U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

December 7, 1965 Volume 821 Number 1

PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of October 1965

Examiner affirmed	218
Examiner affirmed in part	45
Examiner reversed	105
Total	368

New Search Room Hours

Effective immediately, the Public Search Room will be open from 7 : 30 a.m. to 9 : 00 p.m. on workdays, and on Saturdays from 8 : 30 a.m. to 12 : 30 p.m.

C. A. KALK,
Director of Administration.

Copyright Fees

President Johnson has signed Public Law 89-297, which amends the copyright law by providing for an increase in certain copyright fees, effective November 26, 1965. The new fee schedule is as follows :

Item	New fees
All registrations (except renewals)	$6.00
All renewals	4.00
Additional certificates	2.00
Other certifications	3.00
Assignments, etc. (containing not more than 6 pages and not more than 1 title)	5.00
Each additional page or title	.50
Notice of use (containing not more than 5 titles)	3.00
Each additional title	.50
Notice of intention to use (containing not more than 5 titles)	3.00
Each additional title	.50
Searches (hourly fee)	5.00

The registration fee for commercial prints and labels remains unchanged at $6.00. Also, the fee for the additional pages and titles in connection with the recordation of documents and notices of use has remained $0.50. In the case of the recordation of notices of intention to use, the copyright law previously prescribed no fee.

Foreign Patents Received in the Scientific Library as of October 31, 1965

Source	Date received	Highest number
Australia :		
(*Abstracts*)	Oct. 26, 1965	62,564
(*Patents*)	Oct. 26, 1965	254,521
Austria	Oct. 11, 1965	242,150
Belgium	Oct. 25, 1965	634,500
Canada	Oct. 28, 1965	720,585
Czechoslovakia	Oct. 8, 1965	113,850
Denmark	Oct. 4, 1965	101,680
East Germany	Oct. 22, 1965	42,466
Egypt	Mar. 23, 1965	4,968
Finland	July 6, 1965	34,398
France :		
(*Patents*)	Oct. 28, 1965	1,400,800
(*Additions*)	Oct. 25, 1965	85,000
(*Medicaments*)	Oct. 4, 1965	2,750 M
(*Additions*)	May 10, 1965	47 CAM
Germany :		
(*Auslegeschriften*)	Sept. 30, 1965	1,197,820
(*Patents*)	Sept. 30, 1965	1,185,760
Great Britain	Oct. 19, 1965	1,007,010
India	June 14, 1965	89,253
Ireland	Feb. 9, 1965	23,946
Italy	July 1, 1965	640,000
Japan	Oct. 29, 1965	22,080/65
Netherlands :		
(*Octrooiaanvragen*)	Sept. 30, 1965	8,599/65
(*Patents*)	Sept. 30, 1965	120,258
Norway	Oct. 25, 1965	107,234
Pakistan	Feb. 3, 1964	112,446
Philippine Republic	Apr. 13, 1962	458
Poland	Oct. 14, 1965	49,984
Rumania	Aug. 2, 1965	43,091
Sweden	Oct. 18, 1965	198,210
Switzerland	Oct. 22, 1965	392,458
U.S.S.R.	Oct. 22, 1965	172,967

Australia : First 2,000 incomplete
Belgium : First printed 493,079/1950
Canada : First printed 445,931/1948
Czechoslovakia : Not received between 81,300/1952 and 91,901/1959
Finland : First printed 19,428/1941
First 500 incomplete
Hungary : First received 5,792/1896
Latest 140,582/1951
Ireland : First received 10,000/1929
Italy : First 243,000 incomplete
Rumania : First received 40,380/1957
U.S.S.R. : Not received between 2,496/1928 and 116,000/1958
Yugoslavia : First received 10,001/1933
Latest 16,461/1941

New Applications Received During September 1965

Patents	7703
Designs	459
Plant Patents	14
Reissues	22
Total	8198

Issue—December 7, 1965

Patents	1344	No. 3,221,339 to No.	3,222,682, incl.
Designs	50	No. 203,100 to No.	203,149, incl.
Plant Patents	3	No. 2,577 to No.	2,579, incl.
Reissues	16	No. 25,923 to No.	25,938, incl.
Total	1413		

Public Law 89-295

[89th Congress, H.R. 7888]

October 23, 1965

AN ACT

Providing for the extension of patent numbered D. 119,187

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That (a) a certain design patent issued by the United States Patent Office of date February 27, 1940, being patent numbered D. 119,187, which is the insignia of the Massachusetts Department of the United American Veterans of the United States of America, Incorporated, is hereby renewed and extended for an additional period of fourteen years from and after the date of enactment of this Act, with all the rights and privileges pertaining to the same, being generally known as the insignia of the Massachusetts Department of the United American Veterans of the United States of America, Incorporated; (b) no person who has manufactured the design of such patent between February 27, 1954, and the date of the enactment of this Act shall be held liable for infringement of such patent by reason of the continued manufacture and sale thereof.

Approved Oct. 23, 1965.

Adjudicated Patents

(C.A. Ohio) Berry Patent No. 2,262,132 (92—229), for PISTON CONSTRUCTION. Claim 2 *Held* not infringed. *Church* v. *Chrysler Corporation*, 349 F.2d 856; 146 USPQ 520.

(C.A. Miss.) McLemore Patent No. 2,408,328 (47—1.44), for APPARATUS FOR CULTIVATION OF PLANTS. Claims 1, 3, 4, 6 to 9 and 11 *Held* valid and infringed. *Southern Implement Mfg. Co.* v. *McLemore*, 350 F.2d 244; 146 USPQ 680.

(C.A. Miss.) McLemore Patent No. 2,487,353 (47—1.44), for FLAME CULTIVATOR. Claims 11, 13, 14, 16 and 17 *Held* valid and infringed. *Id.*

(C.A. Ohio) Fellabaum Patent No. 2,693,889 (214—38), for TRAILER WITH DETACHABLE LOAD PLATFORM. Claim 3 *Held* invalid. *Felburn* v. *New York Central Railroad Co. et al.*, 350 F.2d 416; 146 USPQ 622.

(C.A. Mass.) Tansel Patent No. 2,725,803 (95—0.5), for PHOTOGRAPHIC COMPOSING APPARATUS, *Held* invalid. *Harris-Intertype Corp.* v. *Photon, Inc.*, 349 F.2d 710; 146 USPQ 621.

(C.A. Calif.) Anderson Patent No. 2,787,314 (264—115), for APPARATUS AND METHOD FOR FORMING A FIBER REINFORCED PLASTIC ARTICLE. Claim 11 *Held* invalid. *Canadian Ingersoll-Rand Co.* v. *Peterson Products of San Mateo, Inc.*, 350 F.2d 18; 146 USPQ 327.

(C.A. Calif.) Gilbert Patent No. 2,875,425 (339—176), for MULTIPLE ELECTRICAL CONNECTOR, *Held* invalid. *Continental Connector Corp.* v. *Houston Fearless Corp.*, 350 F.2d 183; 146 USPQ 630.

(C.A. Mass.) Tansel Patent No. 2,896,523 (95—4.5), for PHOTOTYPOGRAPH, *Held* invalid. *Harris-Intertype Corp.* v. *Photon, Inc.*, 349 F.2d 710; 146 USPQ 621.

(C.A. Calif.) Anderson Patent No. 2,933,125 (46—154), for APPARATUS AND METHOD FOR FORMING A FIBER REINFORCED PLASTIC ARTICLE. Claim 11 *Held* invalid. *Canadian Ingersoll-Rand Co.* v. *Peterson Products of San Mateo, Inc.*, 350 F.2d 18; 146 USPQ 327.

(C.A. Ohio) Felburn Patent No. 2,002,636 (14—655), for METHOD OF "PIGGIE BACK" TRANSPORTATION. Claims 1, 3, 4, 11, 12, 14 and 15 *Held* invalid. *Felburn* v. *New York Central Railroad Co. et al.*, 350 F.2d 416; 146 USPQ 622.

PATENT EXAMINING CORPS

R. A. WAHL, Superintendent

CONDITION OF PATENT APPLICATIONS AS OF NOVEMBER 1, 1965

PATENT EXAMINING OPERATIONS AND GROUPS	Actual Filing Date of Oldest Case Awaiting Action: New	Amended
CHEMICAL EXAMINING OPERATION—I. MARCUS, Acting Director.		
GENERAL CHEMISTRY, GROUP 110—W. B. KNIGHT, Acting Manager. Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries.	7-11-62	2-18-59
GENERAL ORGANIC CHEMISTRY, GROUP 120—G. D. MITCHELL, Acting Manager. Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids.	12- 7-62	8-12-60
PETROLEUM CHEMISTRY, GROUP 130—J. R. LIBERMAN, Manager. Hydrocarbons; Halogenated Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices; Organic Chemistry (Part) e.g.: Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	2- 5-63	7-14-61
HIGH POLYMER CHEMISTRY, GROUP 140—L. H. GASTON, Acting Manager. Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins: Reclaiming; Pore-Forming.	1- 2-63	3- 2-60
COMPOSITIONS AND MOLDING, GROUP 150—L. H. GASTON, Manager. Compositions (Part) e.g.: Coating; Molding; Adhesive Compositions; Abrading; Liquid Purification or Separation; Gas Separation; Special Utility; Molding Processes.	9-11-62	2-26-60
COATING AND LAMINATING, GROUP 160—J. REBOLD, Manager. Coating: Processes, Apparatus and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Ornamentation; Adhesive Bonding; Special Manufactures	7-25-62	9-22-60
SPECIALIZED CHEMICAL ARTS AND INDUSTRIES, GROUP 170—W. B. KNIGHT, Manager. Bleaching and Dyeing; Fertilizers; Foods; Fermentation; Photography; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Metallurgical Apparatus; Gas, Heating and Illuminating; Cleaning Processes; Liquid Purification; Thermolytic Distillation; Preserving.	10- 1-62	11-25-60
CHEMICAL ENGINEERING, GROUP 180—G. D. MITCHELL, Manager. Gas, Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Distillation; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	12-18-62	10-30-61
ELECTRICAL EXAMINING OPERATION—N. H. EVANS, Director.		
POWER, GROUP 210—M. L. LEVY, Manager. Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art.	11-26-62	11-22-60
SECURITY, GROUP 220—S. BOYD, Manager. Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedos, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	1- 3-63	10-21-60
INFORMATION TRANSMISSION, GROUP 230—S. W. CAPELLI, Manager. Communications; Multiplexing Techniques; Facsimile and Related Art.	10-22-62	2-26-60
INFORMATION STORAGE AND RETRIEVAL, GROUP 240—W. W. BURNS, Manager. Data Processing, Computation and Conversion; Storage Devices and Related Art.	7- 5-62	4-26-61
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—B. G. MILLER, Manager. Semi-Conducter and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks.	10- 4-62	8- 1-60
RADIATION AND INSTRUMENTS, GROUP 260—F. M. STRADER, Manager. Optics; Radiant Energy; Measuring.	9-27-62	8-26-60
ELEMENTS, GROUP 270—E. J. SAX, Manager. Conductors; Switches; Miscellaneous.	2-21-63	12-20-61

Total number of pending applications (excluding Designs)	197,288
Total number of Design applications pending	4,847
Total number of applications awaiting action (excluding Designs)	151,692
Total number of Design applications awaiting action	2,448
Date of oldest new application awaiting action	July 5, 1962
Date of oldest amended application awaiting action	Feb. 18, 1959

EXPIRATION OF PATENTS

The patents within the range of numbers indicated below expire during December 1965, except those which may have been extended under the provisions of the Veterans Patent Extension Act (64 Stat. 316 as amended by 66 Stat. 321) and those which may have expired earlier due to shortened terms under the provisions of Public Law 690. A list of Veterans' patents which have been extended appears in the *Annual Index of Patents—1965*.

Patents	Numbers 2,455,347, to 2,457,796 inclusive
Plant Patents	Numbers 813 to 817, inclusive

PATENT EXAMINING OPERATIONS AND GROUPS (Continued)	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
MECHANICAL ENGINEERING EXAMINING OPERATION—F. H. BRONAUGH, Director.		
MATERIAL HANDLING, GROUP 310—A. BERLIN, Manager Material or Article Handling and Dispensing; Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Fluid Sprinkling and Fire Extinguishers; Coin Handling and Check Controlled Apparatus; Classifying and Assorting Solids.	9- 9-63	9-26-62
MANUFACTURING; METAL AND PLASTICS WORKING, GROUP 320—N. BERGER, Manager Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus.	11- 2-62	2-14-61
MACHINE TOOLS, MECHANISMS AND ELEMENTS, GROUP 340—A. M. HORTON, Manager Machine Tools for Shaping or Dividing Involving Cutting or Breaking; Machine Elements Including Power Transmission Components, Work and Tool Holders.	4-26-63	1-16-61
TOOLS, JOINTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Manager Miscellaneous Hardware; Tools; Joints; Cutlery; Locks; Fasteners; Rod Pipe and Electrical Connectors; Buckles; Buttons, Clasps, Etc.; Pushing and Pulling.	5-27-63	4-18-62
FLUID HANDLING, GROUP 360—E. PAUL, Manager Fluid Handling; Valves; Pipes and Tubular Conduits; Fluent Material Handling; Lubrication; Baths, Closets and Sinks; Joint Packing; Centrifugal Bowl Separators.	4-26-63	12-15-61
POWER PLANTS, MOTORS AND PUMPS, GROUP 370—C. F. GAREAU, Manager Power Plants, Combustion Power Plants, Expansible Chamber Motors, Rotary Motors and Rotary Expansible Chamber Motors, Expansible Chamber Devices and Internal Combustion Engines, Pumps and Pump Regulation.	10-14-63	11-20-62
HEAT GENERATION, TRANSFER AND UTILIZATION, GROUP 380—P. L. PATRICK, Manager Furnaces, Liquid Heaters and Vaporizers, Burners, Heat Exchange, Automatic Temperature and Humidity Regulation; Refrigeration; Drying; Ventilation; and Illumination.	5-13-63	5-25-61
GENERAL ENGINEERING AND INDUSTRIAL ARTS EXAMINING OPERATION—J. A. MANIAN, Director.		
AMUSEMENT, HUSBANDRY AND PERSONAL TREATMENT, GROUP 410—A. RUEGG, Manager Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery and Toiletry.	4- 8-63	12- 4-61
CIVIL ENGINEERING, GROUP 420—B. BENDETT, Manager Building Structures; Bridges, Closures; Closure Operators; Safes; Earth Engineering; Drilling; Mining.	3-22-63	4-19-61
PHYSICS, GROUP 430—R. L. EVANS, Manager Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	3-11-63	12-20-61
TEXTILES AND APPAREL, GROUP 440—W. S. COLE, Manager Textiles, Winding and Reeling; Tying Strands; Apparel; Boot and Shoe Making; Sewing Machines.	2-25-63	10-18-60
TRANSPORTATION, GROUP 450—P. ARNOLD, Manager Railways and Rolling Stock; Brakes; Land Vehicles; Aeronautics; Ships.	3-28-63	7-25-61
FURNITURE AND RECEPTACLES, GROUP 460—W. S. COLE, Manager Furniture; Supports; Cabinet Structures; Receptacles; Baggage.	6- 6-63	2-16-62
PRINTING, STATIONERY AND MATERIAL TREATMENT, GROUP 470—L. W. VARNER, Manager Printing; Typewriters; Stationery; Material Treatment.	9- 6-62	7-28-60
DESIGNS, GROUP 490—J. A. MANIAN, Manager Industrial Arts; Household, Personal and Fine Arts.	1-27-65	1-25-63

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

IN RE REYNOLD E. HOLMEN

No. 7308. Decided July 8, 1965

[52 CCPA —; 347 F.2d 852; 146 USPQ 290]

1. APPLICATION—DISCLOSURE—SUFFICIENCY OF DISCLOSURE—35 U.S.C. 112.

On the issue whether a disclosure, indicating that a bisphenolic acid was reacted with polyethylenimine and that "other polyfunctional compounds are also suitable for reaction with the carboxylic acid radical of the bisphenolic acids of this invention * * * including other diols such as ethylene glycol, diamines such as 1,3-diaminobutane, and amino alcohols such as N-butylethanolamine," within the meaning of 35 U.S.C. 112, supports claims to products derived from alkylene amines having either "at least 2 amino groups" or "only 2 amino groups," *Held* that "We are in agreement with the Examiner and the Board that it does not"; and that "In so deciding we do not find it necessary to consider what the disclosure could support, but only whether it does support the present claims."

2. CLAIM—BROADER THAN DISCLOSURE—COMPOUNDS—SINGLE OPERATIVE EXAMPLE INSUFFICIENT.

A single operative example *Held* not enough to support claims as broad in scope as those on appeal.

3. SAME—SAME—SAME—SAME.

"We think that the reference to 1,3-diaminobutane as made here does not provide sufficient support for the claims. Even were we to assume such a reference to be a disclosure of an operative example, it alone could not support the language 'alkylene amines having only 2 amino groups' since 1,3-diaminobutane, having a four-carbon alkyl chain, is insufficient to support claims calling for alkyl chains of unlimited length."

4. SAME—SAME—SAME.

"* * * while a reaction product of the bisphenolic acid with 1,3-diaminobutane would be one of the invention compounds as claimed, there is no disclosure of such product or, necessarily, of its properties and use. Thus the suggestion of 1,3-diaminobutane as a reactant does not strengthen the disclosure of the polyethylenimine example to a degree sufficient to provide support for claims 52 and 59 calling for alkylene amines having 'at least 2 amino groups.'"

APPEAL from the Patent Office. Serial No. 502,742.

AFFIRMED.

Robert E. Granrud for appellant.

Clarence W. Moore (*J. E. Armore* of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, JR., *Associate Judges*

MARTIN, *J.*, delivered the opinion of the court.

Appellant copied certain claims, in modified form, from a patent to Greenlee [1] for the purposes of interference. Those modified claims appear as claims 52, 53, 59 and 60 in appellant's application,[2] and were rejected by the Examiner on the ground that the claims are of such scope as not to be supported by the disclosure. The issue thus is under 35 U.S.C. 112. In accordance with section 708.01(f) of the Manual of Patent Examining Procedure, appeal was taken to the

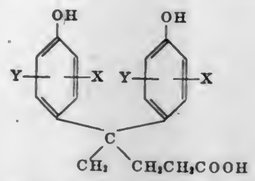
[1] U.S. Patent No. 2,933,528 entitled "Polyamides of 4,4-Bis(4-Hydroxyphenyl) Pentanoic Acid" issued April 19, 1960, on an application filed September 5, 1956, said therein to be a continuation-in-part of Serial No. 505,552, filed May 2, 1955, now abandoned.

[2] Serial No. 502,742, filed April 20, 1955, for "Bisphenolic Substituted Carboxylic Acids and Esters."

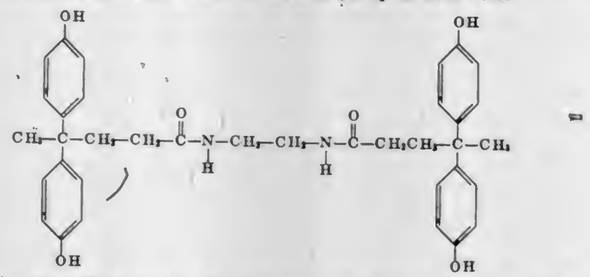
Board which affirmed the Examiner. The remaining claims in the application are involved in interference, and thus are not before us.

The four claims on appeal define compositions of matter which are the amide reaction products of a bisphenolic acid with a polyamine. Claim 52 is representative:

52. As a composition of matter an N-acylated amine produced by interacting alkylene amines having at least 2 amino groups as the sole amide forming groups and in which said amino groups contain only hydrocarbon substituents, and an acid having the formula:



wherein X and Y are members of the group consisting of hydrogen and lower alkyl, said N-acylated amine having only one hydrogen atom of each of at least two of said amino groups replaced by the acyl group of said acid.[3]



While claim 52 calls for the alkylene amines having "at least 2 amino groups * * *," claim 53 specifies "only 2 amino groups * * *." Claims 59 and 60 are patterned similarly, differing only in the preamble.

Appellant's specification in the main shows the production of the bisphenolic acid by the reaction of phenol with levulinic acid. There is no challenge to the sufficiency of support for that acid reactant. The specification continues with a showing of the applications to which the bisphenolic acid may be put, and reads as follows:

The following four examples illustrate reactions of the product acid of Example I prepared from phenol, that is, γ,γ-bis(4-hydroxyphenyl) valeric acid [the bisphenolic acid], and the manner in which it and polymers obtained by reacting it with other substances may be cross-linked to infusible, insoluble resins. Some of these cross-linked formaldehyde condensates may be used as cation exchange resins.

* * * * * * *

Example XIII

A highly insoluble polyamide which may be cross-linked to an infusible polymer was prepared by reacting the product of Example I with an equivalent amount of polyethylenimine at an elevated temperature. A small amount of xylene was added to aid reaction by removal of water. After 5 to 6 hours at the reflux temperature, a light amber resinous polyamide was obtained. Subsequent reaction with formaldehyde may be carried out to cross-link this polymer.

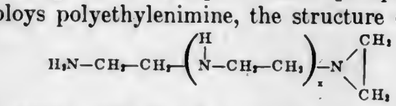
* * * * * * *

A variety of other polyfunctional compounds are also suitable for reaction with the carboxylic acid radical of the bisphenolic acids of this invention to produce cross-linkable resins including other diols such as ethylene glycol, diamines such as 1,3-diaminobutane, and amino alcohols such as N-butylethanolamine.

[3] A polyamide reaction product, taking ethylene diamine as a typical alkylene amine, would have the structure:

[1] The issue then is whether that disclosure, within the meaning of 35 U.S.C. 112, supports claims to products derived from alkylene amines having either "at least 2 amino groups * * *," or "only 2 amino groups * * *." We are in agreement with the Examiner and the Board that it does not. In so deciding we do not find it necessary to consider what the disclosure could support, but only whether it does support the present claims.

The Examiner noted that "the sole *working example* of a[n] 'alkylene amine' is that given in Example XIII." [Emphasis ours.] That example employs polyethylenimine, the structure of which is:



Evidently X varies considerably in any given sample of polyethylenimine, it being a mixture of polyamines of the above structure. No defining indicia are given in Example XIII such as boiling point, etc., which would pinpoint the value of X, i.e., the particular polyethylenimine, used therein. The Examiner was of the view that:

* * * This compound [polyethylenimine] possesses a "cyclic group" as one of its functional groups whereas "alkylene amines" do not have this group. Since the chemical nature of polyethyleneimine is different from alkyleneamines it does not serve as a representative example of the group. *Ex parte Gunther*, 66 USPQ 189. Moreover, there is no support for the limitation "at least 2 amino groups."

Appellant argues that the terminal cyclic group is an amino group and cites literature[4] tending to show that the Examiner errs in stating that "the chemical nature of polyethyleneimine is different from alkyleneamines * * *."

[2] It is not necessary to our decision to determine that issue, for, assuming arguendo that the



group is known by one of ordinary skill in this art to be equivalent to an amino group, we do not think a single operative example enough to support claims as broad in scope as those here on appeal, claims 52 and 59, which call for "at least 2 amino groups." We think the following reasoning of the Examiner to be sound:

* * * The claims call for the expression having "at least 2 amino groups" but no upper limit has been set. It would be sheer speculation to try to predict what would happen to the reaction, for instance, as the length of the chain increases and as more and more amino groups were added. * * * Furthermore, since there have been no limitations on the number of amine groups there is clearly no support for these claims. As the number of amine groups increases, the nature of the molecule would be changed and prediction as to operability would amount to sheer speculation.

Appellant also relies on the reference to 1,3-diaminobutane to support claims 52 and 59 calling for "at least 2 amino groups," as well as the sole and specific support for claims 53 and 60 calling for "only 2 amino groups." The pertinent part of appellant's specification states:

A variety of other polyfunctional compounds are also suitable for reaction with the carboxylic acid radical of the bisphenolic acids of this invention to

[4] Journal of Organic Chemistry, vol. 9 (1944), p. 509, and Marvel, An Introduction to Organic Chemistry of High Polymers, W. J. Wiley (1959), p. 51.

produce cross-linkable resins including other diols such as ethylene glycol, diamines such as 1,3-diaminobutane, and amino alcohols such as N-butylethanolamine.

The Examiner was of the view that that language "is too broad to be meaningful" as support, and the Board, on reconsideration, noted that "there is a reference to, but no description of the product of the reaction with 'diamines such as 1,3-diaminobutane.'"

[3] We think that the reference to 1,3-diaminobutane as made here does not provide sufficient support for the claims. Even were we to assume such a reference to be a disclosure of an operative example, it alone could not support the language "alkylene amines having only 2 amino groups" since 1,3-diaminobutane, having a four-carbon alkyl chain, is insufficient to support claims calling for alkyl chains of unlimited length. Thus claims 53 and 60 are not sufficiently supported.

[4] Further, while a reaction product of the bisphenolic acid with 1,3-diaminobutane would be one of the invention compounds as claimed, there is no disclosure of such product or, necessarily, of its properties and use. Thus the suggestion of 1,3-diaminobutane as a reactant does not strengthen the disclosure of the polyethyenimine example to a degree sufficient to provide support for claims 52 and 59 calling for alkylene amines having "at least 2 amino groups."

As we view the appealed claims, they fail to meet the requirements of 35 U.S.C. 112 in that they are broader than the invention described in the specification. *In re Sus*, 49 CCPA 1301, 306 F.2d 494, 134 USPQ 301. Since the invention claimed is broader than the invention described in the written description, we need not decide whether the polyethylenimine is an alkylene amine, or whether the reference to 1,3-diaminobutane represents such disclosure as would be sufficient on which to base any claim.

For the foregoing reasons, the decision of the Board is affirmed.
AFFIRMED.

U.S. Court of Customs and Patent Appeals

IN RE JAMES A. DINWIDDIE

No. 7385. Decided July 22, 1965

[52 CCPA —; 347 F.2d 1016; 146 USPQ 497]

1. PATENTABILITY—DOUBLE PATENTING—SPECIFICATION MAY BE CONSIDERED TO UNDERSTAND PATENTED CLAIMS.

In connection with a rejection for double patenting on the basis of the claims of a patent to Vernon, *Held* that "To see *what* it is Vernon is claiming it is necessary to look at his specification for the purpose of understanding the claims, though the specification is not otherwise involved in this rejection."

2. SAME—SAME—TWO DISTINCT INVENTIONS FOUND.

"Viewing the Vernon patent as a whole and comparing it with appellant's application, we are in complete disagreement with the Examiner that in them there is but a single 'inventive concept.' We see two distinct inventions fully justifying two separate applications. The only basis for an argument that appellant is not entitled to all of his otherwise patentable claims is the single exceedingly narrow claim 6 of Vernon defining a process in which appellant insists the carrier gas is reactive. Appellant, contrariwise, has limited all of his claims expressly to inert carriers. With this limitation the Patent Office has found him clear of the prior art and we find him to be likewise clear of Vernon's patent claims."

3. SAME—SAME—SAME.

"The essence of *double* patenting, in all of its ramification, is that a patent has already issued on an invention or on the patentable substance of it or

that an attempt is being made to patent an obvious modification of an already patented invention. We are unable to see such a situation here, nor any timewise extension of a patent monopoly already granted, the usual basis of the 'double patenting' objection."

APPEAL from the Patent Office. Serial No. 714,097.

REVERSED.

Thomas B. McCulloch for appellant.

Clarence W. Moore (*Jere W. Sears* of counsel) for the Commissioner of Patents.

Before RICH, *Acting Chief Judge*, and MARTIN, SMITH, and ALMOND, JR., *Associate Judges*

RICH, *J.*, delivered the opinion of the court.

This appeal is from the decision of the Patent Office Board of Appeals affirming the Examiner's rejection of claims 7–12 of application Serial No. 714,097, filed February 10, 1958, for "Catalytic Process."

After the Examiner's final rejection of some of the appealed claims and others on a variety of grounds, including nine prior art patents, appellant filed an amendment cancelling some claims and substituting two of the present claims and arguing all of the rejections. Upon the Examiner's refusal to enter the amendment and refusing to alter his stand, appellant appealed to the Board of Appeals and filed his brief. Thereafter the Examiner filed his "Answer" in which he withdrew all of the references except two and all of his grounds of rejection except one, and that one he rephrased. It is a species of "double patenting" rejection but one of the more confused rejections of this type to come before us—and many have come here of late. There are many points of similarity between this case and Appeal No. 7299, *In re Sutherland*, just decided, — CCPA —, — F.2d —, — USPQ —. Compare *In re Sarett*, 51 CCPA 1180, 327 F.2d 1005, 140 USPQ 474.

To put the matter in perspective, we judge that the double patenting rejection before us is in the "common assignee" category by tacit agreement of the parties—assuming they are clear on the matter. The application at bar, as we would guess from the power of attorney, and as the Solicitor's brief in a footnote says is shown by the Patent Office assignment records, but with no such record before us, is assigned to Humble Oil & Refining Company.

The claims stand rejected on United States Patent No. 2,916,444, which issued on December 8, 1959, on application Serial No. 714,335, filed February 10, 1958, the same day as appellant's application. On its face, this patent was issued to Esso Research and Engineering Company, assignee of Lonnie W. Vernon. We shall refer to it as the Vernon patent.

The same attorney signed the drawings in the application at bar and in the Vernon patent. It seems to be assumed that they have common ownership and at oral argument appellant's counsel said "there is a connection" between Humble and Esso. Since the case seems to have proceeded on this assumption and no one disputes it, for the purposes of our decision we shall assume common ownership of the Vernon patent and the Dinwiddie application though it is not substantiated by the record and may not in fact exist. The Vernon patent also contains a reference to this Dinwiddie application, to which we shall refer later, but the application does not refer to

Vernon's application or patent. Of slight interest is the fact that the record addresses of Dinwiddie and Vernon are both Baytown, Texas.

Another element of confusion confronts us when we come to the point where this opinion should appropirately say something about what the invention is. Were we to go by the specfication, what the appellant says he invented would include considerable subject matter which he no longer claims as his invention, for reasons unknown to us and about which we do not particularly care. From reading several office actions and responses thereto, we surmise that we have before us that not unusual situation in which the specification describes more invention than the appellant is permitted to claim by reason of what turned up in the prior art cited, in consequence of which he gradually restricts his claims and the Examiner gradually withdraws his rejections until there is distilled out that subject matter which is clear of the prior art and properly defined. Upon reaching that point, appellant was faced with the holding, in effect, that the Vernon patent contains all the patent protection to which the common assignee is entitled on the inventions disclosed by Dinwiddie and Vernon. In passing on that issue, though a "double patenting" rejection is based only on the *claims* of an issued patent, there are inextricably involved here statements of fact in both Vernon's specification and in appellant's specification. With this warning, we will now attempt a general description of Dinwiddie's invention.

The invention has to do broadly with catalytic conversion of a fluent feed stock by, inter alia, passing it through a finely divided bed of solid catalyst at appropriate temperatures and pressures. To illustrate, a solid bed of known catalyst is provided and heated gaseous butylenes are passed through it, resulting in the conversion of perhaps half of the butylenes into butadiene; or butane is similarly converted into butene. The conversion products of the catalytic reaction are thereafter separated. This is old. What is desired is to improve the efficiency of the process to maximize production of the desired products. There are a great many such conversions which one might wish to effect. There are two general aspects to the invention of appellant's process as disclosed. First, a fluent *carrier* is continuously flowed through an elongated catalyst bed. Second, the feed stock or material being converted is periodically introduced into the carrier in *pulses*. We need not go into the details of why the pulse feed into the continuously flowing carrier is advantageous except to say that it promotes the separation of the resulting products and the efficiency of the operation. The patentability of the invention over the prior art insofar as novelty and unobviousness are concerned is not in question. No *prior* art is seriously relied on.

The problem portion of appellant's specification has to do with the disclosure of the carrier, the general statement about it reading:

> The carrier to be employed in accordance with the present invention may comprise a liquid or gaseous medium. The carrier *may be inert* with respect to the catalytic conversion to be effected. The carrier *may also be reactive* with the fluent feed stock (e.g., ammonia may be used as a carrier in conducting amminolysis reactions; water or *steam* may be used in conducting hydrolysis reactions, etc.). The carrier should be in the same state as the feed material. Thus, the carrier should be volatilized for vapor phase conversion processes and should be in a liquid condition for liquid phase conversion processes.
>
> Thus, for vapor phase reactions substantially chemically *inert* non-polar gases such as nitrogen, helium, etc. may be employed widely whereas gaseous mediums containing or consisting substantially of materials such as *steam*, flue gas, *carbon dioxide*, carbon monoxide, and even oxygen, hydrogen, hydrogen sulfide, gaseous hydrocarbons, etc. may be employed. When a liquid phase reaction is to be conducted, liquid or liquefied carriers such as benzene, liquefied butane, water, alcohols, ethers, etc. may be employed. [Emphasis ours.]

In describing a flow sheet and the process represented thereby, the specification says:

> A flowing stream of an *inert* fluent carrier (i.e., a gas such as nitrogen, helium, flue gas, *steam*, benzene, etc.) is continually introduced into the reaction zone * * *. [Emphasis ours.]

Steam, it will be noted, appears to be categorized as both inert and reactive. Another flow diagram, that of FIG. 3, illustrates dehydrogenation of butylenes to butadiene in a continuous process and in that connection the specification says:

> A gas which is substantially completely inert to the dehydrogenation reaction, such as steam, is continuously charged to the reaction zone * * *.

There are also in the specification two designated "Examples" in each of which the carrier is the inert gas helium.

For whatever reason, appellant, by the time of the appeal to the Board, had limited all claims to the use of an "inert" carrier. Six of the original 10 claims had been so limited from their filing on. It should also be noted that "inert" as appellant uses the term is relative. A carrier might be inert with respect to one reaction or catalyst and reactive with respect to others. Therefore, the claims do not stop with the mere use of the term "inert" alone. Claim 11, the broadest claim, will illustrate (our breakdown and emphasis):

> 11. In a method for the separation of components formed in the vapor phase catalytic chemical conversion of a vaporous feed material in a conversion zone in the presence of a finely divided catalytically active solid, *the improvement which comprises*
>
> continuously unidirectionally flowing *an inert vaporous carrier* through said conversion zone under conversion conditions,
>
> periodically introducing pulses of said vaporous feed material into said vaporous carrier for sequentially pulsed flow through said conversion zone under said conversion conditions to obtain continuous separation of one of the components from another of the components formed by conversion of said material in said conversion zone,
>
> said one of the components having a rate of travel through said conversion zone different from the rate of travel of said another of the components,
>
> said feed material being introduced into said conversion zone in pulses of sufficient duration separated by a sufficient time to prevent intermingling of said components formed by said conversion,
>
> and thereafter recovering said components from said carrier,
>
> said vaporous *carrier being inert to said solid and to said chemical conversion.*

Claim 12, the only other independent claim, combines the two statements of claim 11 relating to inertness into a single limitation: "a carrier gas inert to said dehydrogenation reaction and to said catalyst," which amounts to the same thing, claim 12 being specific to a process of dehydrogenation of a volatilized hydrocarbon. The other four claims are all dependent on claim 12. So much for the Dinwiddie application. We turn now to the rejection of these claims.

The Examiner first cited and rejected on Vernon in the third office action, Vernon having issued subsequent to the second action, saying:

> 3. Claims 1–10 are rejected as unpatentable over the specification and the claims of the newly cited Vernon patent. Applicant's fluent carrier or inert carrier gas are not seen to be patently [sic] distinct from the fluent electronating agent or carbon dioxide of Vernon particularly as the applicant discloses the use of hydrogen and carbon dioxide as the carrier gas.

Appellant argued that Vernon, having been filed on the same day as his application was not an "anticipating" (i.e., prior art) reference; that Vernon's invention was directed to maintaining catalytic activity and to that end used a reactive, not an inert, carrier; and that his claims patentably distinguished from the claims of the Vernon patent. To this the Examiner replied, in a final rejection:

4. Claims 1–10 are again rejected as unpatentable over the specification and claims of the Vernon patent, of record. While the applicant may argue that hydrogen and carbon dioxide are outside the purview of the claims, it is noted that these gases are recited as applicable in the specification at page 4 and thus it appears that it is essential that the inert gases which are contemplated be specifically stated in the claims.

In the amendment thereafter which presented the claims now before us appellant argued, as he has continued to do here (original emphasis):

The present invention [as now claimed] is directed to the separation of reaction products formed in a chemical conversion wherein a vapor feed is introduced in pulses into a continuously flowing stream of an inert vaporous carrier under reaction conditions to convert the feed into reaction products. The inert vaporous carrier is *inert* to the *solid catalyst* and to the *chemical conversion* such that the vaporous carrier does not enter into the reaction in any manner whatsoever.

* * * * * * * *

The claims here are directed to an *inert* vaporous carier which is *inert* to the *solid* and *conversion operation*. The fact that the same gases are disclosed by applicant as are used by the patentee Vernon means only that, in applicant's operation as claimed, it is necessary, for the separation, to select a carrier and a catalyst, as well as the feed stock, which are nonreactive. Applicant has illustrated his invention with reference to inert carrier gases. Certainly hydrogen and carbon dioxide are not reactive with all catalysts and feeds that may be used. It is respectfully submitted, therefore, that since Vernon employs a *reactive carrier gas*, as opposed to applicant's *inert* carrier gas, the claims patentably distinguish over Vernon. It is respectfully submitted to be immaterial that applicant, with some catalysts, may use the same gases as disclosed by Vernon, which are inert thereto.

The Examiner's reply to this appeared in his answer, where he restated his rejection as "unpatentable over the claims of the Vernon patent," appropriately dropping reference to Vernon's specification. Here the Examiner brought out some new points as to why he did not consider the "inert" limitations of the appealed claims to distinguish from Vernon's claims. He said appellant defined flue gas and steam as inert and disclosed carbon dioxide as a gaseous medium. He pointed to Polk Patent No. 2,848,521, Aug. 19, 1958, the only other reference retained, as disclosing steam to be an oxidizing agent, said it was not clear what gases are inert carriers, said there seemed to him to be "but a single inventive concept" in Vernon and in appellant's application, and that appellant's operation is "noninventively different from that claimed" in Vernon. He concluded by saying:

It is further not evident that the carbon dioxide reacts *to any appreciable extent* in the Vernon process since Vernon merely discloses that the carbon dioxide minimizes hydrogen adsorption by the catalyst and *provides an oxidizing atmosphere* which inhibits reduction of the catalyst. [Emphasis ours.]

The Board affirmed the Examiner in a very short opinion which, aside from setting up the situation, consists almost entirely of the following paragraph:

We appreciate the distinction appellant makes in his brief and which was emphasized at the oral hearing, between an inert carrier gas and a reactive one. However, study of the Vernon reference does not convince us that the claims can be allowed on the basis of this alleged distinction. Claim 6 of the Vernon patent uses carbon dioxide as the continuously flowing gas. *It is not apparent how carbon dioxide could react with the several oxide catalysts specified in claim 6 of the patent, nor how it could react with the hydrogen or other materials present* in the reaction zone under the particular temperature conditions existing in the Vernon process. In brief, the carbon dioxide *appears to us to function as an inert gas in the process of claim 6* of the patent. We are accordingly constrained to affirm the rejection of the appealed claims as unpatentable over the claims of the Vernon patent. The Polk patent appears to be of little significance in respect to the present issues. [Emphasis ours.]

The foregoing shows, we think, that the Examiner and the Board had somewhat different theories as to why there would be "double patenting" if appellant's claims issue. The Board, it is noted, decided for itself the chemistry involved in the process of Vernon claim 6 and concluded that the carbon dioxide carrier gas *therein* would in fact *be inert* whereas the Examiner recognized that it "provides an oxidizing atmosphere" even though he thought it would not react "to any appreciable extent." Oxidation is surely reaction.

The experts not being in agreement, let us consider what invention is claimed by Vernon. We first note that, throughout, the Examiner referred to the "claims" of the Vernon patent, en masse. The Board mentions only claim 6. There are only six claims. [1] To see *what* it is Vernon is claiming it is necessary to look at his specification for the purpose of understanding the claims, though the specification is not otherwise involved on this rejection. Claims of this type cannot be understood in a vacuum. See *In re Zickendraht*, 50 CCPA 1529, 319 F.2d 225, 138 USPQ 22, and cases there cited, but also consider *In re Sutherland*, supra. A few lines shed considerable light on the question:

This invention relates to a method for maintaining the catalytic activity of a solid metal-containing contacting agent [catalyst] in a catalytic conversion process. More particularly, this invention relates to a method for sustaining the catalytic activity of a solid oxidizable metal-containing contacting agent employed in a *conversion* operation *characterized by the incidental production of oxidizing materials.*

Many of the metal-containing contacting agents that are potentially useful in promoting catalytic conversion operations have found only limited utility with respect to conversion operations that are characterized by the incidental production of *de-electronating (i.e., oxidizing) agents* which, on *reaction* with the metal, will substantially inhibit the activity thereof. * * *

In accordance with the present invention, metal catalyzed conversion operations are conducted without impairing the activity of the catalyst by continuously flowing a fluent *electronating (i.e., reducing) agent* through a conversion zone containing a bed of finely divided, preferably microporous, catalyst and by periodically introducing pulses of a feed stock * * *; whereby the action of *oxidizing agents* such as hydrogen sulfide evolved during the course of the reaction is effectively counteracted.

* * * * * * * *

it will be apparent that *any metal sulfides formed by reaction* of the hydrogen sulfide with the catalytic metal component *will be continuously reduced* by the hydrogen present in the conversion zone whereby the catalyst will be maintained in a highly active unsulfided condition. [All emphasis ours.]

Oxidizing, reducing, and the like are words of chemical reaction and denote the use of a reactive agent. In Vernon that agent is the carrier. An inert carrier, that is a carrier which is inert *in the process in which*

used, will not function to carry out Vernon's invention as he has described it.[1]

Vernon's claim 1 call for passing a stream of a fluent "electronating agent" through the catalyst "for inhibiting deelectronation * * *." This is certainly reaction and the antithesis of what appellant claims. Similarly, claims 2–5 all specify a stream of hydrogen in a hydrodesulfurization process to *continuously reduce* any metal sulfides formed. This leaves claim 6 as the only claim which could have any possible bearing on a double patenting rejection.[2] It uses a fluent stream of carbon dioxide in a butylene to butadiene dehydrogenation process with catalyst consisting of 77% Fe_2O_3, 20% K_2CO_3, and 3% Cr_2O_3. Feed stock is introduced in pulses, which is part of Dinwiddie's invention, and this brings about considerable similarity in the claims. Claim 6 does not speak expressly of any reaction of the carbon dioxide but claim 6 is practically a "picture claim" of the second example of the specification which concludes with this statement by Vernon who, presumably, understood his own process:

> Moreover, the tendency of the catalyst to become rapidly deactivated is largely overcome in that the carbon dioxide will minimize hydrogen adsorption by the catalyst and *will provide an oxidizing atmosphere* which will substantially inhibit reduction of the catalyst. [Emphasis ours.]

The Board has looked at the process of claim 6 and came to its own conclusion that since it sees nothing with which the carbon dioxide would react it must be "inert" in the process. But the specification indicates that there is likelihood of *reduction* of the catalyst and that the presence of the carbon dioxide, *as an oxidizer*, will inhibit it. Appellant's brief gives a concrete explanation which is more appealing to us than the Board's unsupported speculation. It is:

> In the dehydrogenation of butylenes to butadiene in claim 6 of Vernon, hydrogen is produced. Moreover, the presence of the hydrocarbon (which is also a reducing agent) together with the produced hydrogen provides a reducing atmosphere which if not counteracted will ultimately deactivate the catalyst as described by the patentee. In short, what happens in the Vernon process, as defined by claim 6 particularly, is that the catalyst components tend to become reduced to the several metals. Carbon dioxide, as stated by the patentee, provides an oxidizing atmosphere which re-oxidizes the catalyst as it becomes partially reduced and thus maintains the catalyst in its catalytically active form.

Without claiming competence to know who has the better of this argument, we certainly see enough doubt on it to resolve it in favor of the applicant's right to a patent, in accordance with the long-established policy. We note that the very competent counsel for the Commissioner in his well-written brief has not controverted the last-quoted passage from appellant's brief.

[1] In Vernon's specification is the following paragraph referring to the introduction of feed stock in pulses:

> As is more clearly disclosed and claimed in copending Dinwiddie application Ser. No. 714,097, filed of an even date herewith and entitled "Catalytic Process," the introduction of a feed stock in pulses or bursts in this fashion provides for a continuous separation within the conversion zone so as to maintain a constantly changing equilibrium.

[2] Claim 6 reads:

> 6. A method for the dehydrogenation of a butylenes feed stock in a reaction zone having a length-to-diameter ratio of about 10 and containing a dehydrogenation catalyst consisting of about 77 percent Fe_2O_3, about 20 percent K_2CO_3, and about 3 percent Cr_2O_3, said method comprising the steps of continually flowing carbon dioxide heated to a temperature within the range of about 650° to 800° F. through said reaction zone at a flow rate of about 100 cubic feet of heated carbon dioxide per hour per cubic foot of catalyst, periodically introducing pulses of said butylene feed stock into said flowing stream of carbon dioxide and recovering butadiene from the effluent from said reaction zone, the period of injection of each of said pulses of feed stock lasting about 5 seconds and the period of time between pulses lasting from about 1 to 2 seconds.

But we do not rest our decision merely on this. [2] Viewing the Vernon patent as a whole and comparing it with appellant's application, we are in complete disagreement with the Examiner that in them there is but a single "inventive concept." We see two distinct inventions fully justifying two separate applications. The only basis for an argument that appellant is not entitled to all of his otherwise patentable claims is the single exceedingly narrow claim 6 of Vernon defining a process in which appellant insists the carrier gas is reactive. Appellant, contrariwise, has limited all of his claims expressly to inert carriers.[3] With this limitation the Patent Office has found him clear of the prior art and we find him to be likewise clear of Vernon's patent claims.

[3] Appellant's principal contribution to this art appears to us to be, and Vernon's patent acknowledges it to be, introduction of the feed stock in *pulses* or bursts. In fact, the Examiner and Solicitor contend that pulsing is the *only* patentable feature here involved. Appellant, however, has limited the claims to his invention to pulse feed into an *inert* carrier. Vernon's invention is maintaining the catalytic activity *in* such a pulse feed operation by using a *reactive* carrier. Vernon's *limitation* of his process claims to pulse feed seems to us of no significance, contrary to the Solicitor's contention. Possibly Vernon's invention is operative only in such a system. In any event, we cannot see in his claim 6, or in any other claim, the grant of any protection *on appellant's invention*. The essence of *double* patenting, in all of its ramifications, is that a patent has already issued on an invention or on the patentable substance of it or that an attempt is being made to patent an obvious modification of an already patented invention. We are unable to see such a situation here, nor any timewise extension of a patent monopoly already granted, the usual basis of the "double patenting" objection. Vernon's claim 6 does not protect appellant's invention, nor could Vernon have a patent claim to it for he is not the inventor, as the law requires, which his patent admits. *In re Sarett*, supra.

The decision of the Board is reversed.

REVERSED.

ALMOND, *J.*, concurs in the result.

[3] It would certainly be within the province of the Examiner, in view of our reversal of his rejection, upon return of the application, to require that the statement of the invention in the specification be made to conform to what has been found to be allowable. As it stands, "in accordance with the present invention" the carrier "may also be reactive," and this appellant abjures.

United States Court of Appeals
District of Columbia Circuit

CRAWFORD B. MURTON AND VESUVIUS CRUCIBLE COMPANY
v.
DAVID L. LADD, COMMISSIONER OF PATENTS

No. 19,083. Decided September 17, 1965

[— U.S.App.D.C. —; — F.2d —; 146 USPQ 699]

1. CLAIM—BROADER THAN DISCLOSURE—DEVICE—CLAIM NOT LIMITED TO STRUCTURE ESSENTIAL FOR ALLEGED ADVANTAGE—35 U.S.C. 112.

"* * * the critical limitation 'said means being the sole means overlying the lateral projection at the bottom of the rod,' while it may describe Murton's invention it also describes structures other than Murton's. Thus claim 2 is worded too broadly. It is not limited to a structure essential to accomplish the advantage claimed for the invention. That advantage does not attach

to other structures covered by the language of the claim. This is basis for disallowance of the claim. 35 U.S.C. § 112 provides that the specifications shall include claims 'particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.'"

2. SAME—SAME—SAME—SAME.

"Appellants rely on *Diamond Rubber Co.* v. *Consolidated Rubber Tire Co.*, 220 U.S. 428, to support their proposition that an inventor is entitled to all that his patent fairly covers, even though its complete capacity is not recited in the specifications and was unknown to the inventor prior to the patent issuing; but this is a different matter from describing an invention in terms that cover the structure which has particular advantages as well as a number of other structures which do not have those advantages. Considering this defect, as well as lack of mention in the claim itself of the structural advantage alleged, the disallowance of claim 2 was proper."

APPEAL from the United States District Court for the District of Columbia.

AFFIRMED.

Edward Hoopes III, with whom *Spencer B. Michael* and *Richard H. Bradford* were on the brief, for appellants.

Clarence W. Moore (*George C. Roeming* of counsel) for the Commissioner of Patents.

Before FAHY, *Circuit Judge*, BASTIAN, *Senior Circuit Judge*, and BURGER, *Circuit Judge*

FAHY, *Circuit Judge*.

This appeal is from a judgment of the District Court in favor of the Commissioner of Patents in a suit brought under 35 U.S.C. § 145 by appellants as claimants to an invention. Only claim 2 of several original claims, one of which was allowed, is involved on this appeal. Those not allowed, other than claim 2, have been withdrawn. The invention is designated as Serial No. 759,670, filed September 8, 1958. As described by appellants it is a ladle stopper used to control the outflow of molten steel through a nozzle in the bottom of so-called "bottom pour" ladles which receive the molten steel from open-hearth steel-making furnaces.

Claim 2 reads as follows:

A stopper for a ladle or similar receptacle comprising a refractory head having a well extending downwardly thereinto, a rod having a lateral projection at its bottom inserted downwardly into the well and means separate from the head also inserted downwardly into the well above the lateral projection at the bottom of the rod into position to overlie at least a portion of the lateral projection at the bottom of the rod and thereby block withdrawal of the rod from the well and connected with the head whereby to attach the rod to the head, said means being the sole means overlying the lateral projection at the bottom of the rod.

The Patent Office Examiner rejected this claim as not patentable over the prior art, referred to as the patents of Sears, No. 1,843,175, of Bacon, No. 1,719,795, and of (British) Williams, No. 12,291. The Board of Appeals agreed, affirming the decision of the Examiner.

After a hearing the trial judge rendered an opinion containing his Findings of Fact and Conclusions of Law. He agreed generally with the analysis of the case made by the Examiner, though stating that in his court the Patent Office directed its efforts toward showing the claims contested before him were so broad as to violate the requirements of 35 U.S.C. § 112. The court referred to appellants' reliance upon a superior function of the invention, due to the fact that the refractory sleeves of the rod bear upon the surface of the inserts[1]

[1] The inserts are intended to be described in claim 2 by the language "and means separate from the head also inserted downwardly into the well . . . said means being the sole means overlying the lateral projection at the bottom of the rod."

rather than upon the surface of the stopper head. When the rod with the head at its end is forced down in the operation of the ladle so as to shut off the nozzle, it is claimed that the bearing of the sleeves upon the inserts reduces the stress upon the stopper head and for that reason lessens the percentage of head failures. As the court said, however, this advantageous construction "does not appear to be directly set forth in the specification, and is certainly not recited by the claims," for which reason, he continued, "the extensive arguments on this point may only be accorded slight probative weight." Reverting then to the view that the position taken by the Examiner was correct the court ended by a finding for the Commissioner and dismissed the complaint.

In this court the Commissioner points out that the Patent Office recognized that appellants had disclosed patentable substance in the specification and drawings of their application and had allowed one of the claims appropriate to this situation, not holding that there was no patentable substance in the structure disclosed in the application. It held only, insofar as now material, that patentable substance is lacking in claim 2. Accordingly, as the Commissioner states, the real issue is not whether appellants have disclosed an invention patentable over the prior art but whether they have defined a patentable invention in the single claim 2.[2]

[1] The beneficial advantage of the invention due to its structure, that is, as above stated, the advantage of transmission through the inserts onto the rod flange of the thrust of the refractory sleeves covering the rod, as the rod is forced downward, thus freeing the head of the stress absorbed by the inserts, thereby lessening the danger of head failure, is not set forth in the specification which was before the Patent Office. Nor is it recited in the claims, as the District Court pointed out. Appellants state, however, that it is covered by the words, "said means being the sole means overlying the lateral projection at the bottom of the rod." And it may be argued, as appellants do, that the structure shown in drawings before the Patent Office can be interpreted so as to show this advantage. But see *Permutit Co.* v. *Graver Corp.*, 284 U.S. 52, 60. Even so the written description of claim 2 embraces more. Its terms can be applied to structures which are quite different from Murton's; that is to say, the critical limitation "said means being the sole means overlying the lateral projection at the bottom of the rod," while it may describe Murton's invention it also describes structures other than Murton's. Thus claim 2 is worded too broadly. It is not limited to a structure essential to accomplish the advantage claimed for the invention. That advantage does not attach to other structures covered by the language of the claim. This is basis for disallowance of the claim. 35 U.S.C. § 112 provides that the specifications shall include claims "particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention."

[2] Appellants rely on *Diamond Rubber Co.* v. *Consolidated Rubber Tire Co.*, 220 U.S. 428, to support their proposition that an inventor is entitled to all that his patent fairly covers, even though its complete capacity is not recited in the specifications and was unknown to

[2] The Commissioner's brief amplifies his position as follows:

Appellants have an adequate remedy by prompt prosecution of claims of proper scope in a continuation application, and by taking of appropriate steps to avoid a *res judicata* situation in such continuation application.

the inventor prior to the patent issuing; but this is a different matter from describing an invention in terms that cover the structure which has particular advantages as well as a number of other structures which do not have those advantages. Considering this defect, as well as lack of mention in the claim itself of the structural advantage alleged, the disallowance of claim 2 was proper. *Dyer* v. *Coe*, 75 U.S.App.D.C. 125, 130, 125 F.2d 192, 197. *Seyfarth* v. *Coe*, 76 U.S. App.D.C. 96, 99, 129 F.2d 58, 61.

AFFIRMED.

BURGER, *Circuit Judge*, dissenting.

The majority bases its affirmance on the grounds that the claim at issue, claim 2, did not set forth the advantageous construction of the invention and that it is worded so as to include other structures and is thus too broad. I cannot find support in the record for either ground.

The District Court refused appellants' application for a patent under 35 U.S.C. § 145 because it believed that "the functional recitations do not seem comprehensive enough to distinguish structurally from the references in a manner unobvious to persons having ordinary skill in the art." Taking a slightly different tack, the majority states that the advantage of the invention is not explicitly stated in claim 2 and that therefore claim 2 does not define a patentable invention. But the record contains uncontradicted expert testimony directed specifically at claim 2 stating that it does in fact describe an invention that removes the sleeve pressure from the stopper head by transferring it to a flange. It is well settled that the advantages of an invention need only to be stated so that *an expert* in the field can understand it. *Hazeltine Research, Inc.* v. *Dage Electric Co., Inc.*, 271, F.2d 218, 220–221 (7th Cir. 1959).

Although Appellee had urged in the District Court that the claim was so broad as to violate 35 U.S.C. § 112, that court made no determination on this point. The contention that the claim was too broadly written to satisfy 35 U.S.C. § 112 wins acceptance for the first time on this appeal. We are not told by the majority how or why that claim is too broadly worded but are presented only with a naked assertion of a conclusion. Possibly the majority is relying on appellee's drawings, based on claim 2, which show a structure that does not remove the sleeve load from the head as the claim urges. Since the asserted advantage of the claim is inconsistent with appellee's drawings, if the advantageous construction is revealed to one skilled in the art by the language of the claim, then the drawings of appellee are not accurate expressions of what appellants' claim represents. The issue of broadness, then, may be merely one facet of the question whether the claim sufficiently disclosed the advantageous construction. Because the trial court's finding on this issue was contrary to uncontradicted testimony, I would remand for further consideration and clarification on this issue.

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

2,219,332, D. Mastini, TELEPHONE SYSTEMS, **filed** Aug. 6, 1965, D.C. Del. (Wilmington), Doc. 3066, *Domenico Mastini* v. *American Telephone & Telegraph Co. et al.* **Same, filed** Aug. 17, 1965, D.C. Del. (Wilmington), Doc. 3077, *Domenico Mastini* v. *The Diamond State Telephone Company.*

2,491,925, A. Lazaro, APPARATUS FOR ELECTROPLATING, **filed** Aug. 31, 1962, D.C., N.D. Ill. (Chicago), Doc. 62c1685, *Hardwood Line Mfg. Co.* v. *Hanson-Van Winkle-Munning Co.* Stipulation and order dismissing complaint and counterclaim with prejudice Aug. 2, 1965.

3,021,236, D. Beggs et al., CONVECTIVE HEAT TRANSFER FURNACE AND METHOD, **filed** Sept. 3, 1965, D.C., N.D. Ohio (Cleveland), Doc. C65–559, *Midland-Ross Corporation* v. *Electric Furnace Company.*

3,042,278, J. F. McCullough, IMPROVED PACKAGING MATERIAL AS AN ARTICLE OF MANUFACTURE, **filed** Sept. 2, 1965, D.C. Vt. (Burlington), Doc. 4358, *Jane F. McCullough* v. *Norcross-Eldridge, Inc.*

3,043,160, H. R. Killian, VALVE OPERATOR; **3,050,781**, same, MOLDED IN PLACE RUBBER SEAT BUTTERFLY VALVE; **3,122,353**, same; **3,193,914**, same, METHOD OF MAKING A BUTTERFLY VALVE WITH AN INTEGRAL SEAT, **filed** Sept. 7, 1965, D.C., N.D. Ill. (Chicago), Doc. 65c1483, *Henry Pratt Company* v. *Crane Company.*

3,050,781. (See 3,043,160.)

3,055,031, P. Rachlin, POLISHING MACHINE WITH AEROSOL DISPENSER; **3,058,136**, same; **3,071,792**, same, POLISHING MACHINE HAVING RESILIENT MOUNT FOR AEROSOL DISPERSER, **filed** Sept. 8; 1965, D.C., E.D.S.C. (Columbia), Doc. AC–1796, *Ponsell Floor Machine Company, Inc.* v. *Eagle Chemical Company, Inc.*

3,058,136. (See 3,055,031.)

3,060,992, Hopp and Bohm, MEANS AND METHOD FOR FORMING NON-PLANAR ARTICLES, **filed** Sept. 2, 1965, D.C. Conn. (New Haven), Doc. 11088, *Harold P. Hopp* v. *Buell Industries, Inc.*

3,067,443, J. W. Dietz et al., SELF-CONTAINED SEWERAGE SYSTEM; **3,172,131**, Herkenhine and Lee, SEWERAGE SYSTEM, **filed** Sept. 3, 1965, D.C., S.D. Calif. (Los Angeles), Doc. 65–1319–CC, *Monogram Industries, Inc.* v. *Koehler Aircraft Products Company.*

3,071,792. (See 3,055,031.)

3,078,477, Schmid and Maciukiewicz, WALL CLOSET CARRIER, **filed** Sept. 4, 1964, D.C., M.D. Pa. (Scranton), Doc. 8645, *Zurn Industries, Inc.* v. *Hoffman Specialty Mfg. Corp.* Stipulation of dismissal Aug. 31, 1965.

3,101,972, C. A. Laughlin, SUPPORT STANDS; **3,171,687**, K. A. Jensen, BABY CARRIER APPARATUS, **filed** Sept. 10, 1965, D.C., N.D. Ohio (Cleveland), Doc. C65–569, *Infanseat Company* v. *Century Products, Inc.*

3,106,321, W. G. Gorman, MINIATURE AEROSOL UNIT, **filed** Sept. 14, 1965, D.C.N.J. (Newark), Doc. 997–65, *Sterling Drug, Inc.* v. *Oil Equipment Laboratories, Inc. et al.*

3,122,353. (See 3,043,160.)

3,168,279, Anderson and Priese, BALL VALVE HAVING OFFSET THROUGH PASSAGE, **filed** Sept. 15, 1965, D.C., N.D. Ill. (Chicago), Doc. 65c1548, *Hills-McCanna Company* v. *Crane Co.*

3,171,687. (See 3,101,972.)

3,172,131. (See 3,067,433.)

3,193,914. (See 3,043,160.)

Re. 23,273, G. P. Kearse, ANTENNA SYSTEM, **filed** Aug. 18, 1965, D.C., N.D. Ill. (Chicago), Doc. 65c1378, *Hi-Lo Manufacturing Corp.* v. *Morton L. Friedman et al.* Cause dismissed Oct. 8, 1965.

Des. 182,993, H. A. Edmondson, BUILDING PANEL; **Des. 187,694**, same; **Des. 188,716**, same; **Des. 190,019**, same, **filed** Aug. 30, 1965, D.C., N. Mex. (Albuquerque), Doc. 6329, *Edmondson & Farmer* v. *Customwood Manufacturing Company.*

Des. 187,694. (See Des. 182,993.)

Des. 188,716. (See Des. 182,993.)

Des. 190,019. (See Des. 182,993.)

Des. 190,410, D. A. Scholz, HOUSE, **filed** Aug. 16, 1965, D.C., S.D. Iowa (Des Moines), Doc. 6–1712–C(2), *Scholz Homes, Inc.* v. *Eggers Bilt Homes, Inc. et al.*

Des. 196,262, E. K. Sovatsky, PORTABLE INCANDESCENT LAMP; **Reg. No. 734,840** (TENSOR), Tensor Electric Development Company, Lamps, A.C.-D.C. voltage supplies, A.C. generators, etc., **filed** Dec. 3, 1964, D.C., S.D. Calif. (Los Angeles), Doc. 64–1682–WM, *Tensor Corporation* v. *Sears Roebuck & Co. et al.* Plaintiff's dismissal and order thereon dismissing action as to defendant Sears, Roebuck & Co. without prejudice. Stipulation for entry of consent judgment—consent judgment in favor of plaintiff and against defendant Richard's Mfg. Co.; said defendant enjoined July 14, 1965.

Des. 201,778, I. Berman, JOINTED MANNEQUIN OR SIMILAR ARTICLE, **filed** Aug. 30, 1965, D.C., E.D.N.Y. (Brooklyn), Doc. 65–C–886, *Irving Berman et al.* v. *Robelan Displays, Inc. et al.*

Des. 201,793, J. K. Rains, SWIMMING POOL, **filed** Aug. 19, 1965, D.C., S.D.N.Y., Doc. 65/2531, *John K. Rains* v. *Monarch Pool Corp. et al.* **Same, filed** Sept. 20, 1965, D.C., W.D.N.Y. (Buffalo), Doc. 11,568, *John K. Rains* v. *Niagua, Inc.*

REISSUES

DECEMBER 7, 1965

Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

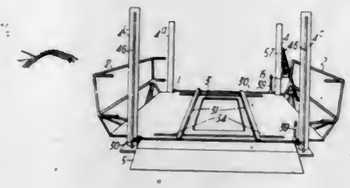
25,923
ROLL-ON TO FREE-WHEEL CONVERTIBLE VEHICLE LIFT

Vernon Powell, Braintree, England, assignor to Joseph Bradbury & Sons Limited, Braintree, England, a British company

Original No. 3,078,961, dated Feb. 26, 1963, Ser. No. 170,114, Jan. 31, 1962. Application for reissue Feb. 24, 1965, Ser. No. 452,425

Claims priority, application Great Britain Sept. 6, 1961

20 Claims. (Cl. 187—8.54)



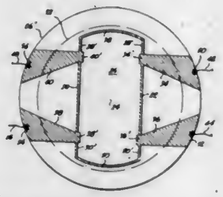
1. A vehicle [lift of balcony type] comprising support means, a platform to accommodate a vehicle, means to raise and lower said platform on said support means, an open structure borne by said platform adapted to support said vehicle at points other than its wheels, and means on said structure engageable with said support means to retain said structure in a raised position, whereby said platform may be lowered to leave said vehicle in its raised position with its wheels free.

25,924
PRESSURE SENSITIVE DIAPHRAGMS WITH STRESS NULL ZONE ORIENTED BRIDGE PATTERNS

Cecil K. Stedman, Enumclaw, Wash., assignor to Statham Instruments, Inc., Los Angeles, Calif., a corporation of California

Original No. 3,071,745, dated Jan. 1, 1963, Ser. No. 134,070, Aug. 25, 1961. Application for reissue Oct. 22, 1964, Ser. No. 420,470

51 Claims. (Cl. 338—2)



1. A pressure responsive device comprising [an edge restrained diaphragm having an] *a diaphragm and means restraining the edge of said diaphragm, said diaphragm having an electrically non-conductive surface to which is bonded an* integral bridge pattern with a plurality of active segments interconnected [at] *by* juncture areas in turn having *connected thereto* relatively low resistance conductor segments [extending beyond the restrained edge of the diaphragm]; said juncture areas lying substantially in the radial stress null zone of the diaphragm, with one active segment connected to each juncture area disposed near-center from said radial stress null zone *of said diaphragm* and the other active segment connected therto disposed near-edge from said radial *stress* null zone *of said diaphragm.*

25,925
AUTOMATIC DIAPHRAGM ARRANGEMENT FOR CAMERAS

Heinrich Hautmann, Erlangen, Bavaria, Germany, assignor to P. Gossen & Co., G.m.b.H., Erlangen, Bavaria, Germany

Original No. 3,122,980, dated Mar. 3, 1964, Ser. No. 852,646, Nov. 13, 1959. Application for reissue May 13, 1964, Ser. No. 377,796

5 Claims. (Cl. 95—64)



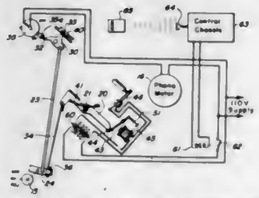
1. In an automatic diaphragm arrangement for photographic cameras wherein two mounted diaphragm vanes are operated by a photoelectrically controlled measuring instrument including a rotary coil, and wherein two adjacent portions of the vanes are shaped to form the exposure aperture proper; the improvement constituted by other portions of the two diaphragm vanes overlying each other and having respective control slots of similar shape which are so arranged that they intersect in every position thereof, two separate laterally spaced pivots for mounting said diaphragm vanes, a lever arm extending from the rotary coil of the measuring instrument, and a single control pin fixed to said lever arm and extending through said slots at the point of intersection of said slots for moving said vanes.

25,926
RECORD CHANGER MECHANISM

Ralph W. Galke, Bellwood, and Richard A. Hathaway, Des Plaines, Ill., assignors to Zenith Radio Corporation, a corporation of Delaware

Original No. 3,038,728, dated June 12, 1962, Ser. No. 11,883, Feb. 29, 1960. Application for reissue Feb. 12, 1963, Ser. No. 258,956

9 Claims. (Cl. 274—10)



9. In an automatic record changer having a record changer mechanism operable in a cyclic manner including control means for initiating a cycle of said changer mechanism, manually operable selector means operable to off,

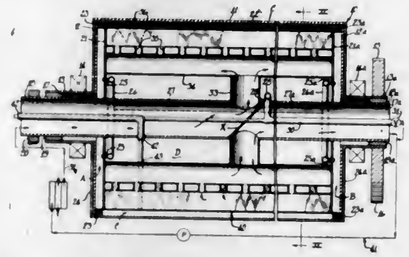
on, and reject positions, and actuator means coupled to said selector means operative as said selector means is moved to the reject position to effect operation of said control means in the initiation of a cycle of said record changer mechanism, the improvement which comprises: auxiliary control means including a movable member operable from a first position to a second position to effect displacement of said manually operable selector means and said actuator means from the off and on positions to the reject position to thus effect operation of said control means and initiation of a cycle of said record changer mechanism, and remotely controlled means including means operative to selectively actuate said movable member to initiate a cycle of the record changer mechanism.

25,927
DRYING DRUM AND METHOD

Edgar J. Justus, Beloit, Wis., and Robert A. Daane, Palo Alto, Calif., assignors to Beloit Iron Works, Beloit, Wis., a corporation of Wisconsin

Original No. 2,915,293, dated Dec. 1, 1959, Ser. No. 651,958, Apr. 10, 1957. Application for reissue Nov. 30, 1960, Ser. No. 72,826

9 Claims. (Cl. 165—1)



5. A dryer drum comprising a first cylindrical shell, a second cylindrical shell receiving the first and closely spaced therefrom to define therewith an annular chamber, a head closing each end of the second shell, means corotatably mounting said second shell and said heads for rotation relative to said first shell, a heat exchange fluid inlet line leading through one of said heads, means defining a first orifice in said first shell, a first conduit receiving fluid from said inlet line and flowing the fluid into said first orifice, said first conduit extending the length of the first shell and defining a fluid flow path through a first right angle turn, a reduced cross-sectional area and then a second right angle turn, means defining a second orifice, separate and apart from the first orifice, in said first shell for withdrawing fluid from said annular chamber, and a drainage line communicating with said second orifice and leading through one of said heads.

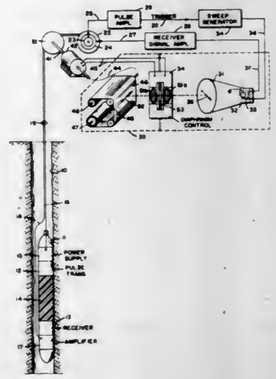
25,928
SEISMIC WELL LOGGING DATA DISPLAY

Robert L. Geyer and Neil R. Sparks, both of Tulsa, Okla., assignors to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware

Original No. 3,093,810, dated June 11, 1963, Ser. No. 5,882, Feb. 1, 1960. Application for reissue June 8, 1965, Ser. No. 463,069

16 Claims. (Cl. 340—18)

1. The method of recording seismic well logs while moving a seismic impulse transmitter and a receiver of seismic waves through a well at substantially constant speed while maintaining said transmitter and receiver a small fixed distance apart and repeatedly causing said transmitter to emit impulses and said receiver to detect the resultant seismic waves impinging thereon, which recording method comprises moving a record-receiving strip lengthwise in proportion to the speed of moving said transmitter and receiver through said well, initiating a mark at a base line parallel to the edge of said strip substantially synchronously with the emission of each impulse by said transmitter, extending said mark continuously and linear-



ly with time across said strip in the direction of its width during the time interval while the seismic waves resulting from said impulse are traveling to and are being received by said receiver, and varying the density of said mark in proportion to the instantaneous amplitude of the waves received by said receiver.

25,929
AXIALLY ADJUSTABLE DRIVE MECHANISM

Frederick O. Luenberger, Los Angeles, Calif., assignor, by mesne assignments, to Emerson Electric Co., a corporation of Missouri

Original No. 3,122,384, dated Feb. 25, 1964, Ser. No. 116,531, June 12, 1961. Application for reissue Jan. 25, 1965, Ser. No. 443,734

8 Claims. (Cl. 287—52.04)



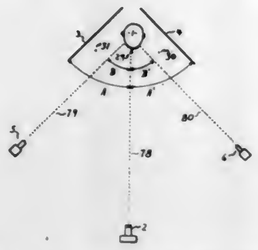
8. In a rotary drive structure including a shaft element and a pulley element slidably mounted on the shaft element; a metal key carried by one of the elements for movement therewith and extending parallel to the shaft; the other of said elements having a keyway the side surfaces of which are metal; said key extending into the keyway and having a width less than that of the keyway such that the opposite side surfaces of the key are opposed to and spaced from said side surfaces of said keyway; and a plastic liner portion between each of the opposed side surfaces of the key and keyway and terminating its extent therebetween at the juncture between the opposed portions of the shaft and pulley elements whereby the shear strength of the metal key is utilized for rotatably coupling the elements while the plastic liner portions reduce sliding friction between said key and said other element as the pulley element slidably moves along the shaft element.

25,930
RECORDING AND REPRODUCING THE SHAPE OF THREE-DIMENSIONAL OBJECTS

Kenneth L. Agnew, Falconbridge, Ontario, Canada

Original No. 3,085,923, dated Apr. 16, 1963, Ser. No. 33,682, June 3, 1960. Application for reissue July 22, 1964, Ser. No. 395,975

4 Claims. (Cl. 156—58)



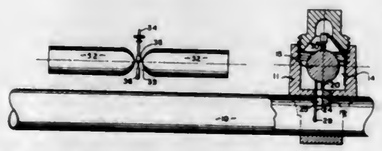
1. A method for reproducing the shape of three-dimensional objects, comprising the steps of registering images of the object, projecting the images of multiple lines [simultaneously] on to the object by light rays whose planes of passage are at a substantial angle to both the lines joining object and images and to the planes to which the lines joining object and images are perpendicular, said lines being projected as groups along parallel rays, and thus form contour lines superimposed on the images of the obejct; followed by the steps of guiding a tracing device, said tracing device being inserted in a holding device in such a way that it is free to move only in a direction with respect to the holding device that is normal to the plane of the image, and said holding device being connected to a cutting tool moving in a plane having the same angle to the image as the plane of passage of the light ray was to the object *as it was viewed in two dimensions*, and in such a way that both holding device and cutting tool simultaneously share the same motions in said plane of passage of the light ray, and also in a plane parallel to said plane, while a contour line is being traced, and thus reproducing an outline, then moving the cutting tool to a parallel plane, and the tracing device to the corresponding contour line; adjusting the feed mechanism of the cutting tool to feed in planes corresponding to different angular projections of light rays on the object *as it was viewed in two dimensions*, and rotating the material being shaped to correspond with images showing different views of the object so that corresponding outlines may be formed, the sum of the outlines producing the reproduction of the shape in three dimensions.

25,931
METERING APPARATUS

Jacob H. Rubenstein, 101 Shirley Road, Syracuse, N.Y.

Original No. 3,040,577, dated June 26, 1962, Ser. No. 760,234, Sept. 10, 1958. Application for reissue June 27, 1963, Ser. No. 292,207

7 Claims. (Cl. 73—228)



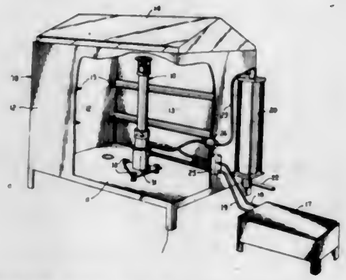
1. A metering apparatus for indicating the condition of a medium confined within an enclosure, comprising a permanent magnet mounted in the enclosure, a magnetometer mounted externally of the enclosure in proximity thereto, said magnetometer including a pair of flux gathering antenna members disposed in spaced coaxial relation, said antenna members having a magnetic axis extending in a direction lengthwise of said members, means mounted in said magnetic axis and responsive to indicate the intensity of the magnetic field in said axis, said magnet being movable proportional to a change in the condition of said medium to move the magnetic axis of said magnet toward the position coincident with the magnetic axis of said magnetometer.

25,932
CORROSION TESTING MECHANISM

Carel H. Neffenger, Elyria, Ohio, assignor to The G.S. Equipment Company, Cleveland, Ohio, a corporation of Ohio

Original No. 3,098,720, dated July 23, 1963, Ser. No. 115,467, June 7, 1961. Application for reissue Jan. 20, 1964, Ser. No. 347,988

19 Claims. (Cl. 23—253)



1. A corrosion testing mechanism comprising an enclosure resistant to attack by a corrosive test fluid, said enclosure defining a test-conducting space for retaining an atmosphere of corrosion testing mist therein and including a specimen access opening and a movable closure therefor, an axially upwardly extending tube in said enclosure having an upper outlet opening, a mist-producing aspirator nozzle positioned within said tube and orientated toward said outlet, said nozzle being spaced from said outlet and from the walls of said tube to permit relatively large liquid drops in the mist to gravitate downwardly past said nozzle as the mist rises in said tube toward said outlet, trap means below said nozzle and adjacent the bottom end of said tube for collecting said liquid drops, and supply conduit means connected to said nozzle for supplying a test liquid and a gas under pressure.

25,933
PROCESS FOR THE PRODUCTION OF ETHYLENE OXIDE AND NITROGEN

Harold A. Huckins, Jr., New Canaan, Conn., assignor to Halcon International, Inc., a corporation of Delaware

Original No. 3,140,153, dated July 7, 1964, Ser. No. 69,699, Nov. 16, 1960. Application for reissue Aug. 7, 1964, Ser. No. 431,237

1 Claim. (Cl. 23—220)

A combined process for the production of ethylene oxide and high purity nitrogen which comprises: contacting ethylene with an oxygen and nitrogen containing gas; withdrawing a stream containing ethylene oxide and a gaseous reaction mixture containing nitrogen, oxygen and combustible carbonaceous material, said oxygen being present in more than stoichiometric amounts in relation to said carbonaceous material; separating said ethylene oxide from said gaseous reaction mixture; adding additional carbonaceous materials so the the total carbonaceous material is stoichiometrically equivalent to said oxygen present; preheating said gaseous reaction mixture to about 600° *to 800°* F.; catalytically reacting said gaseous mixture in the vapor phase so as to raise its temperature to about 1100° to 1800° F., thereby converting said carbonaceous materials to carbon dioxide and water and substantially consuming said oxygen; expanding and cooling the resultant mixture to a temperature of about [765°] *700°* to 1000° F., while performing work; utilizing the residual heat to preheat said resultant mixture [is] *in* the aforesaid preheating step; separating said carbon dioxide and water from said resultant mixture; and leaving a residue of substantially pure nitrogen.

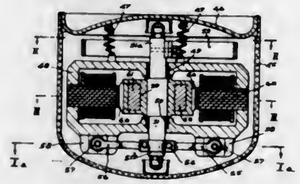
25,934
ELECTROMAGNETICALLY-CONTROLLED COMPRESSING AND PUMPING DEVICES

Andre Chausson, Asnieres, Seine, France, assignor to Societe Anonyme des Usines Chausson, Asnieres, France, a French company

Original No. 3,039,395, dated June 19, 1962, Ser. No. 830,091, July 28, 1959. Application for reissue Aug. 7, 1962, Ser. No. 215,767

Claims priority, application France, July 31, 1958, 771,595

11 Claims. (Cl. 103—53)



1. An electromagnetically-controlled compressing and pumping device of the character described, comprising a sealed container, a body of substantially cylindrical shape within said container, said body defining an inner housing and being provided with opposed apertures, bearings disposed in said apertures, a shaft fitted in said bearings and extending axially through said body, a lever fixed to said shaft externally of said body and provided at both ends with compressing means, a plurality of cylinders fixed to said body receiving said compressing means whereby relative oscillation between said body and said shaft will effect operation of said compressing means within said cylinders, a cylindrical core disposed within said body and fixed to said shaft, a plurality of arcuate permanent magnets within said core having their opposite ends disposed closely adjacent the periphery of said core, a plurality of radially extending pole members carried by said body and terminating closely adjacent the periphery of said core, an A.C. coil winding surrounding each of said pole members, there being twice as many pole members as there are permanent magnets.

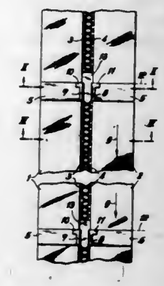
25,935
METHOD OF MAKING SLIDE FASTENERS

Hans Porepp, Wangen (Bodensee), Germany, assignor to Opti-Holding A.G., Glarus, Switzerland

Original No. 3,001,904, dated Sept. 26, 1961, Ser. No. 786,567, Jan. 13, 1959. Application for reissue Sept. 24, 1963, Ser. No. 311,267

8 Claims. (Cl. 156—66)

1. A method [for] *of* manufacturing [sliding clasp] *slide* fasteners [haivng] *having* two [fastener] stringer tapes which are each provided with a row of teeth made of a molecularly orientable plastic material *so as to constitute fastener chains* [and which are] adapted to be brought into engagement by means of a slider, [wherein] *comprising the steps of welding* strips of a thermoplastic material [are welded] on to at least one side of the two engaged fastener chains at distances corresponding to the desired fastener lengths, said strips extending transversely to the longitudinal direction of the fastener, next heat and pressure molding the strips and rows of teeth therebetween to form a longitudinally directed separating portion centrally between the two toothed rows and a longitudinally directed bead on the internal edge of [the textile] *each* stringer tape [which is], *said bead being* widened outwardly at [the edge of the strips] *a location* remote from *one of* [direction of advance in order] the *strip edges so as* to form a stop member, and finally transversely severing the tapes adjacent the stop members.

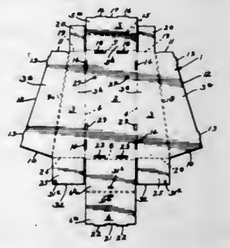


25,936
DISPOSABLE SEATING STRUCTURE FOR INFANTS

Lew W. Throssel, Eldora, Iowa, assignor, by direct and mesne assignments, to Infanseat Company, Eldora, Iowa, a corporation of Iowa

Original No. 2,960,149, dated Nov. 15, 1960, Ser. No. 768,116, Oct. 20, 1958. Application for reissue Nov. 27, 1964, Ser. No. 429,692

1 Claim. (Cl. 297—443)

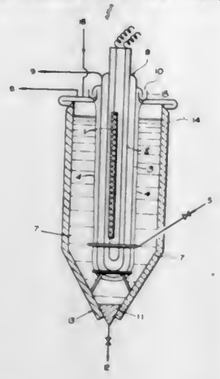


A foldable and disposable chairback supported [seat] *seating* structure for infants, comprising a one-piece foldable blank having a substantially rectangular back wall portion adapted to be mounted on and rest against said chairback, sidewall portions substantially coextensive with and foldably connected to opposite sides of said back wall portion, each said side wall portion being obliquely folded upon itself substantially midway between its longitudinal outer edge and its foldable connection with said back portion and extending normal thereto to provide a reenforced [seat] *bottom* suspending means, foldable end wall portions extending normal to and beyond one end of each of said side and back wall portions with said side end wall portions disposed in superimposed relation to said back end portion and providing a reenforced [seat] *bottom* suspended between said folded side portions, and means interconnecting said folded side and superimposed end wall portions to said back wall portion and said back wall portion to a chairback.

25,937
METHOD OF PRODUCING NITROSO COMPOUNDS OR OXIMES

Yoshikazu Ito, Nagoya-shi, Japan, assignor to Toyo Rayon Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan

Original No. 3,090,739, dated May 21, 1963, Ser. No. 43,440, July 18, 1960. Application for reissue Jan. 28, 1965, Ser. No. 459,139
10 Claims. (Cl. 204—162)

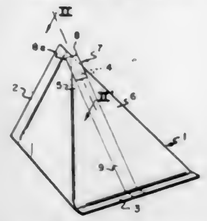


1. In a method of continuously producing a nitroso compound and an oxime, by reacting under irradiation of an actinic light in a reaction vessel having a wall separating said light from the reaction liquid, a nitrosation agent with a compound selected from the group consisting of alkanes and cycloalkanes having 5 to 10 carbon atoms to produce its corresponding nitroso compound and oxime, the improvement consisting of passing continuously sulfuric acid having a concentration above 4% down and along the outermost surface of the reaction vessel, said outermost surface being the wall through which the light passes and where the reaction liquid makes contact.

25,938
CONTAINER

George A. Mobley, Spartanburg, S.C., assignor to Milliken Tetra Pak, a division of Clemson Industries, Inc., Pacolet, S.C., a corporation of Delaware

Original No. 3,166,226, dated Jan. 19, 1965, Ser. No. 260,594, Feb. 25, 1963. Application for reissue Apr. 29, 1965, Ser. No. 457,902
3 Claims. (Cl. 229—7)



1. A liquid filled tetrahedron container formed of laminated material, the innermost lamina of which is a thermoplastic continuous layer substantially impervious and inert to the contents of the container, a wall of which container bears an aperture [through one wall only thereof] for providing access to the contents of the container positioned at about that apex of the wall which is uppermost when the container is resting on the wall opposite the aperture bearing wall, the aperture being sealed by a tape having the surface that faces the container wall being formed of a thermoplastic material, at least a portion of which is infused around at least the outermost lamina of the container to form a liquid tight seal between the tape and the container and a portion of which forms a bead around the edge of the aperture, and with at least one corner of the end portion of the tape which is positioned uppermost with respect to the upright container being unsealed to the container wall and extending outwardly away from the walls of the container, thus providing a readily locatable pull tab with which to remove the tape from the container.

PLANT PATENTS

GRANTED DECEMBER 7, 1965

Illustrations for plant patents are usually in color and therefore it is not practicable to reproduce the drawing.

2,577
ROSE PLANT

Quinto Mansuino, Via Duca d'Aosta 15, San Remo, Italy

Filed July 22, 1964, Ser. No. 384,565
Claims priority, application Italy, Aug. 23, 1963, 17,295/63
1 Claim. (Cl. Plt.—11)

A new and distinct variety of rose plant of the class between the dwarf and hybrid tea classes, substantially as herein shown and described, characterized particularly as to novelty by the unique combination of a shape of the plant, stems, leaves and flowers like those of hybrid tea roses, but harmoniously reduced in size and presenting a more elegant appearance, rapid growing and free blooming habits in all seasons of the year, and consequent suitability for both outdoor and greenhouse culture, numerous and erect main branches or canes, starting from the base of the plant and bearing numerous, thin, woody, rigid, erect and elegant floral stems having few or no thorns, which produce flowers on thin, rigid and erect peduncles, small, light and decorative leaves which clothe the plant and floral stems in an attractive and harmonious manner, a habit of bearing the flowers singly and terminally on the stems, with the flowers ranging from small to medium size, an urn-shaped flower form on opening, but becoming flat cupped as the flowers age, a distinctive and attractive general color tonality of the flowers ranging between Tyrian Purple and Spirea Red, a delicate but permanent flower fragrance, good weather resistance, and especially good resistance to fungus diseases such as blackspot and mildew, good flower shipping qualities, very long lasting flower qualities as cut flowers, and ease of reproduction by bud grafting and by rooted cuttings.

2,578
ROSE PLANT

Eugene S. Boerner, Newark, N.Y., assignor to Jackson & Perkins Company, Newark, N.Y., a corporation of New York

Filed Sept. 18, 1964, Ser. No. 397,666
1 Claim. (Cl. Plt.—18)

A new and distinct variety of rose plant of the hybrid tea class, substantially as herein shown and described, characterized particularly as to novelty by the unique combination of a vigorous plant habit, a habit of bearing many more blooms per plant than plants of "Golden Masterpiece," a large flower size, a flower shape similar to that of the variety "Golden Masterpiece," and a distinctive and attractive general color tonality of the flowers, with the inside of the flower petals corresponding to Eosine Pink, lightly overcast with La France Pink, and the outside of the petals corresponding to Thulite Pink, lightly overcast with Cameo Pink.

2,579
ROSE PLANT

Louis Lens, Wavre-Notre-Dame, Belgium, assignor to Jackson & Perkins Company, Newark, N.Y., a corporation of New York

Filed Oct. 2, 1964, Ser. No. 401,282
1 Claim. (Cl. Plt.—19)

A new and distinct variety of rose plant of the hybrid tea class, substantially as herein shown and described, characterized particularly as to novelty by the unique combination of a vigorous and upright habit of plant growth, great freedom of bloom which continues throughout the summer season, a distinctive and attractive bud coloration in which the inside of the bud petals are Spinel Red, very lightly overcast with Rose Red, and the reverse of the bud petals are Rose Red, very lightly overcast with Tyrian Rose, and a distinctive and attractive color tonality of the open flowers in which the inside of the flower petals are Eosine Pink, lightly overcast with Begonia Rose, and the reverse of the petals are Eosine Pink, very lightly overcast with Deep Rose Pink, presenting a general color tonality of Rose Doree, very lightly overcast with Eosine Pink.

PATENTS

GRANTED DECEMBER 7, 1965

GENERAL AND MECHANICAL

3,221,339
NECK SLEEVE FOR CONNECTING A HELMET TO A LIFE VEST

James V. Correale, Jr., South Houston, Tex., assignor to the United States of America as represented by the Secretary of the Navy

Original application Oct. 25, 1962, Ser. No. 233,165. Divided and this application Dec. 30, 1963, Ser. No. 334,676

3 Claims. (Cl. 2—2.1)

(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A device for connecting a pressure suit helmet having a bayonet-type connecting ring around the neck hole thereof with a pilot's life vest having a slide fastener around the neck opening, said device comprising:

a pliable fabric sleeve for encircling the neck of the wearer, said sleeve being two ply, the outer ply having a slit with a closure therefor;

a bayonet-type connecting ring at one end of said sleeve for joining said sleeve to said helmet;

a slide fastener around the other end of said sleeve for connecting said sleeve to said life vest;

a plurality of vertically spaced loops secured to the inner ply of the sleeve under the slit in the outer ply of the sleeve;

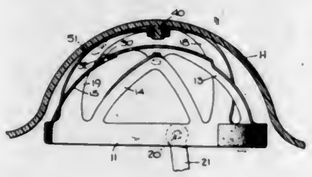
and means threaded through said loops for reducing the length of said sleeve.

3,221,340
HARNESS IN COMBINATION WITH A RIGID HAT

Edward J. Joffe, Summit, N.J., assignor to Park Plastics Co. Inc., Linden, N.J., a corporation of New Jersey

Filed Feb. 3, 1964, Ser. No. 342,086

5 Claims. (Cl. 2—3)



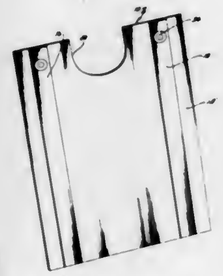
2. In combination with a rigid hat, a one-piece harness comprising a head band, a series of head straps each integral at one end with said head band and spaced linearly along said head band, a series of support bands also each integral at one end with said head band and longer than said head straps and also spaced linearly along said head band, means securing the opposed free ends of said head band to form a band to lie about the head of the wearer, means for securing the ends of the head straps remote from said head band to one another so as to flex said straps to form a head harness with said head band to fit the head of the wearer, means for securing the end portions of the support bands remote from said head band to the upper portion of the rigid hat with said support bands flexed so that the rigid hat rests on the flexed upper end portions of said support bands in a position displaced vertically from said head straps and with its lower inner peripheral surface spaced at all points laterally from said head band.

3,221,341
PLASTIC BIB CONSTRUCTION

Raymond J. Hummel, Grand Rapids, Mich., assignor to H & H Plastics Mfg. Co., Grand Rapids, Mich., a corporation of Illinois

Filed June 24, 1964, Ser. No. 377,629

2 Claims. (Cl. 2—49)



1. A disposable plastic bib comprising: an elongated thermoplastic sheet forming the body of said bib; a generally semi-circular cut-out in one end of said sheet; a pair of elongated thermoplastic tie straps on opposite sides of said cut-out, each having one end attached to said adjacent side of said sheet; and each strip attachment comprising an annular shaped fushion bond with an outer diameter slightly smaller than the width of the strip, and encircling an unfused, unbonded central circle of substantial size.

3,221,342
OVERALL GARMENT

James Keith Payne, NE. 58th St. and Lake Washington Blvd., Kirkland, Wash.

Filed Nov. 18, 1963, Ser. No. 324,497

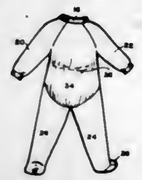
3 Claims. (Cl. 2—83)

1. An overall garment formed of stretchable fabric, comprising:

means forming a fastener-closed, two-part, front panel including a waist portion, each part having a leg covering portion integral therewith; each said leg covering portion extending to the rear and terminating approximately where the wearer's leg joins the buttocks;

a sleeve extending outward from the upper outer side of each said front panel above said waist portion; the rear of each sleeve terminating approximately where the wearer's arm joins the body;

an oval-shaped unitary back panel disposed in opposition to said front panel and peripherally joined by a continuous seam, rearwardly to each said leg termination, to each said sleeve termination, and to



the outer side of each said waist portion of said two-part front panel; and

said oval-shaped panel having its major axis extending from the neck of the garment to the crotch and being of a length in said extension greater than the length of the front panel from the garment neck to the crotch, and the minor axis of said back panel being disposed across said garment beneath the horizontal center line of said back panel and being greater than the width of said panel at said center line.

3,221,343
NECKTIE CLIP

Robert Phillips, Roslyn, and Cosmo Centrella, West Hempstead, N.Y., assignors to Redi-Knot Tie Clip Corporation, New York, N.Y.

Filed Mar. 10, 1965, Ser. No. 438,710

3 Claims. (Cl. 2—153)



1. A tie clip comprising a unitary substantially rigid plastic frame member of approximately triangular shape with the apex thereof at the bottom, and the side portions tapering rearwardly, said frame member having a downwardly extending notch formed in the medial portion of the upper edge, said notch being substantially rectangular in shape and having its lower edge formed into a molded integral axle bearing comprising at least three rigid fingers, a plastic hook element pivotally connected to said frame member in said bearing, and a spring rigidly secured to the front face of said frame and contacting said hook element adjacent said bearing for holding said hook element in operative position.

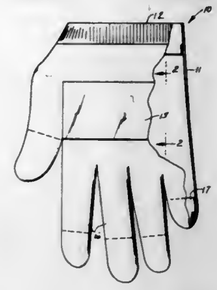
3,221,344
SAFETY GLOVE

Adolph G. Rokus, P.O. Box 732, Kankakee, Ill.

Filed Jan. 19, 1965, Ser. No. 426,651

1 Claim. (Cl. 2—161)

A safety glove comprising, in combination, a hollow hand shaped body of any desired material having reinforcement means in the palm area, said hand shaped body including a plurality of hollow finger elements and each of said finger elements having a metal cup within the ends thereof, each of said metallic cups comprising a relatively short, cylindrical portion, having an hemispherical portion at one end thereof to encompass the tip of a wearer's finger and protect the finger against injury, the metal cup of the said middle finger being longer than the metal cups of the index, fourth and fifth fingers and said reinforcement means comprising a plurality of rectangular panels, two of said panels being made of leather and one of said panels being made of metal, one of said leather panels being affixed to the outer side of the palm of said hand shaped body, said metal panel being affixed



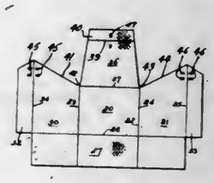
to the inner side of the palm of said hand shaped body and the second of said leather panels being secured over said metal panel within said hand shaped body, said second leather panel being relatively larger than said metal panel to enclose said metal panel between said second leather panel and said palm of said hand shaped body.

3,221,345
CAPS FOR NURSES OR THE LIKE

Elaine Berg, Chicago, Ill.
(Box 220, Crystal City, Manitoba, Canada)

Filed Aug. 28, 1963, Ser. No. 305,043

1 Claim. (Cl. 2—198)



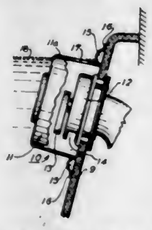
A nurse's cap comprising a plane blank of sheet material forming a rectangular body portion, said body portion having a central body portion, a pair of parallel front to back creases bounding said central body portion, side portions being supported at each edge of the central body portion, each side portion having at its outer lateral edge, a narrow doubling flap turned back against each of the side portions for stiffening the side portions at their lower edges, said central body portion and side portions having at their forward edges, a crease at right angles to the front and back creases of the central body portion and side portions, said last mentioned crease supporting a backwardly bent fold at the front edge of the cap, which is rearwardly folded closely against the central body portion and the side portions, said central body portion having at its rear edge a crease at right angles to said pair of parallel front to back creases, a back flap supported by said last mentioned crease, said back flap being folded downwardly to form the rear of the cap, said side portions each having a diagonally and rearwardly extending rear edge forming an outer rear corner with each of said side portions, and each side portion having a plurality of apertures at each of said outer rear corners, said back flap having an aperture adjacent its rear edge, said side portions and back flap being provided at said apertures with a through fastener holding the back flap and said portions including said doubling flap in substantially rectangular form.

3,221,346
GARMENT WAISTBAND
Leonard W. Johnson, Oak Park, Karl E. Senser, Riverside, and Charles E. Pellino, Mount Prospect, Ill., assignors to Sears, Roebuck and Co., Chicago, Ill., a corporation of New York
Filed Oct. 24, 1963, Ser. No. 318,585
3 Claims. (Cl. 2—236)



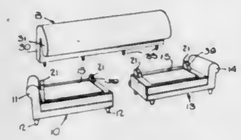
1. A band for incorporation with an article of apparel to provide frictional engagement of the article with another article of apparel worn in contiguous relation thereto comprising a flexible base strip, a facing strip of an elastomer foam in contiguous relation to said base strip, said facing strip having a thickness of substantially 1/16 inch, the marginal longitudinal edges of said base strip being folded over the corresponding longitudinal marginal edges of said facing strip and being secured thereto by lines of stitching and a stiffening strip interposed between said base and facing strips, one of said folded longitudinal marginal edges of said base strip having an integral extension reversely folded and overlapping said folded longitudinal marginal edge, said extension affording means for attaching said band to an article of apparel.

3,221,347
BATH TUB OVER-FLOWS
William M. Emery, 44 Pittsford Way, New Providence, N.J.
Filed Oct. 7, 1964, Ser. No. 402,251
2 Claims. (Cl. 4—206)



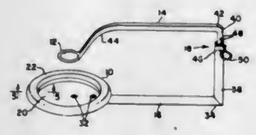
1. An over-flow control device to adjustably raise the water level in a conventional tub which has an overflow in one of its upright walls, said control device being made substantially in one piece, comprising a substantially cylindrical cup-shape member formed concentrically about a substantially horizontal axis, said cup-shape member having a round end wall and a circumferential wall defining a cavity therein adapted to encompass said over-flow, a concentric circular rim extending outward from the edge of said concentric cup-shape member substantially normal to said axis, a port in said circumferential wall, suction means formed integrally in said rim having its lips in the tub contacting side of said rim and its rounded top freely accessible and protruding from the other side, and a thin substantially circumferential sealing edge for said rim extending normal to said axis and beyond said suction means, said sealing edge in cooperation with said suction means completing the seal of said total device against said upright tub wall when water in said tub presses thereagainst, said port being selectively indexed about said axis to determine the over-flow level of said conventional tub.

3,221,348
SOFA BED
Jerome L. Siegel, Cornwells Beach Road, Sands Point, N.Y.
Filed Jan. 22, 1964, Ser. No. 339,470
8 Claims. (Cl. 5—28)



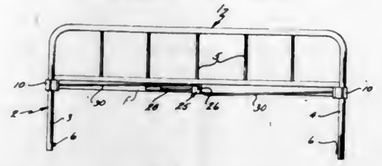
3. In a combination sofa of the class described, a pair of separate substantially rectangular sofa bed units comprising each a substantially rectangular base member having a substantially rectangular opening within which is mounted a standard convertible bed unit having a mattress assembly adapted to lie with its upper surface in position to support a sofa cushion when said unit is in its retracted inside position in said opening, a sofa cushion resting on said upper surface, a single back for both said sofa beds, said single back comprising a separate longitudinal inverted V frame substantially the length of both said sofa beds when said sofa beds are placed side by side, both outside surfaces of said V being upholstered so that one surface of the inverted V forms the back rest of said combination sofa and the other surface forms the back of the sofa, and readily releasable means securing said V frame to each of said sofa beds whereby to form a single assembly of said separate V frame and said two separate sofa beds.

3,221,349
MATTRESS DEPRESSOR
George S. Bradley, 3424 24th St., Rock Island, Ill.
Filed Dec. 9, 1963, Ser. No. 329,074
13 Claims. (Cl. 5—317)



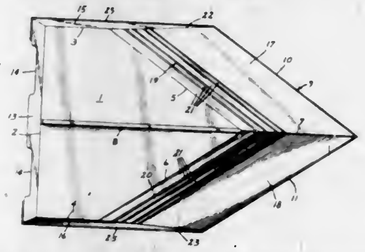
1. A mattress depressor for a mattress on which an invalid person or the like is reclining so as to provide in the top of such mattress a localized depression capable of receiving and alleviating distress in a body part of such person, comprising: a lower plate-like element adapted to engage generally flatwise a portion of the bottom of a mattress spaced a substantial distance inwardly from the marginal edge of such mattress, an upper button-like element adapted to engage the upper surface of the mattress at a portion thereof in vertical alinement with said bottom element, said bottom element having a mattress-engaging area subsantially greater than that of said upper element, and means operatively connected between the elements for exerting a vertical force between the elements to hold the upper element downwardly toward the bottom element and thereby to create a substantial depression in the upper surface of the mattress centered about said upper element.

3,221,350
BED RAIL
Truman L. Atkinson, 609 Lake Shore Drive, Ludington, Mich.
Filed July 15, 1963, Ser. No. 295,160
11 Claims. (Cl. 5—331)



1. An adjustable bed rail for preventing a person from falling off the side of a bed, comprising: a guard frame including a pair of depending legs; clamping brackets slidably receiving said legs, said brackets adjustable from a first position gripping said legs to a second position allowing said legs to move freely therein; a movable element positioned between said brackets; rigid rods connecting said element to each of said brackets; and means for moving said element, thereby moving said rods and said brackets between said positions.

3,221,351
BOAT HULL CONSTRUCTION
Rogenald J. Keller, Casco Point, Rte. 1, Wayzata, Minn.
Filed Jan. 30, 1964, Ser. No. 341,180
4 Claims. (Cl. 9—6)



1. In a boat hull, a bow having angularly disposed sheer line edge portions running angularly outwardly and rearwardly from a center, a stem extending generally angularly rearwardly and downwardly from the center of the bow, a generally flat bottom having angularly disposed front edge portions which extend forwardly and inwardly to the stem of the boat, a pair of bow plates disposed between the sheer line edge portions of the bow and the bottom front edge portions and each one located on an opposite side of the stem and the center line length of said generally flat bottom approximating the maximum width of said boat.

3,221,352
DRILLING MACHINE FEED MECHANISM
Stanley A. Pfister, Wilmington, Ohio, assignor to The Cincinnati Milling Machine Co., Cincinnati, Ohio, a corporation of Ohio
Filed June 5, 1963, Ser. No. 285,704
2 Claims. (Cl. 10—139)

1. In a drilling machine having a head, a quill therein and a source of power and a manual control member both for reciprocally moving the quill in and out of the head, a transmission mechanism selectively to connect the quill to the power source and manual control member one at a time comprising:

(a) a drive member connected to the quill for movement thereof when said drive member is rotated,

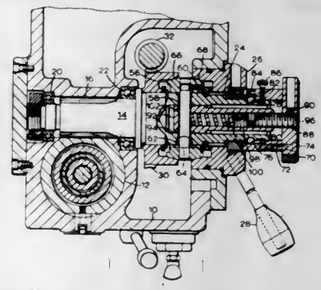
(b) a friction clutch including

(1) a first set of mating friction drive surfaces in train between the power source and said drive member, and

(2) a second set of mating friction drive surfaces in train between the manual control member and said drive member,

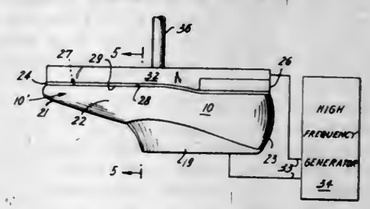
(c) bias means tending to hold said first set of surfaces in contact with a predetermined pressure for transmission of a corresponding maximum torque therebetween and including

(1) means to adjust said bias means to alter said predetermined pressure, and



(d) engaging means selectively movable in one direction from a neutral position thereof to hold said first set of surfaces together positively for transmission of a torque therebetween greater than the maximum torque corresponding to said predetermined pressure and movable from the neutral position in the other direction to positively engage said second set of surfaces and to disengage said first set of surfaces to provide rotation of said drive member only in accordance with movement of the manual control member.

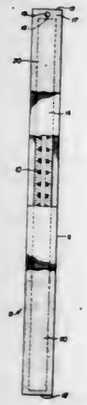
3,221,353
METHODS OF SHOE MANUFACTURE USING A RADIO FREQUENCY DIELECTRIC HEATER
Franklin R. Greene, New York, N.Y. (142—33 59th Ave., Flushing 55, N.Y.)
Filed July 31, 1961, Ser. No. 128,010
2 Claims. (Cl. 12—142)



1. In the manufacture of a shoe having a shaped upper and a sole attached along the bottom of said upper, the improved method of simultaneously providing a permanent shoe shape to said upper while attaching the sole thereto using a radio frequency dielectric heater having at least two electrodes of which one said electrode is provided with the shoe shape that it is desired to impart to said upper, which improved method includes forming said upper, comprised of material having at least one thermoplastic surface, into an envelope having a shoe shape approximating the desired shoe shape to be imparted to said upper, placing said envelope over said shoe shaped electrode, with said thermoplastic surface outward, such that said envelope is conformed in shape to the shape of said shoe shaped electrode and excess material in said envelope exists along the bottom of said electrode, placing a sole,

comprised of thermoplastic material, between said opposing electrodes and in position for attachment to and along the bottom of said upper, said sole being coextensive with the bottom of the upper and covering the excess material on said bottom and bringing said sole and the bottom of said upper into surface contact under pressure by movement of at least one of said electrodes towards the other while subjecting said sole and upper surfaces in contact to a dielectric field established between said electrodes, whereby the contacting surfaces of said sole and upper unite into a substantially smooth surfaced fused attachment of one to the other and the shape of said shoe shaped electrode is permanently imparted to said upper.
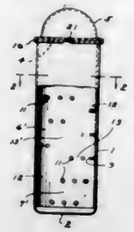
3,221,354
CLEANING WAND
Lois A. Noyes, 7831 Paso Robles, Van Nuys, Calif.
Filed Sept. 30, 1964, Ser. No. 400,352
3 Claims. (Cl. 15—118)



1. A cleaning wand, comprising an elongate relatively stiff and narrow carrier body, an elongate and narrow width sheath into which said body is received, and an elongate and relatively narrow width cleaning strip of soft foam plastic material carried by said sheath to extend at and along a side thereof openly facing away from the body for picking up dust when said strip is displaced by the body and sheath with sweeping motion over and adjacent to a relatively inaccessible surface to be cleaned, the sheath consisting of flexible sheet plastic material loosely receiving said elongate body, the sheath having an open end through which said body is readily removable from the sheath, the sheath having overall thickness substantially less than its width, the sheath length being in the range of about 36 to 38 inches and the sheath width being in the range of about 1½ to 2 inches, and the body comprising a yard stick.

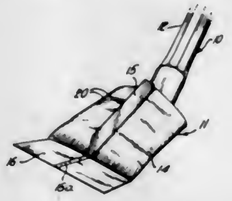
3,221,355
GOLF BALL CLEANER
John Grommes, 12785 Hartwell, Detroit, Mich.
Filed Dec. 4, 1961, Ser. No. 156,662
8 Claims. (Cl. 15—160)

6. A golf ball cleaning device adapted to contain a cleansing medium, comprising an elongated tubular body having a closed end and an open end, said open end being adapted to receive a golf ball, a cap sealably closing said open end, and brushing means within said tubular body, said brushing means comprising brushing material extending radially inward from said tubular body, the radially inward ends of said brush material defining an axially extending cylindrical brush surface, said brushing means comprising a sole means for guiding and supporting said ball in a cylindrical chamber formed by said brushing surface during a cleaning operation, said device having no parts axially movable within said chamber, said ball being free to move axially of said body in engagement with said brushing surface due to the momentum of said ball when



said ball is sealed in said device and said device is shaken to impart momentum to said ball, said brush material being arranged to form a plurality of axially extending helical brushing surfaces whereby rotation is imparted to a golf ball moving axially within said tubular body.

3,221,356
DISPOSABLE CLEANING SWAB
Henry G. Schirmer, Spartanburg, S.C., assignor to Johnson & Johnson, a corporation of New Jersey
Filed Feb. 5, 1963, Ser. No. 256,372
11 Claims. (Cl. 15—210)



1. A disposable cleaning swab comprising an outside scrub sheet of a flexible material flushable in a toilet bowl but nevertheless immune to water disintegration during normal period of use of the swab, and sufficiently wear-resistant and tear-resistant when wet to maintain its integrity during said period of use, said sheet being folded to define a pocket for receiving a holder, and defining two substantially flat opposing scrub faces, said sheet having its opposed marginal sections secured together face to face along one of said scrub faces in a region intermediate the sides of the swab to form a lamination along the latter scrub face constituting a seam and outstanding from the latter scrub face transversely of the general plane thereof, said seam having sufficient rigidity to permit the seam to be inserted into close corners and recesses with sufficient stiffness to clean said corners and recesses effectively.

3,221,357
NON-SWEATING DOCTOR BLADE SUPPORT
Arthur E. Keyworth, Jr., East Walpole, Mass., assignor to Bird Machine Company, South Walpole, Mass., a corporation of Massachusetts
Filed Nov. 1, 1962, Ser. No. 234,637
5 Claims. (Cl. 15—256.51)

1. In a support for a doctor blade for use in doctoring a heated surface, said support having

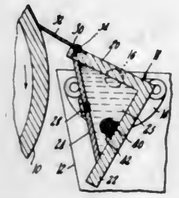
walls defining an elongated hollow chamber occupying the entire interior of said support and providing support for said doctor blade between its ends,

a mass of liquid substantially completely filling said chamber thereby providing a substantially completely liquid-filled chamber occupying the entire interior of the doctor blade support and

means sealing said liquid mass in the chamber,

that improvement for maintaining the entire said support at a temperature above a control temperature comprising

an elongated imperforate immersion heater element mounted within said sealed chamber of said support,

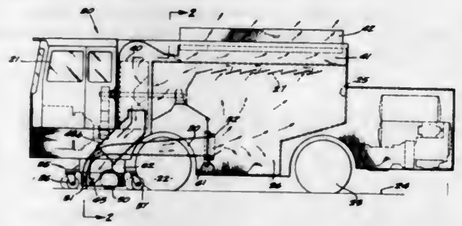


said heater element extending substantially the length of said chamber in heat exchanging contact with said liquid mass therein,

a source of energy for said heater outside of said support and

a control device connecting said energy source to said heater to maintain the temperature of the outer surface of said support above said control temperature, said control temperature being above that at which water vapor will condense on the outer surface of said support from the surrounding atmosphere.

3,221,358
HIGH-SPEED ROADWAY VACUUM CLEANER
Rufus F. Dickson, 525 Arbolado Drive, Fullerton, Calif.
Filed Apr. 18, 1963, Ser. No. 273,898
3 Claims. (Cl. 15—340)



1. A roadway vacuum cleaner comprising, in combination:

a wheeled vehicle adapted to transverse the roadway in a predetermined direction of travel;

a vacuum intake nozzle carried by said vehicle and disposed a predetermined, substantially fixed distance above the roadway surface;

an air blast nozzle carried by said vehicle and disposed behind said intake nozzle for directing an air blast upon the roadway surface;

primary agitation means carried by said vehicle and disposed behind said air blast nozzle for dislodging heavy particles not picked up from the roadway surface when initially traversed by said intake nozzle;

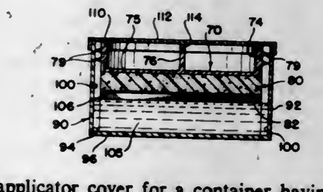
a pair of air skirting means extending longitudinally of said vehicle on respective sides of said intake nozzle;

third air skirting means extending transversely behind said primary agitation means, said three air skirting means together providing a protected area within which the desired cooperative action of said intake nozzle, said air blast nozzle, and said primary agitation means, may take place without interference from the ambient atmosphere, and despite variations in the forward speed of the vehicle and unevenness in the roadway surface;

each of said air skirting means including a chamber having an elongated, relatively narrow opening disposed at approximately the same elevation as the opening of said intake nozzle;

and means for supplying a curtain of air flowing continuously through said openings downwardly onto the roadway surface.

3,221,359
APPLICATOR COVER FOR CONTAINER
Rolf Moroni, Hersel, near Bonn, Peter Kisteneich, Spich, near Troisdorf, and Peter Josef Breuer, Mondorf, near Troisdorf, Germany, assignors to Collo-Rheincollodium, Köln G.m.b.H. Werk Hersel, Hersel, near Bonn, Germany
Filed June 28, 1963, Ser. No. 291,484
Claims priority, application Germany, July 20, 1962, C 27,510; Aug. 11, 1962, C 27,695
4 Claims. (Cl. 15—517)



1. An applicator cover for a container having a base and a cover receiving chamber defined by a peripheral wall which chamber has substantially the same general shape in all planes extending through said chamber and parallel to said base, said cover comprising: a body portion with a lower wall and side walls, each of said cover walls matching said general shape and being so dimensioned to allow reciprocal movement of said body portion over the complete length of said chamber with said lower wall remaining substantially parallel with said base, and an absorbent pad secured onto said lower wall and below said body portion, said absorbent pad having a periphery generally matching said shape, and at least one resilient sealing ring extending between the peripheral wall of said container and the side wall of said cover, said ring sealing the space between said peripheral and said side walls.

3,221,360
MARKING DEVICE CONSTRUCTION
Robert W. Seeman, Abington, Pa., assignor to Blaisdell Pencil Company, Bethayres, Pa., a corporation of Pennsylvania
Filed Mar. 11, 1963, Ser. No. 264,378
1 Claim. (Cl. 15—537)



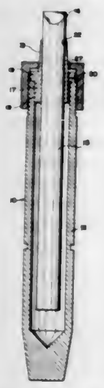
A marking device comprising an elongated hollow barrel having a head end and a tip end, an ink containing reservoir slidably mounted in said barrel, said barrel having an internal tip end annular flange and an internal head end annular flange longitudinally spaced by a distance greater than the length of said reservoir to limit the slidable movement of said reservoir in said barrel, a tip as-

sembly secured to one end of said reservoir independently of said barrel, said tip assembly having a sleeve extending axially of said reservoir and a marking tip of compressible material positioned in said sleeve having one end protruding from said sleeve and the other end in communication with said reservoir, the sleeve of said tip assembly having keys extending laterally inward from the inner wall of said sleeve and spaced from each other to provide a substantially rectangular space therebetween, said marking tip being insertable into said rectangular space, said tip being substantially rectangular in cross section and of smaller dimension than said rectangular space, whereby upon rotation of said tip in said rectangular space said keys will wedge into said compressible tip to effect secure retention of said tip in said sleeve, a cap assembly selectively insertable into either end of said barrel and adapted to react against said reservoir to move the latter axially in said barrel, said movement being limited by the respective internal flanges, said cap assembly having an outer sleeve adapted to engage the interior surface of the wall of said barrel at either end thereof and an inner sleeve adapted to encompass the sleeve of said tip assembly completely to enclose the marking tip in substantially an airtight fashion, whereby when said cap assembly is inserted into the head end of said barrel, said outer sleeve will abut against the associated end of said reservoir to move the latter toward the tip end of said barrel to expose said marking tip from said tip end for use and when the cap assembly is inserted into the tip end of said barrel said outer sleeve will abut against the associated end of said reservoir to move the latter toward the head end of said barrel.

3,221,361
SELF-TIGHTENING PEN MEANS

Nathan R. Cline, 752 S. Belmont, Wichita, Kans.

Filed July 18, 1962, Ser. No. 210,645
4 Claims. (Cl. 15—563)

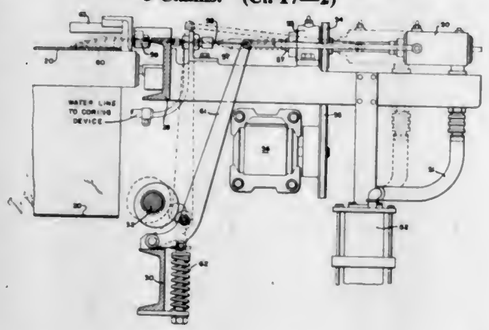


4. A fountain pen comprising, an elongated barrel having an open end, an elongated length of absorbent material arranged in and extending over the major portion of the length of said barrel and projecting from said open end thereof, an annular holder member having separated parts encircling and engaging said length of absorbent material substantially throughout the length of said parts, means insertably mounted in the open end of said barrel positioning said holder relative said barrel when said holder is mounted therewith, said holder having a camming surface, means mounted on said barrel and engaging said camming surface of said annular holder, and vent means for said fountain pen comprising an open conduit providing unrestricted gaseous fluid communication between the atmosphere and the inside of said barrel, said means mounted on said barrel and said camming surface mounted, constructed and adapted so that upon retracting said means mounted on said barrel said length of absorbent material is engaged substantially throughout the length of said parts of said annular holder to clamp said length of absorbent material in a predetermined position.

3,221,362
APPARATUS FOR REMOVING THE EDIBLE MEATS FROM CRUSTACEA TAILS

Robert F. Couret, New Orleans, La., assignor, by mesne assignments, to The Laitram Corporation, New Orleans, La., a corporation of Louisiana

Filed Jan. 18, 1963, Ser. No. 252,530
8 Claims. (Cl. 17—2)



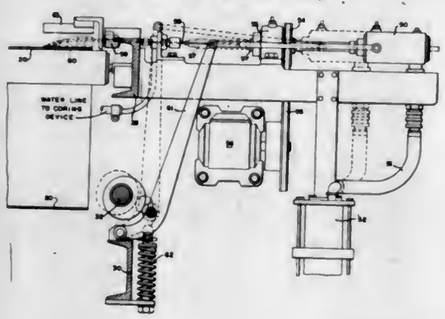
3. A machine for recovering edible meats from tails of crustacea comprising
(a) a rotary tubular implement having
(b) a leading tip offset at least slightly from the true axial line of the implement
(c) so that on rotation the tip will describe an erratically circular path which upon entry into meats, guides the tip through the meats into the area or path of least resistance, providing the least possible mutilation to meats and veins, and upon retraction completely sweeps and cleans the entire tunnel, and
(d) means for subjecting the implement interiorly to a controlled source of negative pressure.

3,221,363
PROCESS FOR REMOVING THE EDIBLE MEATS FROM CRUSTACEA TAILS

Robert F. Couret, New Orleans, La., assignor, by mesne assignments, to The Laitram Corporation, New Orleans, La., a corporation of Louisiana

Original application Jan. 18, 1963, Ser. No. 252,530. Divided and this application Nov. 5, 1964, Ser. No. 416,668

6 Claims. (Cl. 17—45)

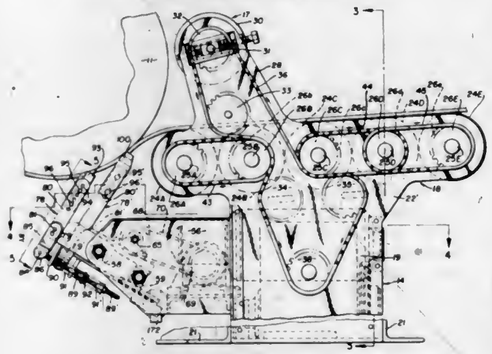


1. The process for recovering edible meats by a tubular implement from subject crustacea having hard shells in which sections of the subjects have shell-on end and side portions and shell-off opposite end portions exposing the meat masses at these shell-off portions only, the shells otherwise defining internal confined areas filled with the meat masses through which run tunnels containing veins, which comprises
(a) inserting the implement through the tunnel proceeding from the shell-off exposed portion until the leading end reaches the telson portion,
(b) rotating the implement to sever the attachment of the vein to the shell at the telson portion, and
(c) withdrawing the implement while subjecting the interior thereof to negative pressure to suck the vein through the implement with the inner end of the vein leading.

3,221,364
TAKE-OFF MECHANISM

Harold G. Bailey and Andrew Hale, Akron, Ohio, assignors, by mesne assignments, to The Akron Standard Mold Company, Akron, Ohio, a corporation of Ohio

Filed June 29, 1962, Ser. No. 206,298
10 Claims. (Cl. 18—2)



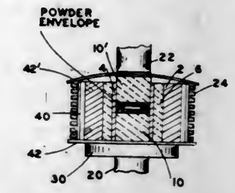
1. A take-off mechanism for removing a ribbon of elastomeric stock from a rotating work roll comprising, a frame, a grooving and a stripping knife, a support means for each of said knives, said support means mounted on said frame, said knives mounted on their respective support means, said grooving knife having a cutting edge, means for positioning said cutting edge to form a furrow in said stock on said work roll, said stripping knife having a blade portion, the support means on which said stripping knife is mounted being adjustable to position said blade portion in contact with the surface of said work roll and at an angular inclination with respect to the surface of said roll, said knives mounted on their respective support means such that said blade portion of said stripping knife is positionable in circumferential alignment with said grooving knife within said furrow when no stock is being removed from said work roll, means to move at least one of said knives transversely along the surface of said work roll away from the other said knife to remove a ribbon of stock from said work roll.

3,221,365
APPARATUS FOR FORMING OPTICAL ELEMENTS

John S. Mattern, North Chili, and Renald R. Robert, Rochester, N.Y., assignors to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York

Filed Dec. 14, 1962, Ser. No. 244,679
5 Claims. (Cl. 18—5)

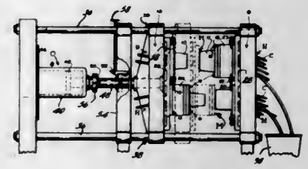
1. Apparatus for hot pressing ceramic material comprising a susceptor, a pressed ceramic ring confined by said susceptor and a tube consisting essentially of platinum disposed concentric with said ring and separated from said susceptor by said ring, a powder envelope confined by said tube and a pair of ceramic plungers in sliding contact with said tube and adapted to transmit pressure through said powder envelope to a ceramic material disposed within said powder envelope and between said plungers.



3,221,366
MOLDING APPARATUS

Timothy Couchman, Clarkson, Ontario, Canada, assignor to David Bloom, Toronto, Ontario, Canada

Filed Feb. 20, 1964, Ser. No. 346,346
Claims priority, application Great Britain, Mar. 28, 1960, 10,858/60
7 Claims. (Cl. 18—5)



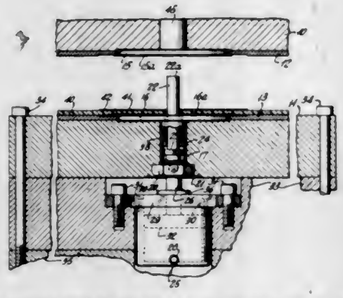
1. Molding apparatus for use in the molding of articles from thermally expandable particulate plastic material comprising:
a pair of opposed mold supports of which one, at least, is movable towards and away from the other for closing and opening molds carried by said supports, and
a plurality of molds respectively formed of at least two separable sections which are complementary to each other and which when closed with each other define a molding cavity; one section of each said mold being mounted on one of said mold supports and the complementary section of each said mold being mounted on the other of said mold supports providing a pair of composite batteries of mold sections directed towards each other and respectively carried by said mold supports;
each said mold support including:
a rigid box-like frame with open sides providing clear passage therethrough and rendering the interior of said rigid frame accessible from each said side, and
a plurality of mounting bars secured to said frame in parallel spaced relation spanning an open side of said frame; said mounting bars being respaceable on said frame relative to each other;
each said mold section including:
a parting face which confronts the parting face on its complementary mold section in the closed position of the mold, and
a flange in a predetermined standard position relative to the parting face of the same section and engaging said mounting bars on one of said mold supports;
securing means for attaching said mold sections to said mounting bars by their respective flanges;
said securing means permitting adjustment of said mold sections along said mounting bars for aligning each said mold section on one of said supports with its complementary section on the opposite support;

said parting faces of said mold sections in each said battery being aligned in substantially the same plane permitting simultaneous closing of all said molds at a predetermined shut-height;

charging facilities at the rear of at least one section of each said mold, said charging facilities being accessible through the open side at the rear of the rigid frame carrying said mounting bars to which said mold section is attached, for connection to mold charging apparatus; and

mechanism for moving at least one of said supports in a direction to effect simultaneous closing of all said molds at a predetermined shut-height as aforesaid, for maintaining said molds in their closed position during expansion of said plastic material therein during molding and for moving said support in an opposite direction to effect simultaneous opening of said molds.

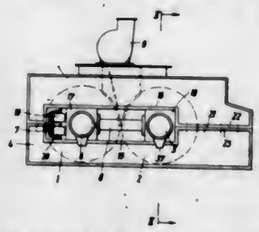
3,221,367
PHONOGRAPH RECORD PRESSING MACHINES
Gerard C. Cavaller, 16 Forestdale Drive, Huntington, N.Y.
Filed Oct. 19, 1962, Ser. No. 231,655
6 Claims. (Cl. 18—5.3)



3. In a compression phonograph record press, the combination comprising, a pair of mold halves each having record stamper means attached thereto for pressing grooves into plastic records, a disc mounted over the central portion of each stamper, said discs being in opposed confronting relationship, each disc having a surface substantially flush with the groove-forming surface of its correlated stamper, a centering pin reciprocally moveable within a said first of discs, hydraulic means for biasing said centering pin toward and into flush abutting contact with the second disc, whereby said pin protrudes between said discs to prevent deformation of the plastic material in the region of said pin when the press is forming the record center hole, means for detachably securing said first disc to said mold half, said pin having means for captive-keyed register with complementary shaped means in said first disc for effecting rotating turning of said first disc by turning said pin for detaching and securing said first disc with respect to its mold half to allow replacement of a centering pin and also to permit release of the stamper from said last-mentioned mold half.

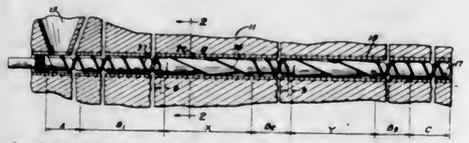
3,221,368
HOT BRIQUETTING ROLLER PRESS
Heinrich Schnier, Hattingen (Ruhr), Germany, assignor to Maschinenfabrik Koppern & Co. Kommanditgesellschaft, Hattingen (Ruhr), Germany
Filed Mar. 23, 1964, Ser. No. 354,058
Claims priority, application Germany, July 8, 1960, M 45,871
6 Claims. (Cl. 18—9)

1. A roller briquetting press for the hot briquetting of coal and similar materials by means of rolls which are rotatable in a closed housing in mutually opposite directions about parallel shafts which are displaceable with respect to each other in their common plane, said press comprising, in combination a double walled frame consisting of two sections joined in said common plane, longitudinally extending corresponding openings in opposite sides of said frame, strengthening flanges passing around said openings, bearing blocks for said shafts located inside said openings, one of said bearing blocks being displaceable, hydraulic means supporting said displaceable bearing against a wall forming said opening, bearing covers firmly secured to said bearing blocks and cover-



ing the bearings at their sides facing said rolls, projections at said covers extending in the direction of said rolls, a stuffing box between said projection and the shaft supported by said bearing, a plate tightly joined to said flange and extending inside the frame over said entire opening, said plate consisting of two sections joined in said common plane, apertures in said plate for passage of the shafts and said projections, the apertures for the shaft supported by the displaceable bearing being shaped to permit such displacement, annular channeled packing supports secured to said bearing covers, and U-shaped packings in said supports straddling said plates.

3,221,369
EXTRUSION MACHINE
Paul E. Vesilind, Beaver, Pa., assignor to Koppers Company, Inc., a corporation of Delaware
Filed July 1, 1963, Ser. No. 291,895
2 Claims. (Cl. 18—12)



1. Apparatus for advancing and working plastic material in a hollow cylinder of uniform internal diameter comprising:

(a) a stock screw rotatable in said cylinder having at least one helical thread extending along a first portion of the length of said stock screw comprising a feed section for advancing said plastic material to a first

(b) compression section disposed adjacent said feed section and comprised of at least one helical thread extending along a second portion of the length of said stock screw having a root diameter that gradually increases in the direction of movement of said plastic material along said cylinder whereby said plastic material is compressed between said stock screw and the inner wall of said cylinder and said compressed material is discharged from said compression section into

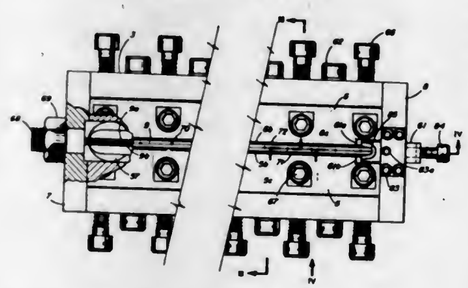
(c) a distributing section adjacent said compression section wherein there are no helical threads and the compressed material is uniformly distributed around said stock screw and delivered to

(d) a working section disposed adjacent said distributing section and comprised of one or more helical threads extending along a third portion of said stock screw, said threads having a pitch in the range of 3 to 10 times the pitch of the helical thread in said compression section and a leading face that uniformly slopes downwardly forward toward the axis of said stock screw at an angle in the range of 2° to 5°, said leading face merging with the arcuate trailing face of the next adjacent screw thread whereby the material delivered to said working section flows along said stock screw and passes over the crest of said elongate threads and is worked between the walls of said cylinder and the face of said screw thread, said material being thereafter delivered to

(e) a second compression section substantially the same as said first compression section disposed adjacent said working section and extending along a fourth portion of said stock screw; and

(f) a metering section disposed adjacent said second compression section and comprised of a screw thread extending along a fifth portion of said stock screw.

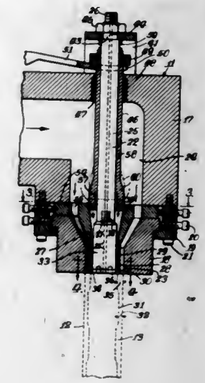
3,221,370
APPARATUS FOR EXTRUDING THERMOPLASTIC FILM
Herbert O. Corbett, Cananadaigua, N.Y., assignor to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia
Filed Feb. 6, 1963, Ser. No. 256,619
12 Claims. (Cl. 18—14)



1. An apparatus for producing tube-type extruded films of molten thermoplastic materials, comprising an extruder head, including a pair of longitudinally opposed, spaced die lips forming a channel intermediate their opposed side surface portions, an air blade disposed in said channel to extend longitudinally thereof and disposed therein for laterally spaced relation said respective die lip side surface portions, whereby to divide said channel into two parallel portions, said blade terminating at each end in spaced relation to the respective ends of said die lips, means at each end of said die lips, spaced from said air blade, to close said channel ends, and means for defining a passageway between the end portions of said air blade which passageway is continuous with said two parallel portions of said channel.

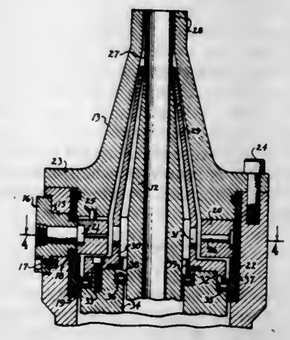
3,221,371
EXTRUDING DIES
Alexander Michael Stevens, 439 Greenbay Road, Highland Park, Ill.
Filed Mar. 25, 1963, Ser. No. 267,659
9 Claims. (Cl. 18—14)

1. An extruder die structure for use in the extrusion of tubular parasins of plastic material comprising, in combination, a hollow body having an inlet and an outlet for flow of plastic material through the body under pressure, a first tubular parasin extruder shell having a bore in fixed relation to and communicating with the outlet and of a cross-sectional shape to suit the cross-sectional shape of the parasins to be extruded through said bore, a core of complementary cross-sectional shape disposed in fixed centered relation to the outlet end of the bore of said shell to define an annular orifice of a predetermined width for extrusion of a parasin of a predetermined wall thickness, a second tubular parasin extruder shell having a bore



of complementary cross-sectional shape in fixed relation to and communicating with the outlet of said body and disposed in fixed centered relation to the core and to the outlet end of the bore of said first shell to define an additional annular orifice arranged to increase the width of the first orifice to permit extrusion therethrough of additional material to build up the wall thickness of a parasin beyond the first mentioned predetermined wall thickness, and means for opening up and closing off communication with said outlet for the bore of one of said shells.

3,221,372
APPARATUS FOR EXTRUDING COLLAGEN FIBRILS
Emanuel R. Lieberman, Somerville, N.J., assignor to Johnson & Johnson, a corporation of New Jersey
Filed Sept. 16, 1963, Ser. No. 310,516
4 Claims. (Cl. 18—14)



1. A nozzle for extruding swollen collagen fibrils in the form of a tube suitable for a sausage casing, comprising an elongated chamber defined by inner and outer walls, a partitioning member therebetween to divide the flow of the collagen, means for rotating the partitioning member to orient the collagen fibrils in the vicinity of said partitioning member at an angle to the direction of flow, and

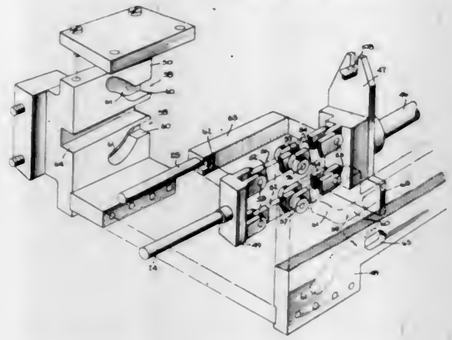
a nozzle section at the discharge end of the elongated chamber in which the divided flow of collagen from the elongated chamber is merged.

3,221,373

MOLDING APPARATUS FOR FORMING AN ARTIFICIAL MULTICOLORED FLOWER

Lun Fat Kwan, Hong Kong, assignor, by mesne assignments, to Rico Limited, Kowloon, Hong Kong, a corporation of Hong Kong

Filed Dec. 18, 1961, Ser. No. 160,061
2 Claims. (Cl. 18—30)



1. A molding mechanism comprising a nozzle assembly, a first passageway for injecting a first plastic into a mold through said nozzle assembly, a second passageway for injecting a second plastic into said mold through said nozzle assembly, said two passageways being substantially parallel to each other, a feed plunger in each of said passageways, means for moving said feed plungers simultaneously in said passageways toward said nozzle assembly, the feed plunger in said second passageway being positively connected to said moving means, means for stopping the movement of the feed plunger in said first passageway while the feed plunger in the second passageway is being moved by said moving means, said stopping means comprising a toggle assembly interposed between the feed plunger in the first passageway and said moving means, said toggle assembly having a cam follower thereon, a cam in said molding mechanism having a portion parallel to the path of linear movement of said plungers and another portion directed away from said path of linear movement, said cam follower being movable in said cam, said toggle assembly including a link operatively connected at one end to the feed plunger in the first passageway another link connected at one end to the moving means, said two links being connected together by a pivot at their other ends and said cam follower being mounted on said pivot, whereby translation of the first forward movement of said moving means to the plunger in the first passageway is prevented when said cam follower enters the portion of the cam directed away from the path of linear movement.

3,221,374

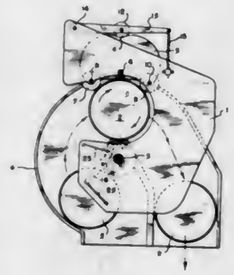
CAN-CENTERING APPARATUS

Gaston G. Fornes, Charlottesville, Va., assignor to Institute of Textile Technology

Filed Oct. 4, 1963, Ser. No. 314,055
9 Claims. (Cl. 19—159)

1. A can centering mechanism comprising
(a) a support,
(b) a rocking cam mounted upon said support and having
(i) two relatively spaced centering whels, and
(ii) a cam stopping indent,
(c) cam stop means mounted upon said support and having a portion thereof disposed in said indent when said rocking cam is in a neutral position, and
(d) guide means connected to said support and urging said can against said rocking cam.

9. In a sliver packing apparatus a sliver can centering mechanism which mechanism comprises
(a) a support,
(b) a rocking cam mounted upon said support and having
(i) two relatively spaced centering wheels; and
(ii) a cam stopping indent,
(c) a cam stop means comprising
(i) a lever pivotally mounted upon said support,
(ii) a cam stop wheel connected to said lever and



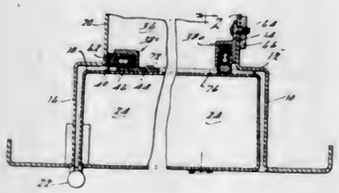
disposed in said indent when said rocking cam is in a neutral position,
(iii) spring tensioning means connected to said lever and urging said cam stop wheel into said indent,
(d) guide means connected to said support and spaced opposite said rocking cam comprising
(i) a pair of guide arms pivotally mounted upon said support,
(ii) a guide wheel connected to each said guide arm, and
(iii) guide springs connected to said guide arms and urging said guide wheels against said sliver can.

3,221,375

SEALING MEANS

James C. Lewis and Robert M. Hockett, Tulsa, and Rex H. Wainwright, Claremore, Okla., assignors to Braden Steel Corp., Tulsa, Okla.

Filed Dec. 14, 1962, Ser. No. 244,777
5 Claims. (Cl. 20—69)



3. Means for sealing a door mounted within a door frame, comprising: means defining an elongated channel secured to one of said door or frame adjacent and facing the other thereof when said door is closed; means defining a slot in the bottom of said channel, said slot having a narrowed neck; a resilient impervious transversely extensible sealing member having a flange mounted within said channel with said flange disposed in said slot, said sealing member being normally positioned for the most

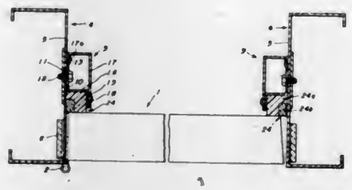
part within said channel; an elongated strip of permanently magnetized material secured to said sealing member and adapted to move transversely out of said channel to sealingly engage the other of said door or frame when said door is closed; and means defining a magneto-responsive surface on the other of said door or frame facing said channel when said door is closed.

3,221,376

SOUND RESTRICTING DOOR SEAL

Donald C. Smeltzer, Greensburg, Pa., assignor to Overly Manufacturing Company, Greensburg, Pa., a corporation of Pennsylvania

Filed June 7, 1963, Ser. No. 286,234
2 Claims. (Cl. 20—69)



1. A sound seal for restricting passage of air borne sound through the peripheral clearance openings between a door panel and the frame within which the panel is pivotally mounted, comprising,
(a) a seal housing portion extending longitudinally of and in spaced relation to each marginal edge of one face of the door panel and connected with the adjacent door frame surfaces providing a substantially continuous housing member,
(b) sealing means mounted within and extending longitudinally of each said housing portions and extending outwardly therefrom to engage a portion of the adjacent face of the door panel and to extend across the clearance openings between the peripheral margin of the panel and the adjacent frame surfaces,
(c) said sealing means comprising a resilient closed cell cellular sound absorbing body portion having a longitudinally co-extensive insert of a sound transmitting material which insert is juxtaposed to the clearance opening, said insert being bounded on at least two sides thereof by the cellular body portion, and
(d) means on each said housing portions for adjustably maintaining contact between said outwardly extending portion of the sealing means and the face of the adjacent panel surface.

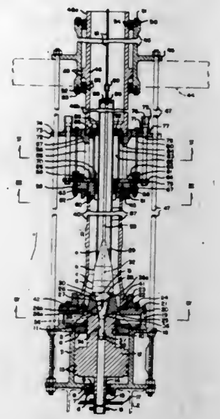
3,221,377

MOLD FORMING METHOD AND APPARATUS

Loyal L. Johnston, Zellenople, Pa., assignor to Herman Pneumatic Machine Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed June 5, 1963, Ser. No. 285,642
14 Claims. (Cl. 22—17)

1. A method of forming a foundry mold comprising advancing compacting means into one end of a flask contaning mold forming material to compact the mold forming material at said end of the flask, by the advancing compacting means pushing a tapered former through the mold forming material at said end of the flask to simultaneously start the former through the flask and provide guidance for the former at said end of the flask by the mold forming material compacted by the advancing compacting means and further compacting mold forming material in the flask by the former as it is pushed by the compacting means, pulling the former the rest of the way through the flask and while the former is thus



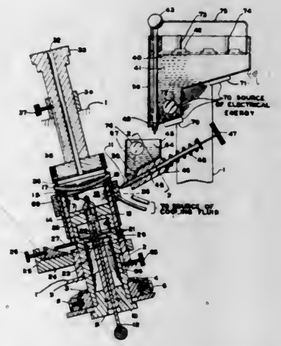
being pulled through the flask further compacting by the former the mold forming material in the flask and guiding the former by the compacted mold forming material.

3,221,378

LENS BLOCKING METHOD AND DEVICE

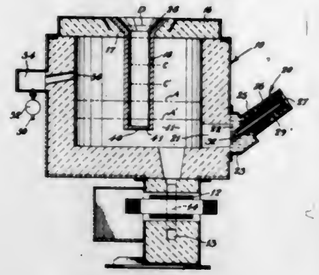
Kenneth D. Faas, Henrietta, and Israel Schrier, Irondequoit, N.Y., assignors to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York

Filed Jan. 2, 1963, Ser. No. 249,051
7 Claims. (Cl. 22—58)



1. An apparatus for making a lens block on a toric lens surface comprising means forming a mold cavity, means slidably mounted in said mold for molding a reference surface a predetermined distance from a point on the toric surface, four pins angularly spaced in said means forming said mold cavity for directly engaging the toric surface of said lens on meridians intermediate the meridians of major and miner curvature of said lens establishing the position of the blocked lens surface relative to the mold, a deformable seal having holes for receiving said pins conforming to the toric surface and sealing said mold cavity, means for tiltably adjusting the axis of the lens blank relative to the axis of said mold by providing relative axial movement of said pins, and means for introducing a molten metal to bond a lens block having a reference surface on said lens.

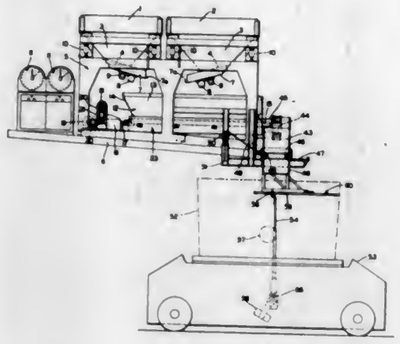
3,221,379
FURNACES
Wilbur E. Shearman, Yardley, Pa., assignor to Ajax Magnethermic Corporation, Youngstown, Ohio, a corporation of Ohio
Filed Feb. 14, 1962, Ser. No. 173,293
5 Claims. (Cl. 22—69)



1. A single chamber apparatus for holding and intermittently and pneumatically dispensing molten metal comprising in combination an essentially pneumatically sealed single chamber container, a molten metal discharging conduit communicating with the exterior and interior of said container in gas tight sealed relationship with said container, an inlet opening of said discharge conduit communicating with the interior of said chamber at a level below the minimum surface level of molten metal in said container, an outlet opening in said discharge conduit disposed exteriorally of said container and at a level above the maximum surface level of molten metal within said container, a refill tube disposed substantially within said container for supplying molten metal thereto, said refill tube having a restricted orifice therein communicating with the interior of said chamber at a level below the minimum surface level of molten metal in said container, said restricted orifice being of substantially lesser cross-sectional area than the cross-sectional area of the refill tube and sufficiently small to substantially limit and control the rate at which molten metal can pass therethrough, said refill tube passing through said chamber in airtight sealed relationship with said chamber and having a second opening communicating with the exterior of said chamber for receiving molten metal to charge and refill said apparatus, said second opening being disposed at a level above the outlet opening in said discharge conduit and above the maximum surface level of molten metal in said container, pressure means for intermittently applying pressure on said molten metal in the container; whereby the container may be refilled without interrupting the maintaining of a predetermined pressure cycle in said container.

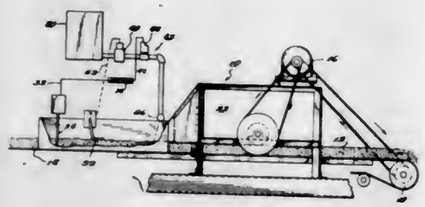
3,221,380
LADLE ADDITION FEEDING MECHANISM WITH INDEPENDENTLY CONTROLLED FEEDER CONVEYOR
June H. Reighart, 1991 Lee Road, Cleveland 18, Ohio
Filed Dec. 21, 1962, Ser. No. 246,498
10 Claims. (Cl. 22—82)

8. Ladle addition feeding mechanism including a material hopper having a discharge outlet, gate means normally closing said outlet, electric power-operated means connected to said gate means, fluid power-operated means connected to said gate means, valve controlled means for admitting fluid pressure to said fluid power-operated means for operating said gate for discharging a predetermined amount of material through said outlet, a substantially horizontal conveyor positioned beneath said gate for receiving material discharged from said hopper, and independent means for operating said conveyor for discharging material therefrom whereby feeding of the required amount of material from the hopper into said horizontal conveyor may be started at any time prior to



tapping of a heat of metal into the ladle, and operation of said conveyor may be started at any time during said tapping to feed said material from said conveyor into the ladle.

3,221,381
SYSTEM FOR COOLING FOUNDRY SANDS IN PROCESS
Orville C. Nutter, West Chicago, Ill., assignor to Pekay Machine & Engineering Co. Inc., Chicago, Ill., a corporation of Illinois
Filed May 4, 1962, Ser. No. 192,567
6 Claims. (Cl. 22—89)



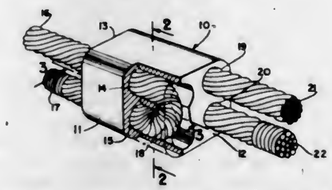
2. Apparatus for processing massed granular particles transported on a reach of a conveyor having two stations spaced apart along the path of transport which comprises: means for supplying a mass of the particles to the conveyor reach; a group of individually responsive thermistor-type temperature sensing elements disposed near the conveyor in temperature sensing relation with the particles in transit on the reach at the first station; means for applying coolant to the particles on the reach at the second station; a group of individually responsive coolant admitting valves, each valve having only a completely open state and a completely closed state, each of the valves in fluid connection with the coolant applying means for controlling the amount of coolant to the particles; and a plurality of individually responsive control circuits, each being connected between one of the sensing elements and one of the admitting valves for selectively causing the operation of the admitting valves from one state to the other in response to signals from the sensing elements, each admitting valve being operated in response to a signal caused by a temperature sensed by its associated element, said temperature associated with at least one admitting valve being different from the temperature associated with any other admitting valve.

3,221,382
METHOD OF MAKING A HOT TOP
Sherwood G. Haw, 1117 Fair Oaks Ave. S., North Canton, Ohio
Original application Apr. 16, 1963, Ser. No. 273,422, now Patent No. 3,153,823, dated Oct. 27, 1964. Divided and this application May 28, 1964, Ser. No. 371,040
10 Claims. (Cl. 22—193)



1. The method of providing a preformed liner for a hot top for an ingot mold comprising the steps of
(a) pouring a waterless mixture of refractory material with thermosetting binder into a first tubular mold to form an outer vertical tubular sleeve,
(b) pouring a waterless mixture of exothermic material with thermosetting binder into a second tubular mold within the first tubular mold for the refractory material to form an inner vertical tubular sleeve,
(c) pouring a waterless mixture of refractory material with thermosetting binder into a mold extending horizontally from the lower ends of the outer mold to form a radial flange-like base integral with the outer vertical sleeve,
(d) applying a wiper strip to the outer periphery of the flange-like base,
(e) vibrating the waterless mixtures within the mold into a compact status substantially devoid of air pockets and crevices,
(f) baking the assembled members at the curing temperature of the thermosetting binder to form rigid exothermic refractory liners, and
(g) stripping the second tubular mold from the inner tubular sleeve.

3,221,383
CINCHING DEVICE
Eugene A. Bilodeau, 45 Sheridan St., Barre, Vt.
Filed July 9, 1964, Ser. No. 381,450
2 Claims. (Cl. 24—129)



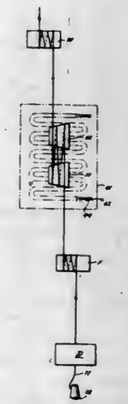
1. A device for retaining at least one rope in fixed position which comprises; an elongated block having a passage therethrough slightly larger in diameter than the diameter of said rope, a return passage adjacent to said first passage and parallel to said first passage, a cut-out portion connecting said first passage and said return passage, said cut-out portion being slightly less in width than the diameter of said rope, at least a third and fourth passage through said block parallel to said first and second passage, a cut-out portion connecting said third and fourth passages, said cut-out portion being slightly less in width than the diameter of said rope, said cut-out portion being located at the opposite end of said block in said first cut-out portion all passages being longitudinal, through passages parallel to each other of uniform dimension, each cut-out being of less dimension than its adjacent passages adapted to receive and hold said rope.

3,221,384
CLAMP FOR SHOES, ESPECIALLY SPORT AND SKI SHOES
Friedrich Aufenacker, Wuppertal-Elberfeld, Germany, assignor to Stocko Metallwarenfabriken Hugo und Kurt Henkels, Wuppertal-Elberfeld, Germany
Filed Jan. 29, 1964, Ser. No. 340,971
Claims priority, application Germany, Mar. 6, 1963, St 15,727
6 Claims. (Cl. 24—146)



1. A hook-like clamp for the strings of shoes, especially sport and ski shoes, which comprises: a substantially planar base plate having one end portion provided with means for connecting said plate to a shoe and having its other end portion folded over in a curved path in a direction toward said means to be spaced therefrom so as to form an arcuate hook, and a resilient tongue having one end thereof integral with said base plate in the region of said one end portion of the base plate and having its other end forming the free end of said tongue formed out of the plane of said base plate and extending into the gap between said base plate and said folded over end portion so as to be slightly spaced from said folded over end portion for receiving and clamping therebetween a shoestring, the extremity of the said other end of said tongue being located closely adjacent the bottom region of said hook to prevent a shoestring from slipping around in the hook past the said other end of the said tongue.

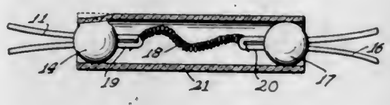
3,221,385
STRAND TREATMENT
Robert K. Stanley, Plymouth Meeting, Pa., assignor to Techniservice Corporation, Philadelphia, Pa., a corporation of Pennsylvania
Filed May 24, 1961, Ser. No. 112,374
2 Claims. (Cl. 28—72)



1. Strand treatment, for a distorted strand having distortion-induced strains therein effective to bias the strand so as to reduce the distortion thereof, such strains being adapted to be relieved by heating, comprising supporting such strand within a heating zone for travel through the zone, travelling the strand through the zone, and reduc-

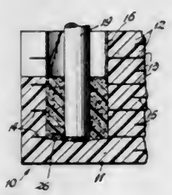
ing the rate of travel of the strand at successive increments of its travel through the zone, and heating the strand sufficiently throughout its travel through the zone to relieve such strains to a desired extent, as evidenced by resultant reduction in the bias of the strand toward a distortion-free condition.

3,221,386
METHOD OF MAKING AN ELECTRICAL DEVICE COMPRISING A GLASS CAPSULE AND A WIRE LEAD FUSED THEREIN
Philip C. Demarest, Pine Brook, N.J., assignor to Ohmega Laboratories, Pine Brook, N.J., a corporation of New Jersey
Filed July 7, 1960, Ser. No. 41,417
7 Claims. (Cl. 29—25.11)



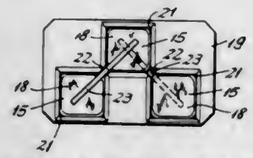
1. The process of sealing a capsule comprising the steps of: threading a wire lead through a hollow glass bead; heating said bead only by passing an electric current through said wire to melt said bead into a coherent mass attached to said wire; inserting said mass into one end of a hollow glass tube; and heating said mass and the contiguous part of said tube to the temperature at which they melt and flow together only by passing electric current through said wire.

3,221,387
TERMINAL LEAD CONNECTION AND METHOD OF MAKING THE SAME
Barton L. Weller, Monroe, and Edmund A. Bolton, Easton, Conn., assignors to Vitramon Incorporated, Monroe, Conn., a corporation of Delaware
Filed June 19, 1962, Ser. No. 203,600
7 Claims. (Cl. 29—25.42)



1. In the method of making an electrical component which comprises the steps of buiding a substantially rigid monolithic body formed by successive substantially parallel layers of materials having specific electrical properties, at least one of said layers being electrically conductive and lying wholly within said body, inserting a flexible lead of electrically conductive material into said body for electrical connection to said electrically conductive layer, and bonding the inserted lead to said body, said lead projecting outwardly of the body for connecting said electrically conductive layer into an electrical circuit; the improvement in the inserting and bonding steps of the method comprising forming a recess in the body extending at least into the electrically conductive layer thereof for receiving an inserted lead, said recess having a diameter approximately twice the diameter of the lead to be inserted therein for providing an annular space between the lead and the body approximately equal to the radius of the lead for receiving a shock absorbing bonding material, and inserting a lead and an electrically conductive malleable shock absorbing bonding material into said recess so that the bonding material substantially fills the annular space around the lead, said lead having electrical connection with said electrically conductive layer through said bonding material and said bonding material bonding the lead in position and forming a malleable annular cushion therearound for substantially increasing the surface area of the bond relative to the surface area of the bonded portion of the lead, whereby stress resulting from flexing of the lead is dissipated.

3,221,388
METHOD OF MAKING A STACKED CAPACITOR
Barton L. Weller, Monroe, and William R. Belko, Jr., Huntington, Conn., assignors to Vitramon, Incorporated, Monroe, Conn., a corporation of Delaware
Filed Nov. 16, 1962, Ser. No. 238,174
6 Claims. (Cl. 29—25.42)

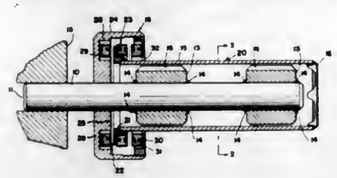


1. The method of making a capacitor comprising the steps of providing a plurality of capacitor units adapted to be stacked in superposed relation, each of said units including a wafer of dielectric material having first and second electrically conductive patterns on opposite surfaces thereof respectively, said patterns being spaced inwardly of the edges of their respective wafer so that a border of dielectric material extends completely therearound and corresponding patterns of adjacent units being adapted in the stacked assembly thereof to be in engagement to cooperatively form an electrode plate of the capacitor; positioning said units relative to each other in checkerboard pattern with corresponding electrically conductive patterns facing in the same direction; electrically connecting said first patterns in adjacent units which are not adapted to be in engagement in the stacked assembly of the units by a flexible connector extending diagonally between the respective units and across the borders thereof; electrically connecting said second patterns in adjacent units which are not adapted to be in engagement in the stacked assembly of the units by a flexible connector extending diagonally between the respective units and across the borders thereof; and then folding said units into superposed stacked relation so that corresponding patterns of adjacent units are in engagement for forming the electrode plates of the capacitor and the connectors for said first patterns are disposed in spaced relation to the connectors for the second patterns with each connector extending solely around the edges and across the borders of its respective units for electrically connecting alternate electrode plates in the capacitor.

3,221,389
TEXTILE SPINDLE
John Cowell, East Meadow, N.Y., assignor to Industrial Tectonics, Inc., Ann Arbor, Mich., a corporation of Michigan
Filed Sept. 22, 1964, Ser. No. 398,271
5 Claims. (Cl. 29—116)

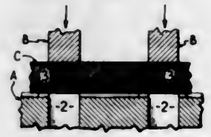
1. In a guide roll having a rotatable tube adapted to conduct a filament upon the external periphery of said rotatable tube, the combination comprising:
(a) a housing;

(b) a rod engaged with the housing;
(c) said rod being provided with air bearing means;
(d) said air bearing means being journalled in said rotatable tube;
(e) said air bearing means being provided with a



plurality of longitudinal grooves, whereby said tube is stabilized during rotation and is supported on a film of air between said bearing means and said tube;
(f) said tube being provided with magnetic thrust bearing means at at least one end thereof.

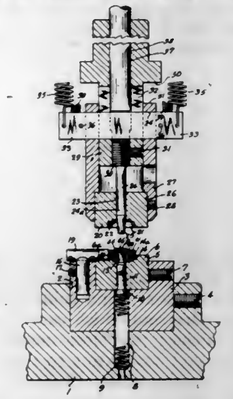
3,221,390
METHOD AND APPARATUS FOR FORMING CAGES FOR ROLLER BEARINGS
Alfred Pitner, Paris, France, assignor of one-half to Nadella S.A., Rueil-Malmaison, France, a French body corporate
Filed Jan. 21, 1965, Ser. No. 427,031
Claims priority, application France, Feb. 19, 1964, 964,324
6 Claims. (Cl. 29—148.4)



1. A method for forming rolling element retaining projections in the sides of apertures in a flat strip adapted to form a cage structure for bearings having rolling elements, said method comprising piercing each rolling element receiving aperture in the strip by means of a punch and a die having a punch-receiving opening, upsetting portions of the material of the strip by the action of the punch as it pierces the aperture, the punch upsetting said portions into grooves provided in the top face of the die and communicating with the wall defining said opening so as to form depending projections in the strip, and thereafter urging the depending projections laterally inwardly of the aperture by means of a forming punch and an anvil, the depending projections being placed against the anvil and the forming punch having rounded edges in the region of said projections.

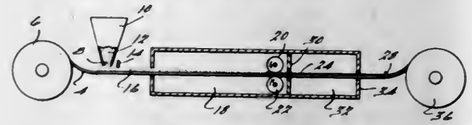
3,221,391
METHOD FOR MANUFACTURING SPHERICAL BEARINGS
Lewis R. Helm, Box 95, Fairfield Beach Road, Fairfield, Conn.
Filed Nov. 18, 1960, Ser. No. 70,875
12 Claims. (Cl. 29—149.5)

1. The process of assembling a bearing having an outer tubular member with a concave spherical inner face and an inner member with a convex spherical outer face, at least one of the members being of ductile material, comprising placing an outer member with a concave inner face over an inner member with a convex outer face and diminishing the space between the members by deforming at least one ductile member in a radial direction through-



out the length of the space without using the undeformed member as a die for the purpose of causing the adjacent surface of the other member to become spherical.

3,221,392
METHOD OF MAKING BEARINGS
James C. Gould and Victor Gallatin, Ann Arbor, Mich., assignors to Federal-Mogul-Bower Bearings, Inc., Detroit, Mich., a corporation of Michigan
Original application Sept. 28, 1960, Ser. No. 59,086. Divided and this application July 30, 1964, Ser. No. 392,982
6 Claims. (Cl. 29—149.5)



1. The method of making an aluminum lead alloy containing up to about 70% lead of which up to about 5% thereof is in the form of lead monoxide comprising the steps of providing a powder blend of aluminum and lead monoxide powders, preheating the said powder blend at a temperature ranging from about 800° F. to about 1100° F. in a reducing atmosphere until substantially all of the lead monoxide is reduced to metallic lead, compacting the preheated said powder blend into a relatively dense mass, and thereafter cooling the said dense mass.

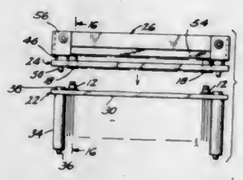
4. The method of making a composite strip suitable for the manufacture of bearings and the like comprising the steps of providing a hard metal backing strip and a substantially homogeneous powder blend of aluminum powder and lead monoxide powder in the proportions of up to about 72% lead monoxide powder and the balance aluminum powder, superposing a relatively uniform layer of said powder blend on said backing strip, preheating said layer of said powder blend in a reducing atmosphere at a temperature ranging from about 800° F. to about 1100° F. for a period of time sufficient to substantially completely reduce said lead monoxide to metallic lead, densifying the preheated said layer on said backing strip by passing said strip and said layer thereon through a pair of rolls, one of said pairs of rolls in contact with said layer relating at a peripheral speed less than the linear speed of said layer causing concurrent compacting and extrusion of said layer and tenaciously bonding said layer to said backing strip, and thereafter rapidly cooling said composite strip in a non-oxidizing atmosphere.

3,221,393
METHOD OF MAKING BEAD TYPE THERMISTORS
Meyer Sapoff, West Orange, and John Gecsey, Rahway, N.J., assignors to Victory Engineering Corporation, Union, N.J., a corporation of Delaware
Filed Sept. 5, 1961, Ser. No. 136,019
3 Claims. (Cl. 29—155.5)



1. The method of manufacturing bead-type thermistors which includes the following steps: Coating two conductors of platinum-iridium with gold to form a surface which is wet by glass and which can be soldered, applying a bead of calcined powdered metallic oxides mixed with a binder to said conductors so that each conductor is embedded within the bead, heating the bead and conductors in a furnace at a temperature which lies within the range of 1,000 to 1,500 degrees centigrade, applying a layer of powdered glass to the bead surface, and heating in a furnace at a temperature which lies within the range of 700 to 900 degrees centigrade.

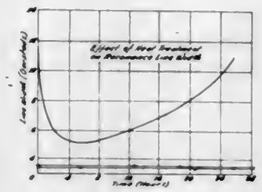
3,221,394
METHOD AND APPARATUS FOR USE IN THE MANUFACTURE OF TRANSISTORS
John J. Pitts, Brockton, Mass., assignor to General Instrument Corporation, Newark, N.J., a corporation of New Jersey
Filed Oct. 26, 1962, Ser. No. 233,332
14 Claims. (Cl. 29—155.5)



1. For use in the manufacture of electronic components having a header capped by a flanged can, in combination, a header carrier, a can jig, and a magnetic chuck, said carrier and said jig each comprising a plate with a large equal number of holes, said carrier holes being dimensioned to receive and locate the headers, said jig holes being dimensioned to receive the flanged cans, said chuck having permanent magnets disposed for registration with the cans, the arrangement being such that a large number of cans may be held in said jig by placing the jig over the chuck, and the assembly then inverted over the carrier to simultaneously cap all of the headers, following which the chuck may be removed, and then the jig removed to leave the cans on the headers.

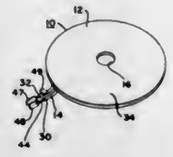
7. In the manufacture of electronic components each having a header capped by a flanged can, the method which includes placing a large number of headers in a carrier, placing a large number of cans in a jig, placing the jig over a magnetic chuck to hold the cans in the jig, inverting the assembly of jig and chuch over the carrier to simultaneously cap all of the headers with cans, removing the chuck while restraining the cans by means of the jig, and then removing the jig to leave the cans on the headers.

3,221,395
METHOD OF MAKING A MICROWAVE ELEMENT
James W. Nielsen, Berkeley Heights, N.J., assignor to Airtron, Inc., Morris Plains, N.J.
Filed May 17, 1962, Ser. No. 195,625
6 Claims. (Cl. 29—155.5)



1. A method for reducing the ferromagnetic resonance line width of an element of lithium ferrite material comprising:
grinding and polishing the element with fine abrasive grit;
applying material containing available lithium to the entire outer surface of said element; and
annealing the element while it is in contact with the applied material.

3,221,396
METHOD OF FORMING A SOLID PLATE COOKING UNIT
Robert D. Bremer and Howard E. Van Scoyk, Dayton, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Original application July 15, 1960, Ser. No. 43,211, now Patent No. 3,110,796, dated Nov. 12, 1963. Divided and this application May 2, 1963, Ser. No. 277,538
4 Claims. (Cl. 29—155.5)



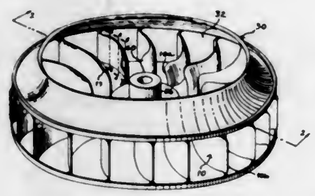
1. A method of forming a solid plate cooking unit comprising the sequential steps of, casting a malleable iron plate with upstanding ribs on one side thereof to form a trough having a configured bottom, placing a tubular metal sheathed heating element of substantially the same configuration as the bottom of said trough within said trough, pressing the terminal ends of said ribs into deformed partially overlapping relationship to said heating element while simultaneously flattening the exposed side of said heating element, shot-blasting the assembled plate and heating element, preheating the assembled plate and heating element to between 250° F. and 300° F., flame-spraying a corrosion resistant metallic coating which is capable of diffusing at approximately 1700° F. over the assembled plate and heating element, and diffusing the metallic coating on the assembled plate and heating element in an ordinary air atmosphere furnace at approximately 1700° F.

3,221,397
METHOD OF MASS PRODUCING RESISTORS
Carl Otto Areskoug, Vimmerby, Sweden, assignor to Aktiebolaget Installationsmateriel, Vimmerby, Sweden, a corporation of Sweden
Filed Feb. 14, 1962, Ser. No. 173,210
Claims priority, application, Sweden, Mar. 29, 1961, 3,358/61
8 Claims. (Cl. 29—155.63)



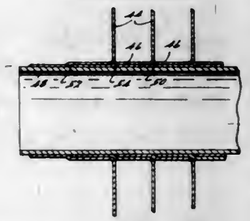
1. A method of mass producing resistors comprising, forming reverse bends on a continuous resistance wire thereby defining loops arranged in successive groups each having a given number of loops and disposed longitudinally spaced in an elongated configuration, disposing between successive individual groups of loops two longitudinally spaced cavity-forming fugitive elements extending axially transversely of the longitudinal direction of said elongated configuration at positions designated as end portions of each two next adjacent ones of said successive groups, said cavity-forming elements each being disposed in position to be covered axially only partially with ceramic, embedding the formed resistance wire in a settable ceramic paste for forming an elongated ceramic-covered band confining said loops, and while embedding said resistance wire at the same time embedding said cavity-forming elements in said ceramic paste only partially axially thereby to allow at least an end surface of each of said cavity-forming elements to be disposed outwardly of said band, severing said ceramic covered band including the severing of said wire between the successive groups and said cavity-forming elements to form a plurality of resistors, and firing the individual resistors at a temperature insufficient to damage said wire and sufficient to completely set the ceramic, causing said cavity-forming elements to emigrate from said resistors thereby to define access cavities open to the exterior of said ceramic axial to the opposite end portions of said resistance wire within each resistor, and connecting leads to said resistance wire extending through said cavities in said resistors.

3,221,398
METHOD OF MANUFACTURING A TURBINE TYPE BLOWER WHEEL
Robert A. Mayne, deceased, late of Oakwood, Ohio, by Ruth D. Mayne, executrix, 42 W. Forrer Road, Oakwood, Ohio
Filed Jan. 25, 1961, Ser. No. 84,959
5 Claims. (Cl. 29—156.8)



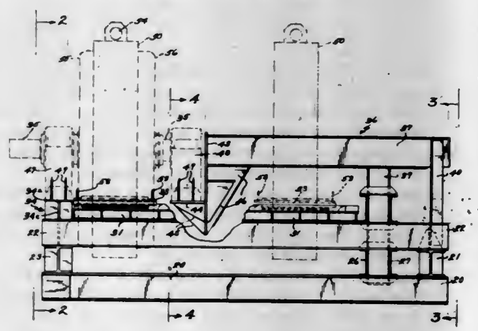
1. The method of producing a blower wheel including the steps of forming equally spaced blades from two sheets of material leaving marginal strips integral with the ends of the blades, there being a marginal strip along each side of each sheet, forming the blades into a concavo-convex shape extending transversely from the plane of the sheets, superimposing the two sheets with the blades equally spaced so that alternate blades project from one sheet and the remaining blades from the other sheet, curving the sheets into a cylindrical member with the greater portion of the blades directed inwardly, forming a frustum-conical member having the apex of the frustum-conical member open and the peripheral outer margin secured to the marginal strips of each of the two cylindrical sheets of material along one side of the blades, forming a circular backing member, securing the peripheral margin of the backing member to the other marginal strips of the sheets, and securing the blades to the backing member so as to form a blower wheel.

3,221,399
METHOD OF MANUFACTURING HEAT EXCHANGER
John Karmazin, % Karmazin Products Corporation, Wyandotte, Mich.
Filed Mar. 28, 1962, Ser. No. 183,164
3 Claims. (Cl. 29—157.3)



1. The method of manufacturing a heat exchanger which includes stacking a plurality of sheets of material having integral tapered tubular projections with the projections of adjacent sheets arranged in nested relationship, positioning a tube within a row of nested projections of said sheets, the outer diameter of said tube being substantially coincidental with the inner diameter of the terminal portions of said projections, and compressing the stack longitudinally of the tube to cause the ends of the projections of said row to deflect radially inwardly into gripping engagement with the outer diameter of the tube and to cause most of said projections to extend along said tube substantially the entire distance between a next adjacent pair of sheets, whereby said tube is enclosed by a double layer of said projections for the major portion of its length.

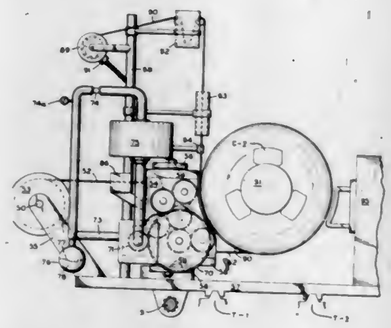
3,221,400
MOTOR MAINTENANCE RACK
Homer P. Halsey, Silver Bay, Minn., assignor to Reserve Mining Company, Silver Bay, Minn., a corporation of Minnesota
Filed Jan. 24, 1963, Ser. No. 253,580
4 Claims. (Cl. 29—205)



1. A motor maintenance rack comprising an elongated base, a first fixed platform crosswise on said base adapted to support one end of a motor rotor shaft, a second fixed

platform crosswise on said base adapted to support the other end of the motor rotor shaft, a pair of longitudinally extending parallel runways fixed with respect to said base and disposed in a horizontal plane, said runways spaced respectively on opposite sides of said platforms, a pair of movable carriage members, one on each runway adapted to support respectively opposed sides of the stator housing of said motor, said runways and carriage members having complementary surfaces permitting longitudinal movement and preventing crosswise movement of said carriage members relative to said runways, whereby, when the motor is disposed with its rotor shaft parallel to said runways with opposite ends of said shaft supported respectively on said platforms and the stator sides resting on respective movable carriage members, said stator can be separated from said rotor and moved endwise along said runways for maintenance or repair of rotor and stator.

3,221,401
STRIP TENSIONER
Charles H. Scott, South Norwalk, Conn., and Russell C. Raynor, South Salem, N.Y., assignors to Dorr-Oliver Incorporated, Stamford, Conn., a corporation of Delaware
Filed June 28, 1961, Ser. No. 121,812
17 Claims. (Cl. 29—208)



2. A tensioning device from which strip material is to be withdrawn under tension which comprises,

a main support structure,

a swivel frame structure, pivotal means connecting said swivel frame structure with said main support structure,

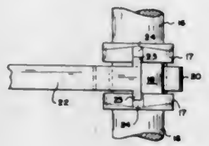
a sequence of at least two parallel guide rollers rotatably mounted on said swivel frame with their axes extending transversely of said pivotal axis and arranged so as to provide a meandering course for said strip material when in frictional engagement with said rollers, and furthermore arranged relative to said pivotal axis so as to establish equilibrium for said swivel structure when said strip is under tension, said pivotal axis being located in a plane intermediate and substantially parallel to the planes including the respective lateral edges of the strip material frictionally engaged by said rollers,

a gear coaxially connected to each roller, said gears meshing with one another to rotate simultaneously due to the withdrawal of the strip material frictionally engaged by said rollers,

a brake device carried by said swivel frame and effective to apply initial tension to the strip material at least sufficient to establish frictional non-sliding contact between said strip and said rollers while the strip is being drawn through the tensioning device against torque load resistance imposed upon said rollers,

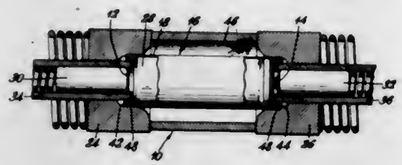
and dynamometric means driven by one of said guide rollers, having controllable torque load means resisting the rotation of said guide roller, whereby the torque load as well as the strip tension diminishes from each roller to the next preceding roller, while providing the required withdrawal tension in said strip.

3,221,402
METHOD OF LINING BEARING IN CONNECTING ROD AND PIVOT PIN CONNECTION
Robert J. Lannen, Detroit, Mich., assignor to Micro-Poise Engineering and Sales Company, Detroit, Mich., a partnership
Original application Feb. 19, 1962, Ser. No. 174,069. Divided and this application Oct. 17, 1963, Ser. No. 316,989
3 Claims. (Cl. 29—439)



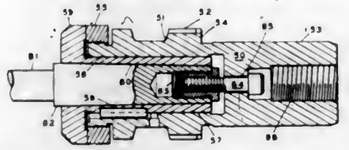
1. In a method of inserting a pivot pin in a connecting rod bearing and of lining the bearing, said pin being jointly mounted on the outer ends of a pair of spaced crank-arms, the bearing having a gap proportioned to afford insertion of the pin laterally thereof in the bearing, and the pin diameter being predeterminedly less than the internal diameter of the bearing to accommodate a liner, and such liner having the initial form of an elongated strip, the steps of inserting the pin in the bearing through said gap, and then attaching a leading end of said strip to the outer ends of the crank-arms to adapt the strip to wrap around the pin responsive to relative rotation of the pin and bearing, and detaching the wrapped strip from the outer ends of the crank-arms.

3,221,403
APPARATUS AND METHOD FOR PRODUCING CLOSURES IN BATTERY CONTAINERS
Robert D. Simonton, Bay Village, Ohio, assignor to Union Carbide Corporation, a corporation of New York
Filed Oct. 9, 1962, Ser. No. 229,314
4 Claims. (Cl. 29—511)



4. A method of assembling a battery comprising at least one galvanic cell and a cylindrical container therefor; said method comprising supporting said container peripherally about each end, compressing the ends of said container longitudinally and radially such that said ends are simultaneously metered inwardly toward the axis of said container and into a predetermined curl, thereby forming a tight radius of said ends about the peripheral edges of said cell and providing good electrical contact between the components of said battery assembly.

3,221,404
CUTTING TOOL ADAPTER
William D. Averill and David I. McDonald, Cincinnati, Ohio, assignors to The Cincinnati Milling Machine Co., Cincinnati, Ohio, a corporation of Ohio
Filed July 2, 1963, Ser. No. 292,258
10 Claims. (Cl. 29—568)



10. In combination with a machine tool spindle, the mechanism comprising:

(a) an axial recess in one end of the spindle,

(b) a gear member attached to the spindle at said one end,

(1) said gear member having a plurality of involute teeth parallel to the axis of the spindle, chamfered on the end thereof away from the spindle, and circumferentially arranged around said spindle recess,

(c) a tool adapter body having one end adapted for receipt in said spindle recess,

(d) a cutting tool fixed in the other end of said adapter body,

(e) a collar extending from said adapter body intermediate to the ends thereof,

(1) said collar having involute teeth formed thereon chamfered on the ends thereof adjacent to said one end of the adapter body to slide axially in mesh with the teeth of said gear member when the adapter body is inserted axially into said spindle recess at a random angle,

(f) a storage magazine adapted to hold said adapter body at a location spaced from the spindle, and

(g) mechanism operable to remove said adapter body from said magazine, transfer said adapter body to the spindle, and insert said adapter body axially into the spindle recess,

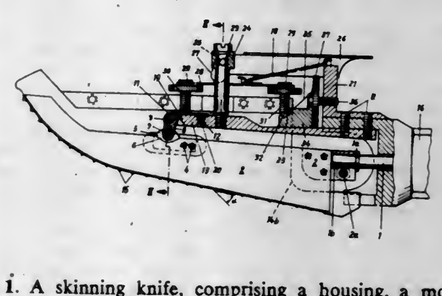
(1) said gear member teeth and collar teeth coacting to prevent the adapter body from rotating in the spindle.

3,221,405
GLASS CUTTER
August Bohle, 13 Grenzstrasse, Solingen-Ohligs, Germany
Filed Mar. 11, 1964, Ser. No. 351,091
1 Claim. (Cl. 30—164.95)



In a glass cutter comprising a handle and head fixed to one end thereof, said head being bifurcated at one end and including a pair of opposed mutually parallel extensions defining a terminally opening groove at said one end, and a cutter assembly consisting of a one-piece housing comprising a flexible material and including oppositely opening grooves complementary to opposed portions of said extensions and grippingly and removably engaged therebetween, said housing including opposed recesses substantially normal to said grooves, said housing including bearing portions opening into opposite sides of said recesses, and a cuttting wheel having an integral shaft journaled in the respective bearing portions and having a cutting edge projecting beyond the outer margin of said housing at said recess portions, the cutting edge of one of said wheels extending beyond the terminal end of said extensions, said other cutting wheel being disposed between said extensions intermediately of said head in a stored position.

3,221,406
SKINNING KNIFE
Fritz Knoll, 21 Konradigasse, Konstanz, Germany
Filed July 12, 1963, Ser. No. 294,476
Claims priority, application Switzerland, July 24, 1962, 8,880/62
8 Claims. (Cl. 30—272)

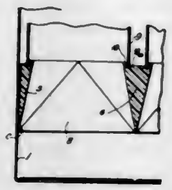


1. A skinning knife, comprising a housing, a motor driven shaft mounted in said housing, a cutting blade detachably connected to one end of said shaft, a bracket affixed to said housing and arranged to extend above said cutting blade, a pair of protector members arranged in spaced relation and disposed on opposite sides of said blade with the free edges thereof corresponding in shape to the cutting edge of said blade, first and second adjustable screws arranged in spaced relation and disposed between said pair of protector members and above said blade for adjusting the lower edges of said protector members relative to said blade edge, a carriage slidably mounted on said bracket having a depression for receiving said first adjusting screw, a yielding spring plate connecting the upper ends of said first and second adjusting screws, a pivoted lever movable from an inoperative position to an operative position and supported by said bracket, a cam portion on said pivoted lever engageable with said yielding spring plate to yieldingly urge said protective members in a direction toward said cutting edge when said lever is in its operative position, a bearing support supported by said bracket engageable by said second adjusting screw when said pivoted lever is in its operative position to hold said bearing support securely against the upper portion of said bracket, and a third adjustng screw connected to said slidable carriage to move the same in a longitudinal direction parallel with said motor driven shaft and simultaneously slide said protector members in a direction longitudinally with respect to said blade so that the lower edges thereof will be adjusted relative to the cutting edge of said blade, said second adjusting screw being arranged to engage said bearing support and securely hold the same in position during operation of the skinning knife.

3,221,407
CHEESE MAKING APPARATUS

Robert Jagoueix, Deux-Sevres, France, assignor to Pierre Guerin S.A., Deux-Sevres, France, a company of France

Filed Nov. 12, 1963, Ser. No. 323,029
Claims priority, application France, Nov. 23, 1962, 916,449; May 6, 1963, 933,814
2 Claims. (Cl. 31—49)

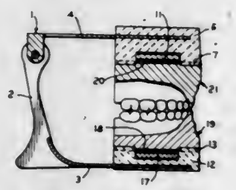


2. In a cheese-making apparatus, a curd-preparing and molding assembly comprising in combination a tank adapted to receive a body of milk composition to be curdled therein, said tank being flat-bottomed with grooves therein and having upstanding side walls, said walls at their free ends having a flanged rim and a flared inner edge, a distributor frame structure having an outer peripheral frame removably engageable with the side wall surfaces of said tank and having intercrossed partition means therein defining a number of flare open-ended sockets, said flare ends being engageable with the grooves in the bottom of the tank to divide said body into portions, said upstanding walls and said peripheral frame being made of resilient material, the side walls of said peripheral frame having outwardly tapered edges adapted to fit within said upstanding walls in a yielding, frictional engaging, scraping relation therewith, and molds removably connectable to the other ends of the respective frame sockets whereby inversion of the assembly will fill all the molds with curd from the tank.

3,221,408
DENTAL MODEL HOLDER

Joseph V. Scullin, 15632 Greenway Road, Cleveland, Ohio

Filed Dec. 1, 1961, Ser. No. 156,449
6 Claims. (Cl. 32—32)

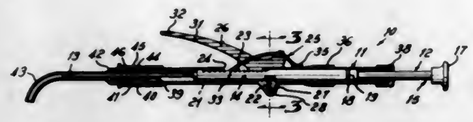


1. An articulator comprising a frame; two arms supported by the frame, at least one of said arms being pivotally mounted thereon; shaped masses of set-up material at the unsupported ends of the arms; magnet components incorporated in the set-up material, said magnet components comprising shallow magnet bodies non-detachably held in shallow metal retainers; dental models in contact with the masses of set-up material, said models incorporating other magnet components cooperating with the magnet components incorporated in the masses of set-up material; and means for positioning the models on the masses of set-up material.

3,221,409
AMALGAM DISPENSER

Charles J. Thiel, 625 6th Ave., and Louis J. Michaels, 1210 6th Ave., both of Dayton, Ky.

Filed Dec. 12, 1961, Ser. No. 158,681
8 Claims. (Cl. 32—60)

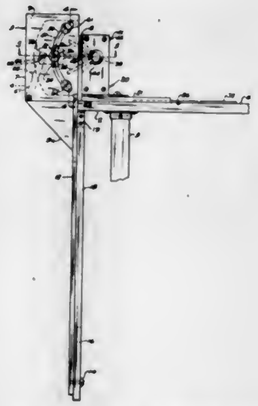


1. An amalgam dispenser comprising,
an elongated tubular holder having a fitting at its forward end,
an amalgam supply tube having a fitting at one end thereof by which it is attached to the fitting of said holder, the remaining portion of said tube being of substantially uniform internal diameter throughout its length,
said tube adapted to be pre-loaded with amalgam and constituting the sole source of supply of amalgam to be dispensed,
a plunger slidably mounted in said holder, said plunger having a forward end portion terminating adjacent the rear end of said tube when said tube plunger is rearwardly withdrawn,
said forward end portion being adapted to pass through said tube to its end to force the amalgam out of said tube,
a plurality of longitudinally spaced ratchet teeth on said plunger,
a pawl having a longitudinally movable portion engaging said teeth,
a lever pivoted on said holder and cooperating with said pawl to move said pawl forwardly and rearwardly to move said plunger in a forward direction step-by-step.

3,221,410
PERSPECTIVE DRAWING INSTRUMENT

John H. Malven, 1230 E. Mission Lane, Phoenix, Ariz.

Filed Dec. 9, 1963, Ser. No. 328,998
3 Claims. (Cl. 33—77)

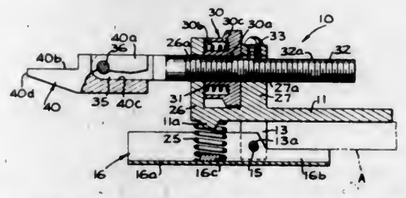


1. An instrument for locating and drawing perspective lines on a drawing board comprising a drawing board supported by a pedestal, said board having an upper drawing face, an upper edge and a lower edge, and a working edge along one side, a perspective head slideably supported to move along the working edge of said drawing board, a leg depending from the board below the working edge, a lever connected with said perspective head and pin means slidably connecting said leg and said lever at their distal ends, a ruler head having a ruler extending across said drawing board and held at one end by said ruler head, a perspective shaft connecting the perspective head with the ruler head, said shaft having a flattened pivotally held outer end and a ball at the inner end connected to said ruler head by a socket therein, means for adjustment of the angle that said shaft maintains relative to the vertical in said perspective head so that the angle of said perspective shaft may be varied with reference to the vertical position of said perspective head.

3,221,411
DEVICE FOR ALIGNING WORK

John C. Bickford, 661 Santa Coleta Court, Sunnyvale, Calif.

Filed Sept. 3, 1963, Ser. No. 305,977
5 Claims. (Cl. 33—171)



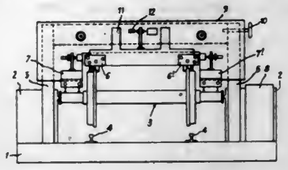
4. A device for aligning work comprising an externally threaded adjustment rod, means supporting said adjustment rod for movement in an axial direction, work engaging means mounted on said adjustment rod for movement therewith, calibrated means disposed in threaded engagement with said adjustment rod for moving said adjustment rod in the axial direction to adjustably position said work engaging means, a base supporting said adjustment rod supporting means and extending in a direction parallel to the axis of said adjustment rod, clamping means pivotally mounted from said base for gripping a support disposed between said base and said clamping means, and resilient means interengaging said base and said clamping means for continuously urging said clamping means into gripping relation with the bar.

3,221,412
MEANS FOR MEASURING RAILWAY WHEELS AND AXLES

Joseph Jean-Marie and Pierre Paintendre, Paris, France, assignors, by direct and mesne assignments, to Societe Anonyme H. Ernault-Somua, Paris, France, a corporation of France

Filed Apr. 9, 1962, Ser. No. 186,237
Claims priority, application France, Apr. 24, 1961, 859,696, Patent 1,295,442
4 Claims. (Cl. 33—174)

1. Machine for evaluating a railway axle having spaced wheels, comprising a fixed support, a first carriage, a pair of spaced feeler-holder blocks, one for each wheel of the axle, rigidly connected with the said carriage, a plurality of tire feelers mounted stationarily on each of the feeler-holder blocks in positions especially adapted to the profile of the wheels of the type of axle to be evaluated, said feelers being displaced in response to surface variations, means associated with each of the feelers to place its contact in contact with the surface of a wheel, means for transmitting and recording on a single sheet a linear displacement of all the contacts of the feelers during revolution of the axle, a second carriage mounted on said fixed support, means for moving said second carriage parallel to the direction of the railway axle, said first carriage being mounted on said second carriage,

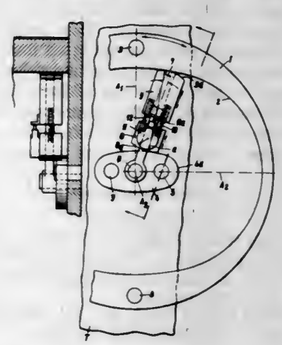


means for adjusting said first carriage in a direction at right angles to the movement of said second carriage, and means for receiving a railway axle and effecting the rotation thereof.

3,221,413
DEVICE FOR CHECKING THE CONTOUR, ESPECIALLY TROCHOIDAL CONTOUR SURFACES, OF WORK PIECES

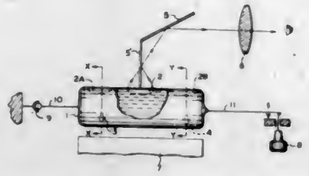
Erich Fesser, Cologne-Riehl, Germany, assignor to Klöckner-Humboldt-Deutz Aktiengesellschaft, Cologne, Germany

Filed July 18, 1963, Ser. No. 296,126
Claims priority, application Germany, July 20, 1962, K 47,283
7 Claims. (Cl. 33—174)



1. A checking device for checking the contour surface of a work piece, especially the inner trochoidal contour of a housing for a rotary piston engine, which includes: a template having an outside contour shaped in conformity with the contour surface of the work piece to be checked, means for locating said template and a work piece to be checked coaxially with regard to each other so that the template will be located within and in spaced relationship to the contour of the work piece to be checked, at least one arm pivotable about the common axis of said template and the work piece to be checked and extending radially from said common axis, two feeler members supported by and displaceable on said arm radially of said common axis, each of said two feeler members having a curved contacting surface for contacting engagement with the contour surface of said template and the corresponding contour surface of the work piece to be checked, yieldable means arranged between said feeler members and biasing the same so as to urge said feeler members to move relative to each other in the direction toward said template and the work piece to be checked respectively, and indicating means responsive to a movement of said feeler members relative to each other for indicating such relative movement.

3,221,414
MECHANISM FOR INDICATING THE LEVELING DIRECTION IN A SURVEYING INSTRUMENT
Katsuhiko Murayama, Tokyo, Japan, assignor to Nippon Kogaku K.K., Tokyo, Japan, a corporation of Japan
Filed Apr. 26, 1962, Ser. No. 190,361
Claims priority, application Japan, Nov. 14, 1961, 36/40,770
8 Claims. (Cl. 33—214)



1. A mechanism for indicating the direction of adjustment required to position an instrument level horizontally comprising a longitudinally elongated bubble tube, a liquid containing a bubble in the tube, a directional index at each end region of the tube, the tube being pivotable about one end thereof, means at the other end of the tube for adjusting the tube to the horizontal including a member rotatable in opposite directions, and optical means pivotally movable in unison with the bubble tube, and a fixed ocular cooperating with the optical means having a field of view containing in adjacent longitudinal halves the images of the respective longitudinal halves of the tube and their contents, each half of the tube extending from the longitudinal midpoint to a respective end of the tube, the field of view including an image of at least a part of the bubble in the tube and when the tube is inclined from the horizontal one of the half-tube images also includes an image of the directional index in that half-tube visually indicating the direction in which the rotatable element must be rotated to position the tube horizontally.

3,221,415
METHOD FOR CROP DRYING
Patrick Anthony Molteno Murray, Painswick, England, assignor to R. A. Lister & Company Limited, Dursley, England, a British company
Filed June 4, 1962, Ser. No. 205,478
3 Claims. (Cl. 34—30)



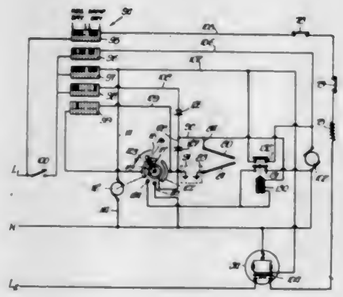
1. A method for drying stem crops including grain and hay comprising
(a) stacking the crop for drying into a stack of a single heavy thickness of about 15 to 20 feet thus presenting static pressure resistance to air blown into the stack of up to 7 inches water gauge,
(b) blowing massive quantities of air on the order of 12,000 to 39,000 cubic feet per minute into and throughout the stack at a velocity rate of at least 25 to 40 feet per minute,
(c) elevating the temperature of the air being blown from 4 to 15 degrees Fahrenheit above ambient temperature; and
(d) blowing the air at a force sufficient to overcome pressure resistance in the stack of up to 7 inches water gauge.

3,221,416
HEAT TREATING METHOD AND APPARATUS FOR SHEET OR WEB MATERIAL
Horace L. Smith, Jr., Richmond, Va., assignor to Hupp Corporation, Cleveland, Ohio, a corporation of Virginia
Filed May 15, 1962, Ser. No. 194,879
6 Claims. (Cl. 34—41)



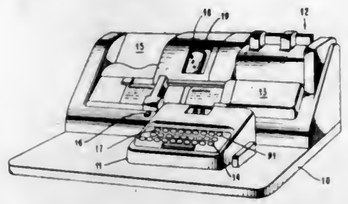
1. A method of producing box board and similar relatively thick paper products of improved quality, comprising the steps of:
(a) forming a wet, continuous web of the paper product;
(b) continuously moving the wet web in at least one horizontal drying pass between radiant heaters having emitting surfaces substantially parallel to, closely adjacent, and on opposite sides of the wet web to thereby dry said web; and
(c) as the web moves between said radiant heaters, periodically and alternately;
(d) applying tensile forces acting at right angles to the web's direction of movement to said product to produce lateral tension therein; and
(e) releasing the lateral tension thereby produced in said web from the web.

3,221,417
MOISTURE SENSOR CONTROL DEVICE FOR A LAUNDRY DRIER
John C. Mellinger, Newton, Iowa, assignor to The Maytag Company, Newton, Iowa, a corporation of Delaware
Filed Dec. 30, 1963, Ser. No. 334,086
16 Claims. (Cl. 34—45)



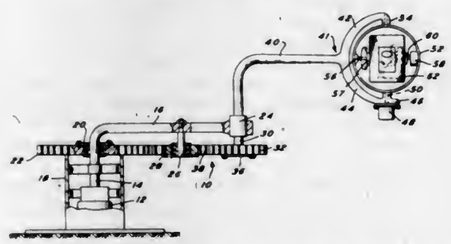
1. In a control system, the combination comprising, a chamber, electrodes positioned for contacting and completing an electrical circuit through the articles to be tested, means associated with said chamber for causing relative movements and random contacts between the articles and said electrodes, capacitor means, means for gradually charging said capacitor means through charging resistance means, means for discharging said capacitor means through the articles contacting said electrodes, control means responsive to a predetermined charge on said capacitor means, and means for connecting said capacitor means to said electrodes and then to said control means.

3,221,418
TEACHING MACHINE
Gerhard E. Hoernes, Harvey S. Long, and Gerald A. Maley, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed May 24, 1963, Ser. No. 282,981
3 Claims. (Cl. 35—9)



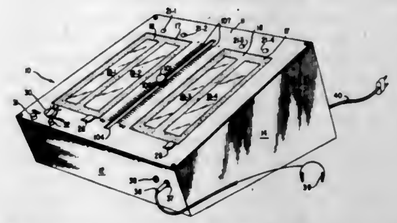
1. In a teaching machine controlled by records containing a printed question and answer and an answer perforated in columns of index positions, certain of said records also bearing a predetermined control perforation and being arranged in at least one successive series of records;
a record feed;
a station at which said question is exposed and both printed and perforated answers are concealed;
a plurality of keys;
perforation sensing means;
comparing means jointly controlled by operation of one of said keys and said sensing means;
control means actuated by said comparing means to operate said feed;
a presettable control device; and
means operated jointly by said comparing means and said presettable control device to initiate a skipping operation of said record feed to pass all subsequent records bearing said predetermined control perforation through the machine without individual verification thereof.

3,221,419
APPARATUS FOR PRODUCING LINEAR ACCELERATION OF A MASS
Leonard A. Cohen, 224 Old Lancaster Road, Merion, Pa.
Filed Dec. 24, 1963, Ser. No. 333,098
11 Claims. (Cl. 35—12)



1. Apparatus for imparting true linear acceleration to a mass comprising first rotatable means, second rotatable means coupled to said first means and rotatable in a direction opposite to the direction of said first means, said second means having twice the rotational velocity of said first means, said second means supporting a mass, the distance between the rotation axis of said first means and the rotation axis of said second means being equal to the distance between the rotation axis of said second means and said mass, and means for maintaining said mass facing in the direction of said straight line acceleration.

3,221,420
AUDIO-VISUAL TEACHING MACHINE AND METHOD
Paul J. Heinberg, 1437 Franklin St., Iowa City, Iowa
Filed Nov. 27, 1961, Ser. No. 155,121
9 Claims. (Cl. 35—35)



1. A teaching machine comprising a first record medium comprising a rotatable magnetic cylinder, said magnetic cylinder having a plurality of tracks with different signals stored on the individual tracks, drive means for continuously driving said first record medium, a second record medium having stored thereon a plurality of normally non-visible character sequences, the number of said character sequences corresponding to the number of tracks on said first record medium and each character sequence being representative of the audio signal stored on a corresponding track of said first record medium, respectively, an indexable carrier, means defining a plurality of index positions for said carrier, each index position corresponding to a track on said first record medium, means for indexing said carrier to a selected index position, a scanning head mounted on said carrier for scanning one track on said first record medium, a sound reproducer, means for connecting said sound reproducer to said scanning head for producing an audio signal corresponding to the signal stored on said one track, means for operatively making one of said normally non-visible character sequences visible independently of said means for connecting said scanning head to said sound reproducer and means indexed synchronously with said carrier, and operatively associated with said means for operatively making one of said normally non-visible character sequences visible, for locating a related normally nonvisible character sequence to be made visible by said means for operatively making one of said normally non-visible character sequences visible.

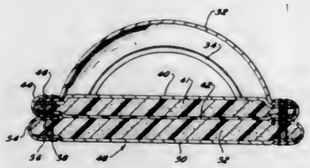
3,221,421
DECORATIVE COVER FOR WOMEN'S SHOES
Jack S. Liebmann, 420 Lincoln Road, Suite 206, Miami Beach, Fla.; Ralph Memole, 4911 Tyler St., Hollywood, Fla.; and Harold Barkowitz, 312 Aledo Ave., Coral Gables, Fla.
Filed May 25, 1964, Ser. No. 369,711
5 Claims. (Cl. 36—2.5)



1. In a decorative cover for a woman's shoe of the type having a sole, a projecting heel and an upper having a rim defining a foot opening, the combination comprising, a flexible upper member shaped to conform to the outer surface of the upper of a woman's shoe when fitted thereon and having a toe end and a heel end and a foot opening, a flexible sole member in the shape of

the sole of a woman's shoe, said sole member being integrally formed with a sole shank portion, a heel breasting member integrally formed with said sole shank portion and extending outwardly therefrom, said upper member being attached to said sole member and said sole shank portion to provide a pocket therewith for receiving a woman's shoe, said upper member having an opening at the heel end for receiving in outwardly projecting relation thereto the heel of a woman's shoe fitted in said pocket, a flexible heel member secured to the heel end of said upper member and projecting outwardly at the back of said heel opening, means for securing said heel member in conforming relation against the back and sides of the heel of a woman's shoe, means for securing said breasting member against the inside front wall of the heel of a woman's shoe, and means for securing a marginal portion about the foot opening of said upper member over the top of a shoe upper foot opening rim and against the inner marginal portion at the rim of the shoe.

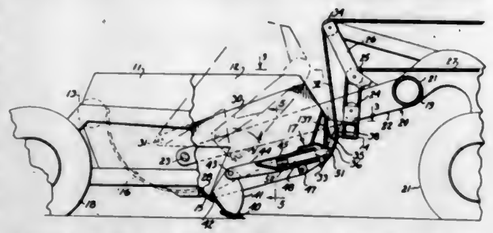
3,221,422
SLIPPER
William Lemeshnik, White Plains, N.Y., assignor to Jo-Nan Enterprises Inc., New York, N.Y., a corporation of New York
Filed Mar. 21, 1963, Ser. No. 266,953
2 Claims. (Cl. 36—9)



1. A slipper comprising an upper, an insole, said insole comprising an inner fabric layer, a cushion layer and an outer water impervious material layer, a first tape overlapping peripheral portion of said upper and insole, stitching extending through said tape, upper and insole peripheral portions thereby retaining the same in assembled relationship, an outsole having an outermost layer and an innermost layer, said innermost layer being made of a resilient cushioning material, a second tape corresponding to the material of the outermost layer of said outsole, said second tape overlapping peripheral portions of said layer of said outsole, second stitching extending through said second tape and outsole thereby retaining the same in assembled relationship, and a third stitching extending through said tapes and the overlapped peripheral portions of the insole and outsole thereby binding the same together.

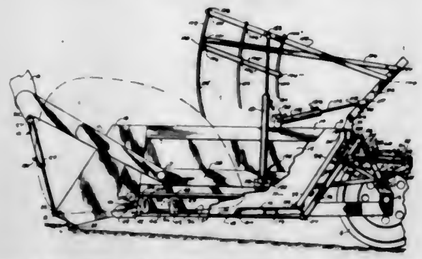
3,221,423
EARTH SCRAPER
Gordon E. Daniels, 7600 Twining Drive, Knoxville, Tenn.
Filed Feb. 28, 1963, Ser. No. 261,708
5 Claims. (Cl. 37—126)

1. An earth scraper comprising the combination with a scraper body adapted to be moved along the ground and comprising a receptacle; and a scraper blade adapted to direct material scraped thereby into said receptacle during movement of said body; of an apron mounted in front of said receptacle, a second scraper blade supported by said apron, said apron having an opening therein, means on said apron for moving said second blade relative to said apron from a position below said first blade wherein said second blade is effective to direct material through said opening and into said receptacle to a position wherein said second blade at least partly closes said



opening, and means for bodily moving said apron away from said first blade whereby to render said first blade effective to direct material into said receptacle.

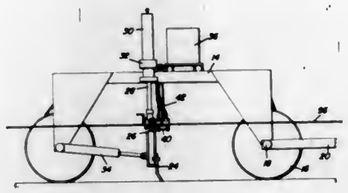
3,221,424
RAKE-TYPE LOADER FOR SCRAPER
James E. Hancock, Lubbock, Tex., assignor to Hancock Manufacturing Company, Lubbock, Tex., a corporation of Texas
Filed May 15, 1963, Ser. No. 280,569
12 Claims. (Cl. 37—129)



1. Apparatus for handling dirt comprising:
(a) a mobile frame,
(b) a dirt collecting box having side walls and a bottom, and a door opening in said bottom,
(c) scraper means for loosening said dirt for movement into the dirt collecting box as the apparatus is moved forwardly,
(d) means mounted on the dirt collecting box for movement of the dirt into said box as it is loosened by the scraper means, said means including a frame pivotally mounted on the rear portion of said box and having pairs of forwardly extending arms on each side of said box and having one of their ends pivotally attached to said frame in spaced relation, a raking element on the forward ends of said pairs of arms and extensible and retractable means connected to said box and to said frame and to said side walls of the box and to a pair of said arms for movement of the raking element in an upwardly and forwardly direction and in a downwardly and rearwardly direction.

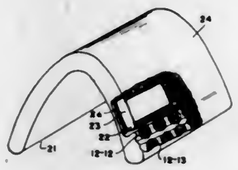
3,221,425
VALVE CONTROL
Tom Thomas, 1903 Pasadena St., Houston, Tex.
Filed July 31, 1962, Ser. No. 213,672
13 Claims. (Cl. 37—143)

1. A valve control adapted for use on an earth working machine of the type having an elevatable tool and a fluid pressure mechanism for controlling the vertical position of the tool, said valve control comprising an actuating rod defining motion transmitting means and adapted to be movably supported from said machine and to lightly engage a reference line disposed in predetermined positions, a control valve adapted to be mounted on said machine and having an axially reciprocal and rotatable actuating spool, means for effecting rotation of said spool, connecting means connected to said rod and engaged with the spool and including means operable in response to rotation of said spool for axially reciprocating the spool in response to movement of said motion transmitting means effected by its engagement with the reference line, one end of said spool being provided with a drum mount-



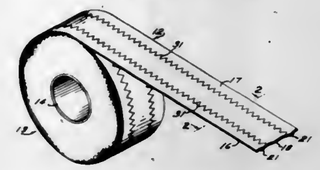
ed for rotation therewith and including inner and outer surfaces, said connecting means including a pair of wheels engaging the inner and outer surfaces of the drum respectively, means mounting said wheels for orienting the axes of rotation thereof parallel to or in angular relation to the axis of rotation of the drum and against displacement axially of the axis of rotation of said spool whereby the drum and spool will be moved axially when the axes of rotation of the wheels are angularly disposed in relation to the axis of rotation of the drum.

3,221,426
SPRING PADDED IRONING DEVICES
Harold O. Zeidler, 10 Brevoort Lane, Rye, N.Y.
Filed May 26, 1965, Ser. No. 458,985
4 Claims. (Cl. 38—66)



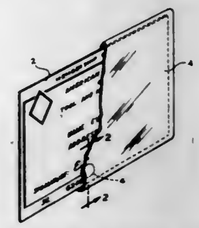
1. A pressing device formed of a flat to convex, essentially two dimensional base member having an array, in rows and columns, of coil springs of substantially equal height attached thereto to provide an upper surface, substantially matching the shape of the base member, of separately compressible, closely spaced coil springs, each compressible toward the base member,
an area intermediate the ends of said base member corresponding to the width of at least one row and the length of less than one row of springs from which said coil springs have been omitted,
a stiff mesh material extending over the area covered by said springs but being slotted in the area where said springs are omitted so as to cover only the edges of said area, and
an elastomeric pad mounted in the area from which said coil springs are omitted, so that the upper surface thereof is approximately level with the upper surfaces of the adjacent springs, the width and length of said pad being proportioned to extend underneath the edge portions of the slot of said mesh material.

3,221,427
SELF-DESTROYING LABEL
Irving Kaplan, El Cerrito, Calif., assignor to Trig-A-Tape Corp., Berkeley, Calif., a corporation of Delaware
Filed Apr. 10, 1962, Ser. No. 186,526
2 Claims. (Cl. 40—2)



1. A self-destroying label of the character described including a generally longitudinally extending base sheet, a layer of pressure sensitive adhesive on the lower surface of said sheet, a narrow non-adhesive strip adhesively secured to said layer in parallel spaced relation to each longitudinal edge of said sheet, said sheet having weakening means therethrough extending substantially continuously along the length of said strip with portions of said means being disposed at different angular relationships to a longitudinal edge thereof, said weakening means comprising a generally zig-zag cut through the sheet along the length thereof and with the lateral outermost portions of the cut being spaced inwardly of said strips.

3,221,428
TRANSPARENT ENCASEMENT FOR DOCUMENTS AND THE LIKE
Wanda B. Fischler, Windsor, and Marilyn M. Mann, Manchester, Conn., assignors to Robert M. Fischler, Windsor, Conn., and Irving Mann, Manchester, Conn.
Filed Mar. 19, 1963, Ser. No. 266,236
14 Claims. (Cl. 40—2.2)

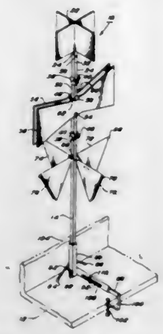


1. A sealed document assembly adapted to indicate tampering therewith comprising a document with visible indicia thereon; an encasement of transparent synthetic plastic material extending about said document; and chemical reagent means within said encasement substantially inert to said document during sealed assembly and reactive upon rupturing of said encasement to evidence tampering.

3,221,429
DISPLAY APPARATUS
Alan L. Reuben, Wynnewood, Pa., and Anthony M. Russo, Palmyra, and Joseph Forte, Riverton, N.J., assignors to Promotional Advertising Associates, Inc., Philadelphia, Pa., a corporation of Pennsylvania
Filed Aug. 26, 1963, Ser. No. 304,524
8 Claims. (Cl. 40—10)

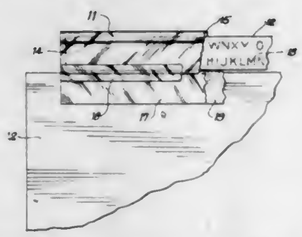
1. Display apparatus comprising a rod adapted to mount a plurality of display card holders, a support for said rod, means pivotly securing one end of said rod to one end of said support, said last-mentioned means being additionally operative to lock said rod in a predetermined angular position with respect to said support, a

clamp fixed to a second end of said support opposite from said one end of said support, said clamp extending at an angle to said support substantially opposite from the



angle of said rod with respect to said support, said support having telescoping parts to adjust the distance between said support one end and said support second end.

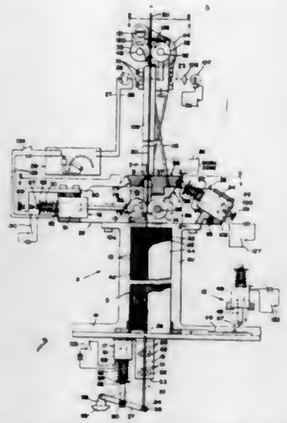
3,221,430
INSERT-RECEIVING INDEX TABS
Walter F. Cunningham, Des Plaines, Ill., assignor to Superior-Tabbies, Inc., Chicago, Ill., a corporation of Illinois
Filed Sept. 25, 1963, Ser. No. 311,540
2 Claims. (Cl. 40—23)



1. An index tab, comprising a body having a longitudinally extending wing portion depending from one side thereof, a second wing portion extending longitudinally of the other side of said body, hinge means attaching said second wing portion to said body to facilitate folding of said second wing portion upwardly into a position substantially flat against said body, a tab-attaching strip having pressure-sensitive adhesive on both surfaces thereof with one of said surfaces adhered to the adjacent exposed surfaces of both of said wing portions when said second wing portion is folded upwardly against said body, and a guard strip of release paper adhered to the opposite surface of said tab-attaching strip while in a substantially planar position to maintain said second wing portion in folded position against said tab body.

3,221,431
STRIP DRIVE AND POSITIONING MECHANISM
Fred S. Stauffer, Saratoga, and Claris L. Donelson, San Jose, Calif., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 29, 1961, Ser. No. 163,207
21 Claims. (Cl. 40—106.1)

1. In a data access mechanism, film strip drive and positioning mechanism comprising a single clocking strip, a plurality of separate, individual, data bearing film strips, mechanism for placing the clocking strip in controlled, driving relation with a selected one of the film strips, a work zone mounted in the path of movement of a selected



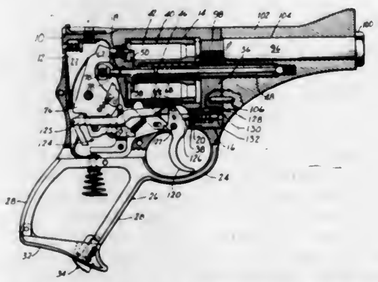
one of the film strips, and means controlled by the clocking strip for driving the clocking strip and a selected one of the film strips to position a selected portion of such selected film strip in register with the work zone.

3,221,432
ILLUMINATED SIGN
Bert J. Gold, Long Beach, N.Y.
(180 W. 58th St., New York, N.Y.)
Filed Feb. 20, 1963, Ser. No. 259,920
2 Claims. (Cl. 40—130)



1. An insulated sign comprising:
(a) a frame member;
(b) a plurality of elongated, non-conductive casings each having a V-shaped bottom and two spaced side walls terminating in longitudinally extending ends, each of said casings being fixed to said frame in parallel relationship with each other to provide a plurality of elongated slots spaced from each other by a constant predetermined distance, said V-shaped bottom defining a base groove extending along the inner surface of said casing in a direction substantially parallel to said slot;
(c) closing means for each of said casings comprising:
(1) a flange portion extending from the end of each of the side walls of said casing along the length thereof and partially across said elongated slot with each of the side walls intersecting its respective flange portion internally of said casing along a line parallel to said base groove, and
(2) an elongated flexible sealing member attached to each of said flange portions along its length and normally closing said slot;
(d) a plurality of elongated female, V-shaped conductors each having a base and two diverging sides extending therefrom and terminating in longitudinally extending free edges, each of said conductors being positioned in one of said casings with each longitudinal free edge of the sides of each conductor engaging its respective casing along one of said lines formed by the intersection of said walls with said flange portions and with the base of the conductor disposed within the base groove on the bottom of said casing so as to restrain movement of said conductor within said casing;
(e) means for connecting alternate conductors to opposite terminals of a source of electricity;
(f) a plurality of characters each including a non-conductive support;
(g) a plurality of lighting elements mounted thereon;
(h) a pair of conductive elements connecting the lighting elements of each character together electrically;
(i) a first male electrical terminal projecting from one of the condsctive elements of eahh character removably and slidably positioned within the slot of one of said casings in electrical contact with its condrctor; and
(j) a second male electrical terminal spaced from said first terminal by a distance equal to said predetermined distance and projecting from the other conductive element of each character removably and slidably positioned within the slot of an adjacent casing in electrical contact with its conductor.

3,221,433
FIREARM CRANE AND TRIGGER CONSTRUCTION
Karl R. Lewis, 54 Folly Brook Blvd., Wethersfield, Conn.
Original application Nov. 23, 1960, Ser. No. 71,339, now Patent No. 3,163,951, dated Jan. 5, 1965. Divided and this application Nov. 13, 1964, Ser. No. 410,965
5 Claims. (Cl. 42—62)



1. The combination in a revolver type firearm of: a frame having a mechanism cavity, a cylinder recess, a crane recess, and a longitudinal bore extending between said mechanism cavity and said crane recess; a crane having a pivot portion loosely received by said longitudinal frame bore for pivotally supporting said crane for swinging movement into and out of said crane recess, said pivot portion of the crane having a longitudinal bore therein which bore communicates with said mechanism cavity; a cylinder attached to said crane and swingable therewith into and out of said cylinder recess; a trigger having an upper portion located in said mechanism cavity rearwardly of said frame bore and a lower portion extending out of said cavity and adapted for engagement with a finger of a person holding the firearm, said trigger being pivotally movable relative to said frame; a member pivotally connected to said trigger and extending forwardly therefrom into said crane bore; and spring means housed in said crane bore which spring means engages said member and biases the same so as to oppose rearward movement of the lower trigger portion and which serves to return said lower trigger portion to a forward position after such rearward movement.

3,221,434
FISHING RIG
Harry O. Moore, Charlotte, N.C., assignor of fifty percent to Walter F. McCall, Charlotte, N.C.
Filed May 6, 1964, Ser. No. 365,374
11 Claims. (Cl. 43—42.02)



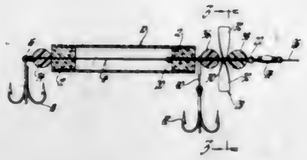
1. A fishing rig adapted to be used in connection with a retrievable fishing line, comprising:
(a) a lure;
(b) a body member having eyelet means thereon;
(c) elongate resilient means connected at its respective opposite ends to said body member and said lure for resiliently maintaining said lure a spaced distance outwardly away from said body member;
(d) elongate leader means adapted to be connected at its inner end to the fishing line and connected at its outer end to said lure and passing loosely through said eyelet means of said body member for moving said lure, upon retrieving of said line and against the biasing force of said resilient means, toward said body member; and
(e) the resiliency of said resilient means being such as to return said lure outwardly away from said body member upon slackening of said leader means following retrieving of the fishing line.

3,221,435
FISHING LURE
John R. St. Amant, 15 Gage St., Pontiac, Mich.
Filed Jan. 30, 1964, Ser. No. 341,303
15 Claims. (Cl. 43—42.06)



4. A fishing lure including a generally symmetrical spoon shaped body, said body comprising a centrally disposed upwardly directed and elongated impression extending longitudinally and at least partially along the length thereof, and arcuately upwardly directed side walls extending laterally outwardly directly from said impression and being substantially co-extensive therewith, said impression providing a water flow trough to maintain axial movement of said lure when pulled through the water.

3,221,436
FISHING LURE
Julius A. Mikus, 752 Elmsford, Clawson, Mich.
Filed Jan. 30, 1964, Ser. No. 341,174
13 Claims. (Cl. 43—42.17)



8. A fishing lure comprising:
a resilient body member adapted to be secured to a fishing line and having a hook secured thereto;
a rotatable spinner movably secured to said body member, said spinner being rotatable relative to said body member in one position as said lure is pulled through the water in one direction;
and manually shiftable means for fixing said spinner relative to said body member in another position to cause rotation of said body member therewith as said lure is pulled through the water in said one direction.

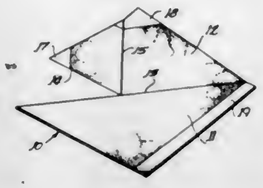
3,221,437
FISH HOOK WITH WEED GUARD
David A. De Long, Cleveland, Ohio, assignor to De Long Lures Inc., a corporation of Ohio
Filed Oct. 9, 1963, Ser. No. 315,059
3 Claims. (Cl. 43—43.4)



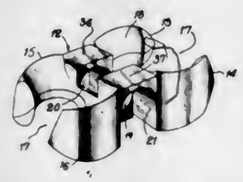
1. A fish hook with weed guard comprising a hook having an elongated shank with a hook bend at one end terminating in a barb and point and with a circular eye at the other end, a weed guard consisting of at least one stiff filament passing through said eye generally parallel to the axis of the eye and extending away from said eye at an acute angle to said shank, a hollow rivet snugly fitting the inside diameter of said eye and having a central generally cylindrical portion tightly holding said filament there between said rivet and said eye in a plane passing approximately through the central axis of said rivet, opposite ends of said rivet being upset against opposite faces of said eye, whereby said filament is held against movement endwise of its length relative to said eye and held also against rotational movement relative to said eye, and said filament so assembled being of a length to lie sufficiently close to the end of said barb and point to fend off weeds.

3,221,438
RODENT REPELLING DEVICE
Phillip H. Huyssen, 61 S. 6th Ave., La Grange, Ill.
Filed July 12, 1963, Ser. No. 294,682
3 Claims. (Cl. 43—124)

1. A rodent repelling device comprising a rectangular sheet of foldable material coated on one side thereof with a tacky pressure sensitive adhesive capable of adhering to the fur of a rodent, said sheet having a single straight diagonally-extending horizontal fold line dividing the same into a generally triangular base portion and a generally triangular upstanding portion when said sheet is folded therealong, said adhesive coating being disposed on the upper surface of said base portion and on one side of said upstanding portion when said sheet is folded and placed upon a supporting surface with its base resting thereon, said sheet having a slit extending diagonally and in longitudinal alignment with said fold line and terminating intermediiate opposite corners of said sheet, said upstanding portion being provided with a vertical fold line intersecting said slit to define a flap portion foldable outwardly in a direction opposite to said base portion for stabilizing said device, said adhesive-coated surface of said base being at least as large as the area of said coated upstanding portion directly above said horizontal fold line.



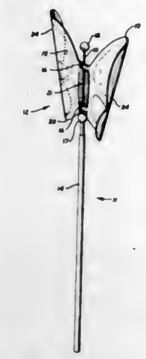
3,221,439
CONNECTOR FOR TOY ROD CONSTRUCTION ELEMENTS
Leonard W. Schaper, West Orange, N.J., assignor to Orange Products, Inc., Orange, N.J., a corporation of New Jersey
Filed Apr. 27, 1962, Ser. No. 190,668
3 Claims. (Cl. 46—29)



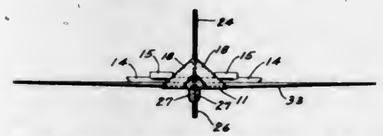
1. A connector for toy assemblies which comprises a molded element having at opposite ends means including a pair of claws curved to grasp and hold a pair of parallel toy logs and having between said pairs of claws a series of at least three contiguous recesses extending alternately from opposite sides of said element in directions parallel to the logs grasped by said claws and having respective bottom semi-cylindrical surfaces about a common central axis normal to a plane coincident with axes of said logs, said recesses together being means forming an unobstructed passage for receiving and holding a cylindrical rod extending normal to the said plane, the open sides of said recesses opposite to respective ones of said surfaces defining passage means to permit withdrawal of a forming die in a direction parallel to the logs.

3,221,440
WIND OPERATED TOY
Peter P. Gutierrez, 3101 Fresno St., Santa Clara, Calif.
Filed Jan. 14, 1963, Ser. No. 251,075
4 Claims. (Cl. 46—58)

1. A wind operated toy, comprising a handle, a shaft mounted on said handle, a unit mounted for rotation on said shaft, and wings on said unit responsive to wind currents for rotating the unit, said wings being bent at the ends thereof to form jointly and with said unit a reverse curve resembling an elongated S, said wings also being tapered so that the edge on the handle side is substantially shorter than the edge on the side opposite the handle side.



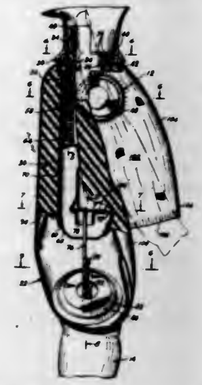
3,221,441
TOY AIRCRAFT AND BLANK
William J. Shapiro, 658 Montgomery St., Brooklyn 25, N.Y.
Filed Feb. 23, 1960, Ser. No. 10,481
17 Claims. (Cl. 46—79)



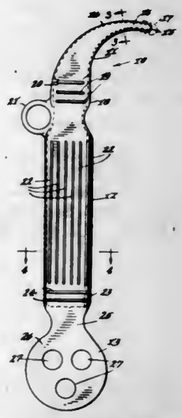
13. A toy aircraft fuselage comprising a horizontal fuselage portion having a forward end and a rear end and a central longitudinal axis, a panel integral at a longitudinally extending first edge of the horizontal fuselage portion on each side thereof and spaced laterally from the central longitudinal axis, the panels being at the forward end of the horizontal fuselage portion, each panel having a longitudinally extending second edge spaced laterally outwardly from the first edge with respect to the central axis of the horizontal fuselage portion, a vertical fuselage element integral with the second edge of each panel on an integral hinge connection and extending generally vertically with respect to and toward the horizontal fuselage portion, each vertical fuselage element having a longitudinal length at least as long as the second edge of the panel, each panel having a lateral dimension locating the second edge vertically with respect to the horizontal fuselage portion, the vertical fuselage elements having abutting edges which edges abut the horizontal fuselage portion, the panels and the vertical fuselage elements forming forward hoods, the vertical fuselage elements giving vertical rigidity to the horizontal fuselage portion and the horizontal fuselage portion giving lateral rigidity to the vertical fuselage elements, and means carried by the fuselage to receive a flight member.

3,221,442
ARTICULATED DOLL
Anne G. Estern and Nell C. Estern, both of 82 Remsen St., Brooklyn, N.Y.
Filed Apr. 18, 1963, Ser. No. 273,943
6 Claims. (Cl. 46—154)

3. A doll comprising in combination: a torso including a top section and a base section, connecting means intermediate said sections and interconnecting both sections with one another, said connecting means comprising a ball member and spring means interconnecting said ball member with said top section, said base section and ball member having interengaging surfaces defining a substantially swivel joint, and said connecting means further including biasing means for urging said ball member relatively towards said base section; a pair of arms; means for coupling said arms to said torso; a pair of legs extending from said base section, said connecting means also including means for coupling said legs to said base section; a head; means for coupling said head to said top section; a sack extending substantially over said torso and being coupled with top section and base section; said sack including means for providing access for a hand; and means associated with said torso for manipulating at least one body part of the doll by said hand in the manner of a puppet.



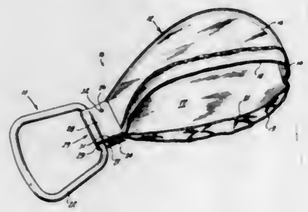
3,221,443
MUSICAL INSTRUMENT
Daniel Ray Goddard, 715 Dewey, East Liverpool, Ohio
Filed Jan. 28, 1963, Ser. No. 254,832
1 Claim. (Cl. 46—174)



In a musical instrument toy the combination of an elastic container, said container including an upper arcuate-shaped neck portion, a longitudinal, generally straight middle section adjacent one end of said neck portion and a lower flat section adjacent the opposite end of said middle section, said arcuate portion and said middle section enclosing a hollow chamber, the upper terminal end of said arcuate neck portion having an opening communicating with said chamber, a thimble frictionally

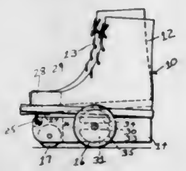
secured to said terminal end of said neck portion and closing said opening, said thimble comprising a cylindrical sleeve having a hemispherical portion at one end, a relatively small opening through said hemispherical portion and said neck portion having a plurality of transversely extending raised ridges on its outer side, said middle section having a plurality of longitudinally extending, parallel, equally spaced apart ridges extending outwardly on its outer side, said flat lower section being of generally circular configuration and having a plurality of islands extending beyond the flat surface of said flat lower section to provide grasping means between the fingers of the operator, the upper portion of said lower section being of generally narrowed configuration, a pair of transversely extending, raised ridges adjacent the lower ends of said longitudinally extending ridges of said middle section and a ring-shaped extension extending in a lateral direction between said neck portion and said middle section.

3,221,444
CHILD'S NOISE PRODUCING PLACATER
Siebolt Hettinga, 734 Washington St., Pella, Iowa
Filed Sept. 4, 1962, Ser. No. 221,200
6 Claims. (Cl. 46—175)



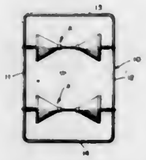
2. A child's placater comprising:
(a) resilient reinforcing means, and
(b) surface layers of a deformable means which on being deformed has the characteristics of producing a crinkling and crunching sound, said layers being positioned adjacent but movable relative to said reinforcing means to sandwich said reinforcing means therebetween and cover the reinforcing means whereby the resilient reinforcing means return the deformed layers into their initial positions.

3,221,445
PULL TOY
William Riva, 116 E. 95th St., New York, N.Y.
Filed June 18, 1962, Ser. No. 203,292
6 Claims. (Cl. 46—204)



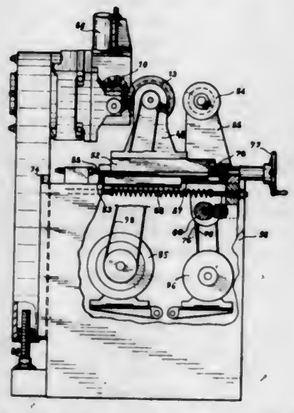
1. A pull toy adapted for translation over a supporting surface and comprising, in combination, a base member, an axle rotatably mounted on the base member, a pair of wheels mounted in a spaced-apart relation on said axle to support the base member spaced above said supporting surface and in rolling engagement therewith, a pair of elongated supports arranged in side by side relation above said base member, a pivot means fixed against translational movement independently mounting said supports at one end thereof on the base member, the pivot means permitting the opposite ends of said supports to rest by gravity on the base member, and elevator means for alternately lifting each of said supports periodically out of their respective positions of rest, said elevator means being acutated by the rotation of the wheels whereby said supports are slowly lifted and rapidly dropped due to gravity.

3,221,446
ELASTIC BAND POWDERED ROLLING TOY
Norman A. Keck, 707 4th Ave., Joliet, Ill.
Filed Dec. 16, 1963, Ser. No. 330,894
7 Claims. (Cl. 46—206)



3. In a toy of the type which when rolled in one direction will reverse itself and roll in the opposite direction, the combination of a frame having spaced side members, a pair of wheels each in the general shape of a hollow cone, said wheels being spaced apart and disposed between said side members with the larger end of each wheel facing outwardly toward one of said side members, and means for connecting said wheels axially between said side members, said means including a length of elastic band extending between the smaller end of one of said wheels and one of said side members and a length of elastic band extending between the smaller end of the other of said wheels and the other of said side members.

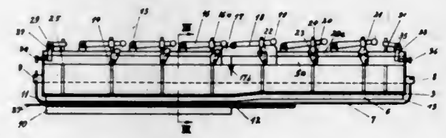
3,221,447
DEVICE FOR GRINDING AND RESHARPENING GEAR-CUTTING HOBS
Felix Riebel, Nymphenburgerstrasse 81, Munich, Germany
Filed Mar. 27, 1963, Ser. No. 268,400
Claims priority, application Germany, Mar. 29, 1962, H 45,312
13 Claims. (Cl. 51—98)



13. A device for grinding and resharpening gear-cutting hobs in a dividing process by means of profiled grinding wheels, the hobs having a plurality of cutting teeth

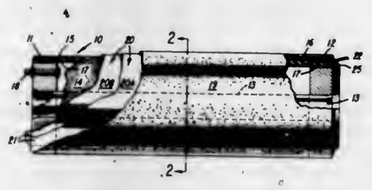
arranged in a helical pattern around the hob periphery in at least two substantially adjacent rows and tooth backs forming concave surfaces of rotation with respect to the axis of the hob, comprising support means for a hob to be machined, support means including a movable attachment for rotatably supporting a profiled grinding wheel, the diameter of said wheel being approximately twice that of said hob, feed means for producing plunge feed between said hob and said wheel, and means for journaling said wheel and said hob with their respective axes arranged substantially parallel to one another.

3,221,448
BELT GRINDING MACHINE
Karl Heesemann, 54 Friedenstrasse, Rehme Via Bad Oeynhausen, Germany
Filed July 11, 1961, Ser. No. 123,305
Claims priority, application Germany, Oct. 22, 1960, H 40,748
9 Claims. (Cl. 51—141)



1. A belt grinding machine comprising an endless grinding belt, a pressure beam arranged for pressing the grinding belt toward a workpiece, said workpiece being moved through the machine transversely to the direction of move ment of the grinding belt, said pressure beam being extended over the entire grinding width of the machine, a sliding adjusting device movable parallel to the pressure beam and adjacent thereto, a plurality of pairs of levers movably mounted on the pressure beam and alternately contacted by said sliding adjusting device and a plurality of supporting elements connected to said pairs of levers and arranged for supporting the effective pressure surface of said pressure beam and varying the height of said pressure surface as the levers are contacted by the sliding adjusting device.

3,221,449
SANDPAPER COT
John H. Lewis, Archdale, and John A. Lewis, Trinity, N.C., assignors to Archdale Belt Company, Inc., Archdale, N.C., a corporation of North Carolina
Filed Aug. 9, 1963, Ser. No. 301,085
3 Claims. (Cl. 51—373)



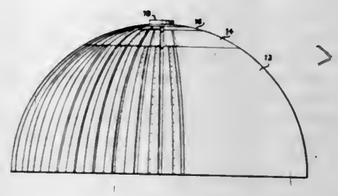
3. In combination with a deformable air-inflatable drum for receiving an encircling abrasive-covered member, said drum having spaced apart end flanges, a supporting shaft and an inflatable bladder supported on said flanges, a seamless knit stretchable sleeve covering said inflatable bladder, and an abrasive-covered member encircling said knit sleeve covering said bladder.

3,221,450
THEATRE INSTALLATION
Raimund Doblhoff, 16a Siebentischstrasse, Augsburg, Germany
Filed July 24, 1959, Ser. No. 829,448
Claims priority, application Germany, July 26, 1958, D 28,622
4 Claims. (Cl. 52—10)



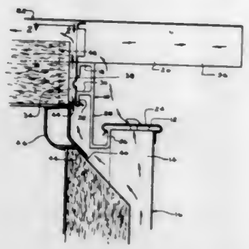
4. An auditorium arrangement for use in a building having a floor, said auditorium arrangement comprising, in combination, a first carriage adapted to move along a floor; a second carriage; a third carriage; first mounting means movably mounting said second carriage on said first carriage and second mounting means movably mounting said third carriage on said second carriage, one of said mounting means supporting the mounted carriage for turning movement about a vertical axis relative to the carriage on which this mounted carriage is mounted and the other of said mounting means supporting the carriage mounted thereby for movement in a horizontal plane relative to the carriage on which this latter mounted carriage is mounted; and an auditorium including a plurality of seats mounted on said third carriage movable together with the same.

3,221,451
BUILDING WALL STRUCTURE
Owen M. Stolz, 825 W. Centerville Road, Dayton 59, Ohio
Filed Nov. 2, 1960, Ser. No. 108,965
4 Claims. (Cl. 52—80)



1. In a generally spherically shaped wall structure, a plurality of arched sheet metal panels secured together in tiers, adjacent panels in a tier overlapping and adjacent tiers overlapping, the panels of each tier comprising fragments of a generally spherical surface and tapering from a wide base at one margin of the tier to a narrower top at the opposite margin of the tier, the width of the bases of the panels in one tier being substantially an even numbered integral multiple of the width of the tops of the panels in the adjacent tier which is disposed in overlapping relation to such bases, each panel having a central reinforcing groove formed integrally therewith and extending from its base to its top, grooves in the panels in one tier nesting with grooves in the panels of the adjacent tier, the construction and arrangement being such that the portions of overlap between adjacent panels of one tier will be staggered relative to the portions of overlap between adjacent panels of the adjacent tier.

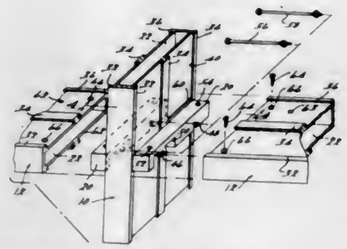
3,221,452
FROST BARRIER AND VENT
Resta S. Gregoire, Dillsburg, Pa., assignor to Gregoire Engineering and Development Company, a corporation of Maryland
Filed May 24, 1963, Ser. No. 282,896
5 Claims. (Cl. 52—95)



1. A side and cover hollow panel wall corner structure comprising
side and cover hollow panel walls each having inner and outer sides with hollow spaces forming ventilating passages between them,
a cover support extrusion for said corner structure having a base flange mounted over the upper edge of the outer side of the side panel wall, and an upper flange supporting the cover panel wall at the outer side thereof,
said base flange being perforated over the hollow space portions in said outer side of the side panel wall,
said support extrusion having a web extending downwardly from the inner edge of its base flange and then being turned upwardly and extending to the outer edge of said upper flange,
a perforated clip fastened over said base flange and having a ledge extending over its outer edge holding the top of said outer side of the side panel wall in place under said base flange against said downwardly extending portion of said web,
said web having a channel flange extending from its side,
a spring clip having an upper plate portion attached to said outer side of the cover panel wall and having a hooked lower edge sprung over the lower edge of said channel flange, thereby fixing the cover panel wall over said upper flange,
the inner sides of said side and cover walls being terminated short of their respective outer sides and of said support extrusion so that their edges are closely spaced from each other and from said support extrusion at the corner of the structure, and
a resilient sealing strip mounted between said closely spaced inner side edges and spaced from said support extrusion to form a passage with the inside of said support extrusion extending between the ventilating passages of the side and cover panel walls.

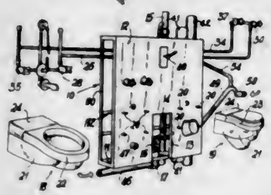
3,221,453
WALL SYSTEM
Harold E. Lietaert, 712 Washington St., Monroe, Mich.
Filed June 21, 1962, Ser. No. 204,100
2 Claims. (Cl. 52—209)

1. A wall system comprising: a plurality of horizontally and vertically disposed hollow core frame members defining framework openings, each of said frame members having attaching surfaces; connecting means securing said frame members together, said wall system having an inside portion and an outside portion; panel means positioned within the openings in the frame work; means maintaining said panel members in position; weep holes extending from the upper surface of each of said horizontally disposed frame members to the hollow core thereof along the inside portion of said wall system; means limiting fluid communication between the hollow core of each horizontally disposed frame member and the attaching surface of each adjacent vertically disposed frame member to only the outside portion of said wall system, said last-mentioned means including sealing means extending between said hollow core of each of said horizontally disposed frame members and the attaching surface of each



of said adjacent vertically disposed frame members and between the end of the upper surface of each of said horizontally disposed frame members and the attaching surface of each of said adjacent vertically disposed frame members on the inside portion of the wall system whereby any liquid which may collect on the horizontally arranged frame members on the inside portion of said wall system is communicated down the outside portion of the wall system by said adjacent vertically arranged frame members.

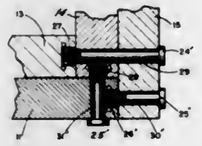
3,221,454
PRE-FABRICATED UTILITY BUILDING ASSEMBLY
Giulio Togni, 31 Via Aurelio Togni, Milan, Italy
Filed Jan. 30, 1961, Ser. No. 85,904
2 Claims. (Cl. 52—220)



1. A prefabricated utility building assembly, comprising, in combination, an upright self supporting skeleton frame structure comprising a pair of rectangular main frames connected spaced from each other in substantially parallel relationship, each of said main frames being formed by a pair of upright beams and a pair of transverse beams extending between and respectively connected to opposite ends of said upright beams, at least one of said main frames further including at least one additional transverse beam located between said pair of transverse beams and connected to said upright beams; at least one substantially upright main water supply conduit extending between said main frames and being fastened thereto; a plurality of secondary supply conduits communicating with said main water supply conduit and extending transversely through the space between said main frames, at least one of said secondary supply conduits having an end portion projecting laterally beyond said frame structure; at least one outlet means and cock means for controlling the same and connected to said end portion of said one secondary supply conduit and located outside said frame structure; at least one outlet means and cock

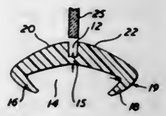
means for controlling the same and connected to another one of said secondary supply conduits and located within the area defined by said one main frame; at least one pair of screw bolts welded to said additional transverse beam and projecting forwardly therefrom, said pair of screw bolts being arranged substantially equally spaced from a vertical line passing through said last mentioned outlet means for fastening a bowl coordinated with said outlet means to said frame structure; at least one substantially upright main drain duct extending between said main frames and being fastened thereto; and a plurality of secondary drain ducts connected to and communicating with said main duct and having open ends in substantially vertical alignment with said outlet means, whereby a completely prefabricated assembly can be easily adapted to varying specifications.

3,221,455
MODULAR WALL CONSTRUCTION
Tony Car, 26500 Hass Ave., Dearborn, Mich.; Alfred O. Machnik, 6386 Curtis Road, Plymouth, Mich.; and Michael J. Milkovich, 15716 Rose Drive, and Ante Ivosic, 15990 Pleasant St., both of Allen Park, Mich.
Filed Apr. 22, 1963, Ser. No. 274,589
1 Claim. (Cl. 52—285)



A wall comprising
a first wall section,
a second wall section,
a third wall section,
and a fourth wall section,
said first section and said second section being disposed in side by side relation,
said third wall section and said fourth wall section being disposed in side by side relation to each other,
projection means on said first section engaging projection means on said second section holding a part of said sections between the ends thereof in spaced relation to each other and defining spaces therebetween,
projection means on said third wall section between the ends engaging projection means on said fourth wall section between its ends,
one side of said first section adjacent an end resting on one side of said second section adjacent its end,
one side of said third section adjacent its end resting on a side of said fourth section,
said first section and said second section being disposed at right angles to said third section and said fourth section,
an end of said third section engaging a side of said first section,
an end of said fourth section engaging a side of said second section,
an end of said second section engaging a side of said third section, and
a first bolt, a second bolt, and a third bolt,
said first bolt extending through said first section and through said second section and threadably engaging said fourth section,
said second bolt extending through said first section and threadably engaging said third section,
said third bolt extending through said third section and threadably engaging said second section.

3,221,456
PANE SUPPORT AND SEAL
Gilbert O. Capel, Toronto, Ontario, Canada, assignor, by mesne assignments, to Dor-Seal Limited, Toronto, Ontario, Canada
Filed May 27, 1960, Ser. No. 32,326
2 Claims. (Cl. 52—400)

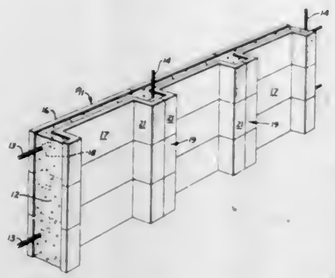


1. A moulding for supporting and sealing a window in an opening in a door or the like comprising a unitary strip of resilient material, said strip being of substantially constant cross section along its length, a first channel extending longitudinally of a first surface of said strip adapted to receive therein a sheet of glass, a second channel extending longitudinally of a second surface of said strip opposite from said first surface to form a pair of lips, said material being resilient as aforesaid whereby said lips can be flexed to embrace the marginal portions of an opening in a door or the like in use, said first channel being substantially narrower than said second channel, the thickness of the cross section between the bottom of said first channel and the bottom of said second channel of said strip being substantially smaller than the cross-sectional thickness of said strip on each side of said first channel from said first channel to the outer edge thereof, whereby to form a pair of substantially rigid glass-engaging jaws adapted to grip a glass section and open and close about a jaw axis lying in said substantially smaller cross-section between the bottom of said first channel and the bottom of said second channel, said jaw axis extending longitudinally of said strip, said cross-sectional thickness of said strip on each side of said first channel being substantially smaller than the distance from said first channel to the outer edge of said strip, said lips each extending towards each other to form said second channel wider at its bottom than at its open side opposite said bottom, and the cross sectional thickness of said strip at said lips being relatively large when compared to the cross-sectional thickness between the bottoms of said channels whereby laterally directed force transmitted to said lips by the marginal edge of an opening in a door or the like is transmitted to said glass engaging jaws to close them about said jaw axis.

3,221,457
MONOLITHIC WALL SLAB AND METHOD OF CONSTRUCTING SAME
Ernest Vevoda, 100 Broderick St., San Francisco, Calif.
Filed June 25, 1962, Ser. No. 205,044
3 Claims. (Cl. 52—438)

1. A wall slab, comprising a plurality of form members composed of concrete material and having a rectangular first wall and a second wall, said walls being of substantially uniform height and held in parallel spaced relation to said first wall by a plurality of transversely extending crosswalls, said form members being positioned in rectilinear relation to each other in aligned stacks and courses with the said first and second walls of each form

member in coplanar abutting relation to the corresponding first and second walls of the adjacent form members, said crosswalls being spaced inwardly from the adjoining ends of said form members so as to define therebetween vertical channels extending the height of the wall slab, the adjacent ends of said second walls being formed with generally L-shaped flanges, the ends of said L-shaped flanges abutting and cooperating with the ends of the L-shaped flanges of an adjacent form member, and the ends of said first wall abutting and cooperating with the ends of an adjacent first wall thereby defining with said abutting L-shaped flanges hollow vertical buttresses extending the height of the wall slab along each joint between said aligned stacks of form members and the adjacent stacks, said crosswalls of each form member terminating a spaced distance from an upper edge of the form member thereby defining horizontal channels extending

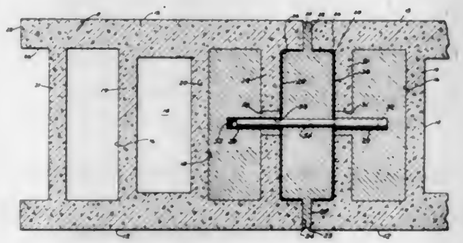


between said first and second walls along the length of the wall slab, said horizontal channels communicating with said vertical buttresses when concrete is poured therein, reinforcing members extending through said hollow vertical buttresses and said horizontal channels, and concrete material of a composition substantially the same as the concrete of which said form members are composed filling the hollow vertical buttresses and the space between said first and second walls so as to provide an integral and monolithic reinforced concrete slab.

3,221,458
SHEAR TRANSFER TIE

Joseph N. Lucas, Hammond, Ind., assignor to A A Wire Products Co., Chicago, Ill., a corporation of Illinois

Filed June 11, 1962, Ser. No. 201,608
4 Claims. (Cl. 52—438)

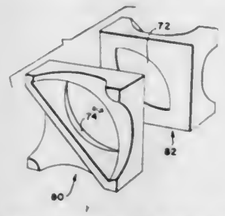


1. In a masonry wall,
a pair of hollow blocks,
each having transverse cross webs and hollow recesses therein,
the end of each block having a recess forming a cavity at the joint between the blocks, said cavity having at least one side thereof lined with a bond breaker means,
a shear transfer tie between said pair of blocks and extending across said joint,
said shear transfer tie comprising rigid telescopically interfitted dowel and cap members,
said dowel member comprising a shaped metal rod and
each said cap member comprising a tubular sleeve telescopically receiving a corresponding end of said rod,
grout filling said cavity and said joint thereby to securely embed said cap members in corresponding blocks,
said dowel and cap members being relatively axially movable to accommodate expansion and contraction in the wall while providing lateral stability between the blocks across said joint.

3,221,459
MOLDED BLOCKS AND LOAD-BEARING WALLS CONSTRUCTED THEREOF

Robert J. Hamory, San Juan, Puerto Rico

Original application July 6, 1960, Ser. No. 41,097. Divided and this application Nov. 13, 1962, Ser. No. 243,692
1 Claim. (Cl. 52—606)



A molded block member of rectangular perimeter having a substantially flat base and including a first triangular section lying on one side of the diagonal axis of the block and a second triangular section lying on the opposite side of the diagonal axis, said first triangular section having a saddle shape contoured surface opposite said base and sloping downwardly away from said diagonal axis forming a cornerpost opposite said diagonal axis in said first triangular section, said second triangular section having a saddle shape contoured surface opposite said base sloping downwardly from said diagonal axis and terminating in a corner post diagonally opposite said cornerpost of said first triangular section, said second triangular section further having a passage of substantially semi-elliptical shape extending therethrough in a plane substantially perpendicular to said one base to permit passage of light and air, said first section having a tapered recess extending angularly inwardly from said base thereof for a part of the distance to said contoured surface of said first triangular section, said recess being bounded by and having its shape defined by a surface in said first section tapering inwardly toward the diagonal axis of said block, said recess communicating with said passage of said second section whereby said first passage and said recess together define a composite passage which extends through said block in a plane extending at an angle to the plane of said base.

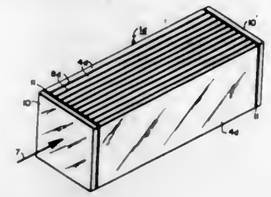
3,221,460
WINDOW CONSTRUCTION AND GLASS BLOCK FOR USE THEREIN

Theodore W. Glynn, Kingsport, Tenn., assignor to American-Saint Gobain Corporation, Kingsport, Tenn., a corporation of Delaware

Filed Jan. 8, 1962, Ser. No. 164,715
5 Claims. (Cl. 52—616)

1. A window construction comprising a wall having an opening extending through it, a glass block in the opening,

said glass block comprising a plurality of glass sheets assembled in side-by-side relation, said glass sheets extending parallel to the light path through said glass block, said

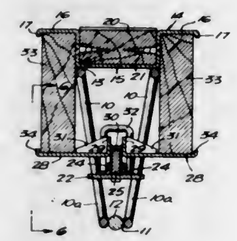


glass block having a glass panel adhered to each end thereof by a transparent adhesive having an index of refraction approximately the same as that of the glass.

3,221,461
BEAM CONSTRUCTION

Michael Grunfeld, 4560 Sperry St., Los Angeles, Calif.

Filed Oct. 24, 1961, Ser. No. 147,258
2 Claims. (Cl. 52—376)



1. A truss beam comprising:
a lower chord member;
a pair of zig-zag web members secured to said lower chord member and extending upwardly and outwardly therefrom and having upper and lower apices;
an upper plate member secured to each of said upper apices of said zig-zag web members and extending laterally therefrom;
a bearing plate secured to said web members intermediate said upper and lower apices;
a floating beam supporting plate means adjustably supported on said bearing plate, said supporting plate means including a portion extending laterally from each of said web members in alignment with one of said upper plate members;
a cantilever beam supported on each of said laterally extending portions of said supporting plate means intermediate said upper plate members and said supporting plate means; and
a wedge member disposed intermediate said bearing plate and said supporting plate means for adjusting said supporting plate means, whereby the beams supported thereby are forced into clamped engagement with said upper plate members.

3,221,462
FASTENER FOR WINDOW STRUCTURES AND THE LIKE HAVING REMOVABLE MULLION UNITS

Braman Pomeroy, 138 Lexington Ave., Buffalo, N.Y.

Filed Feb. 17, 1964, Ser. No. 345,303
3 Claims. (Cl. 52—632)

1. A fastener for a window structure or the like having a removable mullion unit comprising, in combination, a mullion bar having a lengthwise passageway therein from one end thereof, a transverse slot therein from a side surface thereof intersecting said passageway, and a shoulder overhanging the inner end of said passageway, and a fastener having an elongated shoe slideable in said passageway, a neck slideable in said transverse slot lengthwise of said bar and connected to said shoe adjacent one end thereof, thereby providing said shoe with a forwardly extending toe portion and a rearwardly extending heel por-

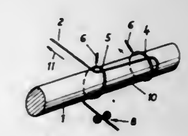


tion, and an elongated head carried by said neck and slidable along said side surface of said bar, said toe portion projecting beyond said one end of said bar and said head completely covering said slot when said fastener is extended relative to said bar, said toe portion being confined within said bar and said heel portion being confined below said shoulder when said fastener is retracted relative to said bar.

3,221,463
REINFORCEMENT GRID FOR CONCRETE

Hans Schoch, 44 Alfred Escherstrasse, Zurich, Switzerland

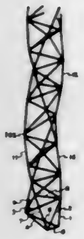
Filed Feb. 15, 1963, Ser. No. 258,771
Claims priority, application Austria, Feb. 23, 1962, A 1,518/62
1 Claim. (Cl. 52—645)



A reinforcing grid for concrete structures comprising a series of bend resistant hard steel reinforcing rods disposed in spaced parallel relation, a series of continuous flexible soft iron spacing wires extending crosswise of said reinforcing rods at spaced crossing points therealong and connecting the same with each other, said reinforcing rods having a diameter substantially greater than said spacing wires, U-shaped turnouts formed at spaced intervals on each of said flexible spacing wires at each crossing point, each of said U-shaped turnouts having a pair of leg portions connected at their outer ends by an apex portion and provided at their other ends with oppositely directed bent foot portions continuous with each said spacing wires, said leg portions of each turnout engaging one of each of said reinforcing rods and extending longitudinally thereof with said apex portion extending transversely thereof, two binding loops of substantially the same material and diameter as said spacing wire securing said U-shaped turnouts to said reinforcing rods against sliding movement, one of said loops encircling the reinforcing rods at each of the crossing points of said spacing wires extending over one of said leg portions and under the remaining leg portion at the apex of each of said U-shaped turnouts, and the second loop encircling the reinforcing rod and extending over both legs of the U-shaped turnout adjacent the foot portions thereof, the longitudinal axis of the wires forming each of said binding loops lying in

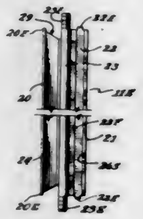
a plane, the planes containing said loops converging toward one another toward the side of the reinforcing rods to which the spacing wires are attached, wedging the spacing wires against the reinforcing rods.

3,221,464
TETRAHELICAL STRUCTURE
Alvin E. Miller, 437 Magie Ave., Hamilton, Ohio
Filed Mar. 17, 1961, Ser. No. 96,544
12 Claims. (Cl. 52—655)



1. A structure of elongated form made up of struts joined together at their ends so that any six adjacent struts constitute the edges of a tetrahedron, there being a single succession of such tetrahedra in the direction of the length of the structure, one strut of each such tetrahedron lying in substantial axial alignment with a strut of an adjacent tetrahedron and forming a part of one of three helices passing around the surface of said structure.

3,221,465
SECTIONAL OVERHEAD DOOR
John F. McKee, Aurora, Ill., assignor to McKee Door Company, a corporation of Illinois
Continuation of application Ser. No. 818,774, June 8, 1959. This application June 28, 1962, Ser. No. 207,159
8 Claims. (Cl. 52—656)



1. A frame element for incorporation in a sectional overhead door or the like and comprising a one piece homogeneous extruded section having, as integral homogeneous portions thereof, a lengthwise web integrally connecting transversely spaced, lengthwise extending front and rear walls of the section, said web having an integral enlargement at a location intermediate of said walls and extending the length of the web, with said enlargement having an integral and extension projecting endwise beyond adjacent regions of the web and having an externally threaded attachment surface.

3,221,466
DUAL PURPOSE INTERLOCKING BEAM CONNECTORS
Lucien R. Downing, Jr., Avon Lake, and Donald A. Brown, Westlake, Ohio, assignors to Donn Products, Inc., a corporation of Ohio
Filed Feb. 13, 1964, Ser. No. 344,775
6 Claims. (Cl. 52—726)



4. A pair of beams in interlocked end-to-end relation, said beams each having a planar web portion, and at confronting extremities having dual purpose interlocking connecting means including:
(a) in one of said pair of beams,
(1) a tongue portion defined by spaced parallel marginal edges extending beyond the extremity of said web and integral therewith, and lying substantially in a plane superior to, and parallel to the plane of said web,
(2) a tongue receiving pocket formed in said web adjacent the proximal extremity of said tongue portion, and lying substantially in a plane inferior to, and parallel to the plane of said web,
(i) a cam portion of said pocket struck out of the plane of said pocket in a direction inferior to the plane of said pocket, and defining a tongue deflecting and guiding cam adapted to deflect the distal extremity of a mating tongue portion, and guide it through said web portion,
(ii) a tab passing relief in said cam adapted to allow said distal tongue portion of said mating tongue portion to slide into said pocket, said passing relief lying substantially in a plane inferior to, and parallel to the plane of said tongue receiving pocket,
(3) a first detent recess, adjacent the distal extremity of said tongue portion, struck out of the plane of said tongue portion in a direction superior to the plane of said tongue portion, and forming a first tab extending in a direction superior to the plane of said tongue portion,
(4) a second detent recess, adjacent the proximal extremity of said tongue portion, similarly struck out of the plane of said tongue portion in a direction superior to the plane of said tongue portion, and forming a second tab extending in a direction superior to the plane of said tongue portion,
(5) a detent between said recesses, and in spaced relation thereto, said detent struck out of the plane of said tongue portion in a direction inferior to the plane of said tongue portion,
(6) a welt, between said second recess and said detent, and lying substantially in a plane superior to and parallel to the plane of said tongue portion,
(7) rolled reinforcing ribs adjacent each marginal edge of said tongue portion, extending from the proximal extremity of said tongue portion beyond said detent and short of said first detent recess, and lying substantially in a plane superior to and parallel to the plane of said tongue portion,
(b) in the second of said pair of beams,
(1) a tongue portion defined by spaced parallel marginal edges extending beyond the extremity of said web and integral therewith and lying substantially in a plane inferior to and parallel to the plane of said web,
(2) a tongue receiving pocket formed in said web adjacent the proximal extremity of said tongue portion, and lying substantially in a plane superior to the plane of said web,
(i) a cam portion of said pocket struck out of the plane of said pocket in a direction superior to the plane of said pocket, and defining a tongue deflecting and guiding cam adapted to deflect the distal extremity of a mating tongue portion, and guide it through said web portion,
(ii) a tab passing relief in said cam portion adapted to allow said distal tongue portion of said mating tongue portion to slide into said pocket, said passing relief lying substantially in a plane superior to, and parallel to the plane of said tongue receiving pocket,
(3) a first detent recess, adjacent the distal extremity of said tongue portion, struck out of the plane of said tongue portion in a direction inferior to the plane of said tongue portion and forming a first tab extending in a direction inferior to the plane of said tongue portion,
(4) a second detent recess, adjacent the proximal extremity of said tongue portion, similarly struck out of the plane of said tongue portion in a direction inferior to the plane of said tongue portion, and forming a second tab extending in a direction inferior to the plane of said tongue portion,
(5) a detent between said recesses and in spaced relation thereto, said detent struck out of the plane of said tongue portion in a direction superior to the plane of said tongue portion,
(6) a welt, between said second recess and said detent, and lying substantially in a plane inferior to, and parallel to the plane of said tongue portion,
(7) rolled reinforcing ribs, adjacent each marginal edge of said tongue portion, extending from the proximal extremity of said tongue portion beyond said detent and short of said first detent recess, and lying substantially in a plane inferior to and parallel to the plane of said tongue portion.

3,221,467
STRUCTURAL MEMBER
William K. Henkels, Washington, D.C., assignor of one-half to American Metalcore Systems, Inc., Baltimore, Md.
Filed Feb. 1, 1963, Ser. No. 255,467
3 Claims. (Cl. 52—690)

3. A chord assembly including a structural member comprising a base section, the lateral margins of said base section extending downwardly a predetermined distance to provide converging walls, vertical walls issuing from the lower terminals of said converging walls, said vertical walls extending upwardly in parallel spaced relation into supporting contiguous engagement with said base section, thereby forming a longitudinal recess between said vertical walls, a second structural member similar in construction to said first structural member, the structural members being vertically spaced with their longitudinal recesses in opposed relationship, web members between said structural members, the upper and lower limits of said web members being positioned within the longitudinal recesses of the structural members, and



means rigidly securing the limits of said web members to said vertical walls defining the longitudinal recesses of said structural members.

3,221,468
METHOD AND APPARATUS FOR APPLYING EASY-OPENING SEAL OF ADHESIVE TAPE
James H. Casey, Roseville, Minn., assignor to Minnesota Mining & Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed Mar. 21, 1962, Ser. No. 181,244
9 Claims. (Cl. 53—14)

1. A method for attaching an easy-opening seal of adhesive tape around an article, said method comprising adhering the adhesive surface of one of the ends of a length of adhesive tape to a piece of sheet material, adhering the adhesive surface of tape intermediate the ends thereof around the article and to itself, to form a flag type seal around the article, and then adhering the adhesive surface of the other end of said length of tape to said piece of sheet material.

3,221,469
METHOD AND APPARATUS FOR FORMING TETRAHEDRON SHAPED PACKAGES
John H. Murray, Norwood, Mass., assignor to Packaging Frontiers, Inc., Waltham, Mass., a corporation of Delaware
Filed Mar. 21, 1962, Ser. No. 181,403
22 Claims. (Cl. 53—28)

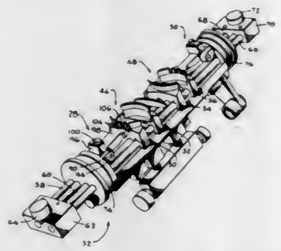
1. The method of making packages from a continuous web of flexible packaging material comprising forming the web into a tube by bringing its side margins together and sealing them to form a longitudinal tube seam extending lengthwise of the tube, intermittently feeding the tube forward in single package length increments with dwell intervals between successive feeding operations, the tube being maintained against rotation around its axis as it is fed forward thereby maintaining said longitudinal

seam straight and extending lengthwise of the tube, and making package-end-forming seals across the tube during said dwell intervals by bringing sealing instrumentalities into engagement with the tube starting at the beginning



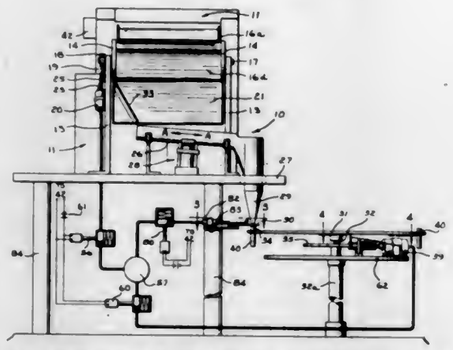
of each dwell interval and maintaining said instrumentalities in engagement with the tube until near the end of the dwell interval, and withdrawing the said instrumentalities at the end of each dwell interval to permit the next forward feed of the tube.

3,221,470
STRIPPING MEANS FOR A CONTAINER PACK FORMING MACHINE
John Stevenson, Jr., Hoopeston, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Filed Nov. 21, 1962, Ser. No. 239,212
8 Claims. (Cl. 53—48)



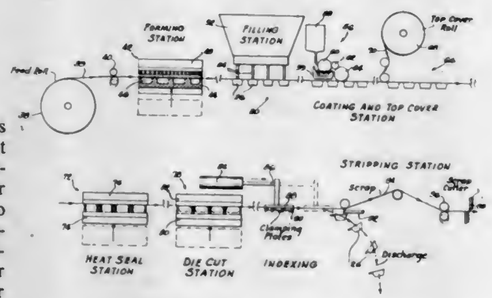
1. For use in a machine for assembling containers into packs held together by generally flat, somewhat elastic carriers, said machine including means for directing a procession of containers to a carrier and container assembly station, there being rotor means proximate to said assembly station and means for supplying a succession of carriers to said rotor means at a location circumferentially spaced from said assembly station, said rotor means including shoe means on the periphery thereof for picking up successive carriers from said carrier supplying means and applying the carriers into embracing relations to containers in said assembly station, the improvement comprising stripper means mounted on said rotor means for association with said shoe means, said stripper means having a stripping position and a recessed position, there being means operable to move said stripping means from its recessed position to its stripping position at said carrier and container assembly station.

3,221,471
APPARATUS FOR ORIENTING AND PACKAGING ELONGATED PARTS
Donald L. Wolever, Oklahoma City, Okla., assignor to Western Electric Company Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 11, 1961, Ser. No. 158,462
4 Claims. (Cl. 53—78)



1. An apparatus for packaging lengths of material which comprises, a vibratory sloping chute for receiving and advancing such lengths of material and having an end provided with a restricted opening and wall portions converging toward said opening for directing the lengths of material into a bundle, means for feeding a predetermined number of such lengths of material into said chute, means for supporting a container in a loading position in alignment with said end of said chute for receiving the bundle, stop means interposed between the container in the loading position and said end of said chute and cooperable with said chute for supporting and orienting the lengths of material into a bundle, and means for actuating said stop means to permit the movement of the bundle into the container.

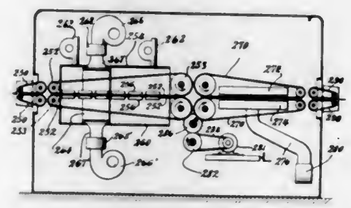
3,221,472
PACKAGING MACHINE
Fred A. Groth, Chicago, and Paul Meisner, Park Forest, Ill., assignors, by mesne assignments, to Dynamics Corporation of America, a corporation of New York
Filed Nov. 24, 1961, Ser. No. 159,811
9 Claims. (Cl. 53—184)



1. A packaging machine including a plurality of stations, means for introducing a first continuous sheet of plastic material and means for periodically indexing said sheet through said stations, said stations including a forming station capable of producing receptacles in said sheet, a filling station adapted to introduce the articles to be packaged into said machine, means for bringing a second continuous plastic sheet into registry with said

rims, a heat sealing station including means for pressing said rims and said second sheet together and means for applying heat during said pressing whereby said receptacles are completely closed, a cutting station including means for cutting said sheets around the outer edges of said rims, and means for discharging said closed receptacles from said machine, said means for periodically indexing the sheets through the machine including means for clamping the sheets along their side edges, a bracket for said clamping means reciprocally mounted for movement between a forward position near the discharge end of said machine and a rearward position nearer the entry end of the machine, and means for holding said clamping means in clamping position during forward movement of said bracket and for releasing said clamping means during rearward movement of said bracket.

3,221,473
MACHINE FOR SKIN PACKAGING
Robert J. Brown, Des Plaines, Ill., assignor, by mesne assignments, to United Shoe Machinery Corporation, Boston, Mass., a corporation of New Jersey
Filed Jan. 25, 1962, Ser. No. 168,651
5 Claims. (Cl. 53—373)



1. Apparatus for skin-packaging of items which have been inserted into a preformed article of manufacture comprising an apertured sheet having a thermo-stretchable, thermo-sealable plastic material adhered thereto covering said aperture and overlapping the edges thereof and wherein said plastic material within said aperture has been stretched to a configuration corresponding to said item to be skin-packaged and wherein said apertured sheet has been folded upon itself such that portions of said plastic material overlapping the edges of said aperture are in contact, comprising

a plurality of oppositely paired feed rollers and a corresponding plurality of heat conductive transversely spaced contiguously paired feed belts drivably associated with said feed rollers and adapted to pressurably engage said apertured sheet on opposite sides of said aperture,

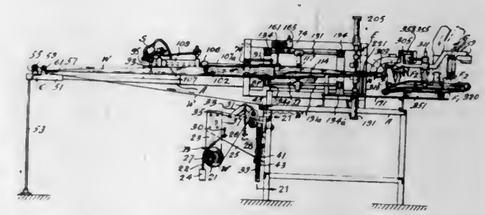
a heating enclosure surrounding and enclosing said feed belts and including a hot air chamber and means for directing and controlling the temperature of a heated stream of hot gases therethrough and over and around said plastic material within said apertured sheet, said heated stream of gases within said hot air chamber capable of heating said plastic material within said aperture to a first temperature at which said plastic material within said aperture will regain its memory and tend to return to its original shape,

a plurality of opposingly spaced heater elements spaced along said conductive feed belts to transfer heat energy to said contiguous feed belts, said plurality of heater elements capable of heating said plastic material adjacent and overlapping said aperture to a second temperature at which portions of said plastic material overlapping said aperture and in contact will adhere to one another,

said plurality of feed belts transversely spaced such that said portions of said plastic material overlapping said aperture and in contact are under a pressure which will cause said portions of said plastic material in contact to adhere to one another after said portions of plastic material in contact have been heated to said second temperature,

a drive mechanism to drive said feed rollers and said associated feed belts so that said item to be skin-packaged and said apertured sheet are driven into and out of said apparatus, whereby said plastic material within said aperture regains its memory and tends to return to its original shape and thereby stretches taut against said item within said apertured sheet and said plastic material overlapping said aperture and in contact adhere to one another and seal said item to be skin-packaged within said apertured sheet.

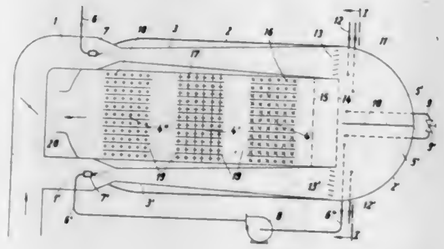
3,221,474
AUTOMATIC PACKAGING MACHINE
Wolfgang Hoffmann, L'Abord a Plouffe, Quebec, John Follows, Dorval, Quebec, and Richard Taylor, Bale D'Urfe, Quebec, Canada, assignors, by mesne assignments, to Canadian International Paper Company, Montreal, Quebec, Canada
Filed Oct. 23, 1961, Ser. No. 146,696
Claims priority, application Great Britain, June 13, 1961, 21,281/61
22 Claims. (Cl. 53—182)



1. A package forming mechanism, comprising, web-supplying means for intermittently supplying a web of flexible sheet material; means for intermittently and indeterminately feeding said material as a web into and through means for forming the web into a continuous cylindrically tube-shaped roll; means for sealing the free longitudinal edges of the roll thus formed to form a continuous sealed tube; means for transversely sealing said tube at spaced-apart intervals to partition the inside of the tube into bag-lengths; means for severing said bag-lengths of material from said tube in advance of each transverse seal to form individual bags which are bottom-sealed and open topped said means for intermittently advancing said material including reciprocating gripping means for engaging the tube at a point removed from its free end at the initial end of a predetermined stroke and to retain engagement with the tube throughout the stroke and to release it at the end of the stroke thereby to advance a predetermined length of tube material corresponding to the desired bag length, transport means for receiving and engaging the sealed bottom of each of said bags as they are severed from said tube for transporting and supporting each of said bags in a sequence and in a position for subsequent filling and top-sealing; and means for actuating said web feeding means, said bottom sealing means, said severing means and said transport means in intermittent timed related sequence whereby said mechanism sequentially forms said web into said cylindrically-shaped roll, seals the roll longitudinally to form a continuous sealed tube, transversely seals the tube to form

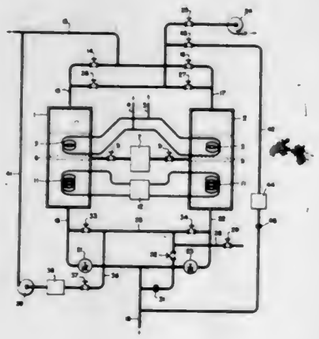
separate bag-sections, transversely severs the said bag-sections from said tube to release individual open-topped bags and individually transport said bags to a position for said filling and top-sealing operations.

3,221,475
WET ELECTROSTATIC PRECIPITATOR
Jean Wiemer, Oberhochstadt, Germany, assignor to Metallgesellschaft Aktiengesellschaft, Frankfurt am Main, Germany
Filed Apr. 10, 1963, Ser. No. 271,970
Claims priority, application Germany, Apr. 12, 1962, M 52,485
9 Claims. (Cl. 55—10)



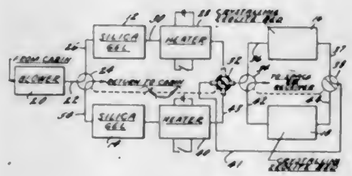
1. In the method for improving the amount of fine dust precipitated in a wet electric filter in which the entering raw gas is first subdivided into two separate gas streams and each stream is saturated with a liquid as in a scrubber or washer, the improvement comprising saturating and cooling each separate stream at a temperature different from the other stream, mixing the saturated streams to form a mist composed of water droplets and dust, and then passing the mist of mixed streams through an electric filter to precipitate the water droplets and the dust from the gas.

3,221,476
ADSORPTION-DESORPTION METHOD
James R. Meyer, Lewiston, N.Y., assignor to Chemical Design, Inc., a corporation of New York
Filed Dec. 7, 1961, Ser. No. 157,805
5 Claims. (Cl. 55—28)



4. The method of reactivating the adsorbent in an adsorbent tower, through which a feed gas stream flows under pressure from a feed gas supply line, with no substantial loss of gas which comprises cutting off the supply of feed gas to and the discharge of feed gas effluent gas from the tower, partially depressurizing the tower by removing a portion of the gas therein, storing the removed gas, reducing the pressure in the tower substantially to atmospheric by removing additional gas therefrom and returning said additional gas to the feed gas supply line, applying a vacuum to the tower, flowing a purge gas through the tower in a reverse direction of the flow of feed gas to desorb contaminants from the adsorbent, disconnecting the vacuum and the flowing purge gas, returning the stored gas to the tower to partially repressurize it, and connecting the tower to feed gas effluent to raise the pressure of the tower to the pressure of the feed gas stream.

3,221,477
SPACE ADSORPTION SYSTEM AND METHOD
Walter E. Arnoldi, West Hartford, Conn., Donald G. De Roze, Dayton, Ohio, and David C. Jennings, Windsor Locks, and George T. Peters, Hartford, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Apr. 24, 1961, Ser. No. 105,187
14 Claims. (Cl. 55—31)

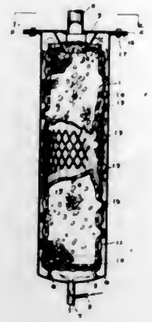


9. A process for removing carbon dioxide from air contained in a sealed compartment and for returning the carbon dioxide free air back to the compartment comprising the steps of passing the carbon dioxide contaminated air over an active adsorbent formed from silica gel for removing the moisture content of the air, then passing the moisture free air over an active adsorbent formed from crystalline zeolite, regenerating the activated bed of silica gel by subjecting it to all of the carbon dioxide free air discharging from the activated adsorbent of crystalline zeolite, and returning the carbon dioxide free air back to the compartment with the moisture picked up during the regeneration of the adsorbent of silica gel and regenerating the adsorbent of crystalline zeolite by subjecting the activated zeolite adsorbent to a low pressure receiver whose pressure is substantially equal to zero pounds per square inch absolute.

3,221,478
GAS DRIER
Orlo Clair Norton, Erie, Pa., assignor to Van Products Company, Erie, Pa., a corporation of Pennsylvania
Filed Oct. 2, 1961, Ser. No. 142,423
2 Claims. (Cl. 55—281)

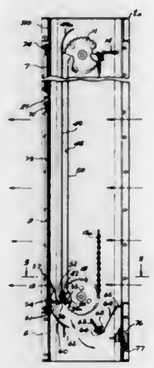
1. An air drier comprising
a tank having an inlet adjacent the bottom, an outlet adjacent the top, and drain means in said tank adjacent the bottom,
a screen like basket in said tank,
said basket having a wall with apertures in it,
said wall being generally concentric to the inside surface of said tank and spaced inwardly from said inside surface on all sides of said tank so as to define a flow path between said basket and said tank between said inlet and said outlet,
a sponge like container in said basket,

said sponge like container protruding through said apertures in said basket into said flow path,
and a hygroscopic desiccant in said container,



said desiccant being adapted to form a solution with water which will flow by percolation through said container into engagement with air flowing through said flow path.

3,221,479
LINT ARRESTER
Robert V. Moser, Northfield, and James P. Van Swearingen, Cleveland Heights, Ohio, assignors to Rockwell-Standard Corporation, Cleveland, Ohio, a corporation of Pennsylvania
Filed July 10, 1961, Ser. No. 122,850
5 Claims. (Cl. 55—296)

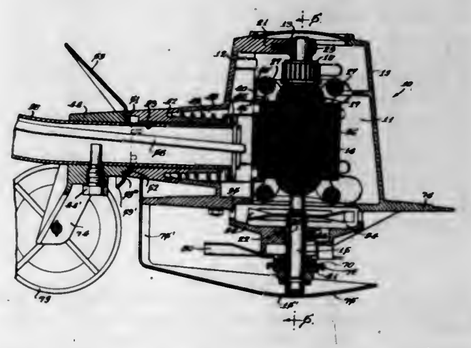


4. A filtering apparatus comprising a housing having means defining an opening through said housing to receive a stream of air; a vertically disposed filter panel mounted in said opening on the downstream side of said housing; receptacle means disposed below said housing; endless conveyor means mounted in said housing on the upstream side of said filter panel above said receptacle means; a brush for removing disentrained particles from the upstream side of said filter panel; mounting means mounting said brush to said conveyor means in such manner as to pass said brush periodically downwardly over the upstream side of said filter panel in use of the apparatus; said receptacle means having an open top through which particles removed from said panel may fall by gravity into said receptacle means; a door normally closing said open top; a wiper disposed adjacent said door in the path of said brush in such manner as to engage said brush and remove particles adhering thereto as said brush passes said door; means carried by the door extending into the path of the conveyor means, and means attached to said conveyor means adapted to engage said door carried means for opening said door.

3,221,480
COATED FORAMINOUS FIBROUS GAS FILTER
Andrew Stefcik, Easton, Pa., and Fred E. Woodward, Watchung, N.J., assignors to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Dec. 27, 1961, Ser. No. 162,585
9 Claims. (Cl. 55—524)

1. A foraminous fibrous gas filter,
(1) the individual fibers of which are coated
(2) with a substantially non-volatile viscous liquid film consisting essentially of
(3) a member of the group consisting of
(a) free mono- and di-acid phosphate esters of a condensation product of about 2.5 to 7 moles of an alkylene oxide of 2 to 4 carbon atoms with one mole of an aromatic compound selected from the group consisting of
(a–1) phenol,
(a–2) naphthol,
(a–3) mono-, di- and trichlorinated- and -brominated phenol and -naphthol, and
(a–4) mono-, di- and tri-alkylated-phenol and -naphthol containing a maximum of about 6 alkyl carbon atoms;
(b) the metal and ammonium salts of such free acid phosphate esters, and
(c) mixtures thereof.

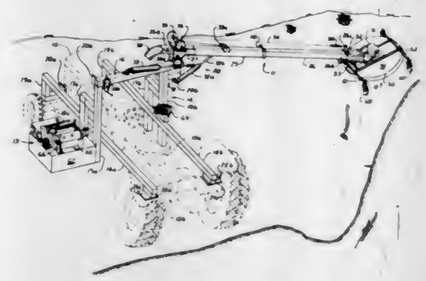
3,221,481
COMBINATION LAWN EDGER AND TRIMMER
Charles A. Mattson, Oak Park, Ill., Marvin R. Olsen, Glen Ellyn, Ill., and Frederick O. Ottosen, deceased, late of Chicago, Ill., by Harriet Ottosen, executrix, assignors to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed Aug. 19, 1963, Ser. No. 303,474
4 Claims. (Cl. 56—25.4)



1. In an edger-trimmer, a tubular handle, said handle having a round cross section, said handle being directed downwardly and forwardly and having an integral front end which is horizontal with respect to the ground, a collar journaled on said horizontal front handle end for rotary and axial movement, a motor housing connected to said collar, a vertically disposed motor in said housing, a horizontally disposed cutter blade positioned below said housing, a drive connection between said motor and blade, a pair of notches formed in the rear edge of said collar, said notches being spaced with respect to each other by 90

degrees, a locking lug fixed to said horizontal front handle end behind said collar, a coil spring disposed about said horizontal front handle end inside said housing for biasing said collar rearwardly toward said locking lug, said locking lug being adapted to enter either one of said notches to lock said collar against rotation whereby said housing is fixed to said handle for either a horizontal or vertical disposition of said cutter blade, and means for releasing said collar, said releasing means comprising a manually operable member on said horizontal front handle end, said manually operable member being disposed behind said collar and being adapted to urge said collar axially away from said locking lug against the bias of said coil spring.

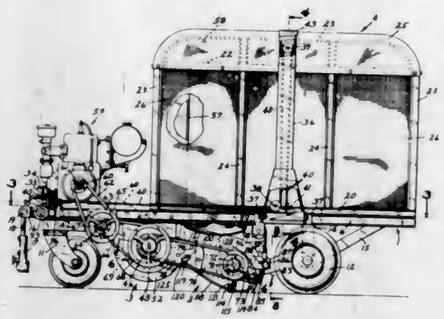
3,221,482
MOWING APPARATUS WITH A MOWER HEAD UNIVERSALLY SUPPORTED BY AN EXTENSIBLE BOOM
Robert E. Cowling, 5321 Rice Ave., Houston, Tex.
Filed Oct. 21, 1963, Ser. No. 317,726
7 Claims. (Cl. 56—25.4)



3. Mowing apparatus adapted to be mounted on a mobile carrier comprising an extensible boom assembly, including a boom and means for moving the boom laterally outwardly and inwardly relative to the path of travel of a mobile carrier; a power operated mower head with cutting means provided with wheels for engaging the ground and rollingly supporting the mower head; means pivotally attaching the mower head to the boom for universal movement relative to the boom as the mower head changes its position to conform with changes in the contour of the ground over which the wheels traverse; and means for pivotally mounting the boom assembly on a mobile carrier to allow the boom to pivot in a vertical plane whereby the mower head is free to follow the contour of the ground engaged by the wheels as it is propelled by a mobile carrier.

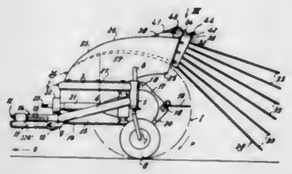
3,221,483
ROTARY LAWN TOOL WITH GATHERING MEANS
Jacob A. Ronning, % Ronning Corporation, 707 Central Ave., Minneapolis 14, Minn.
Original application Jan. 30, 1961, Ser. No. 85,826, now Patent No. 3,112,593, dated Dec. 30, 1963. Divided and this application May 29, 1963, Ser. No. 293,222
6 Claims. (Cl. 56—27)

1. A mobile lawn tool comprising a wheel mounted frame, a rotary shaft journaled for rotation on a horizontal axis extending transversely of the direction of movement of said frame, raking and sweeping means on said shaft, a container, means mounting said container on said frame for tilting movements between a material receiving position and a tilted material dumping position angularly displaced from said receiving position, power operated means for delivering material from said raking and sweeping means to said container when said container is disposed in its material receiving position, said raking and sweeping means comprising circumferentially spaced axially extended rows of axially spaced radial cutter blades mounted on said shaft, said cutter blades having sharp leading edges adapted to pass between upstanding



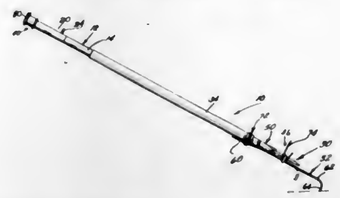
blades of live grass to rake the grass and to chop generally horizontally disposed portions of thatch-forming dead grass clippings and foreign material in the grass, and circumferentially spaced axially extended rows of axially spaced flexible radial whiplashes mounted on said shaft circumferentially between said rows of cutter blades, and means for imparting rotation to said shaft.

3,221,484
CROP-WORKING IMPLEMENTS
Cornelis van der Lely, Zug, Switzerland, assignor to C. van der Lely N.V., Weverskade, Maasland, Netherlands, a Dutch limited-liability company
Filed Nov. 27, 1962, Ser. No. 240,305
Claims priority, application Netherlands, Dec. 1, 1961, 272,073; Aug. 15, 1962, 282,138
16 Claims. (Cl. 56—370)



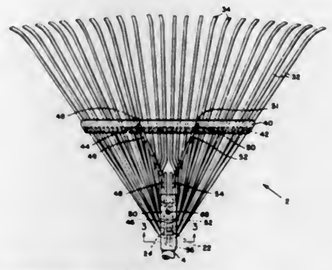
1. A tedder of the kind comprising a rotatable body having tines thereon in spaced relationship for picking up the crop from the ground, a frame on which said body is rotatably mounted so as to rotate in such a direction that the tines in the lowermost region of the tined body move forwardly relative to the intended direction of travel of the tedder, a hood partially surrounding said tined body, guide means associated with said tined body mounted at the rear of the tedder, said guide means forming deflector surfaces for the crop displaced by said tined body, support means for pivotally mounting said guide means on said tedder, said support means and guide means being pivotable in a substantially horizontal direction and in a substantially vertical direction, locking means on said tedder, said locking means being associated with support means to retain said guide means in selected angular settings.

3,221,485
MULTIPURPOSE HAND TOOL ARRANGEMENT
Homer T. Jenkins, 161 E. Grand Ave., Chicago, Ill.
Filed July 24, 1962, Ser. No. 211,966
3 Claims. (Cl. 56—400.06)



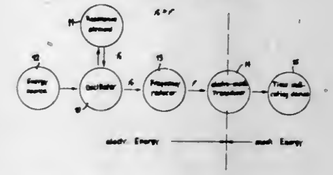
1. A hand tool comprising:
a pronged head, including a plurality of prongs, secured to one end of the handle,
an elongate blade member carried on the handle with one portion thereof in juxtaposition with the prongs of said head and having one side facing away from said head prongs,
said blade member extending longitudinally of said handle and being mounted for movement longitudinally of said handle,
an elongate sleeve member mounted on said handle for shifting movement longitudinally thereof,
means for securing said sleeve member to said blade member for moving said blade member longitudinally of said handle member to shift said blade member portion with respect to said head prongs,
a hoe element carried by said head prongs,
said hoe element comprising:
a sheet having one of its ends doubled over to define a bent portion,
said bent portion being slotted to receive the respective prongs of said head,
and a pair of oppositely facing U-shaped locking elements received over and disposed longitudinally of said sheet bent portion with one of their legs respectively frictionally received between said sheet bent portion and said prongs and the other of their respective legs being positioned to overlie and frictionally engage said one side of said blade member.

3,221,486
RAKE
Albert L. Godshall, Lansdale, and Albert E. Moore, Mainland, Pa., assignors to Ametek, Inc., New York, N.Y., a corporation of Delaware
Filed May 25, 1964, Ser. No. 369,814
7 Claims. (Cl. 56—400.17)



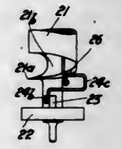
1. A rake comprising a handle,
a ferrule for the reception of said handle,
V-shaped tine members supported on the upper outer surface of said ferrule,
upstanding members on the ferrule to limit the movement of the tine members in planes parallel to the upper outer surface of the ferrule,
a spacer engaging the tine members intermediate the ferrule and the ends of the tine members,
a pair of spring wire arms each engaging the spacer and each overlying and engaging a portion of the tine members overlying the ferrule, and
means to clamp said arms against said tine members to in turn clamp the tine members against the ferrule.

3,221,487
ELECTRIC POCKET OR WRIST-WATCH
André Greuter and Arpad Korom, both of Zurich, Switzerland, assignors to Gesellschaft zur Forderung der Forschung an der Eldg. Techn. Hochschule, Zurich, Switzerland
Filed Jan. 17, 1964, Ser. No. 338,421
Claims priority, application Switzerland, Jan. 22, 1963, 816/63
2 Claims. (Cl. 58—23)



1. An electrical watch having the over-all size of a conventional watch, which comprises an electric power cell, an electrical standard frequency transmitter having a resonance element as frequency stabiliser, an electromechanical transducer, a mechanical time-indicating device, and an electronic frequency divider provided between the standard frequency transmitter and the electromechanical transducer, said frequency divider having a plurality of stages each of which is provided with a backward diode as active member, the standard frequency transmitter including a relaxation oscillator for maintaining oscillation of the resonance element, said relaxation oscillator being provided with at least one backward diode as active member.

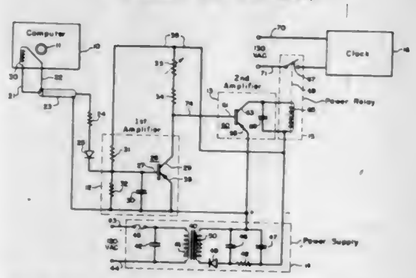
3,221,488
MICROCONTACT DEVICE FOR OSCILLATING SYSTEMS
André Deladerriere, Saint-Nicolas-d'Aliermont, France, assignor to Societe Anonyme Reveils Bayard, Saint-Nicolas-d'Aliermont, France, a corporation of France
Filed June 26, 1964, Ser. No. 378,384
Claims priority, application France, July 5, 1963, 940,526
7 Claims. (Cl. 58—28)



1. A microcontact device for an oscillating system comprising: a frame, an oscillating member provided with a shaft, said shaft being mounted for rotation in said frame, a control member comprising a disc and a helix spaced from said disc, both being integral with said shaft, a contact pin extending from one surface of said disc, a block of insulating material mounted on said frame, a flexible conducting strip having one end mounted in said block and another end extending into the path of said contact pin so that said contact pin will touch said end twice upon a normal cycle of oscillation, a stop rod of a non-conducting material, one end of said rod being mounted in said

insulating block, the other end of said rod resting against said shaft and is adapted to be raised by said helix when the amplitude of swing of said oscillating member exceeds a predetermined limit and thus to push said strip out of the path of said contact pin during said high amplitude swing, a voltage supply source having two poles, one pole being electrically connected to said strip so that a circuit is completed when said contact strip touches said contact pin.

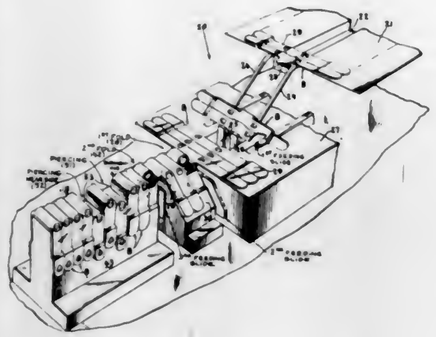
3,221,489
ELECTRONIC DIGITAL COMPUTER ELAPSED PROCESSING TIME METER
Ernest A. Mackey and William A. Counterman, Roosevelt, N.J., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Aug. 29, 1963, Ser. No. 305,567
3 Claims. (Cl. 58—145)



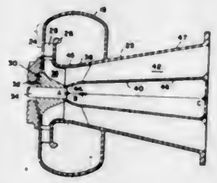
1. An elapsed time indicating meter for use in conjunction with a computer having a magnetic memory unit, comprising:
(a) an antenna positioned adjacent to said unit for receiving electromagnetic signals emanating from said unit;
(b) circuit means, including a resistance-capacitance network having a predetermined time constant for rectifying received signals;
(c) shielded coupling means connecting said antenna to said circuit means, said coupling means isolating said circuit means from actuation by random signals from source other than said computer;
(d) a first amplifier coupled to said circuit means for amplifying said rectified signals;
(e) a power amplifier having an output circuit coupled to said first amplifier for amplifying signals from said first amplifier;
(f) a power relay, having a coil serially connected to said output circuit, activated when said power amplifier receives signals;
(g) a switch having an open and a closed position activated to said closed position when said relay is activated; and
(h) a clock device, activated by said switch in said closed position, for measuring time that said computer is in operation.

3,221,490
CHAIN LINK MAKING MACHINE
Eugene W. Onulak, Huntington, Ind., assignor to The Locke Steel Chain Company, Huntington, Ind., a corporation of Connecticut
Original application Dec. 10, 1957, Ser. No. 701,814, now Patent No. 3,063,237, dated Nov. 13, 1962. Divided and this application Apr. 6, 1962, Ser. No. 185,624
19 Claims. (Cl. 59—13)

1. In an apparatus for forming an integral chain link from a blank having a cylindrical bushing thereon and legs extending outwardly from said bushing, the combination comprising first means for partially bending said legs adjacent their juncture with said bushing, second means for bending said partially bent legs adjacent said juncture to a position perpendicular to the axis of said bushing and generally parallel to each other, means for piercing holes in the free ends of said legs a predetermined distance from the axis of said bushing, and transfer means between said first and second bending means and said piercing means adapted to advance said blank successively between said bending means and piercing means.

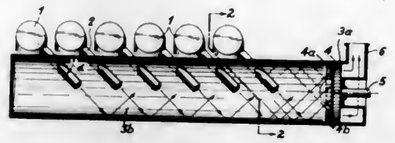


3,221,491
TURBINE
Carl F. Koenig III, Yardley, Pa., and Ernest W. Blattner, Trenton, N.J., assignors to De Laval Turbine Inc., Trenton, N.J., a corporation of Delaware
Filed Apr. 22, 1963, Ser. No. 274,601
2 Claims. (Cl. 60—13)



1. In combination with an internal combustion engine delivering pulsating exhaust gas, a turbine having a single inlet chamber and a bladed rotor, means for directing gas from said engine to said inlet chamber, means directing the gas from said inlet chamber to said rotor throughout the circumference thereof to drive the latter with the gases being discharged therefrom at a subsonic velocity, means defining a vaneless and continuous annular discharge passage immediately adjacent the rotor discharge for receiving gas discharged from the rotor directly at said subsonic velocity and having cross-sectional areas orthogonal to flow which progressively decrease to form a convergent section for accelerating the flow of the gases passing through the discharge passage in both angular and axial directions, and means defining a divergent section following said convergent section and having cross-sectional areas orthogonal to the flow which progressively increase to provide diffuser action and deceleration of flow.

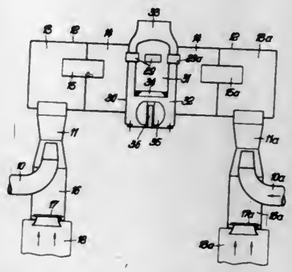
3,221,492
EXHAUST MANIFOLD SYSTEM FOR INTERNAL COMBUSTION ENGINES
Ledo Rivoluzio Carletti, Hulfteggstrasse 15, Winterthur, Switzerland
Filed Sept. 16, 1963, Ser. No. 308,970
Claims priority, application Switzerland, Sept. 20, 1962, 11,064/62
6 Claims. (Cl. 60—13)



1. Exhaust manifold system for a multicylinder combustion engine comprising:
an axially elongated cylindrical receiver defined by a generally continuous body wall which forms therewithin a continuous undivided flow chamber of substantially circular cross-section and of given diameter;
said receiver being adapted for gas flow therethrough toward a downstream end thereof;
a turbine means disposed at said downstream end of said receiver;
said turbine means including a rotatable portion;
at least one exhaust pipe connecting each cylinder of said multicylinder combustion engine to said receiver
each of said exhaust pipes passing through said receiver body wall and having an outlet end disposed within said undivided flow chamber;
said exhaust pipes being arranged in spaced disposition axially of said receiver and hence passing through said body wall at locations successively spaced along the elongated length thereof;
said exhaust pipes having diameters which are a minor fractional dimension of said given diameter;
each of said exhaust pipes having its axis extending from the outlet end thereof toward its connected cylinder;
each of said exhaust pipe axes being disposed at an angle of less than 90° to said receiver axis;
said exhaust pipe outlet ends being positioned so that gas flow therefrom will have a directional component toward the downstream end of said receiver, whereby the cumulative gas flow through said exhaust pipes creates a spiral-shaped rotational velocity field within said flow chamber which traverses to said turbine means to rotate the rotatable portion thereof.

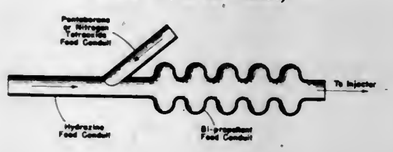
3,221,493
EXHAUST GAS SYSTEM FOR INTERNAL COMBUSTION ENGINES
Wilhelm Meyer, Angerstrasse 11, Hannover, Germany
Filed Apr. 21, 1964, Ser. No. 361,417
Claims priority, application Germany, Apr. 24, 1963, B 71,612
3 Claims. (Cl. 60—30)

1. An exhaust gas system for internal combustion engines, comprising
at least one ejector pump,
an air intake pipe communicating with said ejector pump,
a non-return valve disposed in said air intake pipe, and said non-return valve automatically opening and closing, respectively, in response to the pressure prevailing in said air intake pipe,
said non-return valve comprising a flap valve including a flap and closing by gravity, and includes
a counterweight substantially compensating for the weight of said flap valve,
said flap valve comprising a sheet metal pressing having two lateral lugs forming a hinge, said lugs simultaneously limiting the deflection angle of said flap,
said flap having a lever arm projecting between said lugs,
a counterweight attached to said lever arm and disposed beyond the axis of said hinge,



said air intake pipe having a seating at its top edge,
a sealing ring mounted in said seating,
said non-return valve bearing on said seating,
said air intake pipe having a channel section flange to form a groove, the latter receiving said sealing ring and constituting said seating, and
a silencer means following directly and communicating with said ejector pump.

3,221,494
COMPOSITIONS, PROCESSES, AND APPARATUS FOR THE IMPROVEMENT OF BI-PROPELLANT FUELS
Ju Chin Chu, Garden City, N.Y., assignor to North American Aviation, Inc., a corporation of Delaware
Filed Feb. 13, 1961, Ser. No. 88,931
7 Claims. (Cl. 60—35.4)

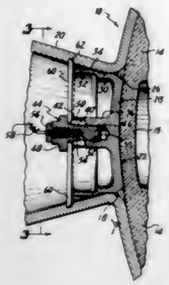


1. A liquid bi-propellant composition for rockets that comprises the components hydrazine, pentaborane, and a surface active agent for each of said hydrazine and said pentaborane, each of said surface active agents being present in an amount by weight of each of said components within the range of 0.1 percent to 1.0 percent.

3,221,495
THRUST CUT-OFF AND THRUST REVERSAL SYSTEM
John H. Tweet, Tolland, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Mar. 28, 1960, Ser. No. 18,103
6 Claims. (Cl. 60—35.6)

1. A reaction propulsion motor, comprising: a combustion chamber having a solid fuel therein which is adapted to be burned for the generation of hot gases under pressure; a thrust nozzle connected with said combustion chamber receiving the discharge of gases to provide a thrust; an opening in the wall of said combustion chamber; a closure covering said opening preventing the escape of gases therefrom, said closure having a surface forming

a part of the combustion chamber wall; a part of said solid fuel covering said surface and serving as a heat insulator; retaining means associated with said closure and operative to retain the closure in closed position; and remotely



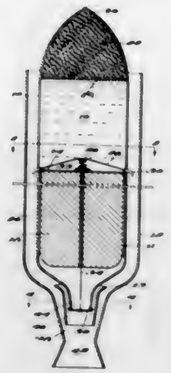
controlled means connected to said retaining means to render the same inoperative and permit the pressure of the gases within the combustion chamber to force the closure from the opening to relieve the pressure within the combustion chamber.

3,221,496
RAMJET MOTOR WITH MULTI-STAGE BURNING
Frederick L. Haake, 1519 Little Farms Road, Oxnard, Calif.
Filed June 26, 1962, Ser. No. 206,545
8 Claims. (Cl. 60—35.6)
(Granted under Title 35, U.S. Code (1952), sec. 266)



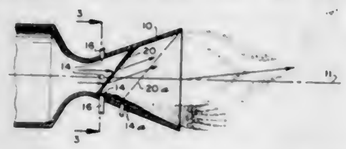
1. A reaction-type ram air motor comprising
(a) a cylindrical motor casing terminating in a nozzle
(b) a solid propellant charge mounted in said motor casing longitudinally spaced from said nozzle to form a combustion chamber therebetween.
(c) said solid propellant charge being formed of a plurality of individual solid propellant grains of the end burning type the tool cross-sectional area of all the grains combined being less than the cross-sectional area of the motor casing, said grains being arranged traversely in said casing to provide a plurality of longitudinal ram air passages leading to the combustion chamber;
(d) at least a portion of said air passages having different cross-sectional areas to pass ram air at different velocities; said air passages being open along their entire length throughout operation of the motor;
(e) the cross-sectional areas of said air passages remaining substantially constant throughout motor combustion
(f) the longitudinal length of the combustion chamber being of a dimension as to allow the formation of longitudinally disposed burning zones therein for the respective ram air passages so as to achieve substantially complete combustion in the combustion chamber prior to exhaust through said nozzle.

3,221,497
RAMJET PROPULSION SYSTEM
Ernest E. Forbes, Jr., 2610 3rd Ave. S., Birmingham, Ala.
Filed June 29, 1962, Ser. No. 206,452
4 Claims. (Cl. 60—35.6)



1. A ramjet engine utilizing solid and liquid propellants comprising an inner shell adapted to contain a propellant and having an exhaust nozzle in one end for the exhaust of said propellant, an outer shell concentric with said inner shell and having a chamber therebetween open at the front and rear portions of said outer shell, said rear portion of said outer shell including an exhaust area, a liquid propellant within said inner shell, a solid propellant within said inner shell, means separating said liquid and solid propellants, fuel nozzle means for said liquid propellant communicating with said chamber, valve means normally closing said fuel nozzle means, a closure member positioned over the exhaust nozzle of said inner shell, means connecting said closure member and said valve means to hold said valve means in position to close said fuel nozzle means, whereby the exhaust gases from the solid propellant will blow off the closure member and release the valve means to open the fuel nozzle means and permit the liquid propellant to pass into said chamber where it will be vaporized and directed to the rear exhaust area to increase the thrust.

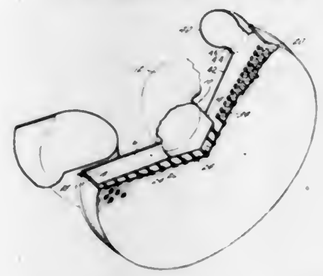
3,221,498
SECONDARY FLUID INJECTION THRUST VECTORING METHODS AND APPARATUS
Lester T. Bankston, Oxnard, Calif., assignor to the United States of America as represented by the Secretary of the Navy
Filed Aug. 6, 1962, Ser. No. 215,252
6 Claims. (Cl. 60—35.54)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. In a rocket motor having a fixed convergent-divergent exhaust nozzle exhausting gas at supersonic velocity and normally producing thrust along the axis of the nozzle, and means for selectively diverting said direction of thrust angularly to said axis in one of a plurality of angularly disposed planes containing said axis, whereby the direction of thrust may be varied as desired and effect movement of said nozzle in any direction about its axis, said means comprising a plurality of angularly spaced

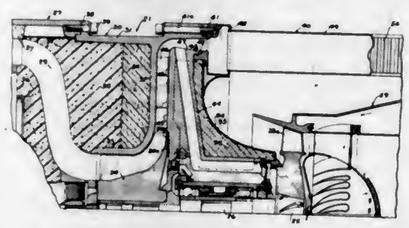
orifices disposed in the divergent portion of said nozzle and in a plane substantially perpendicular to said axis, a source of noncombustible liquid which is unoxidizable by said gas, and means for selectively delivering the liquid to at least one of said orifices for delivery into the exhaust gas in liquid state in sufficient quantity to produce a planar shock front, having a forward terminus forwardly adjacent the point of delivery and extending angularly rearwardly with a rearward terminus just within the confines of the nozzle.

3,221,499
INJECTOR HEAD FOR ROCKET
Augustus Hasbrouck, Middletown, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Apr. 12, 1960, Ser. No. 21,832
14 Claims. (Cl. 60—39.74)



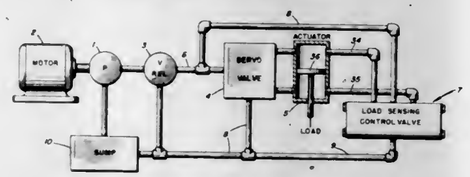
1. An injector head for a rocket combustion chamber for the delivery of two propellants into the chamber, said head including a central hollow hub receiving one propellant and having substantially radially extending manifolds integral therewith and projecting therefrom, each manifold having a plurality of propellant discharge tubes extending therefrom, a plate having a plurality of openings to receive the ends of the tubes and spaced axially from said radial manifolds, an annular manifold for the other propellant surrounding said hub and located adjacent to the ends of the radially extending manifolds, and a plurality of sector-shaped fillers engaging and closing the spaces between the radially extending manifolds to define chambers into which the other propellant is discharged from said annular manifold.

3,221,500
GAS TURBINE POWER PLANT
Charles C. Hill, 1148 Vesper, Ann Arbor, Mich.
Original application June 26, 1959, Ser. No. 823,197, now Patent No. 3,118,278, dated Jan. 21, 1964. Divided and this application Mar. 22, 1963, Ser. No. 267,283
3 Claims. (Cl. 60—39.75)



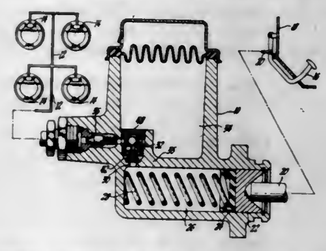
1. The combination comprising
a compressor having an axial inlet and a generally radial outlet,
said compressor having a shroud adjacent said axial inlet and said radial outlet,
a body of heat insulating material within said shroud adjacent said radial outlet,
a first body of sound absorbing material on said shroud in juxtaposed relation to said first mentioned body,
a second body of sound absorbing material spaced from the exterior surface of said first body of said sound absorbing material,
the adjacent surfaces of said bodies of sound absorbing material being so shaped to define an annular chamber having a first axial portion, a second radial portion and a third axial portion extending to the axial inlet of the compressor.

3,221,501
POWER MATCHED HYDRAULIC SERVO-SYSTEM
Woodrow Seamone, Rockville, and Loran A. Wenrich, Silver Spring, Md., assignors to the United States of America as represented by the Secretary of the Navy
Filed Aug. 19, 1964, Ser. No. 390,769
5 Claims. (Cl. 60—52)



1. A hydraulic servo system, comprising
a pump,
a relief valve connected with the pump,
a servo-valve having an input connected with the relief valve,
actuator means connected to the servo-valve and having a piston for connection to a load,
sump means connected to said valves and said pump, and
a variable load sensing control valve including means connected between the servo-valve input and the sump for bypassing said servo-valve and actuator means, said variable load sensing control valve also including mechanical means connected to the actuator means and operable to mechanically vary the bypass around said servo-valve and actuator means inversely with the load.

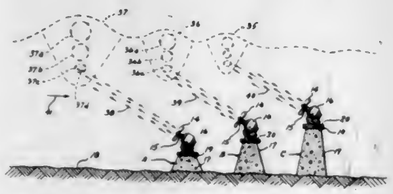
3,221,502
FLOW CONTROL MASTER CYLINDER
Ronald L. Shellhause, Vandalia, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Mar. 23, 1964, Ser. No. 353,883
10 Claims. (Cl. 60—54.6)



1. A master cyclinder for fluid pressure producing apparatus, said master cylinder comprising: fluid storage means, fluid displacing means in fluid communication

with said fluid storage means and adapted to draw fluid therefrom, first means for directing fluid pressure from the fluid displacing means to a fluid operable system, and valve means disposed within said first means and including an unrestrained displaceable element therein adapted to selectively isolate the fluid storage means from the fluid pressure producing apparatus and bring said fluid pressure producing apparatus into fluid communication with said fluid operable system during periods of pressure development, said valve means arranged to pass fluid from the fluid storage means into the fluid pressure producing apparatus as the fluid quantity therein becomes depleted in response to a negative pressure in said fluid displacing means, said valve means arranged to shut off fluid flow from said fluid storage means to the fluid displacing means as the need therein is satisfied.

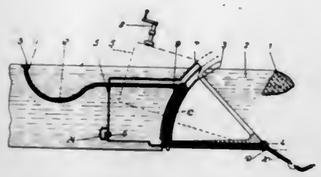
3,221,503
METHOD OF PRODUCING RELATIVELY-CALM WATER AREA
Allen B. Wilson, 2920 NE. 19th St., Pompano Beach, Fla.
Filed June 28, 1961, Ser. No. 120,397
1 Claim. (Cl. 61—6)



The method of producing a relatively-calm water area in the path of waves advancing in a predetermined direction in a body of water, which comprises the steps of: producing a pair of diverging groups of submerged streams of water, with the streams of water in each group being substantially parallel, said streams originating from a depth below the lowermost level of water disturbance within the waves; and simultaneously directing said submerged streams of water of each of said groups along substantially straight parallel paths against the waves in a direction generally opposite the predetermined direction of movement of the waves, each of said paths of said streams being upwardly inclined and at an acute angle with respect to said direction of movement, said diverging groups of streams of water thereby diverting the waves from the calm water area.

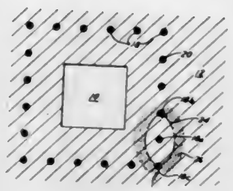
3,221,504
METHOD AND APPARATUS FOR THE AUTOMATIC REGULATION OF OBTURATING DEVICES
Lawrence Alexander Turner, Middleton, Cape Province, Republic of South Africa, assignor to Fluid Dynamics (Proprietary) Limited, Port Elizabeth, Republic of South Africa
Filed Apr. 24, 1961, Ser. No. 105,140
Claims priority, application Republic of South Africa, Apr. 29, 1960, 1,741/60
10 Claims. (Cl. 61—22)

1. Improved apparatus for the automatic regulation of the outflow from an open body of water impounded by a barrier and having a varying level when the level of said body of water is below a predetermined upper limit, which apparatus comprises a gate contiguous to said body of water and arranged to be opened and closed to control the outflow of water from said impounded body of water, a hollow float coupled to said gate on the side of said gate facing said body of water, said float having a water inlet adjacent the bottom thereof and having an air vent at the top thereof, conduit means connected to and opening out of the float and discharging downstream of said barrier, and control means in series with said conduit means for control of withdrawal of water from said float and discharging it downstream of the barrier at varying controlled rates so as to vary the buoyancy of the float and consequently the opening and closing movements of the gate,



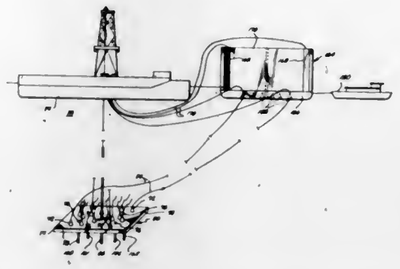
said control means being operatively dependent on the level of the impounded body of water, wherein the control means comprises a main syphon operable for said withdrawal and discharge of water, said syphon having a throat and air inlet means for syphon breaking purposes connected to the throat of said syphon means, said air inlet means being fixed in the impounded body of water below said predetermined upper limit to be covered or uncovered depending on the level of the impounded body of water.

3,221,505
GROUTING METHOD
Robert J. Goodwin, Oakmont, Pa., and Frederick L. Becker, Northfield, Ohio, assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware
Filed Feb. 20, 1963, Ser. No. 259,988
10 Claims. (Cl. 61—36)



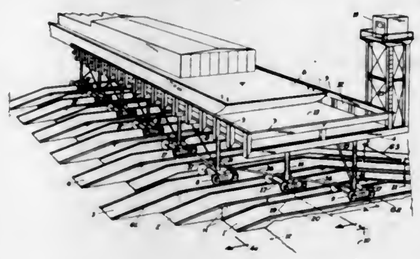
1. A method of creating an impermeable barrier extending from a first location in a permeable subsurface formation containing an aqueous liquid to a second location in the permeable formation spaced from the first location comprising injecting a non-aqueous water-miscible liquid into the subsurface formation adjacent said first location, displacing the water-miscible liquid through the formation to drive water through the formation, withdrawing the water-miscible liquid and displaced water from the formation adjacent said second location whereby said formation is dehydrated between the area of injection and the area of withdrawal of the water-miscible liquid, maintaining pressure on the dehydrated portion of the formation to prevent flow of water into said portion from the surrounding formation and displacing into the dehydrated portion of the formation a gaseous reagent reactable with the aqueous liquid in the formation to form a solid water-insoluble precipitate, and displacing said gaseous reagent into the formation adjacent the dehydrated portion whereby said gaseous reagent reacts with aqueous liquids therein to plug the formation.

3,221,506
SUPPORT STRUCTURES
Hal Stratton, Los Angeles, Robert F. Bauer, Whittier, Almeron J. Field, Portuguese Bend, and Robert C. Crooke, Corona del Mar, Calif., assignors, by direct and mesne assignments, to Shell Oil Company, Los Angeles, Calif., a corporation of Delaware
Continuation of application Ser. No. 809,024, Apr. 27, 1959. This application Apr. 16, 1964, Ser. No. 360,807
11 Claims. (Cl. 61—46.5)



1. A subsurface structure comprising in combination equipment of predetermined vertical height and weight for carrying out a desired function underwater, a platform, means within the platform to store fluid to give the platform a positive buoyancy in excess of its own weight and that of the equipment, means for landing and holding the equipment on the platform, and at least one vertical tubular column fastened at its upper end to the platform and anchored at its lower end in the bottom of the water body, the tubular column between the bottom and the platform being substantially shorter in length than the difference between the water depth and the combined vertical height of the equipment and the platform so that the equipment supported on the platform is at its upper extremity substantially below the surface of the water body, the tubular column being under tension in response to the positive buoyancy of the platform.

3,221,507
DIFFERENTIAL INCLINED RAILWAY TRANSIT MEANS
Stanley J. Grossman, 2132 Crestmont, Norman, Okla.
Filed Nov. 13, 1962, Ser. No. 237,790
8 Claims. (Cl. 61—67)

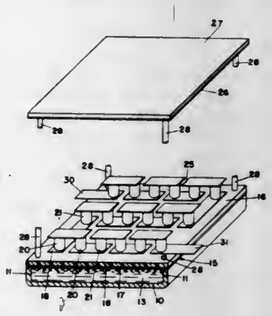


1. A transit means having ascending and descending ways, a horizontal crest section connecting said ways, said ways having positive and negative slopes of the same numerical value on opposite sides of said crest section, a plurality of ways on said crest running parallel with the longitudinal axis of said means, the ways on said crest and on only one side thereof being displaced vertically from one another, a mobile carriage having a plurality of wheel assemblies, equal in number to said ways, adapted to run thereon, the difference in elevation (H) between any two adjacent of the aforesaid vertically displaced ways and the alignment of said wheel assemblies on said two ways being defined by the equation:

$$H=A(G_T-G_W)$$

where A is the distance between centers of wheel assemblies on said two ways, G_T is the grade of said two ways at the location of said wheel assemblies, G_W represents the grade, other than zero, of a line tangent to the wheels on said two ways, whereby said carriage remains substantially level on said ways when moved from one side of said crest to the other.

3,221,508
FLEXIBLE COLD SIDE FOR THERMOELECTRIC MODULE
John B. Roes and William J. Gauld, San Diego, and Erik S. Pedersen, La Crescenta, Calif., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Jan. 28, 1965, Ser. No. 428,891
6 Claims. (Cl. 62—3)

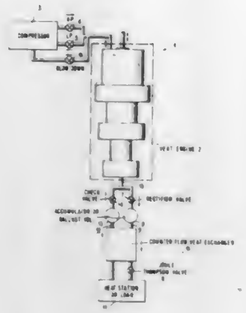


1. A thermoelectric assembly which comprises,
(a) a cold junction including an outer metal support having a reservoir in its inner surface,
(b) a film of liquid metal in said reservoir,
(c) a layer of sheet material having a coating of metal on one face positioned in contact with the film of liquid metal,
(d) said sheet material having electrically insulating and heat conductive properties,
(e) metal contact means on the other face of the sheet,
(f) heat sink means,
(g) thermoelectric elements secured to the contact means and to the heat sink means providing a space therebetween and
(h) stress relief means of insulating material secured to the layer of sheet material and to the heat sink means permitting relative movement therebetween.

3,221,509
REFRIGERATION METHOD AND APPARATUS
Richard L. Garwin, Scarsdale, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Jan. 16, 1964, Ser. No. 338,089
14 Claims. (Cl. 62—6)

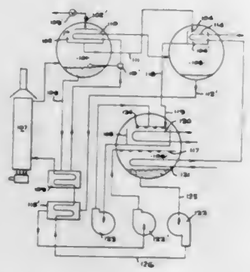
1. Refrigeration apparatus comprising a heat engine, a load adapted to operate at cryogenic temperatures, means for cyclically introducing and exhausting a fluid to and from said heat engine wherein said fluid is cooled by

a process of successive compressions and expansions, means for delivering said fluid to said load at substantially constant pressure disposed intermediate said heat engine



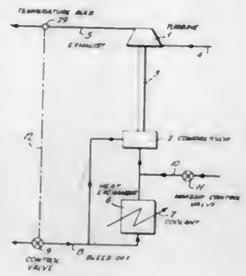
and said load and means connected to said heat engine for cyclically blowing-down said fluid through said engine at pressures lower than said constant pressure.

3,221,510
METHOD AND APPARATUS FOR THE REMOVAL OF FIXED GAS FROM ABSORPTION REFRIGERATION PROCESSES
Judson S. Swearingen, Los Angeles, Calif., assignor, by mesne assignments, to Electronic Specialty Co., Los Angeles, Calif., a corporation of California
Filed Dec. 15, 1961, Ser. No. 159,531
12 Claims. (Cl. 62—85)



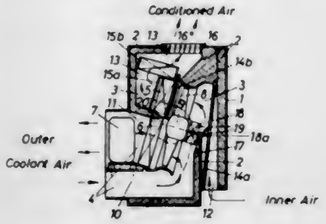
1. A process of refrigeration in a refrigeration system which comprises heating a liquid refrigerant containing fixed gas, partially vaporizing said liquid refrigerant, and separating the unvaporized fraction of liquid refrigerant from generated refrigerant vapor and gas; fractionating said vapor and gas in a fractionation zone to produce a refrigerant condensate substantially free of fixed gas and separating and removing the fixed gas from said condensate and discharging the same from the system; removing said condensate from said fractionating zone; passing said condensate substantially free of fixed gases to an evaporation zone and vaporizing said condensate at a substantially lower pressure than in said separating zone in heat exchange with a fluid to be cooled; removing and passing vapors from said evaporation zone to an absorber and absorbing said vapor in an absorbing liquid, and circulating said last named liquid to said heating step in cycles of operation.

3,221,511
COOLING SYSTEMS FOR GASES
Michael Ernest Garrett, London, England, assignor to The British Oxygen Company Limited, London, England
Filed Dec. 14, 1964, Ser. No. 417,977
12 Claims. (Cl. 62—172)



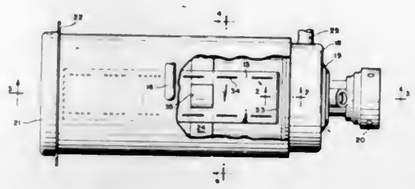
1. A cooling system for a gas comprising an expansion turbine for expanding and cooling the gas, a compressor driven by said turbine, a closed gas cycle including said compressor but not including said turbine, a controlled make-up to said closed gas cycle at the input side of said compressor, a controlled bleed-off from said closed gas cycle at the output side of said compressor and means for varying at least one of said make-up and said bleed-off to control the pressure in said closed gas cycle.

3,221,512
AIR CONDITIONER ARRANGEMENT
Nikolaus Bakos, Betzdorf, Germany, assignor to Heinrich Nickel G.m.b.H., Betzdorf (Sieg), Germany
Filed Aug. 28, 1964, Ser. No. 392,806
14 Claims. (Cl. 62—281)



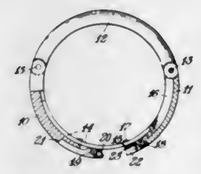
1. In an air conditioner arrangement including an evaporator and a condenser, in combination, a housing means including partition means thereacross and a first air duct therein for the flow of air to be conditioned and arranged along one side of said partition means and having a first air inlet duct and a first air outlet duct, and a second air duct in said housing means for a flow of coolant air and arranged along the other side of said partition means and having a second air inlet duct and a second air outlet duct, said partition means having a transverse opening located between said inlet ducts and said outlet ducts; and fan wheel means rotating substantially in one plane for blowing during rotation air in direction substantially normal to said means, said fan wheel means basing mounted for operation in said transverse opening of said partition means and having its plane of rotation transverse of both said first and second air ducts, the area of operation occupied by said fan wheel means in said plane extending partly across said first air duct and partly across said second air duct, so that rotation of said fan wheel means causes said flow of air through both said first and second air ducts simultaneously and in the same direction.

3,221,513
FREEZING CYLINDER
Charles William Clark, Jr., Edmonds, Wash., assignor to Sweden Freezer Manufacturing Co., a corporation of Washington
Filed Mar. 18, 1963, Ser. No. 265,945
3 Claims. (Cl. 62—519)



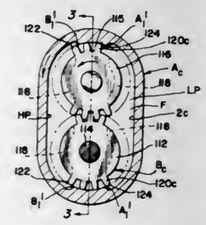
1. A freezing cylinder for a frozen comestible dispenser comprising, inner and outer shells spaced apart radially to define a chamber therebetween, said inner shell being of thin stainless steel and turning outwardly at one of its ends and then being bonded to the respective end of the outer shell, a ring located between said inner and outer shells at the other end of said outer shell, said ring being bonded to said outer shell and brazed to the inner shell, said inner shell continuing longitudinally beyond said outer shell from said ring and then necking, and said inner shell having an egress opening for product mix between said ring and said necking, said outer shell having an inlet and outlet for refrigerant, and a perforated diffuser plate tangential to said inner shell and subdividing said chamber into a manifold chamber and an expansion chamber, said inlet feeding to said manifold chamber and said outlet leading from said expansion chamber, said inner shell being free of welds between said outward turning and said necking.

3,221,514
ADJUSTABLE FINGER RINGS
Jacob Newman, 68 Ralph Court, Queensway, Bayswater, London, England
Filed Feb. 28, 1964, Ser. No. 348,248
2 Claims. (Cl. 63—15.7)



2. An adjustable finger ring comprising in combination an arcuate intermediate section, a first tubular arcuate side section, pivoted to one end of the intermediate section, a second tubular arcuate side section pivoted to the other end of the intermediate section, an arcuate bridging member concentric with the center of the ring and having a portion thereof anchored inside the first tubular side section, a rigid transverse catch member at the free end of the second tubular arcuate side section dividing the internal cross section surface area of the tube into two unequal parts and into the greater of which parts the remaining portion of the bridging member is slidable, a projection means on the portion of the bridging member slidable into said second tubular side section which coacts with the said catch member and prevents separation of the bridging member from said second tubular arcuate side section when said ring is in open position, a curved resilient latch bar means concentric with the center of the ring and having a radially inwardly directed curved nose, said latch bar means being fixedly secured to said first tubular side section, said second tubular arcuate side section being provided at the outer surface of its free end with an oblong slot overlying said transverse catch member; said latch bar means penetrating into said slot and filling the latter and gripping with its curved nose over and behind said catch member when said two arcuate side sections are closed at their junction.

3,221,515
GEAR TYPE IMPULSE TOOL
Christopher K. Brown, Sayre, and Elmer B. Burnett, Monroeton, Pa., assignors to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Original application Dec. 12, 1962, Ser. No. 244,151. Divided and this application May 5, 1964, Ser. No. 377,788
13 Claims. (Cl. 64—26)

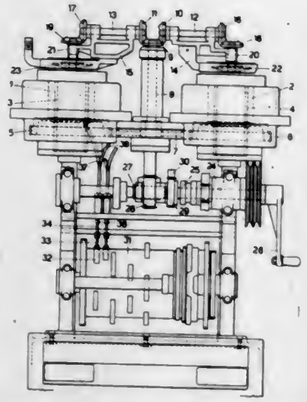


1. An impulse tool for applying a torque to an object, said impulse tool comprising:
(a) housing means provided with a cavity for sealingly containing a fluid and provided with first and second sealing portions,
(b) spindle means in said housing means and in said fluid,
(c) drive means operatively associated with one of said housing means and said spindle means for causing relative rotary movement between said housing means and said spindle means,
(d) the other of said housing means and said spindle means being adapted to engage said object,
(e) first gear means on said housing means in said cavity and provided with first and second spaced solid tooth portions,
(f) second gear means on said spindle means in said cavity and provided with third and fourth spaced solid tooth portions and meshing with said first gear means, each of said first and second gear means being provided with by-pass means between said solid toothed portions,
(g) said first solid tooth portion and said third solid tooth portion, said second solid tooth portion and said first sealing portion and said fourth solid tooth portion and said second sealing portion being disposed in sealing relation during a relatively small portion of each revolution of said relative rotary movement,
(h) said first solid tooth portion and said third solid tooth portion, said second solid tooth portion and said first sealing portion, and said fourth solid tooth portion and said second sealing portion being operable during said relatively small portion of each revolution of said relative rotary movement to dynamically seal off a portion of said cavity into a high pressure portion so that the pressure in said high pressure portion of the fluid and on said other increases thereby causing the other of said housing means and said spindle means to rotate with respect to said one and to apply a torque to said object twice during each said revolution.

3,221,516
CIRCULAR KNITTING MACHINE FOR THE MANUFACTURE OF STOCKINGS

Pietro Giuliuzza and Arduino Schoen, Milan, Italy, assignors, by direct and mesne assignments, to O.M.C.S.A. Officine Meccaniche Cigardi S.p.A., Milan, Italy, an Italian company

Filed Dec. 14, 1961, Ser. No. 159,297
Claims priority, application Italy, Dec. 19, 1960, Patent 641,962
3 Claims. (Cl. 66—8)

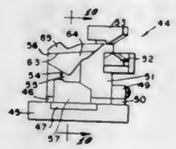


1. A knitting machine for the manufacture of stockings comprising a plurality of parallel needle cylinders each adapted for rotation about a vertical axis, each cylinder including knitting means adapted for the knitting of fabric, central drive means for said needle cylinders for driving the same together and simultaneously, and means for controlling the knitting means of each of the needle cylinders simultaneously to produce identical stockings from each needle cylinder, the latter said means comprising a control drum, a plurality of cams on said drum and means associated with the cams on said control drum and the knitting means of each of the needle cylinders for controlling the knitting means simultaneously from the control drum, the latter means comprising a lever for each cam resiliently urged thereagainst, a rocker for each lever, a rod for each of the knitting means coupled to the rocker for controlling the associated knitting means, and means for moving each of the rockers and the rods coupled thereto upon corresponding movement of the associated lever.

3,221,517
KNITTING MACHINE

Vaughn H. Butler, Harriman, Tenn., assignor, by mesne assignments, to Scott & Williams, Inc., Laconia, N.H., a corporation of Massachusetts

Filed June 22, 1956, Ser. No. 593,228
4 Claims. (Cl. 66—57)

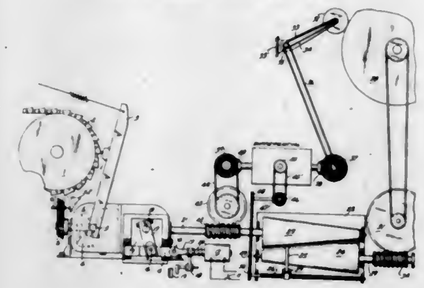


4. In a circular knitting machine, a rotary cylinder with independent needles, a retractible auxiliary cam assembly for actuating said needles, means for moving said cam assembly as a unit radially with respect to said cylinder, said assembly including a stitch cam, a landing cam below said stitch cam, a center cam leading said stitch cam and a clear cam leading said center cam, and means for adjusting said stitch and landing cams vertically with respect to said auxiliary cam assembly.

3,221,518
HYDRAULIC MECHANICAL WARP BEAM CONTROL FOR TEXTILE MACHINES

Rudolph G. Bassist, New York, N.Y.
(3660 Waldo Ave., Riverdale, Bronx, N.Y.)

Filed Nov. 24, 1961, Ser. No. 154,546
3 Claims. (Cl. 66—86)



1. In a textile machine such as a warp knitting machine in which there is a warp beam, a source of driving power, a pattern control, and a driving transmission between said driving source and the warp beam: the improvement which resides in

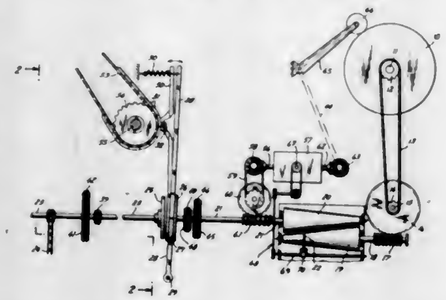
(a) interposing in said transmission, in series, a variable hydraulic speed change unit and a variable mechanical speed change unit, and

(b) providing a means responsive to the pattern control for varying the output of the hydraulic speed change unit, and a means responsive to the diminishing diameter of the warp beam for varying the output of the mechanical speed change unit.

3,221,519
MECHANISM FOR CONTROLLING THE ROTATION OF A WARP BEAM OF A WARP KNITTING MACHINE

Rudolph G. Bassist, 3660 Waldo Ave., Riverdale, N.Y.

Filed Jan. 13, 1964, Ser. No. 337,389
6 Claims. (Cl. 66—86)



1. A mechanism for rotating a warp beam of a warp knitting machine at controlled varying speeds corresponding, for example, to the varying demands of the needles, comprising:

(a) a primary driving shaft affording a constant-speed driving force,

(b) a primary driven shaft operatively connected to the warp beam,

(c) a releasable clutch between said driving and driven shafts,

(d) at least one set of by-pass driving and driven shafts with a releasable clutch between them,

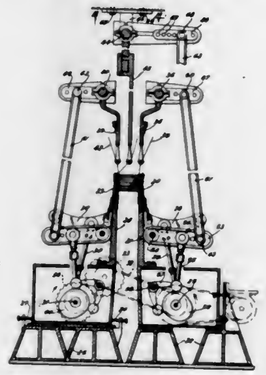
(e) a transmission between the primary and by-pass driving shafts and another transmission between the by-pass and primary driven shafts, at least one of said transmissions being alterable to permit a selective change in the speed ratio achieved, and

(f) means for operating said clutches in a predetermined timed sequence to direct the driving force through a selected one or another of said clutches.

3,221,520
DOUBLE-NEEDLE-BED WARP KNITTING MACHINE

Rudolph G. Bassist, 3660 Waldo Ave., Riverdale, N.Y.

Filed Feb. 27, 1963, Ser. No. 261,358
7 Claims. (Cl. 66—87)



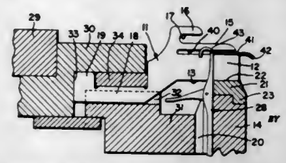
1. In a warp knitting machine, a pair of needle beds and means for moving the needles of each bed through the knitting cycle, yarn feeding means, primary movable guide bars in proximity to said needle beds respectively, each guide bar being adapted to move back and forth only with respect to its own needle bed and controlling the disposition of yarn with respect to the needles of said bed, a third movable guide bar adapted to move back and forth with respect to both needle beds and controlling the disposition of yarn with respect to the needles of both beds, means for moving said guide bars in such timed relation that the yarn-positioning movements of said third guide bar with respect to each needle bed occur with the yarn-positioning movements of the corresponding primary guide bar, means for varying the distance between said needle beds, and means for correspondingly varying the range of the back-and-forth movement of said third guide bar.

3,221,521
SINKER ARRANGEMENT FOR KNITTING MACHINES

Sam Mishcon, Miami Beach, Fla., assignor, by mesne assignments, to The Singer Company, New York, N.Y., a corporation of New Jersey

Filed Oct. 18, 1962, Ser. No. 231,518
3 Claims. (Cl. 66—107)

1. In a circular knitting machine having a needle cylinder formed peripherally with substantially parallel needle accommodating slots, a bank of knitting needles endwise slidably constrained one in each of said needle cylinder slots, a bank of endwise reciprocatory hold-down type sinkers interdigitated with said needles, a platen ring secured atop said needle cylinder, said platen ring being formed with a substantially planar sinker support top surface defining the upper extremity of means carried by said needle cylinder and defining the sole guide surface on said needle cylinder for said sinkers, each sinker having a web supporting blade formed with an under surface of uniform thickness engaging

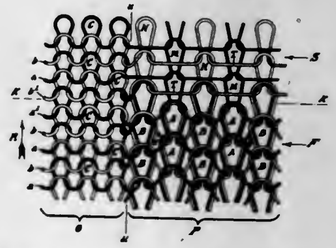


said planar top surface of said platen ring, the web supporting blade of each sinker being provided with an upper portion of reduced thickness, said upper portion of reduced thickness being formed with a web supporting surface, and a web hold-down finger overlying said web supporting surface and defining therebetween a web accommodating slot.

3,221,522
CIRCULAR KNIT STOCKINGS

Max Bruno Nebel, Wiesbaden, Germany, assignor to Hanes Hosiery Mills Company, Winston-Salem, N.C., a corporation of North Carolina

Filed Jan. 23, 1962, Ser. No. 168,140
Claims priority, application Germany, Jan. 26, 1961, N 19,488
2 Claims. (Cl. 66—185)



1. In a lady's stocking rotary knitted throughout the leg and foot thereof,

(a) an instep portion composed of a first thread in alternate courses and a second thread in the intervening courses,

(b) a heel portion contiguous with the instep portion wherein the two threads are formed into double thread knitted loops in alternate wales in alternate courses and into double thread knitted loops in the intervening wales in the intervening courses, and

(c) a sole portion contiguous with both the instep portion and the heel portion wherein one thread is formed into knitted loops in alternate wales in alternate courses and floated across the intervening wales, and wherein the other thread is formed into knitted loops in the intervening wales in the intervening courses and floated across the alternate wales.

3,221,523
MANTLE AND SUPPORT

Will S. Sease, Philadelphia, Pa., assignor to The Welsbach Corporation, Philadelphia, Pa., a corporation of Delaware

Filed Nov. 18, 1963, Ser. No. 324,559
2 Claims. (Cl. 67—101)

1. A mantle and a mantle support for a burner comprising a supporting refractory ring having an integral upwardly extending hook portion opening downwardly, a mantle having its upper end secured to said supporting

ring, a base ring the upper end of which is telescoped inside the lower end of the mantle, and an inverted U-shaped frame secured to said base ring and having an upper end extending substantially above the upper end of the mantle with a loop portion opening upwardly and



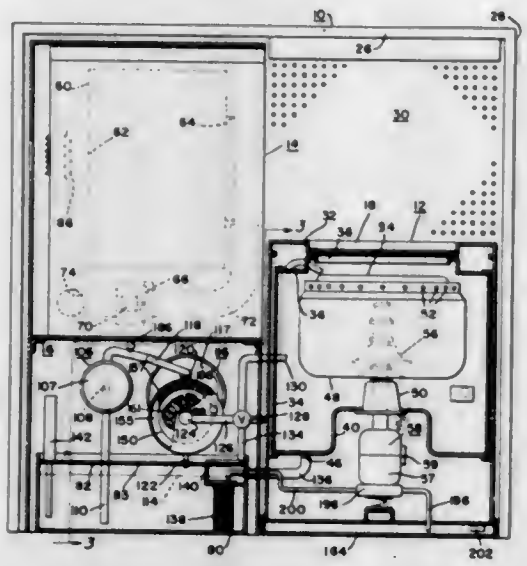
centered on the axis of the mantle, said loop portion being engaged by said hook portion whereby the mantle and the hook can be raised clear of the base and frame respectively for the removal of the mantle without movement of the frame.

3,221,524

DOMESTIC APPLIANCE USING A FILTER

James W. Jacobs and George B. Long, both of Dayton, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Oct. 27, 1961, Ser. No. 148,235
1 Claim. (Cl. 68—12)



In combination, dry cleaning apparatus having a solvent circulating system including a sump having an air vent means in the top thereof, wall means defining a filter chamber having an inlet and an outlet, a pump having an open ended inlet conduit in continuous open communication with said sump and an outlet conduit connected to said filter chamber inlet, a tub, a supply conduit having one end connected to the outlet of said filter chamber and another end in spaced air gap relationship to said tub, two-way valve means in said supply conduit between said ends and having an open ended sump return line in communication with said sump and the atmosphere, said valve means being actuatable selectively to connect said ends of said supply conduit to each other for directing solvent to said tub or to connect said one end of said supply conduit to said sump return line for directing solvent to said sump, said valve means when directing solvent to said sump placing the outlet of said filter chamber in communication with the atmosphere through said valve means, a removable, throw-away filter cartridge substantially filling said filter chamber and having an outer surface spaced from the wall means of said filter chamber to form an annular space in solvent flow receiving relationship to said filter chamber inlet, a central outlet channel spaced from said outer surface and in solvent flow supply relationship to said filter chamber outlet and filtering material filling the space between said outer surface and said central outlet channel in permanently fixed relationship thereto for filtering solvent flowing through the filter cartridge from said outer surface to said central outlet channel, first switch means operable in one manner for energizing said pump to pump solvent from said sump through said cartridge to said tub or said sump and operable in another manner to deenergize said pump, second switch means operable in one manner for actuating said valve means to direct solvent to said tub and operable in another manner for actuating said valve means to direct solvent to said sump and or to connect said filter chamber to atmosphere, bleed-drain means constructed and arranged to fluidly communicate the lowest point of the interior of said filter chamber with said sump, means including the open ended inlet conduit of said pump and the open ended sump return line and said bleed-drain means for completely draining said filter chamber, said inlet and outlet conduits of said pump and said one end of said supply conduit when said valve means is connecting said filter chamber to atmosphere through said open ended sump return line and said pump is deenergized thereby to admit air at atmospheric pressure to both the outer surface and the central outlet channel of said cartridge between periods of pump energization, and timing means for operating said first and second switch means throughout a plurality of successive dry cleaning cycles of predetermined duration, said timing means operating said first and second switch means in said another manner before the end of one of said dry cleaning cycles to facilitate the draining of said filter chamber, said inlet and outlet conduits of said pump and said one end of said supply conduit thereby to expose said outer surface of said cartridge to atmosphere and thereby condition said outer surface to receive sudden surges of high pressure air and solvent when said pump is reenergized in the next succeeding one of said dry cleaning cycles, said timing means at the start of said next succeeding one of said dry cleaning cycles operating said first switch means in said one manner to reenergize said pump and operating said second switch means in said another manner to continue the connection of said filter chamber to atmosphere through said open ended sump return line thereby to force filtered contaminants into said filtering material from said outer surface of said cartridge toward said central outlet channel progressively with each one of said dry cleaning cycles to insure that the entire radial cross section of the filtering material in said cartridge is utilized for filtering before the cartridge is thrown away.

3,221,525

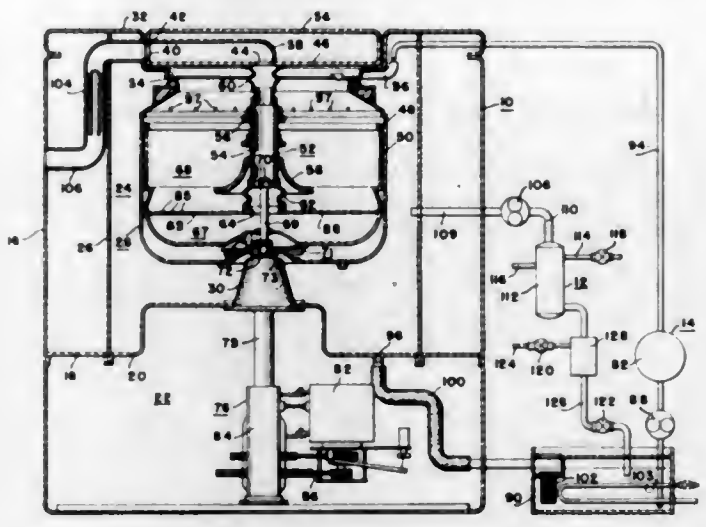
DRY CLEANING APPARATUS WITH SOLVENT RECOVERY

James W. Jacobs, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Feb. 28, 1963, Ser. No. 261,641
3 Claims. (Cl. 68—18)

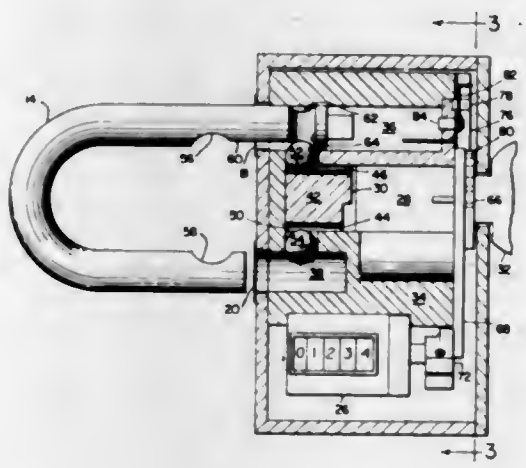
1. In a dry cleaner system, a spin tub for cleaning articles, an enclosure surrounding said spin tub including a liquid solvent sump region and a vaporized solvent collection region, a liquid solvent circuit including a storage tank, means for draining liquid solvent from said sump region into said storage tank and means for directing liquid solvent from said storage tank into said spin tub, a

vaporized solvent circulation system including an inlet in said enclosure communicating with atmosphere and an outlet from said enclosure, fluid passage means for serially connecting said spin tub between said inlet and said outlet for circulating air from the bottom thereof to the top thereof, pump means connected to said outlet for drawing air through said spin tub as a single pass from said inlet through said fluid passageway means and said outlet, means for heating said air stream to vaporize solvent in said spin tub, said pump means compressing air and vaporized solvent from said spin tub, a condenser for receiving said



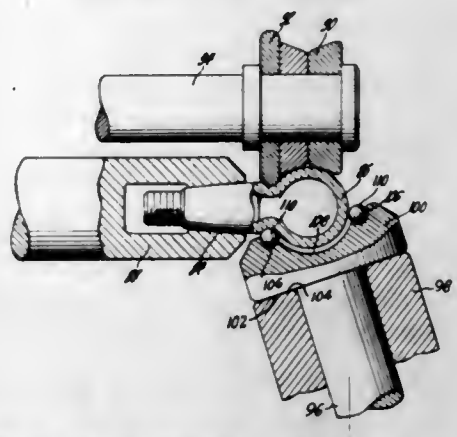
compressed vaporized solvent and air mixture from said pump means, means for maintaining said discharged mixture from said pump means under pressure in said condenser, and means for directing air from said condenser back to atmosphere and for returning condensed solvent therefrom back to said liquid storage tank.

3,221,526
METER PADLOCK
Wells F. Stackhouse, 126 Lowell St., Andover, Mass.
Filed July 23, 1962, Ser. No. 211,645
11 Claims. (Cl. 70—437)



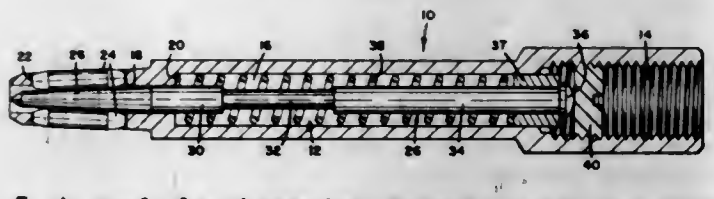
1. A padlock, comprising a casing, a hasp connected to said casing for locked and unlocked engagement therewith, locking means for locking said hasp to said casing, counter-action means connected with said locking means for restricting a return movement of said locking means from one position to another only upon completion of a locking or unlocking movement, a limited accumulation counter mechanism mounted to said casing and operatively connected with said locking means, said counter mechanism being adapted to be actuated each time said locking means is operated and means preventing recycling of said counter mechanism.

3,221,527
HOLLOW BALL STUDS
Guenter W. Roehrs, Rochester, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Original application Mar. 3, 1960, Ser. No. 12,604. Divided and this application Nov. 13, 1962, Ser. No. 236,929
2 Claims. (Cl. 72—80)



1. Apparatus for producing high precision sphericity and surface finish on the preformed spherical end portion of a hollow ball stud comprising, a chuck rotatably supporting the stud, roller members rotatably supported in surface contact with said spherical end portion, one of said roller members being a ring member having a diameter greater than the other of said members, the outer surfaces of the other of said rollers being inclined toward one another, driven means for applying circular line contact deforming pressure to said end portion in a plane normal to an axis intersecting the geometric center of said end portion at an angle to the axis of said chuck.

3,221,528
TUBE EXPANSION TOOL
Harley E. Linthicum and William A. Linthicum, Springfield, Ohio., assignors to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed Aug. 17, 1962, Ser. No. 217,747
5 Claims. (Cl. 72—122)



5. A tool for imparting limited radial expansion throughout a predetermined axial portion of a hollow structural member for the purpose of uniting the member with a second structural member having an opening for receiving the first member comprising

a hollow elongated cage member of substantial axial extent having a plurality of slots circumferentially spaced about a first end theerof, said slots being arranged in a direction skewed with respect to the axis of the cage member, said cage member being further provided with a passage of a differential diameter extending therethrough;

a plurality of rollers mounted in said cage member so that each slot accommodates one roller therein;

a mandrel having a tapered end portion, an enlarged end portion and a relieved intermediate portion spaced from each end slidably mounted in said eage member passage;

spring means assembled within a portion of the cage member passage of constant diameter with one end in engagement with the enlarged end portion of the mandrel and the other end in engagement with a shoulder defined by the juncture of two portions of the cage member passage having different diameters;

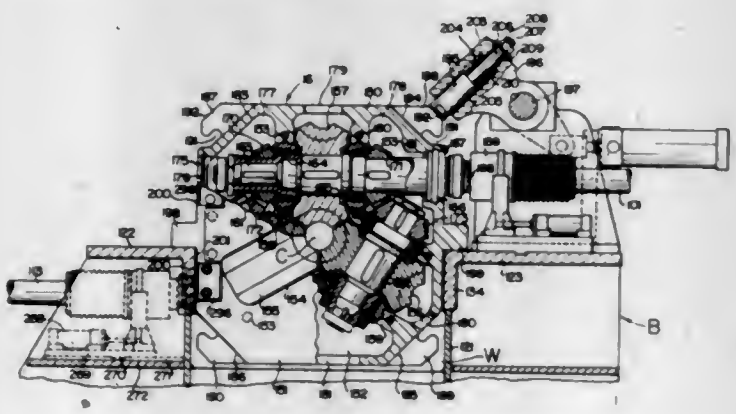
an adjustable abutment member mounted in said passage in engagement with said mandrel member, said abutment member being operable to yieldably advance said mandrel through said passage until predetermined engagement between said tapered mandrel end and said rollers is effected so that when the assembly is inserted within a part to be expanded in a radial direction and the rollers restrainably engage the part and the mandrel, rotary motion imparted to the cage member causes the rollers to advance the mandrel while simultaneously exerting a continuing outwardly directed force against the tube until the section of the mandrel having the relieved portion is aligned with said rollers.

3,221,529

QUICK MASS ASSEMBLY OF MILL HOUSINGS

William J. H. Chang, Lakewood, Ohio, assignor to The Yoder Company, Cleveland, Ohio, a corporation of Ohio

Filed Oct. 19, 1961, Ser. No. 146,277
27 Claims. (Cl. 72—224)



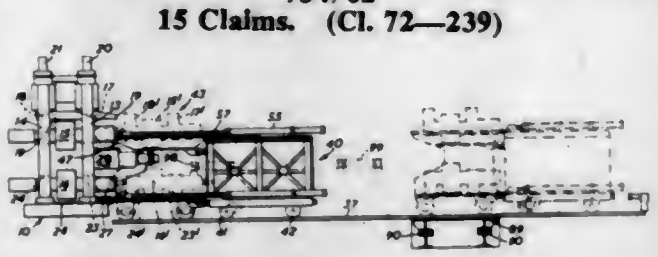
1. A mill having a base provided with a longitudinally extending recess having a finished side wall, a group of roll housings supported on said base within said recess, and means to push said roll housings against said finished wall to align longitudinally said roll housings.

3,221,530

ROLLING MILLS HORIZONTAL-ROLL CHANGE

Reginald Dennis Swallow, Todwick, near Sheffield, and Dennis Stubbs, Sheffield, England, assignors to Davy and United Engineering Company Limited, Sheffield, England, a British company

Filed Jan. 8, 1963, Ser. No. 255,423
Claims priority, application Great Britain, Jan. 8, 1962, 734/62
15 Claims. (Cl. 72—239)



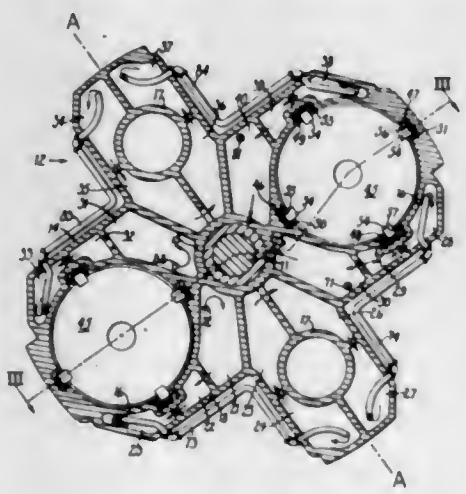
1. In combination a universal beam mill stand and a mobile roll-change unit for changing the horizontal rolls thereof, the mill stand having means for lowering the lower horizontal roll assembly to a roll changing position in which that lower horizontal roll assembly can be removed horizontally to one side of the stand below a vertical roll assembly and having means for raising the upper horizontal roll assembly to a roll changing position in which that upper horizontal roll assemly can be removed horizontally to said one side of the stand above said vertical roll assembly, the mill stand having means for supporting the upper and lower horizontal roll assemblies as they are moved horizontally to said one side of the stand and the mobile roll change unit being positionable at said one stand side and including a carriage having integral upper and lower decks arranged to receive the upper and lower horizontal roll assemblies respectively; a track extending in a direction normal to the passline of the mill between said one side of the stand and a roll storage area; means for driving the carriage over the track between the roll storage area and said position at said side of the stand and roll transfer means for moving the horizontal roll assemblies between the mill stand and the carriage.

3,221,531

PRESSES FOR THE HOT WORKING OF METAL BILLETS

Frank Sidney Salter, Parkstone, Dorset, England, assignor to The Loewy Engineering Company Limited, Bournemouth, England, a corporation of Great Britain

Filed Oct. 26, 1962, Ser. No. 233,372
Claims priority, application Great Britain, Oct. 26, 1961, 38,349/61, 38,350/61
10 Claims. (Cl. 72—263)



1. A metal extrusion press having at least two billet containers, means for rotating said containers about an axis parallel to the main working axis of the press, whereby the containers are transferred from a position in this axis to a position outside theref, said rotating means comprising a carrier common to said containers and a stationary support in said press extending parallel to the main working axis, said carrier having a central hub by which it is mounted on said support, cylindrical housings radially spaced apart from said hub and each supporting a container, an outer cover spaced apart from said housings, and a cooling system for said housings for circulating a coolant through the space between said housings and said outer cover, and means for supplying and discharging a coolant to the space between said housings and said outer cover including inlet and outlet ducts in the hub part, and inlet and outlet ducts on the stationary support, the latter ducts being in registry with the former ducts.

3,221,532

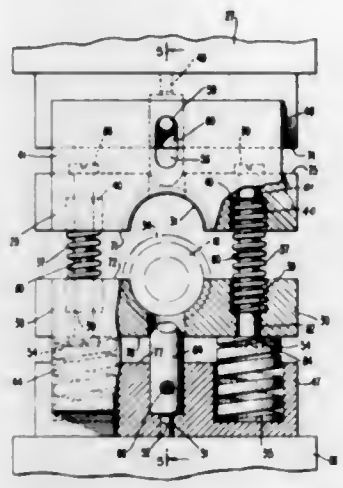
CRIMPING APPARATUS

Joseph F. Bazata, Sidney, and Robert Goebeler, Unadilla, N.Y., assignors to The Bendix Corporation, Sidney, N.Y., a corporation of Delaware

Filed Oct. 23, 1961, Ser. No. 146,737
8 Claims. (Cl. 72—312)

1. Apparatus for crimping a ferrule about a wire to effect mechanical retention of the wire in the ferrule, comprising two opposed blocks connected together for reciprocable movement relatively toward and away from

each other, the blocks each having an open sided cavity in the face thereof which confronts the other, the cavities together presenting an opening in the blocks when the blocks are close together, the opening being of such size and shape as closely to receive and confine an undeformed ferrule, a first yieldable means constantly urging the blocks away from each other, a passage in at least one of the blocks generally aligned with the path of relative reciprocation of the blocks and opening into the cavity in the block, a punch-like tool having a shank aligned with and receivable through the passage in said one block, means supporting the tool, and a second yieldable



means, having a yielding point appreciably higher than that of the first yieldable means, acting between the said one block and the tool-supporting means constantly to urge the tool supporting means and the said one block apart, whereby when the other of the blocks and the tool-supporting means are thrust toward each other the first yieldable means is first overcome and the blocks are forced together to embrace and hold a ferrule positioned in the opening, following which the second yieldable means is overcome and the tool is advanced through the passage into the opening to indent the wall of the thus held ferrule.

3,221,533

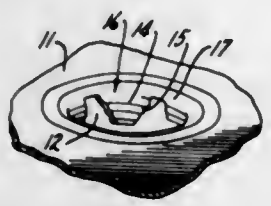
METHODS OF MANUFACTURING THREADED CLOSURES

Adriaan Buys, Krommenie, Netherlands, assignor, by mesne assignments, to Inland Steel Company, Chicago, Ill., a corporation of Delaware

Original application Nov. 28, 1962, Ser. No. 240,529. Divided and this application Mar. 17, 1965, Ser. No. 447,938

Claims priority, application Great Britain, Nov. 29, 1961, 42,648/61

5 Claims. (Cl. 72—379)



1. A method of forming a closure seat for containers having a sheet metal wall, comprising, the steps of forming a plurality of slots in said wall extending radially from a common point with said slots defining a plurality of tongues, forming portions of screw threads in said tongues, and bending said tongues out of the plane of said wall.

3,221,534

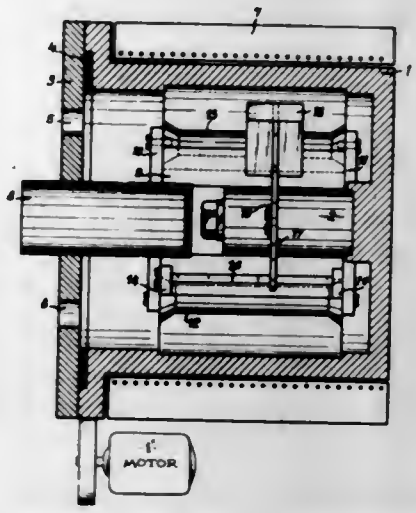
APPARATUS FOR STUDYING WEAR ON MATERIALS IN A HERMETIC ENCLOSURE

Marc Alfred, La Trinite, and André Marcelin, Paris, France, assignors to Commissariat a l'Energie Atomique, Paris, France

Filed June 12, 1962, Ser. No. 201,974

Claims priority, application France, June 21, 1961, 865,560

3 Claims. (Cl. 73—7)



1. Apparatus for studying the wear on materials comprising a hermetic rotatable enclosure, a first friction member having a cylindrical revolving surface axially secured to said enclosure and rotatable with said enclosure around the axis of revolution of said first friction member, at least one second friction member comprising a sample friction disc having an axis parallel to the axis of said first friction member and tangentially arranged with respect to said first friction member in said enclosure, a supporting device for said second friction member movably mounted within said enclosure, means for guiding the movement of said supporting device in said enclosure relative to said first friction member and means for maintaining said supporting device in a fixed position in space under the effect due to the force of gravity acting on said device about the axis of revolution of said first friction member, said supporting device comprising a mass movable within said enclosure, means for supporting said mass on one side of said first friction member and for supporting said second friction member on the other side of said first friction member, said supporting means maintaining said second friction member against said first friction member.

3,221,535

MECHANISM FOR SELECTIVELY APPLYING LOADS OF DIFFERENT MAGNITUDES IN HIGH TEMPERATURE MICRO-HARDNESS TESTING APPARATUS

Sakae Ohishi, Tokyo, Japan, assignor to Cohen Co., Ltd., Yokohama-shi, Japan, and Nippon Rogaku K.K., Tokyo, Japan, both corporations of Japan

Filed Oct. 24, 1961, Ser. No. 147,310

2 Claims. (Cl. 73—15.4)

1. An apparatus for micro-hardness testing of materials at elevated temperatures comprising a frame, a plurality of loading weights within the frame, the individual weights positioned one below the other of the plurality being of predetermined weight and each having a successively smaller diameter the lower it is positioned in the plurality and each having a central bore, an evacuated chamber within which the frame is vertically reciprocable, an air-tight seal at the top of the chamber, an extension integral with the upper end of the frame slidingly fitted in and passing through the air-tight seal to outside the

chamber, means providing an internal vertical bore within the extension from its bottom to its closed upper region, a vertically slidable stem of which the upper region is within the bore of the extension and of which stem the intermediate region passes through the central bore of each loading weight, an annular plate integral with a lower portion of the stem, a radially inward tapering conical stem region integral with the lower face of the plate, an arm within the chamber extending into the frame, means providing a conical port through the arm, the conical stem region of the stem fitting into the conical port of the arm so that the arm normally supports the

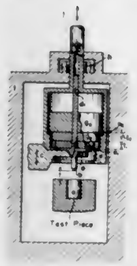
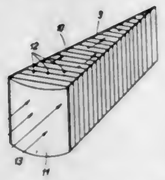


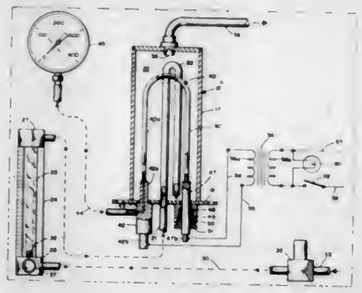
plate and the plurality of loading weights, an indenter below the conical stem region at the lower end of the stem, means adapted to support a specimen of the material to be tested at a predetermined region below and in the path of the indenter, a graduated scale on the portion of the extension external to the chamber, and means internally of the frame for loading the plate selectively with loading weights of the plurality and simultaneously adjusting the distance between the indenter and a specimen in the specimen holding means in accordance with the reading to which the scale is set by vertical manual positioning of the extension.

3,221,536
METHOD FOR DETERMINING THE REQUIRED HARDENING CONDITIONS FOR CYLINDRICAL WORKPIECES
Gerhard Seulen, Remscheid, and Herbert Geisel, Remscheid-Luttringhausen, Germany, assignors to Deutsche Edelstahlwerke Aktiengesellschaft, Krefeld, and Allgemeine Elektricitäts, Berlin-Grunewald, Germany
Filed Sept. 14, 1962, Ser. No. 223,724
Claims priority, application Germany, Sept. 18, 1961, D 37,054
6 Claims. (Cl. 73—15.4)



1. A method for determining the hardening conditions required to bring about predetermined surface hardness and predetermined depth of penetration of the hardened zone of a work specimen having a cylindrical peripheral surface which specimen is to undergo a surface hardening treatment comprising: severing at least one sample from the work specimen, each sample including end faces and an arcuate face corresponding to said cylindrical peripheral surface of said specimen; applying thermal insulation to said end faces; heating and quenching at least one of said samples from said arcuate face thereof; examining the samples which have been heated and quenched for depth of penetration of the hardened zone and for the amount of surface hardness produced by the heating and quenching steps to determine which sample has achieved said predetermined surface hardness and said predetermined depth of penetration of the hardened zone thereof; heating and quenching said work specimen from the cylindrical peripheral surface thereof using essentially the same power density and quenching conditions as were used in the heating and quenching steps on the last-mentioned sample, thereby producing a surface hardness and depth of penetration of the hardened zone of said work specimen corresponding essentially to the surface hardness and depth of penetration of the hardened zone of said last-mentioned sample.

3,221,537
ANALYZER FOR DETERMINING HYDROGEN CONTENT OF GAS
John Kenneth Jacobsen, Madeira Beach, Fla., assignor to Milton Roy Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Mar. 26, 1963, Ser. No. 267,994
2 Claims. (Cl. 73—23)

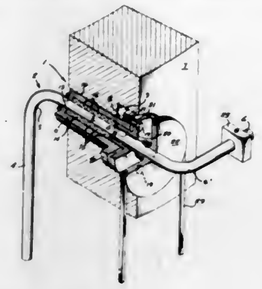


1. Gas analyzing apparatus of the character described comprising:
(a) a body defining a chamber having an inlet and an outlet for a gas to be analyzed,
(b) conduit means from a source of gas to said inlet and including a pressure regulating valve connected therein between said source of said gas and said inlet,
(c) a flow meter connected in said conduit means to indicate the rate of gas flow therethrough,
(d) a tubular palladium-silver element disposed in said chamber, one end of said element being closed,
(e) pressure indicating means communicating with the interior of said element through the other end thereof,
(f) means electrically insulating at least one end of said element from said chamber defining body, and
(g) means connected to the opposite end of said element for causing an electric current to flow therethrough, whereby said element is heated in accordance with its electrical resistance, said conduit means including an appreciable length of tubing in said chamber subjected to the heat of said element for preheating gas discharged therefrom into said chamber.

3,221,538
DILUTION ZONE DENSITY DETECTOR
Herbert T. Peterson, Longview, Wash., assignor to Weyerhaeuser Company, Tacoma, Wash., a corporation of Washington
Filed Feb. 15, 1963, Ser. No. 258,722
6 Claims. (Cl. 73—32)

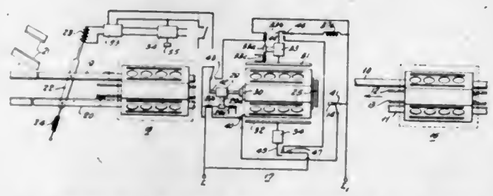
1. In combination: a continuous steady flow reaction tower having a source of dilution fluid connected thereto by a header means communicating with openings through said tower and a dilution zone detector, said dilution zone

detector comprising: cylindrical arm means extending through the wall of said reaction tower, the inner portion of said cylindrical arm means being exposed to the force created by the flow of materials through said reaction tower, the outer portion of said cylindrical arm means carrying a counterweight, and means mounting said cylindrical arm means in the wall of said reaction tower so that the inner portion of said cylindrical arm



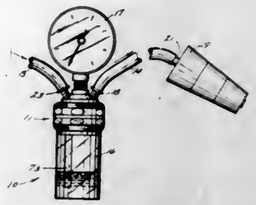
means can align itself with said force and deflect said outer portion and counterweight, said mounting means comprising a body means having a bore therethrough threadedly connected to said reaction tower, and packing means carried by said body and adapted to form a seal around said cylindrical arm means extending through said bore, whereby the angle of deflection of said counterweight can be calibrated to indicate the density of said materials flowing in said reaction tower.

3,221,539
METHOD AND APPARATUS FOR LEAK TESTING CASTINGS
Dewey M. Evans, Plymouth, and Frederick W. Koepke, Jr., Detroit, Mich., assignors to Ajem Laboratories, Inc., Livonia, Mich., a corporation of Michigan
Filed Dec. 10, 1958, Ser. No. 779,349
21 Claims. (Cl. 73—45.2)



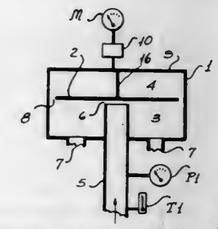
1. The method of testing recessed parts for leaks which comprises the steps of moving successive parts to a testing zone, stopping and clamping each part in a fixed position at said testing zone, operating closures at the fixed position to form a closed chamber in the part, producing a pressure difference between the closed chamber and the ambient atmosphere at the side of the walls opposite the chamber, closing the chamber at a predetermined pressure therein, segregating a sample of testing media at the initial pressure in the chamber, measuring the difference in pressure in the trapped sample and closed chamber for a predetermined period of time after the chamber is closed to determine whether leakage has occurred through the wall of the part, venting the chamber after said predetermined period of time, withdrawing the closures, releasing the part and moving it from the testing zone, and sequentially performing each of the steps of stopping, clamping, testing, venting, releasing and moving the part away from the testing zone automatically in response to the completion of the preceding step.

3,221,540
MECHANICAL DEVICE
Eugene L. Kilbourn, Marengo Township, Calhoun County, Mich., assignor to S. H. Leggitt Company, Marshall, Mich., a corporation of Michigan
Filed Aug. 12, 1963, Ser. No. 301,541
4 Claims. (Cl. 73—49.1)



3. In a gas flow detector for location between a source of gas under pressure and a system to be fed thereby, the combination comprising:
indicating means;
inlet means connected to said source and outlet means connected to said system;
valve means connected between said inlet and outlet means having at least first and second selectable positions, whereby said valve means in its said first position directly connects said inlet means with outlet means and in its said second position connects said inlet means with said outlet means through said indicating means;
said indicating means comprising a closed chamber having walls at least partially transparent and being partially filled with liquid;
a tube extending from said valve means into said liquid; and
passage means communicating from said valve means with said chamber but being spaced from said liquid;
whereby gas from said source may be diverted by said valve means when same is in its said second position into said tube and whereby also said passage means is then connected by said valve means to said system so that gas flowing from said source to said system will bubble through said liquid.

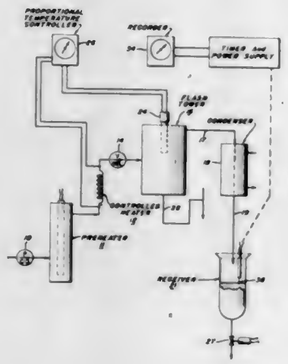
3,221,541
METHOD OF AND APPARATUS FOR ACCURATELY AND INSTANTANEOUSLY DETERMINING THE RATIO OF THE CONSTITUENTS OF A VAPOR-LIQUID-SOLID MIXTURE OR A MIXTURE OF ANY TWO OF THE COMPONENTS THEREOF
Adam Osborne, Bethlehem, Pa., assignor to Entroputers, Inc., New York, N.Y., a corporation of New York
Filed Dec. 20, 1961, Ser. No. 160,829
18 Claims. (Cl. 73—53)



7. An apparatus to determine a characteristic of a multiphase mixture which comprises:
(a) a dynamic chamber having an inlet passage which terminates in a constricted opening, means in said chamber providing a vent which restricts the outflow of fluid to the atmosphere;

(b) a second chamber communicating with said dynamic chamber, said second chamber being a substantially no-flow chamber;
(c) means in communication with said second chamber to measure the energy in said second chamber and thereby to indicate a characteristic of the multiphase mixture.

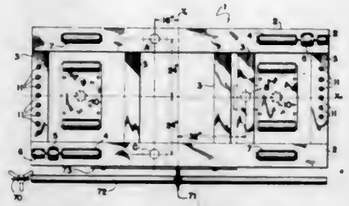
3,221,542
METHOD AND APPARATUS FOR DETERMINING THE RELATIVE AMOUNT OF A PRODUCT DISTILLING AT A SELECTED TEMPERATURE
Sixt Frederick Kapff, Homewood, Ill., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana
Filed Feb. 11, 1963, Ser. No. 257,622
4 Claims. (Cl. 73—53)



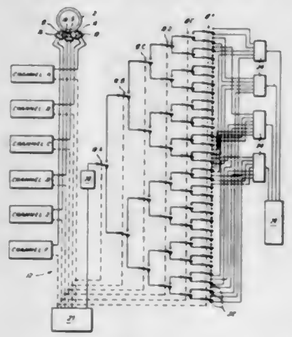
4. Apparatus for determining the relative amount of a multi-component liquid sample stream distilling at a known temperature and pressure which apparatus comprises:
(a) means to flash distill at least a portion of said liquid sample stream at said known temperature and pressure into a vapor phase and a liquid phase;
(b) means to flow said liquid sample stream into said flash distilling means at a known flow rate;
(c) means to withdraw said vapor phase and said liquid phase separately from said flash distilling means;
(d) means to accumulate at least one of said withdrawn streams; and
(e) means to measure the time necessary to accumulate a predetermined amount of said withdrawn stream.

3,221,543
WEIGHT AND CENTER OF GRAVITY COMPUTING APPARATUS
Donivan L. Hall, Robert F. Orr, and Roger B. Williams, Jr., Toledo, Ohio, assignors to Toledo Scale Corporation, Toledo, Ohio, a corporation of Ohio
Filed Sept. 18, 1961, Ser. No. 138,882
1 Claim. (Cl. 73—65)

A weight and center of gravity computing apparatus comprising, in combination, a load receiving platform for supporting a rocket motor whose weight and center of gravity are to be determined, a plurality of transducers supporting the platform at spaced points and each producing an output voltage which is a function of load applied thereto, a servo system for reading out in analog fashion the output voltage in terms of weight, switch means for connecting the transducers successively in circuit with the servo system, an analog to digital converter for changing the analog readings to electrical digital outputs, an electronic digital computer for controlling the switch means, accepting the converter outputs and computing and recording the total weight and center of gravity of the rocket motor from hand-entered data and the converter outputs, and hold-down means for preventing substantial movement of the platform in the event of accidental firing of the rocket motor.



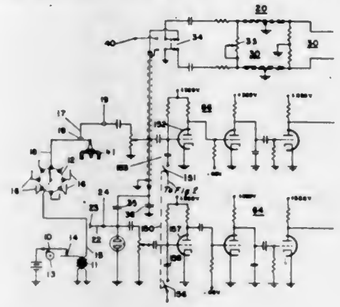
3,221,544
ULTRASONIC INSPECTION SYSTEM
Walter A. Gunkel, San Antonio, Tex., assignor to Southwest Research Institute, San Antonio, Tex., a trust estate of Texas
Filed June 10, 1963, Ser. No. 286,776
13 Claims. (Cl. 73—67.8)

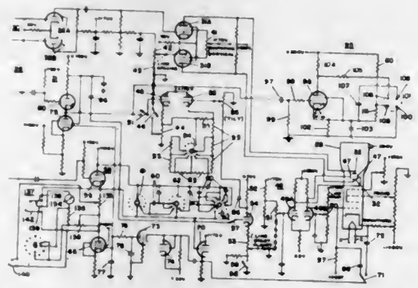


1. An ultrasonic inspection system comprising a plurality of electro-acoustic transducers for converting ultrasonic acoustic signals passing from an article being inspected into electrical signals, means for performing a primary discrimination of the signals from each of said transducers, a plurality of signal responsive means, means for supplying the discriminated signals from said transducers to respective ones of said signal responsive means, a switch network including a plurality of switches, means controlled by respective ones of said signal responsive means for actuating selected ones of said switches to define an electrically conductive path through said switch network, means for passing an electrical signal through said switch network along said path, and means responsive to said electrical signal for indicating the particular path along which said signal has passed.

3,221,545
ANALYZER FOR INTERNAL COMBUSTION ENGINES
Alfred E. Traver, Great Neck, N.Y., assignor to Socony Mobil Oil Company, Inc., a corporation of New York
Filed Feb. 8, 1962, Ser. No. 172,016
5 Claims. (Cl. 73—116)

1. A multi-cylinder engine analyzer for testing a spark-fired internal combustion engine comprising an oscilloscope having vertical deflection and horizontal deflection amplifiers respectively connected to the vertical and horizontal deflection circuits of a cathode-ray tube, a vertical sweep oscillator, a horizontal sweep oscillator, means capacitively coupled to the high-tension ignition system of said engine for supplying the ignition circuit pulses of all cylinders to said vertical deflection amplifier and to said horizontal sweep oscillator and for supplying the ignition circuit pulses of a selected one of said cylinders to said vertical sweep oscillator, a vertical drive circuit, switching means operable selectively to provide a raster display or a parade display of the ignition circuit events comprising switchs which for the raster display provides connections from said vertical drive circuit to said vertical sweep oscillator and to said vertical deflection amplifier and provides connections from said

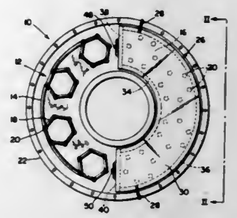




horizontal sweep oscillator to said horizontal deflection amplifier and which for the parade display breaks said connections and provides connections from said vertical sweep oscillator to said horizontal deflection amplifier, said horizontal deflection amplifier including a preamplifier tube selectively connected by one of said switches to the horizontal sweep oscillator and to the vertical sweep oscillator, said preamplifier tube having in its cathode circuit a potentiometer providing an adjustable raster-line start-clamp bias for said horizontal deflection amplifier, and in which said switching means includes a switch which for the raster display connects said potentiometer directly to ground and which for the parade display connects said potentiometer to ground through a high resistance to provide a suitably high bias irrespective of the adjustment of said potentiometer.

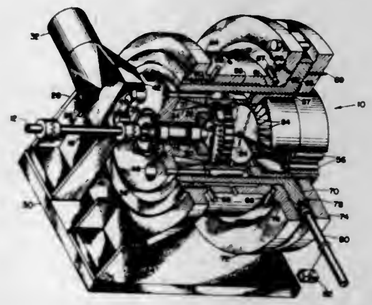
3,221,546
FUEL NOZZLE SPRAY TESTING BOX
Richard A. Heath, 3819 Louisiana St., San Diego, Calif.
Filed Nov. 29, 1963, Ser. No. 327,157
5 Claims. (Cl. 73—119)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. Apparatus for testing jet engine fuel nozzle spray patterns comprising:
a spray box conforming to the configuration of a fuel manifold assembly of a jet engine;
detachable means for securing said spray box to the jet engine;
said spray box having an opening for each of the jet engine nozzles respectively to be tested to enable test fluid discharged from the nozzle to be exhausted into the spray box;



means for draining said spray box of the discharged test fluid;
at least a portion of said box being made of transparent material;
whereby the test fluid flow pattern from each nozzle of the assembly in the spray box can be observed through said transparent portion.

3,221,547
APPARATUS FOR ABSORBING AND MEASURING POWER
Robert Y. Wong, William J. Nusbaum, and Donald E. Holeski, Cleveland, Ohio, assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Aug. 16, 1963, Ser. No. 302,749
8 Claims. (Cl. 73—134)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. Apparatus for absorbing and accurately measuring power from a power generating device, said apparatus comprising
a rotatably mounted shaft operably connected to said power generating device,
a rotor mounted on said shaft for rotation therewith,
a plurality of vanes mounted on said rotor,
a manifold rigidly mounted adjacent one end of said shaft,
means for supplying a braking fluid to said manifold,
a plurality of stator blades mounted between said manifold and said rotor vanes,
means for conveying said braking fluid from said manifold to said stator blades along a path substantially parallel to the axis of rotation of said shaft, said stator blades being angularly disposed to said path to direct said braking fluid from said path toward said rotor vanes in a direction opposite the direction of rotation of said rotor,

a housing for mounting said stator blades adjacent said rotor vanes, said housing being in close proximity to said rotor vanes for preventing radial movement of said braking fluid during axial movement across said rotor vanes,

a plurality of straightening vanes secured to said housing and positioned on the opposite side of said rotor from said stator blades for directing said braking fluid away from said vanes along a path substantially parallel to said axis of rotation of said shaft,

a casing surrounding said housing and secured thereto, said casing having a first axially extending portion and a first radially extending portion,

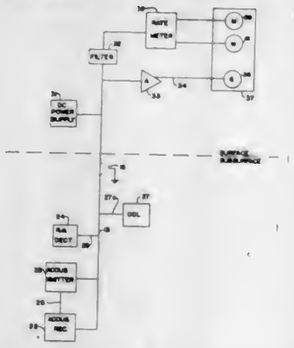
a support housing surrounding said casing, said support housing having a second axially extending portion adjacent said first axially extending portion on said casing and a second radially extending portion adjacent said first radially extending portion of said casing,

first air bearings between said first and said second axially extending portions for accommodating radial thrust,

second air bearings between said first and said second radially extending portions for accommodating axial thrust, and

torque measuring means operably connected to said casing.

3,221,548
COMBINATION LOGGING SYSTEM AND METHOD
John C. Wilson, Houston, Tex., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Filed June 2, 1961, Ser. No. 114,466
8 Claims. (Cl. 73—152)



1. A logging system for use in a cased borehole in which the casing is at least partially surrounded by a cement sheath, said system comprising:

a logging tool adapted to be moved through said borehole;

a sheathed cable supporting said tool;

a single insulated electrical conductor in said cable;

surface equipment, including signal receiving means and a direct current supply, electrically connected to said conductor;

an electrically actuated acoustic shock wave transmitter in said tool, said transmitter electrically connected to said conductor and adapted to produce acoustic shock waves for transmission axially of said borehole;

an acoustic shock wave receiver in said tool spaced from said transmitter including means for converting received acoustic energy into an intermediate electrical signal made up of a series of pulses of varying amplitude;

integrating means electrically connected to said receiver in said tool for producing a direct current voltage output of magnitude proportional to the amplitude of pulses of said intermediate signal received by said integrating means;

a pulse generator electrically connected to the output of said integrating means for producing an acoustic logging as a series of direct current voltage pulses of one polarity and of a frequency proportional to said voltage output of said integrating means;

means electrically connecting the output of said pulse generator to said conductor;

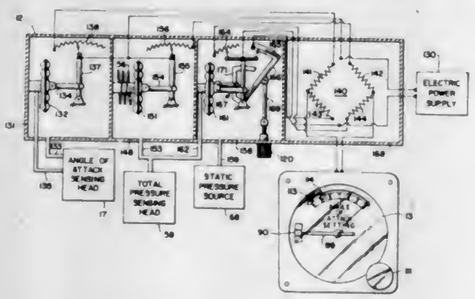
radioactivity detector means in said tool for receiving radiation from earth formations traversed by said borehole, said radioactivity detector means effective to convert said received radiation into a radioactivity logging signal made up of a series of direct current voltage pulses of polarity opposite that of said acoustic logging signal;

means electrically connecting the electrical output of said radioactivity detector means to said conductor;

gating means electrically connected to said integrating means and effective to permit reception of only selected pulses of said intermediate signal by said integrating means; and

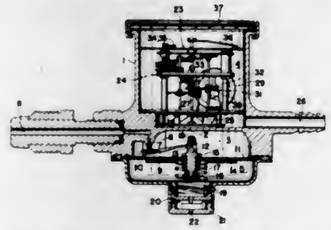
means electrically interconnected with said shock wave transmitter and said gating means and actuated by said shock wave transmitter to actuate said gating means.

3,221,549
AIRCRAFT INSTRUMENT
Joseph W. Wetmore, Hampton, Va., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Nov. 9, 1962, Ser. No. 236,748
11 Claims. (Cl. 73—178)
(Granted under Title 35, U.S. Code (1952), sec. 266)



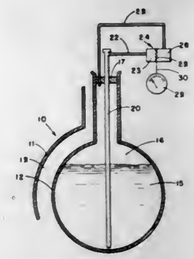
2. An instrument for use with a piloted aircraft comprising: single indicator means to indicate optimum aircraft operation during takeoff roll, rotation and climb, a plurality of pressure-responsive means in operative relationship with said indicator means, pressure sensing means in individual operative connection with each of said pressure-responsive means, said plurality of pressure-responsive means including an angle of attack responsive unit, a total-pressure-rate responsive unit and an aircraft rotation programing unit, said units being individually and respectively responsive during aircraft operation to pressure variables sensed by said pressure sensing means as caused by changes in aircraft angle of attack, total pressure, and dynamic pressure; means connected to said single indicator means for so combining the outputs of said units into a resultant output function that as the respective outputs of said angle-of-attack responsive unit and said total-pressure-rate responsive unit increase, each contributes in a constant sense to said resultant output function, and as the output of said rotation programing unit increases it first contributes to the resultant output function in one sense and after reaching a settable value contributes to the resultant output function in the reverse sense, such that upon essentially optimum aircraft operation during takeoff roll, rotation and climbout, the output function derived will be essentially equal to zero and the pilot, by controlling the aircraft, to maintain a substantially fixed reading by said single indicator means during aircraft takeoff, will cause the aircraft to rotate to takeoff attitude at the proper speed and thereafter to follow a near-optimum climbout path.

3,221,550
FLOW METER FOR PROPANE OR THE LIKE GAS WITH A SAFETY DEVICE COMBINED THEREWITH
Masamichi Yashima, Shimada-shi, Shizuoka Prefecture, Japan, assignor to Yazaki Meter Co., Ltd., Tokyo, Japan
Filed Jan. 23, 1963, Ser. No. 253,365
Claims priority, application Japan, Apr. 14, 1962, 37/18,275, 37/18,276; July 20, 1962, 37/39,218; Sept. 22, 1962, 37/40,919
3 Claims. (Cl. 73—199)



2. A gas handling device particularly for use with gas supplied from a pressurized gas container such as a propane gas container, comprising wall means defining a container having a flow meter chamber and a pressure regulating chamber with a partition wall therebetween having a gas passage defined therein for the flow of gas between said chambers, means defining an outlet passage extending outwardly from the interior of said flow meter chamber, means defining an inlet passage terminating in an opening in said pressure regulating chamber, a resilient member in said pressure regulating chamber supported in a location to be exposed to the pressure of the gas flowing through said inlet passage and being displaceable in accordance with the pressure of the gas, a valve member connected to said resilient member and movable toward and away from the opening of said inlet passage in response to the movement of said resilient member for closing said passage upon increase in gas pressure in said pressure regulating chamber, and flow meter means in said flow meter chamber for measuring and indicating the amount of gas flowing therethrough, said flow meter means including a rotatable impeller arranged above the opening of said partition wall in a position where the flow of gas through said opening causes rotation of said impeller, an indicator dial mounted in said flow meter chamber, an indicator pointer rotatable around said indicator dial, gear means connecting said pointer to said impeller for moving said pointer indicator in proportion to the rotation of said impeller, said indicator dial having graduations thereon and indicating quantities of gas which is flowing through said flow meter chamber in accordance with the displacement of said pointer indicator, a rotatable ring mounted on said wall means to overlie said indicator dial, said ring being rotatable and having graduations thereon increasing around said ring in a direction opposite to the direction of increase of the indications of said dial, said ring being rotatable to position the index of said ring with the index of said dial in an initial position of said pointer indicator whereby said pointer indicator when moved by said impeller simultaneously indicates the quantities of gas flowing through said flow meter chamber on said dial and the quantity of gas remaining in the gas container on said ring member.

3,221,551
LIQUID LEVEL GAGE FOR CRYOGENIC FLUIDS
Walter H. Hogan, Wayland, and Arthur H. Post, Jr., Belmont, Mass., assignors to Arthur D. Little, Inc., Cambridge, Mass., a corporation of Massachusetts
Filed Nov. 29, 1963, Ser. No. 326,991
7 Claims. (Cl. 73—299)



1. A liquid-level gage for determining the volume of a cryogenic liquid stored under pressure in a Dewar-type vessel, comprising

(a) a probe element adapted to be inserted into said cryogenic liquid and comprising

(1) a thermal shielding defining a gas passage; and

(2) a heat-conductive rod centrally located within said gas passage and thermally bonded to a heat source external of said vessel;

(b) pressure-differential sensing means;

(c) a first gas conduit communicating with said gas passage through a first constriction and adapted to transfer gas under a pressure determined by the hydrostatic head of said liquid to said pressure-differential sensing means, said first constriction being adapted to prevent incipient thermal oscillations in said first gas conduit;

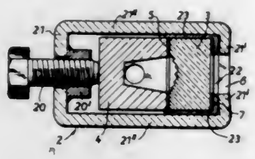
(d) a second gas conduit communicating through a second constriction with the top portion of said vessel above the level of said cryogenic liquid and adapted to transfer gas to said pressure-differential sensing means, said second constriction being substantially identical to said first constriction thereby to match impedances in said first and second gas conduits and to ensure that pressure fluctuations in said vessel reach said pressure-differential sensing means through said gas conduits at essentially the same time; and

(e) indicator means associated with said sensing means and adapted to evaluate the difference in pressures of the gas transferred by said first and second conduits.

3,221,552
LIQUID LEVEL INDICATOR
Giulio Bonetti, Milan, Italy, assignor, by mesne assignments, to Istag A.G., Suhr-Aargau, Switzerland
Filed Feb. 19, 1964, Ser. No. 346,018
Claims priority, application Italy, Feb. 22, 1963, 3,777/63
1 Claim. (Cl. 73—330)

A liquid level indicator comprising two elongated prismatic elements, a packing, said elements sandwiching

said packing therebetween and forming a unit defining a sealed liquid duct constituting a visual indicator, one of said elements having an observation surface bounded by two lateral surfaces, soft protective strips marginally covering said observation surface, angle members including first and second sections respectively covering said strips and extending flatly along said lateral surfaces, said angle members extending past said packing onto the other of said elements, a plurality of separate clamps spaced along and encircling said unit, said clamps each

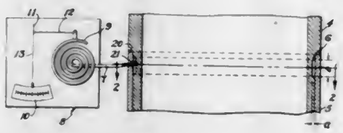


including lateral portions extending along said lateral surfaces and end portions connected to the lateral portions at an acute angle and engaging against the first sections of the angle members at positions spaced inwardly of the lateral surfaces of said one element, said clamps each further including a web connecting the related end portions and of substantially lesser width than the same; and screws extending through the clamps and engaging said other element to hold said elements and packing together.

3,221,553
TEMPERATURE SENSING DEVICE AND METHOD

Street Chang, Walnut Creek, Calif., assignor, by mesne assignments, to High Voltage Engineering Corporation, Burlington, Mass., a corporation of Massachusetts

Filed May 14, 1962, Ser. No. 194,280
1 Claim. (Cl. 73—343)

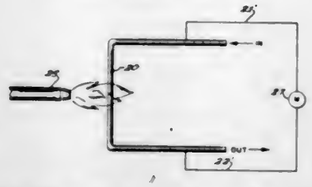


Apparatus for monitoring the temperature of a circular metal waveguide comprising in combination with a circular metal waveguide a hermetically sealed annular space having an axial width at least eight times its radial depth disposed within the waveguide wall, pressure sensitive temperature indicating means, capillary tube means for connecting said annular space with said temperature indicating means, and a quantity of fluid filling the volume of said annular space and its associated capillary tube, said annular space being established by a first circumferentially disposed groove in said waveguide wall having a depth less than the mean thickness thereof, a second circumferentially disposed groove having a width less than, and residing within, said first groove, said second groove having a depth greater than the mean thickness of the waveguide wall and a cylindrical sleeve member of the same material as said waveguide adapted to cooperate with said first groove so as to hermetically enclose the volume of said second groove residing below the depth of said first groove.

3,221,554
HIGH TEMPERATURE SENSORS

Frederick W. Kuether, Minneapolis, Minn., assignor to Honeywell Inc., a corporation of Delaware

Filed Jan. 9, 1964, Ser. No. 336,799
4 Claims. (Cl. 73—359)

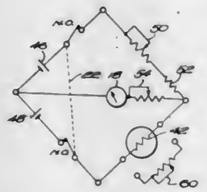


1. A temperature sensor comprising tubes of first and second dissimilar metal members butt welded to form a thermocouple junction, means for passing a cooling fluid through the bore of said thermocouple junction, and meter means connected to said members for measuring the electrical ouptut of said thermocouple.

3,221,555
CLINICAL THERMOMETER

Conrad H. Biber, 12 Taylor St., Needham, Mass.

Filed Nov. 1, 1961, Ser. No. 149,376
1 Claim. (Cl. 73—362)



A temperature measuring device, comprising a bridge circuit having at least four arms, one of said arms including a thermistor element, the second of said arms including an adjustable resistance element, the third and fourth of said arms each including a battery and a manually operated switch, a temperature indicating current measuring meter connected diagonally across said bridge, said meter connecting said bridge at one end between said first and second arms and at the other end, between said third and fourth arms, an adjustable resistance element serially connected with said meter, both of said switches being normally open and connected for simultaneous operation, said meter being set to indicate a predetermined temperature lying within the normal operating range of said device when said switches are open and a variable resistance element adapted to be connected in said circuit in place of said thermistor element for calibrating said circuit, said variable resistance element being set to indicate on said meter a second predetermined temperature different from said first predetermined temperature but within the normal operating range of said device when said switches are closed.

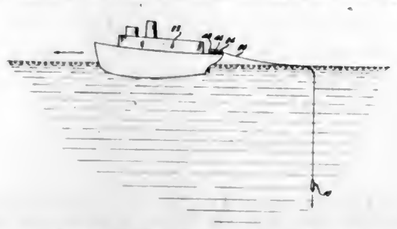
3,221,556
BATHYTHERMOGRAPH SYSTEM

Walter Graham Campbell, William Van Alan Clark, Jr., and Courtland B. Converse, Marion, Mass., assignors to Buzzards Corporation, Marion, Mass., a corporation of Massachusetts

Filed Jan. 31, 1964, Ser. No. 342,338
21 Claims. (Cl. 73—362)

1. Apparatus for measuring a property of a fluid relative to a given dimension, comprising a sensor probe containing therein a quantity of wire to be deployed from

said probe when the probe is traversing said dimension, recording means including a record medium connected from said wire for recording signals sent by the sensor probe relative to said property, means for moving said

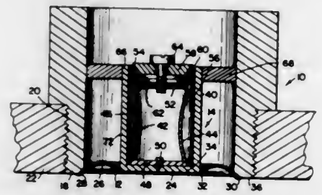


record medium at a rate substantially related to the rate of movement of said probe, and means for compensating for the change in the rate of movement of said probe due to the deployment of wire therefrom.

3,221,557
PRESSURE TRANSDUCER

Yao T. Li and Shih Ying Lee, South Lincoln, Mass. (both % Dynisco, 42 Carleton St., Cambridge, Mass.)

Filed June 13, 1962, Ser. No. 202,265
8 Claims. (Cl. 73—406)



8. A pressure sensing device comprising,
a cylindrical frame,
a diaphragm secured to and closing one end of the frame,
a strain tube disposed coaxially in the frame and having a closed flat end that bears against and is secured to the central portion of the diaphragm to establish on the diaphragm a flat central portion and an inwardly dished surrounding annular portion,
said strain tube acting in compression to resist inward deflection of the diaphragm in response to pressure exerted against its outer face and establishing a neutral position for the diaphragm,
said diaphragm having a sensitivity to pressure exerted against its outer face that decreases with inward deflection of the diaphragm,
and a slender column disposed within the frame and secured to the diaphragm complementing the restraint against displacement exerted by the strain tube upon the diaphragm,
said slender column having a stiffness which decreases with inward deflection of the diaphragm and which stiffness is tuned to the decreasing sensitivity of the diaphragm.

3,221,558
SAMPLING METHOD AND APPARATUS

Milton A. Lagergren, Salt Lake City, Utah, assignor to Kennecott Copper Corporation, New York, N.Y., a corporation of New York

Filed May 31, 1963, Ser. No. 284,489
5 Claims. (Cl. 73—421)

1. A method of obtaining an undisturbed sample of moisture-bearing material comprising the steps of: sinking a hollow sampler into said material a desired depth; reducing the temperature within said sampler until the water in a section of material surrounding the sampler is frozen, the relative positions of the solid particles

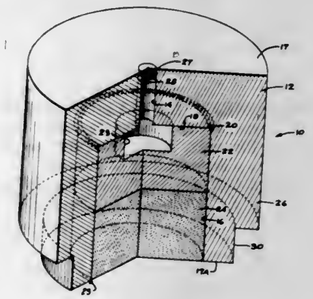


therein are fixed, and the sample adheres to said sampler; and withdrawing the sampler with the adhering sample.

3,221,559
IMMERSION SAMPLER

Eldon D. Miller, Jr., Bridgeville, and Robert K. Scott, Pittsburgh, Pa., assignors to Harbison-Walker Refractories Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Sept. 16, 1963, Ser. No. 309,235
6 Claims. (Cl. 73—425.4)

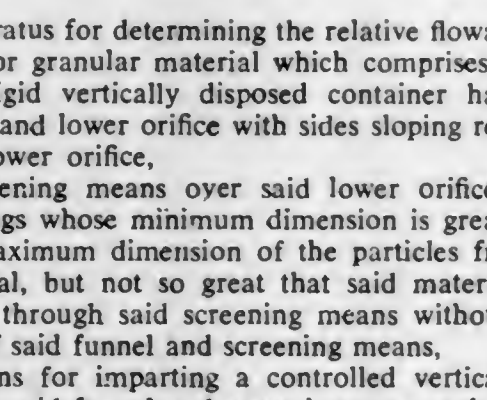


2. An immersion sampler suitable for obtaining samples of molten metal from a slag covered molten metal bath, comprising a hollow refractory cylindrical member having communicating upper and lower openings, the upper opening enlarging substantially in cross-section a short distance from the upper end into the lower opening, there being an interior longitudinally disposed surface adjacent the upper opening, where said upper opening enlarges, a metal member having an upper cup-like cavity disposed within the lower opening and having a surface portion in contiguous contact with the longitudinal surface, the cavity in the metal member being in communication with the upper opening, a refractory plug member disposed in and closing the lower opening, a face of said plug member being contiguous with the cup-shaped member, and an upper plug member composed of a burnable material disposed in and closing the upper opening, there being deoxidizing material for the molten metal carried by said sampler within the upper opening adjacent said upper plug member.

3,221,560
FLOWABILITY APPARATUS

Tibor Kosa and Frank R. Agasie, Minneapolis, Minn., assignors to The Pillsbury Company, Minneapolis, Minn., a corporation of Delaware

Filed Feb. 21, 1963, Ser. No. 260,154
8 Claims. (Cl. 73—432)



1. Apparatus for determining the relative flowability of powdered or granular material which comprises,

(a) a rigid vertically disposed container having an upper and lower orifice with sides sloping regular to said lower orifice,

(b) screening means over said lower orifice having openings whose minimum dimension is greater than the maximum dimension of the particles from said material, but not so great that said material flows freely through said screening means without vibration of said funnel and screening means,

(c) means for imparting a controlled vertical vibration to said funnel and screening means which comprises:

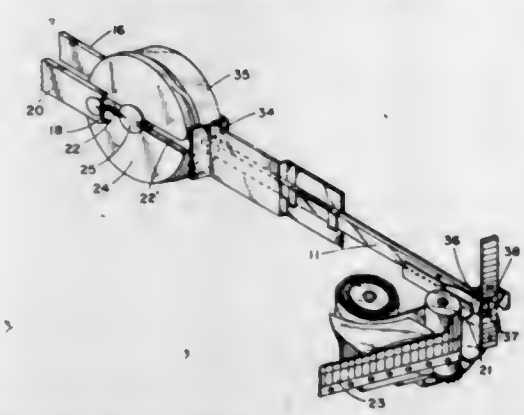
(1) a rigid upstanding cylindrical vibrating element having an upper horizontal edge and a lower horizontal edge, said element being secured to said container at said upper horizontal edge and said container being nested within said element above said lower horizontal edge, and

(2) means for vertically vibrating said cylindrical element with constant amplitude and frequency.

3,221,561
INSTRUMENT DEVIATION INDICATOR

Charles J. Swartwout, Scottsdale, and Denton Kenyon Swartwout, Phoenix, Ariz., assignors to Motorola, Inc., Chicago, Ill., a corporation of Illinois

Filed Oct. 14, 1963, Ser. No. 316,036
5 Claims. (Cl. 73—432)

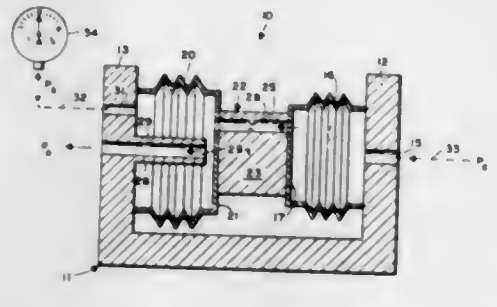


1. In an instrument apparatus to indicate by light the deviation of a process from a desired set point, including in combination, a set point arm, a signal arm adapted to be moved relative to said set point arm, a source of light, light filter means including at least one graded filter, a rod having a first end and a second end and adapted for the transmission of light by internal reflection, said rod being optically coupled to said graded filter and said light source in a manner to allow light from said light source to shine through said graded filter and onto said first end of said rod to be transmitted to said second end of said rod thereby illuminating said second end of said rod, means forming an axis about which said light filter means is adapted to pivot to move said graded filter relative to said rod, mechanical linkage means acting in cooperation with said set point arm, said signal arm and said light filter means to cause said light filter means to pivot about said axis to move said graded filter relative to said rod according to the displacement of said signal arm relative to said set point arm thereby providing modulated light at said second end of said rod for indicating the deviation.

3,221,562
FLUID PRESSURE OPERATED ACCELEROMETER HAVING SIGNAL OUTPUT CORRESPONDING TO RATE AND DIRECTION OF ACCELERATION

Charles A. Borcher, Orange County, and William Frantz, Seminole County, Fla., assignors to Martin-Marietta Corporation, Middle River, Md., a corporation of Maryland

Filed Feb. 27, 1963, Ser. No. 261,335
18 Claims. (Cl. 73—515)



6. An accelerometer device for producing fluid pressure signals related to the magnitude and direction of acceleration of the device, said device comprising:

(a) support means,

(b) an inertial member mounted for displacement in one direction or the opposite direction with respect to said support means by inertial forces resulting from acceleration of said device in said opposite direction or said one direction respectively.

(c) pressure fluid conducting means for connection to a source of pressure fluid at a regulated pressure and including first and second orifices connected in series so that fluid flow through said orifices will establish therebetween a resulting signal pressure related to the ratio of the areas of said orifices,

(d) a first pressure to force means responsive to said regulated pressure and acting against said member in said one direction,

(e) a second pressure to force means responsive to said resulting signal pressure and acting against said member in said opposite direction to provide a net force thereon,

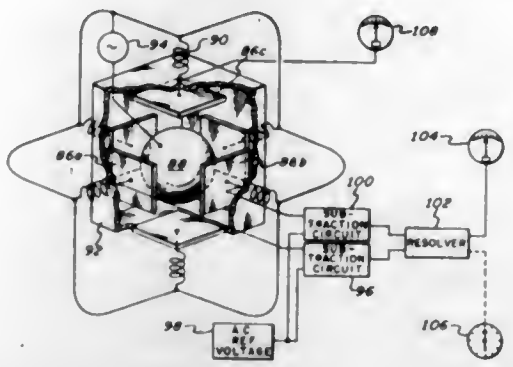
(f) said second pressure to force means having a pressure to force conversion factor which is greater than that of said first pressure to force means, whereby a net force of zero may be produced by a signal pressure which is less than said regulated pressure; and

(g) means connected to said member for varying the effective area of one of said orifices upon displacement of said member whereby displacement of said member in said one direction will increase said resulting signal pressure until said net force balances the displacing force, and displacement of said member in the opposite direction will decrease said resulting signal pressure until said net force balances the displacing force.

3,221,563
SUSPENSION APPARATUS

Willis G. Wing, Glen Head, N.Y., assignor to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware

Filed July 10, 1961, Ser. No. 122,708
17 Claims. (Cl. 73—516)

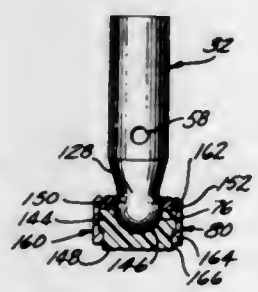


9. An accelerometer comprising a plurality of conductive means, each conductive means being insulated from the others, a conductive mass contained within a volume bounded by said conductive means to form a plurality of capacitors each consisting of said mass as one conductor and one of the conductive means as the other conductor, means supporting said conductive means adapted to be secured within a vehicle, an alternating current source one end of which is connected to said mass, a plurality of inductors each of which is connected to a different conductive means to form series resonant circuits with the capacitors of which said conductive means are part, said series resonant circuits all having a certain resonant frequency when said mass is at a certain position within said volume, said alternating current source being connected to the free ends of all said inductors and being of a frequency greater than said certain resonant frequency, said source frequency being such that the currents in each resonant circuit are unequal when the respective resonant frequencies of those circuits are unequal and means to measure and resolve the relative movement between said mass and each of said conductive means when the vehicle in which said supporting means is secured moves to indicate the magnitude and direction of the acceleration of the vehicle, said conductive mass being repositioned within said volume by electrostatic forces when all said series resonant circuits do not have the same resonant frequency.

3,221,564
PISTON SHOE CONSTRUCTION FOR AXIAL PISTON PUMP

Robert E. Raymond, Zanesville, Ohio, assignor to Hydro Kinetics, Inc., Zanesville, Ohio, a corporation of Ohio

Filed Jan. 18, 1962, Ser. No. 167,030
16 Claims. (Cl. 74—569)

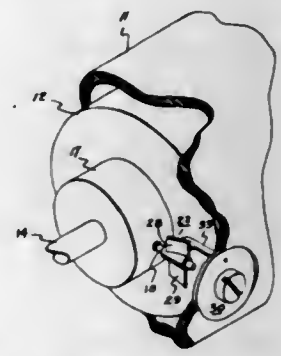


1. In a piston construction for engagement with the cam means of a hydraulic machine, the combination of a metal casing surrounding a piston shoe means formed of low friction material and mounted on a ball-shaped piston foot, said shoe means including a side wall provided with a recess, the lower portion of said metal casing including an inner shoulder disposed in said recess said shoe means including a bearing surface extending outwardly of said metal casing for engagement with said cam means.

3,221,565
ADJUSTABLE THREADLESS POSITIONING DEVICES

Norman C. Zatsky, Huntington, N.Y., and Alan E. Willis, Stamford, Conn., assignors, by mesne assignments, to Dynamics Corporation of America, New York, N.Y., a corporation of New York

Filed Apr. 17, 1962, Ser. No. 188,028
12 Claims. (Cl. 74—5.4)



1. Apparatus for balancing an object about a known axis comprising in combination:

(a) a smooth pin attached to said object and projecting radially from said known axis,

(b) a balance weight having a cylindrically smooth bore tightly pressed upon said smooth pin,

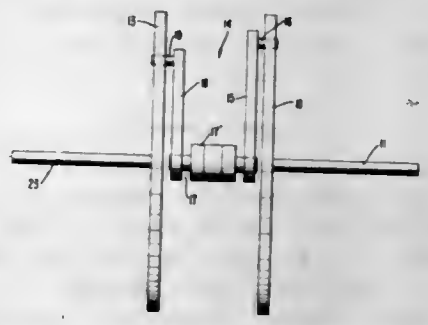
(c) an inclined plate attached to and extending outwardly from the surface of said balance weight, said inclined plate having a flat surface defining a plane which is inclined relative to the axis of the bore of said balance weight, and

(d) means adapted to apply a force about the axis of said pin and balance weight and against the flat surface of said inclined plate, said force causing said balance weight to rotate about and to translate along said pin to balance said object about said known axis.

3,221,566
POWER TRANSMISSION MECHANISM

Joseph T. Gelardi, Yonkers, N.Y., assignor to American Technical Machinery Corp., Mount Vernon, N.Y., a corporation of New York

Filed Feb. 19, 1962, Ser. No. 174,161
22 Claims. (Cl. 74—68)



1. A power transmission mechanism comprising

power input means and power output means,

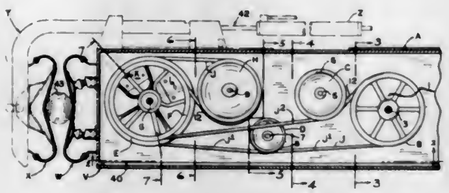
said power input means and said power output means having a common axis of rotation,

first and second normally independently movable lever means having radially outer and inner regions respectively, said inner regions being coaxial with said common axis when said first and second lever means are in a predetermined position, said first and second lever means being rotatable in substantially parallel planar paths,

said lever means being pivotally attached to respective power input means and power output means at the outer regions thereof,

and means coupling substantially the inner regions of said lever means when said inner regions are offset from the said common axis.

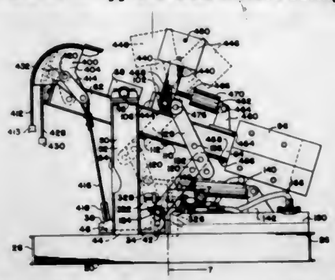
3,221,567
BELT DRIVE FOR SHAKING DEVICE
Richard W. Brandt, Jr., P.O. Box 253, Brownsville, Calif.
Filed Apr. 9, 1962, Ser. No. 186,194
5 Claims. (Cl. 74—87)



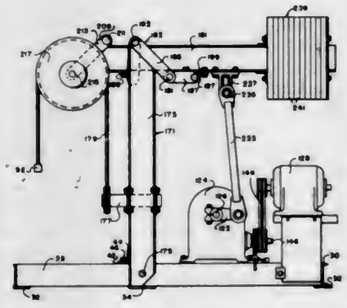
1. A device of the type described comprising:
(a) a base;
(b) a drive pulley rotatably carried by the base;
(c) a first energy wheel having an eccentric mass thereon;
(d) a shaft supported by the base and rotatably carrying the energy wheel;
(e) a second energy wheel of a slightly different diameter than said first energy wheel and having an eccentric mass thereon; said second energy wheel being rotatably mounted on the shaft that supports the first energy wheel;
(f) a transfer idler pulley rotatably carried by the base; and
(g) a drive belt looped around the drive pulley so as to be driven by the rotation of the drive pulley, one portion of the belt being passed around the first energy wheel to rotate it in one direction when the belt is moved by the drive pulley;
(h) another portion of the belt being looped around the transfer idler pulley, and another portion of the belt being passed around the second energy wheel in an opposite direction to that portion of the belt that is passed around the first energy wheel;
(i) whereby the second energy wheel will be rotated in a direction opposite to the rotation of the first energy wheel and the eccentric masses of the two energy wheels will set up a vibratory force which will be transferred to the base by the shaft that is supported by the base.

3,221,568
WELL PUMPING APPARATUS
Milburn M. Ross, 631 N. Bluff, Wichita, Kans.
Filed May 14, 1962, Ser. No. 194,421
8 Claims. (Cl. 74—106)

4. Well pump means, comprising, in combination, a Samson post, means pivotally mounted on said Samson post defining a walking beam, means on one end portion of said walking beam to receive and hold a rope or the like during movement of said walking beam, arm means operatively connected to said walking beam and having end portions positioned at an angles relative to each other with one of said end portions being located in a generally vertical position, weight means carried by said one of said end portions of said arm means, drive means, connecting means operatively connected to said drive means and to the other of said end portions of said arm means, said connecting means being constructed of upper and lower portions pivotally connected together and movable from a position substantially in line with each other to positions on opposite sides thereof during operation with said walking beam being moved through an entire cycle of operation as said drive means moves through a half cycle of operation and with said weight means counterbalancing said pump means for the weight of the fluid in a well or the like.

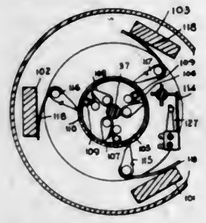


3,221,569
WELL PUMP MEANS
Milburn M. Ross, 631 N. Bluff, Wichita, Kans.
Original application Nov. 12, 1957, Ser. No. 695,673, now Patent No. 3,006,201, dated Oct. 31, 1961. Divided and this application Sept. 11, 1961, Ser. No. 140,157
1 Claim. (Cl. 74—108)



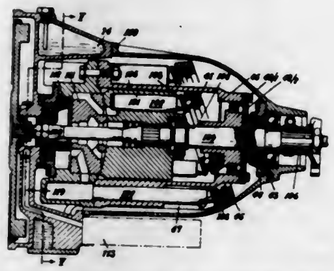
In well pumping means comprising, in combination, a base, a Samson post mounted on said base, a cradle linkage connecting between the upper end portion of said Samson post and said walking beam in a middle portion thereof and supporting said walking beam on said Samson post so that in operation the outer end of said walking beam moves in a straight line, power means operably connected to said walking beam for applying a rocking motion thereto, that improvement, comprising, in combination, a pulley, a vertically protruding hook member on said outer end of said walking beam, a hanger means removably mounted on said walking beam having spaced and substantially parallel side plates, a transverse hanger member secured to said plates and engaging said hook member, a transverse abutment means mounted between said plates abutting the end of said walking beam, and axle means mounted on said plates and spaced outwardly from said hanger member, said pulley rotatably mounted on said axle means, a cable passing over and supported on said pulley and having connecting means in one end portion for connecting said cable to a pump rod, and anchor means mounted on said pump means connecting and mounting the other end portion of said cable at a point below said pulley, the resulting improved stroke of said walking beam and maintaining the line of well pumping means in operation compounding the movement of the connecting means on said cable for connecting to a pump rod along a vertical line tangent to said pulley.

3,221,570
WIND DIRECTION AND TURBULENCE INDICATOR
James O. Ivie, 1019 Emerson Ave., Salt Lake City, Utah
Original application June 3, 1957, Ser. No. 663,200, now Patent No. 3,055,215, dated Sept. 25, 1962. Divided and this application Jan. 10, 1962, Ser. No. 173,599
4 Claims. (Cl. 74—126)



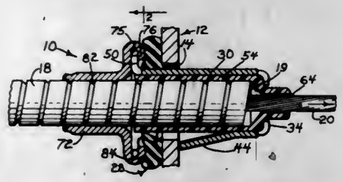
1. A mechanism to integrate the rotation in one direction only of a shaft comprising in combination:
(a) a shaft free to rotate in both directions,
(b) A hollow drum surrounding said shaft,
(c) a friction clutch mounted on said shaft and rotating therewith, said clutch comprising a plurality of spring loaded pawls contacting at an acute angle the interior of said drum, each of said pawls being sharpened at the point of contact, and transmitting the rotation of said shaft in one direction only to said drum,
(d) similar pawls contacting the exterior surface of the said drum to prevent said drum from rotating in the opposite direction from the rotation transmitted by said clutch,
(e) a means associated with said drum to transmit the rotation thereof.

3,221,571
POWER-RECOVERY CONTINUOUS HYDRAULIC CHANGE SPEED GEAR, PARTICULARLY SUITABLE FOR VEHICLES
Giovanni Badalini, Rome, Italy, assignor to Cambi Idraulici Badalini S.p.A., Rome, Italy
Filed Mar. 15, 1963, Ser. No. 265,492
Claims priority, application Italy, June 8, 1962, 11,378/62
3 Claims. (Cl. 74—472)



1. A continuously variable speed change gear for vehicles having an internal combustion engine and an accelerating pedal, comprising in combination an output shaft, an input shaft, a hydraulic multi-cylinder pump, a cylinder body for said pump rigidly connected to said input shaft and rotatably supported on said output shaft, a hydraulic multi-cylinder motor, a cylinder body for said motor having a concave face rigidly connected to said output shaft and concentrically surrounding said cylinder body of said pump, a stationary gear housing surrounding said motor and pump, two bearings arranged respectively at the ends of said gear housing for rotatably supporting said input shaft and said output shaft, said housing having a semi-annular hollow recess for oil, an oil sump communicating with said hollow recess, float means for maintaining constant the oil level of said sump, a pump swash plate pivoted to said motor cylinder body in correspondance to an axis offset with respect to said output shaft, a motor swash plate pivoted to said stationary gear housing, a distributor plate having a convex face rigidly secured to said motor cylinder body and contacting with its convex face said concave face of said cylinder body, said distributor plate having ducts for conveying the pump fluid to said motor pistons, a stationary eccentric ring secured to said bearing of said input shaft for conveying the motor fluid to said pump pistons, control piston means slidably arranged on said output shaft within said motor cylinder body and hydraulically operated for changing the inclination of said pump swash-plate to cause said pump swash plate to assume one of four positions, namely negative inclination, zero inclination, partial positive inclination and maximum positive inclination, a connecting rod pivotly secured to said motor swash plate for changing the inclination thereof from zero to a maximum value, a gear control block secured to said gear housing and operatively connected to said pump and motor and to said accelerating pedal, a filling pump hydraulically controlled by said internal combustion engine and connected to said sump and to said gear control block.

3,221,572
CABLE FASTENER ASSEMBLY
Edwin Grant Swick, Bartlett, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Filed Sept. 30, 1963, Ser. No. 312,545
11 Claims. (Cl. 74—501)



1. A cable assembly adapted to pass through a hole in a workplate comprising in combination:
(a) cable means comprising metallic cable housing means having an end portion and a cable member relatively movable to said cable housing means,
(b) latching clip means surroundingly disposed to said end portion of said cable housing means, said latching clip means being of generally tubular configuration having a first end portion with an aperture therein smaller in diameter than said cable housing means and larger than said cable member which passes therethrough,
(c) said latching clip means at the second end having a sharply flared peripheral edge means portion disposed at substantially right angles to the main body portion of said latching clip means, the outward extent of said peripheral edge portion means being larger than said hole in said workplate,
(d) resilient tang means having an integral portion and a workplate engaging free end portions displaced radially outwardly from said tubular body means for engaging the side of said workplate opposite to said peripheral edge portion means,

(e) said latching clip means being further formed with stop means displaced radially outwardly from the tubular body portion of said latching clip means in the area of said body means intermediate the free ends of said tang means and said peripheral edge,

(f) deformable sleeve means having a neck portion means grippingly deformed to engage and fixedly mount said sleeve means to said cable housing means, said sleeve means having a base portion means integral therewith disposed adjacent to and folded over said peripheral edge means of said tubular latching clip means to provide a shoulder means,

(g) gasket means having a predetermined thickness disposed intermediate said shoulder means of said sleeve means and the workplate when said latching clip means is inserted in the hole of said workplate, said gasket means being disposed in surrounding relationship to said tubular latching clip means in the vicinity of said stop means, and

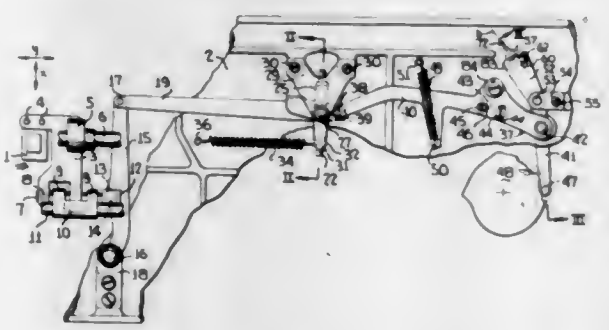
(h) resilient insert means interposed between said end portion of said cable housing means and said tubular latching clip means, said insert means having a necked down portion extendingly disposed in said aperture in said first end thereof in surrounding relation to said cable member, whereby insertion of said tubular latching clip to said hole in said workplate will cause said free end portions of said tang means to engage one side of the workplate and said gasket means to engage the other side, said thickness of said gasket means being such that it is trapped between and compressed into sealing engagement with said shoulder means of said sleeve means and said workplate to provide a strong sturdy cable assembly which is sealingly mounted to said workplate.

3,221,573

ADJUSTING DEVICE FOR REGULATING A SEWING MACHINE MECHANISM

Luigi Bono, Pavia, Italy, assignor to Necchi Societa per Azioni, Pavia, Italy

Filed Sept. 10, 1962, Ser. No. 222,302
Claims priority, application Italy, Jan. 3, 1962, Patent 672,952
9 Claims. (Cl. 74—522)



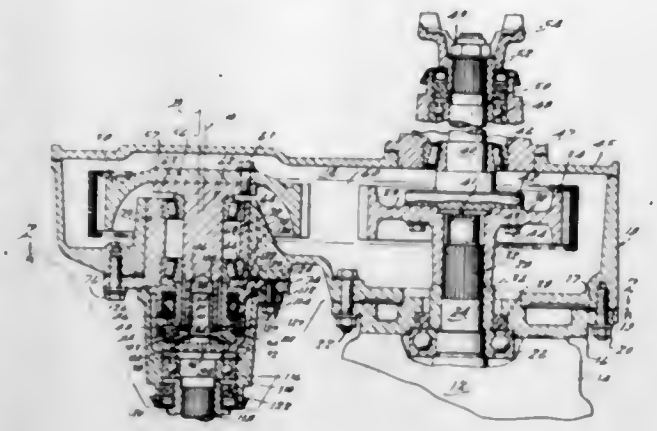
1. Adjusting device for regulating a sewing machine mechanism comprising a first lever, an actuating member, said device further comprising a second lever having first and second arms and a central pivot, a pivot for the first mentioned lever carried by said second arm, and a control device connected with the first arm to effect the shifting of said first lever pivot, said control device including shift means for moving said first arm between positions where said first lever is engaged and disengaged from the actuating member, and adjustable means for limiting the mottion of said shift means, said shift means and said last means including concentric control shafts, a connecting rod carried by one of said control shafts, and means on the other control shaft for permitting limited relative movement of the connecting rod by the one control shaft.

3,221,574

TRANSFER CASE

Achilles C. Sampietro, Bloomfield Hills, and Kenneth G. Matthews, Grosse Pointe Woods, Mich., assignors to Kaiser Jeep Corporation, a corporation of Nevada

Filed Nov. 13, 1962, Ser. No. 237,009
11 Claims. (Cl. 74—665)



1. In an automotive vehicle having a set of front and a set of rear wheels driveable from a source of power, the combination comprising: a transfer case for coupling the set of front and the set of rear wheels to the source of power, said transfer case including first means coupling the set of rear wheels to the source of power, said first means including a first sprocket member, a continuous chain member engageable with said first sprocket member, second means operatively connected to said first means for coupling the set of front wheels to the source of power through said first means, said second means including a second sprocket member engageable with said chain member whereby said second means is coupled to said first means, said second means including clutch means selectively operable for selectively connecting said second means to the set of front wheels.

3,221,575

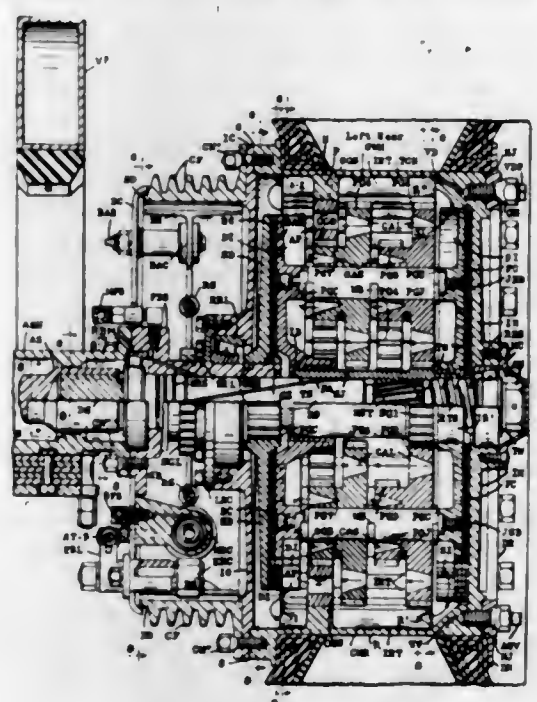
FLUID PRESSURE VARIABLE RATIO REVERSIBLE, COMBINED HYDRODYNAMICAL AND MULTIPLY COMPOUNDED PLANETARY GEARING DRIVEN TRANSMISSION COUPLER, ADAPTABLE AS FORMING A COMBINED FLUID TORQUE CONVERTOR TRANSMISSION COUPLER AND REAR TRACTION-WHEEL-HOUSING ASSEMBLY, OF AND FOR AN AUTOMOTIVE VEHICLE

Frank David Butler, 1409 Wardman St., Brea, Calif. 92621

Filed Nov. 12, 1964, Ser. No. 411,189
10 Claims. (Cl. 74—730)

1. In a liquid fluid, pressure-variable-ratio-reversible, rotatable combined hydrodynamical-torque-convertor and in-tandem multiply-compounded planetary-gearing-driven, automatically-operative, combined fluid-transmission-coupler-housing and traction-wheel-hub assembly, the provision therein and therewith, comprising; a series of elongated-cylindrical combined impulse-reaction fluid-flow-circulating tube means provided, symmetrically disposed, bearing radially outward against an inner periphery of such coupler-housing, concentrically with its rotation-axis, with one each such tubes provided pressed through and extending a predetermined distance axially outward beyond one each of a similar series of cylindrical hole means, each provided extending axially through an annular partition means extending radially inward from and integral with said coupler-housing and provided forming a shouldered-cylindrical-seat means for an annular shaped orbit-gear rotatable with axially inward end such housing; and wherein each such tube is provided adjacent its axially opposite ends with one each of an axially opposite

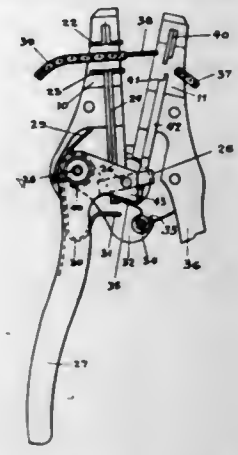
pair of obliquely semi-circumferentially and axially extending respective fluid-flow-impulse and fluid-flow-reaction access means on the same side thereof circumferentially oppositely to the normal direction of such housing's forward rotation with each fluid-flow-impulse access located adjacent a radially outward periphery end of an axially inward multiple convex-vaned fluid-circulating-discharge-impeller means, rotatable with a planet-gear-carrier of such transmission-coupler in same normal direction as its housing, and providing discharging circulating fluid-radially outward semi-circumferentially under a hydrodynamical-pressure in same normal direction into the fluid-flow-impulse end means, and thence axially outward through each respective tube and thence jointly semi-circumferentially in opposite direction to such housing rotation, out through the axially outward fluid-flow-reaction end means, such respective tube, semi-radially inward into radially outward periphery end of a multiple concave-



scoop-vaned fluid-circulating-induction-suction-impeller means, also rotatable with such carrier adjacent its axially outward end; wherein such impulse-reaction fluid-circulating-hydrodynamical-flow through each such tube means plus the centrifugal-rotation-velocity of such planetary-gearing-carrier, assists in automatically-synchronizing the rotation of such orbit-gear and fluid-coupler-housing with the normal forward rotation of such carrier, and a drive-shaft and sun-gear for rotatively driving the in-tandem planetary-gearing carried by such carrier; and wherein such synchronized rotation of such rotative elements results in simultaneously terminating the rotation of the in-tandem planetary-gears and the circulation of the fluid within such coupler-housing, and also in hydrodynamically clutching such carrier axially outward against an integral head end of such coupler-housing and thereby resulting in an efficient ideal condition of coupler cruising operations.

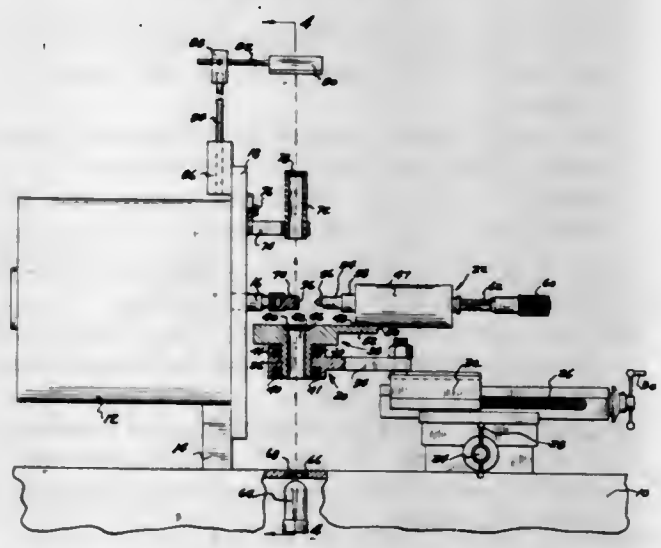
3,221,576
WIRE STRIPPER
George J. Goetz, Belvidere, Ill., assignor to Te Industries, Inc., Providence, R.I., a corporation of Delaware
Filed Aug. 17, 1964, Ser. No. 389,943
18 Claims. (Cl. 81—9.5)

7. A tool for stripping insulated wire comprising, in combination, a pair of elongated parallel body members pivoted together adjacent one end, spring means urging the body members toward closed parallel relationship but permitting them to be moved to a V-relationship against the action of said spring means, wire clamping means on one body member including a stationary jaw and a movable jaw slidable endwise of said body member toward and away from the stationary jaw, wire stripping means on the other body member including a stationary blade and a blade movable endwise of said body member toward and away from the stationary blade, a pair of handles, one of which is pivotally mounted on and extends from one of said body members and the other of which extends from the other body member, said handles being



so arranged as to be adapted to be grasped in one hand of an operator and to be opened and closed with respect to one another, spring means tending normally to urge the pivoted handle to retracted position with respect to the other handle, and means operable solely by said pivoted handle in the pivotal movement thereof and operatively connected with said movable jaw and movable blade to reciprocate the same relative to said body members.

3,221,577
OPTICAL SYSTEM FOR MACHINES
Leon Baum, 2170 Westhampton, Oak Park, Mich.
Filed Jan. 29, 1963, Ser. No. 254,619
2 Claims. (Cl. 82—12)



1. A machine tool, including, in combination:
a driving motor having an output shaft extending along a first axis;
means for supporting a workpiece on said shaft for rotation about said first axis;
a tool carriage supported for motion along second and third perpendicular axes, one of which is parallel to said first axis and the other of which is perpendicular thereto;
a cutting tool;
means for supporting the cutting tool on the carriage for rotation about an axis perpendicular to said first, second, and third axes, said support means comprising a cylindrical bearing member having its central axis perpendicular to said first, second and third axes, and an extension arm journalled in said

bearing and connected to said cutting tool, said bearing member having a central aperture therethrough; and

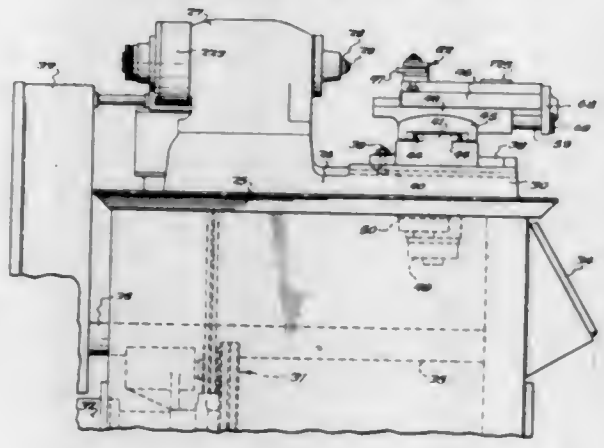
an optical system including a source of illumination and a lens projection system operative to form a beam of light passing through said aperture in the bearing and the point of contact between said cutting tool and said workpiece so as to project an image of such area for visual inspection by a machine operator.

3,221,578

AUTOMATIC TWO-SLIDE MECHANISM

Hubert J. Parsons, Horseheads, and Anders A. Peterson, Elmira, N.Y., assignors to Hardinge Brothers, Inc., Elmira, N.Y.

Filed June 13, 1962, Ser. No. 202,152
9 Claims. (Cl. 82—21)



1. A two slide mechanism, comprising,

a pair of slides mounted for reciprocable movement perpendicularly to each other,

a motor for moving each slide,

a plurality of adjustable stop means mounted on each slide,

a plurality of indexible abutment means which can be disposed in the travel path of said adjustable stop means,

a slip clutch means between said motor and each slide which permits the slide and its adjustable stop to be moved toward said abutment means and will slip when there is engagement between a stop means and an abutment means while continually maintaining pressure between said engaged means,

indexing means for moving any one of said indexible abutment means into position for engagement with an adjustable stop, and

programming means for controlling said indexing means so that any one of said indexible abutment means may be moved into position for engagement with a given stop means.

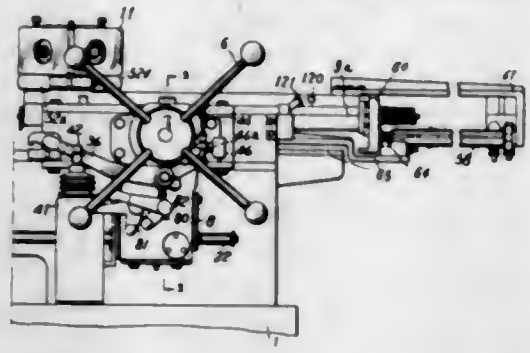
3,221,579

AUTOMATIC CONTROL MECHANISM FOR RAM TYPE TURRET LATHE

Masao Tsuda, 38 Sakee-cho, Senju, Adachi-ku, Tokyo, Japan

Filed Apr. 30, 1963, Ser. No. 276,749
Claims priority, application Japan, Aug. 22, 1962, 37/34,849
1 Claim. (Cl. 82—21)

In a lathe a headstock, a ram, an indexible turret carried by the ram, a rack secured to the ram, a pinion in driving engagement with the rack and means for driving the pinion in opposite directions to drive the ram toward and away from the headstock, said means comprising a shaft, a handwheel secured to the shaft at one end, an electromagentic clutch secured to the shaft at the other end and a gear fixed to the shaft intermediate said ends; a reversible electric motor and a gear train driven thereby at said other end for driving connection to the shaft by said electromagnetic clutch; a gear train including a clutch having an axially movable member connected to said gear for connecting said gear to a power source and means for axially moving the member into clutching engagement, said means comprising a threaded pivot connected to said axially movable member, an arm fixedly mounted on the pivot, and a solenoid connected to the



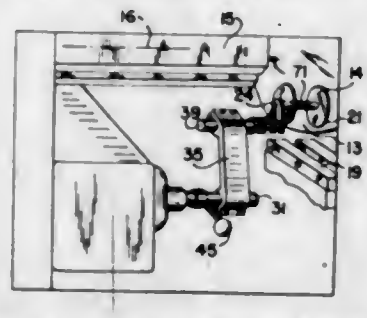
arm for rotating the arm against the force of gravity when the solenoid is energized; means for locking the arm in clutch engaging position when the solenoid is deenergized, means to release the locking means at a predetermined position of the turret in relation to the headstock to allow the arm to drop to clutch releasing position, switch means for energizing and deenergizing the solenoid, electromagnetic clutch, and reversible motor, and means responsive to the position of the ram and the angular position of the turret for operating the switch means in predetermined sequence.

3,221,580

STOCK STOP

Arthur W. Millward, Cleveland, Ohio, assignor to The National Acme Company, a corporation of Ohio

Filed May 1, 1963, Ser. No. 277,389
9 Claims. (Cl. 82—34)



1. In a machine having a spindle rotatable about an axis, the improvement comprising in combination, a cam having high and low points,

a first shaft journalled for rotation about a first axis parallel to the spindle axis,

a lever system including a first lever and a cam lever, said first lever being fixed on said first shaft,

a second shaft fixed on the outboard end of said first lever and having a second axis parallel to said first axis,

a stock stop adjustably fixed axially along said second shaft,

a handle connected to pivotally move said first lever,

said cam lever being journalled for rotation about a third axis parallel to said first axis,

a cam follower cooperating with said cam,

lost motion means carrying said cam follower,

spring means acting between said cam lever and said lost motion means,

means connecting the outboard end of said cam lever to pivotally move said first shaft with arcuate movement of said cam lever,

the low point of said cam moving said levers to a position whereat said stock stop is at a first position out of axial alignment with the spindle,

said high point of said cam moving said levers to have said stock stop in a second position in axial alignment with the spindle,

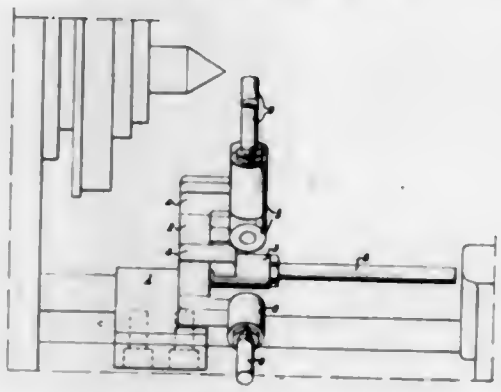
and said handle being arcuately movable against the urging of said spring means with said cam follower at the high point of said cam to move said stock stop to an intermediate position between said first and second positions out of alignment with the spindle.

3,221,581

LONGITUDINAL STOP MEANS FOR LATHES

Jonas Walfred Demander Johansson, Bjorkmossavägen 3, Virserum, Sweden

Filed Mar. 6, 1964, Ser. No. 349,848
Claims priority, application Sweden, Mar. 7, 1963, 2,480/63
2 Claims. (Cl. 82—34)



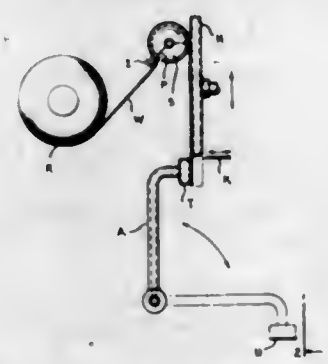
1. A longitudinal stop device for a lathe, said device comprising a frame adapted for being secured to the carriage guide of a lathe, a plate secured with said frame for extending at right angles to the carriage guide, said plate having an axis, a plurality of stop pin holders each having an individual axis and adapted for carrying an associated stop pin in coincidence with the holder axis and means pivotally connecting said holders to said plate for separate and individual pivotal movement between operative and inoperative positions in which said holders in the operative position abut the plate such that the respective axes of the holders coincide with the axis of the plate whereby the pins will also coincide with the axis of the plate, said plate thereby constituting a common reference surface for all the holders.

3,221,582

WEB SEGMENT DISPENSER

John A. Dreher, Trucksville, Pa., assignor to General Cigar Co., Inc., New York, N.Y., a corporation of New York

Filed Jan. 30, 1962, Ser. No. 169,913
2 Claims. (Cl. 83—24)



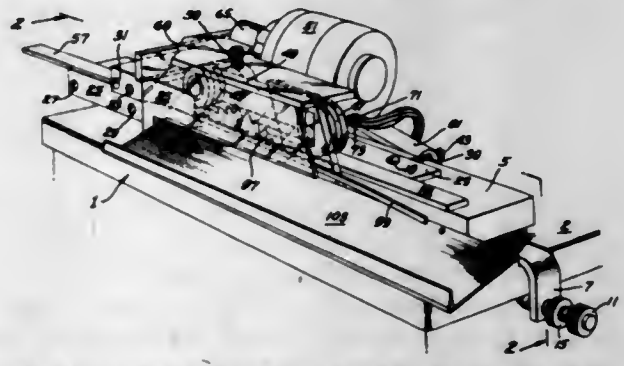
1. A process of supplying segments of a tenuous web in the form of oblique-angled parallelograms from a roll thereof in a smooth condition to the flat wrapper die of a cigar-making machine, which comprises the steps of gently pulling out the leading end of the web away from the roll by the combined action of a rotating cylindrical first suction surface and a succeeding rectilinearly-moving flat second suction surface while both surfaces are moving unidirectionally and while the web is held to both surfaces by suction, stopping the unidirectional movement of the first and second suction surfaces when the free face of the leading end of the web on the second surface has been brought into overlying relationship with a flat third suction surface, drawing the web to the third surface by applying suction thereto while releasing the suction from the second suction surface, returning the second suction surface while suction is cut off therefrom to its original position so that it is no longer in overlying relationship with the third suction surface, severing at an oblique angle with respect to the rectilinear movement of the second suction surface the leading end of the web carried by the third suction surface from the trailing portion of the web, positioning said flat wrapper die with the length thereof at an oblique angle relative to the plane of the second suction surface, transferring the obliquely severed web segment on the third suction surface to a position over said flat wrapper die, depositing said web segment on said flat wrapper die by releasing the suction from the third suction surface, and reapplying suction to the second suction surface before it again moves unidirectionally together with the first suction surface.

3,221,583

SAW FEEDING DEVICE

William A. Nichols, 5617 Hawthorne, and Ralph E. Simpson, 9815 Monte Vista Ave., both of Montclair, Calif.

Filed Sept. 13, 1963, Ser. No. 308,913
6 Claims. (Cl. 83—163)



1. An apparatus for effecting the continuous removal of thin facing strips from bodies of work stock by sawing means, comprising:

(a) automatically vertically adjustable moving frictional contact means for automatically urging work stock, at a substantially constant rate of progress, along a fixed path of travel so situated relative to an operating rotary saw blade as to route said work stock thereby in facing strip severing contact therewith, said moving frictional contact means comprising:

(1) a plurality of rotatably mounted pulley means with interconnecting belt drive means stationed above, in substantially axially perpendicular relationship to the direction of and substantially axially parallel relationship to the plane of the bed of said fixed path of travel, said pulley means and said belt drive means being so individually sized, constructed and assembled, and the resulting assembly being so postioned and supported as to insure contact between substantially half of the nonpulley contacting length of said belt drive means and the upper surface of a body of said work stock disposed along said fixed path of travel for a distance at least equal to the spread distance of said rotatably mounted pulley means thereabove, said contact being of

such frictional character as to induce movement of the body of work stock along the path of travel during operation of said apparatus, and all involved parts being so constructed that those belt surfaces, as well as any parts of the rims of said pulley means, contactable with said work stock during said operation are of frictional contact, but non-workstock scarring, character;

(2) said rotatably mounted pulley means comprising cooperating drive pulley means and follower pulley means;

(3) rotatably mounted roller means with rolling contact rim means disposed adjacently below the lower surface of a body of said work stock disposed along said fixed path of travel for a distance at least equal to the spread distance of the rotatably mounted pulley means of said moving frictional contact means thereabove, said roller means being fixedly positioned in substantially axially perpendicular relationship to the direction of and substantially axially parallel relationship to the plane of the bed of said path of travel and in vertical axial alignment with said rotatably mounted pulley means;

(4) motor means for driving said drive pulley means during operation of said apparatus;

(5) force exerting means urging said moving frictional contact means into sufficiently firm frictional contact with the upper surface of work stock disposed thereunder along said fixed path of travel to cause lineal movement of the latter upon rotational actuation of the drive pulley means of the former, said force exerting means being of such kind and disposition as to exert downward pressure on said rotatably mounted pulley means; and

(6) means mechanically linking said motor means to the drive pulley means of said rotatably mounted pulley means whereby rotational actuation of the latter and concomitant lineal movement of said work stock disposed thereunder are made possible;

(b) cooperating means for simultaneously supporting said work stock during its traversal of said fixed path of travel during operation of said apparatus, comprising a member with a sliding contact upper surface of contact with said work stock over which the latter slides in mechanical response to the urging of said moving frictional contact means, said member having openings directly under the rotatably mounted pulley means of said moving frictional contact means to permit contact of said rotatably mounted roller means with rolling contact rim means with the lower surface of said work stock during its traversal of said fixed path of travel;

(c) cooperating means for simultaneously maintaining said work stock within the lateral confines of said fixed path of travel comprising fence means fixedly securable to said member with a sliding contact upper surface of contact with said work stock, said fence means being so positionally secured in the assembled apparatus to provide a guide for one lateral edge of said work stock during its traversal of said fixed path, thereby defining one lateral edge of said path, and means for exerting resilient pressure against the opposite lateral edge of said work stock whereby it is urged to sliding, abutting contact with said fence during its traversal of said fixed path, the resilient pressure being brought to bear on said work stock at a point along said fixed path of travel upstream of said saw blade, said fence means defining the lateral edge of said fixed path farthest removed from said operating saw blade;

(d) whereby said saw blade continuously cuts facing strip from said work stock during operation of said apparatus; and

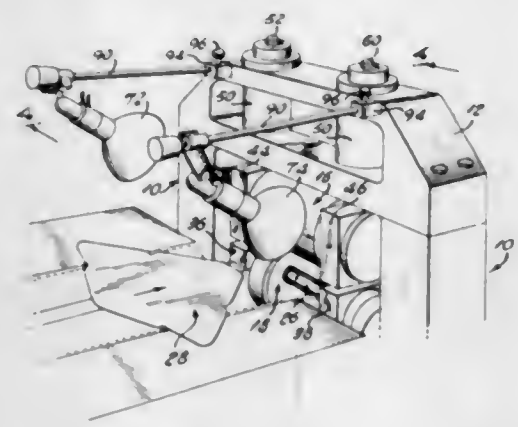
(e) means for laterally deflecting said facing strip away from said fixed path of travel to prevent its whipback to damaging contact with the teeth of said saw blade, said means being so stationed as to deflect said facing strip at a point upstream of its point of lateral passage of the noncutting peripheral edge of said rotary saw blade.

3,221,584

MACHINE FOR CUTTING PORTIONS FROM BLANKS OF SHEET MATERIAL

Abraham Novick, Flushing, N.Y., assignor to F. L. Smithe Machine Co., Inc., New York, N.Y., a corporation of New York

Filed Sept. 26, 1963, Ser. No. 312,834
6 Claims. (Cl. 83—170)



1. Apparatus for maintaining a substantially constant spaced peripheral relationship between a rotary cutter supported from one side of a generally rectangular machine frame and a co-operating hard surfaced anvil roller supported from the opposite side of the rectangular frame of a machine for cutting sheet material passing therebetween comprising, means for heating the supports of said rotary cutter and said anvil roller to a pre-established substantially constant temperature in excess of the normal operating temperature of said machine, means for adjusting the peripheral spacing between the co-operating cutter and anvil roller of the machine at the pre-established elevated temperature, means for sensing the heat rise in said machine adjacent said cutter and roller due to the operation thereof, means for sensing the temperature in the sides of the rectangular machine frame transverse to the axis of rotation of said cutter and anvil, and means for varying the amount of heat supplied by said heating means to maintain a constant predetermined temperature differential between said frame and cutter and anvil supporting means, so that the adjusted spaced relationship between the rotary cutter and anvil roller of said machine is maintained constant irrespective of its operating speed or conditions.

3,221,585

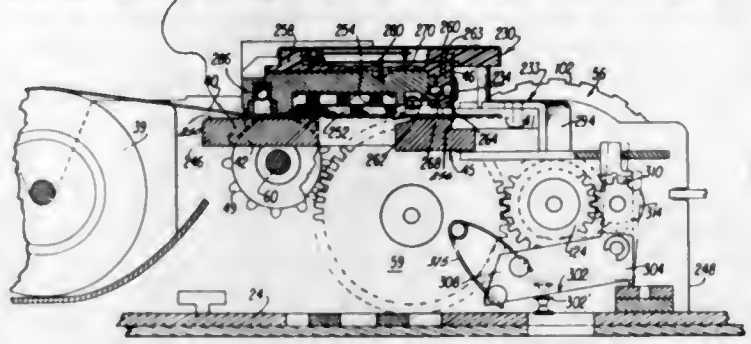
TAPE SEVERING MEANS FOR DICTATING MACHINES

Marcel Jules Helene Staar, Brussels, Belgium, assignor to Usines Gustave Staar, S.A., Brussels, Belgium, a corporation of Belgium

Filed Mar. 22, 1962, Ser. No. 181,545
Claims priority, application Belgium, Sept. 6, 1961, 607,910
7 Claims. (Cl. 83—221)

1. In web cutting apparatus, the combination comprising, means providing a web supporting surface over which a web is adapted to be led, said surface terminating in a sharp edge extending transversely of the web, a knife

support carried over said surface parallel with said edge, a knife carried by said support for movement across the surface adjacent the edge in an advance cocking stroke and in a return cutting stroke, means pivotally carrying the knife for movement from an elevated position free from web contact during the cocking stroke to a lowered position in web shearing relation with said edge during the



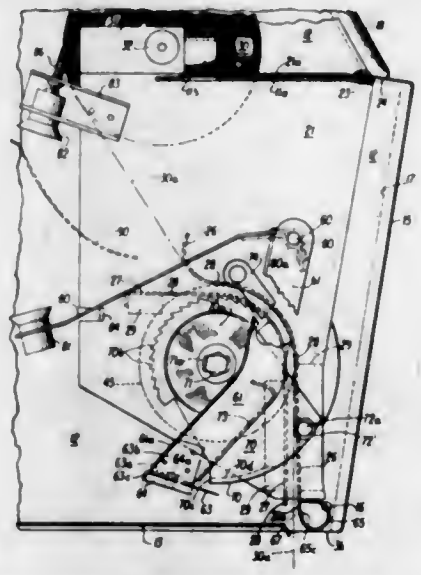
return cutting stroke to sever the web, a spring urging said knife toward the lowered position and means for positively maintaining said knife in said elevated position during said cocking stroke including an element connected to said knife cooperating with means on said support for pivoting said knife between said elevated and lowered positions under the urging of said spring as an incident to completion of the knife cocking stroke.

3,221,586

WEB DISPENSER HAVING A GRAVITY OPERATED CUTTING BLADE

Erwin B. Bahnsen, Hinsdale, Ill., assignor, by mesne assignments, to Georgia-Pacific Corporation, Portland, Oreg., a corporation of Georgia

Filed June 14, 1961, Ser. No. 117,188
20 Claims. (Cl. 83—224)



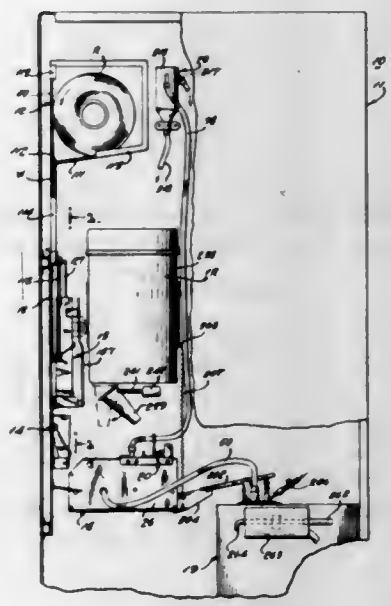
1. In a paper towel dispenser, a friction roller rotatable by the passage thereover of a length of paper toweling, a pendulum mounted for pivotal movement, a knife blade carried by said pendulum, a backing member, said knife blade being movable by said pendulum into paper towel severing cooperation with said backing member, means for biasing said pendulum to a normal position sufficiently removed from severing cooperation with said backing member to permit passage of paper toweling therebetween, and an actuating member driven by said roller and engageable with said pendulum in its normal position to pivot said pendulum upwardly and away from said backing member and disengageable from said pendulum when said pendulum reaches a substantially elevated position to permit said pendulum to fall and carry said movable knife blade past its normal position and momentarily into paper towel severing cooperation with said backing member.

3,221,587

APPARATUS FOR FORMING AND DISPENSING FILTER ELEMENTS IN DEVICES FOR BREWING AND DISPENSING BEVERAGES

Sollie W. Small and David Herman, Newark, N.J., assignors to Coffee-Mat Corporation, Elizabeth, N.J., a corporation of New Jersey

Original application July 14, 1961, Ser. No. 124,207. Divided and this application July 29, 1964, Ser. No. 389,237
3 Claims. (Cl. 83—271)



1. A filter element forming and dispensing apparatus comprising a slide member movable between a lower advanced and an upper retracted position, and including a longitudinally extending plate having a vertically extending longitudinal slot formed therein, guide means directing a web of filter material along a path overlying said plate, web clamp means disposed adjacent to the leading end of said slide member, means for urging said web clamp means toward engagement with said slide member during the advance movement thereof and out of engagement with said slide member during the retraction thereof, a stationary clamp registering with said longitudinal slot and located between the leading and trailing ends of said slide member and for engaging said web to restrain the movement thereof and including a pair of jaw members, one of which is supported for movement toward and away from the other jaw member and being normally urged toward engagement therewith, severing means carried by and moveable with said slide member and disposed in the vicinity of the lower edge of said plate and adapted to cut said web transversely thereof, and means for actuating said cutting means when the slide is in its lower position.

3,221,588

DRILL SCREW AND AN ASSEMBLY INCLUDING THE SAME

George L. Wieber, Mount Prospect, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware

Filed Mar. 5, 1962, Ser. No. 177,627
6 Claims. (Cl. 85—47)

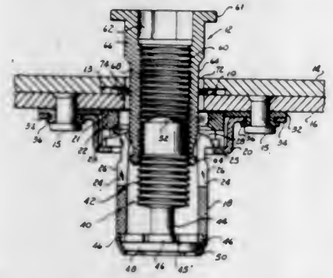
1. A screw of the type described including a cylindrical shank, a head integral with the trailing end of said shank, a tapering entering end portion coaxial with said cylindrical shank terminating in a penetrating portion, said penetrating portion formed as a surface of revolution generated by a half circle with the axis of generation coincident with the axis of said shank, a section of said penetrating portion being relieved on the axis of said

shank to form a recess extending from the terminal end of said penetrating portion at least to a point above the



center of said half circle, the remaining penetrating end portion defining substantially one-quarter of a sphere.

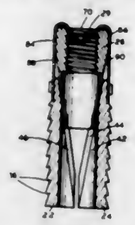
3,221,589
INTERTHREADED FASTENING ASSEMBLY
John L. Vander Sande, North Haledon, Warren C. Bross, Westwood, and Walter Trotter, Fair Lawn, N.J., assignors to Camloc Fastener Corporation, Paramus, N.J., a corporation of New York
Filed June 12, 1961, Ser. No. 116,314
5 Claims. (Cl. 85—61)



1. A fastener for securing a pair of elements to each other including in combination an elongated internally threaded nut, means carried by the nut adjacent its upper end for engagement with one of the elements to be secured, an externally threaded stud, a carrier, means adjacent the lower end of the stud for securing the stud in fixed relationship to the carrier, said stud being formed with a weakened portion between said stud threads and said securing means and means for securing said carrier to the other of said pair of elements while restraining said carrier against rotary movement, said nut being removable upon rupture of said weakened portion.

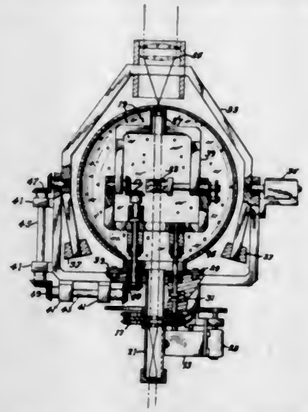
3,221,590
EXPANSION SHELL WITH CONVERGING PLANAR SURFACES IN PLANES FORMING A DIHEDRAL
Frederick P. Dickow, Auburn, N.Y., assignor to The Eastern Company, Naugatuck, Conn., a corporation of Connecticut
Filed Apr. 25, 1963, Ser. No. 275,606
3 Claims. (Cl. 85—76)

1. A mine roof bolt expansion shell assembly comprising a pair of opposed shell segments, a wedge member disposed therebetween and having a threaded aperture to receive a bolt, each of said segments being shaped as a longitudinally tapering segment of a hollow cylinder and being symmetrical about an axial plane passing through the axis of the assembly, and each having planar side edge surfaces extending substantially the entire length of the segments converging at the upper end and lying in the planes of a dihedral, the intersection line of which is inclined upwardly and away from the axis of the assembly at an angle in the order of seven degrees, and the planes of said surfaces lying at angles to the plane of symmetry in the order of seventy degrees, said wedge member having four planar surfaces adapted to mate with said edge surfaces of said segments, and being substantially symmetrical about said axial plane and a second



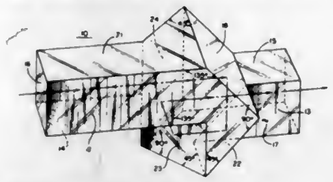
axial plane at right angles thereto, said surfaces lying in planes converging downwardly toward said second axial plane at an angle in the order of seven degrees, and converging laterally from said first axial plane toward the second axial plane at an angle in the order of twenty degrees, and an inverted U shaped spring strap connecting the upper ends of said segments and tending to spread the lower ends of said segments, and said wedge member having opposed side notches disposed between the planar surfaces to receive the side arms of said strap.

3,221,591
SATELLITE FINDER
Herman C. Schepler, 5519 Via Del Valle, Torrance, Calif.
Filed Aug. 15, 1961, Ser. No. 131,689
8 Claims. (Cl. 88—1)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. An astronomical instrument for observing objects in the celestial sphere, said instrument comprising a transparent hollow globe having opaque portions imprinted thereon corresponding to heavenly bodies in the celestial sphere, means for synchronizing the rotation of said globe on its polar axis with that of the earth's, and aligned optical means within and without said globe for focusing an image of the celestial sphere on the surface of said globe and to allow simultaneous visual observation of the image of the celestial sphere and surface of said globe, the opaque portions on said globe being in register with the heavenly bodies to prevent their images from reaching the inner optical means.

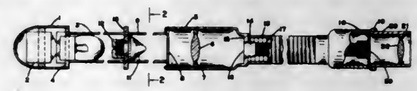
3,221,592
OPTICAL ATTENUATOR
Jack A. Soules, 870 N. Arlington Mill Drive, Arlington, Va.
Filed Aug. 31, 1962, Ser. No. 220,922
2 Claims. (Cl. 88—1)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A light attenuator which comprises:
a housing,
a prismoid in said housing,
said prismoid including a light inlet end and a light outlet end extending from said housing,
a first light reflecting-refracting surface in optical alignment with said inlet end,
a second light reflecting-refracting surface in optical alignment with said first reflecting-refracting surface which receives light reflected from said first surface,
a third light reflecting-refracting surface in optical alignment with said second reflecting-refracting surface which receives light reflected from said second reflecting-refracting surface,
a fourth light reflecting-refracting surface in optical alignment with said third reflecting-refracting surface which receives light reflected from said third reflecting-refracting surface,
said fourth reflecting-refracting surface reflecting light out through said outlet end of said prismoid,
a first window in said housing,
a first mirror surface within said housing,
said first mirror surface positioned to receive light refracted from said first reflecting-refracting surface and to reflect incident light out of said housing through said first window in said housing,
said second reflecting-refracting surface refracting light out through said first window in said housing,
a second window in said housing,
a second mirror surface within said housing,
said second mirror surface positioned to receive light refracted from said third reflecting-refracting surface and to reflect incident light out of said housing through said second window in said housing,
said fourth reflecting-refracting surface refracting light out through said second window in said housing, and
an optical solution within said housing and surrounding said prismoid,
said optical solution having an index of refraction which is less than the index of refraction of said prismoid.

3,221,593
BORESCOPE UTILIZING A STEPPED CONE REFLECTOR
John T. Ferris, Pittsford, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed Sept. 25, 1961, Ser. No. 140,422
1 Claim. (Cl. 88—14)

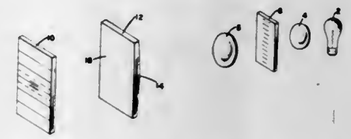
A borescope comprising, a source of light for oblique and radial lighting, means supporting said source of light, a reflector having at least two conical surfaces of different apex angles said surfaces facing in the same direction and mounted on said supporting means for receiving light rays from different fields of view, an image transmitting means, a lens means intermediate said reflector and said image transmitting means for receiving said light rays from said reflector and projecting images of said fields of view on said image transmitting means





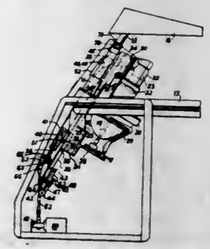
for transmitting images for visual observation external of said borescope.

3,221,594
OPTICAL READ-OUT SYSTEM HAVING A BI-PRISM WITH INTEGRAL SCREEN
Leslie O. Vargady, Rochester, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed Sept. 18, 1961, Ser. No. 138,984
1 Claim. (Cl. 88—24)



An optical read-out system having a scale, a screen, and means for projecting an image of said scale upon said screen, and means including a relatively weak bi-prism placed between said scale and said screen bringing together the marginal elements of an image of a scale line width to thereby reduce the width of the image when the scale line is in alignment with the apex of said bi-prism, said screen being integral with said bi-prism.

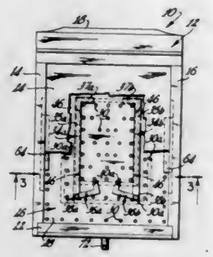
3,221,595
LENS FOCUSSING SYSTEMS AND MEANS FOR MOVING LENS MEANS OF AN OPTICAL PROJECTION SYSTEM
John Henry Jeffree, London, and Dennis Arthur Sutton, Hatfield, England, assignors to Caps (Research) Limited, Wembley, Middlesex, England
Filed Aug. 6, 1962, Ser. No. 215,073
Claims priority, application Great Britain, Aug. 4, 1961, 28,502/61
15 Claims. (Cl. 88—24)



1. A lens focussing system comprising a first movable means constrained to move parallel with the optical axis of the focussing system, a mounting for receiving a lens means of the system and arranged to be movable parallel to the optical axis with the first movable means, second movable means constrained to move parallel with the optical axis in a direction opposite to the direction of movement of the first movable means, the second movable

means including pulley means spaced from the direction of movement of the first movable means and having an axis which extends parallel with a direction normal to the optical axis, control means adapted to effect movement of the second movable means so that the second movable means upon a change in length of the optical path moves by a proportional amount, and coupling means including a band or the like of fixed length anchored at its ends respectively to an abutment and to the first movable means and co-operating at an intermediate location thereon with the pulley means of the second movable means, whereby movement of the second movable means upon actuation of the control means imparts movement to the first movable means sufficient to bring the lens means into focussing position in the optical path.

3,221,596
VACUUM FILM HOLDER
Morris Hoffman, 240 Jerusalem Ave., Hicksville, N.Y.
Filed Oct. 1, 1963, Ser. No. 312,904
18 Claims. (Cl. 88—24)



1. A portable, vacuum type holder for a thin sheet of flexible, photosensitive film having top, bottom and side edges comprising:

(a) a frame member comprised of a pair of spaced side rails, a top piece and a hinged bottom piece;

(b) a substantially flat front plate and a rear plate spaced therefrom to define a vacuum chamber, said chamber being secured within said frame member, said front plate being provided with a plurality of apertures therethrough, whereby said apertures substantially coincide with the edges of said sheet;

(c) a plurality of magnetic members secured in said vacuum chamber adjacent to and behind said front plate, whereby said magnets substantially coincide with the edges of said sheet;

(d) detachable film holding guides having a magnet attractive underside; and

(e) coupling means in communication with said chamber, said coupling means adapted for the application of a vacuum whereby said thin, flexible sheet of photosensitive film is firmly held substantially flat against said front plate of said chamber.

3,221,597
ROLL TAPE COPY MACHINE
Clifford C. Vogt, Rte. 1, Box 511, Mount Pleasant, S.C.
Filed Oct. 9, 1963, Ser. No. 315,094
1 Claim. (Cl. 88—24)
(Granted under Title 35, U.S. Code (1952), sec. 266)

Apparatus for accurately reproducing a relatively narrow elongated roll of tape containing test indicia thereon comprising:

a first magazine for housing a strip of tape to be reproduced, said magazine including a storage spool and a drive roller adjacent said spool and positioned to withdraw tape from the storage spool;

an exposure roller immediately outside said first magazine to present successive portions of said tape for ready viewing thereof, and

a takeup roller within the first magazine and driven from the drive roller to receive and store the tape after it has been exposed;

a friction slip clutch drive assembly associated with said takeup roller;

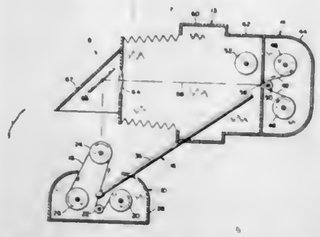
a second magazine spaced from the first magazine and having a spool for storing a strip of photosensitive material;

a drive roller to present said photosensitive strip for sequential exposure to the indicia on the tape;

a takeup spool driven by the drive spool;

a friction slip clutch drive assembly associated with said takeup spool;

one wall of said magazine having a slit therethrough



adjacent to and extending transversely of the direction of strip movement over the drive roller;

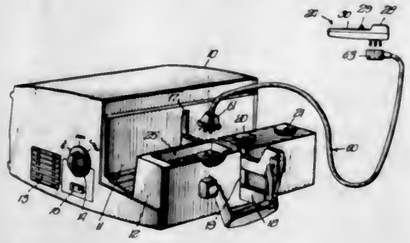
means for guiding said strip past the slit;

a photographic enclosure defining an optical path interposed between the two magazines;

said enclosure including an image inverting means for reversing the image on the tape so that it will appear on the exposed photosensitive strip in its original order; and

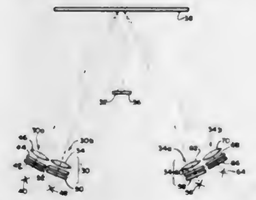
common drive means interconnecting said magazine drive rollers to impart simultaneous movement thereto whereby an image received from the first magazine is picked up by the photosensitive strip and stored in the second magazine at the same rate that it is exposed by the strip of tape emitting from the first magazine.

3,221,598
DETACHABLE CONTROL MEANS FOR SLIDE PROJECTORS OR THE LIKE
Walter J. Hall, Chicago, Ill., assignor to Sawyers Research Development Corporation, Chicago, Ill., a corporation of Delaware
Filed Dec. 31, 1962, Ser. No. 248,312
2 Claims. (Cl. 88—28)



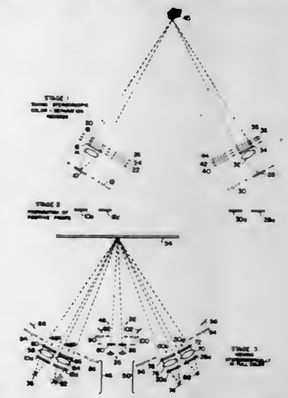
1. Control means for a slide projector having a housing and a control panel comprising said control panel having a cavity with first electric contact means therein, a remote-control handpiece adapted to be received in said cavity and having second electric contact means thereon complementary with said first contact means, which handpiece has a face adapted to blend in with the over-all configuration of the control panel, said handpiece being detachably secured to said projector by mating engagement of said first electric contact means with second electric contact means for operation of the projector, the mating engagement of said first and second contact means serving as the sole means for detachably securing said hand piece to said projector, said handpiece being adapted to be detached from said projector for engagement of the second electric contact means with complementary contact means on one end of elongated, flexible, electric, conductor means, said first electric contact means being adapted for engagement with other complementary contact means on the other end of said electric conductor means, whereby said projector may be operated remotely by said handpiece.

3,221,599
METHOD FOR PRODUCING AND VIEWING MULTICOLORED STEREOSCOPIC IMAGES
Edwin H. Land, Cambridge, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed May 27, 1960, Ser. No. 32,283
2 Claims. (Cl. 88—29)



1. A method of providing in a gamut of colors a composite stereoscopic image of a multicolored photographic subject, comprising the steps of positioning a first pair of black-and-white photographic prints for projection in individual paths of light which converge to substantial superimposition with one another at an image plane, one print of which is produced by photographic taking means recording a relatively long wavelength content of said subject within one-half of the visible spectrum from a first stereoscopic location, and the other print of which is produced by photographic taking means recording a relatively shorter wavelength content of said subject within said one-half of the visible spectrum and also from said first stereoscopic location, positioning a second pair of black-and-white photographic prints for projection in individual paths of light which converge to substantial superimposition with one another and with said first pair at an image plane, one print of which is produced by photographic taking means recording a relatively long wavelength content of said subject within the other half of the visible spectrum from a second stereoscopic location, and the other print of which is produced by photographic taking means recording a relatively shorter wavelength content of said subject within said other half of the visible spectrum and also from said second stereoscopic location, projecting said one print of said first pair in light of a relatively long wavelength within said one-half of the visible spectrum, projecting said other print of said first pair in light of a relatively shorter wavelength within said one-half of the visible spectrum, projecting said one print of said second pair in light of a relatively long wavelength within said other half of the visible spectrum, projecting said other print of said second pair in light of a relatively shorter wavelength within said other half of the visible spectrum, and viewing said prints, projected along said paths as substantially superimposed images, through left- and right-eye viewing filters, the left-eye viewing filter being of a color adapted to pass, substantially exclusively, the light of said relatively long and shorter wavelengths within said one-half of the visible spectrum and the right-eye viewing filter being of a color adapted to pass, substantially exclusively, the light of said relatively long and shorter wavelengths within said other half of the visible spectrum, whereby a multicolored two-dimensional image is rendered visible to each eye individually and a multicolored stereoscopic image is rendered visible to both eyes.

3,221,600
METHOD FOR FORMING AND VIEWING COLOR SEPARATION STEREOSCOPIC IMAGES
Edwin H. Land and Nigel W. Daw, Cambridge, Mass., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed Dec. 29, 1961, Ser. No. 165,467
7 Claims. (Cl. 88—29)



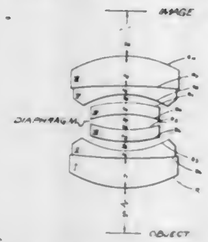
1. A method of producing and viewing composite multicolored stereoscopic images of a photographic subject wherein color integrity is maintained and retinal rivalry is substantially eliminated through the provision of a predetermined color content and chosen densities of a plurality of left- and right-eye image components, said method comprising the steps of exposing successively to said subject from a first stereoscopic location each film of a first pair of photosensitive films of given spectral sensitization characteristics through a plurality of variously-colored taking filters at exposure times which are selected fractions of the normal times therefor relative to said films, the colors of said filters and the exposure times being at least in part relatively different for each of the films of said pair, exposing successively to said subject from a second stereoscopic location each film of a second pair of photosensitive films of given spectral sensitization characteristics through a plurality of given colored taking filters at exposure times which are selected fractions of the normal times therefor relative to said films, the colors of said filters and the exposure times again being at least in part relatively different for each of the films of said second pair and also at least in part different from the colors of said filters and exposure times employed with said first pair of films, producing first and second pairs of black-and-white color-separation records representative in image content of said first and second stereoscopic locations from said first and second pairs of films, respectively, by any suitable method, said pairs incorporating equally balanced densities of said image content by reason of said film sensitization, taking filters and fractional exposures, positioning each record of said pairs in an individual path of light converging to substantial superimposition at an image plane, placing a colored projection filter having a

relatively different transmittance in each said path of light so that a pair of filters composed of relatively long and short wavelength band transmission filters, is positioned in the paths identified with each of said pairs of color-separation records, one pair of said projection filters distinguishing from the other in wavelength characteristics, projecting light along said paths through said records and filters to provide pairs of predeterminedly differentially-colored images in substantial superimposition at an image plane, and viewing said pairs of images binocularly through discriminatory viewing filter means operating in conjunction with discriminatory means identified with said projection filters, to restrict the pairs of images identified with said first and second stereoscopic locations to the separate eyes of the viewer.

3,221,601
FOUR COMPONENT SYMMETRICAL PROJECTION OBJECTIVE

Ellis I. Betensky, Rochester, and Nathan Rickless, Brighton, N.Y., assignors to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York

Filed July 30, 1962, Ser. No. 213,226
3 Claims. (Cl. 88—57)



1. A symmetrical projection objective for copying and process work at a transmission range of 440 to 580 mu at substantially unity magnification, said objective comprising a pair of negative compound meniscus lenses, and a pair of positive singlet meniscus lenses optically aligned symmetrically between said first pair and symmetrically spaced from an interposed diaphragm, each said pair of lenses having all of their refractive surfaces concave toward said diaphragm, and the half field angle being substantially 20°,

said compound lenses being composed of an outward positive meniscus element and inner negative meniscus element whose adjoining refractive surfaces lie in complete contact with each other to form an interface,

the focal lengths of the successive lens elements represented by F_I to F_{VI} being given substantially in the following table of mathematical expressions wherein F designates the equivalent focal length of said objective,

$$F_I=F_{VI}=.433F$$
$$F_{II}=F_V=-.369F$$
$$F_{III}=F_{IV}=1.324F$$

The airspaces S_2 and S_5 between said compound and singlet members having values which are substantially as follows,

$$S_2=S_5=.020F$$

the airspaces S_3 and S_4 between said singlet lenses and said diaphragm having values which are substantially as follows,

$$S_3=S_4=.0217F$$

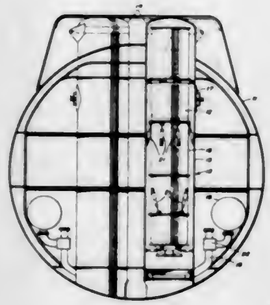
and the refractive index n_D and Abbe number ν of the successive lenses $n_D(I)$ to $n_D(VI)$ and $\nu(I)$ to $\nu(VI)$ having refractive values which are substantially as given herebelow in the table herebelow,

$$n_D(I)=n_D(VI)=1.700$$
$$n_D(II)=n_D(V)=1.605$$
$$n_D(III)=n_D(IV)=1.638$$
$$\nu(I)=\nu(VI)=48.0$$
$$\nu(II)=\nu(V)=38.0$$
$$\nu(III)=\nu(IV)=55.5$$

3,221,602
LIQUID SPRING MOUNTING MEANS FOR A LAUNCHING TUBE

Wilson T. Price, Santa Clara, and Charles R. Brown, Sunnyvale, Calif., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Original application Sept. 13, 1961, Ser. No. 138,534, now Patent No. 3,182,987, dated May 11, 1965. Divided and this application Jan. 3, 1964, Ser. No. 347,987
1 Claim. (Cl. 89—1.7)

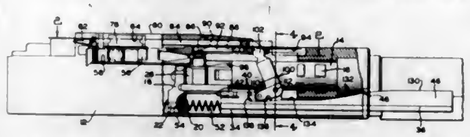


In a missile launcher including an outer storage tube and an annularly disposed inner launch tube, a shock isolating means interconnecting said tubes, said shock isolating means comprising an outer cylinder having a bore; a pair of seals affixed in said bore and forming an enclosed chamber for containing a fluid; a piston slideably retained within said bore, said piston having a counterbore therein; a piston rod having a plunger head slideably received in the counterbore of the piston for limited movement relative thereto and having the rod portion thereof extending through one of said seals; first attaching means for connection to a load to be spring action controlled secured to the other end of said piston rod; a second rod attached to the other end of said piston and configured to have a greater cross-sectional area than that of said piston rod, said second rod extending through the other of said seals, said piston having an orifice therethrough for establishing fluid communication between the portion of the chamber surrounding the piston rod and the portion of the chamber surrounding said second rod; second attaching means affixed to said outer cylinder remote from the first attaching means in order that application of a tensile load to the spring through said attaching means functions to draw said piston rod out of said chamber and said second rod into said chamber, thereby decreasing the volume by virtue of the differential in displacements thereof and effecting an increase in the pressure therein thereby applying a restoring force to said piston.

3,221,603
CARTRIDGE FEEDING MECHANISM FOR FIXED-BARREL, SLIDE-OPERATED GUNS

John L. Lochhead, Springfield, Mass., assignor to the United States of America as represented by the Secretary of the Army

Filed Mar. 23, 1964, Ser. No. 354,183
7 Claims. (Cl. 89—33)
(Granted under Title 35, U.S. Code (1952), sec. 266)

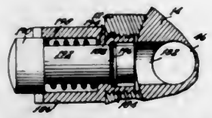


1. In an automatic gun having a receiver with a transverse feedway therein for slidably receiving a linked belt of cartridges, a barrel fixedly secured in the forward end of the receiver, a bolt reciprocably disposed in the receiver in coaxial alignment with the barrel, a slide reciprocably disposed in the receiver for imparting recoil and counterrecoil movement to the bolt, and cartridge belt feed means slidably disposed in the feedway for successive engagement with each leading cartridge in the belt, the improvement in means for actuating said cartridge belt feed means in response to the reciprocating movement of the slide comprising, an actuator pivotally mounted about a transverse axis in the receiver forwardly of the breech end of the barrel, a cam plate slidably disposed in the receiver in simultaneous engagement with said actuator and the cartridge belt feed means, and cam means on the slide engageable with said actuator for imparting pivotal movement thereto and thereby reciprocating said cam plate to actuate the cartridge belt feed means for advancing the leading cartridge in the belt along the feedway into the counterrecoil path of the bolt.

3,221,604
BOLT ACTION FIREARM WITH CHARGER

Walter H. B. Smith, deceased, late of New York, N.Y., by Katherine B. Groves, executrix, late of 150 W. 58th St., New York, N.Y.; Alice Denhoff, substitute executrix of said Katherine B. Groves, deceased

Original applications April 5, 1956, Ser. No. 576,275, now Patent No. 2,894,346, dated July 14, 1959, and Oct. 15, 1958, Ser. No. 767,358, now Patent No. 3,090,148, dated May 21, 1963. Divided and this application Oct. 23, 1962, Ser. No. 232,619
1 Claim. (Cl. 89—187)

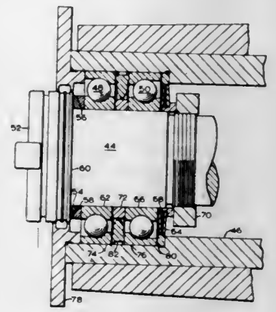


A gun action comprising a receiver having a breech plug at the rear thereof, said receiver having a threaded aperture for receiving a threaded hollow bolt hold housing member, a bolt slidably mounted in said receiver for movement between a forward and retracted position, said bolt being provided with a bolt holding recess formed in the outer surface thereof whereby said threaded aperture and said recess are in alignment when said bolt is in a retracted position within said receiver, spring means extending between said plug and said bolt urging said bolt forward, a hollow bolt hold housing member threaded at its lower end, said lower end of said bolt hold housing member being threaded into said threaded aperture in said receiver, means in said bolt hold housing member insertable through said threaded aperture and into said aligned recess for holding said bolt in retracted position provided with a retaining ring for abutting against the shoulder of a constricted portion of said hollow bolt hold housing member to prevent the removal of said insertable means from said receiver, and spring means urging said insertable means away from said recess.

3,221,605
THERMAL CHANGE COMPENSATION MECHANISM

Joseph V. Hemmerle, Jr., Cincinnati, Ohio, assignor to The Cincinnati Milling Machine Co., Cincinnati, Ohio, a corporation of Ohio

Filed Feb. 4, 1963, Ser. No. 255,806
5 Claims. (Cl. 90—11)



1. In a machine tool having a spindle carrier and a spindle supported for rotation on an axis therein, said spindle subject to temperature changes producing axial dimension changes thereof, a thermally adjusted spacer mechanism to compensate for the axial spindle dimension changes comprising:

(a) means defining a shoulder around said spindle,

(b) a locating member received in the spindle carrier at a fixed location therein, the spindle axially movable relative to said locating member,

(c) a first annular member received around said spindle between said shoulder and locating member and having

(1) a side face inclined relative to the axial direction of the spindle and

(2) a predetermined rate of radial dimension change when the temperature thereof changes,

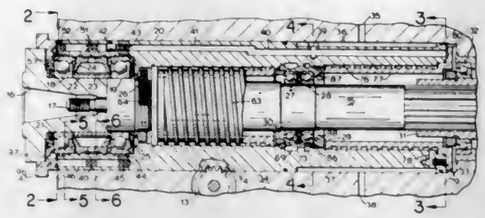
(d) a second annular member received around said spindle between said shoulder and locating member and having

(1) a side face complimentary to and received against said first annular member side face, said first member side face extending obliquely into said second member and

(2) a predetermined rate of radial dimenesion change when the temperature thereof changes greater than said first annular member rate whereby said annular members relatively slip at said inclined side faces thereof to alter the combined axial thickness of said annular members inversely as the axial spindle dimensions change, and

(e) means to produce an axial force on said spindle tending to move said shoulder and locating member together, said shoulder and locating member separated by said annular members therebetween.

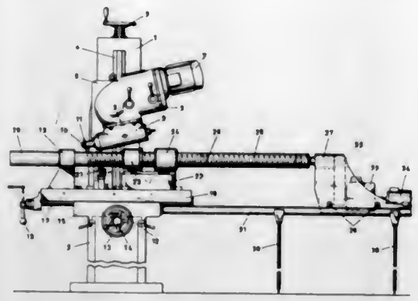
3,221,606
MACHINE TOOL SPINDLE COOLING SYSTEM
Herman J. Baldwin, Cincinnati, Ohio, assignor to The Cincinnati Milling Machine Co., Cincinnati, Ohio, a corporation of Ohio
Filed Feb. 10, 1964, Ser. No. 343,516
2 Claims. (Cl. 90—11)



1. In a milling machine spindle carrier having a cylindrical quill received therein, the quill having a bore therethrough, a spindle received through the quill bore, and a plurality of axially spaced antifriction bearings in the quill bore around the spindle for rotatable support thereof, a fluid cooling system comprising:
(a) a plurality of annular grooves in the quill bore, each of the bearings having at least one of said grooves extending circumferentially therearound,
(b) a pair of slots extending axially along the portion of the outer surface of said quill,
(c) a pair of fluid passages in the spindle carrier defining an input passage terminating at one end in one of said slots and an exhaust passage terminating at one end in the other of said slots,
(d) a bushing fixed in the quill around the spindle with the outer surface thereof contacting the surface of the quill bore,
(e) a spiral groove formed in the outside surface of said bushing and, with said quill, forming a spiral fluid channel around and along the quill bore, and
(f) means for transmitting fluid from one of said slots serially around the bearings and along the spindle to the other of said slots, said means including said spiral fluid channel and a plurality of axial passages through said quill, said axial passages having a plurality of intersecting radial ports at spaced locations along the quill, one of said ports extending between one of said axial passages and said one slot, another of said ports extending between another of said axial passages and said other slot, and other of said ports communicating between said axial passages and said annular grooves and spiral fluid channel.

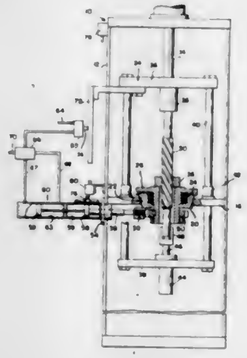
3,221,607
METHOD AND A MACHINE FOR CUTTING AND/OR TREATING THREADS ON ROD-SHAPED WORK PIECES
Bertil Ivar Torsten Larsson, Norregard, Bredaryd, Sweden, assignor to Aktiebolaget Sigfrid Stenberg, Nassjo, Sweden, a corporation of Sweden
Filed Apr. 29, 1963, Ser. No. 276,636
Claims priority, application Sweden, Apr. 30, 1962, 4,846
4 Claims. (Cl. 90—11.42)

1. A machine tool for cutting and/or treating threads of a rod-shaped work piece, said machine provided with a driven cutting tool, a nut being adjustable relative to said tool and passed through by a driven guide screw with a device for its axial coupling to a rod-shaped work piece, means adapted, during rotation, to move said work piece, when it has been provided with threads by means of said cutting tool, axially through said nut so that said work piece thereupon may serve as a guide screw, the end of said guide screw situated opposite said work piece carried by a headstock movable on a guide and provided with



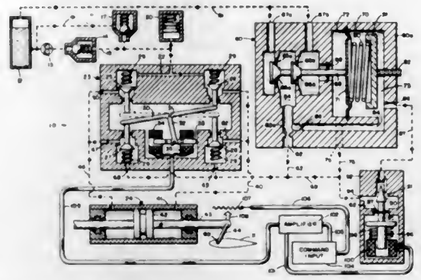
a device for driving said guide screw, said driving device comprising a variable speed transmission.

3,221,608
BROACHING APPARATUS
Russel W. Anthony, Detroit, Mich., assignor to National Broach & Machine Company, Detroit, Mich., a corporation of Michigan
Filed July 24, 1961, Ser. No. 126,238
6 Claims. (Cl. 90—95)



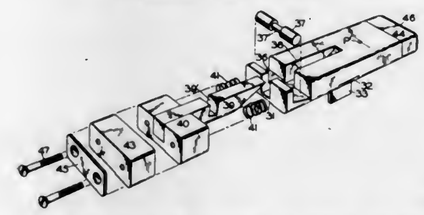
1. Broaching apparatus for broaching helical parts with an axially elongated broach having cutting elements disposed in a helical path comprising a frame, a work support on said frame, a broach support on said frame, means for moving one of said supports on said frame relative to the other in a direction parallel to the axis of the broach, means connecting one of said supports to said frame against rotation about said axis, means connecting the other of said supports to said frame for rotation thereon to define a rotary support, means connected between said frame and said rotary support to apply a torque tending to rotate said rotary support at a rate required by the rate of relative movement between the broach and work piece in a direction parallel to the axis of the broach and the helix angle of the teeth on the broach, and means for limiting the magnitude of the torque available to rotate said rotary support to a magnitude effective substantially to balance frictional resistance to rotation of said rotary support on said frame.

3,221,609
ERROR SENSITIVE FLUID OPERATED ACTUATOR
William Frantz, Winter Park, Fla., assignor to Martin-Marietta Corporation, Middle River, Md., a corporation of Maryland
Filed May 13, 1963, Ser. No. 279,975
14 Claims. (Cl. 91—405)



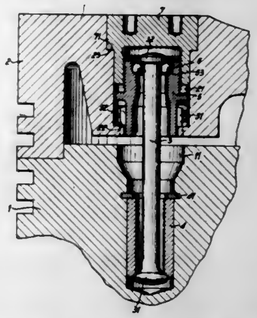
1. Variable flow limiting means for connection in series with a fluid operated actuator so as to control the rate of actuation by limiting the rate of fluid flow therethrough, said variable flow limiting means comprising first and second pairs of orifices, through each of which flow from a fluid source may take place, one orifice of each pair of orifices being a relatively fixed orifice and the other orifice of each pair of orifices being a variable orifice, the flow through said first pair of said orifices being a primary flow, and the flow through the second pair of orifices being a pilot flow, first and second pressure chambers having a pressure responsive means disposed therebetween, the movements of said pressure responsive means in response to pressure difference in said chambers serving to vary the flow through the variable orifice of said first pair of orifices, said first of said pressure chambers being connected to sense the pressure drop occurring across said first fixed orifice as the result of flow therethrough, and the second pressure chamber being connected to sense the source pressure, and signal responsive means operative to vary the effective area of said second variable orifice, so as to vary the pressure drop thereacross, the latter pressure drop being communicated to said first chamber, said change in area of said second variable orifice modulating the position of said first variable orifice to regulate the primary fluid flow in accordance with said signal changes.

3,221,610
CLUTCH TYPE PISTON LOCKING MEANS
William L. King, Beaverton, and Delbert C. Hewitt, Portland, Oreg., said King assignor to said Hewitt
Filed Jan. 13, 1964, Ser. No. 337,329
2 Claims. (Cl. 92—24)



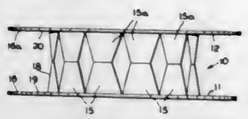
1. In a double acting cylinder in which the pair of ports are located at opposite ends of the cylinder respectively to serve alternately as inlet and outlet ports for actuating fluid delivered into the cylinder through the intermediary of a suitable master control valve, a piston assembly having an automatic clutch-type brake, said piston assembly including a piston main member, said main member having an open transverse slot extending across said main member, the bottom of said slot extending in a plane oblique to the longitudinal center line of the cylinder and of said piston main member so as to have a low side of greater depth and a high side of less depth, a clutch roller in said slot of proper size to have clutching engagement with the cylinder wall when said roller moves from the low side towards the high side of said slot bottom, said piston main member having a second slot extending in longitudinal direction into said main member from the end of said main member nearest the high side of said first mentioned slot bottom and traversing said first mentioned slot, a clutch control bar slidable in said second slot, means on said control bar engaging said clutch roller so as to cause movement of said clutch roller in said first mentioned slot when said control bar is moved in said piston main member, a secondary piston member located beyond said end of said piston main member, said control bar secured to said secondary piston member, and spring means interposed between said piston main member and said secondary piston member and normally acting to cause said control bar to pull said clutch roller toward said high side of said first mentioned slot bottom, whereby said clutch roller and control bar and spring means will act to prevent travel of said piston assembly in the cylinder in one direction except when the actuating fluid in said cylinder thrusts said secondary piston closer to said piston main member against the force of said spring means, thereby automatically causing said clutch roller to be moved by said control bar into releasing position.

3,221,611
MULTIPART PISTON FOR INTERNAL COMBUSTION ENGINE
Rudolf Maier, Stuttgart-Weilimdorf, Germany, assignor to Mahle Komm.-Ges., Stuttgart-Bad Cannstatt, Germany
Filed June 10, 1964, Ser. No. 373,958
Claims priority, application Germany, Aug. 14, 1963, M 57,825
3 Claims. (Cl. 92—220)



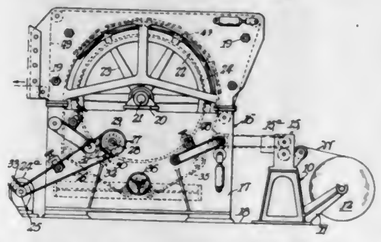
1. In an internal combustion engine piston having a piston head secured to the piston body by a plurality of bolts, the improvement in which each bolt has an upper bolt head and a lower bolt head, a bore in the piston body, thrust sleeve means in said bore for holding the lower bolt head, an exteriorly threaded socket in the piston head surrounding the upper bolt head, removable pressure elements mounted between said socket and said upper bolt head, spline means between said socket and piston head for preventing turning of said socket while permitting longitudinal movement of said socket, and nut means threaded to said socket and engaging said piston head for placing said bolt under tension.

3,221,612
METHOD OF MAKING REELS
Lewis Benton Webb, Mount Airy, N.C., assignor to Essex Wire Corporation, Fort Wayne, Ind., a corporation of Michigan
Original application Mar. 11, 1963, Ser. No. 264,291. Divided and this application Feb. 23, 1965, Ser. No. 440,055
3 Claims. (Cl. 93—1)



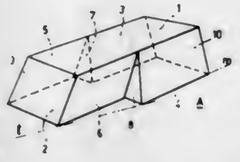
1. A method of shaping a reel from a pair of superposed, flat, substantially identical, sheet-like blanks each having a central opening and inner and outer peripheral portions, the inner peripheral portions of each blank having equally-spaced, open-ended radial slits defining a series of tabs integrally joined at their outer edges to said outer peripheral portion, said blanks being united solely by fastening means securing the inner end portions of the tabs of one blank to the inner end portions of the tabs of the other blank, said method comprising the steps of:
(a) supporting the inner peripheral edges of the blanks in a common plane so that the tabs are free to bend along lines adjacent to said supported inner peripheral edges; and
(b) simultaneously applying radial outwardly-directed forces to the inner peripheral edges of the united blanks to cause the tabs to bend at their outer edges and at lines adjacent to said supported inner peripheral edges as said outer peripheral portions of the blanks are forced apart.

3,221,613
STRIP BAG PRODUCING MECHANISM
Charles J. Sanders, De Pere, Wis., assignor to Paper Converting Machine Co., Inc., Green Bay, Wis., a corporation of Wisconsin
Filed Oct. 26, 1962, Ser. No. 233,216
7 Claims. (Cl. 93—8)



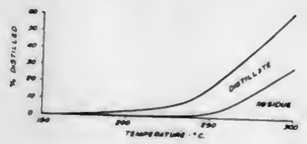
1. Apparatus for transversely sealing together superposed, elongated web portions of thermoplastic material to develop adjacent bags separable along a line of weakness in the sealed portion, comprising: a frame equipped with an elongated, ribbon-supporting member, means on said frame for positioning said web portions with the length of said web portions transverse of the length of the member, an elongated, metal ribbon having a thickness of a few thousandths of an inch supported on said member and having the ribbon length extending parallel to the length of said member, said ribbon being centrally, longitudinally deformed to provide an integral, elongated rib outstanding from said member a few thousandths of an inch, the rib width being substantially less than the ribbon width, with the base of the rib being of greater width than the rib tip, means on said frame resiliently urging said web portions and ribbon together, and means on said frame for intermittently sending electric current through said ribbon, said current-sending means and resiliently urging means being arranged to develop linear web seals on opposite sides of a line of weakness provided by said rib.

3,221,614
BUILDING-ELEMENT, PARTICULARLY A PAVING-ELEMENT
Johannes Pertien, 58–70 Beetserweg, Sellingen, Netherlands
Filed Dec. 4, 1961, Ser. No. 157,324
Claims priority, application Netherlands, Dec. 2, 1960, 258,632
2 Claims. (Cl. 94—13)



1. A building element, particularly for paving, consisting of a plurality of contiguous integral block portions each having a flat upper surface and a bottom surface, the flat upper surfaces of the block portions together forming a rectangular surface, the bottom portions being laterally offset from each other and joined along a line of substantial length, each block portion further having a pair of flat substantially parallel depending lateral surfaces with the respective lateral surfaces being on opposite sides of said rectangular surface, the lateral surfaces of each block portion extending from the edge of the upper surface to the edges of the bottom surface, the lateral surfaces on one block portion extending at a first angle to a vertical between the upper and bottom surfaces, and the lateral surfaces on the block portions adjacent to said one block portion extending between the upper and bottom surfaces at a second angle to the vertical which is different from said first angle, and flat depending end surface which are perpendicular to the top and bottom surfaces.

3,221,615
BITUMINOUS PAVEMENT REJUVENATOR
Edward W. McGovern, Pittsburgh, Pa., assignor to Koppers Company, Inc., a corporation of Delaware
Filed Oct. 26, 1962, Ser. No. 233,276
2 Claims. (Cl. 94—23)



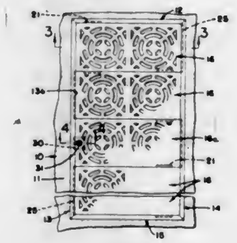
1. A composition for rejuvenating asphalt paving comprising a mixture of di-, tri- and tetracyclic aromatic compounds and their alkyl homologs containing lower alkyl groups together with a significant amount of phenolic and hydroxy derivatives, said mixture being derived from the distillation of coal tar, said mixture having a specific gravity of 25/25° C. of at least 1.08, a maximum Brookfield viscosity at 25° C. of 30 cps., and an initial boiling point of at least 180° C. and a continuous boiling range to at least 300° C., 70–40% by volume of the material

remaining as residue at 300° C. with a distillation curve to 300° C. of

Temperature, ° C.:	Distillate (percent by volume of total composition)
180	1.0 max.
190	2.0 max.
200	3.0 max.
210	4.0 max.
220	5.0 max.
230	6.0 max.
240	5–30
250	10.0 max.
260	2–18
270	15–40
280	20–45
290	25–55
300	30–60

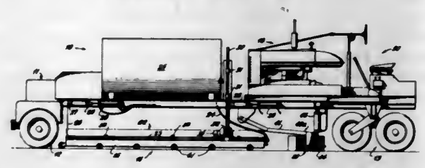
said distillate to 300° C. having a minimum specific gravity at 25/25° C. of about 1.025 and said residue having a maximum S.S.F. viscosity at 122° F. of 120.

3,221,616
INTERLOCKING GRATING AND FRAMING SYSTEM FOR TRENCH DRAINS
George J. Flegel, Michigan City, Ind., assignor to Josam Manufacturing Co., Michigan City, Ind., a corporation of Delaware
Filed Apr. 17, 1961, Ser. No. 103,310
8 Claims. (Cl. 94—34)



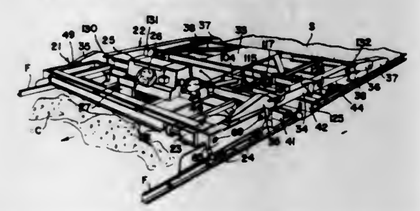
1. In a framing and grating system in a drainage trench: framing elements of like cross section anchored in opposite edges of the drainage trench; a series of grate members closing the top of said trench and each supported at its opposite ends on upwardly exposed shoulder formations of said elements; adjacent said members having interlocking lateral lug and notch formations providing on each side of a member a first portion adapted to be overlain by a portion of the adjacent member and a second portion adapted to overlay another portion of the same adjacent member, excepting a locking member in said series devoid of said lug formations; each of said elements having a longitudinal rabbet formation providing a respective said shoulder formation and also having a longitudinal groove parallel to, and laterally opening toward the trench above, said shoulder; each of said members having solely at one end an integral propection engaged in a tongue-and-groove relation with a said groove of one of said elements; said locking grate member having at an end opposite its said projection releasable locking means engaged with, and in the said groove of, an adjacent one of said elements; and means engaging a respective member laterally at each end of the series to prevent movement parallel to the trench away from the next member of the series.

3,221,617
METHOD AND APPARATUS FOR HEATING AND PLANING ROADS
Charles H. Quigg, 5600 Bent Branch Road, Bethesda, Md.
Filed Aug. 8, 1961, Ser. No. 130,032
3 Claims. (Cl. 94—42)



1. A machine for treating roads having a bituminous or like surface, comprising a powered wheeled chassis, an incandescent heater assembly mounted on said chassis for radiating heat into the road surface for softening the same, means for vertically adjusting said heater assembly, a planing assembly mounted on said chassis rearwardly of said heater assembly, said planing assembly comprising a plurality of laterally adjacent planing blades for cutting the softened road surface, power-operated means operatively associated with each of said blades for individually vertically adjusting each blade independently of the other blades to individually predetermine the depth of cut of each blade through laterally adjacent portions of the radiantly heated and softened road surface, and means for operating said power-operated means for adjusting the respective depths of cut during motion of said machine along the road.

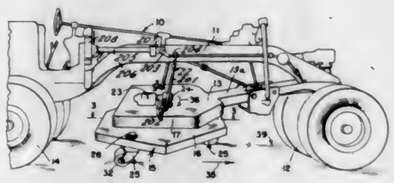
3,221,618
PAVEMENT LAYING AND FINISHING APPARATUS
Michael I. Hudis, Brookfield, Wis., assignor to Rex Chainbelt Inc., a corporation of Wisconsin
Filed Mar. 16, 1962, Ser. No. 180,141
11 Claims. (Cl. 94—45)



1. In a combined machine for finishing the surface of a pavement slab, a spreading unit comprising a spreader frame adapted to span and to move along the site of a slab of pavement being laid between spaced confining side forms, wheels arranged in tandem relationship at each side of said spreader frame in position to engage and support said frame upon the side forms respectively, a spreader carried by said spreader frame in position to engage and spread paving material in plastic condition that has been deposited between the forms ahead of said machine, a strike-off carried by said spreader frame in position to strike off the spread plastic material as said machine moves along thereby to define the slab, a vibrator carried by said spreader frame in position to vibrate and consolidate the plastic material of the slab, a finishing unit comprising a finisher frame including a screed frame and a float frame said finisher frame being adapted to span the slab site and to follow said spreading unit in moving along the site, side beam extensions arranged at each side of said finisher frame in a manner to extend forwardly and rearwardly therefrom, means pivotally connecting the forward ends of said forward side beam extensions to the

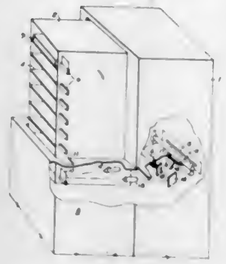
respective sides of said spreader frame at positions thereon midway between said tandem arranged wheels for equalizing action, a bogie pivotally connected to each of the rearwardly extending ends of said rearward side beam extensions, wheels arranged on each of said bogies in tandem relationship at equal distances from said pivotal connection for equalizing action, a first transverse reciprocating screed supported beneath said screed frame in position to engage and preliminarily level the surface of the slab, a second transverse reciprocating screed supported beneath said screed frame behind said first screed in position to engage and finally level the surface of the slab, said second screed being disposed midway between said forward pivotal supporting connections and said rearward pivotal supporting connections of said side beam extensions thereby lying in the longitudinal position on said finishing unit least affected by vertical movement of said wheels in passing over irregularities in the side forms, power operated means connected to effect reciprocation of said screeds in opposite directions respectively, and a float pan suspended beneath said float frame behind said screeds in position to float and smooth the leveled surface of the slab as said machine moves along the slab site, the arrangement being such that as said combined machine advances along the forms and paving material in plastic condition is deposited continuously between the forms ahead of said machine, the paving material is spread, leveled and smoothed to form the pavement slab, the final leveling action taking place midway between supporting bogies for least influence by irregularities in the forms.

3,221,619
ROTATING ROLLER MACHINE
Arnel T. Erickson, Highway 22 W., Hutchinson, Minn.
Filed Sept. 2, 1960, Ser. No. 53,808
3 Claims. (Cl. 94—50)



1. Apparatus for compacting or applying pressure to a worked area comprising a motor grader having a motor grader frame, a subframe and linkage means connecting said subframe to the motor grader for moving said subframe relative to the motor grader frame, and a rotating roller machine mounted on said motor grader, said rotating roller machine including a roller main frame, drive shaft means for connecting said roller main frame to the subframe for rotation about a generally vertical axis, said drive shaft means including a drive shaft mounted for rotation on the subframe, said drive shaft having a universal joint therein between the subframe and the roller main frame, and means for driving said drive shaft, and at least one castor attachment having a castor frame pivotally connected to the roller main frame to depend therefrom and having a generally vertical castor axis spaced a substantial distance from the rotary connection means of the roller main frame to the subframe, said castor frame having generally horizontal roller axis spaced from the castor axis and a revolving ground engaging implement mounted for rotation on the roller axis.

3,221,620
PHOTOGRAPHIC FILM MARKING DEVICE
Karel Marcel Sano, Borsbeek, and Frederik Jullaan Van Landeghem, Mortsel-Antwerp, Belgium, assignors to Gevaert Photo-Producten N.V., Mortsel, Belgium, a company of Belgium
Filed July 16, 1962, Ser. No. 210,259
Claims priority, application Belgium, July 18, 1961, 40,829
4 Claims. (Cl. 95—1.1)

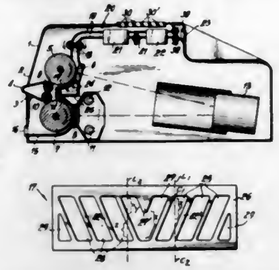


1. In an automatic apparatus having a light-tight casing, a movable magazine for receiving cassettes containing exposed X-ray film sheets and for successively transporting said cassettes into said light-tight casing, and means for removing the film sheets from the cassettes and for delivering the film sheets to developing apparatus, in combination
data carrying means connected to said magazine,
means in said casing for removing said film sheets from said cassettes and for transporting said film sheets through an outlet opening of said casing,
means in said casing for illuminating said data carrying means,
lens means mounted in said casing for projecting an image of said data carrying means,
reflecting means mounted in said casing and positioned with respect to said lens means to project the image of said data carrying means upon said film sheets engaged by said transporting means,
switch means mounted on said apparatus,
means connected to said magazine for actuating said switch means upon movement of said magazine,
means for gripping and positioning said data carrying means relative to said illuminating means and said projecting means,
operating means connected to said switch means for actuating said gripping and positioning means,
a light source and a light sensitive means disposed on opposite sides of one of said data carrying means,
and means for connecting said light sensitive means to said operating means to control the latter in response to variations in the light intensity on said light sensitive means.

3,221,621
DEVICES FOR THE PRODUCTION OF COPIES
Georg Cranskens, Wedel, Holstein, and Uwe Thurat, Hamburg, Germany, assignors to Lumoprint Zindler K.G., Hamburg, Germany, a corporation of Germany
Filed July 20, 1962, Ser. No. 211,361
Claims priority, application Germany, July 26, 1961, L 39,624
7 Claims. (Cl. 95—1.7)

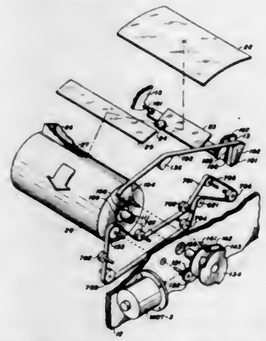
1. In an apparatus for reproducing the contents of an original on a photosensitive copy sheet provided with an electrophotographic surface layer, in combination, guide means for directing an unexposed copy sheet along a predetermined path toward an exposure station, said guide means including a stationary perforated plate of nonconductive material; charging-electrode means for

said layer including a plurality of elongated conductors disposed close to said path but separated therefrom by said plate; and feed means including a roller juxtaposed



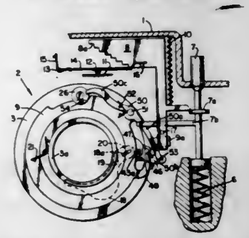
with said plate for advancing the copy sheet along said path with said layer contacting said plate in the region of said charging-electrode means, said conductors being substantially equidistant from said plate.

3,221,622
OPTICAL SCANNING SYSTEM
Gilbert A. Aser, 327 Kimberly Drive, Rochester, N.Y.; John W. Melville, 33 Lincolnshire Road, Webster, N.Y.; and Gordon Philip Taillie, 146 Forest Hills Road, Rochester, N.Y.
Filed Dec. 23, 1963, Ser. No. 332,653
2 Claims. (Cl. 95—1.7)



1. Apparatus for projecting a light image of a document onto a moving light receiving surface, said apparatus including:
a frame,
a curved copy board secured to said frame for supporting a document,
illuminating means positioned to illuminate a document supported by said curved copy board,
a horizontal driven shaft journaled in said frame,
a xerographic drum mounted on said shaft for rotation therewith,
a light shield interposed in the optical path between said copy board and said xerographic drum,
a slot aperture in said light shield adjacent said xerographic drum and extending transversely to the path of rotation of said xerographic drum,
a second shaft journaled in said frame with the axis of said second shaft parallel to said horizontally driven shaft,
an object mirror secured to said second shaft for movement therewith,
a lens,
an image mirror,
said lens and said image mirror being secured to said frame to form an optical path from said object mirror to said slot aperture in said light shield,
a first cam fixed to said horizontally driven shaft,
cam follower means positioned to engage said first cam,
a second cam fixed to said cam follower means for actuation thereby,
a third cam fixed to said second shaft,
and tape means connected to said second cam and to said third cam whereby as said xerographic drum is rotated, said object mirror will be oscillated in synchronization with the rotative speed of said xerographic plate.

3,221,623
PHOTOGRAPHIC CAMERA HAVING AUTOMATIC EXPOSURE SETTING MEANS
Waldemar T. Rentschler, Calmbach (Enz), Germany, assignor to Alfred Gauthier, G.m.b.H., Calmbach (Enz), Germany, a corporation of Germany
Original application Oct. 7, 1960, Ser. No. 61,209, now Patent No. 3,105,427, dated Oct. 1, 1963. Divided and this application Feb. 14, 1962, Ser. No. 180,063
Claims priority, application Germany, Oct. 8, 1959, A 7,439
2 Claims. (Cl. 95—10)



1. A photographic camera of the type having an exposure meter provided with a measuring mechanism and movable member thereof, and having a sensing member and exposure setting member connected thereto and actuated thereby, said sensing member moving to an adjusted position as determined by the movable member in response to actuation of the camera release, characterized by the provision of a releasable locking device having a movable detent member acting directly on said exposure setting member for holding the exposure setting member in any of its various adjusted positions, means for rendering operative said locking device in response to actuation of the camera release after adjustment of the setting member has taken place, and means for rendering said locking device inoperative in response to movement of a member of the shutter drive mechanism after the shutter has been closed thereby, said means rendering operative the locking device comprising a movable member of the camera release, and a releasable detent mechanism for holding the detent member in operative position, said means for rendering inoperative the locking device comprising a member of the shutter drive acting on said detent mechanism.

3,221,624
LIGHT-MEASURING STRUCTURE FOR CAMERAS
Erich Haupt, Sprendlingen, and Hans-Hermann Koeppe, Wiesbaden-Schierstein, Germany, assignors, by mesne assignments, to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Feb. 14, 1963, Ser. No. 258,417
Claims priority, application Germany, Feb. 16, 1962, A 39,493
15 Claims. (Cl. 95—10)

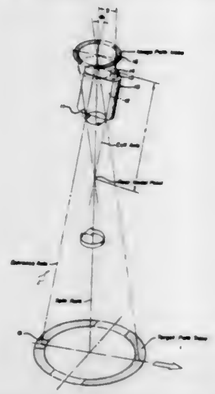
2. In a camera, in combination, a camera housing; support means carried by said camera housing; carrier

means supported by said support means for movement between a reflected-light position and an incident-light position; photosensitive means carried by said carrier means for movement therewith and facing forwardly toward a subject to be photographed at least when said



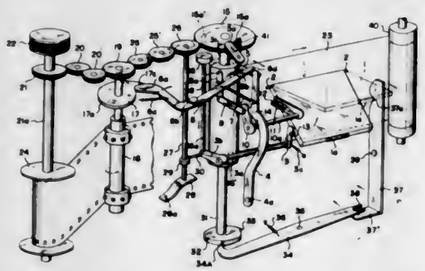
carrier means is in said reflected-light position thereof and facing rearwardly away from the subject at least when said carrier means is in said incident-light position thereof; and light-diffusing means also carried by said carrier means and covering said photosensitive means at least when the latter faces rearwardly.

3,221,625
PANORAMIC CAMERA AND METHOD
Thomas C. Leighton, Palo Alto, Calif., assignor to Itek Corporation, Lexington, Mass., a corporation of Delaware
Filed Aug. 3, 1962, Ser. No. 214,541
27 Claims. (Cl. 95—12.5)



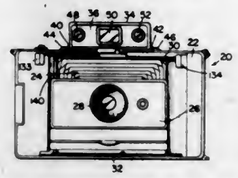
1. A panoramic camera, comprising an image-forming system having an entrance aperture and an exit aperture and a location at which good imagery is provided for image recordation thereat, said image-forming system having an exit axis extending through said exit aperture and such location of good imagery and having also an entrance axis of predetermined direction extending through said entrance aperture, support structure providing a mounting for said image-forming system for rotational movement thereof about a predetermined spin axis, and drive means for rotating said image-forming system in one angular direction, said exit axis and said spin axis being angularly disposed with respect to each other and oriented so as to substantially intersect at a position approximating the rear nodal point of said image-forming system and said entrance axis and spin axis also being angularly disposed with respect to each other and oriented so as to substantially intersect, the interrelationship of said spin and entrance and exit axes being such that rotation of said image-forming system orbits both said entrance and exit apertures so that the first thereof describes a scanning annulus the mean diameter of which is defined by the trace of said entrance axis and the second of which describes an image-path annulus the mean diameter of which is defined by the trace of said exit axis.

3,221,626
MECHANISM FOR OPERATING THE REFLECTING MIRROR OF SINGLE LENS REFLEX CAMERAS
Masahiko Fuketa, 609 Arai-cho, Nakano-ku, Tokyo, Japan
Filed July 30, 1963, Ser. No. 298,654
Claims priority, application Japan, Dec. 11, 1959, 34/63,850
3 Claims. (Cl. 95—42)



1. In an operating mechanism for the reflex mirror within the body of a photographic camera having a shutter, a shutter and film winding means, and shutter release means, the combination of a lever system including a first lever pivoted at one end to the camera body, an intermediate link pivotally connected to the other end of the first lever and an arm pivotally connected to the other end of the link, a rotatable shaft, the arm being affixed to the shaft, means interconnecting the shaft and the reflex mirror, a tension lever pivoted to the camera body at a region spaced from the pivot of the first lever, a spring of which one end is anchored to an intermediate region of the first lever and its other end to the free end region of the tension lever, a projection at an intermediate region of the tension lever facing and substantially aligned with the pivotal interconnection between the intermediate link and the arm, a priming lever interconnected with the shutter winding mechanism and having its free end region against the free end region of the tension lever, a movable stop connected to the shutter winding mechanism, the priming lever on winding up the winding mechanism preparatory to making an exposure deflecting the tension lever to tension the spring and on maximum deflection of the tension lever in the spring tensioning direction to stop member moving into the return path of the tension lever to prevent return movement of the tension lever to its original position, the projection and the pivotal link-to-arm interconnection being spaced from each other when the spring is fully tensioned, a spring biased latching pawl pivoted to the camera body, means on the mirror engageable by the pawl and normally engaged therewith to hold the mirror in the light intercepting position, and means interconnecting the pawl and the shutter release means to disengage the pawl from the engageable means on the mirror on an exposure actuation of the shutter release means permitting immediate rotation of the mirror on such release to its withdrawn position, while on removal of the movable stop member from the return path of the tension lever the tension of the spring causes the projection to strike and engage the pivotal interconnection to rotate the mirror to its intercepting position.

3,221,627
PHOTOGRAPHIC RANGE AND VIEWFINDER
Herbert A. Bing, Wellesley, and Robert A. Malerbi, Brighton, Mass., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed Mar. 29, 1963, Ser. No. 268,884
7 Claims. (Cl. 95—44)



1. In a photographic camera having a camera body, an objective lens and movable means for effecting focusing movement of said lens relative to the film plane of said camera, the combination comprising:

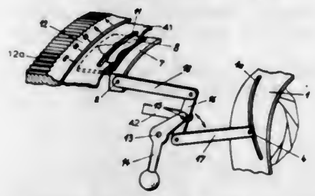
(a) a rangefinder having means for receiving and deflecting a measuring beam from the scene to be photographed;

(b) a housing wherein the elements of said rangefinder are enclosed;

(c) mounting means for movably affixing said housing to said camera body for selective movement between an operative position, wherein said scene may be viewed through said rangefinder, and an inoperative position, wherein said housing is at least partially enclosed within said camera body; and

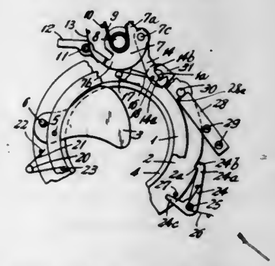
(d) linkage means effective upon movement of said housing to said operative position to transmit movement of said movable means to said receiving and deflecting means, whereby said measuring beam provides a visual indication of the plane of the scene which is focused at the film plane of said camera by said objective lens throughout the focusing range thereof.

3,221,628
DEPTH-OF-FIELD INDICATOR FOR VARIFOCAL OBJECTIVE
Herbert Mahn, Kreuznach, Rhineland, Germany, assignor to Josef Schneider & Co. Optische Werke, Kreuznach, Rhineland, Germany, a corporation of Germany
Filed Dec. 22, 1961, Ser. No. 161,660
10 Claims. (Cl. 95—45)



1. In a camera objective having first control means for adjusting the aperture of a variable diaphragm in said objective and second control means for displacing a movable component of said objective to change its focal length, the combination therewith of a carrier provided with a distance scale, co-operating means for registering on said scale a variable distance range representing depth of field, said co-operating means comprising a swingable transmission element with a displaceable fulcrum, first link means coupling said element with said first control means for swinging said element about said fulcrum to impart to said co-operating means an adjustment correlated with diaphragm aperture, and second link means coupling said fulcrum with said second control means for displacement of said element to impart to said co-operating means a corrective adjustment correlated with focal length.

3,221,629
INTRA-LENS SHUTTER
Waldemar T. Rentschler, Calmbach (Enz), Germany, assignor to Alfred Gauthier, G.m.b.H., Calmbach (Enz), Germany, a corporation of Germany
Filed Aug. 27, 1963, Ser. No. 304,802
Claims priority, application Germany, Sept. 5, 1962, G 35,851
6 Claims. (Cl. 95—63)

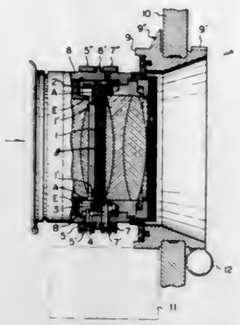


1. A photographic intra-lens shutter comprising: a shutter blade; a first member connected to said blade to position the same between an open position and a closed position; a driving mechanism; a second member connected to said blade to drive said shutter blade and connected to said driving mechanism to be driven thereby to drive said shutter blade from its closed position to its open position and back to its closed position to make a photographic exposure; a fixed rebounding stop; means on said first member to engage said stop when said first member is in position in which said shutter blade is in its closed position; a counterstop on said first member; means on said second member to engage said counterstop when said second member is in the position corresponding to the open position of said shutter blade, whereby said second member rebounds from said counterstop and returns said shutter blade to its closed position.

3,221,630
CAMERA DIAPHRAGMS WITH SQUARE OPENINGS
Tatsuo Fujii, 179 Honmura-cho, Azabu, Minato-ku, Tokyo, Japan
Filed Dec. 23, 1964, Ser. No. 423,897
Claims priority, application Japan, July 25, 1961, 36/26,298
4 Claims. (Cl. 95—64)

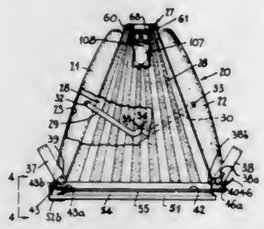
1. A square aperture forming diaphragm for incorporation in a lens mount, comprising four diaphram leaves, each leaf having its radially inner face in the form of a right angle open facing the optical axis of the lens mount, at least one leg of the angle having a linear portion extending a substantial length from the vertex of the angle, a pair of interconnectable rings coaxially within the lens mount barrel, the diaphragm leaves being positioned in the interspace between the pair of rings, grooves in one of the rings for slidably guiding the leaves, the ring having the grooves being affixed to the lens mount barrel, pins projecting laterally from the leaves, slot means in the other ring of the pair for maintaining the laterally projecting pins symmetrically positioned about optical axis of the lens mount, driving means for rotating the lens mount

barrel, and means for selectively rotating both diaphragm rings and either ring with the lens mount so that on rotation of both rings both the orientation of the sides of the square aperture formed by the leaf legs having the linear portions of substantial length and the area of the so



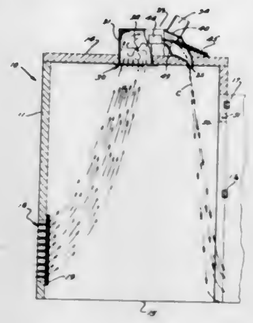
formed square aperture are changed, on rotation of the ring slidably guiding the leaves the area of the so formed square aperture only is changed, and on rotation of the ring with the pin-holding slot means the orientation only of the sides of the so formed square aperture is changed.

3,221,631
PHOTOCOPY DEVICE
Alfred M. Bernstein, Lynbrook, N.Y., assignor to Grafex Corporation, New York, N.Y., a corporation of New York
Continuation of application Ser. No. 160,055, Dec. 18, 1961. This application July 20, 1964, Ser. No. 385,546
14 Claims. (Cl. 95—73)
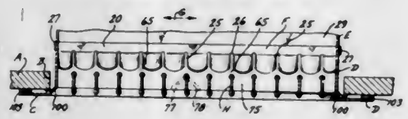


1. In a copying device, an exposure chamber comprising a pair of reflective facing side walls, connection means connecting said side walls together along one pair of adjacent side edges for swinging opening-and-closing movement of said side walls between a generally parallel closed position and an open position diverging from said connection means, expansile and contractile end walls extending between adjacent end edges of said side walls for expansion and contraction upon opening-and-closing movement of said side walls, illuminating means carried by said connection means, a transparent plate extending in open position between the other pair of adjacent side edges of said side walls and connected to one of said side walls for swinging movement to a closed position in parallelism between said side walls, whereby said plate is adapted to rest flat on copy material for concentrated illumination of the latter through said plate, hinge means connecting said plate to said one side wall for said swinging movement, and releasable detent means on said other side wall engageable with said plate to releasably hold the latter in said open position, a support panel detachably connected to said hinge means for swinging movement into and out of underlying relation with said plate when the later is in open position, and a yieldable facing on said support panel engageable with the underside of said plate for holding copy material flat against said plate.

3,221,632
AIR SYSTEM FOR STERILE AREAS
Roland H. Copp, Grand Rapids, Mich., assignor to Sterilab, Inc., Grand Rapids, Mich., a corporation of Michigan
Filed Jan. 13, 1964, Ser. No. 337,335
4 Claims. (Cl. 98—33)



1. In an enclosure designed to maintain a sterile internal condition, the combination comprising: a door in one wall of the enclosure; an air inlet for the enclosure mounted through another wall of the enclosure, said air inlet having air cleaning means; a power driven air exhaust fan mounted in a third wall of the enclosure and communicating with the interior of the enclosure to receive air therefrom; said air exhaust fan having a discharge duct; said duct having both a first port discharging externally of said enclosure and a second port discharging internally of said enclosure; means for directing air from said air exhaust fan alternately to one of said discharge ports, said directing means normally directing air to said first port when said door is closed; control means operated by said door and connected to said directing means and positioning said directing means to direct air to said second port when said door is open to reduce the movement of air into said enclosure through the door opening when said door is open; said second port being a narrow slot adjacent one end of said door and extending substantially the width of said door.

3,221,633
WALL DIFFUSER
George J. Sweeney, Plandome, N.Y., assignor to Air Devices, Inc., New York, N.Y., a corporation of New York
Filed May 13, 1963, Ser. No. 279,782
4 Claims. (Cl. 98—40)



1. A wall diffuser for insertion in a wall or ceiling opening, said diffuser having an air outlet face substantially flush with the wall or ceiling, and comprising a rectangular frame having inwardly directed sidewalls, the outer edges of said sidewalls having flush mounting flanges extending at right angles thereto, a plurality of air directing members extending across said frame, each member

comprising a mounting strip having a plurality of air directing vanes extending from said strip, alternate vanes extending in opposite directions, the face of each vane having a concave surface for receiving and directing the air flow creating a series of oppositely directed separated jets of incoming air in crisscross fashion which will diffuse together and create a thorough mixture with the air in a room.

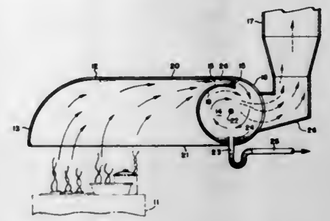
3,221,634
FRESH-AIR VALVE
Jens Boesen Helle, Vedbaek Strandvej 400, Vedbaek, Denmark, and Carl Rudolph Georg Johansen, Nordre Fasanvej 91, Copenhagen, Denmark
Filed Apr. 25, 1963, Ser. No. 275,717
2 Claims. (Cl. 98—96)



1. A fresh air ventilator comprising:
a frame adapted to be fixed in an aperture formed in a partition of a room to be ventilated;
said frame having a cylindrical opening;
an inner stationary disc-shaped plate mounted on said frame transversely of said frame opening; said plate formed with substantially sector-shaped ventilating openings;
an outer disc-shaped plate formed with sector-shaped ventilating openings similar to the ventilating openings of said inner plate; said outer plate mounted on the frame for partial rotation across said frame opening in close spatial relationship with said inner plate;
control means for rotating said outer plate to bring the ventilating openings of said plates in and out of register;
a rotor mounted for free rotation in close spatial relationship with said inner plate and formed with a plurality of closely disposed radial blades obliquely arranged in relation to the general plane of said plates whereby to be easily revolved by air going through said rotor;
the blades of said rotor having generally the same shape, size and radial extent as the ventilating openings through said inner plate;
radial arms extending from a central hub, the outer ends of said arms being secured to the said frame on the face opposite the face of the frame carrying said plates, said rotor having a central shaft and bearing means on said inner plate and hub for receiving said shaft for free rotation of said impeller.

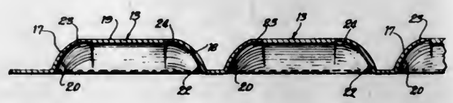
3,221,635
GREASE COLLECTION DEVICE FOR STOVES
Edward Hill, Jr., 141 Cazneau Ave., Sausalito, Calif.
Filed May 31, 1963, Ser. No. 284,675
7 Claims. (Cl. 98—115)

1. A ventilating system for removing heated air, smoke, and fumes containing grease vapors and other suspended particulate matter from kitchens and the like, said systems comprising:
a combined elongated collector housing and an attached hood of sheet metal material adapted to cover an area above a smoke producing stove or the like, said hood extending generally horizontally with a downwardly curved outer edge portion on one side, said collector housing curving around in a helical pattern in cross section on the opposite side of said hood, the inside end portion of said housing being spaced downwardly from said hood to form a longitudinally extending opening directed tangentially into said collector housing along its upper side;
end wall means for enclosing the opposite ends of said collector housing;
nozzle means connected to a supply of water under pressure, mounted in said end wall means and extending generally axially within said collector for



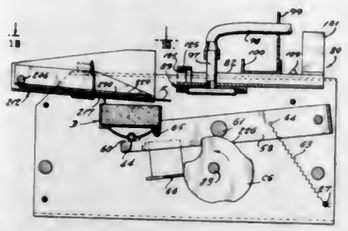
producing a continuous fine spray of water across said opening;
duct means attached to said collector housing;
a receiver in said duct means;
and a suction fan at the exit end of said duct means for causing air to flow through said longitudinal opening and through the water spray in said collector housing, thereby cooling the air and removing from it substantially all of the grease vapor and other particulate matter originally suspended therein before the air is passed through said duct means and said receiver to the atmosphere outside the room;
and drain means in said collector housing for removing the water and grease that collects in the bottom of said housing.

3,221,636
LOUVERED VENTILATOR
Lester L. Smith, Peoria, Ill. (P.O. Box 68, Princeville, Ill.), and Frank E. Randall, Peoria Heights, Ill.; said Randall assignor to said Smith
Original application Jan. 26, 1961, Ser. No. 85,108. Divided and this application Nov. 27, 1964, Ser. No. 414,292
9 Claims. (Cl. 98—121)



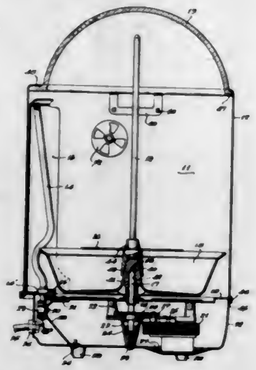
1. A louvered ventilator integrally formed from sheet stock and comprising, in combination, a panel of sheet stock having therein a plurality of integrally formed louvers projecting from one face of the sheet stock and each overlying a vent opening and having a free longitudinal edge, said louvers each having end portions curved in respect to planes which are transverse to one another and normal to the panel, said louvers also having mid-portions which are substantially straight longitudinally, and said end portions of each louver including coined regions which embody preestablished variations in material thickness in addition to those normally effected by louver formation and which variations extend both laterally and longitudinally of said longitudinal edge.

3,221,637
APPARATUS FOR BREWING AND DISPENSING BEVERAGES
Sollie W. Small and David Herman, Newark, N.J., assignors to Coffee-Mat Corporation, Elizabeth, N.J., a corporation of New Jersey
Continuation of application Ser. No. 124,027, July 14, 1961. This application Mar. 9, 1965, Ser. No. 444,892
35 Claims. (Cl. 99—289)



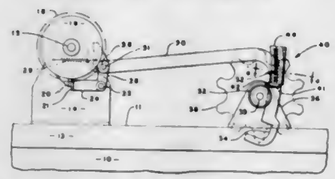
33. A brewing apparatus comprising a brew chamber including a member defining a wall thereof, means for introducing an infusion material into said brew chamber, means for passing a brewing liquid through said infusion material in said brew chamber, and means for discharging said infusion material from said brew chamber including means for moving said wall member rapidly down and bringing said wall member to an abrupt stop to effect the separation of said infusion material therefrom.

3,221,638
ROTISSERIE
Chester H. Wickenberg, Elgin, Ill., assignor to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed May 25, 1964, Ser. No. 370,016
1 Claim. (Cl. 99—340)



A rotisserie comprising a generally circular shaped base plate, a bearing formed in the central portion of said plate, a vertically disposed spindle in said bearing, a motor support frame connected to the underside of said plate, a bearing formed in said frame for the lower end of said spindle, a motor supported on said frame for driving said spindle, a vertically disposed sheathed electrical heater positioned along the periphery of said plate, said heater being generally U-shaped and inverted, a heater support clamp connected to the underside of said plate, a pair of apertures formed in said plate in alignment with said clamp, the ends of said heater extending through said apertures into said clamp, a support for said plate comprising a generally cup-shaped member disposed beneath said plate for housing said frame, motor and clamp, a vertically disposed curved heater reflector positioned on said plate radially outward of said heater, a generally cyindrical shaped and vertically disposed metallic cooking chamber defining member positioned on said plate, said heater and reflector being positioned inside said cooking chamber defining member, and a transparent material cover member for the upper end of said cooking chamber defining member.

3,221,639
BALE LENGTH CONTROL DEVICE
Robert R. Rimmey, Centre Hall, Pa., assignor to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware
Filed Oct. 23, 1964, Ser. No. 406,032
3 Claims. (Cl. 100—4)

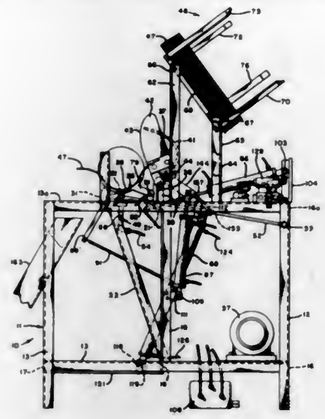


1. An improvement in a hay baler having a movable trip arm, a rotary element engaging said trip arm and operable upon rotation to move said trip arm in one direction from an initial position to a tripping position, and adjustable stop means on said trip arm engageable with said rotary element upon movement of said trip arm in the direction opposite said one direction to stop said trip arm in said initial position, the improvement residing in said adjustable stop means and comprising a member having a portion elongated in the direction of movement of said trip arm and disposed along one side of the trip arm, said portion having a row of spaced apart holes therethrough, said row of holes extending in the direction of elongation of said portion, stop means on said member engageable with said rotary element to stop said trip arm in said initial position, said trip arm having a hole therethrough, said member being movable along said trip arm to selectively align any hole of said row of holes with said hole in said trip arm and thereby change the location of said initial position defining stop means relative to said trip arm, and pin means insertable through said hole in said trip arm and any selectively aligned hole of said row of holes to positively lock said member in a selected position on said trip arm.

3,221,640
VEGETABLE BUNCHING MACHINE
Andrew A. D'Arrigo, Salinas, Calif., assignor to D'Arrigo Bros. Co. of California, Salinas, Calif., a corporation of California
Filed Mar. 12, 1964, Ser. No. 351,406
15 Claims. (Cl. 100—5)

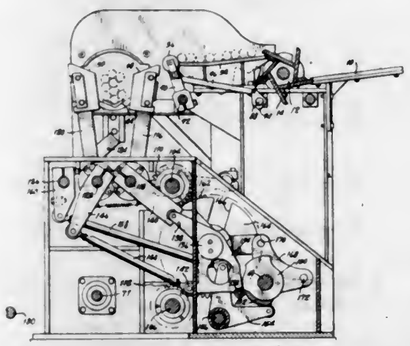
1. A machine for use in bunching and trimming articles and banding the same together with bands comprising; a supporting frame, article holding means on said frame for gripping articles loaded thereon in a bunch, a first fluid cylinder operatively connected to the article holding means for actuating the same between article clamped and unclamped conditions, a knife mounted on the frame, a second fluid cylinder operatively connected to the knife for actuating the same between article trimming and normal retracted positions, a magazine on the frame for holding a supply of bands, a pick-up head movable between the magazine and said article holding means to transfer a band from the magazine to the article holding means for use in tying the articles together in a bunch, a third fluid cylinder operatively connected to the pick-up head for moving the same between the magazine and article holding means, means under control of an operator for

energizing the first and second fluid cylinders for actuation of the article holding means into clamping position and actuation of the knife into the trimming position, respectively, means under control of the operator for energizing the first and second fluid cylinders in the opposite direction for return of the article holding means and



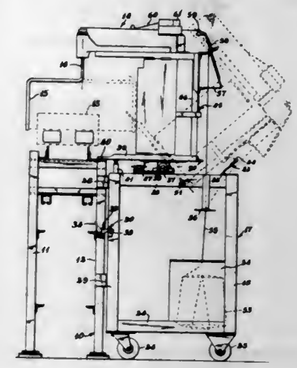
knife to their normal unclamped and retracted positions, respectively, and means energizing the third fluid cylinder for moving the pick-up head from the article holding means to the magazine and back again for removal of a tie from said magazine and the placement thereof in the article holding means in preparation of loading the same with articles for another cycle of operation.

3,221,641
BUNDLING MACHINE
Albert C. Adams, Flushing, and Edward S. Bialog, West Hempstead, N.Y., assignors to Republic Steel Corporation, Cleveland, Ohio, a corporation of New Jersey
Filed Nov. 14, 1962, Ser. No. 237,681
12 Claims. (Cl. 100—7)



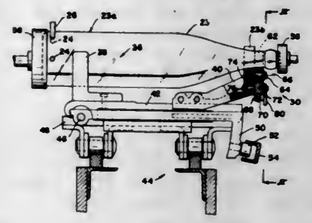
1. In a tube bundling machine, a rotary transfer reel adapted to engage and transfer single tubes in succession, a tube support adapted to receive tubes from said reel and accumulate thereon a plurality of tubes, a tube transfer device adapted to lift a plurality of tubes from said tube support and transport the same to a tube bundle shaper, a tube bundle shaper adapted to receive a plurality of tubes from said tube transfer device, means for gripping the ends of a bundle of tubes and for rotating the bundle, and means for securing said tubes as a bundle as the tube bundle is being rotated by said gripping and rotating means.

3,221,642
MOUNTING FOR TYING MACHINE
Walter D. Ayres, Jr., Oaklawn, Ill., assignor to B. H. Bunn Company, Chicago, Ill., a corporation of Illinois
Filed Nov. 26, 1963, Ser. No. 326,150
8 Claims. (Cl. 100—27)



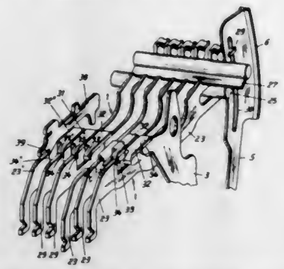
1. In combination, a tying machine and a stand therefor, said machine comprising a rotatable twine arm, means on the machine supporting the twine arm for rotation about a vertical axis in cantilever relation to the stand, such that articles to be tied are disposed adjacent said stand, and means on the stand mounting said machine thereon for tilting movement relative to the stand.

3,221,643
METHOD AND APPARATUS FOR DECORATING BOTTLES
Rome R. Rudolph, Gibsonia, and Carl J. Strutz, Jr., Mars, Pa., assignors to Carl Strutz & Co., Inc., Valencia, Pa., a corporation of Pennsylvania
Filed Aug. 5, 1963, Ser. No. 299,928
6 Claims. (Cl. 101—38)



1. In a method of decorating bottles on a decorating machine having a single registration station at which bottles are registered exactly with a decorating screen bearing a design to be transferred to the bottles and at least one painting station spaced from said registration station and including a decorating screen bearing a design to be transferred to the bottles, the steps of bringing the bottles in succession along a straight line path of travel to said single registration station, registering the bottle area to be decorated with said design on said decorating screen at said registration station, thereafter immobilizing the bottles at said registration station against rotation about their longitudinal axes, transporting the bottles in their immobilized and registered condition along said straight line path of travel to said painting station, and releasing the bottles at said painting station in their registered condition for decoration.

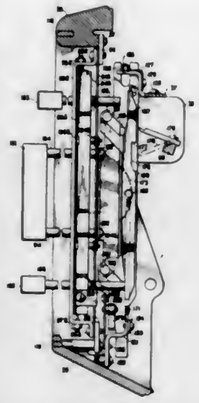
3,221,644
PRINTING DEVICE WITH ZERO SUPPRESSING MEANS
Helmut Gelling, Dietlikon, Zurich, Switzerland, assignor to Precisa AG, Rechenmaschinenfabrik, Zurich, Switzerland
Filed Mar. 28, 1963, Ser. No. 268,646
Claims priority, application Switzerland, Apr. 5, 1962, 4,164/62
2 Claims. (Cl. 101—93)



1. A printing device for a calculating machine comprising:
(a) a rotary platen,
(b) a plurality of printing mechanisms arranged in side by side relation and each adapted to print selectively any one of the numbers "0" to "9" on a sheet placed on said platen,
(c) each one of said printing mechanisms including a rocking lever **3** pivotally mounted about a fixed axle, a type carrying member **5** carrying a number of types from "0" to "9," means operatively connecting said type carrying member with said rocking lever, a control bar movable lengthwise of its length engageable with said rocking lever for rocking said rocking lever to move said type carrying member and thereby a selected type on said member **5** into a position ready for printing,
(d) each printing mechanism also including a longitudinal hammer means **23**, rod means **25** for slidably supporting said hammer means for lengthwise movement, means **29** for operatively connecting one end of said hammer means with said type carrying member **5** carrying said number of types, a projection **36** on said rocking lever for supporting the other end of said hammer means, spring means **26** for urging said hammer means in a direction in which the selected type on said member is caused to perform its printing movement, and means **27** operatively engaging said hammer means for preventing said printing movement until released from engagement with said hammer means,
(e) and abutment means **32** formed integrally with each one of said hammer means for engagement with a counter-abutment means **34** formed integrally with the next adjacent hammer means to prevent a lengthwise movement of those hammer means in a printing direction whose associated type carrying members for all digital positions higher than the first non-zero digital position are adjusted to zero.

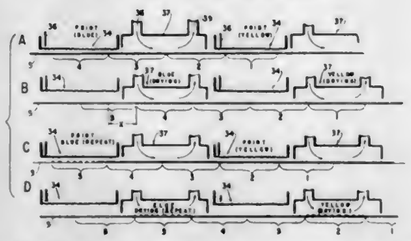
3,221,645
PRINTER
Clarence E. Adler, Toledo, Ohio, assignor to Toledo Scale Corporation, Toledo, Ohio, a corporation of Ohio
Filed Aug. 23, 1963, Ser. No. 304,080
10 Claims. (Cl. 101—95)

1. In a printer, in combination, a movable printing member, means including a bank of selectively operable keys for setting the member in printing position, the keys being movable between home and operated positions, operation of any one of the keys releasing any previously operated key, the last-operated key being retained in operated position, reset means operable after printing for resetting said last-operated key to the home position automatically, means including a selectively operable manual reset button, for immobilizing automatic operation of the reset means, and a selectively operable reset bar for resetting



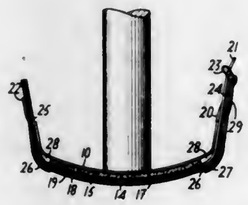
the last-operated key to the home position manually, the reset means including an automatic reset button, the buttons being movable between home and operated positions, means for retaining the last-operated button in operated position and for releasing either one of said buttons upon operation of the other button, and mechanical interlock means for preventing simultaneous movement of the buttons to their operated positions.

3,221,646
SCREEN PRINTING APPARATUS
Charles D. Hardy, Jr., Green Village, and Frederick Jeronimus, Lincoln Park, N.J., assignors to Fritz Buser AG, Maschinenfabrik, Ozendorf, Switzerland, a corporation of Switzerland
Filed Oct. 24, 1961, Ser. No. 147,294
5 Claims. (Cl. 101—115)



1. A silk screen printing machine for printing on material comprising a print table having a stationary and a movable portion, vacuum means associated with said table to provide a vacuum to hold said material to said table, power means operatively coupled to said movable portion of said table to impart a linear excursion to said movable portion, return switching means at the beginning of said excursion to provide a return control signal, advance switching means at the end of said excursion to provide an advance control signal, power reverser means operatively coupled to said power means and responsive to said return control signal and to said advance control signal to switch the direction of motion of said movable portion of said table, overadvance switching means at a point intermediate between the beginning and end of said excursion to provide an overadvance control signal on the return portion of said linear excursion and vacuum reverser means operatively coupled to said vacuum holding means responsive to said advance control signal to switch said vacuum from said movable portion to said stationary portion of said table and responsive to said overadvance control signal to switch said vacuum from said stationary portion to said movable portion of said table.

3,221,647
HAND STAMPS
Carl E. Carlsen, 867 3rd Ave., New York, N.Y.
Filed Mar. 29, 1963, Ser. No. 269,025
4 Claims. (Cl. 101—125)



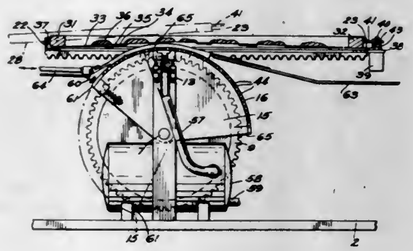
1. A hand stamp having a handle and comprising an upper and a lower part or printing cylinder, said upper part being provided with a front edge and a rear edge, an extended projection disposed on said rear edge of said upper part adapted to be received by a slot in the printing cylinder, said slot being provided in the side of the printing cylinder and being of a size large enough to permit the upper part to move freely downwardly, said printing cylinder having a small depression whereby said extended projection engages the slot in said printing cylinder and the front edge of said upper part is forced below said depression thereby locking said uper and lower parts together, an ink absorbing storage pad disposed between said upper and lower parts and subjected to pressure by said upper and lower parts, said printing cylinder being provided with perforations, said printing cylinder being at each end formed with cut-away portions, a printing pad extending beyond said printing cylinder, prongs formed upon the latter and a stencil provided with slots engaged by said prongs, said stencil being wrapped around the outer surface of said printing cylinder, and means for keeping said stencil under stress.

3,221,648
STENCIL PRINTING PROCESS
Franz Weiss, Park Ridge, Ill., assignor to Poster Products, Inc., Chicago, Ill., a corporation of Illinois
Filed Apr. 11, 1962, Ser. No. 186,773
8 Claims. (Cl. 101—129)

1. A process for applying a predetermined colored configuration to a porous sheet material which comprises applying suction to one side of said porous sheet material, applying to the opposite side of said sheet material a liquid in which a predetermined coloring composition is at least partially soluble, thereafter bringing the side of said sheet material to which said liquid was applied into contact with a stencil screen having pervious portions corresponding in shape to said predetermined colored configuration, supplying said predetermined coloring composition to said pervious portions of the side of said screen remote from said sheet material, said coloring composition being a heavy concentrated non-flowing printing ink which is sufficiently viscous to remain on one side of the stencil screen under normal atmospheric conditions but which will flow through the pervious portions of the stencil screen when the pressure on the opposite side of the stencil screen is reduced, applying additional suction between said stencil screen and said sheet material, and continuing to apply said first named suction and said additional suction for a brief interval until said coloring composition has been drawn through the pervious portion of said screen and printed on the surface of said sheet material.

5. A process for applying a predetermined colored configuration to a porous sheet material which comprises applying suction to one side of said porous sheet material, applying to the opposite side of said sheet material a liquid in which a predetermined coloring composition is at least partially soluble, thereafter bringing the side of said sheet material to which said liquid was applied into contact with a stencil screen having pervious portions corresponding in shape to said predetermined colored configuration, supplying said predetermined coloring composition to said pervious portions of the side of said screen remote from said sheet material, said coloring composition being a heavy concentrated non-flowing printing ink which is sufficiently viscous to remain on one side of the stencil screen under normal atmospheric conditions but which will flow through the pervious portions of the stencil screen when the pressure on the opposite side of the stencil screen is reduced, applying additional suction between said stencil screen and said sheet material, continuing to apply said first named suction and said additional suction for a brief interval until said coloring composition has been drawn through the pervious portion of said screen and printed on the surface of said sheet material, discontinuing the application of said additional suction, removing said stencil screen from said sheet material, and thereafter discontinuing said first suction.

3,221,649
SCREEN PRINTING APPARATUS
Franz Weiss, Park Ridge, Ill., assignor to Poster Products, Inc., Chicago, Ill., a corporation of Illinois
Filed Apr. 15, 1963, Ser. No. 272,995
4 Claims. (Cl. 101—126)



1. A printing apparatus for printing on a sheet of porous material comprising
(a) a substantially horizontally extending stencil screen having pervious portions,
(b) a coloring composition on the top of said pervious portions,
(c) means for substantially horizontally reciprocating said screen through
(1) a printing stroke and
(2) a return stroke,

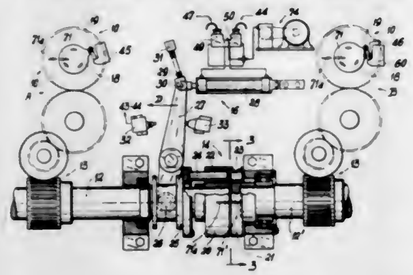
(d) a perforated, arcuate-shaped supporting panel disposed beneath said screen,
(e) means for oscillating said panel around the radius of the arch thereof through
(1) a printing stroke
(a') during movement of said screen through said first-mentioned printing stroke
(b') in the same general direction as the movement of said screen, and
(c') in position to progressively press such a sheet against the lower side of said screen, and
(2) a return stroke
(a') during movement of said screen through said first-mentioned return stroke, and
(b') in the same general direction as the movement of said screen,
(f) means for holding said screen in upwardly spaced relation to said panel during said return stroke, and
(g) means for applying reduced pressure to the bottom of said panel and thereby to the side of said sheet remote from said screen during said printing stroke,
(h) said last-named means being
(1) the sole pressure means for causing said coloring composition to be deposited on said porous sheet, and
(2) disposed in position to apply said reduced pressure at any one time to only a small fraction of the arch, of said panel.

3,221,650
PLANOGRAPHIC PRINTING IMPROVEMENTS
Paul W. Greubel, Short Hills, N.J., assignor to Interchemical Corporation, New York, N.Y., a corporation of Ohio
No Drawing. Filed June 21, 1963, Ser. No. 289,742
4 Claims. (Cl. 101—149.2)

1. A method of planographic printing comprising applying a fountain solution comprising a solution in a volatile aliphatic hydrocarbon having a boiling range within the limits of 145°–390° F. of a phosphate ester ingredient selected from the group consisting of
(1) mono-octyl phosphate and
(2) a mixture of mono-alkyl and di-alkyl phosphate esters, said alkyls comprising a plurality of members selected from the group consisting of decyl, dodecyl, tetradecyl, hexadecyl and octadecyl with said dodecyl member predominating, said phosphate ester comprising from 0.01% to 4% of the fountain solution weight, to a lithographic printing plate, the non-image areas of which are covered with a cured coating comprising a thermosetting silicone resin, applying to the plate an ink having a solvent selected from the group consisting of alkandiols having from 2 to 5 carbon atoms, diethylene glycol, dipropylene glycol, triethylene glycol and glycerin, said inks being immiscible with said volatile aliphatic hydrocarbon fountain solution, printing successive copies of the image with said ink and reapplying said fountain solution between successive printings.

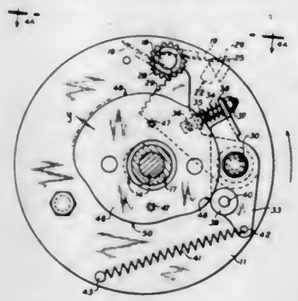
3,221,651
MULTI-UNITS SHEET-FED PRINTING MACHINE DRIVE
Ercole Tagliasacchi, Milan, Italy, assignor to Officine Meccaniche Cigardi S.p.A., O.M.C.S.A., Milan, Italy, a corporation of Italy
Filed July 30, 1963, Ser. No. 298,639
Claims priority, application Italy, Aug. 3, 1962, 15,679/62
2 Claims. (Cl. 101—183)

1. In an apparatus in which a pair of rotary units are to be connected in a preselected angular relationship for simultaneous rotation with each other, in combination, shaft means comprising a pair of shaft sections, one for each rotary unit; a pair of gear means respectively connecting said shaft sections to said rotary units so as to rotate said units with an angular speed different from that of said shaft sections, each of said gear means providing the same ratio transmission between the respective shaft section and rotary unit; coupling means cooperating with said shaft sections and being movable between a disconnected position in which said shaft sections are free to rotate relative to each other and a connected position in which said coupling means fixedly connect said shaft sections in a given angular relationship for rotation with each other; a pair of motor means respectively connected with



said shaft sections for driving the same, when said coupling means is in said disconnected position, with slightly different speeds; actuator means operatively connected to said coupling means for exerting, when actuated, pressure on said coupling means tending to move the latter to said connected position when said shaft sections are in said given angular relationship; and means cooperating with said rotary units for sensing the angular relationship thereof and operatively connected to said actuator means for actuating the latter slightly before said rotary units reach said preselected angular position so that said coupling means will couple said shaft sections when the latter reach said given angular position to connect thereby said units in said preselected angular position for rotation with each other.

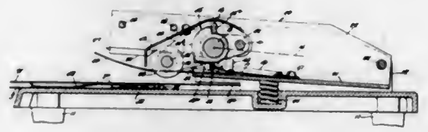
3,221,652
IMPRESSION CYLINDER COMBINATION FOR A PRESS
Luis Mestre, 305 E. 46th St., New York, N.Y.
Filed Dec. 19, 1963, Ser. No. 331,674
17 Claims. (Cl. 101—232)



1. An impression cylinder combination for a press comprising cylinder means including a cylinder having a periphery, a head secured to the cylinder at each end thereof, and shaft bearings in the heads adapted to receive a shaft on which the cylinder rotates; a gripper shaft pivotally mounted in the heads, sheet gripping means carried by the gripper shaft including a plurality of spaced

grippers, anvil means carried by the cylinder adjacent to the periphery thereof and located to be engaged by the grippers; and operating means operatively connected with the gripper shaft to pivot the same to open and close the grippers including a pinion secured to the gripper shaft, a rack meshing with the pinion, rack mounting means mounting the rack for movement on a head, an operating lever, an operating lever pivot carried by the head and pivotally mounting the lever at a midportion of the lever providing the lever with a rack operating end and a cam follower end, the rack operating end being disposed radially outwardly from the rack, and an operating connection between the rack operating end of the operating lever and the rack to open and close the grippers including spring means between the rack operating end of the lever and the rack to move the rack through compression of the spring means in a direction to pivot the grippers to closed position in contact with the anvil means.

3,221,653
OPEN THROAT BED AND CYLINDER IMPRINTING MACHINE
Vincent G. Bell, Jr., Wayne, and Calvin D. Cassel, Gardenville, Pa., assignors to Safeguard Corporation, Lansdale, Pa., a corporation of Pennsylvania
Filed Oct. 15, 1962, Ser. No. 230,560
8 Claims. (Cl. 101—269)

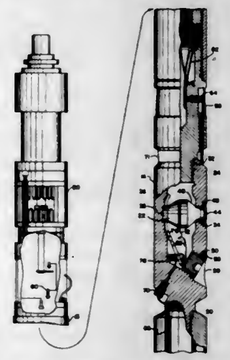


1. An imprinting machine, comprising in combination, a main frame having a platen base for holding imprinting elements, an operating shaft mounted for oscillation on said main frame, a cam frame mounted for up and down movement on said main frame, resilient means urging said cam frame upward, hold-down cams carried by said cam frame, an impression roll mounted on a roll shaft having reciprocatory movement under said hold-down cams, operating connections between said roll shaft and said operating shaft for moving the roll shaft back and forth when the operating shaft is oscillated, a wedge cam mounted on said operating shaft, a wedge roller mounted in a guide slot with a closed end on said cam frame, the wedge roller standing below the axis of said operating shaft at times, a spring connected to said wedge roller to urge it against the closed end of said slot in a position below the operating shaft axis, said wedge cam having an inclined camming portion of short radius at its inner end beneath which said wedge roller normally rests when the impression roll is in its retracted or home position, the cam frame and hold-down cams being raised in the home position, said wedge cam having a raised concentric portion following the inclined portion for holding said wedge roller and cam frame down when the roll is moving on its outward printing stroke, said wedge having a radial portion following the concentric portion to allow the wedge roller and cam frame to rise at the end of forward movement of the impression roll, the radial portion and the raised concentric portion holding the wedge roller out of wedging position when the operating shaft is turned reversely to move the impression roll back until the inclined camming portion is reached near the end of the return stroke, the spring then moving the wedge roller back into its position below the axis of the power shaft.

3,221,654
PLASTIC PRINTING PLATE AND METHOD FOR MANUFACTURE
Fred M. Jernt, Chicago, Ill., assignor, by mesne assignments, to Dynamics Corporation of America, a corporation of New York
Filed Sept. 22, 1960, Ser. No. 57,757
7 Claims. (Cl. 101—401.1)

1. A method of preparing an imaged printing plate of thermoplastic sheet material comprising the steps of positioning the plastic sheet and a porous matrix in spaced parallel relation, introducing a heating means in between the sheet and matrix for preheating the opposing surfaces thereof, withdrawing the preheating means and bringing the preheated surfaces together into abutting relationship, exhausting the air through the porous matrix from the side opposite that which is engaged by the thermoplastic sheet to generate a vacuum between the said surfaces whereby plastic of the sheet is depressed into the recesses of the image in relief in the porous matrix for exact conformance to reproduce the image in offset in the surface of the plastic sheet, and separating the imaged plastic sheet from the porous matrix after the plastic has set.

3,221,655
SELECTIVE SHAPED CHARGE GUN
Alexis A. Venghiattis, Houston, Tex., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Filed June 26, 1963, Ser. No. 290,685
1 Claim. (Cl. 102—20)



An improved hollow carrier gun for shaped charges comprising:
a controller section provided with firing means having a plurality of firing positions and means to sequentially advance one position upon each subsequent energization;
a plurality of individual, generally tubular, gun sections,
one end of said gun sections formed into a male connecting end portion and the other end formed into a female connecting end portion, one end of the first of said gun sections detachably secured to the controller section, another of said gun sections detachably secured to the other end of said first gun section, the remainder of said gun section detachably secured together serially;
a shaped charge chamber in each gun section,
a shaped charge in said chamber,
an individual denotator attached to said shaped charge,
a port in each gun section communicating with the chamber, the port being of sufficient size to accommodate the entry of the shaped charge,
a replaceable sealed closure member for said port,
a second port spaced from the first port in each gun section communicating with the chamber, said second

port being coaxial with the axis of the shaped charge in said chamber,

a replaceable sealed closure member for said second port, said replaceable closure member presenting an area of lesser strength for the jet of the shaped charge,

each gun section being an independent hollow carrier gun having sufficient strength to isolate the shaped charged from external borehole pressure and contain the fragmentation resulting from denotation of its shaped charge;

an insulated lead for each gun section, each lead attached to one of the firing positions of the firing means,

a pressure type fitting in the controller section through which the insulated leads extend,

each lead extending along the periphery of the gun sections until it reaches the gun section it services,

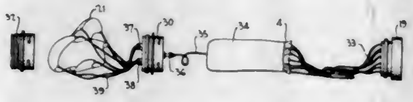
a pressure fitting in each gun section through which the lead servicing such gun sections enters the chamber and is attached to the denotator.

3,221,656

APPARATUS FOR HIGH-VELOCITY RECOVERY

Adrian P. Sutten, La Plata, Md., assignor to the United States of America as represented by the Secretary of the Army

Filed Mar. 23, 1964, Ser. No. 354,184
3 Claims. (Cl. 102—34.1)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A recovery package for safely recovering a payload from a high-velocity vehicle traveling in a substantially flat trajectory under powered flight comprising:

(a) a first connecting block,

(b) a main parachute attached to said first connecting block,

(c) a bag enclosing said main parachute,

(d) a second connecting block,

(e) a lanyard connecting said bag and said second connecting block,

(f) a first pair of split sleeves in mating connection with said first and second connecting blocks and enclosing said bag and said main parachute,

(g) a drag parachute attached to said second connecting block,

(h) a third connecting block, and

(i) a second pair of split sleeves in mating connection with said second and third connecting blocks and enclosing said drag parachute.

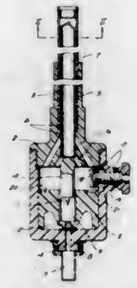
3,221,657

MINE IGNITERS

Paul Madlener, Karlsruhe-Durlach, and Otto Pecksen, Berghausen, near Karlsruhe, Germany, assignors to Industrie-Werke Karlsruhe Aktiengesellschaft, Karlsruhe, Germany

Filed May 15, 1963, Ser. No. 281,384
Claims priority, application Germany, May 26, 1962, J 21,836
3 Claims. (Cl. 102—70)

1. A mine igniter consisting of non-metallic elements and comprising, in combination, a cylinder having an open end and an opposed closed end formed with an axial passage extending therethrough; a detonator carried by said cylinder at the exterior thereof in line with said passage; a piston slidable in said cylinder and carrying an ignition cap, said piston being formed with an axial bore in line with said ignition cap; mounting means fluid-tightly closing the open end of said cylinder and having an elongated tubular extension directed away from the interior of said cylinder, said mounting means being formed with at least one passage providing communication between the interior of the cylinder adjacent said open end thereof and the interior of said tubular extension; an elongated, fluid-tight, deformable, tube-like cover member extending outwardly substantially beyond said tubular extension and fluid tightly connected to the latter; an elongated, fluid-tightly closed, frangible, substantially rod-shaped container located in said tubular extension and communicating with said passage of said mounting means, the interior of said container being evacuated to a pressure substantially below atmospheric pressure and said container extending outwardly within said cover member beyond said tubular extension so as to be accessible for breaking in response to deformation of said



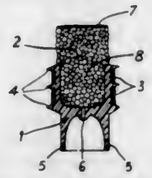
cover member when an external force is applied to the latter, said container when breaking providing at the side of said piston which is directed toward said open end of said cylinder a pressure substantially less than at the side of said piston directed toward said closed end of said cylinder so that said piston will be driven toward said mounting means; an extension fixed to said mounting means in the interior of said cylinder in alignment with said axial bore of said piston and of a smaller diameter than said bore to be received therein when said piston advances toward said mounting means; and a pin carried by said extension of said mounting means in alignment with said ignition cap to engage the latter when said piston advances toward said mounting means upon breaking of said evacuated container so that a flame resulting from engagement of said pin and ignition cap will spread through said axial passage of said closed end of said cylinder to said detonator at the exterior of said cylinder.

3,221,658

SHOT-GUN CARTRIDGE AND WAD THEREFOR

Raymond Henri Pierre Devaux, 46 Rue de Rennes, Paris VI, France

Filed Oct. 2, 1963, Ser. No. 313,301
2 Claims. (Cl. 102—95)



1. A cartridge case wad comprising two coaxial aligned generally cylindrical sections rigid with each other and open at their ends facing away from each other, a transverse partition lying across the adjacent ends of the two sections and closing the inner ends of the two sections,

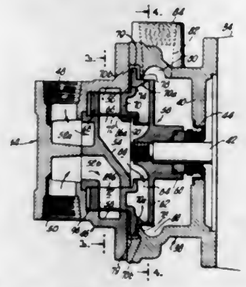
said partition having a central port connecting the inside of the two sections, and a small annular projection surrounding the opening of said port into one of said sections, said projection tapering in thickness from a greater thickness adjacent its base to a lesser thickness adjacent its free end, said projection being adapted to collapse and close said opening of the port upon firing of the associated cartridge.

3,221,659

LIQUID RING AND CENTRIFUGAL SERIES PUMPS FOR VARYING DENSITY FLUIDS

Harold E. Adams, South Norwalk, Conn., assignor to Nash Engineering Company, South Norwalk, Conn., a corporation of Connecticut

Original application Apr. 20, 1960, Ser. No. 23,552, now Patent No. 3,102,083, dated Aug. 27, 1963. Divided and this application Feb. 20, 1963, Ser. No. 261,557
16 Claims. (Cl. 103—5)



1. A multi-purpose pump comprising a housing having an interior compressor portion having at least one lobe, and an interior liquid pumping portion adjacent said compressor portion, inlet means for directing fluids in the gaseous and liquid state to said compressor portion, annular volute discharge means extending about said liquid pumping portion, said compressor portion including, a discharge, a symmetrical annular rotor having radially extending blades and a pair of annular end shrouds forming therewith a plurality of radially extending displacement chambers, said liquid pumping portion including a liquid impeller adjacent said rotor having a plurality of enclosed impeller blades integral with an end shroud of said rotor and shaped to provide a central inlet, whereby to take fluids in centrally from the discharge of said compressor portion and direct said fluids to said volute discharge means, and shaft means connected to said impeller for imparting rotation to said rotor via rotation of said impeller; said compressor portion, and said compressor rotor having a capacity to pump and compress its full displacement volume of intake vapors and gases over said pumps designed pressure range and to discharge said compressed vapors and gases to said impeller, said impeller having a capacity to pump substantially all liquid over the same designed pressure range and to thereby reduce the pressure at the discharge of said compressor portion when substantially no gas and vapor is present at the inlet of said compressor portion whereby said compressor portion is only required to handle substantially all liquid over a greatly reduced pressure range.

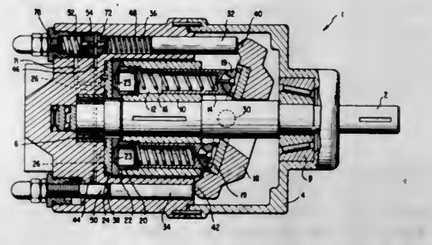
3,221,660

AUTOMATIC CONTROL FOR VARIABLE DISPLACEMENT PUMP

Michael A. D'Amato, Grand Ave. and 4th St., West Des Moines, Iowa

Filed Aug. 20, 1963, Ser. No. 303,364
7 Claims. (Cl. 103—38)

1. In a variable displacement pump, including a casing having inlet and delivery ports and a tiltable swash plate, the improvement comprising first and second cylinders in said casing, said cylinders each having open and closed ends, first and second plungers respectively sliding in the open ends of said cylinders, said plungers having outer ends respectively engaging diametrically opposite sides of said swash plate and inner ends facing the closed ends of their respective cylinders whereby a force applied to the inner end of said first plunger tends to slide the same outwardly and thereby tilt the swash plate to decrease delivery and a force applied to the inner end of the second plunger tends to slide the same outwardly and tilt



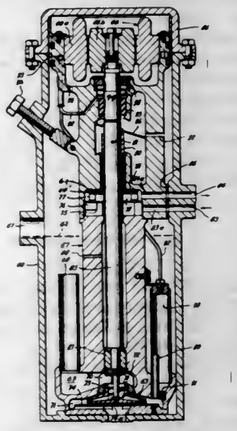
the swash plate to increase delivery, compression spring means in the inner end of said second cylinder engaging the inner end of said second plunger and applying an outward bias thereto, a fluid connection between the inner end of the first cylinder and said delivery port, first and second fluid conduits respectively leading from said delivery and inlet ports, and pressure responsive valve means normally connecting the inner end of the second cylinder to said first conduit and being responsive to the pressure of fluid therein for alternatively connecting the inner end of said second cylinder to said second conduit upon attainment of predetermined fluid pressure.

3,221,661

LOW-SUCTION HEAD PUMPS

Judson S. Swearingen, Los Angeles, Calif., assignor, by mesne assignments, to Electronic Specialty Co., Los Angeles, Calif., a corporation of California

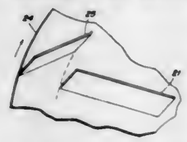
Filed Dec. 18, 1961, Ser. No. 159,901
23 Claims. (Cl. 103—87)



1. An improved pumping system for an absorption refrigeration system comprising in combination, a hermetically sealed housing disposed to receive spent absorbent; a centrifugal pump disposed in said hermetically sealed housing, said pump including a central inlet and a peripheral outlet section; a pump impeller shaft, bearing for said shaft a rotary impeller substantially coaxial with said inlet mounted on said shaft; means for preventing rotation

of liquid in the inlet, including an inlet section having non-converging walls immediately adjacent to the impeller; and means for preventing turbulence in the inlet section, including impeller blades arranged to impart impact and frictional forces to the liquid in the pump substantially entirely in directions to move the liquid in radially outward and tangential directions; an electric drive motor disposed in the hermetically sealed housing, said electric motor including a stator and a rotor mounted on said pump impeller shaft; and means in the hermetically sealed housing for cooling and lubricating the bearing of the shaft by a portion of a pumped stream including a settling chamber communicating with the peripheral outlet section of the pump, a cooling coil in the stator of the drive motor a line arranged to withdraw a part of the pumped stream and to introduce the same into said cooling coil and to said bearing to be lubricated and cooled.

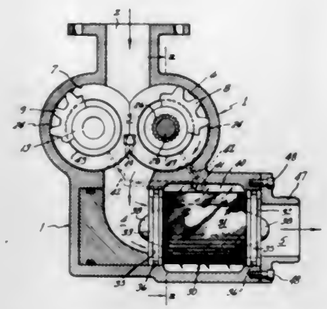
3,221,662
METHOD AND APPARATUS FOR CONTROLLING FLOW IN CENTRIFUGAL MACHINES
Douglas Frank White, Bedminster, N.J., assignor to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware
Filed Feb. 14, 1963, Ser. No. 258,961
9 Claims. (Cl. 103—103)



1. In a centrifugal machine having an intake chamber, an exhaust chamber, a source of fluid communicating with said intake chamber, an impeller comprising at least one radial blade having a leading edge and a trailing edge mounted for rotation about a central axis adjacent said intake chamber, the leading edge being spaced radially outward from the axis of rotation, the trailing edge being spaced radially outward therefrom, said impeller constructed upon rotation to derive fluid from said intake chamber and deliver a jet of said fluid which has been centrifugally accelerated to said exhaust chamber, at least one auxiliary vane having a leading edge and a trailing edge fixed relative to said vane positioned beyond the periphery of and ahead of said impeller blade such that it approximates the angle formed by the tangent to an equilibrium pressure surface in the fluid, the leading edge of the vane being positioned ahead of the blade and on an arc of a circle incorporating the peripheral edge of the blade, and the trailing edge of the vane positioned beyond the end of the blade and radially aligned with the leading edge of said blade.

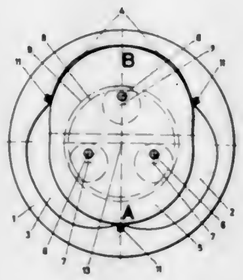
3,221,663
WASH FLOW BEARING SYSTEM
John J. Schofield, Glastonbury, and Francis P. Schierberl, West Hartford, Conn., assignors to Chandler Evans Inc., a corporation of Delaware
Filed May 20, 1964, Ser. No. 368,862
5 Claims. (Cl. 103—126)

1. In a gear-type fuel pump which comprises a fuel inlet, a pumping chamber, a fuel filter chamber, and a fuel discharge outlet, all connected in flow series: a pair of intermeshing, pumping gears, each journaled in a pair of oppositely disposed fuel pressure-loaded bearings mounted in said pumping chamber; a wash-flow filter having a tubular filtering element in said filter chamber; means for passing through said filtering element a minor fraction of the fuel flowing through said filter; and means for feeding said fraction of fuel, under substantially pump discharge pressure, to and through the interspaces between the sides of each gear and the adjacent end of each



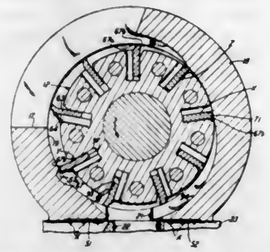
of said bearings, whereby said filtered, clean fuel prevents the entrance of unfiltered, contaminated fuel in said pumping chamber from entering said interspaces.

3,221,664
ROTATING PISTON MACHINE ARRANGEMENT
Finn Joachim Jörgen Jernaes, Agoler Alle 4, Oppg. 10, Kristiansand, Norway
Filed June 12, 1964, Ser. No. 374,637
Claims priority, application Norway, Nov. 1, 1963, 150,654; Apr. 10, 1964, 152,774
17 Claims. (Cl. 103—130)



1. A machine comprising a first element, a second element concentric with the first element and surrounding the same, said second element being provided with internal recesses defining a plurality of adjacent chambers, the first element including at least one external lobe, means including a gear mechanism for driving one of the elements in rotation along a path in which said lobe of said first element is introduced and withdrawn from the chambers successively, said gear mechanism comprising a sun gear coupled with the other of said elements, externally toothed planet gears in mesh with the sun gear, said planet gears having individual centers, and means eccentrically supporting each of the planet gears with respect to its own center from said one element in regular angular relationship with respect to said sun gear such that upon relative rotation between said sun gear and planet gears said one element is caused to undergo relative rotation with respect to the other element.

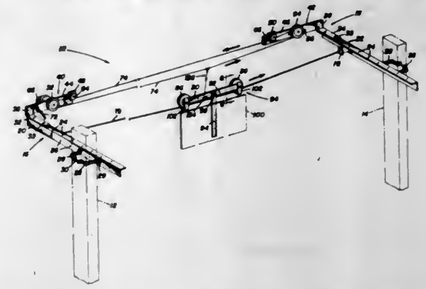
3,221,665
HYDRAULIC PUMP OR MOTOR WITH HYDRAULIC PRESSURE-RESPONSIVE VANE
Philip Hartmann, Racine, Wis., assignor to Hartmann Manufacturing Co., Racine, Wis., a corporation of Wisconsin
Original application Jan. 11, 1962, Ser. No. 165,626, now Patent No. 3,180,271, dated Apr. 27, 1965. Divided and this application Jan. 15, 1965, Ser. No. 425,867
5 Claims. (Cl. 103—136)



1. In a hydraulic machine of the vane type, a rotor having radially disposed vane slots and being rotatably mounted, a port ring surrounding said rotor and defining a chamber therein and being movable eccentric to said rotor and having a circular wall in contact with the radially outer edges of said vanes, a vane radially slidably disposed in each of said slots and with each of said vanes being planular in the radial inner portion thereof and with the radially outer portion of each of said vanes having a projection offset from the plane of said vane to the rotationally trailing side with respect to rotor rotation, the radially outer surface of said vane being flat and presenting one continuous outer surface with a rotationally leading edge and a rotationally trailing edge, said rotor having pockets for fully receiving said projections upon full radial retraction of said vanes, said rotor having a fluid passageway extending from the rotationally leading side of said vane with respect to rotor rotation and extending to the radially inner surface of said vane to admit fluid from said chamber to urge said vane radially outwardly, said projection and the radially outer surface of each of said vanes intersecting on said port ring wall and forming the trailing one of said outer edges of said vane along a line on a plane furthest offset from and parallel to said inner portion so that said projection has a radially projected area to present only a projected area for fluid pressurizing said vane radially outwardly only.

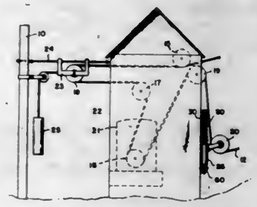
3,221,666
DISPLAY APPARATUS
Sheldon M. Wengel, Reedsburg, Wis., assignor to Hankscraft Company, Reedsburg, Wis., a corporation of Wisconsin
Filed Feb. 17, 1964, Ser. No. 345,140
2 Claims. (Cl. 104—173)

1. Apparatus for continuously moving a visual display device back and forth along a predetermined path between two spaced-apart locations, comprising fixed track means extending between said spaced-apart locations, a display carriage movably mounted upon said track means and adapted to ride therealong, a pair of pulleys respectively mounted adjacent said spaced-apart locations with the space between said pulleys and said track means being unobstructed at said locations, an endless conveyor line extending between and entrained about said pulleys, motor means for continuously driving said endless conveyor line in a single direction about said pulleys, a flexible tow line having one of its ends fixed to said display carriage, connecting means securing the other end of said tow line to said conveyor line, said connecting means being adapted to pass around said pulleys without interference, and swivel means in said tow line to prevent twisting of said tow line as said connecting means passes around said pulleys during the continuous movement of said endless conveyor line, said continuous movement of said endless



conveyor line in a single direction serving continuously to tow said display carriage back and forth along said track means between said spaced-apart locations, thereby to attract attention to visual material which may be mounted on said display carriage.

3,221,667
ROPE TOW
Robert D. Watt, Seattle, Wash., assignor to Electro-Watt, Inc., Seattle, Wash., a corporation of Washington
Filed Apr. 13, 1964, Ser. No. 359,293
9 Claims. (Cl. 104—173)

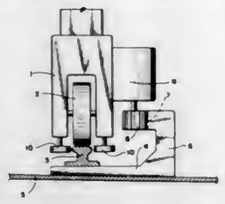


1. In a rope tow, a set of sheaves including two pairs of guide sheaves one pair for the up-hill end and one pair for the down-hill end of a ski slope, individual mountings providing rotary journals for the two guide sheaves of each pair and placing the two sheaves one above another in longitudinal vertical planes which generally coincide, an endless power-driven tow rope of the twisted character trained over said set of sheaves and in its travel over the guide sheaves tracing a generally rectangular course first working downwardly from the upper to the lower sheave of the down-hill pair, thence progressing on a lower-level tow run to the lower sheave of the up-hill pair, and then working upwardly to the upper sheave of said up-hill pair before making an upper-level return run, the mountings for at least the lower sheaves in said two pairs of guide sheaves being each carried for adjusting swivel motion about a respective horizontal axis located normal to the concerned journal axis, and means for setting said adjustable mountings at selected points within a permitted range of swivel motion.

3,221,668
ARRANGEMENT BY GANTRY CRANE
Sverre Munck, Bergen, Norway
Filed Aug. 19, 1963, Ser. No. 303,078
Claims priority, application Norway, Sept. 5, 1962, 145,618; Nov. 10, 1962, 146,387
4 Claims. (Cl. 105—29)

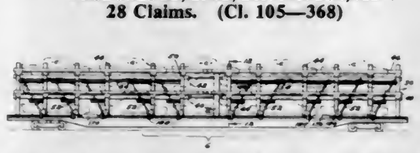
1. In combination with a gantry crane on a ship having drive means comprising gantry support legs, a sup-

port plate mounted on the ship deck and generally disposed along the path of movement of the legs on one side the gantry crane, a rail integral with the support plate and disposed to cooperate with at least one wheel rotatably secured to each leg of said crane, a rack integral with said support plate and having the gear teeth thereof disposed vertically with respect to the ship deck, drive means comprising a pinion mounted on a support leg



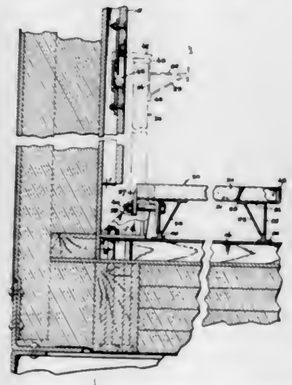
to engage with said rack to move the gantry along said rail, means to restrain said wheel from moving transversely of said rail, jack means for lifting each leg of the crane, and means to secure the crane in a stowed position wherein the wheels are raised free of the rails comprising a seat secured to each leg and spaced above a second seat secured to the ship deck and a filling block insertable between the first and second seats when the corresponding leg is raised by said jacks.

3,221,669
APPARATUS FOR SHIPPING VEHICLES
William R. Baker, Detroit, and Donald E. Kullgren, Livonia, Mich., assignors to Paragon Bridge & Steel Co., Novi, Mich., a corporation of Michigan
Filed June 22, 1962, Ser. No. 204,412
28 Claims. (Cl. 105—368)



1. In combination, a railroad flatcar, a multi-level shipping rack for supporting wheeled vehicles on said railroad flatcar comprising a bottom deck extending generally horizontally lengthwise of said flatcar and adapted to support a line of wheeled vehicles with the highest body portions thereof located in predetermined shipping positions therealong, upright frame means disposed along each longitudinal side of said bottom deck, an upper deck spaced above said bottom deck and extending generally horizontally lengthwise of said flatcar between said upright frame means for supporting a line of wheeled vehicles therealong, said upper deck comprising a series of spaced deck sections movable as a unit and adapted to support the wheeled vehicles positioned for shipment on the upper deck, said deck sections being spaced longitudinally to provide a plurality of clearance spaces adapted to individually receive the highest body portions of the bottom deck vehicles when disposed in said shipping positions, a parallel series of beams pivotally mounted at spaced intervals along each longitudinal side of said bottom deck of said rack for movement in a vertical longitudinal plane between an upright position and an inclined position, said beams each having a roller journalled thereon adapted to support said upper deck by rolling contact therewith, means for pivoting said beams in unison between the upright and inclined positions thereof for raising and lowering said upper deck between a raised loading position wherein said upper deck is spaced sufficiently above the bottom deck to permit the vehicles to be driven therealong and a lowered shipping position wherein the highest body portions of the vehicles on the bottom deck individually project into the corresponding clearance space between said deck sections of said upper deck and means on said upright frame members for supporting said upper deck in said lowered shipping position thereof.

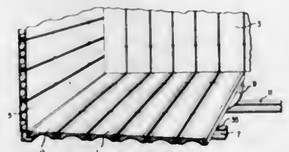
3,221,670
METAL FLOOR RACK FOR REFRIGERATOR CARS
Lucien W. Lemon and Kristjan H. Palsson, Renton, Wash., assignors to Pacific Car and Foundry Company, Renton, Wash., a corporation of Washington
Filed Sept. 17, 1962, Ser. No. 224,089
2 Claims. (Cl. 105—375)



1. In a refrigeration chamber which comprises the interior of a railway car, a plurality of all-metal racks collectively covering the floor of said chamber and each comprised of paralleling spaced-apart stringers bearing upon the floor with closely spaced slats disposed in overlying cross-angular relation to the stringers and secured rigidly thereto, the individual slats, sectionally considered, having the shape of two downwardly facing touching channels, the side edge of said rack which lies proximal to a side wall of the chamber being hinged to the car so that the rack may be swung upwardly about the center of the hinge as an axis into an out-of-the-way position against said side wall, said hinge comprising a forked bracket fixed to the car, with a hinge pin extending between and journaled by its ends for rotation in the two arms of the fork, the bracket occupying a position centered with respect to the end of one of the slats, said end of the slat overhanging a side stringer of the rack, the span of the bracket being less than the width of the slat, and a hinge butt fixed to said side stringer of the rack in a position underlying said overhanging end of the slat and centered relative to the width of said slat and formed to provide a hook-shaped projection which has a saddling fit over the pin in the interstice between said fork arms and is clamped thereto, the concerned slat being mutilated by having the legs of its two channels which lies at the center of the slat cut back in the degree necessary to produce a covered pocket of a depth sufficient to accommodate said butt and the portion of the bracket which receives the ends of the hinge pin.

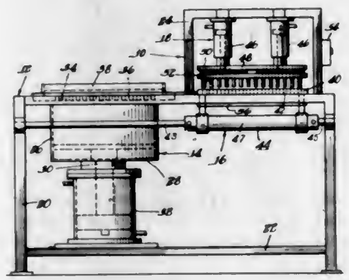
3,221,671
CONVEYANCE CONSTRUCTION
Tappan Collins, Prairieton, Ind., assignor to National Steel Corporation, a corporation of Delaware
Filed Nov. 1, 1961, Ser. No. 149,448
2 Claims. (Cl. 105—422)

1. Railway rolling stock comprising a freight car elongated in its direction of travel and having conveying supporting structure and a floor construction carried thereby to which blocking can be nailed for preventing shifting of freight in transit, the floor construction comprising a plurality of elongated structural members arranged in adjacent side-by-side relation transverse to the length of the freight car, each structural member comprising an upwardly open channel member having a central panel and a pair of webs extending away from the panel both in the same direction and terminating at their edges away from the panel in a pair of coplanar flanges directed toward each other defining a uniplanar freight-engaging face of the channel member, said channel member being filled with hardened plastic material having a skid-resistant surface at the level of said uniplanar freight-engaging face, the exposed surfaces of the flanges and the hardened



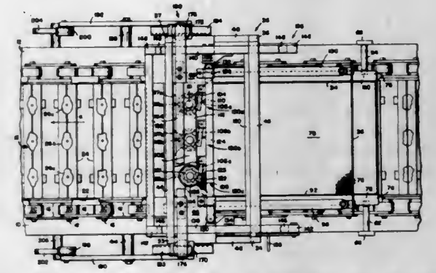
plastic material on the side of the channel member opposite the panel being coplanar, the panel being arched in transverse cross section, the arch of the panel opening away from the webs of the channel member, the arch of the panel extending across at least the major portion of the width of the channel member, means including rigid connection between the structural members and the conveying supporting structure, integrating the floor construction and conveying supporting structure and holding the structural members in spaced side-by-side relation in the freight car with opposed webs of adjacent structural members contiguous to form a nail-receiving slot therebetween transverse to the length of the freight car, and nail-gripping means associated with the slot for exerting pressure from said webs on nails driven into the slot thereby to grip nails driven into the slot.

3,221,672
FOOD PRODUCT ASSEMBLY DEVICE
Vito Antonio Falco, 5659 S. Sayre Ave., Chicago 38, Ill.
Filed Mar. 6, 1963, Ser. No. 263,252
5 Claims. (Cl. 107—1)



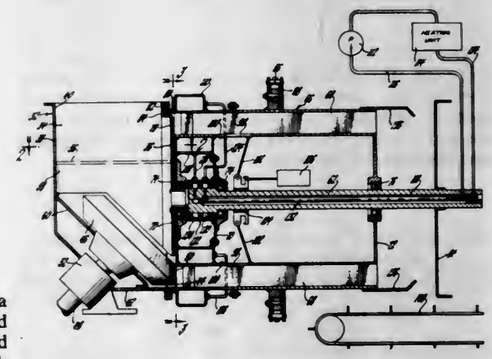
4. A device for measuring and positioning a food on a food product comprising, in combination, a frame, a food container mounted on said frame, a first die positioned adjacent to said food container, said die having a plurality of apertures contained therein, a movable die positionable adjacent to the first die, said movable die having a second plurality of apertures registerable with a portion of the plurality of apertures of said first die in one position and registerable with a second portion of the plurality of apertures in the first die in a second position, means for forcing food from the container through the first die and into apertures of the movable die, and a plurality of fingers mounted on the frame for forcing food out of the apertures of the movable die.

3,221,673
STICK INSERTING MECHANISM
Jacob M. Shelly, Lansdale, Pa., assignor to Shelly Brothers, Inc., a corporation of Pennsylvania
Filed July 12, 1963, Ser. No. 294,548
11 Claims. (Cl. 107—8)



1. A machine for inserting sticks into molds carried by a conveyor comprising a carriage, means mounting said carriage for reciprocating movement forward and backward generally parallel to the direction of conveyor movement, means for reciprocating said carriage, means supported by said carriage for containing a supply of sticks, means supported by said carriage for positioning a plurality of individual sticks in alignment with respective molds, means for simultaneously injecting said sticks into said respective molds, means for actuating said injecting means during reciprocating movement of said carriage in the direction of movement of said molds, and means for synchronizing the speed of said last-mentioned movement of said carriage with the speed of movement of said molds.

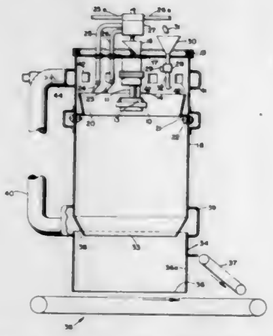
3,221,674
HAY WAFERING APPARATUS
Stanley L. Lawrence and Merle H. Peterson, Livonia, Mich., assignors to Massey-Ferguson Inc., Detroit, Mich., a corporation of Maryland
Filed June 12, 1963, Ser. No. 287,337
4 Claims. (Cl. 107—14)



3. An apparatus for making compressed hay wafers comprising a support shaft, an annular series of relatively fixed axially elongated die cells extending parallel to each other and said support shaft and each having axially spaced entrance and exit ends, means mounting said die cells for rotation in unison about said support

shaft whereby said entrance ends thereof travel in an annular path about said support shaft, feed hopper means communicating with said entrance ends of said die cells, a hay feeding and compression roller mounted within said feed hopper means for rotation about a fixed axis and including a roller surface immediately adjacent to and rotatable at a fixed location within said annular path of said entrance ends of said die cells as the latter rotate, means for rotating said roller and said die cells to feed and compress hay from said feed hopper means into and through said die cells, a wall member hingedly mounted on each of said die cells and forming an internal contact surface thereof, a control member shiftable axially along said support shaft, linkage means interconnecting said control member and said respective wall members, and means operatively connected to said control member to control the position of the latter along said support shaft to adjust the positions of said wall members substantially simultaneously to vary the cross sectional areas of a portion of each of said die cells substantially equally and uniformly to vary the resistance to flow of hay being compressed therethrough.

3,221,675
METHOD OF MANUFACTURING A FOOD PRODUCT
John Hood Forkner, Fresno, Calif., assignor to The Pillsbury Company, Minneapolis, Minn., a corporation of Delaware
Filed Mar. 7, 1962, Ser. No. 178,040
5 Claims. (Cl. 107—54)



5. In a method for the manufacture of a sugar-containing food product, the steps of forming a mass of sugar filaments by centrifugally spining the filaments and then causing the same to move in free flight and to be deposited upon each other to form a cotton-like, warm filamentary mass and then compressing the warm filamentary mass to reduce its volume to a minor fraction of its original volume and to effect increased points of contact and attachment between the filaments.

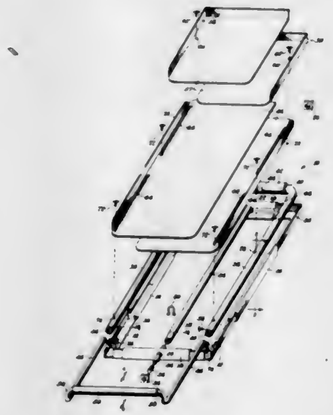
3,221,676
EXPANDIBLE WARDROBE SHELF WITH ADJUSTABLE CAPTIVE BRACKETS
Gerald H. Sedo, West Covina, Calif., assignor to M & D Store Fixtures, Inc., a corporation of California
Filed Jan. 30, 1964, Ser. No. 341,334
5 Claims. (Cl. 108—28)

1. In a sheet metal wardrobe shelf which is expandible lengthwise, the combination of: primary and secondary telescopically related sheet metal shelf top members, each of which comprises a flat rectangular blank having front and back flanges downturned respectively from front and back edge portions thereof, lower portions of said back flanges being also bent inwardly and upwardly, and lower portions of said front flanges being bent inwardly whereby said members are retained by said front and back flanges in a telescopic relation until separated by an endwise sliding movement between said members, an outer end portion of each of said members also having an end flange downturned therefrom; and a shelf supporting bracket having a downturned hook at its back end which slidably receives the upturned edge portions of said back flanges while the front end of said bracket is confined by the inwardly bent portions of said front flanges whereby said bracket is held in transversely slidable captive assembly



with said top members, said bracket being free to rock through a substantial angle about its length to reduce the space required for shipment of said shelf, there being a multiplicity of at least three brackets held in captive assembly with said top members, two of said brackets being available for supporting said shelf at its opposite ends when installing the same and the other of said brackets being available to provide intermediate support for said shelf, said transverse shiftability of said third bracket permitting an area to be chosen for its being fastened to a wall where a stud is available for receiving fasteners.

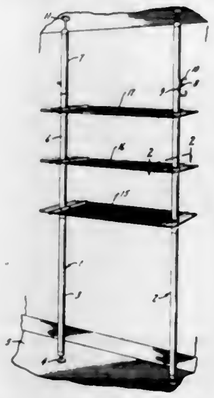
3,221,677
EXPANSIBLE SHELF ASSEMBLY
Clarence E. Kerr, 4308 E. Shan Drive, Mobile, Ala.
Filed Nov. 13, 1964, Ser. No. 410,918
4 Claims. (Cl. 108—102)



1. An expansible storage shelf assembly, comprising in combination, a size adjustable base, the size adjustable shelf, and a size adjustable carrier slidably supported upon said base for reciprocating movement between pre-determined limits, said shelf being detachably secured to said carrier for movement therewith relative to said base, said size adjustable base comprising a plurality of frame members having a composite rectangular outline slidably interconnected to define a rectangular frame of adjustable size, said size adjustable base comprising four

right angle members defining said rectangular outline, and four sleeve members each slidably receiving one end of an adjustable angle member adjustably connecting said frame members to define said rectangular frame.

3,221,678
SHELF STRUCTURE
Donald W. Doherty, Park Ridge, Ill., assignor to Queen Manufacturing Co. Inc., Chicago, Ill., a corporation of Illinois
Filed June 25, 1963, Ser. No. 290,512
1 Claim. (Cl. 108—152)



A compression assembly for frictionally securing a base to a generally vertical, contoured support member, said compression assembly including, in combination,

a friction band,

said friction band being formed of bodily resilient material and having a contoured portion which is substantially complementary in configuration to the associated surface portion of the generally vertical contoured support member with which it is to be in frictional engagement,

said contoured portion having an unbroken engaging surface from end to end of that portion of it which receives the contoured support member to thereby maintain continuous, non-separable frictional engagement between the friction band and the generally vertical contoured support member from end to end of the area of frictional contact,

the end portions of said friction band terminating in a pair of flange members,

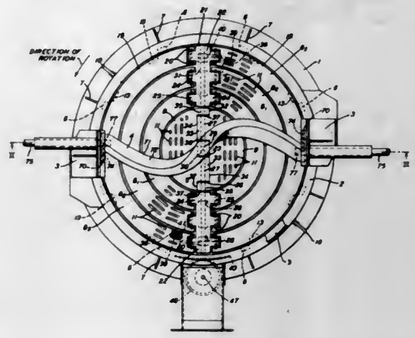
said flange members lying in substantially parallel planes, in an unstressed condition,

the depth of the enclosure formed between the base and the contoured portion of the friction band being less, in an unstressed condition, than the width of the contoured support member, and

connectors for connecting the flange members to the base against the resistance of the friction band caused by the compressive forces exerted by the base and the friction band against the support member as the flange members are urged against the base by the connectors.

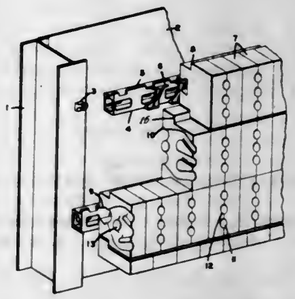
3,221,679
AUTOMATIC STOKING GRATES
Miroslav Dvirka, Long Island City, N.Y., assignor to Morse Boulger Inc., New York, N.Y., a corporation of Delaware
Filed May 22, 1963, Ser. No. 282,319
7 Claims. (Cl. 110—36)

1. An automatic stoking grate assembly comprising a casing, a plurality of grates supported within the casing with the upper faces of the grates coplanar, the plurality of grates comprising a pair of semicircular grates at the center of the plurality and at least one annular grate about the pair of semicircular grates, means for rotating the plurality of grates as a unit, a stoking arm extending diametrically across the plurality of grates immovably mounted on and above the casing and at a distance above the upper faces of the grates of the plurality and of such



configuration that material to be combusted positioned on the grates is plowed up by the arm on rotation of the grate plurality and thrown over the arm in the direction toward the central portion of the upper face of the grate plurality, a diametrical support crossbeam below the grate plurality, and a pivotal connection between at least each semicircular grate and the crossbeam, each pivotal connection being coplanar with the upper face of each grate.

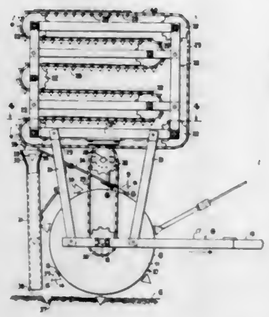
3,221,680
DRYER FURNACE WALL TILE
George P. Reintjes and Donald R. Byfield, Kansas City, Mo., assignors to Geo. P. Reintjes Co., Inc., Kansas City, Mo., a corporation of Missouri
Continuation of application Ser. No. 82,814, Jan. 16, 1961. This application Apr. 22, 1963, Ser. No. 276,121
1 Claim. (Cl. 110—72)



In a furnace wall, a pair of wall tile in side by side relationship whereby to present abutting faces and adjoining inner and outer edge surfaces, the abutting faces of each of said tile having companionate grooves formed therein, said grooves combining to define multiple air passages through the tile, there being a central air passage and a pair of outer air passages, there being a common inlet opening for said passages formed in the outer edge surfaces of said tile and a separate outlet opening for each passage formed in the inner edge surfaces of said tile; the outer passages being curved to intersect with said central passage as the common inlet opening is ap-

proached, the combined cross-sectional area of the passages at the point of intersection being greater than the cross-sectional area of said common inlet opening; and a boss at said point of intersection.

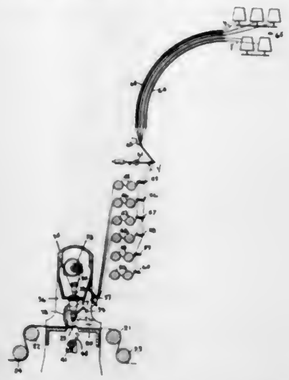
3,221,681
PLANTER FOR POTTED PLANTS
Phillip T. Snyder, 8003 Oak Ave., and Fred Becker, 8248 Sunrise Ave., both of Citrus Heights, Calif.
Filed Jan. 2, 1964, Ser. No. 335,051
7 Claims. (Cl. 111—3)



1. An automatic planter of the character described, comprising a hollow wheel having structure thereon adapted to make a plurality of depressions in the ground over which it is run in longitudinal and equal spaced relation to each other, the said hollow wheel being rotatably supported by a Y-shaped member that is towed behind a vehicle, and the said Y-shaped member supporting a framework above the said hollow wheel, the said framework embodying a plurality of free-turning sprockets therein, on which rests a pair of endless chains in equal and parallel spaced relation to one another, and mechanism activating the said endless chains in the same direction at the same speed when the said automatic planter is given linear motion, the said endless chains swingably supporting a plurality of equally spaced U-shaped hangers therebetween, in which are placed paper cups having plants that it is desired to plant in the ground, and structure adapted to guide the said paper cups into the depressions in the ground when they have been dislodged from the said U-shaped hangers by automatic mechanism as the said automatic planter is towed along the said ground.

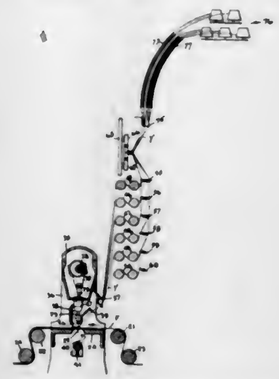
3,221,682
HIGH TENSION STOP MOTION FOR TUFTING MACHINES
David G. Burnell, Clayton, Ga., assignor to James Lees and Sons Company, Bridgeport, Pa., a corporation of Delaware
Filed Aug. 19, 1963, Ser. No. 302,882
3 Claims. (Cl. 112—79)

1. In pile fabric tufting apparatus having a creel, a plurality of needles reciprocable to penetrate a backing material fed to the needles, a series of yarn guides for directing yarn ends to said needles, a motor for operating said needles, and means including creel tubes for feeding yarn ends from the creel to the needles, the improvement which comprises first stationary yarn guides mounted adjacent the discharge ends of the creel tubes, second stationary yarn guides mounted in spaced relation to said first yarn guides, yarn contacting elements journaled between said two stationary yarn guides, said elements having yarn contacting surfaces offset from the straight line path between said stationary yarn guides to normally engage and deflect the travelling yarn ends from said straight line path, pivot means for mounting said elements, an electrical switch secured thereto and directly operable by the pivoting of each of said elements, electrical connections between said switch and the motor whereby the circuit to the motor is opened when the yarn



contacting means pivots to a predetermined position to thereby shut off said motor when excessive tension is present in a feeding yarn, and time delay means to prevent opening of the circuit to the motor until a predetermined interval has elapsed after one of the elements has pivoted due to excessive tension in a feeding yarn.

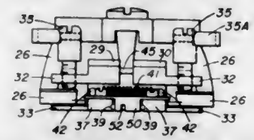
3,221,683
PRESSURE SENSITIVE STREAK ELIMINATOR FOR TUFTING MACHINES
Cornelis B. Abelsma, Buena Vista, Va., assignor to James Lees and Sons Company, Bridgeport, Pa., a corporation of Delaware
Filed Aug. 19, 1963, Ser. No. 302,888
2 Claims. (Cl. 112—79)



1. In pile fabric tufting apparatus having a creel, a plurality of needles reciprocable to penetrate a backing material fed to the needles, a series of yarn guides for directing yarn ends to said needles, a motor for operating said needles, and means including creel tubes for feeding yarn ends from the creel to the needles, the improvement which comprises first stationary yarn guides mounted adjacent the discharge ends of the creel tubes, second stationary yarn guides mounted in spaced relation to said first yarn guides, pivoting yarn contacting elements journaled between said two stationary yarn guides, said elements having yarn contacting surfaces offset from the straight line path between the stationary

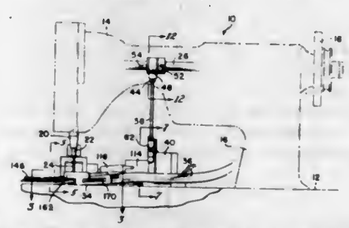
yarn guides at one end thereof to normally engage and deflect the travelling yarn ends from said straight line path, pivot means for mounting said elements, electrical switch actuating means carried by the other end of said elements, electrical switch means operable directly by the pivoting of each of said elements, electrical connections between said switch means and the motor whereby the circuit to the motor is opened when the yarn contacting means pivots to a predetermined position to thereby shut off said motor when excessive tension is present in a feeding yarn, and time delay means to prevent opening of the circuit to the motor until a predetermined interval has elapsed after one of the elements has pivoted due to excessive tension in a feeding yarn.

3,221,684
SNAP FASTENER ATTACHMENT FOR SEWING MACHINES
Angelo Micale, 995 Nassau St., North Brunswick, N.J.
Filed Nov. 14, 1963, Ser. No. 323,646
3 Claims. (Cl. 112—114)



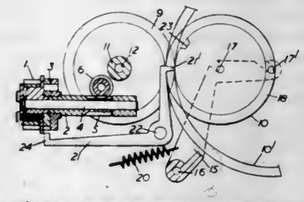
1. A sewing machine attachment, comprising a pair of laterally movable coacting blocks, mounting means for individually mounting said blocks on a sewing machine, spring means mounted to pull the blocks together, said blocks having spaced front extensions adjacent the bottom thereof, said forward extensions having opposed surfaces for holding a snap fastener at its opposed lateral edges, each of said blocks being relatively independently movable with respect to the other, parallel guide means for said blocks operative to allow only linear movement between said blocks, and spacing means on said attachment for holding said blocks at a selected distance apart whereby when a snap fastener is pressed between said front extension opposed surfaces, said blocks will move equally apart from one another.

3,221,685
CARPET BINDING MACHINE
Nathan Greenberg, 5016 Bingham St., Philadelphia, Pa.
Filed Oct. 7, 1963, Ser. No. 314,135
8 Claims. (Cl. 112—138)



1. In a one-step carpet binding machine for sewing a strip of binding to the top and bottom faces of carpet along a raw edge thereof, said carpet being comprised of pile, said machine including a needle-bar actuating shaft adapted to sequentially actuate a sewing needle to form a path of stitching in said binding and in said carpet, the improvement comprising driving means to actuate top rotary feeding means to pull said carpet intermittently in a given direction past said sewing needle, strip reversing guide means to deliver said binding in a longitudinally folded condition to said raw edge in advance of said sewing needle, said guide means having an entrance end and a delivery end, said delivery end including upper and lower members, said upper member having a free edge inwardly offset from said lower member, said guide means being adapted to issue binding from said upper and lower members in a generally U-shaped folded condition, the binding as issued being comprised of upper and lower legs and open toward said carpet raw edge with said lower leg extending further than said upper leg because of the upper and lower members of said guide means, finger means temporarily pushing the upper edge of said pile away in advance of the sewing needle to avoid any interference with the operation thereof, said finger means being positioned upstream of and closely adjacent to said sewing needle, said finger means also being positioned in close proximity to said guide means adjacent to the delivery end thereof, said finger means extending generally normal to said path of stitching and being curved adjacent said delivery end in an arc across said path toward a direction parallel to said path of stitching, said top rotary feeding means being positioned in said path of stitching, downstream of and closely adjacent to said sewing needle, whereby said binding is sewn to the top and bottom faces of said carpet in a one-step operation.

3,221,686
CONTROL CAM MECHANISM
Giuliano Gustin, Piazza Tripoli 22, Milan, Italy
Filed Aug. 5, 1963, Ser. No. 300,003
Claims priority, application Italy, Aug. 6, 1962, 15,757/62
12 Claims. (Cl. 112—158)

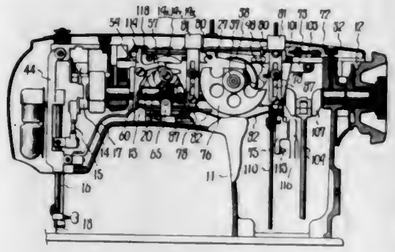


1. In a zig-zag sewing machine, control cam mechanism comprising at least one cam for automatically controlling cyclic movements of movable members of the sewing machine, means mounting said cam for rotation, a first wheel fixed to the cam and having gear teeth thereon the pitch circle of which coincides substantially with the basic profile of the cam, a second wheel having gear teeth thereon in mesh with the teeth of said first wheel, means for rotating said second wheel, means mounting said cam for movement of its axis toward and away from the axis of said second wheel, and means for maintaining constant the distance between the axis of said second wheel and the basic profile of said cam.

3,221,687
AUTOMATIC ORNAMENTAL STITCH SEWING MACHINE
Tetsuzo Hayashi, Fuse, and Minoru Tanaka, Kashihara, Japan, assignors to Koyo Seiko Company, Ltd., Osaka, Japan, a corporation of Japan
Filed Oct. 21, 1963, Ser. No. 317,602
6 Claims. (Cl. 112—158)

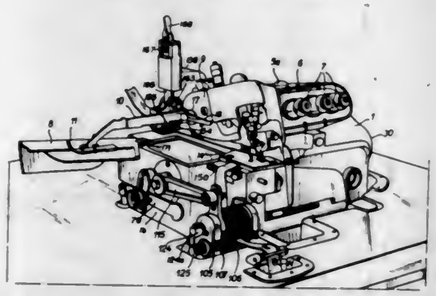
1. In an ornamental stitch sewing machine for selectively producing a plurality of stitch patterns, a hollow frame, a needle mounted on said frame for endwise reciprocation and for lateral swinging movements transversely of the direction of reciprocation, a cam shaft supported within said frame, a stack of rotary stitching cams mounted in side-by-side coaxial relation on said cam shaft

including groups of plural cams each for producing transverse oscillation of the needle and regulating amplitude of needle oscillations, means for driving said cam shaft to rotate said cams simultaneously about the axis thereof, a plurality of cam followers corresponding in number to said cams, pivot means defining pivot axes for said cam followers, means mounting said cam followers individually on said pivot means for independent movement of each cam follower about pivot axes in parallel planes perpendicular to the axis of said cam shaft alongside said cams in radial alinement with their respective cams without effecting movement of any of the other of said cam followers, said cam followers each having an engagement portion for engaging and following the periphery



of its associated cam and an activating end portion spaced from their pivot axes, means producing transverse oscillation of the needle including an oscillation-producing plate, means for regulating the amplitude of oscillation of the needle including an oscillatory amplitude plate, each of said plates being slidably mounted on said frame for rectilinear reciprocative movement along axes paralleling said cam follower planes of movement, each of said plates being disposed to be directly driven by the activating end portions of the cam follower associated with a respective one of said groups of cams, and means for selectively positioning selected ones of said followers to dispose their activating end portions in driving engagement with said plates to activate said plates responsive to the cams followed by said cam followers.

3,221,688
OVERLOCK SEWING MACHINE
Nerino Marforio, Milan, Italy, assignor to S.p.A. Virginio Rimoldi & C., Milan, Italy
Filed Apr. 4, 1963, Ser. No. 270,568
Claims priority, application Italy, Apr. 12, 1962, 7,478/62
13 Claims. (Cl. 112—162)



1. In an overlock sewing machine for attaching bands and the like to fabric edges, and having a frame provided with an upright surface and a lower forward extension, a plate for use as a working table superposed on said forward extension, and a needle plate flush with said table, said needle plate having a needle hole, a needle bar for carrying a needle, a presser foot arm, a fabric cutting device comprising a movable element carried by said upright surface, a threaded bottom looper and a threadless top looper arranged beneath said needle plate and disposed to cooperate with the needle to form a two thread overlock stitch, a presser foot secured to said presser foot arm, fabric transporting means cooperating with said presser foot, and comprising means arranged beneath the working table and said needle plate for feeding the band in a tensioned condition to a zone in which stitches are formed in a direction perpendicular to that of the stitch formation, means on said needle plate for deflecting the band through 90° to extend in said direction of the stitch formation and for overlaying it over a portion of the upper face of the needle plate extending from the needle hole in the direction of the stitch formation, means for removing the band and the fabric sewn thereto from the working table, and said means on said needle plate comprising an edge portion inclined to the direction of the stitch formation and extending from the needle hole in the needle plate to the needle plate edge, said inclined edge being directed towards said upright surface and being displaced in the direction of the stitch formation with respect to said needle hole in the needle plate.

3,221,689
METHOD OF SEWING ELASTIC STITCHES
Paul Leo James, 2320 N. Cleveland Ave., Chicago 14, Ill.
Filed Nov. 24, 1961, Ser. No. 154,492
2 Claims. (Cl. 112—262)



1. A method of stitching fabric comprising freely supporting the fabric in the area traversed by a needle to enable the needle to depress and raise the fabric during stitching to cause gathering of the fabric contiguous and adjacent to the needle, placing the components of the stitching in the thus depressed and raised fabric with the needle in a manner to impart a substantially zig-zag pattern to the stitching and further to cause substantially simultaneous lateral and longitudinal gathering of the freely supported fabric within and about the stitching, the thus formed stitching encompassing a wide area of the freely supported fabric to impart resiliency to the stitching, and anchoring a portion of at least two substantially spaced components of the stitching in the fabric.

3,221,690
BUMPER STABILIZER FOR A CAN BODY SIDE SEAMER
Ed Laxo, 27690 Orlando Ave., Hayward, Calif.; Thelma E. Laxo, executrix of said Ed Laxo, deceased, assignor to Thelma E. Laxo
Filed May 3, 1962, Ser. No. 192,139
11 Claims. (Cl. 113—12)

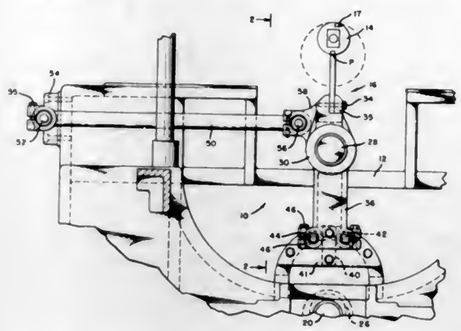
1. In a can body side seamer having a machine frame, and a horn for supporting a can body blank thereon with hooks along opposite edges of said blank interlocked, means for delivering an impact to said interlocked edges comprising:

a driven crankshaft,

a connecting rod having one end portion thereof mounted on said crankshaft,

a cross head pivotally mounted adjacent the other end portion of said connecting rod,

a guide member having opposite sides parallel to a diameter of said crankshaft at the rotational axis thereof,

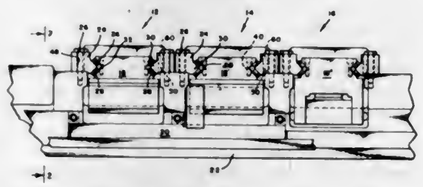


a roller carrier member, and

a pair of guide rollers on said carrier member each being disposed in rolling engagement with one of said parallel sides,

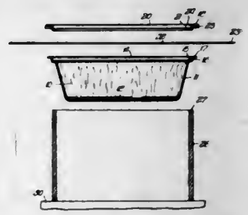
one of said members being carried by the machine frame with the other member being carried by the cross head.

3,221,691
CAN BODY NOTCHING AND FOLDING MACHINE
Ed Laxo, Hayward, Calif.; Thelma E. Laxo, 27690 Orlando Ave., Hayward, Calif., executrix of said Ed Laxo, deceased, assignor to Thelma E. Laxo
Filed May 3, 1962, Ser. No. 192,270
4 Claims. (Cl. 113—115)



1. A can body making machine comprising: a machine frame, a feed rail associated with said frame and along which can body blanks are moved progressively, and at least one operating station located along said rail to which can body blanks are delivered along said rail in rapid sequence, said operating station comprising: a slideway which includes opposed side guide members releasably secured to the machine frame in spaced relationship along said rail, a slide member located between said guide members and spaced therefrom, means mounting said slide member for vertical, reciprocating movement in said slideway between said guide members, and a tool carried by said slide member for performing an operation on a can body blank carried by said feed rail, said mounting means being in the form of a pair of vertical complementary male and female V-shaped members on each of two opposite sides of the slide member and on the adjacent side guide member, a V-shaped bearing carrier interposed between each said pair of V-shaped members, a plurality of roller bearings rotatably carried in each said carrier, and adjustment means comprising a cylindrical adjustment pin having an end surface thereof inclined with the pin axis, at least one of said side guide members being formed with a generally horizontal hole extending therethrough in a direction transverse to said rail, a vertical edge of said machine frame being exposed through said hole, said pin being received in said hole with the inclined surface thereof in line engagement with said vertical machine frame edge, and means for axially moving said pin through fine increments for adjustably positioning the guide member laterally on the machine frame.

3,221,692
METHOD OF FORMING A PACKAGE
Oscar E. Seiferth and Glenn M. Austin, Madison, Wis., assignors to Oscar Mayer & Co., Inc., Chicago, Ill., a corporation of Illinois
Original application Oct. 29, 1959, Ser. No. 849,478. Divided and this application May 18, 1962, Ser. No. 204,026
3 Claims. (Cl. 113—120)

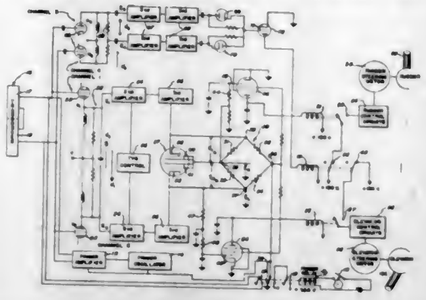


1. A method of forming a receptacle of tray-like form and a lid therefor from a single piece of relatively thin gauge metal sheet which comprises drawing the sheet between a pair of dies which are shaped to form the sheet into an open top pan-like container body portion having a bottom wall and an upwardly extending side wall with a peripheral upper edge portion which comprises inwardly and outwardly directed flange formations in vertically spaced planes and a connecting, upwardly and outwardly slanted narrow peripheral wall section, cutting the drawn sheet at the top edge of the body side wall and separating said peripheral edge portion from the container body forming portion to provide an apertured lid and further drawing the top margin of the side wall of the body portion to provide thereon inwardly and outwardly directed, vertically spaced flange formations and a connecting, upwardly and outwardly slanted, narrow wall section, with the respective flange formations and the connecting wall section on the body portion each having a slightly larger diameter than the corresponding flange formations and connecting wall section on the lid so that the lid may be placed on the body portion with the flange formations and connecting wall section thereof in superimposed nested relation with the flange formations and connecting wall section on the body portion.

3,221,693
TARGET ANGLE DISCRIMINATOR FOR DIRECTIONALLY SENSITIVE WAVE ENERGY RECEIVERS
Paul C. Gardiner, Scotia, N.Y., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Oct. 4, 1950, Ser. No. 188,464
6 Claims. (Cl. 114—23)

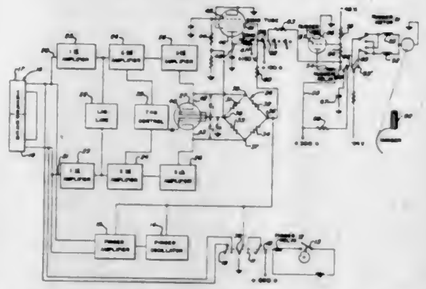
1. In a signaling system of the character described, a receiver adapted to directionally receive wave energy in accordance with a sensitivity pattern and to generate electric oscillations varying with changes in the direction of reception of said wave energy, a discriminator

energized by said receiver generated oscillations adapted to furnish a signal upon the reception by the receiver of wave energy beyond predetermined angular limits, and



means actuated by said discriminator signal adapted to blank said receiver output whereby the effective width of said sensitivity pattern is held within said predetermined angular limits.

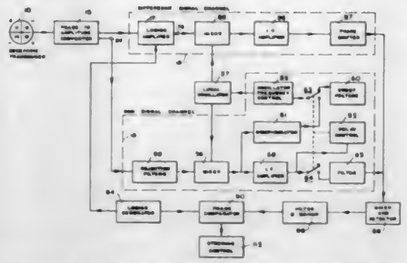
3,221,694
TIME DELAY CIRCUITS FOR ECHO CONTROLLED STEERING GEAR
Robert S. Gardner, Key West, Fla., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Oct. 4, 1950, Ser. No. 188,467
9 Claims. (Cl. 114—23)



1. In an automatic steering system, a transmitter adapted to project pulses of wave energy at regular intervals, a receiver adapted to receive echoes of said pulses upon reflection from a target, a rudder movable between first and second spaced positions, one for left rudder and the other for right rudder, means normally initially disposing said rudder in said first position for a target search when no echoes are being received, means adapted to dispose said rudder in said second position responsive to the reception of an echo, and means coacting with said first and second mentioned means to effect a return of the rudder to said first position upon the expiration of a time interval following the reception of a single echo.

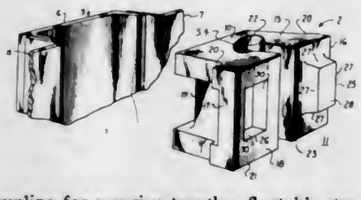
3,221,695
TARGET LOCATION SYSTEM
William Altar and Carl W. Helstrom, Pittsburgh, Pa., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Apr. 27, 1956, Ser. No. 581,263
8 Claims. (Cl. 114—23)

1. A target location system, comprising electro-acoustic echo-ranging means for providing a first signal indicating target presence and a second signal of like frequency having modulation characteristics dependent upon target direction, first and second signal channels for operating upon said first and second signals, respectively, said first signal channel including means for eliminating noise components from said first signal, means controlled by the substantially noise-free first signal to heterodyne the latter signal and said second signal to a substantially fixed



intermediate frequency in said first and second channels, respectively, and means for combining intermediate-frequency output signals of said channels and for deriving therefrom control signals corresponding to target direction.

3,221,696
MECHANICAL COUPLINGS FOR MULTI-SECTION FLOATABLE ASSEMBLY
Elmer C. Gardner, 16 Westlane, Houston, Tex.
Filed Apr. 1, 1963, Ser. No. 269,466
9 Claims. (Cl. 114—43.5)



1. A coupling for securing together floatable structures and the like to provide a rigid and easily separable assembly, comprising

a block of strong material having a rear face adaptable for attachment to the side of a floatable structure,

said block having opposite side faces, upper and lower faces, and on outer face for confronting a mating coupling block secured to another floatable structure,

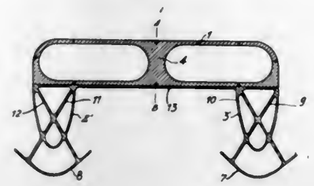
said outer block face having guide means that receives guide means on the mating coupling to align the mating blocks and prevent relative movement of the mating blocks in the lateral direction, either vertical or horizontal, when the mating blocks are in abutting relationship,

said block having a passage opening to said outer face, extending from the upper to the lower block face,

an elongated connecting member having an end configuration that matches the block recess configuration and permits said connecting member end to be inserted into said block recess and prevents disengagement of said connecting member by pulling towards the mating block when the mating blocks are in abutting relationship,

said guide means comprising a pin and groove spaced on opposite sides of said passage opening on said block outer face to receive a mating pin and groove on the mating block so that the outer faces of the mating blocks can be brought together in abutting relationship before inserting said elongated member that connects the mating blocks together.

3,221,697
BOATS WITH TWO OR MORE HULLS
Pier Luigi Allegretti, Piazza S. Quirico 3, P.P., Lucca, Italy
Filed Aug. 1, 1963, Ser. No. 299,356
Claims priority, application Italy, Aug. 4, 1962, Patent 678,553
3 Claims. (Cl. 114—66.5)

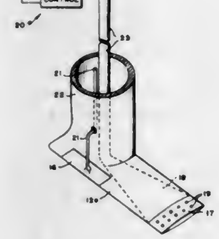


1. A boat having at least two hulls and a superstructure connecting the hulls and adapted to ride above the water in which said hulls are immersed, said superstructure comprising a hollow frame and reinforcing partitions extending across said hollow frame symmetrical to the longitudinal plane of symmetry of the boat,

similar supporting fins attached to each of said hulls,

a first additional reinforcing structure connecting adjacent edge portions of the fins of the two hulls.

3,221,698
HYDROFOIL CONTROL SYSTEM
James J. Turner, 215 Fairfax Road, Alexandria, Va.
Filed Oct. 30, 1963, Ser. No. 320,232
1 Claim. (Cl. 114—66.5)
(Granted under Title 35, U.S. Code (1952), sec. 266)



A system for controlling the operation depth of hydrofoil comprising:

a vehicle designed to be supported by the hydrofoils;

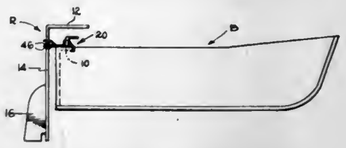
essentially hollow hydrofoils mounted to support said vehicle when said vehicle is traveling at high speed;

said hydrofoils each having located in the upper surfaces thereof a plurality of spoiler apertures whereby when air at sufficient pressure is passed therethrough, a cavitation bubble is formed;

means mounted in said vehicle and fluidly coupled to said hollow hydrofoils for supplying air for passage through the apertures in said hydrofoils to form a cavitation bubble;

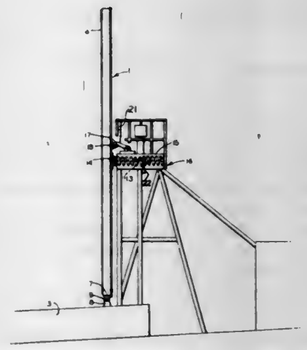
said means comprising a fan whose gas discharge rate at any preselected fan speed is related to the depth of submergence of said hydrofoil and to the load response characteristic of said fans.

3,221,699
RUDDER ASSEMBLY FOR WATERCRAFT
John B. Vidach, 180 E. Delaware Place, Chicago, Ill.
Filed Oct. 26, 1964, Ser. No. 406,425
4 Claims. (Cl. 114—162)



1. In a watercraft having a rudder assembly including a tiller, a rudder shaft interconnected with said tiller and a rudder secured to said rudder shaft; means for releasably fixing the steering angle of said rudder including clamping means having cooperable members one of which members is movable toward and away from an oppositely disposed clamping surface, a locating member mounted on said rudder assembly and movable with said tiller, said member having a locking segment lying between said movable clamping means member and said oppositely disposed clamping surface in substantially all steering angles of said rudder whereby when said movable clamping means member is moved towards said oppositely disposed clamping surface the locking segment is clamped therebetween releasably fixing the steering angle of said rudder and when said movable clamping means member is moved away from said oppositely disposed clamping surface the steering angle of said rudder may be changed.

3,221,700
HATCH COVERS
Thomas T. Lunde, 233 Cervantes Blvd., San Francisco, Calif.
Filed Dec. 27, 1961, Ser. No. 162,386
3 Claims. (Cl. 114—201)

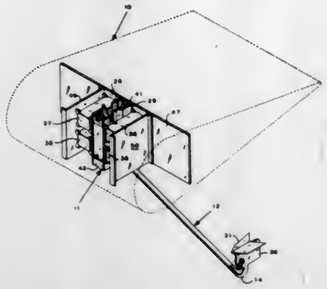


1. An improved hatch cover system for a hatch in the deck of a ship comprising a unitary cover structure pivotable about any one of its sides, rigging means for pivoting said cover about any selected one of said sides, pin means carried by said cover, a pivoted gravity latch means, cushioning means for engaging said cover in its open position, and rigid structure mounted on the deck for supporting the latch means and the cushioning means such that the pin means will engage with said latch means and will be biased into firm engagement with said latch means and be retained thereby by said cushioning means.

3,221,701
STORE RELEASE MECHANISM

John E. Smith, Hatboro, and Raymond A. Starry, Levittown, Pa., assignors to the United States of America as represented by the Secretary of the Navy

Filed July 30, 1959, Ser. No. 830,684
10 Claims. (Cl. 114—235)
(Granted under Title 35, U.S. Code (1952), sec. 266)

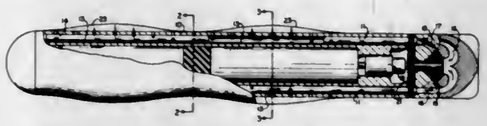


7. In combination with a hydroplane, store release means carried by said hydroplane, said store release means adapted to carry at least one replacement store, streamer rod means depending from said store release means and adapted to carry a store at the freely depending end thereof, said store release means operating to automatically dispense the replacement store along said streamer rod means to said freely depending end when the store carried by said streamer means is released therefrom.

3,221,702
UNDULATING SURFACE DRIVING SYSTEM

Chester A. Clark, Rte. 2, Box 42, Waldorf, Md.

Filed Oct. 30, 1964, Ser. No. 407,931
6 Claims. (Cl. 115—.5)
(Granted under Title 35, U.S. Code (1952), sec. 266)

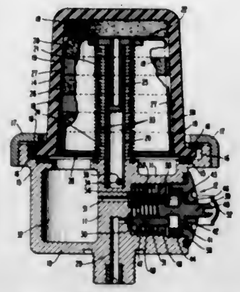


1. A propulsion drive system which comprises:
an elongated cylindrical body,
a plurality of rows of axially aligned tubular passages in said body with their centers equidistant from the axis of said body,
a plurality of linearly aligned apertures in said body extending from the outer surface thereof into said tubular passages,
an extensible material secured about said body enclosing the area including said apertures in said body,
a valve arrangement within each of said tubular passages,
means for rotating each of said valve arrangements, relative to said apertures in said body,
means for supplying a fluid under pressure to alternate passages in said body,
means for returning fluid to said fluid supply means from the remainder of said plurality of passages,
whereby fluid under pressure is forced through said apertures in said body through said passages under pressure and returned to said supply means,
said fluid under pressure producing a pressure sine-like wave travelling along said body between said extensible material and said body.

3,221,703
METHOD AND APPARATUS FOR DETECTING VARIATIONS IN PRESSURE

Berdj C. Kalustyan, Park Ridge, N.J., assignor to Trodyne Corporation, Teterboro, N.J., a corporation of New Jersey

Filed Aug. 6, 1963, Ser. No. 300,347
14 Claims. (Cl. 116—70)

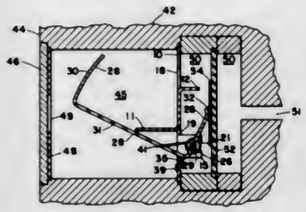


1. A pressure sensitive instrument comprising a sealed rigid casing, a sealed resiliently expansible casing mounted in said rigid casing, an indicating member mounted on said expansible casing for linear movement thereby, said rigid casing having a wall portion through which said indicating member is visible, stop means in the rigid casing for limiting movement of said member in one direction by the expansible casing relative to said rigid casing, a gaseous medium under a predetermined operating pressure in one of said casings, and a gaseous medium under a different substantially constant predetermined reference pressure sealed within the other of said casings, the normal differential between said pressures being such that said member is normally maintained against said stop means with said expansible casing biased by its resiliency for moving said member in the other direction upon a predetermined reduction of said operating pressure.

3,221,704
FLUID FLOW APPARATUS

Vernon E. Johannsen, Wilton Junction, Iowa, assignor to The Bendix Corporation, Davenport, Iowa, a corporation of Delaware

Filed Apr. 24, 1964, Ser. No. 362,239
2 Claims. (Cl. 116—117)



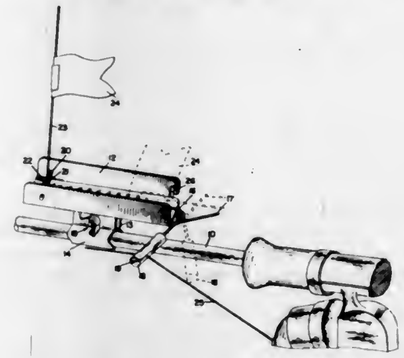
1. An oxygen flow responsive apparatus for indicating an oxygen flow condition comprising
(a) a housing defining an oxygen inlet and an opening disposed at the front of said housing,
(b) pressure responsive means movably mounted in said housing having one side thereof exposed to and actuated by the flow of oxygen through said inlet,
(c) a frame member having an aperture therethrough and interposed between said pressure responsive means and said opening,
(d) a shaft,
(e) a pair of supports extending from said frame member having means for supporting said shaft,

(f) an indicating member in the form of a single structure mounted for rocking motion on said shaft, said indicating member extending through said aperture having one end of two sections of contrasting colors and viewable through said opening and a second end arranged to be actuated by the movement of said pressure responsive means,
(g) a stop extending from said frame member,
(h) torsion spring means disposed around said shaft having a portion thereof resting against said indicating member for biasing said indicating member against said stop, thereby exposing one of said sections of contrasting color to view through said opening.

3,221,705
TIP-UP SIGNAL FOR FISHING RODS

Julius V. Saviskas, 62 Granite St., Worcester, Mass.

Filed Apr. 5, 1965, Ser. No. 445,640
5 Claims. (Cl. 116—132)



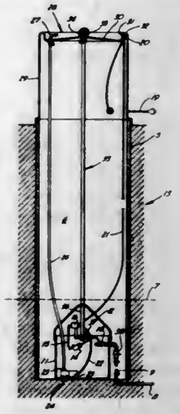
1. A tip-up signal device adapted to be mounted directly on the shaft of a fishing rod and comprising an elongated channel-shaped member opening upwardly, a clamp on said member for detachably mounting the same on a fishing rod, a pivoted staff, means mounting said staff on said channel-shaped member, spring means urging said staff to an erect position generally at right angles to the length of said channel-shaped member,
a pivoted trigger, means pivoting said trigger on an axis generally transverse to the fishing rod, said trigger having a part adapted to overlie the staff when the staff is pivoted down against the action of the spring into the channel-shaped member, so that the staff is held down by friction, a handle for said trigger, and means on said handle for releasable attachment of a fishing line thereto at the opposite side of the pivot of the trigger from the part thereof that overlies the spring-pressed staff, the action of the fish in taking the bait pivoting said trigger to a released position when the staff snaps up.

3,221,706
CIRCULATING LIVE-STOCK WATERING SYSTEM

Glenn J. Johnson, Rte. 2, Powell, Wyo.

Filed Apr. 4, 1963, Ser. No. 270,759
14 Claims. (Cl. 119—73)

14. A recirculating live-stock watering system comprising:
(a) a container disposed within the soil below the frost line thereof;
(b) means connected in fluid communicating relationship with said container for maintaining a supply of water within said container at all times;
(c) a watering bowl disposed in elevated relation to said container and having a bottom and side walls with upper edges;
(d) pump means connected with the interior of said container and the supply of water therein and having a discharge;
(e) supply conduit means connected with the discharge of said pump means and terminating within said bowl

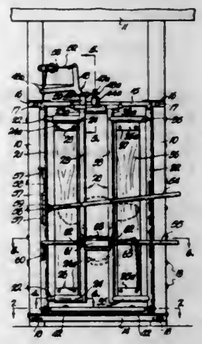


and having a normally open discharge discharging the entire flow of said conduit into said bowl; and
(f) return flow conduit means extending between said bowl and said container and having an inlet disposed within said bowl above the bottom and below the upper edges thereof and having a discharge discharging into said container.

3,221,707
AUTOMATIC LIVESTOCK HEAD GATE

Laurence B. Pearson, Thedford, Nebr.

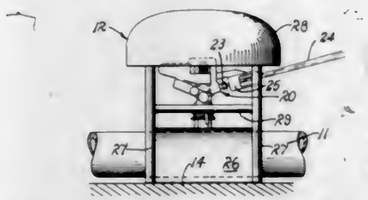
Filed Sept. 28, 1964, Ser. No. 399,516
9 Claims. (Cl. 119—98)



1. In an automatically actuated livestock headgate, the combination of
a pair of laterally spaced upright members,
a pair of gate sections, one for each member, each gate section mounted to its member for swinging movement about an upright axis, each gate having an animal neck engaging outer edge,
means interconnecting said gate sections for synchronous movement in either direction toward and away from a central, substantially coplanar closed condition in which said outer edges can pinch between them the neck of an animal, and
releasable latch means above said gate sections operable to engage and hold said gate sections in said

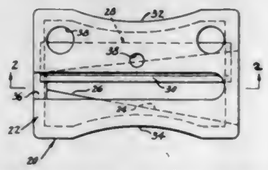
closed condition, said latch means operable automatically to engage and hold said gate sections in said closed condition responsive to movement of the gate sections into the closed condition from either direction.

3,221,708
SPRAYING APPARATUS FOR WASHING CATTLE
Daniel B. Marley, 3125 N. Milburn, Fresno, Calif.
Filed Jan. 13, 1964, Ser. No. 337,262
3 Claims. (Cl. 119—158)



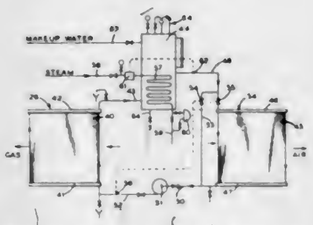
2. An apparatus for washing cattle and the like comprising a corral for the cattle having a hard-surfaced drainage floor; a plurality of rotary sprinklers disposed adjacent to the floor of the corral, the sprinklers having overlapping predetermined discharge patterns substantially covering the floor; a conduit connected to the sprinklers adapted to supply water under pressure thereto; substantially semi-cylindrical guards positioned downprising a corral for the cattle having a hard-surfaced ing the conduit rigidly supported thereon in elevated position above the floor providing unrestricted areas between successive guards along the conduit to permit free flow of water along the surface of the floor transversely of the conduit between the sprinklers; legs rigidly extended upwardly from ecah guard; and a dome-shaped cover mounted on the legs of each guard in spaced shielding relation above its respective sprinkler, each of the sprinklers having a predetermined radially outwardly directed upwardly inclined discharge trajectory disposed beneath its respective cover, said cover and said guard defining therebetween an opening aligned with said discharge trajectory of the sprinkler.

3,221,709
PENCIL SHARPENER
Jose A. Racaj Montemayor, Cerro dos Conejos, Esq. Con Cerro del Tigre, Coyoacan 21, Mexico
Filed May 14, 1964, Ser. No. 367,398
1 Claim. (Cl. 120—93)



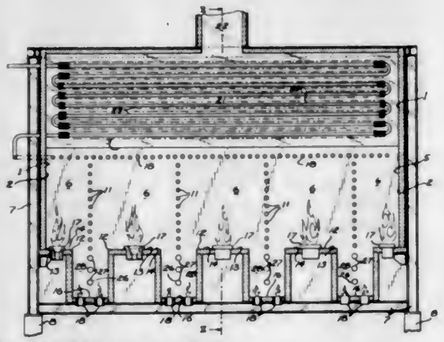
A pencil sharpener comprising a unitary assembly formed of a single piece of plastic material defining a relatively flat top wall having an elongated slot extending the full length thereof, a pair of depending side walls having arcuate finger engaging concavities therein, a first solid end wall and a second end wall having a circular pencil receiving opening therein centered beneath said slot, said top, side and end walls defining a hollow interior having an open bottom, means defining a hollow substantially conical pencil receiving socket extending into said hollow interior extending from said circular opening, the inner end of said conical socket being open, said slot intersecting and defining an opening in said conical socket at said top wall, and a metal sharpening blade having a sharpening edge projecting into said slot and extending the full length thereof, said blade having recess means therein for the reception of protrusions of said plastic and comprising an integral part of said top wall and except for said sharpening edge completely encompassed in the material of said top wall.

3,221,710
CLOSED CIRCUIT HEAT EXCHANGE SYSTEM
Isaac O. Gallapoo, Barberton, Ohio, assignor to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey
Filed Mar. 2, 1964, Ser. No. 348,562
4 Claims. (Cl. 122—1)



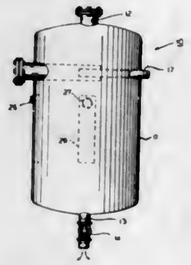
1. A closed circuit heat exchange system comprising a tubular air heater, means for passing air over the tubes of said tubular air heater, a separate tubular heater, means for passing combustion gases over the tubes of said separate tubular heater, means for passing a fluid heat transfer medium through the tubes of and between said air heater and separate heater, a tank positioned between said heaters in the flow path of said heat transfer medium, means for passing the fluid heat transfer medium around said air heater while completing the closed circuit flow through said separate heater and said tank, means for selectively heating the heat transfer medium including a heating coil within said tank, and means for supplying heat to said coil only when the temperature of the medium entering the tubes of said air heater is below a selected value.

3,221,711
RIDGE FIRING ARRANGEMENT FOR PROCESS HEATERS
Harold L. Beggs, St. Davids, Pa., assignor to Alcorn Combustion Company, New York, N.Y., a corporation of Delaware
Filed May 28, 1964, Ser. No. 370,893
6 Claims. (Cl. 122—240)



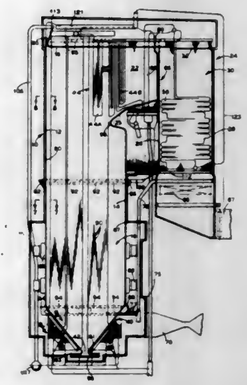
1. A fired heater comprising
a setting which includes a roof arch and a floor as well as walls all cooperating to define a furnace chamber therein,
the floor defining a low floor level,
the floor having at least one ridge projecting upward from the low floor level,
the ridge having an upper extremity which defines a high floor level,
the floor defining at least one trough below the high floor level,
at least one main burner penetrating the floor via the upper extremity of the ridge and communicating with the furnace chamber to introduce fuel and air therein and arranged so that a main flame burst is formed above the high floor level,
means in the vicinity of the roof arch for exhausting combustion gases from the furnace chamber,
at least one tube coil arranged to form a generally horizontal configuration in the furnace chamber,
the tube coil having an upper end communicating in flow series with a source of process fluid so that the fluid courses generally downward therethrough,
the tube coil having a lower end communicating in flow series with means for exhausting the process fluid therefrom,
the tube coil including at least one enlarged critical tube situated downstream in the path of process fluid flow,
the critical tube positioned in the trough so that heat input to the critical tube from the main flame burst is reduced.

3,221,712
BOILER BLOW DOWN TANK
Edwin B. Tidd, Park Ridge, Ill., assignor to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Maryland
Filed Sept. 4, 1963, Ser. No. 306,494
1 Claim. (Cl. 122—379)



In a blow down tank for a steam boiler, a drain at the lower end of said tank for boiler sludge and scale, a steam line adapted to connect said blow down tank to said steam boiler, said steam line being supported by a wall of said blow down tank, and means for reducing the energy of a blast of steam introduced to said tank by said steam line by reversal of the direction of said blast and for confining the wear effect of abrasive materials carried by said blast of steam comprising a tube of larger cross sectional area than said steam line, said tube being supported by the wall of said blow down tank and extending outward beyond said wall, a flange located at the end of said tube protruding beyond said wall of said blow down tank, a wear tube nested within said tube of larger cross sectional area and having a flange thereon adapted to bear against the flange of said tube protruding beyond the wall of said tank, said wear tube being disposed in nesting relationship with said steam line, a wear plate bearing against said flange of said wear tube, and means for securing said both of said flanges and said wear plate in assembled relationship.

3,221,713
FORCED FLOW VAPOR GENERATOR
Murray Wiener, Akron, Ohio, assignor to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey
Filed Aug. 20, 1963, Ser. No. 303,299
4 Claims. (Cl. 122—406)

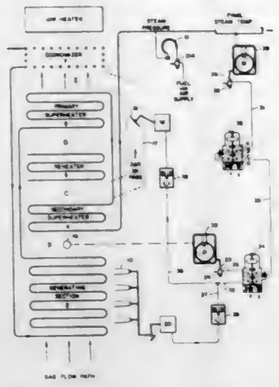


1. In a forced circulation fluid heating unit, walls defining a furnace chamber, burner means supplying high temperature heating gases to said chamber for flow therethrough, at least one of said walls including a row of upwardly extending contiguous upflow tubes arranged for parallel flow of fluid therethrough and grouped into a plurality of parallel flow circuits some of which are arranged to absorb less heat than others, a fluid distributor vessel, means for supplying a vaporizable fluid to said vessel, a plurality of conduits connecting said vessel for parallel flow of said fluid to the inlet ends of said upflow tubes and through said circuits, each of said conduits supplying said fluid to a plurality of said upflow tubes, and means for inhibiting the flow of fluid in those of said circuits having a relatively low heat absorption rate to compensate for the inequality of heat absorption in said circuits including flow restrictors disposed in at least some of said conduits, each of said flow restrictors having means forming gradually diminishing and increasing transverse flow areas to avoid abrupt changes of pressure therein.

3,221,714
VAPOR GENERATING AND SUPERHEATING OPERATION
Paul S. Dickey, East Cleveland, Ohio, assignor to Bailey Meter Company, a corporation of Delaware
Application June 29, 1951, Ser. No. 234,169, now Patent No. 2,985,151, May 23, 1961, which is a division of application Ser. No. 57,686, Sept. 22, 1960, now Patent No. 3,136,300, dated June 9, 1964. Divided and this application Aug. 23, 1963, Ser. No. 304,034
10 Claims. (Cl. 122—479)

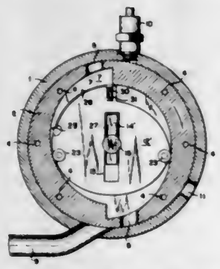
1. In a vapor generating and superheating unit of the type having a fluid-cooled combustion furnace with a heating gas outlet in one end portion thereof and having convection vapor superheating surface positioned beyond the combustion furnace outlet in the path of heating gas flow, the method of operation which comprises introducing fuel and air for combustion into the combustion furnace from a fixed location spaced from the gas outlet, varying the total fuel and air input rate in accordance with demand upon the unit for generated vapor of desired total heat content, and directionally varying the resulting combustion process in the furnace away from the gas outlet responsive to an increase of volume flow rate or

of temperature of the heating gases entering the superheating surfaces, and toward the gas outlet responsive to



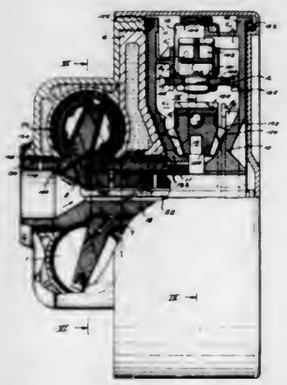
a decrease of volume flow rate or of temperature of the heating gases entering the superheating surfaces.

3,221,715
ROTARY INTERNAL COMBUSTION ENGINE
Mario Romoli, 133 Via dei Serragli, Florence, Italy
Filed Mar. 2, 1962, Ser. No. 177,035
Claims priority, application Italy, Mar. 9, 1961, 4,363/61
13 Claims. (Cl. 123—8)



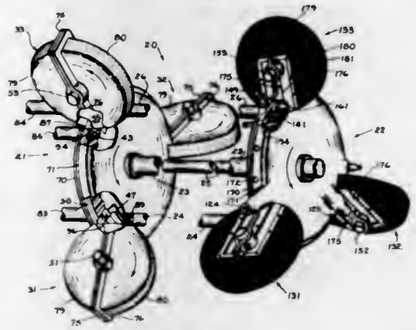
1. A rotary internal combustion engine comprising
a stationary engine housing,
comprising a peripheral wall having a cylindrical inner surface, and a pair of end walls,
a power ring rotatably mounted in said housing,
a drive shaft fixed to said power ring,
said power ring having a cylindrical outer peripheral surface sealingly engaging said inner surface of said housing peripheral wall,
said rotary power ring having a cylindrical inner peripheral surface and having oppositely disposed half-crescent shaped recesses in said inner peripheral surface and constituting combustion chambers,
said combustion chambers having terminal walls at their forward end in the direction of rotation of said power ring,
said power ring having holes therethrough, one end of said holes opening into said combustion chambers adjacent said terminal walls, and the other end of said holes opening on the outer peripheral surface of said power ring,
said housing having an intake and an exhaust port communicating successively with said other end of said holes in said power ring,
fuel ignition means secured to said housing and communicating with said other end of said holes in said power ring,
a generally circular core member of lesser diameter than the diameter of said inner peripheral surface of said power ring and mounted for reciprocation within said power ring transverse to the direction of rotation of said power ring,
a half-crescent shaped projection on said core member adapted to fit into said half-crescent shaped recesses in said power ring,
said core member having a guide slot on one side thereof,
a fixed shaft mounted on said housing and having a guide piece fixed thereon and engaging said guide slot,
said core member having a cam opening on the other side thereof, wherein the peripheral surface of said opening constitutes the cam,
cam follower means connected to said drive shaft and engaging said cam surface of said opening,
said cam means reciprocating said core member during rotation of said drive shaft to cyclically move said shaped projection into said combustion chambers to vary their volume,
and sealing means on said core member adapted to engage the inner surface of said power ring, and side wall means fixed to said power ring and extending over said core member, said drive means connected to one of said side wall means.

3,221,716
FOUR STROKES, FOUR PISTONS, I.C. ENGINE WITH TORIC CYLINDER
Orazio Careddu, Via Borgonuovo 10, Milan, Italy
Filed July 24, 1962, Ser. No. 212,761
Claims priority, application Italy, July 28, 1961, Patent 662,503
6 Claims. (Cl. 123—11)



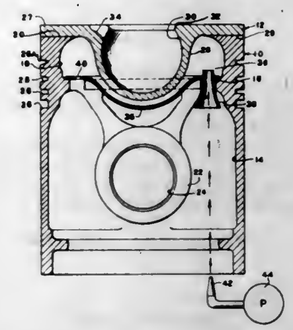
1. In a rotary internal combustion engine comprising, in combination, stator means including a toroidal cylinder having a longitudinal axis; rotor means mounted in said stator means turnable about said axis, said rotor means including two pairs of pistons and a pair of drive shafts coaxial with said axis of said cylinder and respectively connected to said pairs of pistons for rotation therewith, the pistons in each pair being diametrically opposite each other and fixedly connected to each other, said pistons being rotated in said cylinder and dividing the same into four chambers; differential gear means including a pair of side gears respectively connected to the drive shafts for rotation therewith; and control means located between said side gears for alternatingly locking one of said side gears while the other rotates through a given angle, said control means comprising a single locking member located between said side gears movable between a first locking position in which said locking member is in locking engagement with one of said side gears for preventing rotation of said one side gear about said axis and a second locking position in which said locking member is in locking engagement with the other side gear for preventing rotation of the latter about said axis, and means on said side gears for holding said locking member in said first locking position as said other side gear and the drive shaft and pistons connected thereto rotate through said given angle and for moving said locking member into said second locking position as said other side gear finishes rotation through said given angle so as to alternatingly lock one of said side gears and the drive shaft and the pair of pistons connected thereto while the other side gear and drive shaft and pistons connected thereto rotate through said given angle.

3,221,717
POSITIVE DISPLACEMENT ENERGY CONVERTING DEVICE
John P. Renshaw, 340 Pine St., San Francisco, Calif.
Filed July 10, 1961, Ser. No. 127,431
4 Claims. (Cl. 123—13)



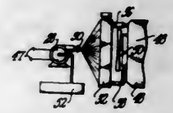
1. An improved positive displacement energy converting device comprising at least one casing, a power disk rotatably mounted in said casing, at least one abutment disk rotatably mounted on said casing with the periphery of said abutment disk being in sealing association with the periphery of said power disk during rotation of the disks, the axis of said abutment disk being substantially tangent to a circle around the axis of said power disk, means for rotating said abutment disk in synchronism with said power disk, said power disks and abutment disk each having at least one large radius section and at least one small radius section intermeshing during rotation of said disks, the improvement comprising means for venting the periphery of said small radius section of the abutment disk throughout rotation of the abutment disk, a compression chamber formed on one side of said abutment disk between the walls of said casing and said small radius section of the power disk and the large radius section of the abutment disk and the leading edge of the large radius section of the power disk, an expansion chamber formed on the other side of said abutment disk between the casing walls and the small radius section of the power disk and the large radius section of the abutment disk and the trailing edge of the large radius section of the power disk, a sealing member positioned on one side of said abutment disk between the abutment disk and said casing, said sealing member having leg portions straddling said power disk and a transverse portion connecting said leg portions radially outwardly of said large radius section of the power disk, and a sealing ring on each side of said power disk coaxial with the power disk between the face of the power disk and the walls of the casing.

3,221,718
PISTON CONSTRUCTION
Walter F. Isley, Grosse Pointe, Mich., assignor to Continental Aviation and Engineering Corporation, Detroit, Mich., a corporation of Virginia
Filed Jan. 9, 1964, Ser. No. 336,681
13 Claims. (Cl. 123—32)



1. In an internal combustion engine a piston assembly comprising,
(a) a piston member having an upper planar surface having a central opening and a substantially cylindrical recess provided in said piston member in registry with said opening and defined by an inner substantially annular surface,
(b) a top member extending entirely across said upper planar surface and having a lower surface secured to said upper surface,
(c) said top member having a central portion defining a combustion chamber cavity and extending through said opening and into said recess,
(d) said combustion chamber cavity being in the form of the major portion of a sphere,
(e) said piston member being provided with means closing the lower end of said recess, and
(f) said means being spaced from said central portion of said top member.

3,221,719
AUTOMOTIVE ASSEMBLY
William Denis Ulrich, North Redondo Beach, Calif., assignor to Gerald M. Hilby and Howard L. Johnson, both of Gardena, Calif., as equal tenants in common
Filed Jan. 11, 1963, Ser. No. 250,950
11 Claims. (Cl. 123—41.01)



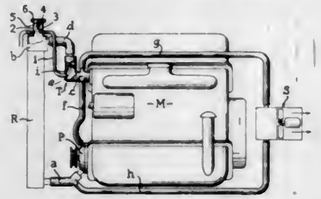
1. In combination for use with an internal combustion engine which includes carburetor means and inlet means for receiving a fuel and air mixture from the carburetor means for combustion in the engine: a conduit extending from the carburetor means to the inlet means for carrying the fuel and air mixture from the carburetor means to the inlet means, a porous element disposed across the conduit for passage therethrough of the fuel and air mixture carried by the conduit, heat exchange means disposed adjacent said porous element and functionally adapted to continuously convey through itself a stream of hot exhaust products from said engine and thereby effect heat exchange with said fuel and air mixture, flow control means responsive to temperature in the vicinity of said heat exchange means and adapted at a predetermined temperature to regulate the flow of said

hot exhaust products therethrough, said engine also having a separate cooling system comprising radiator means, conduit and circulation means adapted for moving a fluid coolant between the radiator means and engine for cooling the latter, and refrigerant container and ejector means responsive to said flow control means (at a predetermined higher temperature) for spraying a liquid refrigerant onto said radiator means to cool the same.

3,221,720
SYSTEM FOR COOLING THE ENGINE OF A MOTOR VEHICLE AND HEATING THE AIR OF THE VEHICLE

Marcel Dangauthier, Paris, France, assignor to La Publicite Francaise, Paris, France, a corporation of France

Filed Sept. 17, 1964, Ser. No. 397,093
Claims priority, application France, Nov. 13, 1963, 953,529
3 Claims. (Cl. 123—41.09)

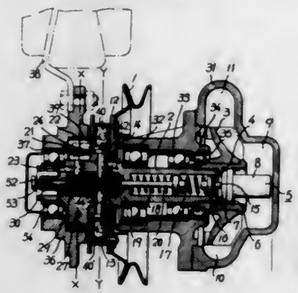


1. A system for cooling the heat engine of a motor vehicle and heating the air inside the vehicle, said system comprising a cooling radiator having a filler aperture and filler cap for closing the filler aperture, a cooling water circuit connecting the radiator to the engine, a thermostatically controlled valve inserted in the part of the circuit returning water from the engine to the radiator, said valve having no aperture therein and preventing any flow of water from the engine to the radiator when the valve is applied against the seat therefor, a by-pass conduit by-passing the valve and having one end connected to the part of the circuit connecting the engine to the valve and the other end open and located in the upper manifold of the radiator in such position that the open end is closed by the filler cap when the latter is in its operative position for closing the filler aperture.

3,221,721
RADIATOR COOLING FAN CLUTCH

Yoshikazu Kuze, 64 Chidori-cho, Chofu, Ota-ku, Tokyo Japan

Filed July 28, 1964, Ser. No. 385,665
Claims priority, application Japan, Aug. 10, 1963, 38/42,321; June 23, 1964, 39/35,243
10 Claims. (Cl. 123—41.12)

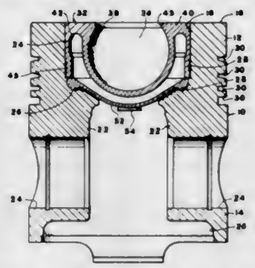


1. A clutch arrangement for the cooling fan of an automotive engine comprising in combination with a water pump having a casing and an impeller rotatably mounted in said casing on a driven shaft; a cooling fan freely rotatably mounted on said shaft, a disc attached to said fan, a cam ring secured to said disc so as to cover a portion of said shaft, a sliding block mounted on said driven shaft slidably in the radial direction therefrom, one end of said sliding block engaging with said cam ring, a thermostat mounted in said water pump to be actuated according to the temperature of the water flowing through said water pump, a movable pin actuated by said thermostat, a pushrod connected to said movable pin, an elastic body fitted into a chamber within the driving shaft, said pushrod engaging said elastic body, an axial movement of said pushrod being transmitted to said sliding block through the elastic body, said sliding block moving in a radial direction of the driving shaft of the water-pump and one end thereof engaging said cam ring thereby engaging and disengaging the cooling fan according to the water temperature.

3,221,722
PISTON

Carl F. Bachle, Grosse Pointe, Mich., assignor to Continental Aviation and Engineering Corporation, Detroit, Mich., a corporation of Virginia

Filed Jan. 3, 1964, Ser. No. 335,567
22 Claims. (Cl. 123—41.35)



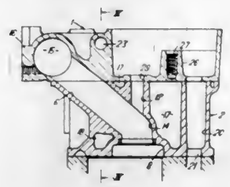
1. In an internal combustion engine a piston assembly comprising
(a) a piston member having a hollow head portion and a skirt depending therefrom,
(b) an insert member carried in said hollow head portion and having a combustion chamber cavity extending from the top face of said insert member into the interior of said head portion,
(c) means spacing said insert member from said head portion whereby to form a thermal dam therebetween,
(d) said insert member being provided with a substantially annular cavity encompassing said combustion chamber cavity,
(e) a second insert member carried in said hollow head portion by said first mentioned insert member,
(f) said second insert member closing said annular cavity and having an inlet and an outlet, and
(g) means directing a flow of cooling fluid through said inlet and into said annular cavity.

3,221,723
CYLINDER HEADS FOR INTERNAL COMBUSTION ENGINES

Alexander Williamson, Luton, England, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Feb. 26, 1964, Ser. No. 347,559
Claims priority, application Great Britain, Feb. 27, 1963, 7,797/63
7 Claims. (Cl. 123—41.77)

1. An internal combustion engine cylinder head having therein an inlet manifold, inlet and exhaust passages, and passages for the flow of liquid coolant therethrough and formed as a two-part casting, said head being divided, so as to form an upper and a lower cylinder head part, in a plane which intersects opposite sides of the head and is so spaced from the upper and lower faces of the cylinder head that said exhaust passages lie wholly within the

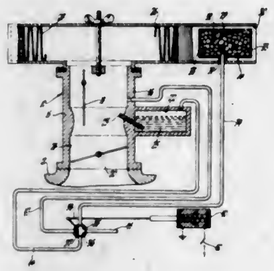


lower part of the casting and that a substantial portion of each of said inlet passages lies in said lower part of the casting; the inlet manifold and the other portion of said inlet passages lying wholly within the upper part of the casting.

3,221,724
VAPOR RECOVERY SYSTEM

Joseph T. Wentworth, Royal Oak, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Jan. 27, 1964, Ser. No. 340,298
4 Claims. (Cl. 123—136)

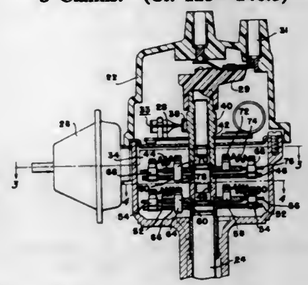


1. A fuel vapor recovery system for the fuel system of an internal combustion engine comprising,
a fuel-air mixture intake passage means for the engine,
a fuel reservoir,
air inlet means for the fuel-air mixture intake passage means including an air cleaner assembly having air duct means and containing a filter element therein,
fuel vapor adsorption means located in said air duct means and being heated by the air stream moving within the air duct means when the engine is running to cause desorption of stored fuel vapors,
vent passage means leading from the fuel reservoir and connecting with the vapor adsorption means,
a bypass passage means connecting between the vent passage means and the fuel-air mixture intake passage means,
valve control means associated with said engine, and
valve means responsive to said valve control means to close the bypass passage means when the engine is not running and to close the vent passage means when the engine is running so that fuel vapors from said reservoir are temporarily accepted and stored by the vapor adsorption means when the engine is off and are bypassed to the fuel-air mixture intake passage means when the engine is running.

3,221,725
DISTRIBUTOR HAVING CENTRIFUGAL ADVANCE AND RETARD

Clarence L. Julian, Middletown, and Robert E. Young, Anderson, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Mar. 16, 1964, Ser. No. 352,014
8 Claims. (Cl. 123—146.5)

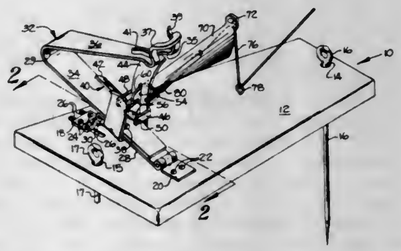


1. An ignition spark control device comprising: spark advance means responsive to pressure in an engine intake manifold that is negatively pressurized under low engine speed and low engine load conditions, said spark advance means responsive to higher loads to retard the ignition spark from a previously established advance point; spark retard means including centrifugal means for retarding the ignition spark from a point established by the spark advance means responsive to intake manifold pressure to a further retarded point during conditions of increasing engine speed, said spark retard means being limited to a predetermined amount of spark retard; and spark advance mechanism responsive to an increased engine speed to advance the spark from the limit of retard to a limit of advance as the engine speed increases to its limit.

3,221,726
TARGET TRAP

Raleigh W. Walker, Jr., 111 N. Everett St., Bennettsville, S.C.

Filed Mar. 26, 1962, Ser. No. 182,608
10 Claims. (Cl. 124—7)



1. A target trap comprising:
(a) a base;
(b) a supporting member carried by said base for pivotal adjustment about a substantially horizontal axis;
(c) means for securing said supporting member in a desired position of pivotal adjustment relative to said base;
(d) a leaf spring mounted upon said supporting member for pivotal adjustment therewith, said leaf spring having a free end portion manually movable relative to said supporting member and said base from a normal relaxed upward position to a downward deflected position and rapidly returnable from said downward deflected position to said normal upward position;
(e) a pair of spaced arm members carried by and ex-

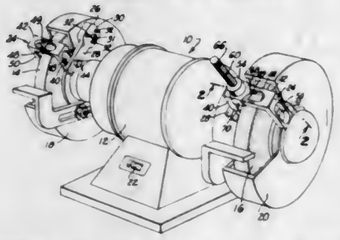
tending upwardly from said supporting member, said arm members terminating below said normal relaxed upward position of said free end portion of said leaf spring and being adapted to straddle said free end portion of said leaf spring during said manual movement thereof and guide the same to said downward deflected position; and

(f) latch means carried by one of said arm members and pivotally movable toward and away from the other of said arm members for releasably maintaining said free end portion of said leaf spring in said downward deflected position.

3,221,727
ABRASIVE WHEEL DRESSING DEVICE

Paul J. Pitcl, 12452 Woodlawn Ave., Tustin, Calif., and James M. Pepper, 2402 N. Oakmont St., Santa Ana, Calif.

Filed May 31, 1963, Ser. No. 284,663
1 Claim. (Cl. 125—11)



A manually operated grinding wheel dressing device, said device comprising:

a support arm for attachment to a grinding wheel guard, said support arm being attachable to the grinding wheel guard about a single site;

adjustable means for orienting the support arm with reference to the grinding wheel guard to place said support arm in a plane perpendicular to the major axis of the grinding wheel, said orienting means being adjustable to move the support arm toward and away from the grinding wheel guard about the site of attachment of said support arm to said grinding wheel guard and said orienting means including leveling screws threadedly held to said support arm with their inner ends abutting against the wall of the grinding wheel;

a dressing frame removably held to the support arm, said frame having a slotted first arm paralleling when installed the major axis of the grinding wheel and a slotted second arm perpendicularly disposed to the first arm and paralleling the face of the grinding wheel with the slot of the first arm extending across the width of the grinding wheel and with the slot of the second arm extending inwardly from the perimeter of the grinding wheel;

a dressing tool holder adapted to be slidably held to a single one of said first and said second arms of the dressing frame; and

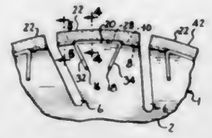
a dressing tool threadedly held to the dressing tool holder with its major axis perpendicular to a surface of said single one of the two arms and with the working end of the tool reaching through the slot of the arm to the proximity of the grinding wheel.

3,221,728
CIRCULAR SAW

Frederick W. Lindblad, 835 Illinois Ave., Aurora, Ill.

Filed Feb. 19, 1963, Ser. No. 259,551
11 Claims. (Cl. 125—15)

1. A saw comprising a circular disc having a reduced thickness peripheral portion and circumferentially spaced recesses at its periphery that extend inwardly therefrom, a cutting edge comprising arcuate segments that include diamond abrasive particles embedded in a matrix, said segments surrounding the periphery of the disc and each having a notch portion which is a counterpart of and fits over the reduced thickness peripheral portion of the disc, the counterpart surfaces of the disc and segments being of a shape to align the segments on the disc and center them between opposite sides of the disc, a bonding film

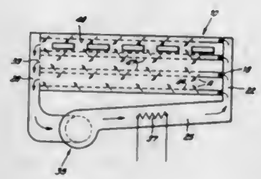


interposed between said counterpart surfaces for rigidly securing the segments to the disc, each segment being of an axial thickness geater than that of the disc adjacent to but spaced from said reduced peripheral edge portion, and means secured to the segments and the disc and lying within the recesses and providing deformed mechanically interlocked radially and peripherally interfering surfaces therebetween and operable in addition to said bonding film for retaining each segment against peripheral and circumferential movement on the disc.

3,221,729
OVEN SUPPLIED WITH HOT AIR THROUGH FORAMINOUS DUCT-SHELVES

Silas V. Beasley, East Dundee, and George K. Harding, Jr., Carpentersville, Ill., assignors to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware

Filed Oct. 22, 1962, Ser. No. 231,978
3 Claims. (Cl. 126—21)

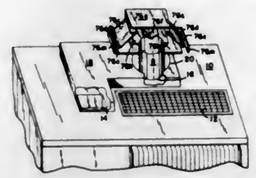


3. A food processing oven comprising an enclosure including first and second parallel side walls; a plurality of vertically spaced horizontally extending article supporting ducts mounted within said enclosure having foraminous upper and lower horizontal wall portions and defining vertically spaced food processing spaces therebetween; a plurality of air inlet openings through said first side wall respectively communicating with said ducts; said ducts having imperforate upper and lower wall portions extending a predetermined distance from said inlet opening, whereby a generally horizontal flow of air is established through the portion of each of said ducts adjoining said air inlet openings; a plurality of air outlet openings in said second side wall respectively communicating with said food processing spaces; and means for circulating heated air into said enclosure through said inlet openings and withdrawing air from said enclosure through said air outlet openings.

3,221,730
DRAFT DIVERTER HOODS

Robert L. Hughes, West Covina, John H. Hollingsworth, Fullerton, and Wayne H. Garside, Arcadia, Calif., assignors to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware

Original application Oct. 26, 1961, Ser. No. 147,848 Divided and this application May 27, 1963, Ser. No. 283,521
2 Claims. (Cl. 126—307)

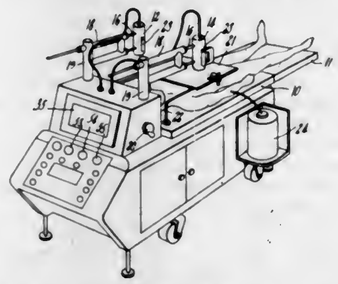


1. A vent termination hood for deflecting gaseous products of combustion flowing from a flue pipe comprising a base member having a flue accommodating opening therein, opposed side plates connected at the lower edges thereof to opposed edges of said base member, a cover connected to opposed upper edges of the side plates, inclined end plates connected to said side plates to define openings with the unconnected ends of the cover, each of said inclined end plates having a lower flange extending outwardly in spaced relation to the unconnected edges of and parallel to said base member to form an air passage, and a vertical baffle member opposite each flange and forming with each flange and said base plate a pair of openings communicating with said air passage, the plane of which is substantially parallel to the plane of the base member.

3,221,731
APPARATUS FOR EVALUATING THE CONDITION OF THE HEART MUSCLE

Martin Annis, 11 Allen Ave., Waban, Mass.; George W. Clark, 133 Rawson Road, Brookline, Mass.; Gilbert S. Greenberg, Jr., 80 Orange St., Reading, Mass.; Frank R. Paolini, 8 Debra Lane, Framingham, Mass.; and Edwin C. Williams, Jr., John St., Southboro, Mass.

Filed May 31, 1962, Ser. No. 198,788
10 Claims. (Cl. 128—2.05)



1. A machine for determining the condition of the heart muscle for use with means for infusing radioactive material of the type absorbed by the body muscles into the blood system of a patient,

said apparatus comprising in combination,

means for monitoring the radioactivity of the patient's blood and providing a signal indicative thereof,

two radiation detector units,

each of said radiation detector units being mounted for adjustment in complementary position relative to the chest of the patient, one on the left side and the other on the right side,

circuitry responsive to each detector unit for providing a signal indicative of the sensed radiation,

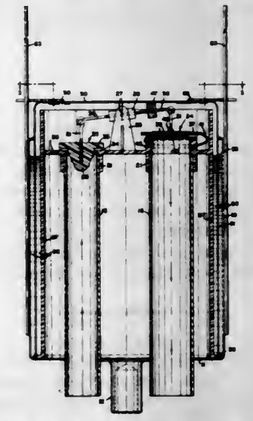
means for subtracting the signal from the detector unit positioned relative to the right side of the patient from the signal from the detector unit positioned relative to the left side of the patient to provide a difference signal,

and means for recording said blood radioactivity signal and said difference signal as functions of time.

3,221,732
MEASUREMENT OF EXPIRED TIDAL AIR VOLUME

Ronald A. Miller, 207 Woodland Road, Syracuse, N.Y., and John R. Potrafka, Otter Lake, N.Y.

Filed Feb. 11, 1963, Ser. No. 257,388
5 Claims. (Cl. 128—2.08)



5. Apparatus for the measurement of pulmonary tidal ventilation comprising a vertically disposed tank member having a bottom wall and being open at the top, intake and exhaust tubes extending upwardly from the lower portion of said tank and terminating in the upper portion thereof, means connected to the lower end of said intake tube for conducting tidal expiration from a patient to said inlet tube, intake and exhaust valves connected to said tubes respectively for opening and closing the same, said intake valve being normally in closed position and being movable to and maintained in open position by the in-flow of tidal expiration and returning to closed position upon cessation of such in-flow, motion transmitting means connecting said intake and exhaust valves for operating the same alternately in unison, a diving bell member mounted for vertical movement in said tank member and enclosing the area above the upper ends of said tubes, a volume of water in said tank member forming a water seal for the lower open end of said diving bell, one of said members bearing indicia, and the other member having a portion cooperable with said indicia for indicating the tidal volume of such in-flow.

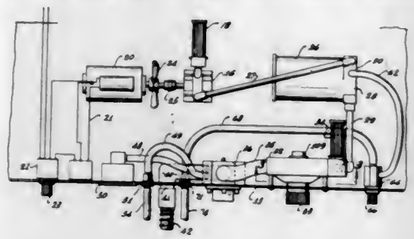
3,221,733
PRESSURE BREATHING THERAPY UNIT

Noel F. Beasley, Malibu, Calif., assignor to Bennett Respiration Products, Inc., Santa Monica, Calif., a corporation of California

Filed Oct. 2, 1961, Ser. No. 142,077
13 Claims. (Cl. 128—29)

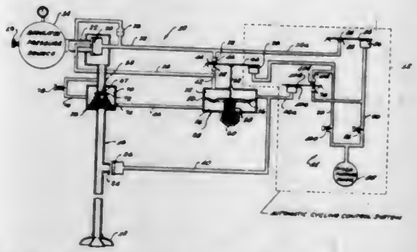
1. In a respiration unit having an air pump and valve means connected to said pump for controlling air flow to a patient, a flow and pressure regulator in series with and between said pump and valve means, said regulator comprising: a body; a movable diaphragm secured to

said body and cooperating therewith to define a pressure chamber; means in said body forming an inlet passage; aspirator means mounted on said body and arranged for receiving compressed air from said pump and discharging into said chamber through said inlet passage, said aspirator means being powered by compressed air from said pump to aspirate ambient air into said chamber at a rate dependent upon the pressure in said chamber; means in said body forming an outlet passage from said chamber for delivering air to said valve means; means in



said body forming a relief passage from said chamber to the atmosphere; seal means carried by said diaphragm and movable into and out of passage-closing relation wherein it blocks flow through said relief passage; and means on said body biasing said seal means into said relation, said biasing means being movable responsive to pressure in said chamber above a predetermined maximum to permit said seal means to move out of said relation, thereby permitting flow through said relief passage.

3,221,734
RESPIRATION APPARATUS
Noel F. Beasley, Santa Monica, Calif., assignor to Bennett Respiration Products, Inc., Santa Monica, Calif., a corporation of California
Filed Mar. 28, 1963, Ser. No. 268,704
11 Claims. (Cl. 128—29)



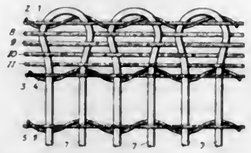
1. Respiration apparatus, comprising:
a regulated source of pressurized gas, the pressure of said gas being adapted to be preset;
a mask adapted to be connected to a patient's respiratory system;
delivery conduit means coupled at one end to said source and at the other end to said mask;
valve means in said conduit means adapted to be cycled between an inspiration position, wherein flow of gas takes place through said conduit means from said source to said mask, and an expiration position wherein such flow is blocked;
a variable flow restrictor in said delivery conduit means including orifice means in said delivery conduit means and closure means cooperable with said orifice means and movable relative thereto to vary the size thereof, said closure means being biased toward a position wherein said orifice is of a minimum size;
diaphragm type sensing means operatively connected to said valve means and to said conduit means, said sensing means being responsive to a predetermined negative pressure at said mask for cycling said valve means to its inspiration position and to a predetermined minimum flow independent of absolute pressures in said conduit means for cycling said valve means to its expiration position;
first adjustment means for adjustably establishing the predetermined negative pressure at which said sensing means cycles said valve means to its inspiration position;
and second adjustment means substantially independent of said first adjustment means for adjustably establishing the predetermined minimum flow at which sensing means cycles said valve means to its expiration position.

3,221,735
ELASTIC TRACTION DEVICE AND SCALE THEREFOR
Abraham Manoah Goodman, Bantry Bay, near Cape Town, Cape Province, Republic of South Africa (P.O. Box 2219 and Room 616, Netherlands Bank Bldg., 85 St. George's St., Cape Town, Cape Province, Republic of South Africa)
Filed May 23, 1962, Ser. No. 199,215
Claims priority, application Republic of South Africa, July 18, 1961, R 61/727
3 Claims. (Cl. 128—75)



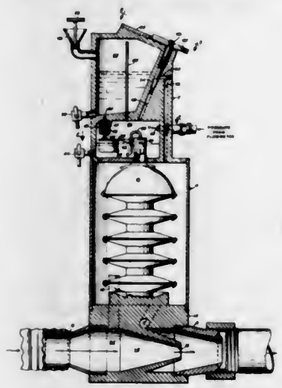
2. In a traction assembly that is utilized for therapeutic purposes in the stretching of various parts of the human body, a halter that is adapted to be placed around the head and jaw of a patient for exerting a tensile force on a cervical portion of the patient and that terminates in opposed upper ends, a pair of connecting members, each of which is interconnected to an end of said halter and to a fixed support and cooperating with each other to equally distribute the application of tensile force on the cervical portion of the patient, each of said connecting members being formed in a closed band of substantially elasticised material and including a web member and an adjustable web portion that is formed as an extension of said web member, a first indicating means applied to the web member of each connecting member, and a second indicating means located in fixed relation with respect to the web member of each connecting member and extending longitudinally thereof in adjacent relation to said first-named indicating means, one of said indicating means for each connecting member being defined by a graduated scale and the other being defined by an elongated indicator, each graduated scale being calibrated to indicate the load that is applied to the cervical portion of the patient placed under tension by said assembly, buckle means secured to the free end of each of said web members, each of said adjustable web portions projecting through a buckle means, one of said indicating means in each connecting member being movable relative to the other when its web member is resiliently expanded in placing the cervical portion of the patient under tension so as to indicate the load applied by the web member to said cervical portion.

3,221,736
DRESSINGS AND BANDAGES
Friedrich Heitzmann, Wimbergergasse 29, Vienna, Austria
Continuation of application Ser. No. 162,633, Dec. 19, 1961, which is a continuation of application Ser. No. 855,050, Nov. 24, 1959. This application Apr. 22, 1964, Ser. No. 363,664
Claims priority, application Austria, Nov. 24, 1958, A 8,147/58
5 Claims. (Cl. 128—156)



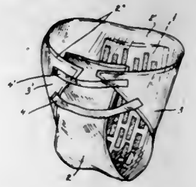
1. A bandage for dressing wounds, comprising a ground warp consisting of crinkled yarn, a weft consisting of uncrinkled yarn of larger diameter than that of the warp yarn for maintaining spacing for the warp yarn when interweaving the warp yarn with the weft yarn, said ground warp including pairs of straight and twisted warp threads, the straight thread of each pair overlying said weft along the entire length of each straight thread, and each straight thread being situated in its entirety on one side of said weft, the twisted thread of each pair being interwoven with its respective associated straight thread and crossing the weft at the side thereof opposite from said one side, each pair of warp threads being laterally spaced from the next adjacent pair at regular intervals across the bandage in a gauze weave, and a plurality of further straight warp threads interwoven with said weft yarn in a plain weave intermediate the two outermost pairs of straight and twisted selvedge ground warp threads, said weft comprising pairs of subsequent yarns looped around the peripheral one of said selvedge ground warp thread pairs, the yarns of each weft pair crossing all of said warp threads in adjacent relationship and spaced apart from the yarns of adjoining weft pairs.

3,221,737
DEVICE FOR VAPORIZATION OF VOLATILE ANESTHETIC LIQUIDS
James A. Felts, 517 Bainbridge Road, Marion, Ill.
Filed July 25, 1962, Ser. No. 212,409
10 Claims. (Cl. 128—188)



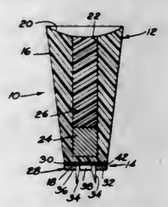
2. In combination, a breathing circuit and a metering device for liquid anesthetics, said metering device having a pressure chamber partially filled with a liquid anesthetic, means for supplying gas at a constant rate of flow to said pressure chamber, means for regulating the pressure in said chamber including a gas duct with an adjustable obstruction therein passing from said pressure chamber to said breathing circuit, a fluid passage leading from a portion of said pressure chamber submerged by liquid anesthetic to said breathing circuit.

3,221,738
METHOD FOR MANUFACTURING DIAPERS AND THE LIKE, AND A DIAPER MANUFACTURED IN ACCORDANCE WITH THIS METHOD
Gustaf E. Ekberg, Boxholm, Sweden, and Tord David Green, Kopmangatan 1, Vasteras, Sweden
Filed Apr. 1, 1963, Ser. No. 269,612
Claims priority, application Sweden, Apr. 5, 1962, 3,803/62
3 Claims. (Cl. 128—287)



1. A diaper or similar protective garment comprising, a pair of relatively thin sheets of thermoplastic material joined together and sealed at their marginal edges to provide a pocket between them, a core of liquid adsorbing material disposed in said pocket between the sheets, one of said sheets being liquid impermeable and adapted to be disposed outwardly from the user, the other of said plastic sheets at least in the area of said core comprising an embossed network of water impermeable plastic material adapted to be disposed inwardly toward the user, said network being defined by a plurality of spaced apart areas in the plastic sheet which are liquid penetrable, each of said spaced apart areas having a plurality of minute perforations distributed throughout said area, said network providing structural strength for said inner sheet while said spaced apart areas pass body liquid therethrough for rapid adsorption in said core.

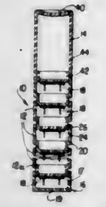
3,221,739
INJECTION DEVICE
Sol Roy Rosenthal, 230 E. Delaware Place, Chicago, Ill.
Filed Mar. 26, 1962, Ser. No. 182,220
7 Claims. (Cl. 128—253)



7. An injection device comprising, in combination, a holder, a readily disposable skin perforating member including a thin substantially flat disc having a plurality of needle-like projections extending in spaced apart relation from one side of said disc, said needle-like projections being adapted simultaneously to puncture and penetrate the skin to a depth substantially equal to their length and to inject a substance into the body, said perforating member being disposed with the side of said disc opposite said first mentioned side facing said holder, a cover for said perforating member interposed between said holder and said disc so as physically to isolate said holder from said perforating member and to tend to

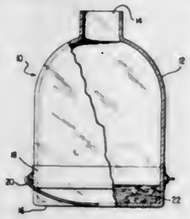
prevent contamination of said holder by substances on said perforating member and by body fluids released by the penetration of said needle-like projections into the skin, and means for detachably securing said perforating member on said holder with said cover therebetween, whereby an injection may be made by grasping said holder and pressing said projections against the skin, and thereafter said perforating member and cover may be removed from said holder and be replaced by another like perforating member and cover preparatory to making another injection.

3,221,740
INJECTION DEVICE
Sol Roy Rosenthal, 230 E. Delaware Place, Chicago 11, Ill.
Filed Aug. 31, 1962, Ser. No. 220,776
6 Claims. (Cl. 128—253)



1. An injection device for making successive injections comprising, a column of superposed injection units, each said injection unit including a skin perforating portion and a substantially rigid backing portion, each said skin perforating portion including a plurality of needle-like projections extending from one side thereof and said backing portions including means for joining said units together in said column with all of said projections extending toward a first end of the column, a holder in said column, and means for removably joining said holder to said units adjacent the second end of said column, said holder being of a size easily to be gripped by the fingers and having an axial length greater than the axial length of each of said injection units, whereby an injection may be made by grasping said column and pressing against the skin said projections of the unit at said first end of said column, whereupon said last mentioned unit may be removed from said column, and thereafter successive injections may be made in like manner with succeeding units.

3,221,741
CONTAINER FOR COLLECTING AND STORING BLOOD HAVING ANTICOAGULANT MEANS THEREIN
Harry H. Le Veen, 85—35 Midland Parkway, Jamaica, N.Y.
Filed June 18, 1962, Ser. No. 203,112
1 Claim. (Cl. 128—272)



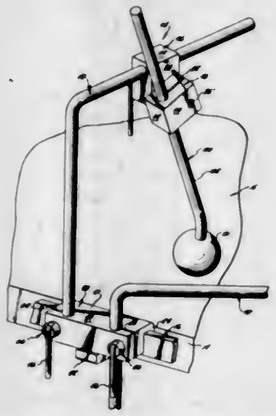
A parenteral apparatus for collecting and storing blood, comprising a container having side walls, a bottom and an opening at its top, a blood anti-coagulant in said container, means within said container for diminishing blood cell trauma upon initial contact of blood with said anti-coagulant, said means retarding the mixing of blood initially put into said container with the entire mass of said anti-coagulant, said means comprising an absorbent pad insoluble in blood, said pad covering substantially the entire bottom surface of said container and being of substantial thickness, said pad being saturated with anti-coagulant, the anti-coagulant being dispersed throughout substantially all of the interstices of said absorbent pad.

3,221,742
RECEPTACLE FOR ENTEROSTOMY APPLIANCE
Egon Orowan, 44 Payson Terrace, Belmont, Mass.
Filed Jan. 9, 1962, Ser. No. 165,193
17 Claims. (Cl. 128—283)



1. An enterostomy appliance comprising a receptacle and a disc, said disc having an opening therein and having means for attaching said disc to the body with said opening of said disc located over the stoma of the patient, said receptacle comprising two pliable walls joined along at least the major part of their margins to form a pliable envelope-like container, one wall containing an opening for receiving the discharge from the stoma of the patient, means connecting said receptacle with said disc with said opening of said receptacle in communication with said opening of said disc and with said receptacle lying generally flat against the body, each of said walls comprising a multi-layered sheet in which at least one layer comprises a substantially crystalline non-polymeric material.

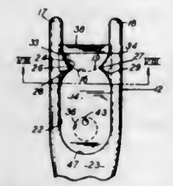
3,221,743
SYSTEM AND APPARATUS FOR POSITIONING AND SECURING SURGICAL IMPLEMENTS
Richard C. Thompson, San Mateo, and Walter H. Goodwin, Sierra Madre, Calif., assignors to Du Pa Co., Inc., Arcadia, Calif., a corporation of California
Filed Aug. 13, 1962, Ser. No. 216,513
13 Claims. (Cl. 128—303)



1. In combination, a surgical accessory having a cylindrical portion and a patient supporting structure having a

side rail, apparatus for positioning and supporting the accessory relative to the rail, the apparatus comprising:
(a) an elongated accessory support bar having a cylindrical portion remote from the rail,
(b) clamp means engaged with the rail and connected to the accessory support bar for positioning same relative to the rail,
(c) releasable universal joint clamp means supporting and positioning the surgical accessory relative to the accessory support bar including
(1) integral bifurcated first means engaged with the support bar substantially circumferentially of the cylindrical portion of the bar for axial and angular movement relative thereto,
(2) integral bifurcated second means engaged with the accessory substantially circumferentially of the cylindrical portion thereof for axial and angular movement relative thereto,
(3) third means engaged between the first and second means and providing continuous angular movement between the first and second means, and
(4) selectively operable fourth means operatively connected to the first, second, and third means and operable
(i) to bias together the bifurcations of the first means to secure the first means from angular and axial movement relative to the support bar,
(ii) to bias together the bifurcations of the second means to secure the second means from angular and axial movement relative to the accessory, and
(iii) to forcibly engage the first and second means with the third means to secure the first and second means from angular movement relative to the third means regardless of the positions of the first and second means relative to the third means substantially at the same time the bar and the accessory are secured from movement.

3,221,744
SURGICAL KNIFE
Homer H. Stryker, Kalamazoo, Mich., assignor to Stryker Corporation, a corporation of Michigan
Filed Mar. 11, 1963, Ser. No. 264,310
7 Claims. (Cl. 128—305)

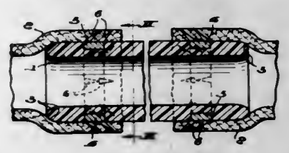


1. A cutting instrument, comprising:
an elongated, substantially rigid member having curved portion near the front end thereof;
a pair of spaced, rigid probes extending from said front end of said member, said probes being substantially parallel with the adjacent part of said portion and defining a frontwardly opening notch;
wall means defining a shallow recess in one side of said portion adjacent said notch, said recess being slightly wider adjacent said probes than the distance between said probes, said portion having an opening communicating between said recess and the reverse side of said member, said opening being spaced from the probes;
projection means extending over said recess between said opening and said probes; and
a thin blade sharpened along the front edge thereof and removably disposed in said recess between said projection means and said wall means, said blade being snugly held within said recess completely between said one side and said reverse side by said projection means and the rearward edge of said blade abutting said wall means when said cutting edge extends between said probes, said blade having engagement means thereon accessible through said opening.

3,221,745
METHOD OF BONDING BODY TISSUE TOGETHER USING METHYLENEMALONIC ACID ESTERS
Harry W. Coover, Jr., Kingsport, Tenn., and Newton H. Shearer, Jr., Zurich, Switzerland, assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed Sept. 12, 1962, Ser. No. 223,241
4 Claims. (Cl. 128—334)

1. The method for surgical bonding of body tissues which comprises applying to at least one of the tissue surfaces to be bonded a thin film of an adhesive composition comprising a monomeric dialkyl ester of methylenemalonic acid, bringing together the surfaces to be bonded and polymerizing the thin film of monomer while in contact with such surfaces.

3,221,746
SURGICAL CONNECTING DEVICE
John William Noble, 5747 Union Ave. NE., Alliance, Ohio
Filed Jan. 25, 1963, Ser. No. 253,890
3 Claims. (Cl. 128—334)

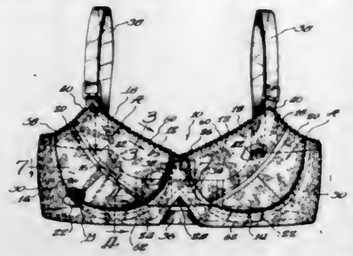


1. A device for connecting tubular canal members, such as blood vessels, of the human or animal body which comprises a section of flexible and resilient tubing having first and second rounded ends for insertion into said canal members, said tubing further having at least one groove extending circumferentially of said tubing and intermediate the said ends thereof, annular gripping means of substantially rigid material compatible with body tissue anchored in said circumferential groove, said gripping means including two sets of gripping barbs, one set of said barbs being anchored adjacent said first end of said tubing and the other set being anchored adjacent said second tubing end, said barbs extending outwardly from said gripping means and being angularly directed away from their respective tubing ends so that said tubular canal means are held in coaptation when said device is properly positioned therein.

3,221,747
UNDERGARMENTS
Ronald L. Blair, 2650 W. Belden Ave., Chicago, Ill.
Filed May 27, 1963, Ser. No. 283,260
3 Claims. (Cl. 128—479)

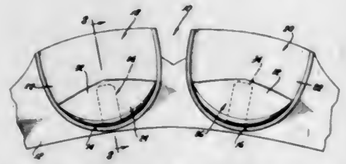
1. A brassiere comprising a pair of outer cups connected to a panel extending between the cups, each said outer cup formed of a plurality of sections joined together to form a cup, said sections having an inner top edge and a connecting outer top edge, a pair of inner contoured cups, with each inner cup positioned inside its respective outer cup, each said inner contoured cup formed of a generally foam-like rubber material, each said inner cup

non-detachably connected to the outer cup along lines of stitching extending only along said top edges with the remaining edge of said inner cup free of the outer cup



thereby providing a hinging action along said connection and said inner cup being free to float with respect to the outer cup.

3,221,748
PADDED BRASSIERE
Albert A. Glasser, 12819 Morrison St., North Hollywood, Calif.
Filed Jan. 3, 1964, Ser. No. 335,511
3 Claims. (Cl. 128—480)



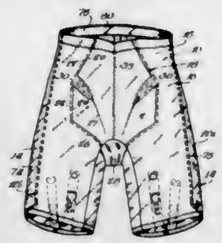
1. In a brassiere: a pair of breast cups; body encircling means for holding the breast cups in place upon the body of the wearer; said breast cups having a layer exposed on the inside of the cups made of material having a substantial nap characteristic; a pad for each cup adapted to be selectively positioned in the cup and having an inside surface; and a plurality of fastener elements having the characteristics of Velcro hooks and attached to the said inside surface of the pad and capable of interlocking the nap of said material for securing the pad at said selected position, said pad substantially overlying said fastener elements; said pad, when in any selected position, overlying only a part of said inside exposed layer.

3,221,749
GIRDLE
Nicholas A. Marino, Chicago, Ill., assignor to Sears, Roebuck and Co., Chicago, Ill., a corporation of New York
Filed Mar. 6, 1964, Ser. No. 349,885
4 Claims. (Cl. 128—528)



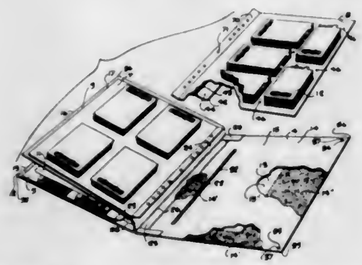
1. A panty girdle comprising a main body predominantly of elastic fabric having front and back portions, leg portions and a crotch portion, and a pair of vertically stretchable elastic panels each disposed in the middle part of the back portion directly under each buttock portion and in the upper part of each leg element, each panel extending a substantial distance into and secured to the upper part of the crotch portion, and each panel in its normal position being generally elongate in a horizontal direction with a portion of maximum width substantially at its mid-portion to afford maximum stretchability thereof within the crotch area.

3,221,750
UNDERGARMENT
Ronald L. Blair, 2650 W. Belden Ave., Chicago, Ill.
Filed Dec. 4, 1963, Ser. No. 327,891
7 Claims. (Cl. 128—540)



1. An undergarment comprising, a front section and a rear section joined by opposite side sections adapted to encircle the body of the wearer around the waist and downwardly below the hips, with said front section extending over the abdomen and said rear section extending over the hips of the wearer, said rear section having controlled and released areas, said rear section formed of a main outer panel and an inner panel, said inner panel being joined to said main outer panel and extending substantially from the top of the hips of the wearer to substantially the crotch of the wearer, said inner panel having an upper portion formed of oppositely extending wing-like members and a depending lower body portion, each said wing-like member having a rear edge, said depending lower body portion having side edges, said inner panel having a cutout between the rear edge of each of the wing-like members and the adjacent side edges of the depending lower body portion, the area bounded by the configuration of said inner panel forming the controlled area of the rear section and the area within the cutouts forming the released areas.

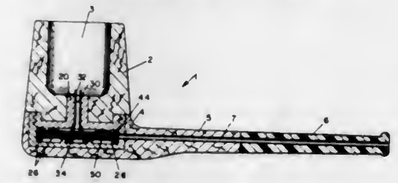
3,221,751
RECORD KEEPING APPARATUS
Skeavington H. Brandon, P.O. Box 457, Harrison, Ark.
Filed July 10, 1963, Ser. No. 294,069
2 Claims. (Cl. 129—34)



1. A folder comprising a plurality of backing sheets with inner edges, means flexibly binding said inner edges together in spaced apart relation for opening in the manner of a book, said backing sheets having an elongate slot

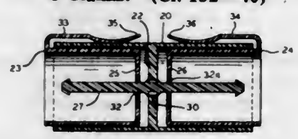
adjacent the respective inner edges, at least one binding sheet for each of said backing sheets, means on the binding sheet extending into said slots for removably securing said binding sheets to said backing sheets, said binding sheets respectively having removable securing means thereon for fastening paper records thereto whereby said folder permits convenient classification of and reference to said records, said removable securing means on said binding sheets comprising a plurality of female pressure clasp openings distributed over said binding sheets in equally spaced apart pairs and a plurality of paper fasteners, said fasteners each having a relatively stiff elongated body and opposite elongated bendable wings extending from said body for insertion through papers to be secured, said fastener body having a pair of downwardly projecting male pressure clasp members spaced apart for reception in a selected pair of said binding sheet pressure clasp openings for removably securing said respective fasteners to said binding sheet.

3,221,752
SMOKING PIPE TRAP AND FILTER CHAMBER
Allen D. Strahm, 3020 S. Madison, Tulsa, Okla.
Filed July 2, 1962, Ser. No. 206,887
4 Claims. (Cl. 131—184)



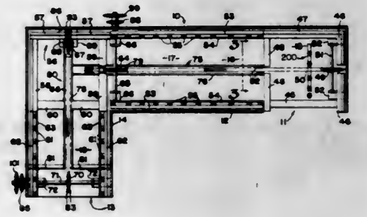
1. A smoking pipe comprised of,
a bowl including an external peripheral threaded portion at the bottom thereof and a downwardly extending annular baffle;
a base section including a stem and a mouthpiece, provided with an internally threaded portion to receive therein said threaded portion of said bowl to form a trap and filter chamber, said base provided with an upwardly extending annular baffle of diameter smaller than said downward baffle;
a removable filter element of diameter slightly larger than said downward baffle extending substantially horizontally in said chamber between and transversely touching said downward and said upward baffles;
an inlet smoke passage from said bowl into said chamber;
and an outlet smoke passage from said chamber into said stem and mouthpiece.

3,221,753
HAIR STYLING ROLLER WITH ROTATING HAIR CLAMPS
Edward A. Zielinski, Berwyn, Ill., assignor to Cadolin, Inc., Chicago, Ill.
Filed June 14, 1962, Ser. No. 202,489
6 Claims. (Cl. 132—40)



6. In a hair styling form, a pair of inner rollers and an outer roller journalled thereon, said inner rollers being positioned generally coaxially with said outer roller, said inner rollers having external diameters conforming closely to the internal diameter of said outer roller, said outer roller being formed and adapted for the styling of human hair thereon, said outer roller having an external surface with a substantially uniform diameter from one end to the other, said inner rollers being movable axially of said outer roller between positions extended outwardly and away from the ends of said outer roller and positions withdrawn within said outer rollers, a shaft positioned internally of said outer roller and extending along the axis thereof, said outer roller having internal support means for supporting said shaft in said position, said inner rollers being slidably mounted on said shaft, said shaft and said inner rollers having interengageable abutment means for limiting movement of said inner rollers to said outwardly extended position, means limiting inward movement of said inner rollers, each of said inner rollers having a clip extending generally longitudinally thereof and positioned to overlie the surface of said outer roller while being closely adjacent thereto when said inner rollers are in the withdrawn position so as to embrace a strand or curl of hair at a selected position between the surface of said outer roller and said clips, said inner rollers and clips being rotatable with respect to said outer roller in both of said positions, said clips overlying a minor portion of the circumference of the outer surface of said outer roller.

3,221,754
DISHWASHING MACHINES
Frederick W. Robson and William A. Wahl, Rochester, N.Y., assignors to Toledo Scale Corporation, Toledo, Ohio, a corporation of Ohio
Continuation of application Ser. No. 242,536, Dec. 5, 1962. This application Sept. 28, 1964, Ser. No. 402,686
4 Claims. (Cl. 134—68)

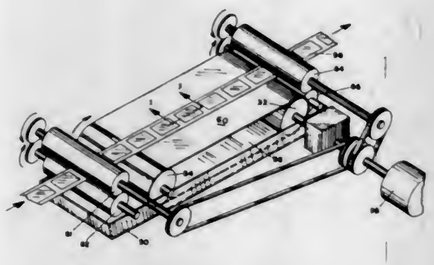


1. A conveyor dishwashing machine comprising, in combination, an L-shaped cabinet defining a wash space and having two joining legs the first of which defines an entrance and the second of which defines an exit at the ends of the respective legs, an entrance frame within the wash space at the entrance upon which dish racks are placed, spray means within the wash space for spraying liquid onto articles in the dish racks, a transfer frame at the junction of the legs, track means between the frames and between the transfer frame and the exit, the frames and the track means being so arranged that dish racks can be moved from the entrance frame along the respective track means to the transfer frame and from the transfer frame along the respective track means to the exit, conveyor means one in each leg of the L for moving dish racks through the leg of the L defining the entrance continuously and for moving dish racks through the other leg of the L intermittently, the conveyor means comprising lug means for moving racks placed upon the entrance frame along the respective track means to the transfer frame and from the transfer frame along the respective track means to the exit, signal means, spray operating means for turning the spray means

on and off, and control means for keeping the conveyor means synchronized and for automatically operating the signal means and the spray operating means in accordance with the position of the lug means of the continuously operable conveyor means relative to the entrance.

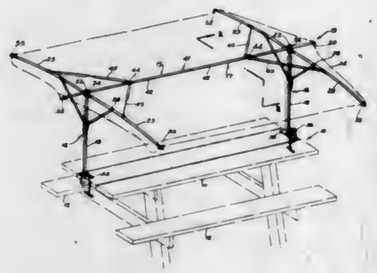
3,221,755
DATA PROCESSING APPARATUS
Malor Wright, Lexington, Mass., assignor to Itek Corporation, Lexington, Mass., a corporation of Delaware
Original application Aug. 22, 1961, Ser. No. 133,268. Divided and this application June 15, 1964, Ser. No. 387,252

4 Claims. (Cl. 134—122)



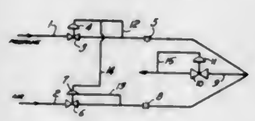
1. Processing apparatus for fluid treatment of strip material comprising, in combination:
fluid carrier means for supporting and transporting a layer of processing fluid;
means for supplying a layer of processing fluid to said fluid carrier means;
drive means for moving said fluid carrier means with said layer of processing fluid thereon at a first speed;
means for moving a strip of material relative to and in operative juxtaposition with said layer of processing fluid at a second speed so that said layer of processing fluid provides support for said strip of material.

3,221,756
AWNING ASSEMBLY
Bert A. Rupright, Lansing, Mich.; Helen Rupright, widow of said Bert A. Rupright, deceased, assignor of fifty percent to Louis Wendrow, Lansing, Mich.
Filed Feb. 7, 1962, Ser. No. 171,739
9 Claims. (Cl. 135—5)



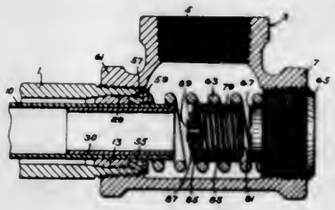
1. An awning comprising a frame and a cover, said frame including an pair of upright standards having a pin extending from the upper end of same, a ridge pole connecting the upper portions of said standards and having openings to receive said pin on the upper end of each of said standards to releasably fasten said ridge pole on said standards, a pair of rafters pivotally connected to and extending with free outer ends from the upper portion of each of said standards generally at right angles to said ridge pole, fixed location pivot means on said ridge pole spaced inward from the ends of same, braces pivotally connected to and extending from said rafters to intermediate portions of said standards, rafter adjusting means vertically adjustably mounted on said standards and pivotally connected to said braces, braces extending from said fixed location pivot means of said ridge pole to said rafters, means releasably fastening the ends of said last named braces to said rafters, and said cover overlying said frame and having sockets receiving said free outer end portions of said rafters.

3,221,757
METHOD AND APPARATUS FOR MIXING GASES
Robert P. Newton, Jr., P.O. Box 506, Orangeburg, S.C.
Filed Mar. 29, 1963, Ser. No. 269,124
9 Claims. (Cl. 137—9)



1. The process of accurately mixing fluids of different physical characteristics to obtain a mixture of predetermined constant physical characteristics which comprises, entraining separate streams of fluids under source pressures, adjusting the pressures of the streams to substantially the same valve, maintaining the adjusted pressure substantially constant in a first one of the separate streams, controlling the pressure in a second one of the separate streams in accordance with the pressure in the first stream, reducing the pressure in each stream in substantially equal and significant amounts, and combining the separate streams of reduced pressure into a single comingled stream.

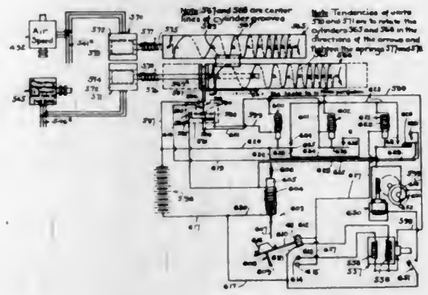
3,221,758
METHOD AND APPARATUS FOR SEALING A PIPE LINE
Lynn H. Morse, Venice, Fla., assignor to Omco Inc., Worcester, Mass., a corporation of Massachusetts
Filed Mar. 22, 1962, Ser. No. 181,668
8 Claims. (Cl. 137—15)



5. Sealing means for a pipe line having in combination a T having two coaxial hubs, a pipe having one end fixed in one hub, a plug in the other hub, a coil spring in coaxial relation with the pipe and located between the pipe and the plug, a cylindrical axially expandible heat-responsive element coaxially and slidably disposed in the coil spring and movable independently of the latter, and closure means for the pipe on the end of the element confronting the end of the pipe.

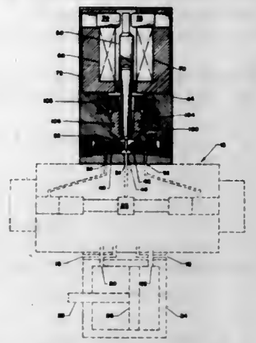
3,221,759
INSTRUMENTS FOR CONTROLLING OPERATIONS, TO ENSURE OPTIMUM OPERATING CONDITIONS OF SUCH OPERATIONS
Thomas A. Banning, Jr., 5500–5520 S. Shore Drive, Chicago, Ill.
Application May 29, 1957, Ser. No. 662,542, now Patent No. 3,096,469, dated July 2, 1963, which is a division of application Ser. No. 248,340, Sept. 26, 1951, now Patent No. 2,794,507, dated June 4, 1957, which is a division of application Ser. No. 573,382, Jan. 18, 1945, now Patent No. 2,569,444, dated Oct. 2, 1951. Divided and this application June 4, 1963, Ser. No. 285,399

10 Claims. (Cl. 137—18)



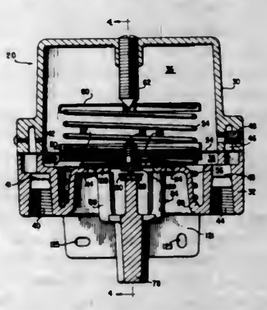
1. Means to generate and transform and deliver power to perform a function and to control the economy of such power transformation and delivery, comprising in combination a fuel consuming prime mover unit, means to control the rate of fuel input to said unit, means to transform and deliver the power from said prime mover unit and to perform said power delivery function at a determined rate of delivery, the rate of fuel input control means comprising a first power control means and the means to transform and deliver the power from the prime mover unit comprising a second power control means, means to produce a first frequency at rate proportional to the rate of delivery of the function, means to produce a second frequency at rate proportional to the rate of fuel input to the fuel consuming prime mover unit, ratio determining means to compare the values of the first and second frequencies, operative connections between the first frequency producing means and the ratio determining means, and operative connections between the second frequency producing means and the ratio determining means, said ratio determining means including a ratio indicating element movable in a first defined direction corresponding to increasing ratio values and movable in a second defined direction corresponding to decreasing ratio values, a reversible servo-motor unit, operative connections between the servo-motor unit and the power control means first defined effective to actuate said first defined power control means for increase or decrease of the rate controlled by said first defined power control means according to direction of movement of said servo-motor unit, and operative connections between the ratio indicating element of the ratio determining means and said servo-motor unit, said operative connections between the ratio indicating element of the ratio determining means and the power control means first defined, including means constituted to cause the servo-motor unit to function in direction to actuate the said first defined power control means for change of the ratio determined by said power control means to produce movement of the ratio indicating element in the increasing ratio indicating direction.

3,221,760
DRY COIL SERVO VALVE
J. D. Buchanan, Burbank, Calif., assignor, by mesne assignments, to Bell Aerospace Corporation, Buffalo, N.Y., a corporation of Delaware
Filed Apr. 12, 1957, Ser. No. 652,489
2 Claims. (Cl. 137—82)



1. A pilot valve for a servo valve mechanism including a body, said pilot valve comprising a flexible tube carried by said body in fluid-sealed relation therewith, two oppositely directed fluid-pressure nozzles carried by said body, an oscillating armature unit carried by said tube, said armature unit being formed with a paddle portion mounted in said tube in fluid sealed relation therewith and extending between said nozzles, said unit being also formed with an outwardly extending lever portion on the side of said tube opposite said nozzles, said lever portion having a bore receiving said tube in fluid sealed relation therewith, and motor means for causing the lever portion to be selectively biased to rock said paddle portion into variably throttling relation with said nozzle, said tube serving to center said paddle portion and control rocking thereof and serving as a fluid seal between said nozzles and said motor means.

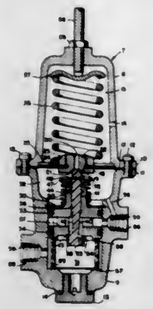
3,221,761
PNEUMATIC CONTROLLER
Kenneth G. Kreuter, Goshen, Ind., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
Filed Apr. 3, 1962, Ser. No. 184,799
6 Claims. (Cl. 137—82)



1. A pneumatic controller for controlling fluid flow in a conduit or the like by varying a control pressure in accordance with a pressure drop in the conduit, the controller comprising,
a casing,
a pressure-responsive diaphragm dividing the casing into a pair of chambers,
a pair of inlet ports in the casing communicating with said chambers respectively and adapted to be communicated in the conduit for rendering said dia-

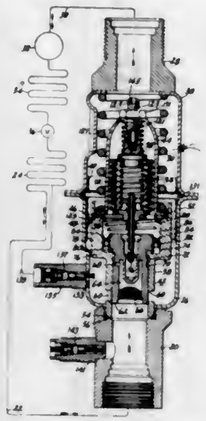
phragm movable in response to a pressure drop in the conduit,
opposed springs in the casing seated against opposite sides of the diaphragm and biasing the same to a pre-determined control position,
a housing connected to the casing,
means for varying fluid flow through the conduit including a control chamber in the housing having a supply port and a delivery port,
a leak port in the housing communicating with said chamber,
a pivoted flapper valve in the housing movable relative to the leak port to control the pressure in said control chamber,
an opening in the casing between one of the chambers and said housing,
a flexible seal closing said opening,
and a valve actuating stem carried by said diaphragm and said flexible seal for actuating said flapper valve in response to movement of said diaphragm as determined by the pressure drop in the conduit.

3,221,762
REGULATING VALVE
George I. Chinn, Middletown, N.Y., assignor to Kieley and Mueller, Inc., Middletown, N.Y., a corporation of New York
Filed May 14, 1962, Ser. No. 194,319
17 Claims. (Cl. 137—116.5)



1. A pressure regulator comprising, in combination, a housing having an inlet port supplied with fluid under pressure and an outlet port, means mounted within said housing and including a movable wall having an exhaust passage therein, said wall being subjected to the pressure at said outlet port, a valve member supported within said housing in spaced relationship with said wall, said valve member including a first passage having an enlarged portion open to said inlet port and a second passage connecting said first passage to said outlet port to enable the transmission of fluid thereto, an elongated, integrally formed valve element of relatively soft material movably carried by said valve member and having a first end portion for closing said first passage and a second end portion for closing said exhaust passage, means for moving said wall and said valve element in one direction relative to said valve member in response to a decrease in the fluid pressure at said outlet port, to urge said first end portion away from said first passage and thereby raise the outlet port pressure, said wall moving in another direction relative to said valve member and said valve element in response to an increase in the pressure at said outlet port, to open said exhaust passage and thereby reduce the outlet port pressure, and means for blocking the transmission of fluid between the enlarged portion of said first passage and the space between said wall and said valve member for all positions of said valve element.

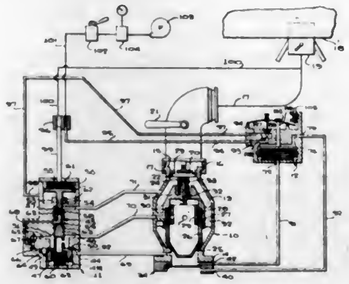
3,221,763
PILOT OPERATED FLOW CONTROL VALVE
Richard E. Widdowson, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Jan. 23, 1964, Ser. No. 339,714
7 Claims. (Cl. 137—220)



1. A flow control device including a body having an inlet and an outlet, a first enclosure means within said valve body coaxially aligned with said inlet, a piston valve coaxially aligned with said inlet within said enclosure means and adapted to cooperate with said inlet to control the flow of fluid from said inlet to said outlet, a weak spring for urging said piston valve to closed position, said piston valve being exposed to the pressure at said inlet on one side and being exposed to the pressure within said first enclosure means on the opposite side, said first enclosure being provided with a restricted connection with said inlet and with outlet means communicating with said outlet, and second valve means cooperating with said outlet means for controlling flow out of said first enclosure means, and a second enclosure within and exposed to the pressure in said first enclosure means having a diaphragm means operably connected to said second valve means for controlling the pressure in said first enclosure means substantially independently of the pressure at said outlet to control said piston valve, said second enclosure being evacuated and sealed.

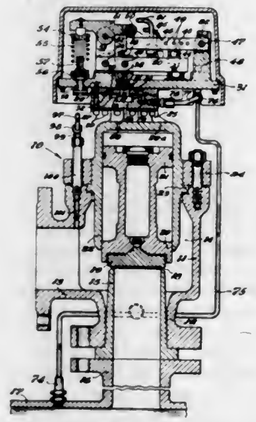
3,221,764
EXCESS FLOW CONTROLLED SHUT-OFF FOR PILOT CONTROLLED REGULATOR
James S. Elbogen, Encino, and Paul A. de Graaf, Los Angeles, Calif., assignors to Parker-Hannifin Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Oct. 9, 1961, Ser. No. 143,677
12 Claims. (Cl. 137—460)

1. An apparatus for controlling the flow of a liquid, a flow regulator having a main flow passage with an inlet and an outlet and having a fluid pressure operated main valve for opening and closing said main passage, said regulator having a pressure chamber connected to said inlet, a bleed passage connected to said pressure chamber and effective when closed to trap pressure fluid in said chamber for closing said main valve and effective when open to relieve pressure in said chamber for permitting inlet pressure to open said main valve, a first servo valve including operating means for opening and closing said bleed passage, the operating means of said first servo valve being actuable to open and close positions, a separate source of regulating fluid, a second servo valve including operating means for directing the regulating fluid from said source to the operating means of said first servo valve for moving the same in a direction for opening said first servo valve, second means for applying a counteracting force to the operating means of the first servo valve for closing said first servo valve, said second servo valve



including means responsive to a rate of liquid flow through the regulator greater than the predetermined rate for closing off the supply of the regulating fluid to the operating means of the first servo valve whereby said second means will close said first servo valve.

3,221,765
SAFETY VALVE
Victor W. Farris, 104 Woodland St., Englewood, N.J. Substituted for abandoned application Ser. No. 275,161, Apr. 23, 1963. This application Feb. 16, 1965, Ser. No. 434,175
7 Claims. (Cl. 137—492)



1. Means for controlling the pressure of fluid flowing through a conduit comprising: a valve body having inlet and outlet ports, and a main valve controlling communication therebetween; said main valve being exposed to the fluid flowing through said conduit whereby a first pressure is exerted thereagainst, in a direction tending to open the same; a first means, including a fluid path-directing valve, for diverting a portion of the fluid flowing through said conduit and applying the same against said main valve to exert a second pressure thereagainst, in a direction tending to close the same; a diaphragm; upper and lower plates cooperating with each other to support the outer marginal region of said diaphragm therebetween; one of said plates being recessed to provide a cylinder; a piston slidable in said cylinder; a disc; said piston and said disc cooperating with each other to support the inner marginal region of said diaphragm therebetween; a second means, receptive of a portion of the fluid diverted by said first means, for applying the same, through a passage in the other of said plates, against said diaphragm to exert a first pressure thereagainst, normally in balance with the first and second pressures exerted against said main valve; a third means, including a linkage system, for applying, through said piston and said disc, a second pressure against said diaphragm in opposition to said first pressure applied thereagainst and equal to the pressure at which it is desired to open said main valve; and a fourth means, interposed between said fluid path-directing valve and said linkage system, and operable upon said first pressure exerted against said diaphragm exceeding said second-pressure exerted thereagainst, for causing said fluid path-directing valve to discontinue the application of said second pressure against said main valve and permit the fluid previously applied thereagainst to flow to the outlet port of said valve body.

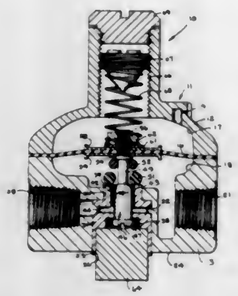
6. Means for controlling the pressure of fluid flowing through a conduit comprising: a first vavle body having inlet and outlet ports, and a main valve controlling communication therebetween; said main valve being exposed to the fluid flowing through said conduit whereby a first pressure is exerted thereagainst, in a direction tending to open the same; a dual, secondary valve communicating with said conduit and said valve whereby when said secondary valve is in one of its positions, a portion of the fluid flowing through said conduit is diverted therefrom and applied against said main valve to exert a second pressure thereagainst, in a direction tending to close the same; a pressure-sensitive device; a first means, receptive of another diverted portion of the fluid flowing through said conduit, for applying the same against said pressure-sensitive device to exert a first pressure thereagainst, normally in balance with the first and second pressures exerted against said main valve; a second means, including a linkage system, for applying a second pressure against said pressure-sensitive device in opposition to said first pressure applied thereagainst and equal to the pressure at which it is desired to open said main valve; a slidably mounted rod extending from said secondary valve; and a bell-crank lever extending from said linkage system and interposed between said rod and said linkage system, and operable upon said first pressure exerted against said pressure-sensitive device exceeding said second pressure exerted thereagainst, for moving said secondary valve into its other position to discontinue the application of said second pressure against said main valve and to permit the fluid previously applied against said main valve to flow to the outlet port of said first valve body.

3,221,766
PULSATOR VALVE HAVING STACKED VALVING RINGS
Eugene L. Kilbourn, Marengo Township, Calhoun County, Mich., assignor to S. H. Leggitt Company, Marshall, Mich., a corporation of Michigan
Filed June 25, 1963, Ser. No. 290,384
5 Claims. (Cl. 137—510)

3. In a valve for producing a pulsed flow of gas therethrough upon connection to a source of gas under pressure, the combination comprising:
a hollow valve body having a hollow interior;
a flexible diaphragm dividing the interior of said valve body into a gas chamber and an air chamber;
means defining an inlet opening extending through said valve body to said gas chamber;
means defining an outlet in said valve body;
a rod of magnetic material substantially coaxially affixed at one end thereof to said diaphragm and extending across said gas chamber;
means defining a rod opening through the wall of said

valve body substantially coaxial with said rod, the other end of said rod extending reciprocably into the inner end of said rod opening, said rod opening having at least one groove extending from the inner end of said rod opening and communicating intermediate the ends of said rod opening with said outlet opening;

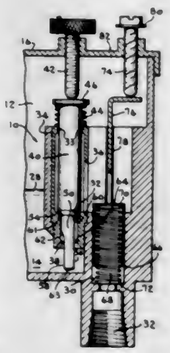
a magnet inserted into the outer end of said rod opening for axially attracting said rod;



coaxial resilient rings on said rod and on said wall around said rod opening said rings being engageable upon engagement of said rod with said magnet for closing communication between said rod opening and said gas chamber and disengageable upon release of said rod by said magnet;

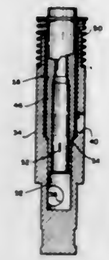
a spring in said air chamber having one end fixed with respect to said valve body and the other end fixed with respect to said diaphragm for urging said rod toward said magnet.

3,221,767
METERING VALVE WITH VISCOSITY COMPENSATING ADJUSTMENT
Lourdes V. McCarty, Milwaukee, William A. Biermann, Brookfield, Robert J. Duncan, Delafield, and Allen L. Teichert, Menomonee Falls, Wis., assignors to Controls Company of America, Schiller Park, Ill., a corporation of Delaware
Filed Jan. 26, 1962, Ser. No. 168,958
2 Claims. (Cl. 137—577)



1. A fuel oil flow control device comprising, a housing having an inlet and an outlet, means controlling flow through the inlet to maintain a constant level of fuel oil in the housing, a vertically extending upfeed metering passage having an entrance and an exit and inter-connecting the inlet and the outlet, valve means controlling the flow of fuel oil through the metering passage, said valve means including an elongated section mounted for axial movement in the passage and having a pilot flow contour, a high flow contour, and an extending portion located below said two contours and terminating at the end of the elongated section; the extended section cooperating with the passage to produce laminar flow through the passage, said pilot flow contour and high flow contour each having an arcuate surface to provide a rapid rise characteristic in the flow rate to a substantially constant flow characteristic in the flow rate, the start of the high flow contour being located relative to the pilot flow contour to provide a substantially constant flow rate characteristic during the movement of the valve means from pilot flow to the start of the high flow contour, and selectively movable adjustment means for varying the relative vertical position between the inlet and outlet of the housing to thereby permit variance in the difference in oil pressure between the points at the entrance and the exit of the oil into the passage.

3,221,768
CONTROL DEVICE
William A. Biermann, Brookfield, Wis., assignor to Controls Company of America, Schiller Park, Ill., a corporation of Delaware
Filed Feb. 23, 1962, Ser. No. 174,978
7 Claims. (Cl. 137—589)



5. A metering device comprising;

a valve guide having a guide section and a tapered section adjacent to said guide section,

a hollow valve guided in said guide section and having a metering slot cooperating with said guide section to meter flow in accordance with the degree of exposure of said slot beyond said guide section, said valve having a tapered section which in cooperation with said tapered section of said guide section defines a restricted fluid path.

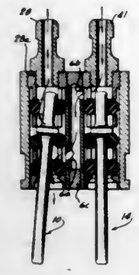
3,221,769
FUNCTIONAL CONTROL VALVES FOR PNEUMATIC PROSTHESES
Edward A. Kiessling, Huntington, N.Y., assignor to the United States of America as represented by the Secretary of the Department of Health, Education, and Welfare, and/or the Secretary of the Army
Filed May 29, 1963, Ser. No. 284,271
20 Claims. (Cl. 137—596)

1. A valve module comprising:

(a) a valve body having entry and exit ports and a passage interconnecting said ports;

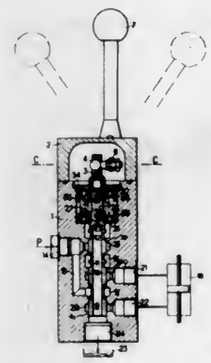
(b) yieldable sealing means within said passage; and

(c) actuator rod means mounted in said valve body, said rod means extending through and sealingly engaging said sealing means when in the relaxed position, said rod means also extending outwardly from said body and being associated with said sealing means so that said rod means when deflected will dis-



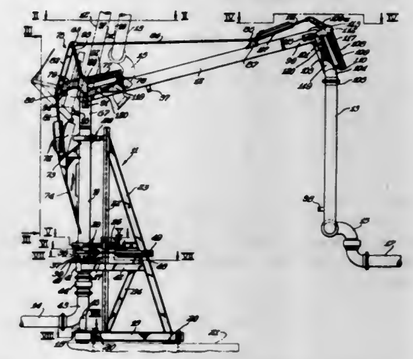
engage from said sealing means and thereby open said passage.

3,221,770
HYDRAULIC DISTRIBUTOR VALVE AND BY-PASS MEANS
Jacques Faisandier, 32 Blvd. Felix Faure, Chatillon-sous-Bagneux, France
Filed Feb. 16, 1962, Ser. No. 173,778
Claims priority, application France, Mar. 3, 1961, 854,477
5 Claims. (Cl. 137—596.13)



1. In a hydraulic distributor valve including a valve body, a displaceable valve element in said valve body, said body having inlet and outlet ports, said displaceable valve element including land means defining a neutral closed center position and two fluid distributing positions, bypass means through which pressure fluid passes directly through the distributor valve as long as said displaceable valve element is in a bypass position defined by a slight displacement of said valve element with respect to said neutral closed center position, the provision of means indicating said bypass position and furnishing a manually detectable signal, said indicating means including two springs mounted to be successively compressed in response to movement of said valve element, the first of said springs being compressed upon displacement of said valve element as it moves from said neutral position to said bypass position, and the second of said springs being compressed upon displacement of said valve element as it moves from said bypass position to fluid distributing position.

3,221,771
ARTICULATED BOOM STRUCTURE WITH STABILIZING STRUCTURE
Francis A. Dollinger, Oak Park, Ill., assignor to Mississippi Valley Structural Steel Company, Chicago, Ill., a corporation of Illinois
Filed Mar. 4, 1963, Ser. No. 262,748
18 Claims. (Cl. 137—615)



2. An articulated boom construction including:

a vertical supporting structure,

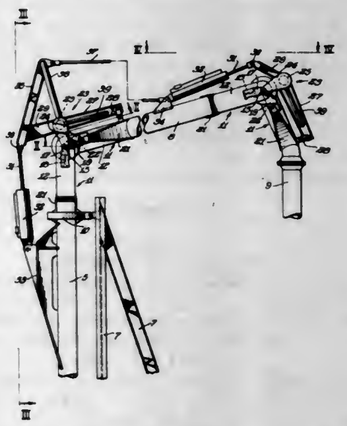
a vertical riser,

a boom having an inboard portion pivotally connected on a horizontal axis to the upper end portion of the riser,

a bridle structure attached to said inboard portion of the boom and having a stabilizer straddling the pivotal connection of the boom and the riser and having a pivotal fulcrum with its axis coaxial with said horizontal axis,

and actuating means connected to said bridle structure and operable for thereby pivotally actuating the boom relative to the standard.

3,221,772
ARTICULATED CONDUIT BOOM ASSEMBLY
John C. Arntzen, Milton Township, Du Page County, Ill., assignor to Mississippi Valley Structural Steel Company, Chicago, Ill., a corporation of Illinois
Filed Mar. 11, 1963, Ser. No. 264,424
4 Claims. (Cl. 137—615)



1. In a conduit boon construction,

a swivel yoke structure comprising a tubular gooseneck portion having a terminal adapted for connection to a swivel coupling,

said gooseneck portion having an outer elbow side and an inner hook side,

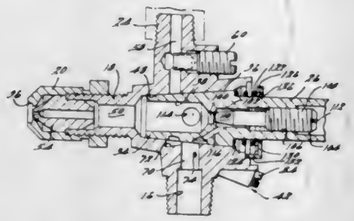
a bracket mounted on said elbow side of the gooseneck portion and having journal means on an axis aligned with said terminal portion,

rigid equalizer frame means carried by the gooseneck portion on said hook side and comprising

a rigid frame bar extending parallel to said axis and a diagonally extending rigid frame bar joining the end of said parallel bar remote from the gooseneck portion,

and journal means mounted adjacent juncture of said bars and disposed on said axis and adapted for pivotal connection with the journal means of a gooseneck-carried bracket of a like gooseneck portion.

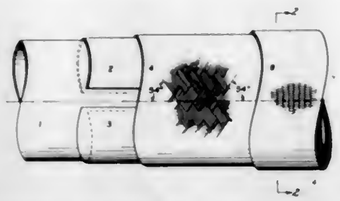
3,221,773
FLUID VALVE
Gerald H. Kass, Garden City, Mich., assignor to Anderson Brass Company, Detroit, Mich., a corporation of Michigan
Filed Oct. 23, 1961, Ser. No. 146,926
5 Claims. (Cl. 137—637.4)



1. A multi-position fluid valve comprising: a housing having a conical valving surface partially defining a tapered valve chamber therein and first and second inlet passageways communicating with said valving surface adjacent the larger end thereof; adjustable flow control means in each of said first and second inlet passageways; a main outlet passageway in said housing communicating with said chamber; a conical rotary valve element disposed in said chamber and having a surface sealingly engaging said valving surface; a valve stem on the larger end of said element extending from said housing for rotating said element to a plurality of angular positions with respect to said housing, each of said adjustable flow control means including a threadably adjustable valve member having an axis of movement which is oblique with respect to the axis of rotation of said valve element and being accessible from outside said housing adjacent said stem; and passageway means in said element for alternatively communicating said first and second inlet passageways with said main outlet passageway in various angular positions of said element.

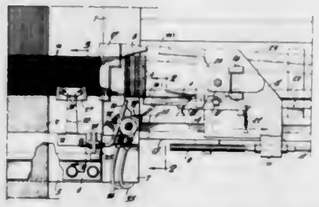
3,221,774
KINKPROOF FIRE HOSE
Harry E. Fritz, Philadelphia, and Frederick M. Galloway, Langhorne, Pa., assignors to H. K. Porter Company, Inc., Pittsburgh, Pa., a corporation of Delaware
Filed July 17, 1962, Ser. No. 210,515
1 Claim. (Cl. 138—125)

A collapsible fire hose comprising an inner elastomeric tube of substaantially uniform thickness the inside diameter of which is a large multiple of its wall thickness, a pair of diametrically opposed elastomeric longitudinally extending backing strips bonded to the outer surface of the tube with their opposed edges spaced apart circumferentially to define between them longitudinally continuous relatively narrow diametrically opposed areas of the tube, a layer of reinforcing elements wound about the outer surfaces of the tube and strips, each element comprising a plurality of yarns laid side by side in substantially parallel relation certain of the elements extending spirally at a positive angle of approximately 54° to the axis of the tube and others thereof extending spirally at a negative angle of approximately 54° there-



to, the elements extending at said positive angle passing alternately over and under adjacent ones extending at said negative angle and all being bonded partially into the strips but unbonded to the inner elastomeric tube at said narrow diametrically opposed areas, and a woven jacket surrounding the elements in snug but slidable engagement therewith.

3,221,775
METHOD AND APPARATUS FOR LUBRICATING THE WIRES OF A PILE WIRE LOOM
Charles C. Boley, Franklin, N.C., and David G. Burnell and William M. Kirby, Clayton, Ga., assignors to James Lees and Sons Company, Bridgeport, Pa., a corporation of Delaware
Filed June 10, 1964, Ser. No. 374,196
8 Claims. (Cl. 139—45)

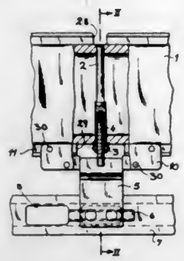


8. The method of weaving a pile fabric which comprises inserting one of a set of pile wires into a shed, withdrawing the last pile wire of said set sequentially after insertion of said first pile wire, and spraying a liquid lubricant upon one of said pile wires at a point spaced from the selvedge of the fabric being woven.

3,221,776
HEDDLE-SUPPORT DEVICES FOR WEAVING LOOMS
Theodor Wagner, Aulberstrasse 34, Reutlingen, Germany
Filed Sept. 30, 1963, Ser. No. 312,775
7 Claims. (Cl. 139—92)

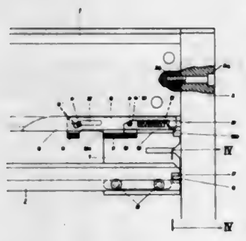
1. In a heddle support device for a weaving loom, in combination, a longitudinally extending substantially horizontal heddle-carrying rail; a support element disposed adjacent said rail and spaced therefrom in the vertical plane of said rail; and vertically adjustable connecting means securing said rail to said element, said connecting means including an internally threaded sleeve lying substantially in said plane journaled to said element and passing central therethrough while emerging at a lower edge of said element, resiliently compressible bipartite clamping means on said element at said lower edge embracing said sleeve, said sleeve having an annular bulge at said lower edge, said clamping means forming a socket

tightly hugging said bulge while permitting rotation of said sleeve, and a spindle affixed to said rail and threadedly received in said sleeve, said elements being formed with a reinforcing web along said lower edge, said web being



interrupted in the region of said sleeve to clear said bulge, said clamping means comprising a pair of clamping portions disposed on opposite sides of said element, said clamping portions bridging the interrupted web to reinforce it.

3,221,777
RIDERLESS WEAVING FRAME
Bernhard Koch, Horgenberg, Horgen, Switzerland, assignor to Grob & Co. Aktiengesellschaft, Horgen, Switzerland
Filed Jan. 29, 1964, Ser. No. 340,998
Claims priority, application Switzerland, July 12, 1963, 8,706/63
6 Claims. (Cl. 139—92)



1. In a heddle frame having upper and lower frame rails and at least one detachable side strut, heddle rods extending between said struts, said upper and lower rails being provided with recesses, a plate-like holder on said heddle rods, and a slide mounted in each of said recesses to detachably engage said holder and lock each of said heddle rods in their operative position.

3,221,778
MECHANISM FOR BENDING AND CLINCHING ENDS OF INTERMITTENT BINDING WIRES ON WIREBOUND CONTAINERS
Charles O. Riker, Morristown, N.J., assignor to Stapling Machines Co., Rockaway, N.J., a corporation of Delaware
Filed June 6, 1963, Ser. No. 285,957
7 Claims. (Cl. 140—93)

1. In wirebound box-making machines of the type in which properly assembled cleats and face material are conveyed through a stapling mechanism which drives staples astride longitudinally binding wires through said face material and into said cleats to form a succession of box blanks each consisting of four sections foldably secured together by said binding wires, and said succession of box blanks is conveyed to a loop-forming mechanism which severs said binding wires in the intervals between adjacent box blanks in said succession and forms the resulting end portions of said binding wires into loop fasteners at each end of said box blanks, the combination therewith of mechanism for clinching the ends of a discontinuous intermediate binding wire which extends longitudinally of each of said box blanks for the length of three contiguous sections thereof and projects beyond the leading and trailing edges of said three sections, said mechanism comprising a first wire-bending member mounted in line with said intermediate binding wire for hooking engagement with the top of the projecting portion of the leading end of said intermediate binding wire, said first wire-bending member being mounted for limited downward movement past the leading edge of the face material on said three sections, whereby as said leading edge passes said first wire-bending member, said intermediate binding wire is bent downwardly around said leading

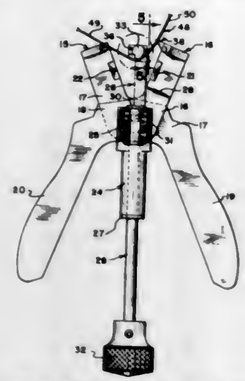


edge and rearwardly adjacent the under surface of said face material, a second wire-bending member mounted in line with said intermediate binding wire adjacent the position of the trailing edge of said three sections of a box blank in loop-forming position in said loop-forming mechanism, said second wire-bending member being mounted for movement downwardly against the top of the projecting portion of the trailing end of said intermediate binding wire, and around the trailing edge of said box sections to bend said intermediate binding wire around said trailing edge and adjacent the under surface of said face material, support members engaging the under surface of said face material adjacent said first and second wire-bending members to support said face material during bending of said intermediate binding wire, and means for causing movement of said first and second wire-bending members as described.

3,221,779
DEVICE FOR FORMING EYES IN WIRE
William J. Noel, Covington, Ky., assignor of one-third each to Robert A. Broerman and William E. Broerman, both of Cincinnati, Ohio
Filed Aug. 29, 1962, Ser. No. 220,236
4 Claims. (Cl. 140—104)

1. A device for forming an eye in wire comprising a pair of wire supporting jaws capable of being moved from spaced to abutting position, pivot means for said jaws, handle means for moving said jaws, a shaft housing fixed to said jaws adjacent the pivot point, a rotatable shaft mounted in said housing, wire die and retaining means on one end of said shaft adjacent said jaws and shaft rotating means at the other end of said shaft, said wire die and retaining means being substantially in the plane of the jaw ends when the jaws are in spaced position and being below the jaw ends when the jaws are in abutting position, one of said jaw ends having a pair of spaced grooves along an edge thereof, said other jaw end having a pair of spaced grooves mating with said first pair of grooves whereby one portion of said wire is received in one pair of mated grooves and another portion of said wire is received in the other pair of said mated grooves, said wire die and retaining means having a lip portion

extending radially thereof and adapted to form an open loop in said wire upon closing of the wire supporting jaws, said shaft being capable of downward movement

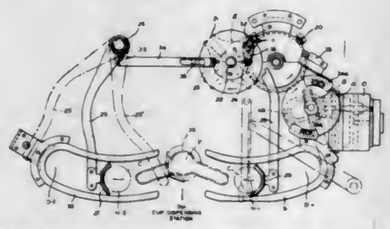


upon rotation thereof whereby one portion of the wire may be helically wrapped around another portion of the wire to form an eye.

3,221,780
CUP TRANSFER MECHANISM FOR FRUIT JUICING MACHINE

Arthur C. Cordray, 841 Montford Road, Cleveland Heights, Ohio, and Tracy Acosta, 2700 S. Wood St., Chicago, Ill.

Filed Dec. 31, 1962, Ser. No. 248,576
6 Claims. (Cl. 141—83)



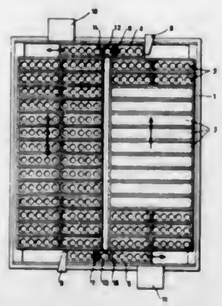
6. In a drink dispensing machine,
means defining a filling station and a delivery station,
a push out arm pivotally movable between the filling station and the delivery station,
a door between said stations pivotally mounted for movement from a closed to an open position,
an operating arm secured to the door,
a pivotal follower arm having one end pivotally mounted and the other end connected to said operating arm,
a cam arm movable against the side of the follower arm between said ends to pivot the arm and open the door,
said cam arm secured to the push out arm to pivot therewith,
and a drive motor for operating said push out arm.

3,221,781
SAMPLE COLLECTOR

Bo Gösta Forsström, Mariehall, Sweden, assignor to LKB-Produkter Aktiebolag, Stockholm, Sweden, a company of Sweden

Filed Sept. 5, 1963, Ser. No. 306,946
Claims priority, application Sweden, Sept. 12, 1962, 9,873/62
5 Claims. (Cl. 141—130)

1. A sample collector comprising a rectangular base, spaces arranged in a first row and a second row on said base for receptacle holders, rectangular elongated receptacle holders arranged in a first row and a second row on said base in all of said spaces excepting one vacant end space in said second row of spaces, a plurality of open receptacles arranged in a row in each receptacle holder, means for moving a receptacle holder from one end position in said first row of receptacle holders to said vacant end space in said second row of spaces in a step by step movement, means for moving each row

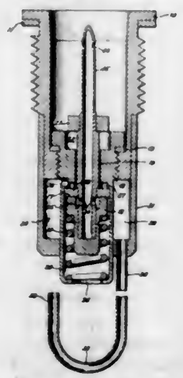


of receptacle holders separately in the longitudinal direction thereof, means for moving a receptacle holder from the opposite end position in said second row of receptacle holders to a vacant end space at the opposite end of said first row of spaces and means for depositing a fluid in said receptacles in said receptacle holder as it is moved step by step from said first row of receptacle holders to said second row of spaces.

3,221,782
FILLER VALVE CONSTRUCTION

Conrad Zellweger, Geneva, Switzerland, and William Retzler, Great Bookham, Surrey, England, assignors to Ronson Corporation, Woodbridge, N.J., a corporation of New Jersey

Filed Dec. 19, 1962, Ser. No. 250,198
Claims priority, application Great Britain, Dec. 19, 1961, 45,554/61
3 Claims. (Cl. 141—286)



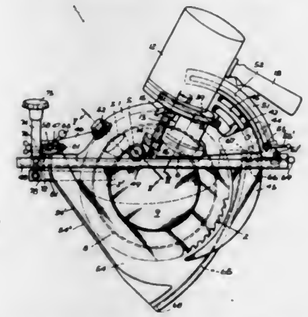
3. A filler valve arrangement for charging sealed containers with highly volatile fluids in their liquid state, said filler valve arrangement comprising, an elongated valve body adapted to be sealed into a container wall with its respective ends exposed to opposite surfaces of said wall, said valve body including therein two separate passageways which extend between its ends and open at mutually displaced points whereby liquid entering via one of said passageways is prevented from being short circuited out through the other passageway, movable valve element

means within said valve body for effecting selective closure of each of said passageways, coupling means for sealably connecting one end of said one passageway to a liquid source, and an elongated tube extending straight outwardly from said other passageway at the opposite end of said valve body and terminating at a given point beyond said valve body with an open end facing generally away from said valve body, a conical skirt surrounding and attached to said elongated tube in the vicinity of said open end, said conical skirt having outer lateral surfaces which flare out away from the sides of said elongated tube to guide liquefied particles flowing down the outside surface of said tube away from its open end.

3,221,783
CIRCULAR SAW WITH ANNULAR SAW BLADE

Otto Kaltenmark, Tubingen, and André Düpüy, Eningen, Germany, assignors to Karl M. Reich Maschinenfabrik, Nurtingen, Germany, a firm of Germany

Filed Aug. 8, 1962, Ser. No. 215,680
Claims priority, application Germany, Aug. 8, 1961, R 30,895; Aug. 9, 1961, R 30,903
15 Claims. (Cl. 143—44)



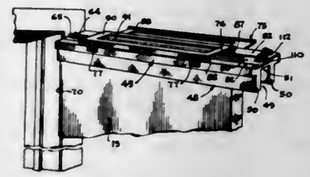
1. A circular saw comprising a housing, an annular saw blade partly disposed within said housing and partly projecting therefrom, a plurality of rollers mounted in said housing and adapted to engage upon and rotate along the opposite sides of said saw blade for guiding the same, a motor connected to and supported by said housing, at least one friction drive wheel rotatable about its axis and adapted to be driven by said motor to engage with said saw blade for driving the same, and means for mounting said drive wheel so as to be capable of swiveling about an axis spaced from and substantially parallel to said wheel axis, said swivel axis being spaced from the plane of said saw blade at a distance greater than the length of the radius of said drive wheel and less than the sum of said length and the distance between said wheel axis and said swivel axis, said wheel axis being disposed behind said swivel axis, as seen in the direction of movement of the surface of said drive wheel engaging with said saw blade.

3,221,784
MORTICING JIG

Arve Skollerud, 1810 N. Sawyer Ave., Chicago, Ill.

Filed Aug. 1, 1963, Ser. No. 299,390
4 Claims. (Cl. 144—144.5)

1. A morticing jig for guiding a router during the milling of a plurality of cavities in a door for reception of a door stop mechanism, said jig determining the depth and configuration of the cavities and the location of the cavities in relationship to the three dimensions of the door, said jig comprising; frame means having a channel positionable over the top of said door; means on said frame means for engaging the sides of the door to locate said frame means with respect to the sides of the door; said frame means having a reference surface thereon in engagement with the top surface of the door and serving as a reference surface to determine the depth of the cavities within said door; an end stop means on said frame means for engaging one end of the door and thereby locating said frame means with respect to the end of the door; a first guiding means being pivotally mounted on said frame means and rotatable into a position over the top of the door, said first guiding means having an aperture therein configured to the shape of said first cavity

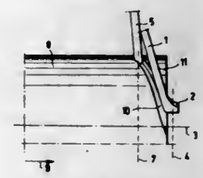


and having a guiding surface thereon for guiding said router, said guiding surface being spaced from said reference surface by a predetermined distance; a second guiding means slidable into position over the top of said door and having an aperture therein configured to the shape of a second cavity, and; guiding surface means on said frame means spaced at a predetermined distance from said reference surface for guiding said router during said second cut so that said router can be maintained at the same depth adjustment and can produce the proper depths of cavities from the top of said door.

3,221,785
ARRANGEMENT OF CUTTERS IN BARKING MACHINES OF DRUM TYPE

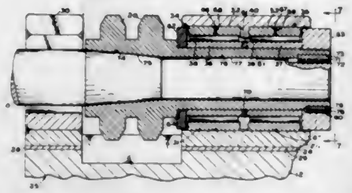
Bruno Valo, Lohja, Finland

Filed Dec. 10, 1963, Ser. No. 329,506
3 Claims. (Cl. 144—208)



1. An arrangement of cutters in barking machines of drum type, in which the logs to be barked are fed lengthwise through a rotating drum, in which drum there are pivotally mounted resiliently engaged barking arms directed towards the axis of the drum, the ends of which arms are provided with barking cutters which are pressing against the surface of the log to be barked, characterized in that there is in relation to the direction of movement of the log in front of each barking cutter a pre-cutter carried by an arm pivotally mounted similarly as the barking cutters in the drum, said pre-cutters being arranged to operate in a plane substantially perpendicular to said direction of movement and at such a distance from the plane formed by said barking cutters that the moving track of each barking cutter substantially follows the moving track of the corresponding pre-cutter along the surface of the log being barked.

3,221,786
VENEER LATHE
Melvin M. Whipple, 700 Delay Drive, Eugene, Oreg.
Filed Oct. 1, 1962, Ser. No. 227,359
4 Claims. (Cl. 144—209)



1. In a veneer lathe including a strongback, the improvement comprising,

a quick-releasable, split bearing holder mounted rigidly on one end of the strongback,

tubular radial-and-thrust bearing means removably mounted in the bearing holder,

a shaft having a shank portion fixed in the bearing means and a sprocket portion at one end thereof positioned beyond one end of the bearing means,

the shaft also being provided with an axial passage therethrough having a first end portion of a predetermined cross-sectional size at said one end thereof, a second portion at the other end thereof of less than said predetermined cross-sectional size and extending at least substantially coextensively with the bearing means, and a short tapered portion joining the first end portion and the second portion,

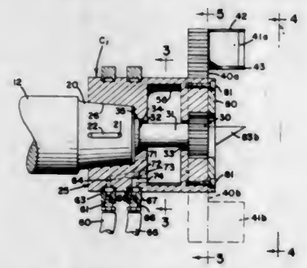
a pressure roll having a first portion fitting closely into the first end portion of the passage, a second end portion fitting closely into the second portion of the shaft, and a short tapered portion fitting closely in the tapered portion of the passage,

the second, end portion of the pressure roll being threaded and extending beyond the bearing means,

and nut means screwed onto the threaded end portion of the pressure roll and engaging an end of the shaft and pulling the pressure roll tightly into the shaft,

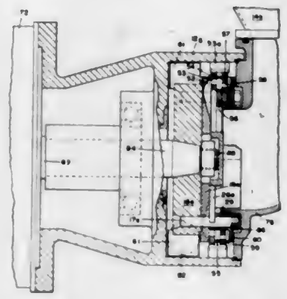
the pressure roll and the shaft being keyed together.

3,221,787
ADJUSTABLE CHUCK ASSEMBLY
George F. Hitt, 937 10th St., Arcata, Calif.
Filed May 3, 1963, Ser. No. 277,765
4 Claims. (Cl. 144—209)



1. In a log peeling lathe of the type having an axially and rotatably movable spindle carrying a face plate on the end of the spindle, at least one arm slidably mounted on the body of said face plate for radial movement relative to said face plate, means connected to said face plate for extending a first end of said arm substantially beyond the periphery of said face plate and to retract said arm to a position substantially coincident with the periphery of the face plate, said arm having outwardly facing log engaging dogs mounted on the first end of the arm, said dogs being formed with cutting edges facing the direction of sliding movement of said arm.

3,221,788
EMULSIFIER
Alvin W. Hughes, 4 N. 194 Church Road, Bensenville, Ill.
Filed Aug. 2, 1963, Ser. No. 299,656
37 Claims. (Cl. 146—182)



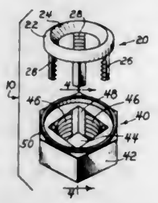
1. In an emulsifier for viscous fluid sausage, said emulsifier having a casing, a supply pipe leading into said casing, a rotatable shaft within said casing, at least a pair of rotatable members mounted on said shaft and spaced apart axially, the member of said pair which is the more remote from said supply pipe having a functionally imperforate central portion to stop any generally axial movement of material from said supply pipe, a non-rotatable ring having perforations extending directly between its opposite flat faces, said perforations being spaced from the inner and outer edges thereof, the other rotatable member of said pair being located between said supply pipe and said aforementioned remote and first mentioned rotatable member, said non-rotatable ring and said second mentioned rotatable member of said pair being substantially coaxial and provided with a hollow central portion into which material from said supply pipe is discharged, means whereby said material may be moved generally radially outward from adjacent said functionally imperforate central portion of said first mentioned rotatable member to the perforations in said non-rotatable ring member, said means including radially elongated recesses in at least one of said rotatable members, said material brought to the perforations in said non-rotable ring being sheared and cut by edges of said elongated recesses in a rotatable member passing across edges of said perforations in said non-rotatable ring, a discharge pipe for cut material from said casing after being passed through said non-rotatable ring and discharged radially outside a rotatable member but within said casing, the combination therewith of the improvement to enhance shearing of said material and to eliminate jamming of tendinous strings within clearance space between said non-rotatable ring member and a rotatable member, said improvement including the cooperating faces of said rotatable and non-rotatable ring members being flat, and spacing means between said rotatable members holding them apart by an amount equal to the thickness of said non-rotatable ring plus an amount substantially less than .010 of an inch, whereby during operation each face of the non-rotatable ring is axially spaced from an adjacent face of a rotatable member by substantially less than .005 of an inch to insure effective shearing of tendinous strings.

3,221,789
PLASTIC VALVE BAG
Francis Harding, Pensacola, Fla., assignor to St. Regis Paper Company, New York, N.Y., a corporation of New York
Filed July 5, 1963, Ser. No. 293,005
6 Claims. (Cl. 150—9)



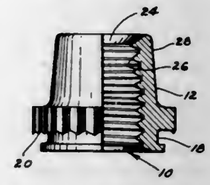
1. A bag comprising: a sheet of flexible pliable thermoplastic material folded to form a flattened tube with edge portions of the sheet overlapped on the front surface along near but spaced from one edge of the tube, said portions being heat-sealed together to form a longitudinal seam, the sealing being interrupted for a distance near the top of the bag to provide a valve opening between the overlapped portions; a sleeve in said valve opening, said sleeve being formed of an area of flexible pliable thermoplastic film material folded upon itself along the lower edge of the valve and providing front and rear sleeve surfaces protruding from the opening of the valve into the bag, the rear surface of said sleeve at its outer end being heat-sealed along on the underlying overlapped portion, the front surface of the sleeve being heat-sealed along the under surface of the overlying lapped portion; and closure means for the top end of the bag formed of a flexible thermoplastic strip of generally U-shaped cross-section located along astride of and with its edges merging with and integrally joined to the top end edge portions of the flattened bag tube and the top end edges of said front and rear surfaces of the sleeve.

3,221,790
NUT LOCK
Ouglјesa Jules Poupitch, Itasca, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Filed Dec. 2, 1963, Ser. No. 327,278
6 Claims. (Cl. 151—7)



1. A locking nut for use with a complementary threaded male member including a peripherally continuous nut body means of polygonal exterior configuration and having a centrally located aperture provided therein, the peripheral wall defining said aperture being generally polygonal and having at least three spaced axially extending, radially relieved areas separated by threaded side wall surfaces, each of said radially relieved areas comprising a pair of angularly disposed, juxtaposed flat wall portions spaced a maximum predetermined distance from each other at the points of intersection with the threaded side wall surfaces and extending radially outwardly and converging toward each other, a locking and sealing insert of deformable plastic material associated with said peripherally continuous nut body means and including an annular body portion having a plurality of axially extending, peripherally spaced flexible leg members projecting from said annular body portion, said leg members corresponding in number and spacing to said radially relieved areas and having an outer peripheral surface complementary to said angularly disposed, juxtaposed flat wall portions to facilitate assembly of said locking and sealing insert with said peripherally continuous nut body means while preventing relative rotation therebetween, said leg members presenting surfaces extending radially inwardly to at least the crest diameter of adjacent threaded side wall surfaces, the threaded male member adapted to be received within the annular body portion of said locking and sealing insert and cooperating with said surfaces of the leg members when threadably associated with said peripherally continuous nut body means whereby to lock said threaded male member and said locking nut against unauthorized retrograde movement relative to each other and provide a seal throughout their threadably associated height.

3,221,791
NUT-TYPE FASTENER INCORPORATING FRUSTO-CONICAL LOCK AND METHOD OF FABRICATING SAME
José Rosán, San Juan Capistrano, Calif., assignor to Rosán Engineering Corp., Newport Beach, Calif., a corporation of California
Filed May 2, 1963, Ser. No. 277,622
4 Claims. (Cl. 151—21)

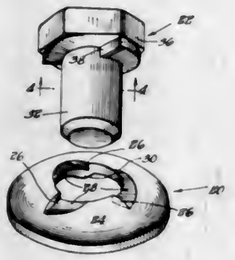


1. A fastener including an elongated body having a bore therein and extending axially of said body, the wall of said bore incorporating a thread and said body having circumferentially continuous external wall which is tapered from a point intermediate the extremities of said body to a point adjacent one of said extremities, the wall of said bore being correspondingly tapered and elongated to impart a corresponding uniform radially inward taper and an elongation to the outermost four thread convolutions of the tapered portion, said thread in said tapered portion having progressively smaller crest and root diameters from said intermediate point to said one extremity, said thread in said tapered portion having a greater pitch than the thread in the untapered portion so as to create a locking area upon said thread engageable with a corresponding fastener.

3,221,792
LOCKWASHER AND FASTENER ASSEMBLY
Ouglјesa Jules Poupitch, Itasca, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Filed Apr. 8, 1963, Ser. No. 271,174
4 Claims. (Cl. 151—38)

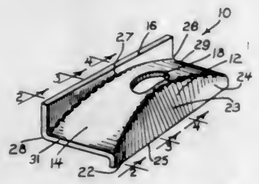
1. A locking device including a dished, axially resilient annular washer body of sheet metal having an upper surface and an underside and having an inner margin adapted to be positioned beneath the clamping surface of a rotary threaded fastener such as a screw head or nut, a plurality of individual abutment means impressed within and spaced circumferentially along said inner washer margin in the vicinity of the washer crown and beneath said upper surface in position to be engaged by corresponding abutment means on the clamping side of a rotary threaded fastener as an incident to rotary tightening of said fastener, circumferentially disposed cam surfaces along the washer crown sloping from a high

point adjacent the top of one abutment means toward a low point in the vicinity of the base of the next adjacent abutment means, the inclination of said cam surfaces with respect to the washer axis extending in the same general direction as and being greater than the inclination of the thread convolutions of a complementary rotary threaded fastener with which the locking device is to be used, whereby to increase the effectiveness of the washer to resist loosening after said complementary threaded fastener has been rotated in a tightening direction to urge said washer abutment means in the direction of said rotation, the work engaging edge means of the



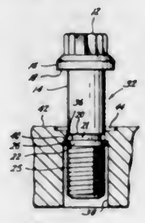
washer being sufficiently limited in radial width to assure the desired degree of rotation of the washer during the initial clamping engagement thereof with a complementary work surface, and a plurality of circumferentially spaced individual lug means projecting axially from and integral with the underside of the washer body to prevent complete flattening of the washer, said lug means normally terminating short of a plane coincident with work engaging edge means of said body for permitting limited flattening of the washer, said lug means having work surface engageable areas of maximum axial extent substantially in axial alignment with said abutment means and circumferentially offset from the high points of said cam surfaces.

3,221,793
DOUBLE FLANGED WASHER
Charles E. Gutshall, Roselle, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Filed Oct. 4, 1963, Ser. No. 313,890
3 Claims. (Cl. 151—38)



1. A one-piece washer made from a four-sided regular polygonal blank of sheet material comprising an arched body portion having an aperture, a flange defined by a plane passed parallel to the edge of one side of said polygonal blank and defining an acute angle with the axis of said aperture, said flange extending downwardly from said body portion on one arched side thereof and including a marginal portion of said washer, said flange presenting an inclined and radially inwardly concave surface portion relative to the axis of said arched body portion aperture and presenting said margin thereof for engagement with the complementary work surface on which it is adapted to be mounted, and a second flange extending upwardly from and along the full length of said body portion on the margin opposite to said first flange and presenting work surface engagement portions at its juncture with said adjacent sides of said polygonal blank, said washer promoting relatively equalized pressure against a complementary workpiece through said marginal and engagement portions of said washer as said portions impinge upon said workpiece.

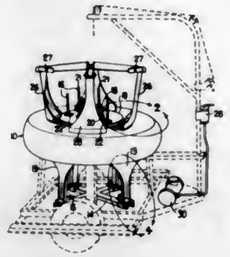
3,221,794
CAPTIVE FASTENER
Richard L. Acres, Houston, Tex., assignor to W. F. Curlee Mfg. Co., Houston, Tex., a corporation of Texas
Filed Dec. 9, 1963, Ser. No. 328,997
7 Claims. (Cl. 151—69)



1. A captive fastener to be held within a member having a bore, a counter bore and an annular shoulder at the juncture of said bore and said counter bore comprising,
a shank,
a stepped groove around said shank,
a split retaining ring,
one end of said shank being adapted to be inserted through said bore and into said counter bore of said member,
the largest diameter portion of said stepped groove being nearest said one end of said shank,
said ring being compressible into the smallest diameter portion of said stepped groove for insertion of said one end of said shank through said bore and into said counter bore,
said ring having a free outer ring diameter larger than the diameter of said counter bore in said member and an inner diameter when in engagement with said counter bore smaller than the diameter of said shank whereby said ring provides a positive interference preventing removal of said shank from said bore of said member, said ring when compressed into engagement with the smaller of said cylindrical surfaces of said groove having an outer diameter less than the diameter of said bore in said first member,
said ring when compressed into engagement with said larger of said cylindrical surfaces of said groove having an outer diameter larger than the diameter of said bore in said first member,
said smaller diameter portion having a diameter less than that of said shank by an amount at least as great as twice the maximum transverse dimension of the cross section of said ring,
said larger diameter portion having a diameter less than that of said shank by an amount less than twice said maximum transverse dimension of said ring.

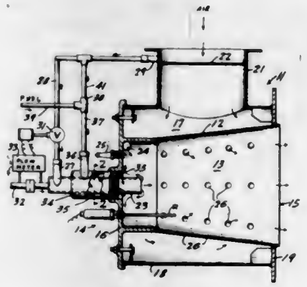
3,221,795
TIRE CHANGING MECHANISM
Harry H. Whited, 1314 Midland Ave., Barberton, Ohio
Filed Feb. 20, 1964, Ser. No. 346,137
3 Claims. (Cl. 157—1.2)

1. Tire changing mechanism of the character described, comprising a frame on which rests a vertically disposed hydraulic cylinder, a piston in said cylinder having an upper and a lower piston rod connected thereto, each said rod carrying spider arms having bead breakers secured to the outer ends thereof, whereby reciprocating movement



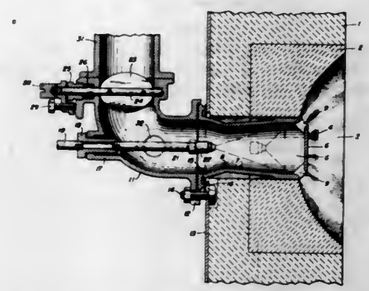
of said piston will cause the beads of a wheel carried tire supported between said bead breakers to be broken away from the wheel.

3,221,796
SELF-STABILIZING COMBUSTION APPARATUS
John D. Nesbitt, Toledo, Ohio, assignor to Midland-Ross Corporation, Toledo, Ohio, a corporation of Ohio
Filed Nov. 29, 1963, Ser. No. 326,895
9 Claims. (Cl. 158—1.5)



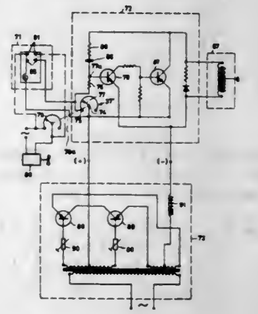
1. In combustion apparatus comprising, in combination: wall means forming a combustion chamber, said wall means comprising a generally cylindrical wall having a corresponding inside and outside surface and the ends of which cylindrical wall define an inlet and exit end of the combustion chamber, and a backplate affixed to the cylindrical wall at the inlet end thereof; a fuel delivery pipe having an inlet and exit end and a corresponding inside and outside surface and extending through the backplate into said combustion chamber substantially along the axis of the cylindrical wall and terminating at a point intermediate said inlet and exit ends of said combustion chamber for introducing a stream of fuel substantially axial to said combustion chamber; and primary air inlet means connected to the outside surface of said cylindrical wall adjacent said backplate, substantially tangential to the inside surface of said cylindrical wall, and in a plane disposed substantially perpendicular to the axis of the chamber for introducing a first spinning stream of air comprising a portion of the combustion air requirements of the fuel stream; the improvement comprising secondary air inlet means connected to the outside surface of said fuel delivery pipe, intermediate its inlet and exit ends, substantially tangential to the inside surface of the fuel delivery pipe in a direction for introducing to said fuel delivery pipe and hence to said combustion chamber a second stream of air circumposing the fuel stream and spinning in the same direction as the first stream of air.

3,221,797
INDUSTRIAL BURNER
Fraser M. Wall, Abington, Pa., assignor to Selas Corporation of America, Dresher, Pa., a corporation of Pennsylvania
Filed Nov. 18, 1963, Ser. No. 324,511
4 Claims. (Cl. 158—11)



1. In a burner, the combination of a hollow, cylindrical distributor member having a closed end to form a chamber therein, said member being provided with a plurality of substantially radial passages extending from said chamber adjacent to said end to the exterior of said member, the interior of said chamber having the shape of an unobstructed venturi with the large end thereof terminating at said passages and the throat thereof being spaced from said end of said chamber, a liquid fuel atomizer having a predetermined angle of spray, means to mount said atomizer adjacent to said throat and centrally of said chamber and directed axially toward said closed end, said atomizer being located a distance from said closed end such that the spray from the atomizer will strike the interior of said chamber adjacent to said large end of said venturi and the edges of said passages, and means to supply combustion air axially to said chamber from a location upstream of said atomizer whereby said combustion air will cross the spray of atomized fuel to mix therewith prior to being discharged through said passages.

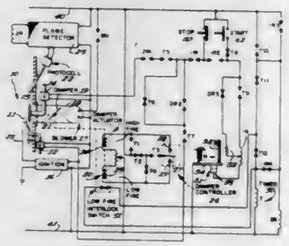
3,221,798
PUMPING SYSTEM FOR OIL BURNERS
Siegfried Kofink, 8 Lenzhalde, Zell am Neckar, Germany
Filed Oct. 23, 1962, Ser. No. 232,561
Claims priority, application Germany, Oct. 26, 1961, K 45,042; May 25, 1962, K 46,840
4 Claims. (Cl. 158—28)



1. A control system for an oil burner comprising an electrically operable variable speed blower for delivering air to said burner, and an electromagnetic pump for delivering fuel to said burner, an electric impulse generator for supplying a pulsating current to said pump, said impulse generator comprising a two transistor oscillation

circuit, a pair of variable resistance means respectively regulating the speed of said blower and the frequency of said pulsating current, and thermostat means having switch contacts effecting alternate switching in and out of said resistance means to effect variations of speed of said blower and variations in stroke frequency of said pump.

3,221,799
BURNER CONTROL APPARATUS
William B. Hamelink and Carl E. Swanson, Minneapolis, Minn., assignors to Honeywell Inc., a corporation of Delaware
Filed Feb. 27, 1964, Ser. No. 347,935
4 Claims. (Cl. 158—28)



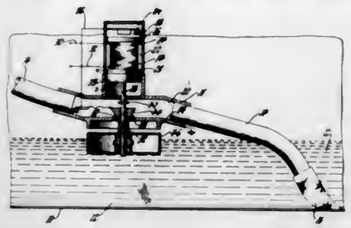
1. In a program burner control having a motor driven timer to sequentially control a plurality of cam operated switch means adapted to be connected to a fuel burner unit to sequentially program the same from a standby condition through at least a prepurge period and a trial-for-ignition period to a run condition, the fuel burner unit including an air damper having an electrically energizable actuator effective to move the air damper between high fire and low fire positions, the movement between these positions requiring a given time interval, the improvement comprising:

first circuit means controlled by said switch means and adapted to be connected to the air damper actuator to provide a prepurge period with the damper in the high fire position and to institute a return of the air damper to low fire position at a timer prior to the end of the purge period, said time prior to the end of the purge period being less than the given time interval,

and second circuit means controlled by said switch means, and adapted to be controlled by the position of the damper, to interrupt operation of the motor driven timer until such time as the damper is in the low fire position, to thus institute the trial-for-ignition period after a prepurge time as determined by operation of the motor driven timer and by operation of the damper actuator.

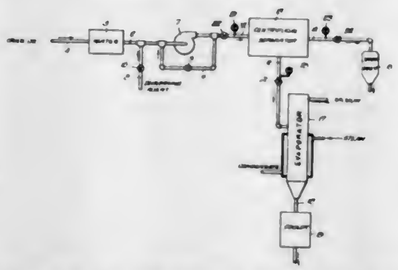
3,221,800
LIQUID RESERVE SYSTEMS
Richard P. Ballou, Howell, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 7, 1962, Ser. No. 222,111
7 Claims. (Cl. 158—46.5)

1. A liquid reserve system including a supply tank, a suction line extending into said tank and having its inlet end portion extending downwardly and terminating within the tank and near the bottom thereof, a control unit including a float arrangement located within said tank, a casing defining an upper chamber and a flow passage in communication with said suction line and said upper chamber, a permanent magnet and a solenoid mounted in said upper chamber, a bottom portion of said solenoid being electromagnetic, a port in said casing, a valve element having a reduced portion extending through said port and fixed to said float arrangement for movement with the latter and a head adapted to seat within said casing and close said port, a stem slidable in said valve element with its upper end fixed to said magnet to move vertically therewith, a stop on said stem determining



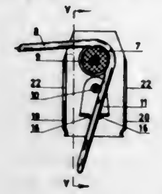
an extent of relative motion of said stem and said valve element, an outer portion of said casing surrounding said port, said float arrangement being spaced from said casing when said valve element is positioned to close said port and being adapted to seat on said outer casing portion when said valve element is raised from said port, means for energizing said solenoid, and said magnet and solenoid bottom portion being in facing relation.

3,221,801
METHOD OF AND APPARATUS FOR CONTINUOUS DEGUMMING OF VEGETABLE OIL AND LECITHIN MANUFACTURE
Noel W. Myers, Decatur, Ill., assignor to A. E. Staley Manufacturing Company, Decatur, Ill., a corporation of Delaware
Original application Mar. 7, 1955, Ser. No. 492,715, now Patent No. 3,134,794, dated May 26, 1964. Divided and this application Jan. 9, 1963, Ser. No. 256,793
6 Claims. (Cl. 159—44)



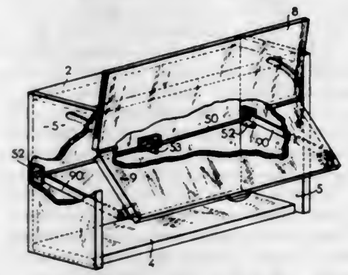
1. Apparatus for continuously degumming vegetable oil and drying the wet gums to produce lecithin which comprises, a centrifugal separator in which two immiscible liquids of different specific gravities may be continuously separated having a feed inlet connection for continuously introducing into the separator under positive pressure a stream of vegetable oil to which degumming agent has been added, an oil-out connection through which a stream of degummed oil continuously discharges from the separator and a gum-out connection through which a stream of wet gums continuously discharges from the separator, pump means for discharging a stream of vegetable oil to which degumming agent has been added under positive pressure into said inlet connection of said centrifugal separator, a continuous agitated wiped film type evaporator adapted to operate under reduced pressure, and a conduit directly interconnecting said gum-out connection of said centrifugal separator with the inlet connection into said evaporator for passing said wet gums into said evaporator without any appreciable retention time.

3,221,802
LOCKING DEVICE FOR LIFT CORDS OF A VENETIAN BLIND
Jozefus Cornelis Hurkmans, Rotterdam, Netherlands, assignor to Hunter Douglas International (Quebec) Limited, Montreal, Quebec, Canada, a corporation of Canada
Filed June 26, 1961, Ser. No. 119,417
Claims priority, application Netherlands, July 4, 1960, 253,395
2 Claims. (Cl. 160—173)



1. A locking device for use with the lift means of a Venetian blind and the like for releasably locking at least one tensioned lift means, comprising in combination, a housing having a pair of spaced side walls and at least one end wall extending between and fixed to said side walls, at least one guide roller between and carried by said side walls, said guide roller having an axis substantially perpendicular to said side walls, and at least one locking member between and carried by said side walls for free turning movement around an axis directly beneath the axis of said guide roller, said locking member being U-shaped and having a web portion connecting the ends of its legs, said web portion being provided with a slot adapted to receive the lift means, at least one edge of said slot being provided with a lip pointing towards said end wall of the housing with which said locking means cooperates, said end wall of the housing being provided with an opening located to allow the portion of the locking member located above its slot to pass therethrough, whereby to clamp the lift means between the edge of the slot and the portion of the end wall subjacent said opening.

3,221,803
HINGED DOORS FOR WALL-CUPBOARDS AND THE LIKE
Marc Henri Jacques Lambert, Sevres, France, assignor of fifty percent to Bernard Louis Jean Liegeon, Champagnole, France
Filed Oct. 29, 1962, Ser. No. 233,720
Claims priority, application France, Oct. 28, 1961, 877,350
5 Claims. (Cl. 160—206)



1. A cupboard comprising two lateral parallel walls, an upper wall and a lower wall, a door for closing said cupboard, said door being formed of two panels hingedly interconnected along their adjacent edges and adapted, in their open position, to be folded back parallel to and against each other along said upper wall of said cupboard, the first of said panels, that is the one nearest to said upper wall against which it is to be stowed, comprising on each of its lateral edges perpendicular to said hinge means a first guiding device, said first guiding device co-acting with plain guide tracks provided on said lateral parallel walls, said first panel comprising also a second guiding device movable in relation to a fixed point on said parallel walls, said second panel comprising also a guiding, balancing and lifting device consisting of a torsion bar means fixedly secured by at least one point thereof to said cupboard, substantially parallel to the plane of the door opening, and having a pair of ends rotatably journalled in bearings provided at both lateral sides of said cupboard, and a pair of substantially symmetrically disposed arms pivotally mounted at one end on the lower part of said second panel and rigidly secured at their other end to said torsion bar means.

3,221,804
FOLDING DOOR STRUCTURE AND ASSEMBLY
Jack Rudnick, Bronx, N.Y., assignor to Jack Rudnick, New York, and Benjamin Rudnick, Tarrytown, N.Y.
Filed Feb. 18, 1963, Ser. No. 259,327
11 Claims. (Cl. 160—206)



1. A door structure comprising an overhead longitudinal positioning member, a track member including a downwardly facing longitudinal track and an upwardly facing channel embracing said positioning member and vertically adjustable relative thereto, a first journal block registering with said track and having formed therein a socket provided with a downwardly directed opening and a longitudinally extending guide surface inclined downwardly toward said socket opening, a pair of laterally spaced substantially vertical first and second panels hingedly connected to each other along their inner adjacent edges, a follower member mounted on and adjacent to the upper outer corner of said first panel and longitudinally slidably registering with said track, a retractable vertical first pivot pin mounted on and adjacent to the upper outer corner of said second panel and engaging said socket and axially movable between a raised and depressed position, spring means urging said pivot pin to its raised position transversely locked in said socket, a first bearing member substantially coaxial with said first pivot pin and located adjacent the lower outer corner of said second panel and supporting said second panel for swinging about a vertical axis, and a second upwardly facing bearing member located on the top of said second panel adjacent its outer edge and bearing on said first journal block to substantially lock said track member against vertical movement.

3,221,805
SELF-LOCKING HINGE

Wellington Everett Miller, Garden Grove, Calif., assignor to Penberthy Lumber Company, Los Angeles, Calif., a corporation of California

Filed July 22, 1963, Ser. No. 296,551
4 Claims. (Cl. 160—229)

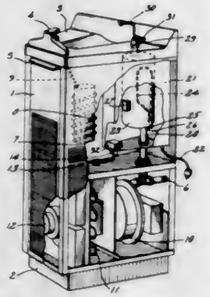


1. In a self-locking hinge assembly for a pair of hingedly connectible members, the combination of:
(a) two spaced hinges each including hinge elements respectively connectible to the hingedly connectible members;
(b) each of said hinges including a hinge pin pivotally interconnecting said hinge elements thereof;
(c) said hinge pins normally being axially aligned to provide said hinges with a common hinge axis about which said hinge elements of said hinges may pivot between open and closed positions;
(d) one of said hinges including bearing elements respectively connected to said hinge elements thereof;
(e) said bearing elements of said one hinge being axially aligned, when said hinge elements of said one hinge are in their closed positions, to provide a locking axis which is perpendicular to said hinge axis and about which said one hinge is pivotable to misalign said hinge pins;
(f) thereby preventing relative pivotal movement of the hingedly connectible members when they are connected to said hinges; and
(g) locking means for pivoting said one hinge about said locking axis into a position to misalign said hinge pins.

3,221,806
WATER COOLER AND HOT WATER ACCESSORY KIT THEREFOR

Roy J. Birmingham, Homewood, Ill., assignor to General Electric Company, a corporation of New York

Filed Oct. 3, 1962, Ser. No. 228,141
11 Claims. (Cl. 165—64)

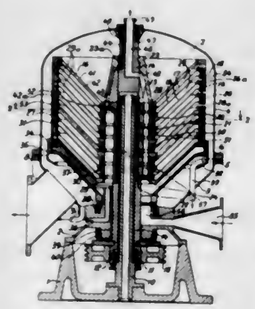


8. An electric drinking water appliance comprising: an electrically powered refrigeration system including a cooling evaporator; an electric power cord for said refrigeration system and a plug therefor for connection to a standard power outlet receptacle with at least one ground wire; a cold water system connected to a water supply, cooled by said evaporator and discharging at a drinking fountain outlet; a separate electric water heater adapted to be combined with or removed from said drinking water appliance, said water heater including a water tank, a water connection to the water supply, an electric heater for said water tank, and a valved outlet from said water tank to discharge hot water; a main power cord having two power conductors and a ground conductor and adapted for connection to a power source, a grounding power receptacle including a grounding clip connected to said ground conductor, a first one piece metal clip connected to one of said power conductors and to one terminal of said electric heater, a second two piece metal clip with one piece thereof connected to the other power conductor and with the other piece thereof connected to the other terminal of said electric heater, said two pieces of the second clip being electrically insulated from one another with portions thereof closely spaced, said first and second clips forming the electrical contacts of the power receptacle whereby insertion of the plug for said refrigeration system into said receptacle completes the electrical connection to said electric heater by interconnecting the two pieces of said second clip.

3,221,807
APPARATUS FOR HEAT TREATMENT OF LIQUIDS

Bjorn Olow Johansson, Lomma, Sweden, assignor to Aktiebolaget Separator, Stockholm, Sweden, a corporation of Sweden

Filed Mar. 20, 1963, Ser. No. 266,670
Claims priority, application Sweden, Mar. 23, 1962, 3,278/62
11 Claims. (Cl. 165—88)



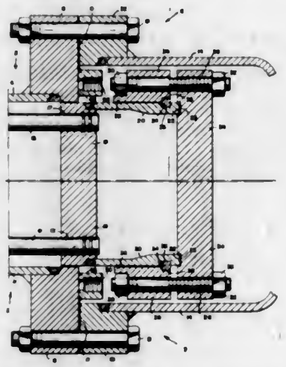
1. In an apparatus for indirect heat exchange between a liquid medium and a vapour medium, the combination of a rotor including a nest of annular disks having spaced conical portions and also having interengaging a set of radial flnages at their outer peripheries and interengaging a set of radial flanges at their inner peripheries, a stationary casing, a drive shaft on which the rotor is mounted through said inner flanges for rotation about an axis in said casing, the casing defining a chamber surrounding the rotor, said conical disk portions forming a series of conical channels of which alternate channels are for passage of said liquid medium and the other channels are for passage of said vapour medium, said outer flanges having first passages through which said alternate conical channels communicate with said chamber, the rotor having an annular groove surrounding and opening toward said axis, said outer flanges having second passages through which said other conical channels communicate with said groove, a stationary paring device located in said groove and forming an outlet therefrom, means for sealing said groove from said chamber, said chamber having a vapour outlet and a

liquid outlet, said inner flanges forming an axial passage extending generally parallel to said shaft and opening toward one end thereof to form an inlet for one of said media, said inner flanges having radial passages leading from said axial passage to said alternate conical channels, a first stationary inlet duct for said one medium, a sealed flow connection through which said first duct communicates with said axial inlet passage in the inner flanges, and a second stationary inlet duct for admitting the other medium and communicating with said other conical channels by way of said annular groove and one of said flange sets.

3,221,808
HEAT EXCHANGER HEAD

John W. Pyle, Jr., West Chester, Pa., assignor to Pressed Steel Tank Company, Milwaukee, Wis., a corporation of Wisconsin

Filed Jan. 21, 1964, Ser. No. 339,149
2 Claims. (Cl. 165—158)



1. In a heat exchanger of the type having a shell and tubes extending lengthwise of the shell,
a floating tube sheet having at least a portion thereof within the shell and supported by the shell carrying the heat exchanger tubes,
said floating tube sheet having a skirt forming an open ended chamber adjacent the ends of the tubes,
a cover for the open end of the chamber,
stuffing box means adjacent the floating tube sheet,
a gland adapted to co-operate with the stuffing box,
means to selectively secure the cover to the skirt and when the cover is removed, to move the gland relative to the stuffing box means to co-operate therewith including a ring slidably mounted on the skirt, means to back-up the ring secured to the skirt, and bolt means for engaging the ring and the cover and when the cover is removed, to engage the ring and the shell, and
an outer end cover removably secured to the shell.

3,221,809
METHOD OF HEATING A SUBTERRANEAN RESERVOIR CONTAINING HYDROCARBON MATERIAL

Dean K. Walton, Dallas, Tex., assignor to Socony Mobil Oil Company, Inc., a corporation of New York

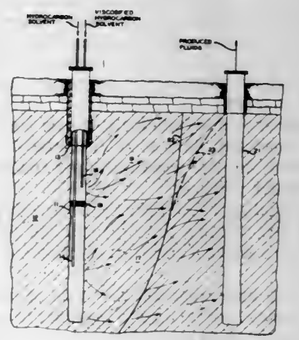
No Drawing. Filed June 14, 1963, Ser. No. 287,752
11 Claims. (Cl. 166—2)

1. A procedure for recovering hydrocarbons from a subterranean formation containing hydrocarbon material comprising:
passing an oxidizing gas from an input well means to output well means through said formation in a first direction to effect auto-oxidation of said hydrocarbon material only until the temperature within the formation traversed by the oxidizing gas passed from said input well means begins to approach the ignition temperature of the hydrocarbon material, and
thereafter passing an oxidizing gas from an input well means to output well means through said formation traversed in said first passage of oxidizing gas in a direction substantially opposite to said first direction to effect auto-oxidation of said hydrocarbon material only until the temperature within the formation traversed by the oxidizing gas passed from said last-mentioned input well means begins to approach the ignition temperature of the hydrocarbon material and thereby heat said hydrocarbon material in said formation, and
thereafter recovering heated hydrocarbons from said formation through an output well means.

3,221,810
SWEEP EFFICIENCY IN MISCIBLE FLUID FLOODS

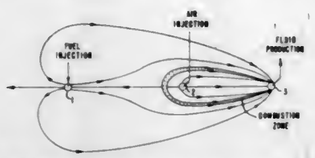
John W. Marx, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Continuation of application Ser. No. 65,128, Oct. 26, 1960. This application Mar. 11, 1964, Ser. No. 352,421
8 Claims. (Cl. 166—10)



1. In a process for secondary recovery of hydrocarbons from a subterranean porous formation by employing a miscible fluid flood, and wherein gravity segregation of an injected hydrocarbon solvent occurs in the formation, causing the solvent to penetrate more rapidly through the upper portion of a pay zone of said formation thus resulting in premature breakthrough to at least one producing well penetrating said formation, the steps comprising;
(a) injecting a hydrocarbon solvent via said input well into the lower portion of said pay zone;
(b) injecting a hydrocarbon solvent containing a viscosifying agent via said input well into a sufficient amount of the upper portion of said pay zone to prevent premature breakthrough caused by gravity segregation, the viscosity of the fluid introduced into said upper portion being greater than the viscosity of the solvent introduced into said lower portion;
(c) injecting a normally gaseous hydrocarbon into said input well behind both of said hydrocarbon solvents;
(d) and producing the hydrocarbons in said formation from said at least one producing well, thereby reducing solvent mobility in said upper portion and resulting in improved vertical sweep efficiency.

3,221,811
MOBILE IN-SITU HEATING OF FORMATIONS
Michael Prats, Houston, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Mar. 11, 1963, Ser. No. 264,384
5 Claims. (Cl. 166—11)



1. A method of heating extensive areas of an underground formation for the purpose of heating a material in an underground location, said method comprising the steps of

(a) injecting fuel at one point into an underground formation which is deficient in combustible material in an amount sufficient to maintain an underground combustion,

(b) injecting an oxygen-containing fluid into said underground formation at a point spaced from said fuel-injection point but within contact range of said injected fuel,

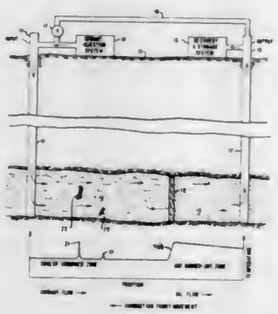
(c) igniting said mixture of fuel and oxygen-containing fluid at least at one point along the contact front in the formation between said injection points where the fuel and oxygen-containing fluid combine into a combustible mixture, thereby forming a combustion front which subsequently propagates along the entire contact front,

(d) discharging the products of said combustion from said formation at a point displaced from the points at which the fuel and the oxygen-containing fuel are separately injected,

(e) controlling the injection rates of said fuel and said oxygen-containing fluid to maintain the combustion front in a selected area of said formation being heated, and

(f) slowly increasing the flow rate of one of said injected materials relative to the other to cause the combustion front to move from a portion of the formation closer to one injection point toward the other injection point.

3,221,812
USE OF ANTIOXIDANTS IN UNDERGROUND COMBUSTION CONTROL
Michael Prats, Houston, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Apr. 25, 1963, Ser. No. 275,515
5 Claims. (Cl. 166—11)



1. A method of recovering petroleum from a subterranean, permeable, oil-bearing formation penetrated by at least one input well and one output well at spaced locations comprising:

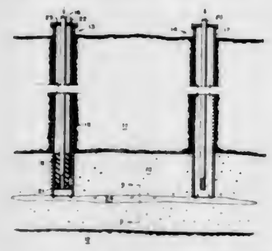
(a) initiating a combustion front in the portion of said formation contiguous to said output well;

(b) injecting a combustion-supporting fluid into said input well at a sufficient pressure to pass through said permeable formation to maintain said combustion front in said formation;

(c) controlling the rate of oxidative heating caused by the passage of said combustion-supporting fluid between said input well and said combustion front by injecting an antioxidant through said input well into said formation between said input well and said combustion front to prevent spontaneous ignition of petroleum and said combustion-supporting fluid between said input well and said combustion front; and

(d) removing petroleum-containing effluents from said formation in said output well.

3,221,813
RECOVERY OF VISCOUS PETROLEUM MATERIALS
Philip J. Closmann and Charles S. Matthews, Houston, Tex., and Todd M. Doscher, Edmonton, Alberta, Canada, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Aug. 12, 1963, Ser. No. 301,301
6 Claims. (Cl. 166—11)



1. An improved process for recovering petroleum tars from shallow incompetent tar-sand reservoirs where the danger of a blowout is imminent when pressurized, heated fluids are injected into the reservoir to displace the viscous petroleum tars comprising:

(a) penetrating such a shallow, incompetent tar-sand reservoir with at least one production well and at least one injection well spaced from one another;

(b) establishing fluid communication through said reservoir between said injection well and said production well;

(c) injecting a heated, gaseous fluid via said injection well through said established fluid communication between said injection well and said production well at a pressure sufficient to maintain said fluid communication but below the fracturing pressure of said reservoir;

(d) terminating the injection of said heated, gaseous fluid when the pressure required for injecting it approaches said fracturing pressure of said formation;

(e) subsequently injecting a substantially non-compressible, petroleum tar entraining liquid via said injection well and flowing it through said established fluid communication between said injection well and said production well at a pressure greater than the fracture propping pressure of said formation to remove petroleum tar, ingressing into said established fluid communication; and

(f) thereafter continuing said injecting of said heated, gaseous fluid below said fracturing pressure of said tar-sand reservoir.

3,221,814
SAND CONSOLIDATION METHOD
Wayne F. Hower, Duncan, Okla., assignor to Halliburton Company, Duncan, Okla., a corporation of Delaware
No Drawing. Filed Apr. 1, 1963, Ser. No. 269,767
4 Claims. (Cl. 166—33)

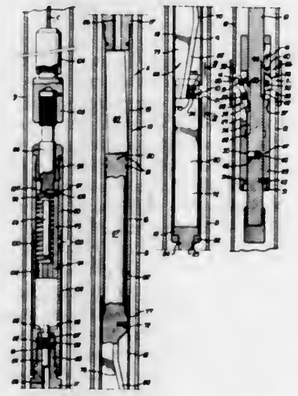
1. A method of permeably consolidating loose sands, earthen formations or the like, consisting of the steps of:

(a) introducing a formation conditioner into the formation to be consolidated;

(b) introducing a phenolic resin containing a relatively small amount of gamma-aminopropyltriethoxysilane into the formation; and,

(c) introducing an oil overflush solution containing a relatively small amount of cresol mixed therewith into the formation.

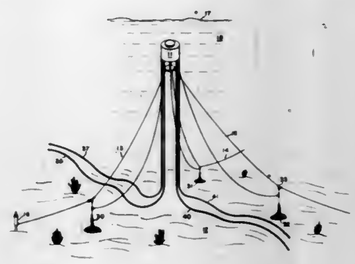
3,221,815
SUBSURFACE TUBULAR STRING PERFORATOR
William D. Myers, Houston, Tex., assignor to Baker Oil Tools, Inc., Los Angeles, Calif., a corporation of California
Filed Apr. 15, 1963, Ser. No. 273,089
12 Claims. (Cl. 166—55.3)



1. In apparatus for perforating a tubular string disposed in a well bore: fluid actuated means adapted to be lowered in the tubular string on a running-in string and having relatively movable first and second members; perforating means carried by and movable laterally of said first member into engagement with the tubular string to perforate the same; means connected to said first member for securing said first member to the tubular string against both upward and downward movement therewithin; actuating means shiftable by said second member and engaging said perforating means to move said perforating means laterally; and means providing a fluid under pressure in said fluid actuated means to exert a force on said second member shifting it relative to said first member to shift said actuating means and move said perforating means laterally outwardly into engagement with the tubular string to perforate the same.

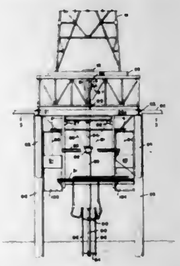
3,221,816
UNDERWATER OIL GATHERING INSTALLATION
Howard L. Shatto, Jr., Palos Verdes, Bruce J. Watkins, West Covina, James Ronald Dozier, Whittier, Bill L. Faulk, Compton, and Benjamin L. Goepfert, West Covina, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Dec. 7, 1961, Ser. No. 157,654
5 Claims. (Cl. 166—66.5)

1. A system for gathering production fluid from underwater wells and transferring at least the oil portion of said production fluid to remote oil handling facilities, said system comprising in combination with at least one well assembly affixed to the ocean floor, an oil and gas handling vessel buoyantly positioned in a body of water, resilient anchoring means resiliently positioning said vessel at a selected depth in said body of water, fluid intake conduit means connecting each well assembly with said vessel for delivery well fluid into said vessel, fluid transfer means



carried by said vessel for transferring at least the oil portion of said fluid from said vessel, fluid discharge conduit means interconnecting said vessel with a fluid handling facility at a remote location for conducting fluid from said fluid transfer means, and valved manifold means connecting said fluid transfer means in fluid communication between said intake conduit means, and said discharge conduit means.

3,221,817
MARINE CONDUCTOR PIPE ASSEMBLY
Douwe de Vries, Metairie, and Frank Poorman, Jr., Lafayette, La., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Sept. 13, 1962, Ser. No. 223,396
7 Claims. (Cl. 166—66.5)



7. Apparatus for drilling, completing and working over an underwater well, said apparatus comprising

(a) operational platform means positioned above the surface of a body of water on a vessel,

(b) a well base positioned below the surface of the water and including substantially vertical well base pipe means having a lower portion thereof fixedly anchored to the formation below said body of water and a portion extending upwardly above said formation,

(c) marine conductor means connectible at its lower end to the upper end of said well base pipe means with the upper end of said conductor pipe extending above the surface of the water in the vicinity of said operational platform means,

(d) buoyancy tank means secured to said marine conductor means below the surface of the water and having sufficient buoyancy to support a major portion of the weight of said marine conductor means,

(e) weight support means operatively secured to said marine conductor means near the upper end thereof and to said platform means for supporting that portion of the weight of said marine conductor means unsupported by said buoyancy tank means,

(f) said weight means carried by said vessel and arranged for substantially free vertical movement, sheave means secured to said vessel at a fixed level above the uppermost position of said weight means, cable means having one end thereof secured to said marine conductor means, said cable means passing operatively over said sheave means with the other end of the cable means secured to said weight means, said weight means being free to move up and down as the vessel rises and falls due to wave action,

(g) movement-limiting means positioned in contact with said movable weight means for confining the movement of said weight means along a selected path,

(h) said movement-limiting means comprising substantially vertically-extending rigid elongated members of a length at least equal to the maximum vertical movement of said weight means and arranged in contact with said weight means to prevent any substantial lateral movement thereof, and

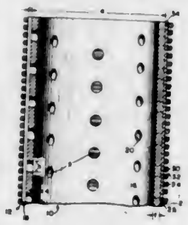
(i) said weight means comprising variable weight tank means adapted to contain weighting material.

3,221,818
FLUID PRESSURE ACTUATED WELL PACKER
Frank H. Taylor and James H. Bostock, Dallas, Tex., assignors to Otis Engineering Corporation, Dallas, Tex., a corporation of Delaware
Filed June 11, 1962, Ser. No. 201,573
13 Claims. (Cl. 166—187)



5. A well packer including: a tubular mandrel constituting a flow conductor; an expander sleeve mounted on said mandrel for limited longitudinal movement thereon, said sleeve having a portion spaced from said mandrel to provide an annular space therebetween; closure means on said expander sleeve at the opposite ends of said annular space having sealing engagement with said mandrel to close said annular space; partition means rigidly secured on said mandrel in said annular space dividing said annular space into two longitudinally spaced chambers, said mandrel having a port communicating the interior of said mandrel with one of said chambers; valve means closing said port; expandable packing means carried by said mandrel and movable to expanded position by said expander sleeve upon movement of said expander sleeve in one longitudinal direction relative to said mandrel, said one of said chambers increasing in volume when said expander sleeve moves toward expanding position and the other of said chambers decreasing in volume, said chambers being initially at low pressure, said expander sleeve being moved by fluid pressure introduced into said one chamber from the interior of said mandrel towards said position expanding said packing means when said valve means is moved to open said port.

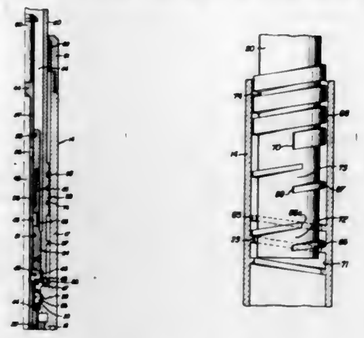
3,221,819
WELL SCREEN
Richard E. Dickinson and Roger W. Dickinson, both of Rte. 2, Box 308, Theodore, Ala.
Filed May 1, 1964, Ser. No. 364,218
6 Claims. (Cl. 166—233)



1. A self-cleaning water well screen which is substantially immune to clogging during insertion into the ground, said water well screen comprising, in combination: an elongate tube of synthetic material having a body portion and a plurality of parallel longitudinally extending and circumferentially spaced imperforate ribs projecting outwardly from said body portion, generally open chambers bounded by adjacent ribs and the outer surface of said body portion between adjacent ribs, said body portion being provided between adjacent ribs with a plurality of openings arranged along the length of said body portion to place said chambers into communication with the interior of said body portion; and filtering means including a strip of material forming a plurality of slightly spaced apart turns encircling said tube and engaging said ribs thereby partially to close the exterior boundary of said chambers and forming between the adjacent turns a continuous slot through which water may pass, said strip being generally wedge-shaped in cross section and including outer and inner surfaces joined by inclined side walls, the inner surface of said strip being the narrowest portion thereof, said inner surface engaging said ribs thereby to render the slot V-shaped and to provide self-cleaning filtering slots, said strip having relatively sharp opposite outer edges defined by said inclined side walls and the outer surface thereof, said outer surface being convex between said outer edges to provide an undulated outer surface thereby to prevent clogging of said filtering means during insertion of the well screen into the ground, the inner and rib-engaging surface of said strip being slightly concave to define with said inclined side walls sharp opposite inner edges along the inner surface thereof, said sharp opposite inner edges being embedded in said ribs to maintain the turns of said strip in spaced relationship from one another.

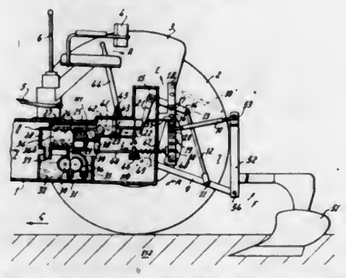
3,221,820
SUBSURFACE ACTUATING DEVICE AND FORMATION TESTER VALVE APPARATUS
William D. Myers, Houston, Tex., assignor to Baker Oil Tools, Inc., Los Angeles, Calif., a corporation of California
Filed Aug. 28, 1962, Ser. No. 219,835
16 Claims. (Cl. 166—237)

1. In apparatus adapted to be operated in a well bore by a running-in string extending to the top of the well bore: inner and outer members, one of said members being adapted for connection to the running-in string; said inner member having external thread means adapted to mesh with internal thread means on said outer member; one of said thread means having a first portion out of phase with a second portion of said one thread means,



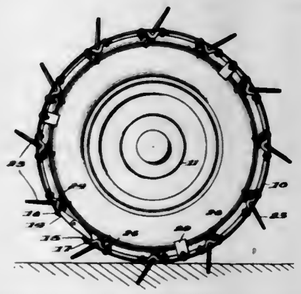
whereby relative turning in one direction between said members and of said first portion along the other of said thread means brings said second portion into abutting engagement with said other of said thread means to prevent further relative turning between said members in said one direction.

3,221,821
LIFTING MECHANISMS FOR TRACTOR-PROPELLED IMPLEMENTS
Cornelis van der Lely, Zug, Switzerland, and Cornelius Otto Jonkers, Delft, and Foppe Hilbertus Fockens, Maasland, Netherlands, assignors to C. van der Lely N.V., Maasland, Netherlands, a Dutch limited-liability company
Filed June 25, 1962, Ser. No. 205,032
Claims priority, application Netherlands, July 7, 1961, 266,856
8 Claims. (Cl. 172—7)



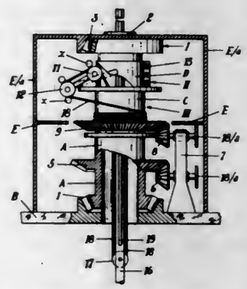
1. A lifting mechanism having a mechanical linkage system connecting a tractor with an implement in a pushing or pulling arrangement, said linkage system including link means pivotally connected to said tractor and pivotably connectable with an implement, power means for raising said implement through said linkage system in response to the external draft forces operating on said implement in a pushing direction and a pulling direction, said power means comprising a normally neutralized hydraulic mechanism, displaceable detecting means for deneutralizing said power means, connection means operatively associated with said detecting means, said connection means being pivotable about a pivotable axis to displace said detecting means, said axis extending substantially transverse to the direction of travel, a resilient member connected to said connection means for opposing displacement of said detecting means, transmission means, said connection means being connectable with said link means and said transmission means on opposite sides of said axis, whereby said detecting means is responsive to torque exerted by said external forces on said implement in both directions, said forces being transmitted via said link means and said transmission means to displace said detection means in the same direction when the implement is pushed or pulled.

3,221,822
SOIL PENETRATING IMPLEMENT
Arnold A. Dedoes, 2070 W. Eight Mile Road, Berkley, Mich.
Filed Dec. 20, 1963, Ser. No. 332,040
4 Claims. (Cl. 172—22)



1. A demountable soil aerating rim attachment for use on a rubber tired tractor wheel comprising a flat metal surfaced annular band, said band having a circumference substantially fitting the circumference of the rubber tire on said tractor wheel, said flat metal annular band having a plurality of elongated slot means formed in the surface thereof and spaced laterally from the side edges of the tire, a plurality of elongated tubular soil coring elements extending through said slot means and mounted for pivotal movement on the inside surface edges of said band so as to discharge cored material to one side of said tire, and means for removably securing the metal band to the tractor wheel.

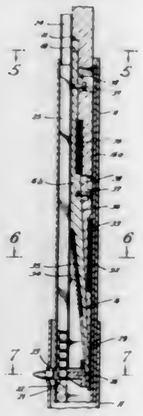
3,221,823
DEPTH DRILLING MACHINE MOUNTED ON A FOUR-WHEELED TRUCK
Emilio Tonti and Elio Tonti, Osimo, Ancona, Silvio Tonti, Filottrano, Macerata, and Armando Tonti, Osimo, Ancona, Italy
Filed June 11, 1963, Ser. No. 287,069
Claims priority, application Italy, June 16, 1962, 12,182/62
3 Claims. (Cl. 173—25)



1. A depth drilling machine adapted to be mounted on an engine driven four wheel truck having a power take-off unit, comprising in combination a platform rigidly arranged on the truck having a circular hole therein, a

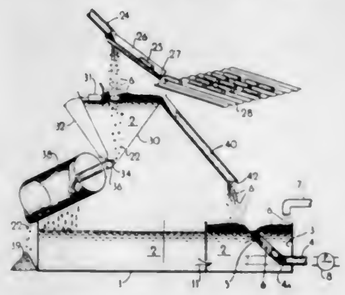
first roller bearing arranged on said platform in correspondence with said circular hole, a first rotary hollow drum placed on said first roller bearing and having a first window provided at the upper portion thereof and a reduced end portion, a first helical spur gear ridgidly secured to said first drum, a second rotary hollow drum adapted to rotate around said first drum, a second helical spur gear provided at the lower end of said second drum, a cylindrical split member having a second window, means for fixing said member on the upper portion of said first drum to cause said first and second window to coincide, a first pulley arranged on said member within said second and first window, a U-shaped bracket rigidly secured to said member and downwardly directed in front of the zone comprising said second window, a second pulley arranged on said bracket, a second roller bearing placed on said reduced end portion of said first drum, a vertical post arranged on said platform parallel to said first drum, a first and second pinion supported on said post and meshing with said first and second helical spur gear, respectively, a reversing gear unit operatively coupled with said pinions and the take-off unit of the engine of the truck, guide means rigidly fixed to the inner wall of said first hollow drum, a cylindrical cover for protecting the entire assembly and having a hole for said reduced end portion of the first drum, tubular elements shaped to slide in said guide means for rotating together with said first drum, coupling means for rigidly connecting said tubular elements to one another, a drilling bit provided at one end of a first tubular element, and a cable fixed at one end onto said second hollow drum, wound on said second drum and passing through said second pulley, first pulley, first and second window, and fixed at its other end onto the inner wall of said first hollow drum, whereby by rotating said first drum the tubular elements will perform the drilling operation causing the cable to unwind owing to the weight of the tubular elements, whereas for lifting the bit the second pinion will be operated for winding said cable on said second drum.

3,221,824
TOOL FOR LAYING A PIPELINE LATERALLY OF A WELL BORE
Leonard W. Self, Gladewater, Tex., assignor, by direct and mesne assignments, to Alpha Trace, Inc., a corporation of Texas
Filed Dec. 19, 1961, Ser. No. 160,559
11 Claims. (Cl. 175—19)



8. An apparatus for forcing a plurality of pipe segments from a borehole of a well laterally into a formation so as to form a flowway between the formation and the borehole comprising an elongated housing adapted to be lowered into the borehole, means carried by the housing for supporting a pipe segment in position so that it can be pushed laterally of the housing into the formation, means in the housing for holding a supply of said segments and for feeding them one-by-one into said supporting means as the preceding segment is pushed therefrom, an anvil mounted in the housing for reciprocation transverse of the housing but for limited longitudinal movement with respect thereto to push said segments without rotation from said supporting means out into the formation, a wedge mounted for reciprocation longitudinally of the housing behind the anvil so that downward movement of the wedge moves the anvil toward segment pushing position, a sliding connection between the anvil and wedge causing the anvil to be retracted responsive to upward movement of the wedge, an actuating member reciprocable with respect to the housing above the wedge, dogs pivoted to the wedge and movable between latching and unlatching positions and in latching position engageable with shoulders on said actuating member, and an abutment carried by the housing for engagement with the dogs upon movement of the wedge to its uppermost position to release the dogs from latching engagement with the actuating member, said housing extending a substantial distance above the wedge when the wedge is in its uppermost position so as to permit the actuating member to overtravel after release from the wedge without moving the latter.

3,221,825
WELL DRILLING FLUID AND A METHOD OF USING SAME
Homer I. Henderson, 2204 Live Oak, San Angelo, Tex.
Filed Mar. 15, 1962, Ser. No. 179,850
5 Claims. (Cl. 175—72)



4. In the process of well drilling , including the use of a drilling fluid circulating system, the improvement comprising the steps of:

providing a supply of fluid,

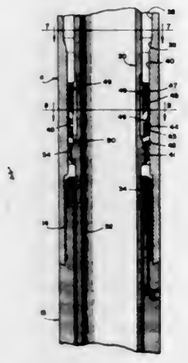
adding a quantity of cork particles to said fluid, and

introducing the fluid with cork particle additives into the drilling fluid circulating system.

3,221,826
FLUID PRESSURE ONE-WAY JAR
Derrel D. Webb, Houston, Tex., assignor to Houston Engineers, Inc., Houston, Tex., a corporation of Texas
Filed Dec. 10, 1963, Ser. No. 329,465
4 Claims. (Cl. 175—297)

4. A fluid pressure one-way jar comprising an upper elongated tubular member providing a torque barrel, a cylinder removably secured to the lower end of said barrel, an elongated sleeve secured to the lower end of said cylinder, an annular shoulder in the upper end of said barrel providing a downwardly facing impact surface, a hollow torque mandrel slidably received in said barrel,

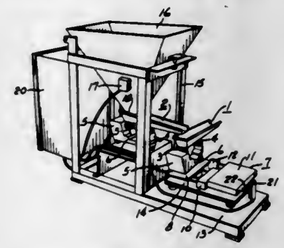
means to prevent rotation of said mandrel with respect to said barrel, means on the upper end of said mandrel for attaching the same to a drill string, a coupling sleeve removably secured to the lower end of said mandrel and providing an enlarged hammer portion having an upwardly facing striking surface, a tubular piston rod removably secured to said coupling sleeve and extending downwardly through said cylinder and into said elongated sleeve, said cylinder having an enlarged internal portion extending from a point adjacent the upper end to a point intermediate the length and terminating in an inwardly tapered wall merging into a portion of reduced diameter extending to the lower end of said cylinder and a piston on said piston rod within said cylinder, said piston comprising an annular flange on said piston rod, a piston ring of yieldable material slidably mounted on said piston rod and supported on the upper surface of said flange, means on said piston rod to limit sliding movement of said piston ring and fluid by-pass grooves in said piston rod inwardly



of said piston ring and providing communication between portions of said cylinder on opposite sides of said piston, whereby upon application of an upward force to said mandrel said piston will move upwardly in said cylinder to compress fluid in said cylinder above said piston ring and accumulate energy in the drill string with a portion of the fluid bleeding by said piston through said grooves and upon said piston ring reaching the enlarged portion in said cylinder pressure in the upper portion of said cylinder will be suddenly released thereby releasing the energy accumulated in the drill string to cause rapid upward movement of said hammer portion and engagement of said striking surface with said impact surface to apply an upward jarring force to said elongated sleeve, said piston ring partially expanding into the enlarged portion of said cylinder upon said upward movement, said tapered wall serving to contract said piston ring upon subsequent downward movement of said piston with fluid flowing through said grooves to facilitate resetting of said jar for a subsequent operation.

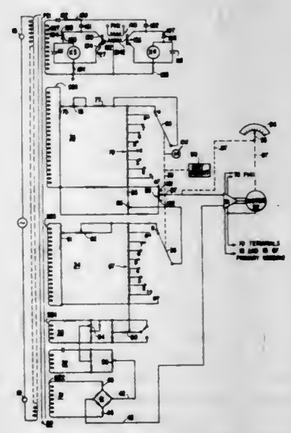
3,221,827
GRAVIMETRIC TWO-FEEDER SYSTEM
William V. Spurlin, Indiana, J. Denny Scott, Homer City, and Gordon H. Dunn, Indiana, Pa., assignors to Link-Belt Company, a corporation of Illinois
Filed Dec. 24, 1963, Ser. No. 333,027
15 Claims. (Cl. 177—210)

2. A controlled material feeding system consisting of a constantly operating discharge conveyor, a weighing device supporting said discharge conveyor and having a back contact opened by a batch of predetermined weight of material on said discharge conveyor, a feeding conveyor mounted to supply the material to form said batch of predetermined weight to said discharge conveyor and having an operating coil, a control circuit to operate said feeding conveyor and including a timer having a back contact connected in series with said operating coil and said back contact of said weighing device, and means in



said timer to close said timer back contact after the passage of a time period sufficient to complete the discharge of said batch of predetermined weight from said discharge conveyor to permit no more than one batch on said discharge conveyor at one time.

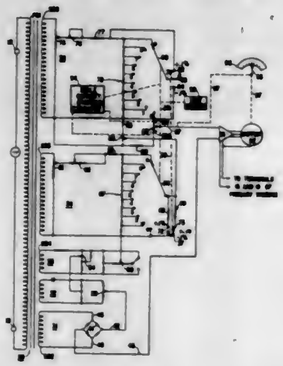
3,221,828
AUXILIARY LOAD CIRCUITRY FOR LOAD RESPONSIVE DEVICES
Robert D. Kohler, Temperance, Mich., assignor to Toledo Scale Corporation, Toledo, Ohio, a corporation of Ohio
Filed Jan. 8, 1964, Ser. No. 336,452
6 Claims. (Cl. 177—210)



1. In a load weighing system having a load receiving transducing element generating a voltage responsive and proportional to the application of a load thereto, a counterbalancing voltage circuit generating a voltage in phase opposition to that of said transducing element and including a potentiometer having a positionable arm driven by a servomotor providing a voltage to said counterbalancing circuit in accordance with the setting of the arm, and a multitapped system capacity changing resistor having a tap selecting slider driven by a second motor providing any of a plurality of magnitudes of voltages to said counterbalancing circuit in accordance with the tap setting of the slider, an error detecting amplifier operatively connected in circuit with said transducing element and said counterbalancing circuit and operable to drive said servomotor in either of two directions in response to the phase of the detected error signal, and a phase sensitive control circuit for said second motor

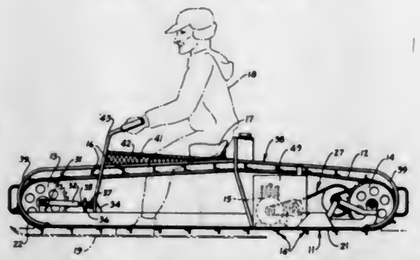
comprising, potentiometer terminal indicating means operable in response to said potentiometer arm approaching the terminal positions of said potentiometer, activating means for said second motor responsive to said terminal indicating means indicating that said potentiometer arm is approaching a terminal thereof to change the tap setting of said multitapped resistor and thereby provide the appropriate counterbalancing voltage to oppose said voltage from said transducing element, said error detecting amplifier generating an error signal of a given phase in response to said counterbalancing voltage circuit providing a signal of improper balancing range relative to said transducing element voltage and generating an error signal of an opposite phase upon said voltage provided by said counterbalancing circuit being within a proper balanceable range, phase sensitive means preventing further changes in the tap setting of said multitapped resistor upon sensing a change in phase of said error signal, and load indicating means indicating the magnitude of the applied load.

3,221,829
VOLTAGE BALANCING CIRCUIT
Robert D. Kohler, Temperance, Mich., assignor to Toledo Scale Corporation, Toledo, Ohio, a corporation of Ohio
Filed Jan. 13, 1964, Ser. No. 337,431
6 Claims. (Cl. 177—210)



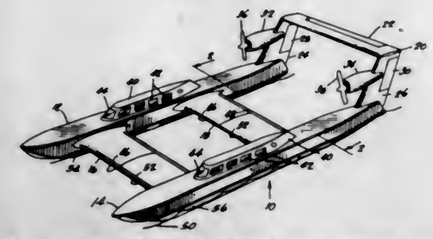
1. A weighing scale comprising, in combination, transducer means for generating an output voltage proportional to load applied to the scale, adjustable means in circuit with the transducer means for supplying a balancing voltage in opposition to the output voltage, servo means in circuit with both said means for altering the adjustable means in a balancing direction in response to differences between said voltages, multi-tapped means having associated switch means for adding increments of voltage to the balancing voltage to increase the capacity of the scale, and selectively operable voltage linearity curve shaping means in circuit with said multi-tapped means for altering the voltage linearity function thereof to substantially conform to the voltage linearity function of said transducer means, said voltage linearity curve shaping means including first impedance means in series with said multi-tapped means for substantially matching said output and balancing voltages in one mode of operation wherein a first linearity type of transducer means is employed and selectable impedance means having associated switch means for placing the selectable impedance means in parallel with the multi-tapped means, the parallel combination of the selectable impedance means and the multi-tapped means being in series with said first impedance means, for substantially matching said output and balancing voltages in a second mode of operation wherein a second linearity type of transducer means is employed.

3,221,830
CROSS-COUNTRY SNOW VEHICLE
Jack Walsh, 519 6th St., Eureka, Calif.
Filed Dec. 14, 1961, Ser. No. 159,294
4 Claims. (Cl. 180—5)



1. A light-weight snow vehicle comprising an elongated runner of light-weight metal having a flat bottom formed with a downwardly facing groove along its longitudinal centerline, power means on said runner adapted to engage and thrust against the snow for moving the runner thereover, said power means including a continuous chain entrained around pulleys at opposite ends of said runner and with the lower reach of the chain supported for longitudinal movement through said groove, a plurality of angle member cross cleats of light-weight metal having one of their legs secured to said chain in position to sweep across the bottom surface of said runner and the other of their legs projecting from the leading end of the first leg relative to the direction of chain traverse, strips of moisture-repellent low-friction plastic secured to each cleat on opposite sides of said chain with the strips extending along substantially the entire bearing and leading end surfaces of the cleats, and a seat on said runner, said seat being formed to support a ski-shod operator astride the seat and with his skis riding on the snow on opposite sides of the runner for controlling the direction of travel of the vehicle.

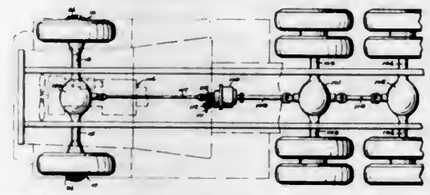
3,221,831
WINGED SURFACE EFFECT VEHICLES
Carl W. Welland, Palos Verdes, Calif., assignor to Douglas Aircraft Company, Inc., Santa Monica, Calif.
Filed Dec. 13, 1963, Ser. No. 330,330
4 Claims. (Cl. 180—7)



1. A surface effect vehicle of the character to travel airborne in surface effect over terrain surfaces comprising:
a streamlined hull;
a substantially horizontally disposed wing affixed to said hull adjacent the lower portion thereof and having an approximately planar under surface with leading edge and trailing edge regions extending along a major portion of the length of said wing,
said wing having a definitely position angle of attack, which effectively funnels a large volume of air into a smaller volume toward said trailing edge between said wing and said surface to create a lifting cushion beneath said wing by its forward velocity over said terrain surfaces;

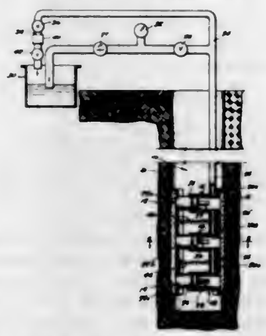
thrust producer means mounted on said vehicle for creating said forward velocity;
an inflatable diaphragm connected to the bottom of said hull for lifting said wing above said surface for takeoff of said vehicle, said means being retractable during flight to minimize the distance between said wing and said surface during flight.

3,221,832
AUTOMOTIVE VEHICLE HAVING MEANS FOR MAKING ACTIVE OR INACTIVE AT WILL BOTH DRIVING PROPELLER SHAFT AND PLANETARY REDUCTION FINAL DRIVE
John G. Holmstrom, Seattle, Wash., assignor to Pacific Car and Foundry Company, Seattle, Wash., a corporation of Washington
Filed Apr. 6, 1961, Ser. No. 101,263
10 Claims. (Cl. 180—44)



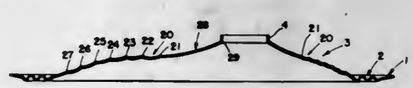
1. A four-wheel drive automotive vehicle having a transfer case the input end of which is driven from the engine of the vehicle, and between the output end of said transfer case and both the front and the rear traction wheels having a respective drive connection including two reduction gear sets, one of which gear sets is common to each of two coaxial axle sections for the concerned front or the rear traction wheels, as the case may be, and occupies a position between such axle sections, and said other of which gear sets is housed in a related wheel and drive-couples the related axle section to such wheel, mechanisms operable at will for isolating all of said gear sets of one of said drive connections both from the transfer case and from the related traction wheels.

3,221,833
GEOPHYSICAL BOREHOLE APPARATUS
John H. Malmberg, Del Mar, Calif., assignor to General Dynamics Corporation, New York, N.Y., a corporation of Delaware
Filed May 2, 1962, Ser. No. 191,995
1 Claim. (Cl. 181—.5)



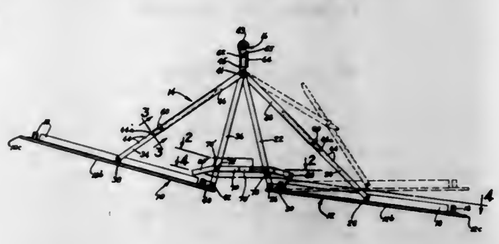
An apparatus adapted to be disposed in a hole in the earth for generating seismic waves, which apparatus comprises at least one cylinder, a first arcuate member connected to a closed end of said cylinder with the convex surface thereof facing outwardly, a piston slidable within said cylinder, a second arcuate member connected to said piston with the convex surface thereof facing outwardly, the radius of said member being slightly less than the radius of said hole, a hydraulic transmission line connected to said cylinder, a source of pressurized hydraulic fluid connected to said transmission line, a first valve in said transmission line between said source and said cylinder, a second transmission line connected to said first transmission line between said valve and said cylinder, a sink for the hydraulic fluid connected to said second transmission line, and a second valve connected in said second transmission line between said first transmission line and said sink.

3,221,834
ACOUSTIC DIAPHRAGM
Mauritz F. Noren and Richard H. Scent, St. Charles, Ill., assignors to Hawley Products Company, St. Charles, Ill., a corporation of Delaware
Filed May 9, 1963, Ser. No. 279,238
3 Claims. (Cl. 181—32)



1. An acoustic diaphragm having an ellipsoidal vibratile portion, an elliptical supporting flange portion and an interconnected elliptical undulating portion, said vibratile portion extending upwardly and inwardly from said undulating portion to a tubular nipple, said vibratile portion having a reverse curvature, being convex in the lower portion adjacent said undulating portion and concave in the upper portion adjacent said nipple, the point of change of curvature being approximately the midpoint of said vibratile portion and there being a rib of elliptical shape on each side of said point of change of curvature.

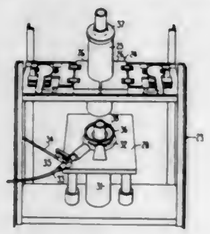
3,221,835
ADJUSTABLE SUSPENDED ACOUSTICAL PANEL ASSEMBLY
Harry J. Wenger, Owatonna, Minn.
Filed July 5, 1963, Ser. No. 293,054
4 Claims. (Cl. 181—33)



1. An acoustical panel apparatus comprising in combination, a pair of spaced apart panel members, elongated support members extending upwardly from said panel members, connecting means at the upward end of said elongated supporting member, some of said support members being connected to the panels at points spaced laterally of the connections between the other of said support members and said panels, longitudinally shiftable means for selectively adjusting the length of some of said elongated support members; whereby the angle of inclination of said panels can be changed as desired; some of said support members include a pair of adjacent and parallel elongated elements positioned side by side, one of said elements having a plurality of longitudinally spaced sockets on one side thereof, the other of

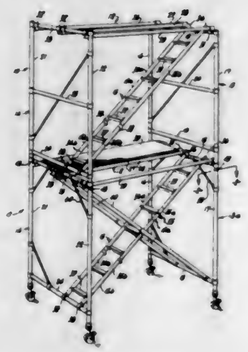
said elements including a pin adapted to selectively engage said sockets and a locking member spaced longitudinally from said pin and including a portion extending laterally therefrom over the side of said element having said sockets therein.

3,221,836
MUFFLER ARTICLE AND METHOD OF CASTING SAME
Frank Leonard Kleinig, 404 Parramatta Road, Burwood, New South Wales, Australia
Filed Mar. 4, 1964, Ser. No. 349,450
Claims priority, application Australia, Mar. 13, 1963, 28,322/63; Apr. 3, 1963, 29,160/63
7 Claims. (Cl. 181—61)



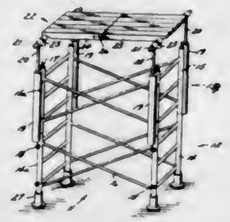
7. A silencer for a motor vehicle comprising a tubular body of corrosion resistant sheet metal; an end tube extending substantially axially into the interior of said tubular body and spaced from the wall thereof, said tubular body having an end portion surrounding at least a part of said end tube and including an interior and an exterior surface portion; and an aluminum end cover cast around said end tube and into binding engagement with both said interior and said exterior surface portions of said end portion of said tubular body so that said end tube is fixed relative to said tubular body and provides a passage through said end cover.

3,221,837
SCAFFOLD WITH FOLDING STAIRWAY
Robert E. Fisher, Berkeley, Calif., assignor to Up-Right, Inc., Alameda, Calif., a corporation of California
Filed Oct. 7, 1963, Ser. No. 314,216
10 Claims. (Cl. 182—115)



1. A folding scaffold comprising:
first and second generally rectangular end sections;
a platform pivotally connected at one end thereof to one end of said first end section and pivotally connected at its other end to one end of said second end section for enabling said scaffold to be folded into a package with the platform and end sections parallel to one another and to be erected with the end sections being vertical and the platform being horizontal;
a stairway comprising first and second members, the first member being longer than said second member;
hinge means connecting said first and second stairway members for enabling said members to be folded flat against each other and to be unfolded into linear relation;
means pivotally connecting the end of said first stairway member opposite said hinge means to an end of said first end section;
means on the end of said second stairway member opposite said hinge for detachably connecting said second stairway member to a diagonally opposite end of said second end section when said end sections are erected and said stairway members are unfolded;
means for securing said stairway members when folded within said package formed by said platform and end sections when folded.

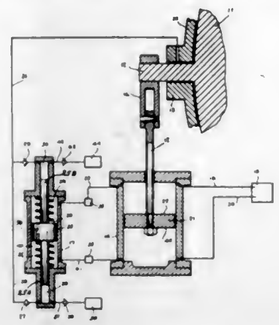
3,221,838
DECK AND LIFT STRUCTURE FOR SCAFFOLDING AND THE LIKE
Alton M. Brayton, 341 N. Homer, Lansing, Mich.
Filed Nov. 8, 1962, Ser. No. 236,274
7 Claims. (Cl. 182—141)



1. A lift mechanism comprising:
(a) a reversible stroke imparting element;
(b) a housing for said stroke imparting element;
(c) a pair of spaced apart locks secured to said housing;
(d) a pair of spaced apart connector elements, the space between said connectors and said locks being substantially equal;
(e) a plurality of upright elements to which said stroke imparting element is detachably and successively secured at said connector elements extending therefrom, and
(f) a deck acted upon by said stroke imparting element and beneath which one of said upright members is insertable upon each stroke of said stroke imparting element.

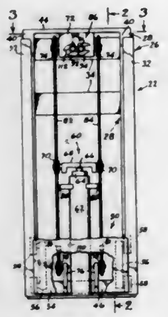
3,221,839
LUBRICATING SYSTEM
Robert J. Simpson, Chippawa, Ontario, Canada, assignor to Dominion Engineering Works, Limited
Filed Aug. 12, 1963, Ser. No. 301,345
5 Claims. (Cl. 184—6)

1. In combination with a hydraulic powered servo motor adapted to move a driven member relative to stationary structure by application of pressurized working liquid from a pressure source to the servo motor, a premotion lubricating means for lubricating said driven member substantially prior to said relative movement, comprising; lubricating pump means having a lubricant pressurizing chamber, lubricant conducting conduit means connecting the output of said lubricant pressurizing chamber with said driven member for passage of lubricant thereto, a fluid motor in driving connection with said lubricating pump, and pressure fluid conduit means connecting said fluid motor with the pressure source of said servo motor, whereby on supplying said working liquid from said pressure source to operate said servo motor,



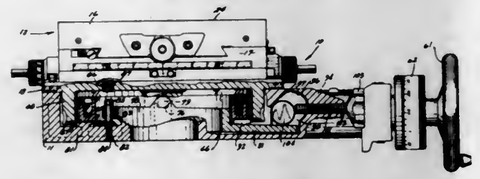
said working liquid operates said fluid motor substantially prior to the operation of said servo motor, to drive said pump, causing lubrication of said driven member by said lubricating pump substantially prior to move of said driven member by said servo motor.

3,221,840
LOAD-LIFTING STRUCTURE WITH LATCH MECHANISM
Harry F. Weinert, Portland, Oreg., assignor, by mesne assignments, to Cascade Corporation, a corporation of Oregon
Filed Mar. 18, 1963, Ser. No. 266,783
11 Claims. (Cl. 187—9)



1. In an industrial truck having at least two vertically disposed telescopic mast sections with one extensible in an upward direction from the other, elevatable carriage mechanism at the base of and vertically shiftable along said one section, and vertically shiftable hoist mechanism connected to and for moving the carriage mechanism, the improvement comprising
means operable during raising of one of said mechanisms to maintain the sequence of first movement of the mechanism upwardly relative to said one section and then upward movement of said one section relative to the other section, and operable on return of the mechanism to maintain a reverse sequence,
said means comprising a pair of latch devices mounted on said one section in an interlocked position,
means on said other section operated upon by said latch devices with the latter in such interlocked position to prevent movement of said one section relative to said other section, and
means mounted on said one of said mechanisms engageable with one of said latch devices on positioning of said mechanism upwardly on said one section and operable on engagement to produce unlocking of the devices from each other and freeing of said one section for movement upwardly on the other section,
said means on said other section engaging the other of said latch devices and operating to place the latch devices in another interlocked position after freeing of said one section and on movement of said one section upwardly on the other with the latch devices in this latter position then operating on said means on said one of said mechanisms to prevent movement of said one section relative to said one of said mechanisms.

3,221,841
CAM OPERATED, AXIALLY MOVABLE BRAKE
Henry Kraklau, Jr., St. Joseph Township, Berrien County, Mich., assignor to Advance Products Corporation, Benton Harbor, Mich., a corporation of Michigan
Filed Jan. 27, 1964, Ser. No. 340,266
3 Claims. (Cl. 188—72)



1. In a cross slide rotary table having a base member and a rotary member supported thereon for rotation around an upright axis, mechanism for releasably holding the rotary member against rotation with respect to the base member, comprising:
substantially annular flange means substantially concentric with the rotational axis of said rotary member and extending upwardly from said base member toward said rotary member, said flange means having a radial opening and an upper surface defining a plane perpendicular to said axis;
second flange means secured to said rotary member;
friction plate means secured to and extending radially inwardly from said second flange means to a position above and adjacent the upper surface of said annular flange means;
a clamping ring substantially concentric with said rotational axis and disposed above said annular flange means for engagement with said plate means;
an annular lever member encircling said annular flange means and pivotally supported at diametrically opposite points upon said clamping ring for movement around a second axis, said lever member being pivotally connected to said base member for pivotal movement around a third axis substantially parallel with said second axis and passing through said lever member on one side of and spaced from said second axis, said lever member having a lever element secured thereto and projecting therefrom on the other side of said second axis from said third axis, said lever element extending through said radial opening;
wall means on said base member spaced above said lever element, said wall means and said lever element having opposing surfaces converging toward said rotational axis;
actuating means disposed between and simultaneously engageable with said converging surfaces for movement radially of said rotational axis; and

control means connected to said base member and engageable with said actuating means for effecting movement thereof toward said rotational axis and thereby causing said lever member to urge said clamping ring toward said annular flange means, whereby said plate means is tightly gripped between said clamping ring and said annular flange means so that rotation of said rotary member with respect to said base member is positively opposed.

3,221,842
BRAKE ADJUSTER
John P. Shampton, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 10, 1963, Ser. No. 329,554
11 Claims. (Cl. 188—79.5)



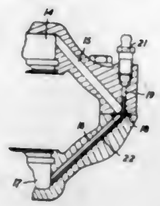
1. A device for adjusting brake shoes carrying linings adapted to contact a rotating drum, comprising: lever means pivotally carried by a first brake shoe, means carried by a fixed portion of a vehicle engaging said lever during a brake actuation to cause a cam action thereabout as said lever means moves toward the drum, expandable means including a driving star wheel interposed between one end of a first shoe and a second shoe, and resilient means engaging said lever means and the second shoe, said lever means being cammed to a new pivotal position during a brake actuation wherein said lever is adapted to engage said star wheel and drive said expandable means apart in response to increasing brake lining wear thereby positioning the linings in closer proximity to the rotating drum.

3,221,843
ADJUSTABLE DASHPOT
Aniese E. Seed, Toledo, Ohio, assignor to Toledo Scale Corporation, Toledo, Ohio, a corporation of Ohio
Filed Sept. 24, 1964, Ser. No. 398,987
5 Claims. (Cl. 188—87)



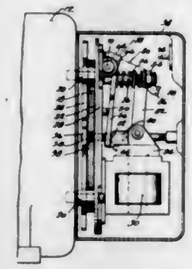
1. A dashpot for damping the oscillations of a condition responsive member comprising, in combination, a body defining a cavity having a restricted area defined by two walls and an enlarged area around at least part of the restricted area, a vane movable within the areas producing damping action by viscous shear, connecting means for connecting the vane to the member, and means for adjusting the amount of damping afforded by the dashpot by moving the body in the plane of the vane.

3,221,844
HYDRAULICALLY OPERATED DISC BRAKES
John Walter Davis, Birmingham, and Kenneth John Wells, Castle Bromwich, England, assignors to Girling Limited, Birmingham, England, a British company
Continuation of application Ser. No. 277,273, May 1, 1963. This application Feb. 11, 1965, Ser. No. 448,198
2 Claims. (Cl. 188—152)



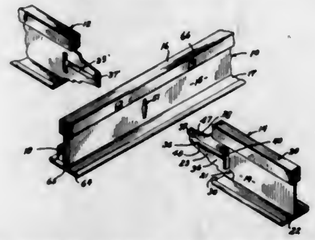
2. A hydraulic disc brake of the kind in which friction pads are applied to opposite faces of a disc rotatable with a vehicle wheel by pistons working in the limbs of a fixed caliper which straddles a portion of the disc, the said caliper comprising first and second parts secured together and respectively incorporating first and second hydraulic cylinders, two bores one in each part, extending from the meeting faces of the two parts to the cylinders, a third bore in said first part normally closed by a bleed screw and meeting one of said two bores, an inlet means through which liquid under pressure is fed to said first cylinder, and means forming two passages within the bore in said second part, one of said passages within the bore extending between said second cylinder and the bore in the first part and the other of said passages extending between said second cylinder and the third bore.

3,221,845
SPRING-APPLIED MAGNETICALLY-RELEASED BRAKE
Quinten A. Hansen, Franksville, Wis., assignor to R. H. Stearns and R. N. Stearns, both of Milwaukee, Wis.
Filed Mar. 4, 1963, Ser. No. 262,675
11 Claims. (Cl. 188—171)



11. The combination with a rotor having at least one disk mounted thereon, coacting disk means supported for frictional engagement with said one disk, said disk and disk means being substantially coaxial, and means for selectively engaging and relieving frictional engagement of said coacting disk means with said one disk, said means comprising a mounting plate, a yoke lever extending transversely of the mounting plate, a pair of bearing balls at opposite sides of the mounting plate and engaged by the yoke lever, said balls constituting fulcrum means for pivoting the yoke lever for movement with respect to the mounting plate, the mounting plate and yoke lever having opposing sockets in which the bearing balls are partially received, means for exerting bias on the yoke lever in one direction about the fulcrum means thus provided, means connecting the yoke lever with said coacting disk means for transmitting yoke lever movement to said disk means, and electromagnetic means for actuating the lever in a direction opposite to said bias.

3,221,846
CROSSING BEAM
Donald A. Brown, Westlake, and Lucien R. Downing, Jr., Avon Lake, Ohio, assignors to Donn Products Incorporated, Westlake, Ohio, a corporation of Ohio
Filed Sept. 7, 1962, Ser. No. 221,989
6 Claims. (Cl. 189—36)



1. A beam member releasably disposed in end-to-end interlocked relation with a correspondingly configured confronting beam member, said beam including in combination:

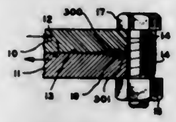
(a) a web having parallel marginal edges;

(b) a laterally extending flange along at least one of said marginal edges;

(c) a tongue having a base portion, a tip portion, and an intermediate portion joining said tip portion with said base portion, said tongue formed at at least one extremity of said web and joined thereto at its base and projecting generally in the direction of the plane of the web, said base and intermediate portions lying substantially in the plane of the web, said tip portion projecting from the plane of said intermediate portion; and

(d) a tongue tip receiving louver projecting in the same direction as said tip portion and formed in said web adjacent the base of said tongue and receiving the tip of the tongue of said correspondingly configured confronting beam when said beams are in interlocked relation.

3,221,847
STRUCTURAL CONNECTIONS
Warren R. Attwood, 4077 2nd St., Wayne, Mich.
Filed Apr. 22, 1963, Ser. No. 274,562
7 Claims. (Cl. 189—36)

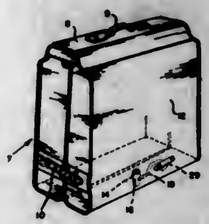


1. Means locking one structural member to another, said means comprising

(a) fastening means operable upon tightening to clamp said structural members one to the other, and

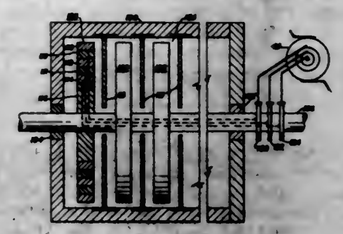
(b) an elongated bent wire member of a material harder and stronger than each of said structural members carried between said structural members and substantially completely encircling said fastening means, said wire member embedding into each of said structural members as said fastening means is tightened, said wire member then resisting shear forces between said structural members in any direction in the plane of said wire member.

3,221,848
GARMENT-CARRYING BAG HOOK ASSEMBLAGES
Harvey L. O'Neil, Lebanon, Tenn., assignor to Hartmann Luggage Company, Lebanon, Tenn., a corporation of Delaware
Filed Sept. 14, 1962, Ser. No. 223,601
5 Claims. (Cl. 190—43)



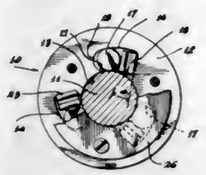
1. In a garment bag having a reinforced end wall portion, a post turnably mounted on said end wall portion, the outer end portion of said post being recessed, a hook having a shank portion extended into the recess of the post, said shank portion of the post having an elongated slot therein, a pin carried by the post and engaging the slot of the hook shank portion to permit pivotal movement of the hook relative to the post and to permit limited projection and retraction of the hook relative to the post, and cooperating means on the inner end of the hook shank and in the base of the post recess to releasably retain the hook in an adjusted position perpendicular to the plane of the reinforced end wall portion of the bag.

3,221,849
ELECTRIC-FIELD-RESPONSIVE FLUID DEVICE
Donald L. Klass, Barrington, and Vincent Brozowski, Mundelein, Ill., assignors to Union Oil Company of California, Los Angeles, Calif., a corporation of California
Filed June 30, 1961, Ser. No. 121,091
10 Claims. (Cl. 192—21.5)



8. A transient-electric-potential-responsive coupling comprising coaxial relatively rotatable members arranged to provide opposed surfaces spaced from each other a distance of about 0.0005 to 0.50 inch, one of said members supporting a plurality of metal electrodes in electrically insulated relationship, each of said electrodes having a bare exposed surface facing said second member, the surface of said second member facing said electrodes being electrically conductive, a thin layer of fluid, which exhibits an apparent change in bulk viscosity under the influence of an alternating electric field, disposed between said members, and means for applying transient electric potential to said electrodes.

3,221,850
CLUTCH MECHANISM
Walter H. Bacon, 39 Dogwood Road, North Haven, Conn.
Filed Jan. 23, 1964, Ser. No. 339,621
3 Claims. (Cl. 192—45)



1. In an over running clutch mechanism for coupling two separable working parts when a driving force is applied to one of those parts one of which comprises a shaft member, a race housing having a central opening to receive such shaft member in journal relationship, said housing having a recess adjacent to the periphery of said central opening, said recess having a first end and a second end spaced circumferentially from each other, said first end being radially closer to said central opening than said second end so that the outer side of said recess between said ends and facing said central opening constitutes a race with decreasing radial distance to the periphery of said central opening from said second to said first end, the first end having a curvilinear surface and said second end having a planar surface, the second end being inclined at an angle to a radial line extending through the point of intersection of the outer side of said recess and said second end, the inner side of said recess merging with the periphery of said central opening between said ends to form a connecting opening between said recess and said central opening, a wedging roller in said recess engaging said race and having a portion of said wedging roller extending into said connecting opening, a resilient member in said recess having one end abutting said second end and the other end engaging said wedging roller to bias said wedging roller toward said first end and into engagement with said race and said shaft member when the shaft member is journaled in said central opening to permit driving engagement between said race and said shaft member, said resilient member having a plane surface at each end thereof in abutting engagement with said roller and said second end respectively, the inclined planar surface of the second end having a slope relative to the slope of the first end at the area of engagement with said roller such that the resultant force exerted by said resilient member on said roller will retain the roller in said recess when the shaft is not journaled in the housing.

3,221,851
SYNCHRONIZED POSITIVE CLUTCHES
John R. Vandervoort, Richland Township, Kalamazoo County, Mich., assignor to Eaton Manufacturing Company, Cleveland, Ohio, a corporation of Ohio
Filed Oct. 16, 1963, Ser. No. 316,680
7 Claims. (Cl. 192—53)

1. In a synchronizer for axially spaced first and second jaw clutches, each thereof being respectively rotatable with one friction surface of first and second friction clutches, the combination comprising:

a first synchronizer braking ring frictionally engageable with one of said friction surfaces and a second axially spaced synchronizer braking ring frictionally engageable with the other of said friction surfaces;

a shaft;

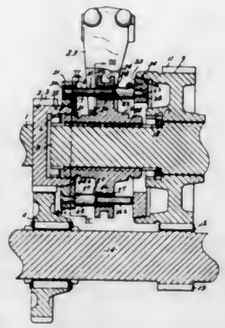
slider means on said shaft including jaw clutch teeth for occupying a first position to engage said first jaw clutch and occupying a second position for engaging said second jaw clutch whereby to connect a selected one of said friction surfaces to said shaft;

a flange extending radially from said slider means and occupying a position substantially between said synchronizer braking rings;

at least two limit openings in said flange;

a first pin fixed in said second synchronizer braking ring extending through one of said limit openings in said flange;

blocker means being formed on adjacent portions of said flange and said pin, a second pin fixed into said first synchronizer braking ring and extending through said second limit opening in said flange and

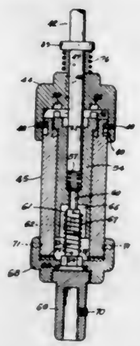


bearing against said second synchronizer braking ring and blocker means formed on adjacent portions of said second pin and said flange;

biasing means constantly and resiliently urging opposite circumferential movement of said respective synchronizer braking rings, said movement being limited by said openings in said flange;

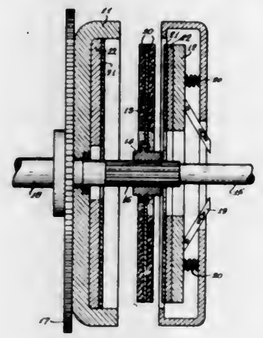
whereby the blocker means existing between said pins and the respectively adjacent portions of said flange will always at the beginning of a synchronizing operation be in axially aligned relationship to each other.

3,221,852
TORQUE CONTROL DEVICE
Albert G. Thomas, 133 Bollingwood Road, Charlottesville, Va.
Filed May 13, 1963, Ser. No. 279,946
4 Claims. (Cl. 192—56)



1. In a torque control device, a cylindrical casing member, a first cap on one end of said casing member and rotatable relative thereto, an inner member coaxial with said casing member and rotatable through a limited angle relative thereto, means for connecting said cap to said inner member, means on said casing member for supporting said inner member so that said connecting means operatively connects said cap and said inner member, said casing member having other support means for supporting said inner member in position to break the driving relationship between said cap and said inner member, another cap for the other end of said casing member and rotatably settable relative thereto, means for attaching a tool to said other cap, torsion spring means connecting said inner member and said other cap, and a rod axially movable relative to said first cap and keyed thereto, said rod serving to apply torque to said first cap and for moving said inner member into position to break said driving relationship.

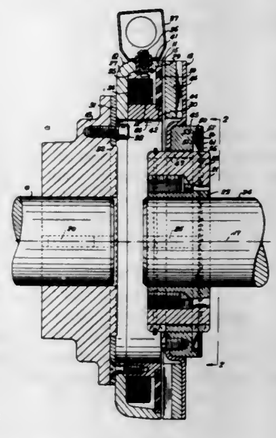
3,221,853
FRICTION DEVICES
Clyde S. Batchelor, Trumbull, and Warren R. Jensen, Stratford, Conn., assignors to Raybestos-Manhattan, Inc., Passaic, N.J., a corporation of New Jersey
Filed Aug. 29, 1962, Ser. No. 220,282
11 Claims. (Cl. 192—66)



1. In a friction mechanism, a friction couple comprising a pair of elements adapted for relative rotational movement on mounting means therefor, a fiber reinforced, hardened organic binder friction composition lining of relatively low heat conductivity secured to and supported on one element of said couple, another element of said couple comprising a metallic mating member carrying on a surface thereof a facing layer of relatively high heat conductive metal material having dispersed therein finely divided refractory inorganic, non-metallic particles selected from the group consisting of crystalline alumina, silicon carbide, zirconium oxide, tungsten carbide, tantalum carbide, titanium carbide, boron carbide, crystalline aluminum silicates and thorium oxide, and having a Mohs' scale hardness of greater than 7 positioned for frictional engagement with the surface of said lining the metallic material in said facing being selected from the group consisting of silver, copper and alloys of said metals having a melting point of at least 1500° F. and a thermal conductivity at least 40% of that of pure electrolytic copper.

3,221,854
COUPLING DEVICE FOR CLUTCH OR BRAKE USE
Ralph L. Jaeschke, Kenosha, and Howard E. Wiltsey, Racine, Wis., assignors to Eaton Manufacturing Company, Cleveland, Ohio, a corporation of Ohio
Filed May 14, 1962, Ser. No. 194,313
13 Claims. (Cl. 192—84)

1. In a coupling device of the character described; a pair of first and second coupling members relatively rotatable on a common axis and one of which is also shiftable along said axis between a coupled position in engagement with the other coupling member and an uncoupled position spaced therefrom by an intervening air gap; support means for said one coupling member and supporting the same for the axial shifting thereof to said coupled and uncoupled positions; said one coupling member having annual wall means surrounding said axis and extending in a transverse relation thereto; power means operable to cause the axial shifting of said one coupling member to said coupled position; and means for automatic adjustment of said gap comprising a plurality of ring members surrounding said axis and support means, and an associated spring means; said spring means being subject to loading during shifting of said one coupling member to its coupled position by said power means and being expansively effective to shift said one coupling member to its uncoupled position upon release of said

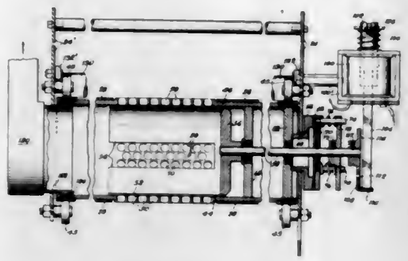


power means; one of said ring members being mounted on said one coupling member in a spaced relation to said wall means, and another of said ring members being mounted on said support means and having a portion thereof projecting into the space between said one ring member and said wall means; the second-mentioned ring member having gripping means in gripping engagement with said support means and adjustably axially slidable therealong in a direction toward said second coupling member in response to a predetermined extent of loading of said spring means; the ring portion projecting into said space comprising an abutment means for limiting the shifting of said one coupling member toward its uncoupled position by the expansion action of said spring means.

3,221,855
SINGLE REVOLUTION CLUTCH MECHANISM
Harry O. Newlin, Skokie, Ill., assignor to The Frederick Post Co., Chicago, Ill., a corporation of Illinois
Original application Aug. 7, 1961, Ser. No. 129,856. Divided and this application Mar. 11, 1964, Ser. No. 351,030
7 Claims. (Cl. 192—84)

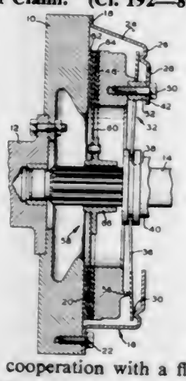
1. In combination a slip-clutch having a rotary driving member and a rotary driven member with constant slip-friction engagement therebetween, means continuously to rotate the driving member, a detent movable into and out of position to hold the driven member against rotation, means to bias said detent into holding position, activatable control means comprising a detent-release member movable from an initial position upon initiation of actuation into a position to move said detent out of holding position, whereby to free said driven member for rotation, detainable means carried by said driven member for movement thereby in a circular path from a position of released detention back to said position for

retention by said detent, second means carried by said driven member to move said release member out of detent-releasing position prior to completion of one revolution of said driven member, whereby said detent is moved by its biasing means into a position holding said



release member out of detent-releasing position, whereby said driven member rotates once and moves said detainable means into said position to be held by said detent, thereby to arrest the driven member after one revolution, said control means upon deactivation effecting movement of said release member into said initial position.

3,221,856
FRICTION CLUTCH
Orville E. Phelps, Toledo, Ohio, assignor to Dana Corporation, Toledo, Ohio, a corporation of Virginia
Filed June 10, 1963, Ser. No. 286,781
1 Claim. (Cl. 192—89)



In a clutch for cooperation with a flywheel, the combination comprising,

(a) a support structure connected to the flywheel for rotation therewith and including an annular fulcrum point disposed on the internal surface thereof and having a central axially extending opening therein bordered by an internal surface,

(b) an annular axially movable pressure plate member disposed within said support structure and having an annular rib portion on the back face thereof,

(c) a driven member having friction surfaces disposed thereon and positioned within said support structure between said pressure plate member and the flywheel,

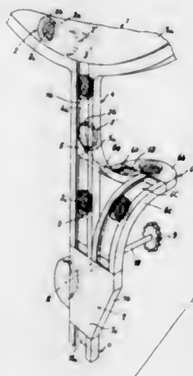
(d) a diaphragm spring having the outer portion thereof fulcrumed about said fulcrum point on said support structure and having an intermediate portion engageable with said rib portion on said pressure plate member for normally effecting movement of said pressure plate member toward the flywheel to cause engagement of the friction surfaces on the driven member with the pressure plate member and the flywheel,

(e) said diaphragm spring including lever means on the radially inner portion thereof and having a plurality of spaced openings therethrough, said lever means being operative in one position to permit said spring to move said pressure plate member toward the flywheel and operative in a second position to permit said pressure plate member to move away from the flywheel,

(f) a plurality of resilient circumferentially elongated segments each having one end formed integrally with said support structure at said internal surface thereof, each segment located radially inwardly of said internal surface and having a free end circumferentially spaced from its one end,

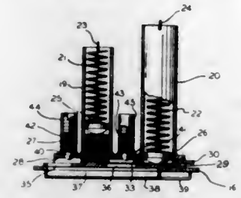
(g) and means extending through said openings and connecting the free ends of said elongated segments with said pressure plate member at circumferentially spaced points disposed radially inward from the periphery of said pressure plate member whereby said elongated segments drive said pressure plate member while permitting axial movement thereof and move said pressure plate member away from said flywheel when said diaphragm spring is in said second position.

3,221,857
APPARATUS FOR ORIENTING BOTTLE CAPS AND THE LIKE
Richard Keller, Dortmund-Aplerbeck, Germany, assignor to Holstein & Kappert, Dortmund, Germany
Filed July 9, 1964, Ser. No. 381,417
14 Claims. (Cl. 193—43)



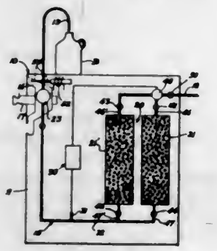
1. An apparatus for inverting improperly positioned crown caps for bottles and the like, comprising chute means defining channel means for conveying the caps, said chute means including a first portion arranged to convey randomly distributed caps and a second portion arranged to receive properly positioned caps from said first portion; deflecting means provided in the first portion of said chute means for engaging the crowns of improperly positioned caps and for ejecting such caps from said first portion; and inverting means comprising a substantially V-shaped inverting track having a first and a second section each defining an arcuate bypass channel, said first and second sections having first end portions respectively merging into the first and second portions of said chute means and second end portions making substantially right angles with said first end portions and communicating with each other, the first end portion of said first section being arranged to receive caps ejected by said deflecting means so that such caps are automatically inverted during passage through said bypass channels and enter the second portion of said chute means.

3,221,858
COIN REFUNDING MECHANISM FOR COIN CONTROLLED APPARATUS
Donald G. Mielke, Roselle, Ill., assignor to Margaret Mielke, Roselle, Ill.
Filed Mar. 28, 1963, Ser. No. 268,701
3 Claims. (Cl. 194—2)



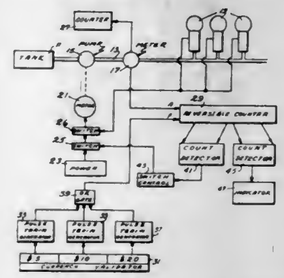
2. Coin controlling and refunding mechanism including a housing having coin receiving mechanism therein, said housing also including means adapted for actuation of apparatus in response to reception of a proper coin in said mechanism, said coin receiving mechanism including a reciprocating coin receiving slide having a plunger adapted to actuate said apparatus actuating means, said plunger being slideably mounted in spaced brackets, said housing having an access opening in one wall thereof, a plate corresponding in size and configuration to said opening while being formed and adapted to close said opening, said plate being removable to allow access to the interior of said housing, said plate including coin storage mechanism mounted on one side thereof and a coin receiving tray mounted on the other side thereof, channel means defined between said coin storage mechanism, through said plate, and to said tray to allow passage of coins from said storage mechanism to said tray, a coin removing slide associated with said coin storage mechanism so as to move coins from said storage mechanism to said tray upon movement of said slide, said slide having arm portions straddling said brackets, the spacing of said arm portions being greater than the spacing of said brackets and being such that said plunger travels a predetermined distance on the coin receiving stroke of said receiving slide before contact with one of said brackets to thereby cause movement of said coin removing slide to remove coins from said storage mechanism and through said passage to said tray.

3,221,859
APPARATUS FOR DISPENSING DEIONIZED WATER
Kenneth E. McAbee, 6059 Bollinger Road, San Jose, Calif.
Filed July 20, 1964, Ser. No. 383,867
7 Claims. (Cl. 194—3)



1. In combination with a source of tap water and a mixed bed ion exchanger for deionizing such tap water and for dispensing the deionized water via a flow line; a coin controlled flow meter in said flow line for dispensing a metered volume of deionized water therefrom, and means in said flow line between said mixed bed ion exchanger and said coin controlled flow meter for rendering the latter inoperative when the mineral content of the water in the flow line rises above a predetermined allowable limit comprising a solenoid having a normally retracted plunger adapted to extend into the coin slot of the coin control of said flow meter, an electrical circuit for supplying current to said solenoid, and a dip cell having contact points extending into said flow line for completing said electrical circuit when the mineral content of the water in said flow line reaches a density greater than said predetermined allowable limit.

3,221,860
INVENTORY CONTROL SYSTEM
George A. Klaffky, Huntington, N.Y.
Filed Oct. 3, 1962, Ser. No. 228,156
6 Claims. (Cl. 194—5)

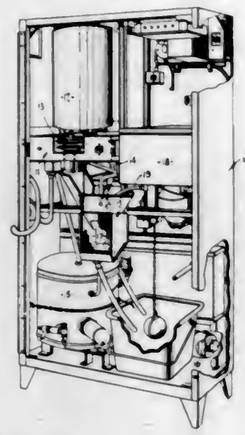


1. An inventory control system comprising gasoline storage means, a plurality of gasoline dispensers each selectively operable to dispense portions of the amount of gasoline available thereto, and means to make a predetermined amount of the gasoline in said storage means available to all of said dispensors in response to receiving a paper currency bill, said last mentioned means including means to selectively vary said predetermined amount that said last mentioned means makes available in response to receiving a paper currency bill.

3,221,861
COIN FREED VENDING MACHINES
Stewart Alfred Maxwell, Walsall, England, assignor to Fisher & Ludlow Limited, Birmingham, England, a British company
Filed Aug. 14, 1963, Ser. No. 302,137
Claims priority, application Great Britain, Aug. 17, 1962, 31,588/62
6 Claims. (Cl. 194—13)

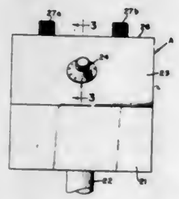
1. A coin-freed vending machine adapted to deliver a commodity, selected from a plurality of available commodities, in response to the insertion of the appropriate coinage into the machine and the subsequent closure of an electrical circuit associated with the selected commodity, the commodities being comprised of two groups and the machine including electrical switch means operable to alter the vending price of at least one group independently of the other by altering the value of the coinage which must be inserted into the machine to enable the electrical circuit associated with a commodity of the said one group to be closed, a pair of setting-up relays, the first of which has normally open contacts in series with the electrical circuit associated with one group of commodities and the second of which has normally open contacts in series with the electrical circuit associated with the other group of commodities, a blocking relay which, when energized, permits the acceptance of a selected denomination of coinage by the machine and which, when de-energized, prevents the acceptance of said selected denomination of coinage by the machine, a change-over switch controlled by said first setting-up

relay, and a control switch connected between the blocking relay and the change-over switch which can be moved into a first position for by-passing the change-over switch, which can be moved into a second position to establish an electrical connection through the change-over switch and the control switch to the blocking relay



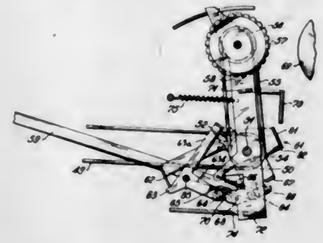
when the first setting-up relay is energized and which can be moved into a third position to establish an electrical connection through the change-over switch and the control switch to the blocking relay when the first setting-up relay is de-energized.

3,221,862
COIN METERING APPARATUS FOR MULTIPLE MACHINE INSTALLATIONS
Christopher G. Taylor, South San Francisco, Calif., assignor to Service Distributors, Inc., San Francisco, Calif.
Filed Apr. 29, 1963, Ser. No. 276,514
9 Claims. (Cl. 194—84)



1. In a device for use in a coin-operated laundry, or the like, of the type having a central console, a plurality of laundry machines, a selective first switch at said console to establish communication between said console and a selected machine, each said machine provided with a timer motor, a second switch mechanism having a solenoid, and a coin-operated switch mechanism at said console, said last-named mechanism comprising a coin deposit slot, manually operated means, and a third switch arranged to be closed upon actuation of said manually operated means when a coin has been deposited in said slot, said first and third switches wired in series to control energizing said solenoid, the improvement which comprises a cam, means for turning said cam, said last named means including a shaft on which said cam is rotatably mounted relative to said shaft and a lost-motion connection between said shaft and said cam, said lost-motion connection turning said cam in one direction of rotation of said shaft and permitting rotation of said cam relative to said shaft in said one direction ahead of the rotation of said shaft, a linkage attached to said solenoid arranged to turn said cam in said one direction ahead of said shaft, and said second switch controlled by said cam and controlling energization of said timer motor, said shaft driven by said timer motor, said third switch when closed by the manually-operated means when a coin has been deposited energizing the solenoid at the particular machine selected by said first switch to advance said cam in said one direction to close said second switch and energize said timer motor, said timer motor continuing energized for an entire cycle despite position of said cam, said improvement characterized by absence of positive connection between said solenoid and said timer shaft to directly advance said timer shaft from said solenoid.

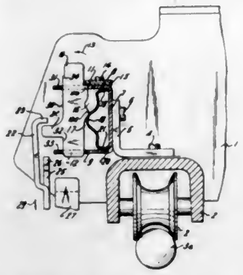
3,221,863
PRINTING ARRANGEMENT FOR BUSINESS MACHINE
Hans Pietzsch, Black Forest, Germany, assignor to Kienzle Apparate G.m.b.H., Black Forest, Germany
Filed Feb. 8, 1963, Ser. No. 257,320
Claims priority, application Germany, Feb. 10, 1962, K 45,863
20 Claims. (Cl. 197—18)



1. A printing arrangement comprising, in combination, a platen; two supports mounted for reciprocating movement independently of each other toward and away from said platen; two type members, each type member having a group of types and being mounted on one of said supports, respectively, for movement between a plurality of printing positions in which different types thereof confront said platen; first means for moving one of said supports, and second means for moving the other support with the respective type member; a set of keys including first and second groups of keys respectively representing the types of said type members; and means connecting said first group of keys with said first means, and connecting the other group of keys with said second means so that upon actuation of any key, one of said supports is moved toward said platen with the respective type member in a position in which the type corresponding to the actuated key confronts said platen until the type represented by the actuated key and moving with said one support produces a printing impact on said platen.

3,221,864
TABULATING ARRANGEMENT FOR BUSINESS MACHINES
Heinz Geis, Frankfurt am Main, Germany, assignor to Max Grundig, Furth, Bavaria, Germany
Filed Feb. 26, 1963, Ser. No. 261,157
Claims priority, application Germany, Mar. 6, 1962, G 34,409
20 Claims. (Cl. 197—179)

1. A tabulating arrangement comprising, in combination, a carriage means; a tabulator stop mounted on said carriage means for movement between an inoperative position and a tabulating position and for movement in said tabulating position between a locked position and a released position; locking means for positively holding said tabulator stop when the latter is in said locked position thereof against movement out of said tabulating position so that said tabulator stop is movable out of said tabulating position only after movement thereof from said locked

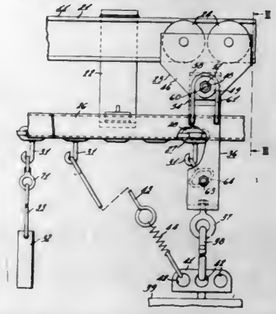


to said released position; means for biasing said tabulator stop toward said locked position; setting means for shifting said tabulator stop from said inoperative position to said tabulating position; and clearing means for shifting said tabulator stop from said locked position to said released position, and in said released position from said tabulating position to said inoperative position.

3,221,865
MATERIAL HANDLING APPARATUS
Charles M. Anderson, Paris, Ky., assignor to W. R. Stamler Corporation, Paris, Ky., a corporation of Kentucky
Filed Apr. 20, 1964, Ser. No. 361,139
7 Claims. (Cl. 198—53)

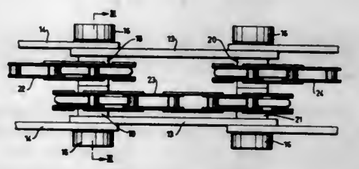
1. Material handling apparatus for receiving uneven loadings of material and for delivering the same at a substantially uniform rate of discharge and comprising, a hopper portion having opposite side walls spaced relatively far apart at the intake end of said apparatus and merging into a hopper exit end having side walls spaced relatively close together and forming a choke region of said apparatus, a delivery chute portion having side walls extending from said choke region and receiving material conveyed past said hopper exit end, a floor for said hopper and chute portions, a conveyor including transversely disposed flights spaced from each other and movable along said floor adjacent thereto so as to gather material in said hopper portion, convey it past said choke region and deliver it into and from said chute portion, a floating plate structure serving as a load flow control member and resting upon said flights, and a flexible means anchored at its ends to said hopper portion and connected intermediate its ends to said plate structure at the upstream end thereof and serving jointly to prevent displacement of said plate structure downstream by the movement of said flights and to permit said plate structure to move vertically and transversely within said hopper exit and during movement of said flights, said plate structure being disposed at a location within said apparatus at which it covers a substantial portion of said conveyor at the choke region of said apparatus and none of the conveyor adjacent the intake end of said hopper portion.

3,221,866
COMBINATION CONVEYER SYSTEM
Ralph Nash, Highland Park, Ill., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Oct. 22, 1964, Ser. No. 405,736
4 Claims. (Cl. 198—177)



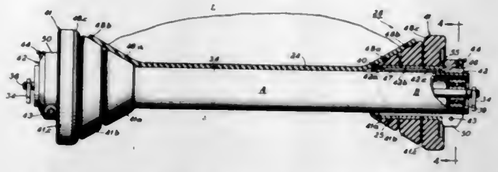
1. In a conveyer system the combination comprising:
a track,
a trolley supported on and guided by said track for movement therealong,
an endless chain conveyer having a section disposed directly below and parallel to said track including guide means and
an endless chain supported on and guided by said guide means including
a plurality of depending support elements spaced therealong adapted to support relatively light weight articles releasably connected thereto, and
a plurality of depending trolley driving members spaced therealong, and
a hanger connected in depending relation to said trolley having a lower end portion beneath said endless chain conveyer adapted to support relatively heavy articles and a draft portion selectively and releasably engageable in draft relation with said trolley driving members.

3,221,867
CHAIN CONVEYOR
Charles Gunnar Birger Bergling and Herman Nils Levin, Orebro, Sweden, assignors to Ingenjorsfirma Hebe Aktiebolag, Orebro, Sweden, a company of Sweden
Filed Sept. 6, 1963, Ser. No. 307,173
Claims priority, application Sweden, Sept. 7, 1962, 9,702/62
3 Claims. (Cl. 198—183)



1. Chain conveyor, comprising at least one endless transport chain arranged for continual operation, characterized in that movable means in the form of endless smaller chains, so-called store chains, are mounted on the transport chain, said store chains being arranged to support the articles being conveyed so that said articles can be moved relative to the conveyor in its longitudinal direction, a stopping member being provided above the conveyor so that it can be placed in the way of the articles being conveyed, the articles when thus stopped being collected at the stopping member while the transport chain continues moving.

3,221,868
TROUGHING ROLLER ASSEMBLY
Conrad J. Ricker, Oak Forest, and Donald C. Reilly, Downers Grove, Ill., assignors to Goodman Manufacturing Company, Chicago, Ill., a corporation of Illinois
Filed Sept. 16, 1963, Ser. No. 309,140
5 Claims. (Cl. 198—192)



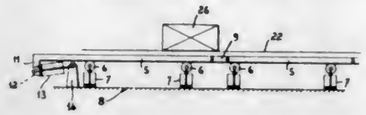
1. A troughing roller assembly comprising:
a supporting shaft;
means for supporting the ends of the shaft and holding it against rotation;
an inner center roller coaxial with the shaft and having a cylindrical surface adapted to carry the center portion of a conveyor belt;
anti-friction means between the shaft and center roller enabling the roller to rotate around the shaft;
a pair of wing rollers coaxial with and spaced apart along the center roller and means rotatably mounting a wing roller on each end of said center roller, said mounting means comprising a split sleeve mounted on the center roller, means for contracting the sleeve to frictionally grip said center roller, and means for retaining the wing rollers on their respective split sleeve, each wing roller having a generally conical surface adapted to carry a respective side portion of a conveyor belt, the wing rollers being oppositely disposed with their larger diameter ends facing outwardly to provide a troughed contour to a belt support thereon;
and anti-friction means between the center roller and each wing roller enabling each wing roller to rotate around the center roller in the same direction as the center roller but at a different rate and independently of the rotation of the center roller.

3,221,869
CONVEYOR BELT
Fritz Paasche, Cologne-Nippes, Germany, assignor to Franz Clouth Rheinische Gummiwarenfabrik Aktiengesellschaft, Cologne-Nippes, Germany
Filed Dec. 28, 1961, Ser. No. 162,892
2 Claims. (Cl. 198—193)



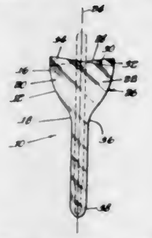
2. A conveyor belt, comprising, in combination, a plurality of metal cables arranged substantially parallel to each other; a substantially strip-shaped first rubber layer having two opposite faces, firmly adhering to and covering said metal cables; at least one second rubber layer having a high tear resistance covering and firmly adhering to at least one face of said first rubber layer; and at least one third rubber layer having a high abrasion resistance greater than the abrasion resistance of said second rubber layer and a tear resistance lower than the tear resistance of said second rubber layer having an outer surface constituting the load-carrying face of the belt, the opposite surface of said third rubber layer firmly adhering to and covering at least the free face of said second rubber layer, said metal cables forming the only reinforcing element of said conveyor belt.

3,221,870
ARRANGEMENT FOR CONVEYING CONTAINERS AND THE LIKE ARTICLES
Roger Pagay, 130 Rue du Docteur Long, Lyon, France
Filed Oct. 31, 1963, Ser. No. 320,323
Claims priority, application France, Nov. 9, 1962, 43,029, Patent 1,346,487
10 Claims. (Cl. 198—219)



1. A conveyor comprising: a stationary horizontal support member including a plurality of longitudinally extending and mutually transversely displaced slats; a movable horizontal support member, said movable support member comprising at least two longitudinally displaced sections, means for articulately connecting said sections to permit relative vertical movement between said sections and unified horizontal movement of said sections, each of said sections including a plurality of longitudinally extending and mutually transversely displaced slats, the slats of said sections being interleaved with the slats of said stationary horizontal support member; means for vertically displacing said first section; means for vertically displacing said second section; and means connected to one of said sections for horizontally moving said first and second sections simultaneously.

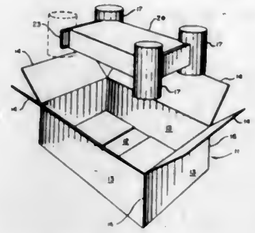
3,221,871
DISPOSABLE THERMOMETER SHEATH
Walter E. Hidding, 505 Banbury Road, Addison, Ill.
Filed Dec. 3, 1964, Ser. No. 415,631
3 Claims. (Cl. 206—16.5)



1. A bell-shaped thermometer sheath of flexible, slippery material comprising a mouth portion and a boot portion, said mouth portion having first and second lips, said first lip extending longitudinally upwardly beyond said second lip to define a backstop for use in catching a leading tip of a thermometer to help guide the thermometer into said sheath, said boot portion having an open end connected to said mouth portion and having a closed opposite end to isolate the thermometer from its environment.

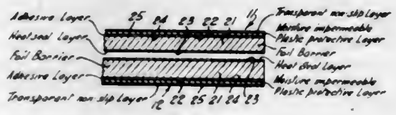
3,221,872
PACKAGE ASSEMBLY AND CUSHION
Harry G. Wood, 679 Arastradero Road, Palo Alto, Calif.
Filed Nov. 7, 1963, Ser. No. 322,164
7 Claims. (Cl. 206—46)

2. A package assembly for commodities comprising a container having top, bottom and side walls, and a corner post made of solid resilient energy-absorbing material, such as expanded polyethylene foam, disposed in each spaced opposed corner of said container, each of said corner posts having a length normally greater than the length of said corner whereby the posts are compressed by engagement with the top and bottom walls of said container and the sides of the posts engage the side walls of the container, said posts including a cut-out intermediate the ends to provide upper and lower surfaces for engaging the associated portions of the top and bottom of the commodity supported therein to provide a contact area substantially equal to the area of said surfaces, and side surfaces for engaging the associated portions of the



sides of a commodity being supported to provide a contact area substantially equal to the area of said side surfaces, the dimensions of said cut-out being less than the corresponding dimensions of the commodity, said spaced posts serving to support the commodity within the container in spaced relationship with the top, bottom and side walls and providing restraining force against vertical and lateral movement of the commodity.

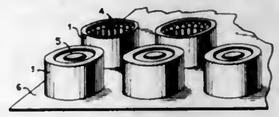
3,221,873
NON-SLIP SURGICAL PACKAGE
Donald R. Bowes, 214 Vinton Circle, Fanwood, N.J., and Oliver T. Smith, 17010 Melgrave Ave., Cleveland, Ohio
Filed June 28, 1963, Ser. No. 291,339
6 Claims. (Cl. 206—63.3)



1. A sterile surgical package which comprises opposed panels of a gas and liquid impervious laminate secured to one another around their edges to completely enclose and hermetically seal off a central space in which the panels are unattached to one another, a sterile surgical product in said space, said panels each comprising an inner layer of aluminum foil and an outer layer of a tough, moisture impermeable transparent plastic film, and a transparent non-slip layer having a high wet coefficient of friction on the outside surface of each of said panels.

3,221,874
PRESENTATION OR PACKING OF ROLLER, NEEDLE AND BALL BEARINGS AND THE LIKE
Alfred Pitner, Paris, France, assignor to Nadella Societe Anonyme, Seine-et-Oise, France, a corporation of France
Filed Jan. 14, 1963, Ser. No. 251,125
Claims priority, application France, Apr. 6, 1962, 893,699
6 Claims. (Cl. 206—65)

1. A package consisting of a plurality of anti-friction bearings each having an outer ring and a circular row of rolling elements adapted to roll in the outer ring; and a support carrying the bearings, the support consisting of a single sheet having a plurality of projections respectively having smooth unribbed outer cylindrical faces which are respectively directly engaged in the circular rows of rolling elements, each rolling element being in contact with the cylindrical outer face of the correspond-



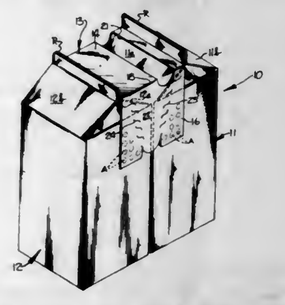
ing projection and the engagement between the cylindrical faces and the rolling elements being sufficient to detachably fix the bearings on the sheet.

3,221,875
PACKAGE COMPRISING RADAR CHAFF
Elmer G. Paquette, Cambridge, Wis., assignor to the United States of America as represented by the Secretary of the Air Force
Filed July 2, 1963, Ser. No. 293,236
3 Claims. (Cl. 206—65)



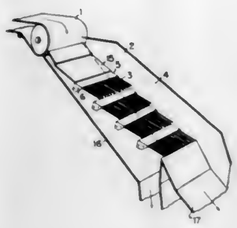
1. A package of radar chaff comprising: a plurality of metallic coated dielectric strands having a selected length of from ¼ inch to 1½ inches formed into a longitudinal bundle and a wrapping of adhesion-free thread spirally wound and longitudinally encompassing said bundle of strands, said thread being of a dielectric material.

3,221,876
PACKAGE
Grover C. Currie, 2518 Inverness Road, Charlotte, N.C.
Filed Sept. 11, 1963, Ser. No. 308,190
13 Claims. (Cl. 206—65)



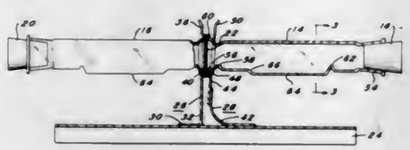
1. A package comprising two gable top cartons having vertical side walls and inclined roof panels, the cartons being in juxtaposition with their proximate roof panels in facing angular relation to each other; and a handle located between the proximate roof panels and secured to each carton, said handle comprising a pair of anchor portions adhesively secured to opposite side walls of each of said cartons for uniting said cartons and a grasping portion extending between and being connected to said anchor portions and spaced above at least portions of said proximate inclined roof panels to define a space therebetween and having a width coextensive with the distance between the upper edges of said proximate roof panels, said grasping portion having an elongate opening therethrough of sufficient length and width to receive at least some of the fingers of a person's hands for carrying said package.

3,221,877
BAR SCREEN
Jacob de Koning, 75 Frans Erenslands, Geleen, Netherlands
Filed Nov. 21, 1962, Ser. No. 239,266
Claims priority, application Netherlands, Nov. 28, 1961, 271,936
8 Claims. (Cl. 209—314)



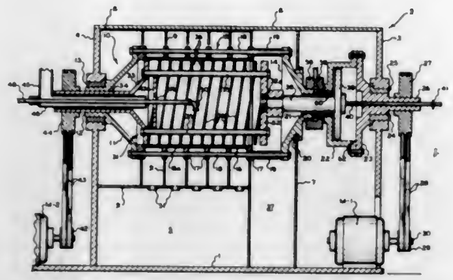
1. A device for screening and sizing material comprising a stationary screen having a plurality of screening bars secured only at their material feed end and extending beside each other in the material feed direction, said bars being alternately of high and low elasticity, and means for securing said bars at their material feed ends and for causing the upper surface of the bars of low elasticity to be at a higher level than the upper surface of the bars of high elasticity throughout the lengths of the respective bars.

3,221,878
PARABIOTIC CHAMBER APPARATUS FOR CELL CULTURE STUDIES
Perry A. Brett, Levittown, Pa., assignor to Bellco Glass, Incorporated, Vineland, N.J., a corporation of New Jersey
Filed Sept. 21, 1962, Ser. No. 225,323
4 Claims. (Cl. 210—94)



1. A parabiotic chamber apparatus, comprising: a pair of vessels, each of a tubular configuration open at both ends and having a flat floor extending along a central bottom portion between said open ends, said floor having a transverse width across said configuration and a longitudinal length extending between two constrictions of said configuration arising from said floor to form boundaries between said floor and open ends, said width and length defining with said constrictions a culture growth area therein, means supporting said vessels adjacent and aligned with one another for communication therebetween through adjacent open ends of the vessels; a dialysis membrane interposed between said adjacent ends; and plug members closing the remote open ends of the vessels, said means comprising a horizontal base and a holder means extending above said base for clamping said adjacent ends together and supporting said vessels with said floor of each vessel at an elevated horizontal plane over said base.

3,221,879
CENTRIFUGING APPARATUS
Henry F. Irving, Saginaw, Mich., assignor to Baker Perkins Inc., Saginaw, Mich., a corporation of New York
Filed Oct. 18, 1962, Ser. No. 231,340
5 Claims. (Cl. 210—106)

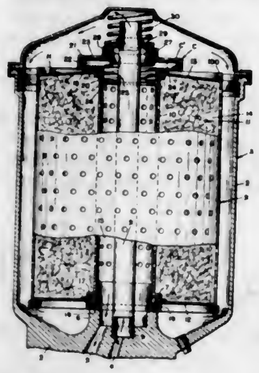


1. A centrifugal machine comprising a cylindrical basket member having a perforate annular wall; a generally cylindrical scroll member having helical flights thereon; means mounting said scroll member within said basket member for rotative and axial movements relative thereto and with said helical flights in scraping relation therewith over the full length of said flights; means for introducing to said basket member a slurry containing solid and liquid components; driving means connected at least to one of said members for effecting relative rotation therebetween in such direction as to enable said flights to engage and apply a force on solid components of said slurry tending to move them toward one end of said basket member, said mounting means including means enabling axial movement of said scroll member relative to said basket member toward the other end of said basket member in response to the application of reactive force of predetermined magnitude on said flights by said solid components; and power means connected to one of said members and operable in response to said relative axial movement of said members to effect axial movement of said scroll member relative to said basket member toward said one end of said basket member, whereby said flights may forcibly engage said solid components and shift them axially of said basket member toward said one end thereof.

3,221,880
OIL FILTER WITH RELIEF VALVE
James W. Wilkinson, Hastings, Mich., assignor to Hastings Manufacturing Company, Hastings, Mich., a corporation of Michigan
Original application Mar. 18, 1959, Ser. No. 800,271. Divided and this application Apr. 14, 1964, Ser. No. 359,632
11 Claims. (Cl. 210—130)

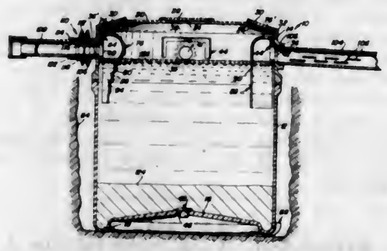
6. In a disposable filter cartridge including coaxial outer and inner pervious cylindrical walls providing a filtering chamber having filtering material therein, and impervious annular end wall members closing the ends of said chamber, said cylindrical wall comprising a tube open at one end to permit discharge of fluid from the cartridge; a relief valve assembly mounted at the end of said cartridge opposite said discharge end and forming a unitary part thereof, comprising an annular valve casing having a sleeve projecting axially therefrom and snugly fitting within an end of said inner pervious wall, said casing member having an imperforate peripheral wall, an imperforate inner end wall separate from the adjacent cartridge end wall and an outer end wall having end openings therein, said valve casing member being flanged radially outwardly from said sleeve member and being

of relatively small thickness as compared with its diameter so that the valve casing projects only a short distance axially beyond the end wall of the cartridge proper, an annular valve housed in said casing and axially reciprocable therein, and means comprising a coil spring normally urging said valve to closed position against said end openings, said coil spring being principally housed in the sleeve portion of the wall casing which projects into the inner wall portion of the cartridge, said annular valve member being relatively thin as compared to the



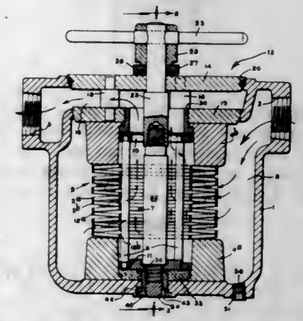
distance between the top and bottom end wall portions of said valve casing member whereby to permit axial movement of the valve member, said valve casing being provided with an axial end opening opposite said sleeve, an annular seal retainer member coaxial with said valve casing, having an axial sleeve of reduced diameter snugly fitting said axial end opening in the valve casing and projecting into the interior of said valve casing to provide a centering element for said valve spring means and a sealing gasket mounted on said seal retainer and facing outwardly therefrom.

3,221,881
GLASS FIBER SEWAGE TANK
Richard L. Weiler, Alma, N.Y., and Ray E. Benedict, Box 193, Richburg, N.Y.
Filed May 25, 1962, Ser. No. 197,688
3 Claims. (Cl. 210—136)



1. A sewage tank comprising a hollow container enclosing a fluid chamber and composed of fiber glass reinforced waterproof resin material, said container including a top portion, the top portion including a roof, and a bottom portion, spaced inlet and outlet passage means formed in said top portion below the roof, said top portion and said bottom portion having abutting edges connected together by interlocking means, said interlocking means comprising a flange on one of the edges fitting within a groove in the other edge, said flange and groove having internesting teeth, said outlet passage means including circular indentations defining knockout plugs, said inlet passage means including a hollow flexible bellows adapted to be connected to an inlet pipe, said inlet and outlet passage means including ports through the side of said container, vertically extending semicircular baffles within said chamber and extending over one end of each of said ports, the baffle over the inlet passage means being corrugated so as to break up solid pieces of sewage into small particles.

3,221,882
MAGNETIC-RESTRICTIVE SEPARATOR
Samuel G. Frantz, Princeton, N.J., assignor to S. G. Frantz Co., Inc., Trenton, N.J., a corporation of New York
Filed July 27, 1961, Ser. No. 127,179
6 Claims. (Cl. 210—223)

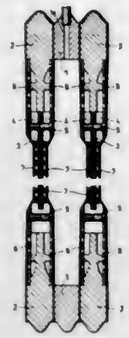


1. A magnetic-restrictive separator adapted to separate ferrous and non-ferrous particles from a fluid, comprising an external casing having ports therein for the reception and discharge of said fluid, a stack of coaxial, generally frusto-conical opposing annular magnetizable grids disposed in said casing in paired relationship so as to define an annular chamber between said paired grids and the walls of said casing and a space in the interior of said stack, said chamber and said space communicating respectively with said ports, said stack including fluid permeable, internal grid support means extending beyond the ends of said stack with means thereon to loosely retain said grids when said separator is disassembled, said grids being freely separable from each other when said stack is removed whereby both sides of said grid are accessible for cleaning while at the same the grids are maintained in their predetermined order, said stack being disposed in said casing so as to permit said fluid to flow in a generally radial direction between said chamber and said space and in parallel paths through said grids, and magnetic means in said casing at opposite ends of said stack for magnetizing said grids, said magnetic means being in releasable arrangement with said stack and support means whereby said stack and support means can be removed from the influence of said magnetic means without the need for disassembling said grids, said grids being compressed betwen said magnets and having sufficient rigidity to generally preserve said frusto-conical shape; said magnetization of said grids and the interstitial character thereof being adapted to separate said ferrous and non-ferrous particles from said fluid.

3,221,883
FILTER PRESS
Karl Valdemar Lennström, Oskarshamn, Sweden, assignor to Reymersholms Gamla Industri Aktiebolag, Halsingborg, Sweden
Filed May 18, 1962, Ser. No. 202,638
3 Claims. (Cl. 210—228)

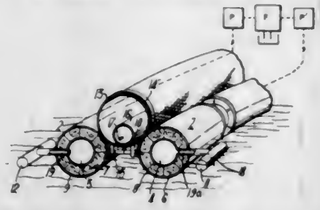
1. A filter press comprising an assembly of alternating juxtaposed suspension supply frames and filter boards,

inlet means for introducing suspension to be filtered into said suspension supply frames and outlets for discharging liquid from the interiors of said filter boards, each of said filter boards comprising a rectangular filter



frame having top and bottom and side bars, a filter cloth secured to each side surface of each filter frame and a flexible mat freely suspended from said top bar between said filter cloths and being freely movable transversely of said filter board relative to said side and bottom bars.

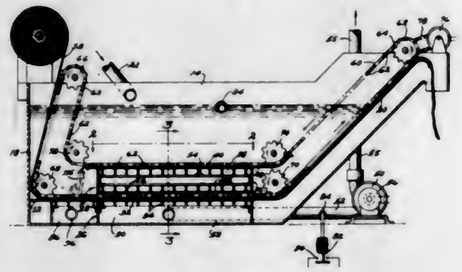
3,221,884
APPARATUS FOR REMOVING A SURFACE LAYER FROM A BODY OF LIQUID
Jacques Muller, 123 Ave. du General de Gaulle, La Garenne-Colombes, Seine, France
Filed Jan. 2, 1962, Ser. No. 163,636
Claims priority, application France, Jan. 31, 1961, 851,180; Aug. 17, 1961, 870,896
6 Claims. (Cl. 210—242)



1. Apparatus for removing a surface layer from a body of liquid comprising a flexible pipe surrounded by a layer of buoyant material and an outer sheath, whereby said flexible pipe floats on the surface of said body of liquid, a plurality of suction nozzles extending at spaced intervals along the length of said pipe, said nozzles projecting laterally outward from said pipe and in communication with the interior thereof, said nozzles being adapted to dip into said surface layer, suction means connected to said pipe to draw the liquid of said surface layer into said pipe through said nozzles, and filter means connected to said pipe and through which liquid is forced by said suction means thereby separating said surface layer liquid from the liquid of said body.

3,221,885
FILTER APPARATUS
Gene Hirs, 17208 Greenview Road, Detroit, Mich.
Filed Jan. 9, 1962, Ser. No. 165,187
5 Claims. (Cl. 210—298)

4. In a filter apparatus for removing contaminant particles from a contaminated liquid, a tank structure including a bottom wall and side and end walls surrounding an interior tank space, stationary wall means interiorly of said space and secured to said side walls defining a vacuum chamber having an open top and a bottom spaced from the tank bottom wall, means for maintaining a substantially constant body of contaminated liquid over the open top of said vacuum chamber, said vacuum chamber thus being sealed from the atmosphere, a perforate fixed filter medium overlying the open top of said vacuum chamber to remove said particles from liquid flowing through said open top and into said chamber, such particles accreting on the upper surface of said medium, an endless conveyor in the form of a closed loop circumscribing said chamber and having a lower reach depending into said tank to be interposed between said chamber and said tank bottom wall and an upper reach overlying said chamber, said conveyor having transverse scraper flights overlying the upper surfaces of said medium, power means for advancing said conveyor in said loop to scrape from said medium particles accreted thereon and contacted by said flights, and a filtrate pump having its intake connected to said chamber to create a vacuum therein supplementing the static head of said



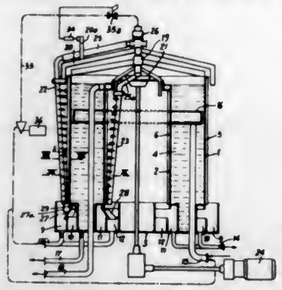
contaminant liquid in said tank to induce the flow of liquid through said medium.

5. In a filter apparatus including a tank having side, end and bottom walls and to which contaminated liquid is supplied, means for maintaining the liquid level in said tank substantially constant, a vacuum box located interiorly of said tank in spaced relation to the walls thereof to project laterally across the tank, said vacuum box having openings in opposing walls thereof, a first perforate filter medium at one of said wall openings and a second and different perforate filter medium at the other of said wall openings so that filtrate only enters the interior of said box, contaminants accreting on said media, respectively, an endless conveyor in the form of a loop circumscribing said box, said conveyor having separate reaches paralleling said first and second media, respectively, and said conveyor reaches each having scraper flights contacting contaminants accreting on said media, means for advancing said conveyor in said loop so that said flights remove contaminants from both said media, and a filtrate pump having its intake connected to said vacuum box.

3,221,886
BACKWASH FILTER WITH FILTRATE DEFLECTOR
Pierre Louis Emile Marie Lamort, Vitry-le-Francois, France, assignor to E & M. Lamort Fils, Marne, France, an anonymous society of France
Filed Nov. 4, 1963, Ser. No. 321,110
19 Claims. (Cl. 210—298)

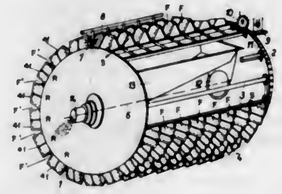
1. Apparatus for the filtration of liquid containing solid particles in suspension, comprising: chamber means having a liquid-permeable filter wall haying an inner and an outer surface; a conduit communicating with the interior of said chamber means for feeding a liquid to be filtered into the interior thereof so that a filter cake will form on the inner surface of said wall while clear liquid will pass

therethrough; a compartment beneath said wall for receiving the clear liquid; cooperating rinsing and deflector means extending along a portion of said wall adjacent thereto for ejecting a cleaning fluid against the outer surface of said wall so that the fluid will pass therethrough to remove the filter cake from said portion and having a deflector element for deflecting any liquid passing ad-



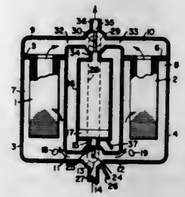
jacent said portion through said filter wall away from said compartment; moving means operatively connected to one of said aforementioned means for moving the same relative to each other so that cleaning fluid will successively be ejected against the whole outer surface of said filter wall; and means for removing filtered-out solid particles from said chamber.

3,221,887
MACHINES FOR FILTERING LARGE QUANTITIES OF WATER AND OTHER LIQUIDS
Harald Joachim Georg Schade, Karlsruhe-Waldstadt, Germany, assignor to Passavant Werke, Nassau, Germany
Filed Aug. 14, 1961, Ser. No. 132,276
Claims priority, application Germany, Aug. 24, 1960, P 25,568
12 Claims. (Cl. 210—327)



6. A machine for filtering large quantities of water and other liquids comprising a plurality of substantially cellular filter units; a movable frame structure for supporting said plurality of filter units and for causing joint movement thereof; rotatable means for operating said frame structure having an axis of rotation; each of said plurality of filter units including porous filter surfaces extending in a direction radially outwardly from said axis of rotation and being inclined with respect to said axis of rotation, each of said filter surfaces including points closest to said frame structure and points most remote from said frame structure; means for admitting liquid to be filtered to the sides of said cellular units adjacent said axis of rotation; means for draining the filtrate arranged at the sides of said cellular units remote from said axis of rotation; and spray nozzle means having orifices closer to said frame structure than said points of said filter surfaces most remote from said frame structure.

3,221,888
CLEANING DEVICE FOR FLUID FILTER
Jacques Muller, La Garenne-Colombes, France, assignor to Rellumit Inter, S.a.r.L., La Garenne-Colombes, France, a corporation of France
Filed May 8, 1962, Ser. No. 193,100
Claims priority, application France, May 12, 1961, 861,515
4 Claims. (Cl. 210—333)



1. Equipment for filtering impurities from fluids comprising a casing having an inlet port for unfiltered fluid and an outlet port for filtered fluid, means dividing said casing into a first and a second section, means mounting at least one filter means in each of said sections and dividing each section into an upstream chamber and a downstream chamber, a cylinder in said casing having a piston movably and sealingly mounted therein, first passage means connecting a first end of said cylinder to the upstream chambers and to said inlet, second passage means connecting the second end of said cylinder to the downstream chambers and to said outlet, first interconnected valve means having a first position controlling said first and second passage means and connecting said inlet port to said upstream chambers and said downstream chambers to said outlet port while cutting off flow to the first end of said cylinder, means to actuate said first valve means to a second position connecting the inlet port with the first end of said cylinder and cutting off flow between said inlet port and the upstream chamber in said first section and between said outlet port and the downstream chamber located in said first section, and further connecting the last mentioned downstream chamber with said second end of said cylinder, a discharge port located in each of the upstream chambers, second valve means normally closing said discharge ports, valve operating means operatively connected to said first valve means and adapted to open the second valve means in the discharge port of the upstream chamber in said first section when said first valve means is in said second position so as to backwash the filter means in said first section, said first valve means being constructed and arranged so as to be movable to a third position wherein the filter means in said second section is backwashed in like manner, and said cylinder having drain means leading therefrom and operative to exhaust fluid from said cylinder when said first valve means is returned to said first position after backwashing.

3,221,889
EFFLUENT REMOVAL STRUCTURE FOR SETTLING TANKS AND RESERVOIRS
Abraham Adler Hirsch, 141 Norwood St., Shreveport, La.
Filed June 13, 1962, Ser. No. 202,268
8 Claims. (Cl. 210—532)

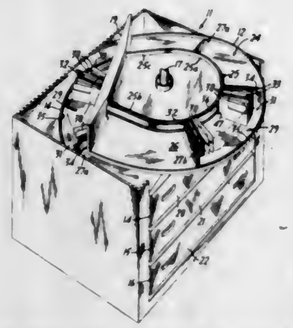
1. The combination in a settling tank for removing suspended solids from liquids contained therein having means to maintain a surface therein comprising an effluent removal means, an effluent baffle means disposed in said tank in advance of and in proximity to said removal means, said baffle means separating said tank into a settling first

zone and a second zone which is adjacent said removal means; said baffle means extending from slightly above the surface of said liquid to above the level of solids settled in said tank, said baffle means including a plurality of port means through which said liquid passes from said first zone to said second zone; said port means having openings lying in an inclined surface, said openings dis-



posed at progressively increasing horizontal distances from said removal means as said openings approach the surface of said liquid; some of said port means having plug means to prevent liquid flow through said some port means for adjusting flow of said liquid through said first zone to form flow currents which are substantially parallel to each other as said currents approach said baffle means.

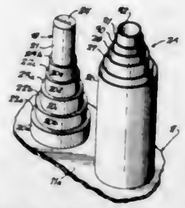
3,221,890
FILE TRAY
George W. Wassell, Westport, Conn., assignor to Wassell Organization, Inc., Westport, Conn., a corporation of Delaware
Filed July 23, 1962, Ser. No. 211,575
10 Claims. (Cl. 211—10)



1. Filing apparatus comprising a tray, a track having an elongated notch extending along its side surface at positions equi-distant above the tray, the track being positioned above the tray, resilient material adjacent the edge of the notch in the track, at least one movable guide supported by the track, the guide having a portion thereof that is normally resiliently engageable with the resilient material adjacent the edge of the notch in the track to prevent movement of the guide along the track, the guide being pivotable without deforming out of resilient engagement with the track and slidable along the track to a desired position on the track where it may be pivoted back into resilient engagement with the track.

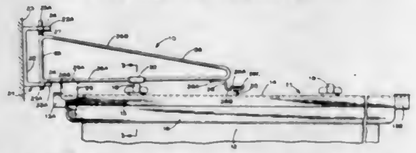
3,221,891
DEVICE FOR HOLDING HAIR CURLER ROLLERS
Theodore R. Snow, 125 S. 7th St., Olean, N.Y.
Filed June 19, 1963, Ser. No. 288,960
8 Claims. (Cl. 211—13)

1. A device for holding tubes of varying peripheries, such as hair curler rollers of varying diameters, in extended telescopic relation, said device comprising elongated spindle means tapering inwardly toward one end in a series of steps, said steps being formed by longitudinal portions severally separated by lateral portions,



the longitudinal portion at said one end being substantially longer than any other longitudinal portion.

3,221,892
HOLDER FOR SHEET-LIKE MATERIAL
Bernard Morcheles, South Orange, and Nunzio L. D'Agostino, Belford, N.J., assignors to Stacor Corporation, Newark, N.J., a corporation of New Jersey
Filed Apr. 30, 1964, Ser. No. 363,892
13 Claims. (Cl. 211—48)

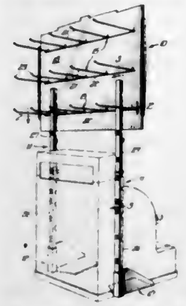


3. A holder for sheet-like material as for example newsprint, drawings and the like, comprising,
(a) a bracket adapted to be detachably connected to a support,
(b) said bracket including an end pin by which said bracket is pivotally and detachably connected to the support,
(c) a member connected to said pin intermediate the ends thereof, said member extending laterally therefrom,
(d) a slotted retainer connected to the free end of said member,
(e) a positioning means connected to said member adjacent the other end thereof,
(f) and a binder means including an elongated channel shaped member and co-operating jaw members for receiving and securing therebetween said sheet-like material,
(g) a headed stud connected to said channel member, said stud being secured to one side of the mid point of said channel shaped member whereby said stud is adapted to be received in said slotted retainer with the nearer end of said channel member received in said positioning means.

3,221,893
ARTICLE DISPLAY DEVICE
Martin Glaberson, Ardsley, N.Y., and Leopold Karl Kuhnl, Stratford, Conn., assignors to Eversharp, Inc., Milford, Conn., a corporation of Delaware
Filed Nov. 13, 1962, Ser. No. 236,875
5 Claims. (Cl. 211—59)

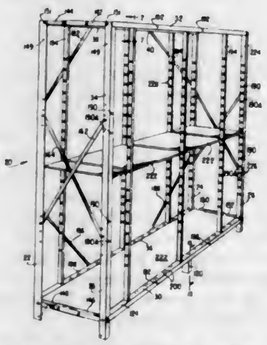
1. In combination, a generally vertically disposed display board and mounting means for supporting the same near or in association with a cash register comprising, a pair of base members adapted to be mounted in a spaced-apart relation on a horizontal surface, each of said base members having a horizontally disposed foot plate adapted to be held in contact with said surface, a pair of upright members secured to said base members, respectively, each of which upright members has at least one relatively short slot formed therein intermediate the ends thereof, and

a pair of clamps removably engageable with said upright members, respectively, for attaching said display board to the upright members, each of said clamps comprising a vertically disposed bar having hook means intermediate the ends thereof in engagement with the corresponding slot in said upright member for pivotal hanging of said bar therefrom, said bars having the upper ends thereof spaced from said upright members for receiving said dis-



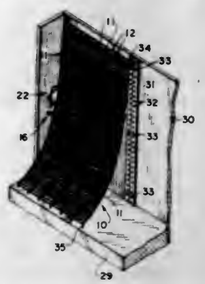
play board therebetween, said bars having thumb actuated means in the lower ends thereof for urging said lower ends away from said upright members, whereby said display board is frictionally gripped between said upright members and said clamps by actuation of said thumb actuated means.

3,221,894
ADJUSTABLE STORAGE RACK
Harvey G. Knuth, Elgin, Ill., assignor to Lyon Metal Products, Incorporated, Aurora, Ill., a corporation of Illinois
Filed July 2, 1963, Ser. No. 292,264
39 Claims. (Cl. 211—134)



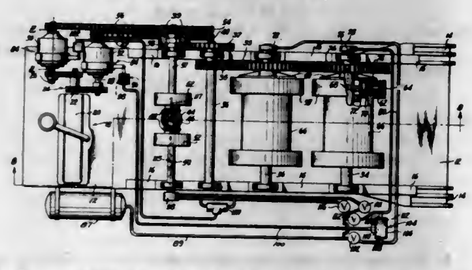
1. An adjustable rack comprising at least two spaced apart, generally rectangular, upright frames including end uprights, means for fastening said frames rigidly to each other in a generally parallel opposed relationship and adjustable means, positioned between the end uprights on at least one of said frames for transmitting the load of the top cross rail and of intermediate shelves to the bottom cross rail of said frame, comprising an intermediate upright extending vertically between the said cross rails and having a shoulder at each end, which shoulders, respectively, engage the opposed faces of said cross rails; and means for removably securing said upright in the said vertically extending position at a plurality of positions spaced at predetermined distances from the said end uprights which comprises tangs extending outwardly from the ends of the upright in a direction lengthwise thereof and slots in each of the cross rails at the said predetermined distances from the end uprights for receiving said tangs.

3,221,895
WIRE DISPLAY RACK
William David Rhodes and Joseph Raymond Forrest, Chicago, Ill., assignors to Production Metal Products Company, Inc., Chicago, Ill.
Filed May 20, 1963, Ser. No. 281,664
10 Claims. (Cl. 211—148)



5. A display rack comprising a structure of generally parallel spaced bendable longitudinal members and generally parallel and more closely spaced cross members substantially at right angles to said bendable longitudinal members, means for mounting said structure on a support in a non-planar condition, shelf means for mounting objects on said structure, said shelf means comprising a plurality of members having upwardly turned extremities integrally connected serially and in overlapping relation with each other and attaching means on said shelf means disposed parallel to said upwardly turned extremities by which said shelf means can be secured to said structure selectively along the length thereof in generally parallel relation to said cross rods selectively, and elongated divider means separate from said shelf means including intermediate rigidifying means selectively attachable both lengthwise and transversely of said structure.

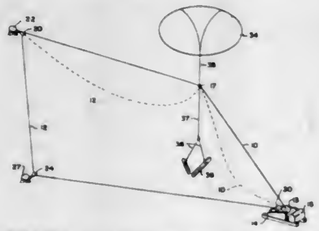
3,221,896
CRANE DRIVE SYSTEM
John G. Grall and Edward B. Nickles, Manitowoc, Roche J. Van De Hey, Whitelaw, and John D. West, Manitowoc, Wis., assignors to Manitowoc Engineering Corporation, Manitowoc, Wis., a corporation of Wisconsin
Filed June 30, 1961, Ser. No. 121,179
18 Claims. (Cl. 212—38)



1. In combination with a crane having a source of power, a hoist assembly and a swing assembly driven by said source of power, a drive system for said assemblies comprising a torque convertor driven by the source of power and a clutch device driven by the torque convertor, fluid pressure responsive apparatus for controllably varying the torque outputs of the torque convertors relative to the engagement of the corresponding clutch device to enable the clutch devices to be engaged prior to an appreciable increase in the torque output of the corresponding torque convertor while the output speed of the source of power may be maintained substantially constant, said apparatus comprising control structure for controllably

varying the torque outputs for each of the torque convertors by regulating fluid flow therethrough, a fluid pressure responsive actuating device connected to each of the control structures of the torque converters and to each of the clutch devices for enabling the clutch devices to be engaged, said fluid pressure responsive clutch engaging actuating devices being responsive to a lower range of fluid pressure than the corresponding fluid pressure responsive torque convertor output regulating control structure actuating device of the respective assembly, and means for enabling the torque outputs of the torque convertors to be continuously varied after the respective clutch device has been engaged.

3,221,897
LOAD-LIFTING APPARATUS
Chester R. Matheson, 1150 W. 41st Ave., Vancouver, British Columbia, Canada
Filed July 10, 1962, Ser. No. 208,837
19 Claims. (Cl. 212—71)



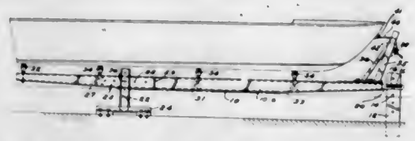
1. Load-lifting apparatus comprising a cable, means connecting the ends of the cable to the ground at spaced-apart points, a lighter-than-air craft secured to said main cable and lifting at least a portion of it off the ground, a carriage movably mounted on the cable, a lifting cable passing over a pulley carried by the carriage, one end of said lifting cable being adapted to be connected to a load, power means connected to the opposite end of said lifting cable for lifting the load towards the carriage, and power means for moving the carriage along the main cable, said craft at least partially supporting the load as the carriage moves along the main cable.

3,221,898
RAILWAY CAR
Herman G. Pellnitz, St. Charles, Mo., assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed Feb. 27, 1964, Ser. No. 347,873
2 Claims. (Cl. 213—8)



1. In combination, an underframe for a railway car including a fixed center sill structure having a pair of spaced, generally parallel longitudinally extending sills each having a vertical web and a lower outwardly extending horizontal leg, a slidable center sill structure mounted between said sills and being hat-shaped with an open bottom, a plurality of crossbearer members spaced along the length of the underframe, each crossbearer member extending transversely of the underframe and having a separate web secured to the outer surface of each said longitudinally extending sill, a shock absorbing unit positioned within the hat-shaped slidable center sill structure between a pair of adjacent crossbearer members for cushioning impacts delivered to the car through said slidable center sill structure, a transverse beam beneath the slidable sill structure adjacent each crossbearer member and secured to the lower surfaces of the adjacent crossbearer member for supporting the sliding sill structure, a detachable support structure for the shock absorbing unit spaced from the slidable sill structure, said support structure including a support plate on which the shock absorbing unit rests, said support plate being of a width less than the spacing of the sides of said hat-shaped slidable center sill structure and of a length substantially the same as the length of the shock absorbing unit when the latter is in a normal centered position, at least a pair of horizontally spaced straps below the support plate in spaced relation thereto and in spaced relation to the slidable sill structure for removably securing said support structure in position within the slidable center sill structure, and a longitudinally extending beam positioned between said support plate and said straps, said longitudinally extending beam extending medially of the width of said support plate, each of said straps having end portions removably secured to said legs of said longitudinally extending fixed sills and an intermediate portion between the end portions sloping downwardly beneath the longitudinally extending beam to support said beam and support plate thereon.

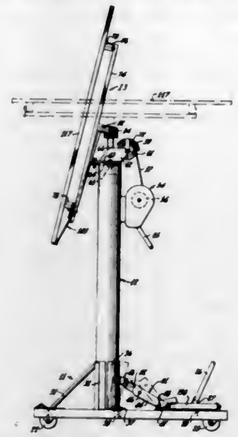
3,221,899
BOAT SUPPORT
Ernst H. Gronlund, 107 St. Clair River Drive, Algonac, Mich.
Filed Nov. 7, 1963, Ser. No. 322,156
3 Claims. (Cl. 214—1)



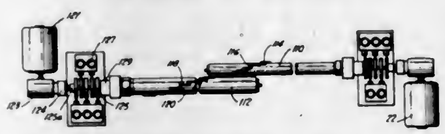
1. A water edge boat support comprising, in combination: upright bow supporting means adjacent to the water edge, upright stern supporting means spaced outwardly toward the water from said upright bow supporting means, a boat carrying frame pivotally mounted on the stern supporting means for tiltable movement of the frame thereabout, said frame releasably connected with the bow support by forwardly extending spaced apart portions having linear slots to receive a pin carried by the bow support to permit adjustment of the front end of the frame up and down with respect to the bow support to pivotally tilt the frame about its pivotal connection with the stern supporting means.

3,221,900
APPARATUS FOR POSITIONING BUILDING BOARD
Leslie G. Love, Rte. 1, Box 70, Crannell, Calif.
Original application Nov. 2, 1961, Ser. No. 149,607, now Patent No. 3,178,038, dated Apr. 13, 1965. Divided and this application Feb. 26, 1965, Ser. No. 435,505
7 Claims. (Cl. 214—1)

1. In apparatus for positioning building board, a dolly, a vertical mast mounted on the dolly, a telescoping extension slidably mounted in the mast, means for raising and lowering the telescoping extension, a substantially vertical framework having its lower extremity mounted on the dolly and being removably secured to the mast, a carriage slidably mounted in said framework for vertical movement, means coupling the carriage to the telescoping extension so that as the extension is raised and lowered, the carriage is raised and lowered, said carriage including means for vertically supporting such building board along the lower edge thereof and selectively shiftable horizontally along said carriage for positioning the building board at the desired location; said carriage further including means retaining the building board along the upper edge thereof, said latter means being selectively shiftable vertically of said carriage to release the building board at the desired location, and means for operating the means engaging the upper edge of the board to permit release of the board in any vertical position of the carriage.



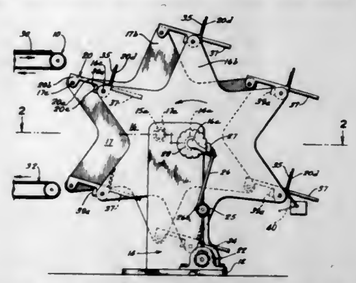
3,221,901
AUTOMATIC PUNCH PRESS
Robert W. Creamer, Fort Worth, Tex., assignor, by mesne assignments, to Numeric Systems of Texas, Inc., Fort Worth, Tex., a corporation of Texas
Filed Dec. 6, 1961, Ser. No. 157,416
10 Claims. (Cl. 214—1.5)



1. In a punch press apparatus, a work holder structure for supporting a work piece, rack means for moving the work piece in a forward direction along the work holder structure, means for advancing the rack means in a forward and reverse direction, indexing means for controlling the forward movement of the rack means in predetermined intermittent increments of distance, said indexing means comprising a plurality of indexing cylinders, dimensional selecting means provided on the indexing cylinders, and means for orientating the indexing cylinders in accordance with the desired predetermined dimension for the forward movement of the rack means.

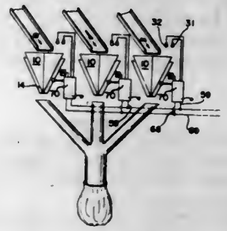
3,221,902
STACKING MACHINES FOR PAPER UNITS
Reuben F. Young, 6539 N. Bosworth Ave., Chicago 26, Ill.
Filed Jan. 4, 1963, Ser. No. 249,532
6 Claims. (Cl. 214—6)

1. A stacking machine for flat-type units deposited in successive order by a supply source, comprising a rotary collector with supports positioned at intervals to receive said units in stacking accumulation, said supports extending in a series along the periphery of the collector, and means to stop the latter periodically for accumulating a desired number of units on each support from said supply source, said collecting unit being a rotor having companion discs journaled on parallel axes to offset the discs laterally from each other, and said members being platforms interposed in peripheral succession between the discs, one end



of each platform hinged to a pivot carried by one disc and the other end hinged to a pivot carried by the other disc, whereby to offset such pivots and position the platforms at the same angle at all points in the rotation of the rotor.

3,221,903
APPARATUS FOR GATHERING AN ACCUMULATION OF VARIOUS OBJECTS
John Van Geen, Sunnyvale, Calif., assignor to RS Electronics Corporation, Palo Alto, Calif., a corporation of California
Filed Sept. 24, 1962, Ser. No. 225,649
7 Claims. (Cl. 214—17)

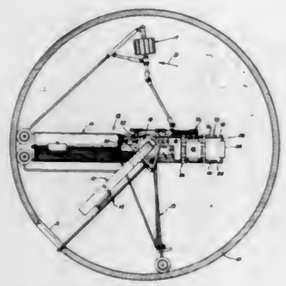


1. In dispensing apparatus of the kind described a system for dispensing a plurality of parts as a predetermined grouping thereof, said system including a plurality of dispensing units operable independently of each other, each said unit being adapted in one condition of operation to acquire a part to be dispensed and in another condition to dispense the acquired part by dispensing activity of the unit, and means interconnecting said units to preclude initiation of dispensing activity by any of same until all are in a predetermined readiness condition preparatory to dispensing, means for sensing successful completion of dispensing of said parts of individual ones of said units to terminate said dispensing activity thereof, and means serving to accommodate prolongation of said activity for individual ones of said units independently of the others, whereby initiation of dispensing by said units commences at substantially the same time notwithstanding periods of dispensing of different duration for each said unit.

3,221,904
SILO UNLOADER
Floyd E. Buschbom, Long Lake, Minn., assignor to Vandale Corporation, Long Lake, Minn., a corporation of Minnesota
Continuation of application Ser. No. 27,435, May 6, 1960. This application May 22, 1963, Ser. No. 285,186
9 Claims. (Cl. 214—17)

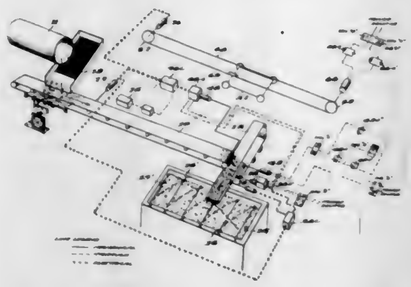
1. In a silo unloader, the improvement comprising an impeller housing substantially in the form of a scroll hav-

ing side members formed from parallel positioned planar members having parallel integral portions extending therefrom, a first closure member extending from adjacent edges of said integral portions to form rear and bottom closure portions for said impeller housing, a second closure member similarly extended to form front and top closure portions for said impeller housing, said first and second closure members being spaced to provide a circumferential entrance into said housing, said circumferential entrance having a substantially horizontal bottom edge, outwardly extending flange means adjacent the bottom



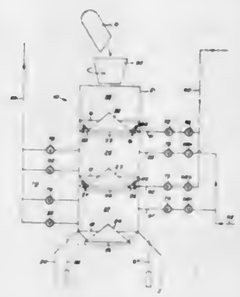
portion of the front and top closure portion for guiding material into said passage, a stop means spaced from said bottom edge means and extended parallel thereto and across said bottom closure portion, and one of said side members having a cut-out along the bottom portion thereof having an edge in the form of an obtuse angle, providing a side entrance into said housing and a first portion of said edge being substantially horizontal and the second portion of said edge being at an obtuse angle with respect thereto.

3,221,905
SHAFT FURNACE STOCKLINE FEEDER
Arthur W. Storm and Franklin G. Rinker, both of Toledo, Ohio, assignors to Midland-Ross Corporation, Toledo, Ohio, a corporation of Ohio
Filed May 22, 1964, Ser. No. 369,534
9 Claims. (Cl. 214—18)



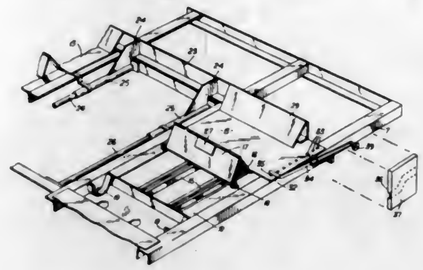
1. The combination with a vertical shaft furnace having a substantially rectangular mouth, of means for feeding fluent material onto the stockline in the furnace mouth, said feeding means comprising a shuttle belt and associated supporting frame structure disposed parallel to one side of the furnace mouth, means for driving said shuttle belt, an extendible index belt and associated extendible supporting frame structure disposed at the discharge end of said shuttle belt and transversely of the latter for receiving the fluent material discharged from said shuttle belt and discharging the same onto the stockline, means for driving said index belt, said extendible supporting frame structure for said index belt including a first frame part which is stationary in relation to said supporting structure for said shuttle belt, a second frame part supporting the forward discharge end of said index belt, and means supporting said second frame part and the discharge end of said index belt on said first frame part for reciprocating movement longitudinally of the latter, drive means for reciprocating said second frame part, means supporting said shuttle and index belts and their respective supporting frame structures for reciprocating movement as a unit longitudinally of said side of the furnace mouth, said supporting means being comprised of an elevated trackway arranged parallel with said shuttle belt, a carriage on said trackway and support means depending from said carriage and which serve to carry the discharge end of said shuttle belt and the appertaining forward end of said shuttle belt support structure as well as said index belt and its associated supporting frame structure; and drive means for effecting said unitized reciprocating movement of said shuttle and index belts and their respective supporting frame structures.

3,221,906
SEALING SYSTEM FOR BLAST FURNACE BELLS FOR HIGH PRESSURE TOP OPERATION
Norwood B. Melcher, Minneapolis, Minn., and Warren M. Mahan, Bethel Park, Pa., assignors to the United States of America as represented by the Secretary of the Interior
Filed Feb. 11, 1964, Ser. No. 343,902
5 Claims. (Cl. 214—36)
(Granted under Title 35, U.S. Code (1952), sec. 266)



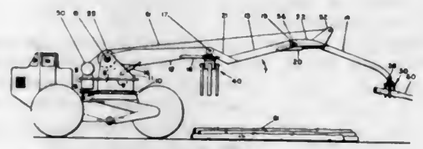
1. In a blast furnace charging apparatus having bell and hopper devices, means intermittently operative to displace a bell of said devices between opened and closed positions with respect to a hopper cooperatively related therewith, and mechanisms to clean a surface of said bell, said mechanisms comprising a conduit having a multitude of passages directed outwardly therefrom, elements supporting said conduit on said hopper whereby said multitude of passages of said conduit have their outer openings facing the surface of said bell designed to contact said hopper when it is closed thereby, supply lines for furnishing a gaseous stream under pressure to said conduit, control valve means in said supply lines operable to disrupt or continue the flow of said gaseous stream therein to said conduit, and operation coordinating means responsive to said bell displacing means to regulate the operation of said control valve whereby the flow of a gaseous stream under pressure is maintained in said supply lines and released to said conduit during the time said bell is displaced from an opened to a closed position with respect to said hopper such that said gaseous stream is jetted out of said multitude of passages and on to said hopper contacting surface of said bell.

3,221,907
CHOCKING DEVICE FOR VEHICLE WHEELS
Eugene O'Sullivan, Orpington, Kent, England, assignor to New Era Multi Park Holding Limited
Filed June 17, 1963, Ser. No. 288,378
Claims priority, application Great Britain, June 20, 1962, 23,722/62
3 Claims. (Cl. 214—42)



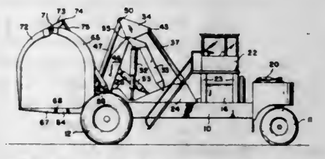
2. A vehicle handling conveyor comprising a fixed frame member, a supporting track carried by said frame member, a platform member shiftable upon said track and adapted to receive the wheels of a vehicle, a slidable member at one end of said platform member to receive and fully support a leading wheel of a vehicle as the vehicle reaches a central position on said platform member and to be moved on said platform member by engagement with said wheel, a first chocking member on said slidable member at the end remote from the oncoming wheel for engagement by said wheel to shift said slidable member on said platform member, a second chocking member at the other end of said slidable member, means to cause said second chocking member to pivot upwardly to an operative position by the motion of the slidable member as the vehicle moves on the platform member, the wheel being engaged between the first and second chocking members to prevent movement on the slidable member, support rollers on said slidable member, guide rails on the platform member, and adapted to receive said support rollers on the slidable member to support the slidable member with its upper surface in line with the platform member and cooperating locking parts on the platform member and on the slidable member respectively, and cooperating means on said platform member and said fixed frame member constructed and arranged to come into operative contact toward the end of the shifting movement of the platform member, to bring said locking parts into locking engagement.

3,221,908
MATERIAL HANDLING DEVICE
Robert W. Larson, Sanborn, Wis., assignor to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin
Filed Feb. 25, 1964, Ser. No. 347,191
8 Claims. (Cl. 214—147)



1. A device for handling elongated objects comprising
(a) a mobile carriage;
(b) boom support means;
(c) an extensible boom including a
(d) rear boom section pivotally mounted at one end to said support means for swinging movement in a vertical plane about a horizontal axis;
(e) motor means operatively mounted on said device for actuating said rear boom section in its said swinging movement;
(f) an extensible boom section having one end operatively mounted to the other end of said rear boom section and adapted for extensible retractive movement relative to the said distal end of said rear boom section;
(g) a first grapple means pivotally mounted to the opposite distal end of said extensible boom section and including
(h) a pair of co-acting jaws adapted for movement toward and away from each other;
(i) motor means for actuating said jaws in their said movement;
(j) a second larger grapple means having a work handling capacity at least twice that of said first grapple means and mounted to the said opposite distal end of said rear boom section and including
(k) a pair of co-acting jaws adapted for movement toward and away from each other;
(l) motor means for controlled actuation of the said jaws of said second grapple means in their said movement, with said first and second grapple means being adapted for alignment of the openings between their respective jaws longitudinally of said extensible boom, and a
(m) motor means operatively connected between said rear boom section and said extensible boom section for reversibly extending said extensible boom section and concurrently moving the first grapple mounted thereon relative to said second grapple whereby said first grapple is adapted to an elongated object thereon for engagement by second grapple.

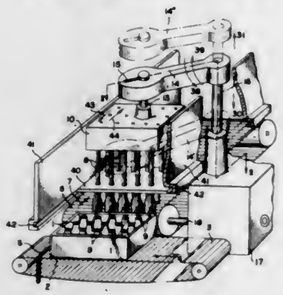
3,221,909
MATERIAL-HANDLING VEHICLE
John E. Magnuson, Seattle, Wash., assignor to Pacific Car and Foundry Company, Renton, Wash., a corporation of Washington
Filed Apr. 29, 1964, Ser. No. 363,428
14 Claims. (Cl. 214—147)



1. In combination with the frame of an automotive vehicle, a material-handling head, a folding boom structure extending between the vehicle frame and the head comprised of heel and reach sections connected by an intervening elbow joint, both of said sections comprising a set of parallel-motion links, the links of the heel section extending upwardly from the frame to the elbow of the elbow joint with the parallel swing motion being about longitudinally spaced transverse horizontal axes, the links of the reach section extending forwardly from the elbow to the head with the parallel swing motion being about vertically spaced transverse horizontal axes, at least one link of each of said sections having a wide bearing at each of its two pivoted ends, and independent power-operated means one for swinging the heel section of said boom relative to the frame and one for swinging the reach section relative to the heel section, the means for swinging the reach section relative to the heel section comprising a hydraulic jack having one end connected to the frame and the other end connected to one of the links of the reach section at a point thereon distal to the axis about

which the latter swings, the power-operated means for swinging the heel section also comprising a hydraulic jack, said latter jack being pivoted at one end to the frame at a point thereon spaced a substantial distance to the front of the boom's frame pivots and at the other end to the boom structure at a point thereon proximal to the elbow.

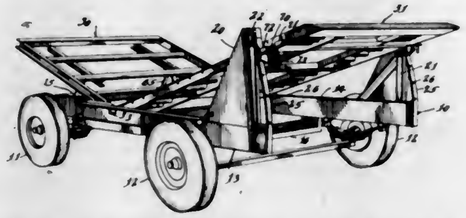
3,221,910
BOTTLE-FEEDING APPARATUS
Shinjiro Izumi, 1336 Ryoke, Urawa-shi, Japan
Filed May 31, 1963, Ser. No. 284,687
Claims priority, application Japan, June 2, 1962, 37/22,651
6 Claims. (Cl. 214—309)



1. Bottle-feeding apparatus comprising, in combination, a first conveyor means arranged to transport a plurality of upright emptied bottles, arranged in a predetermined pattern, to a transfer station; a second conveyor means extending from said transfer station and arranged to have the bottles on said first conveyor means transferred thereto; a plurality of vertically reciprocable rods at said transfer station, equal in number to said bottles and arranged in said predetermined pattern; a plurality of suction cups each secured to the lower end of a respective rod; means mounting said rods for reciprocation in unison to project into bottles at said transfer station to engage said suction cups with the inner surfaces of the bottle bottoms, and to lift said bottles to a first preselected level above said first conveyor means; means for moving said mounting means horizontally to transfer said rods between a first position, vertically aligned with said first conveyor means, and a second position, vertically aligned with said second conveyor means; means operable, when said mounting means is in said second position, to lift said rods and the attached bottles to a second level above said first level; and restricting means engageable with the upper ends of said bottles during lifting thereof from said first level to arrest motion of said bottles toward said second level while providing for lifting of said rods to said second level, to disengage said suction cups from the inner surfaces of the bottle bottoms to deposit the bottles on said second conveyor means; said first and second conveyor means extending at right angles to each other from said transverse station.

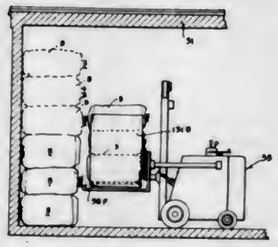
3,221,911
TRUSS AND MATERIALS HANDLING TRAILER
Jay T. Modloff and Billy J. Sayers, De Kalb, Ill., assignors to De Kalb Commercial Body Corporation, De Kalb, Ill., a corporation of Illinois
Filed Oct. 8, 1962, Ser. No. 228,822
2 Claims. (Cl. 214—505)

1. A truss and materials handling trailer comprising:
a generally horizontal framework adapted to be supported by wheels, said framework including spaced side members and front and rear transverse members secured thereto, said rear transverse member disposed below said side members and forwardly of the rear ends thereof;
an upright mounted on the rear portion of each side member;
an upper pulley and a lower pulley rotatably mounted on each upright;
front and rear bed members of generally like size in end-to-end relation on said framework, said rear bed member of width less than the distance between adjacent portions of said side members;
means mounting the adjacent ends of said bed members



in pivotal manner with respect to said framework and to each other;
means interconnecting said bed members in adjustable manner to vary the angulation therebetween;
cables secured to said rear bed member and engaging said upper and lower pulleys, and
rotatable drum means on said framework varying the effective length of said cables whereby said bed members are pivoted simultaneously with respect to said framework, said rear bed member pivotal below the plane of said framework to facilitate unloading.

3,221,912
LIFT TRUCK ARRANGEMENT FOR SYSTEM OF HANDLING BAGGED MAIL
Joseph E. McWilliams, 1345 Canterbury Lane, Glenview, Ill.
Original application Sept. 20, 1961, Ser. No. 139,526, now Patent No. 3,164,271, dated Jan. 5, 1965. Divided and this application Dec. 30, 1964, Ser. No. 422,347
1 Claim. (Cl. 214—514)



In a system for handling loaded mail bags and loading same in tier fashion into a transport vehicle, a lift truck for handling the bags in tier fashion inside the vehicle, said lift truck comprising:
a wheeled mobile body,
a vertically movable load support platform extending laterally of said body and proportioned to support a load of one or more tiers of mail bags positioned in substantially parallel side-by-side relation with said bags extending parallel to the forward and rearward direction of movement of said truck,
said platform at the ends thereof defining the lateral load carrying boundaries of the truck whereby said platform defines the effective load carrying width of said truck,
said platform including means for increasing the effective load carrying width of said truck,

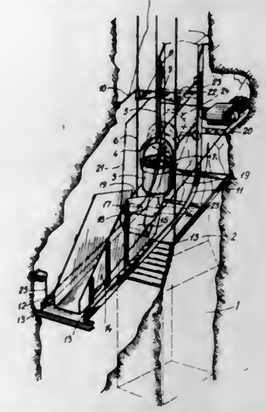
said means including extension members at each of said platform ends and carried by said platform in substantial coplanar relation with said platform,
and means for mounting each of said extension members for movement between a retracted position wherein said members are disposed within said lateral load carrying boundaries, and an extended position in which said members extend beyond the respective ends of said platform to increase said load carrying boundaries,
said lift truck further including substantially vertically disposed pusher plate means for engaging said tier load as a unit and pushing same off said platform in a direction longitudinally of said truck,
said pusher plate means including a pusher plate member extending laterally of said body and having its ends disposed in substantial alignment laterally of said truck with said load carrying boundaries, and means for moving said pusher plate member across said platform,
said pusher plate member including means for increasing the length thereof laterally of said truck beyond said boundaries and comprising extension members at each of said pusher plate member ends and carried by said pusher plate member in substantial coplanar relation with said pusher plate member,
and means for mounting each of said pusher plate member extension members for movement between a retracted position wherein said members are disposed within said lateral load carrying boundaries and an extended position in which said members extend beyond the respective ends of said pusher plate member to extend said boundaries.

3,221,913
HANDLING APPARATUS
Louie L. Chamberlain, 5243 Brookdale Road, South Gate, Calif.
Filed July 8, 1964, Ser. No. 380,994
8 Claims. (Cl. 214—517)



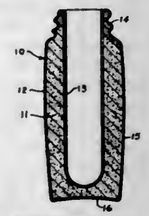
3. Handling apparatus for mounting and dismounting a camper relative to the bed of a pick-up truck, comprising in combination a pick-up truck including a body having a bed structure, mounting wheels for said truck, a pair of spaced parallel cam plates mounted upon said truck bed, each cam plate including upwardly converging aligned surfaces, a pair of spaced drive sprockets mounted on the rear portion of said truck body and projecting rearwardly therefrom, and means carried by said camper for cooperation with said sprockets comprising longitudinally oriented rack means for meshing engagement with said sprockets, said rack means being secured to the underside of the camper and including fixed linear and upwardly extending portions terminating in flexible extremities, said flexible extremities being adapted for draping over said sprockets for meshing engagement therewith, and means for driving said sprockets when in mesh with said flexible extremities to effect longitudinal upward movement of said camper onto said truck bed, said camper including a pair of spaced guide rolls for alignment and travel over the converging cam plates during longitudinal movement of said camper to elevate and lower said camper body.

3,221,914
ARRANGEMENT FOR EMPTYING PIT CASKS
Anders Bertil Noren, Djursholm, Sweden, assignor to Bolidens Gruvaktiebolag, Stockholm, Sweden, a joint-stock company limited of Sweden
Filed Nov. 19, 1963, Ser. No. 324,716
Claims priority, application Sweden, Nov. 23, 1962, 12,626/62
5 Claims. (Cl. 214—623)



1. An apparatus for emptying pit casks which have been elevated to an emptying station from an underlying pit comprising, in combination, means to elevate a pit cask comprising hoisting means, a carrier yoke attached to one end of a line of said hoisting means, and means to drive said hoisting means; a pit cask pivotally mounted in said carrier yoke, a discharge chute, means at said emptying station to guide said discharge chute, means to drive said chute between a retracted position and a receiving end position, means on said chute to cause said cask to empty as said chute moves to the receiving end position, a first limit switch located at said emptying station, said first limit switch being actuated by said carrier yoke to stop said hoisting means drive means and actuate said chute driving means to move said chute to the receiving end position, a second limit switch located at the end of said receiving end position, said second switch being actuated by said chute to stop said chute drive means, means for actuating said chute drive means after a delay to return said chute to the retracted position, a third limit switch located at the end of said retracted position, said chute actuating said third switch to stop said chute drive means.

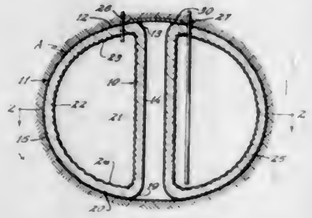
3,221,915
IMPACT-RESISTANT GLASS-LINED CONTAINERS
William J. Gort and Joseph J. Tomassi, Jr., Corning, N.Y., assignors to Corning Fibre Box, Corning, N.Y., a corporation of New York
Filed Aug. 8, 1962, Ser. No. 215,608
5 Claims. (Cl. 215—13)



1. An improved shock-resistant container for packaging products having a volatile constituent and for products

generally considered incompatible with plastics which comprises, an open ended tubular thin glass liner having an interior surface and an exterior surface with a maximum wall thickness therebetween of about 50 mils forming a vapor barrier between the interior of said container and the exterior thereof, a foamed plastic body portion entirely surrounding said exterior surface of said glass liner, and a smooth tough plastic film formed on the surface of said foamed body portion.

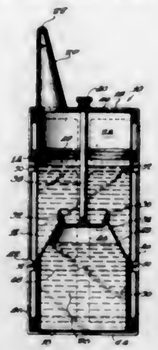
3,221,916
DESIGN OF AN ALL PLASTIC CRYOGENIC STORAGE CHAMBER
John R. Rysgaard, 3947 Rolling Hills Road, St. Paul, Minn.
Filed June 17, 1963, Ser. No. 288,362
3 Claims. (Cl. 220—9)



1. A tank of large capacity adapted for the underground storage of a liquified gas comprising:
(a) a generally doughnut-shaped body including an outer enclosure capable of supporting the weight of dirt placed thereon used to bury the tank underground,
(b) a generally similar shaped structurally self-sustaining inner enclosure enclosed within said outer enclosure and in spaced relation thereto,
(c) said inner enclosure being formed of a thermally responsive material, such as resin impregnated glass fibers, which is creped substantially throughout its surface area whereby said inner enclosure is adapted to accommodate, absorb, and distribute strain of contraction due to temperature drop in all directions simultaneously,
(d) a resilient cellular insulation in a contacting relation between opposed surfaces of said inner and outer enclosure and under compression between the walls of the inner and outer enclosures,
(e) whereby said insulation expands to maintain contacting relation when said inner enclosure contracts,
(f) means communicating with the interior of the inner enclosure and extending through said outer enclosure providing access to the inner enclosure for filling and draining the same.

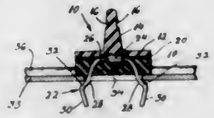
3,221,917
FLUID CONTAINER
John De Santo and Edgar A. Freeberg, both of 151 N. State St., Chicago, Ill.
Filed July 2, 1963, Ser. No. 292,262
3 Claims. (Cl. 220—20.5)

1. A container for holding two different fluids in separation from each other comprising a cylindrical exterior wall and a pair of opposed end walls, said exterior wall having a pleated portion therein for longitudinally extending said wall between a normally compressed position to an extended position, a partition in said container intermediate said end wall dividing said container into separate fluid containing compartments, said partition having an opening therein defining a valve seat, a valve member secured to one of said end walls and movable therewith from a seated position on said valve seat when said exterior wall is in a compressed position to an open position away from said seat when said exterior wall



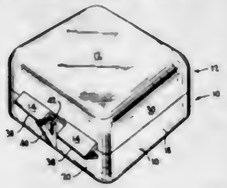
pleats are extended to said extended position and release means for maintaining said exterior wall pleats in a compressed position and manually releasable to allow said wall pleats to be extended to open said valve member.

3,221,918
SNAP-ON CAN SEALER
Louis G. Callegari, 34—06 45th St., Long Island City, N.Y.
Filed Dec. 30, 1963, Ser. No. 334,199
4 Claims. (Cl. 220—24)



1. A plug for sealing an opening in the top end wall of a can, said plug comprising a rigid plastic plate-like body, a resilient pad secured to the surface of the body, and a fastening device anchored to the body and having prongs extending through the pad outwardly thereof, said prongs having the ends thereof bent inwardly toward each other, the bends in the prongs providing shoulders for interlocking with the edge walls of the opening in the top end wall of the can to hold the plug in operative sealing position in the opening.

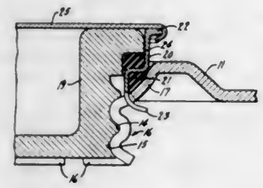
3,221,919
HINGED PLASTIC BOX
Edward H. Gessner, Norristown, Pa. (241 N. Main St., Ambler, Pa.)
Filed Dec. 24, 1963, Ser. No. 333,070
9 Claims. (Cl. 220—31)



1. A hinged box structure having all of its hereinafter stated parts integrally interconnected and forming homogeneous portions of a unitary structure of resiliently flexible material, comprising a box body member, a box cover member, hinge means interconnecting said members for relative swinging movement into and from a

closed position about an axis spaced equidistantly from the respective members and outside of said box structure, positioning elements fixedly carried by the respective members, one of said elements being positioned wholly on one side of said axis, and having a free end projecting toward but spaced from said axis to move in an arc therearound incident to relative swinging of said box members, the other said element projecting across the said axis and having a free end positioned to intersect the arcuate path of movement described by the free end of said one element at a suitable point in the relative swinging movement of said members, one of said elements being resiliently radially yieldable relative to said axis and of a length to permit free ends of said elements to override each other without damage incident to the exertion of a sufficient swinging force on said members.

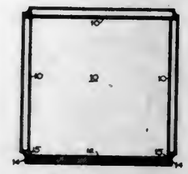
3,221,920
THREADED CLOSURE
Adriaan Buys, Krommenie, Netherlands, assignor, by mesne assignments, to Inland Steel Company, Chicago, Ill., a corporation of Delaware
Filed Nov. 28, 1962, Ser. No. 240,529
Claims priority, application Great Britain, Nov. 29, 1961, 42,648/61
12 Claims. (Cl. 220—39)



1. A container comprising, in combination, a sheet metal wall having an aperture formed therein, a plurality of tongues integral with said wall and projecting out of the plane thereof in substantial surrounding relation to the aperture, said tongues having portions of screw threads formed therein substantially defining a common helix, and an annular sleeve mounted on said wall in surrounding relation to the aperture, said sleeve having at least one tooth projecting through the aperture and between a pair of adjacent ones of said tongues whereby rotation of said sleeve relative to said wall is inhibited.

3,221,921
DEVICES FOR HOLDING CARGO
Milton J. Silverman, 9623 Grossmont Blvd., Grossmont, Calif.
Continuation of abandoned application Ser. No. 66,579, Nov. 1, 1960. This application Dec. 8, 1961, Ser. No. 157,958
4 Claims. (Cl. 220—46)

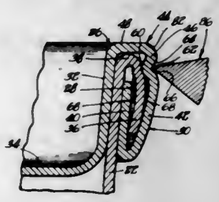
1. A cargo container comprising a container having an opening at one end thereof, said container comprising sidewall portions adjacent said opening, closure means for closing said opening, said closure means comprising a panel having a groove remote from the lateral edges thereof, said groove defined by opposite faces and a bottom portion, one of said faces having a recess therein, said side wall portions including end portions having a recess formed therein cooperating with said recess in said groove, said end portions received in said groove between side opposite faces, deflatable gasket means positioned in said recesses for locking said panel to said container and for sealing said opening, at least a portion of said end portions being constructed of rigid material, said end portions abutting said gasket means and releas-



ably fixed between gasket means and said bottom portions of said groove, and means for deflating said gasket means to thereby release said end portions and unlock said panel from said container.

3,221,922
CONTAINER END SEAM
Clarence J. Smith, 1916 11th St., Rockford, Ill.
Filed Sept. 11, 1961, Ser. No. 137,110
7 Claims. (Cl. 220—48)

1. In a container the combination of a container body,

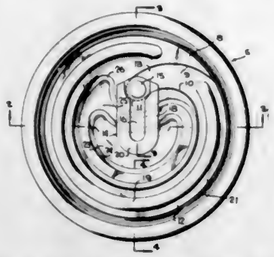


an annular body hook formed on one end of said body, a cover disposed in closing relation to said one end of the body and including an outwardly turned chuck wall fitted into said one end of said body, the periphery of said cover defining a cover hook interfolded with said body hook to form an end seam, said cover hook including an outer fold encircling said body hook and being connected to said chuck wall by an intervening connecting segment of the cover hook which includes a cutter guiding segment of the cover hook joined to said outer fold of the cover hook, and said cutter guiding segment of the cover hook being reversely curved in transverse section to define an outwardly open annular groove and to form an inwardly projecting annular protuberance projecting sharply radially inward from said outer fold of the cover hook to tightly engage said body hook along a narrow band of mutual engagement of the protuberance and the body hook, the engaged portion of the body hook being complementarily displaced inwardly in lesser degree to conform to the shaping of said inward protuberance and said protuberance being in localized pressure contact therewith.

3,221,923
MULTI-PANELED METAL CAN-END WITH SCORED AND BEADED TEAR STRIP
John S. Bozek, Chicago, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Jan. 3, 1964, Ser. No. 335,507
14 Claims. (Cl. 220—54)

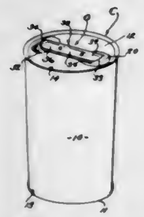
1. A container end comprising an end panel and a peripheral flange for attachment to a container, inner and outer weakening lines defining a removable tear strip extending generally around a central panel portion, said

outer weakening line being substantially loop shaped to effect the removal of that portion of said end panel defined by said outer weakening line, said tear strip having



a starting end, a pull tab secured to said tear strip starting end, and said tear strip having a rib extending along a major portion thereof strengthening said tear strip against flexure and premature rupture of said weakening lines.

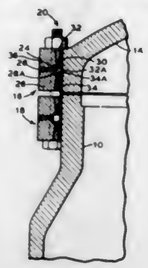
3,221,924
CAN OPENER
Leo M. Harvey, Los Angeles, and Ralph W. Hilton, Palos Verdes Estates, Calif., assignors to Harvey Aluminum (Incorporated), Torrance, Calif., a corporation of California
Filed Dec. 11, 1964, Ser. No. 417,567
14 Claims. (Cl. 220—54)



1. A can and opener for establishing spaced pouring and vent openings therein, and including:
(a) a can having an imperforate wall with spaced predetermined weakened pouring and vent areas thereon;
(b) and an opener overlying the wall and comprising a body of hingedly coupled sections extending over and fastened to each of said predetermined areas respectively, with a lever section fastened to the pouring area and extending to the said vent area, and with a lever section continuing from the first mentioned lever section and fastened to the vent area and extended laterally therefrom and adapted to be lifted for operating the opener to sequentially shear from the wall the vent area and then lift the first mentioned lever to shear from the wall the pouring area.

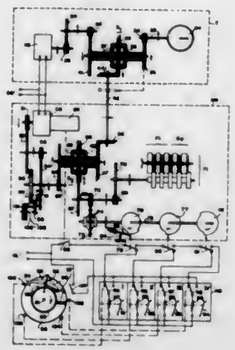
3,221,925
PRESSURE VESSEL CONSTRUCTION
Paul M. Brister, Akron, Otis R. Carpenter and George F. Friese, Barberton, John F. Harvey, Akron, and John W. Leonard, Jr., Wadsworth, Ohio, assignors to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey
Filed Nov. 21, 1960, Ser. No. 70,752
3 Claims. (Cl. 220—73)

1. In combination with a high temperature, high pressure large diameter vessel having a thick generally cylindrical wall with an opening at one end thereof, a closure head operative to close said opening, a heavy closure flange extending about said opening of said vessel and integrally attached to the wall of said vessel, a second heavy closure flange integrally attached to said closure head, said second closure flange arranged in face-to-face alignment with said first closure flange when said head is in operative position, said flanges having physical dimensions as required by the operating conditions of said vessel as to be substantially beyond commercially avail-



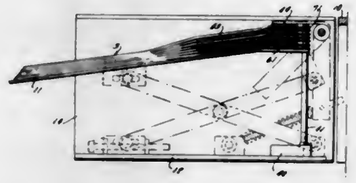
able stock plate sizes, each of said flanges being formed of at least two substantially similar annular plate elements integrally joined by a weldment, said plate elements each having a minimum cross sectional dimension substantially equal to the thickness of said pressure vessel wall and being made from commercially available plate stock.

3,221,926
MEDIUM CONSUMPTION METERING AND INVOICING MECHANISM
Edgar Winiger, Lucerne, Switzerland, assignor to Electrometre, S.A., Zug, Switzerland, a body corporate of Switzerland
Filed Aug. 24, 1962, Ser. No. 219,296
Claims priority, application Switzerland, Sept. 15, 1961, 10,704/61
5 Claims. (Cl. 221—2)



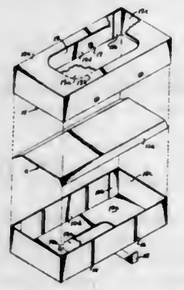
1. Invoice rendering apparatus for locally invoicing media consumption comprising, at least one consumption measuring device located at the consumer installation including a movable member operative to provide a displacement indicative of consumption; a plurality of invoice dispensing devices, each of said devices being capable of dispensing an invoice bearing indicia representative of a different predetermined quantity of consumption; first means coupled to said movable member and operative to provide an accumulated total displacement corresponding to said consumption; said first means including means operative to condition that one of said dispensing devices capable of dispensing an invoice representative of the predetermined consumption quantity closest to, but less than, the consumption represented by said accumulated total; periodically actuated means operative to actuate the then conditioned one of said dispensing devices to thereby issue an invoice related to consumption; and means controlled by the actuated dispensing device and operatively connected to said first means to subtract from said accumulated displacement an amount corresponding to the predetermined consumption quantity represented on the issued invoice.

3,221,927
DISPENSING HOLDERS FOR STACKS OF BAGS
John C. Lowry, Trumbull, Conn., assignor to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia
Original application Sept. 8, 1961, Ser. No. 136,838, now Patent No. 3,145,839, dated Aug. 25, 1964. Divided and this application Aug. 31, 1964, Ser. No. 393,097
1 Claim. (Cl. 221—26)



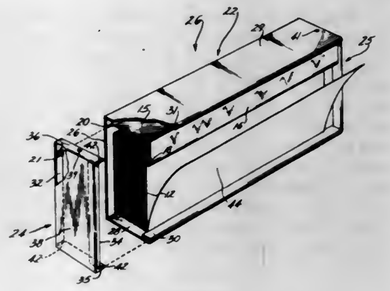
In a dispenser for a stack of bags, in combination, a horizontally disposed bag supporting table, resilient means urging said bag supporting table upwardly, at least one stack of bags supported upon said table, a dispensing saddle provided with a retaining tab having a pair of spaced apertures therein, one end of said stack of bags connected to said dispensing saddle, a pair of vertically disposed complementarily spaced saddle pins positioned transversely of said bag supporting table, and adjacent one end of said bag supporting table, said table being movable vertically with respect to said saddle pins, the inner extremity of the bag supporting table having spaced notches, said saddle pins extending through said aperture in said saddle of each stack and through said notches in said bag supporting table to retain said stack in fixed position with respect to said bag supporting table.

3,221,928
TISSUE DISPENSER AND DISPOSAL
Martin E. Horn, Norton Bldg., Seattle, Wash.
Filed Mar. 19, 1963, Ser. No. 266,318
5 Claims. (Cl. 221—34)



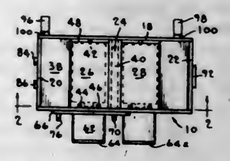
1. In combination, a box with a horizontal wall joined to upright walls, a cover having a horizontal wall spaced vertically relative to said horizontal wall of the box and having upright walls overlapping said upright walls of the box, discharge and waste openings, one in one of said horizontal walls and the other in the other of said horizontal walls, closed-end vertical slots in said upright walls of the box, and tongues struck inwardly from said upright walls of the cover and extending through respective of said slots, said box and cover being movable vertically relative to one another through the range of travel of said tongues in said slots.

3,221,929
PAPER TOWEL DISPENSER
Gilbert A. Riebel, Chicago, Ill., assignor to Jack E. Dominik, Chicago, Ill.
Filed June 22, 1962, Ser. No. 204,452
2 Claims. (Cl. 221—63)



1. A dispenser comprising, in combination, a rectangular box-like housing; said housing having a back, two ends, a top and a base member for said housing, all such members being either perpendicular or parallel with at least one other housing portion and defining an open front portion; and a towel retainer, said towel retainer having an elongate back and an elongate rectangular depending gripping member, all said members being rigid and non-resilient, the retainer back having a hinge edge in remote, spaced, parallel relation with the gripping member, and non-resilient hinge means securing the retainer adjacent the housing back on the retainer's hinged edge and in parallel spaced relation with the housing base member with the retainer back abutting the housing top, whereby a gravitational releasable grip is effected between the retainer and a plurality of stacked folded sheets with the folds along a horizontal axis for the sequential individual release of each of such stacked folded sheets.

3,221,930
BATTERY STORAGE AND DISPENSING UNIT
Donald Dean Nasgowitz, Milwaukee, Wis., assignor to Display Corporation, Milwaukee, Wis., a corporation of Wisconsin
Filed June 11, 1964, Ser. No. 374,410
17 Claims. (Cl. 221—92)



15. A storage and dispensing unit for batteries of the type having an electrode portion extending axially from one end thereof and comprising first and second storage compartments, each of said compartments comprising, in combination,

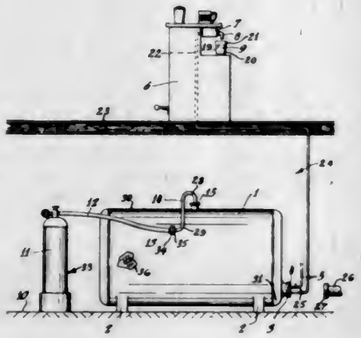
first and second pairs of opposed walls connected to define a battery storage area having an entrance end and a discharge end, the walls of said first pair of walls spaced apart a distance greater than the axial length of said batteries to define an entrance opening at said entrance end,

first means at said entrance end extending generally normal to said first pair of walls into said entrance opening restricting the dimension of said entrance opening parallel to said first pair of walls to less than the axial length of said batteries and greater than the diameter of said batteries,

means including opposed projections extending into said area and positioned in relative vertical staggered relationship on the walls of said second pair of walls to define a tortuous path through said storage area,

and a first projection on a first wall of said first pair of walls arranged generally centrally of said entrance opening and second and third relatively spaced projections on a second wall of said first pair of walls arranged on opposite sides of said first projection, said projections on said first and second walls extending toward each other into said storage area and terminating in spaced relation a distance less than the axial length of said batteries so that batteries can be inserted in said storage area only with the electrodes thereof facing said first wall and arranged between said second and third projections.

3,221,931
PRESSURIZED SYSTEM AND METHOD FOR THE DELIVERY OF BEVERAGES FROM BULK
Thomas Porter, Manchester, England, assignor to Porter-Lancastrian Limited, Bolton, England
Filed Mar. 3, 1964, Ser. No. 348,960
7 Claims. (Cl. 222—1)



1. A hygienic, filtered beer storage and dispensing system, said system comprising:

a storage room;

a bulk storage beer container having a capacity of more than one barrel, said container having a gas inlet at the top thereof but being free of liquid filling orifices except for a liquid inlet and outlet opening, closed by a header, at the bottom thereof;

supports permanently installing said container in said room;

a gas pipe, of rigid material, having an upper end connected to said gas inlet and having a lower end extending downwardly therefrom, to a level lower than the top of said container, for preventing the introduction of liquid into said inlet;

a metering tap, mounted outside of said storage room, said tap dispensing a predetermined quantity of beer, plus the head normally produced by such quantity;

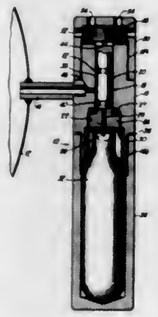
a beer delivery conduit connecting said tap to said header;

a beer supply conduit leading away from said container, said conduit having a delivery end interchangeably with said header for filling said container;

and fluid pressure means in said system, in advance of said tap, said means being operable on the beer in said system to deliver said beer under predetermined pressure to said tap;

whereby said system is inaccessible for introduction of dilutants, drippings or spillings during supply to, storage in and delivery from said container.

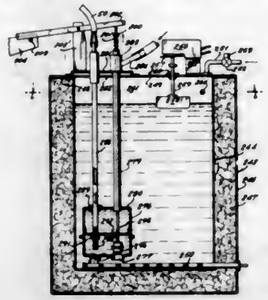
3,221,932
INFLATING DEVICE FOR FLOTATION GEAR
Gustaf A. Anderson, 3333 Pachappa Drive, Riverside, Calif.
Filed Apr. 4, 1962, Ser. No. 185,098
7 Claims. (Cl. 222—5)



1. An inflating device for life preservers and other inflatable apparatus comprising a cylinder provided with a port in its side wall, a cartridge containing inflating fluid under pressure having one end thereof extending into one end of said cylinder, means in said cylinder for puncturing said cartridge to release said fluid into said cylinder, a piston movable in said cylinder to close and open said port, and water soluble pellet means in said cylinder for normally maintaining said piston in a port closing position, said cylinder being provided with passageways to provide for the entry of water to dissolve said pellet means and permit said piston to be moved in said cylinder by the pressure of said fluid to a port opening position.

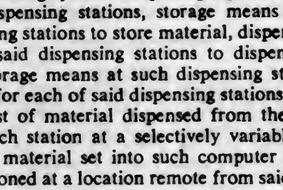
3,221,933
LIQUID DISPENSING DEVICE
Sollie W. Small and David Herman, Newark, N.J., assignors to Coffee-Mat Corporation, Elizabeth, N.J., a corporation of New Jersey
Original application July 14, 1961, Ser. No. 124,207. Divided and this application July 29, 1964, Ser. No. 389,238
6 Claims. (Cl. 222—21)

1. A liquid dispensing device comprising a liquid reservoir, a metering vessel immersed in said reservoir and having an inlet port formed therein communicating with said reservoir, an outlet conduit communicating with and projecting into said vessel to a predetermined level therein, an air conduit communicating with the interior of said vessel at a point above said predetermined level, means including a normally closed first valve connecting said air conduit to a source of compressed air, a second valve associated with said inlet port and movable between an open and closed position, a first means for alternatively opening and closing said second valve, and a second



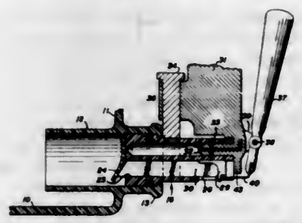
means for effecting the opening of said first valve following the closing of said second valve and for closing said first valve when said second valve is open.

3,221,934
REMOTE PRICE SETTING SYSTEM
George A. Klaffky, Huntington, N.Y., assignor to Socony Mobil Oil Company, Inc., a corporation of New York
Filed July 1, 1963, Ser. No. 292,051
24 Claims. (Cl. 222—26)



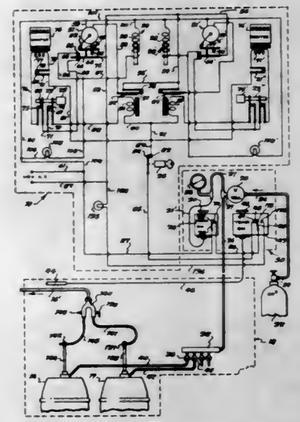
1. A dispensing system comprising a plurality of widely dispersed dispensing stations, storage means at each of said dispensing stations to store material, dispensing means at each of said dispensing stations to dispense material from the storage means at such dispensing station, computer mean for each of said dispensing stations to compute the total cost of material dispensed from the dispensing means at such station at a selectively variable price per unit of said material set into such computer means, and means positioned at a location remote from said dispensing stations to select said selectively variable price set into each of said computer means.

3,221,935
LIQUID CONTAINER AND VALVE THEREFOR
Wood B. Shurtleff, 8113 Rush St., and Philip N. Rawson, 702 Continental Life Bldg., both of Fort Worth, Tex.
Filed Jan. 18, 1965, Ser. No. 426,216
6 Claims. (Cl. 222—52)



1. A container for liquids having gas pressure therein, a sleeve in a wall of said container providing an opening therein, a valve body slidably mounted in said sleeve, means limiting the movement of said body partially outwardly of said sleeve, a gas injection port extending through said body, valve means preventing outward flow through said gas injection port, a liquid dispensing port extending through said body, and manually operated valve means selectively controlling flow through said liquid dispensing port.

3,221,936
DRAUGHT BEER CONTROLLING AND DISPENSING SYSTEM
Russell A. Spinuzza, Buffalo, N.Y., assignor of one-fifth to Samuel C. Battaglia, Buffalo, N.Y., and one-fifth to Joseph P. Gastel, Tonawanda, N.Y.
Filed Apr. 3, 1963, Ser. No. 270,270
17 Claims. (Cl. 222—54)

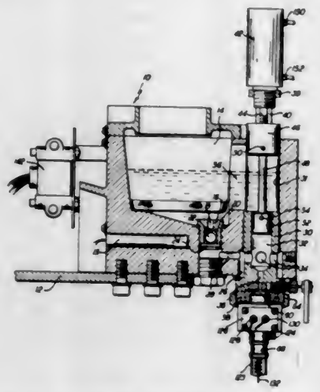


1. A control arrangement for dispensing a measured amount of draught beer comprising a beer tap having a valve therein, solenoid means, means operatively coupling said solenoid means and said valve in said tap, a pressure control for sensing the pressure of draught beer which is to be supplied to said tap, a temperature control for sensing the temperature of draught beer which is to be supplied to said tap, timer means, electric circuit means including a starting switch for energizing said solenoid means and thereby causing said solenoid means to open said valve and for causing said timer means to maintain said solenoid means energized for a predetermined period of time while draught beer flows through said open valve at a predetermined pressure and temperature to thereby cause a measured amount of draught beer to be dispensed from said tap, said electric circuit means including both said temperature control and said pressure control to permit said solenoid means to be energized only if the pressure and temperature of said draught beer are at proper dispensing values.

3,221,937
CEMENT EXTRUDING MECHANISM
Jacob S. Kamborian, 133 Forest Ave., West Newton, Mass.
Filed June 3, 1963, Ser. No. 285,446
6 Claims. (Cl. 222—76)

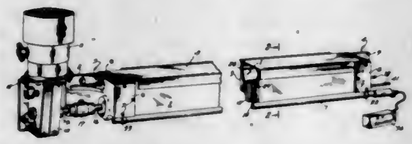
1. A cement extruding mechanism comprising: a cement pot adapted to contain a quantity of cement; a gun; a barrel on the gun; an orifice in the barrel having a valve seat thereon; a conduit interconnecting the cement pot and orifice; pressure applying means operable when actuated to force cement from the cement pot through the conduit into the orifice; a valve in the orifice having a valve head and a valve stem extending away from the valve head, said valve having a first position wherein the

head is seated against the seat to block the orifice and a second position wherein the head is away from the seat to permit the flow of cement through the orifice; means mounting the valve for movement from each of said positions to the other of said positions; a link movably mounted in the gun and connected to the valve stem so that movement of the link in a first direction causes movement of the valve from the first position to the second position and movement of the link in a second direction causes movement of the valve from the second position to the first position; a control member mounted in the



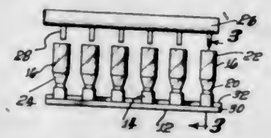
gun having an actuating member so positioned as to be moved in response to movements of the link in each of said directions; control means interconnecting the control member and the pressure applying means actuable in response to movement of the actuating member by the movement of the link in the first direction to operate the pressure applying means and actuable in response to movement of the actuating member by the movement of the link in the second direction to terminate the operation of the pressure applying means; and a trigger mounted in the gun for effecting said movements of the link.

3,221,938
POWDER SPRAYING APPARATUS
Edward H. Yonkers, Glencoe, Ill., and Seymour Z. Lewin, Bayside, N.Y., assignors to Oxy-Dry Sprayer Corporation, New York, N.Y., a corporation of New York
Filed Dec. 18, 1964, Ser. No. 419,399
12 Claims. (Cl. 222—76)



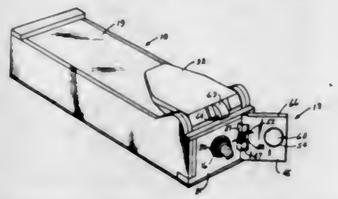
1. Apparatus for dispensing highly particulate material comprising
a dispensing roller;
a pair of wiping blades;
means including said dispensing roller and said wiping blades for forming a receptacle above said roller for retaining the highly particulate material to be dispensed;
a metering mechanism including said dispensing roller and one of said wiping blades disposed to tangentially engage said roller so that particulate material is dispensed from said receptacle as said dispensing roller rotates;
a rigid electrode structure including an elongated metallic electrode disposed in a fixed relation parallel to said dispensing roller and below the other one of said wiping blades;
a sheath of dielectric material snugly fit surrounding said electrode;
a high potential electric source for energizing said electrode to create an electric field capable of freeing particles from the surface of said dispensing roller and thereafter dispersing the same; and
means operatively associated with said electrode structure for preventing accumulation of particulate material thereon.

3,221,939
DISPOSABLE DISPENSERS
Frank E. Brown, Glendale, Calif., assignor to Barnes-Hind International, Inc., a corporation of California
Filed Jan. 8, 1962, Ser. No. 164,711
8 Claims. (Cl. 222—94)



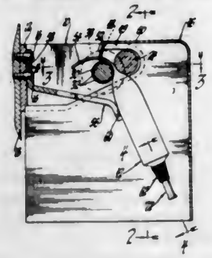
6. An apparatus for storing and dispensing a small unit of liquid, said apparatus comprising:
a closure including a socket having a rounded bottom sloping inwardly and downwardly from all sides and a protruding cylindrical sealing pin located centrally of said rounded bottom; and
a squeezable storage-dispensing unit having an apertured neck sized to be retained frictionally in the socket of the closure with a complementary rounded end surface of the neck being in sealing engagement against the round bottom of the socket and with the sealing pin fitting snugly into the aperture upon positioning of the storage dispensing unit in the socket.

3,221,940
TUBE SQUEEZER WITH AUTOMATICALLY OPERATING CLOSURE MEMBER
Cornelius B. Watson, Jr., P.O. Box 832, Madison, Conn.
Filed Dec. 18, 1963, Ser. No. 331,543
6 Claims. (Cl. 222—96)



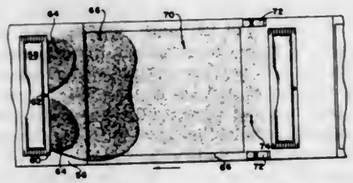
2. A tube squeezer comprising a body for holding a tube to be squeezed and having a forward end from which end the spout of such a tube projects, a squeezing mechanism including an operating handle oscillatable in predetermined opposite directions relative to said body between a normal position and an operated position about an axis extending transversely of said body near the forward end thereof, a closure member pivotally supported on the forward end of said body and movable relative thereto between a closed position at which it closes the spout of a tube contained in said body and an open position at which such spout is unblocked thereby, means for biasing said closure member toward its open position, and a latch member for releasably holding said closure member in its closed position, said latch being fixed to said handle for movement therewith and arranged so as to engage and hold said closure member in its closed position when said handle is in its normal position and to release said closure member for movement to its open position when said operating handle is moved toward its operated position.

3,221,941
TUBE COLLAPSING DEVICE HAVING A ROLLER
James G. Lott, 3378 Coolidge, Royal Oak, Mich.
Filed Dec. 17, 1963, Ser. No. 331,218
25 Claims. (Cl. 222—102)



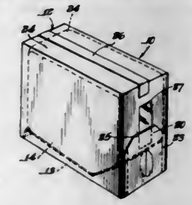
1. A device for dispensing material from a collapsible tube and comprising:
a pair of spaced side walls;
a roller extending through said side walls;
means received in said side walls and coacting with said roller to receive and collapse therebetween the end of a tube;
and means on said roller for rotating said roller and moving said tube between said roller and said means coacting therewith to dispense said material from the other end of said tube, said means engaging said walls and being operable to maintain said walls in such relation as to retain said means coacting with said roller therebetween.

3,221,942
COLLAPSIBLE FLUID CONTAINER
Arthur M. Glass, Newton Center, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed July 25, 1963, Ser. No. 297,565
7 Claims. (Cl. 222—107)



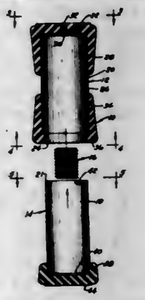
1. A collapsible, fluid-carrying container of the type used in photographic processes wherein said container is positioned between a pair of sheet materials which are advanced in superposed relation between pressure-applying members to effect release of said fluid and spreading thereof in a uniformly thin layer between said sheets to effect photographic processing of at least one of said sheets, said container comprising:
(a) a pair of substantially rectangular, opposed wall members;
(b) means securing together marginal portions of all four sides of said wall members to form a single, enclosed cavity;
(c) a viscous fluid contained within said cavity;
(d) at least one of said wall members being flexible and deformable whereby a hydraulic pressure is exerted by said fluid upon application of a compressive force upon advancement of said container between said pressure-applying members to said container; and
(e) three of said four sides and a centrally disposed portion of the fourth side being secured together in said marginal portions by a stronger bond than that securing said fourth side in other than said centrally disposed portion, whereby said fluid is released upon application of said force to said container from said fourth side on each side of said centrally disposed portion.

3,221,943
CONTAINER WITH VALVE OPERATED NOZZLE
George C. Anderson, 2423 Main St., Evanston, Ill.
Filed Oct. 16, 1963, Ser. No. 316,625
20 Claims. (Cl. 222—183)



1. A container for storing liquids comprising, in combination, a substantially rigid outer shell, a thin film bag positioned within the shell for holding a liquid in the bag, a valve mounted on the shell and receiving a portion of the thin film bag for controlling the flow of liquid out of said bag, and a cover mounted on the shell and covering said valve to protect said valve.

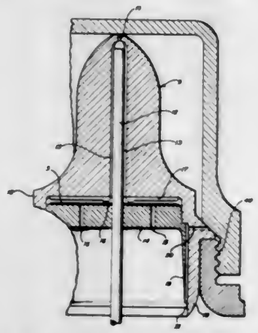
3,221,944
PORTABLE MIXING AND POURING DEVICE FOR FLOWABLE MOLDING MATERIAL
Elmo F. Brennom, 957 N. Court St., Rockford, Ill.
Filed July 6, 1964, Ser. No. 380,415
7 Claims. (Cl. 222—190)



1. A combined mixing and pouring device for plastic materials comprising: a composite two-part separable capsule-like container including an upper cup-shaped section and a lower cup-shaped section, each section presenting an end wall and an outstanding continuous side wall with a continuous open rim, the side wall of the lower section being telescopically receivable within the side wall of the upper section with a snug fit, said sections when telescopically assembled upon each other providing an internal variable volume mixing chamber for the plastic materials, there being a small venting opening in the end wall of the upper section adapted to be manually closed

by the pressure application thereto of the finger or other part of the hand of an operator, the assembled container, when subjected to a manual shaking operation with said opening closed and the sections in any selected position of telescopic relationship, serving to intermix the plastic materials within the chamber, said sections when drawn apart so as to increase the volume of said variable volume mixing chamber and with said opening closed, serving to place the interior of the chamber under vacuum so as to express occluded gases from the plastic materials within the chamber, and a weighted agitator disposed loosely within the telescopically-assembled container and adapted to enhance the mixing action of the container during a container-shaking operation.

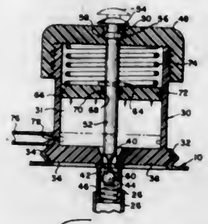
3,221,945
FLUID DISPENSER
George B. Davis, Jr., 7512 Marbury Road, Bethesda, Md.
Filed Apr. 2, 1965, Ser. No. 444,971
5 Claims. (Cl. 222—193)



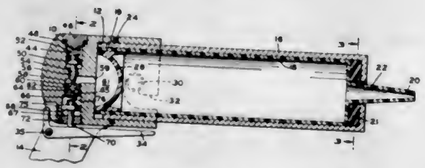
5. A fluid dispenser of the character disclosed comprising a resilient walled receptacle for containing a quantity of liquid, an opening in said receptacle, a housing having thereon a flange for being received within said opening for closing the latter and including a smooth inner face portion, means forming an air return passage into said receptacle, means forming at least one air return port through said housing with said port forming a port of said air return passage, a plug member disposes in said housing and including a flexible flange portion yieldably bearing against the said smooth inner face of said housing flange in a manner to close said air return passage, said flexible flange being operable upon a predetermined drop in pressure within said receptacle to move from said housing flange to open said air return passage, means forming a discharge port in said housing, means forming an air discharge passage to said discharge port, valve means normally closing said air discharge passage and operative upon a predetermined increase in pressure within said receptacle to open and pass air to said discharge port, means forming a liquid discharge passage to said discharge port, valve means normally closing said liquid discharge passage, said last named valve means being operable upon a predetermined increase in pressure within said receptacle to open and pass liquid to said discharge port.

3,221,946
DISPENSER FOR PRESSURIZED RESERVOIR OF THE AEROSOL VARIETY
John K. Riley, 523 De Witt St., San Antonio, Tex.
Filed Sept. 20, 1963, Ser. No. 310,981
10 Claims. (Cl. 222—309)

1. In combination with a fluid pressure reservoir, a trap chamber connected to said reservoir, a normally closed valve disrupting communication between said reservoir and said trap chamber, plunger means for effecting movement of said valve from its normal closed position to its open position upon movement of said plunger means from a first to a second position to establish communication between said reservoir and said trap chamber, releasable locking means for retaining said plunger means in its second position, a fluid pressure responsive member normally occupying one position in said trap chamber and being moveable in one direction therefrom in response to pressure in said trap chamber, means yieldingly opposing movement of said member in said one direction, and means operatively connected to said plunger means and responsive to predetermined degree of movement of said pressure responsive member in said one direction from its normal position for releasing said releasable locking means and effecting movement of said plunger means to its first position whereby said valve moves to its normal closed position.



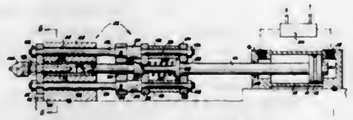
3,221,947
SEALANT GUN
Carl B. Penn, Birmingham, Mich., assignor to Pyles Industries, Inc., Southfield, Mich., a corporation of Michigan
Filed Sept. 30, 1964, Ser. No. 400,365
7 Claims. (Cl. 222—327)



1. A sealant gun comprising, in combination, a frame and socket assembly provided with a forwardly open socket portion, a barrel and cartridge assembly wherein a sealant containing cartridge is telescoped within the barrel and wherein the barrel and the cartridge each has an open rear end portion received within the socket portion of the frame and socket assembly, a nozzle communicating with the interior of the cartridge and projecting forwardly through an opening in the forward end of the barrel, resilient means interposed between the forward end of the cartridge and the forward end of the barrel, securing means operable to couple the rear end portion of the barrel within the socket and as a result of such coupling compressing said resilient means between the forward end of the cartridge and the forward end of the barrel which compression in turn urges the rear end of the cartridge sealingly against a wall of the socket.

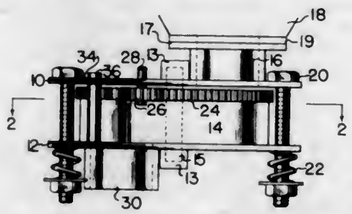
3,221,948
METERING AND INJECTION DEVICE
Ernest S. Kalist, 12037 Kenmoor, Detroit 5, Mich.
Filed Sept. 26, 1962, Ser. No. 226,408
11 Claims. (Cl. 222—334)

1. A metering device for fluents, comprising:
a continuous flowing line of fluent;
a body member defining an interior chamber and having an inlet and an outlet each communicative with said chamber whereby said fluent is permitted to enter said member through said inlet and to depart through said outlet;
first and second means movably disposed within said chamber and normally displaced from each other on opposite sides of the line of flow between said inlet and said outlet;



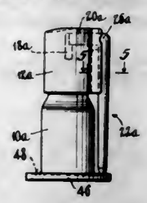
means for actuating said first and second means in a direction blocking said inlet and outlet, a quantity of said fluent being trapped between said first and second means;
stop means adapted to limit the motion of said second means in said direction;
and means permitting the removal of said trapped fluent compressed between said first and second means as said first means approaches said second means.

3,221,949
CELL WHEEL ROTARY FEEDER
George W. Dingus, Pampa, Tex., assignor to Cabot Corporation, Boston, Mass., a corporation of Delaware
Filed May 21, 1962, Ser. No. 196,365
3 Claims. (Cl. 222—362)



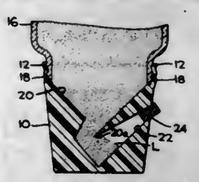
1. Apparatus for transporting powdered material and the like between zones of differing pressure while minimizing gas flow between said zones comprising a substantially horizontally disposed, circular cell wheel having an integral and continuous outer circumferential rim, an integral central shaft extending somewhat above and somewhat below said rim and a plurality of radial rib vanes of substantially the same overall vertical height as said rim each extending in continuous fashion from said shaft to the inner portion of said circumferential rim, two parallel substantially horizontal plates located respectively immediately above and immediately below said cell wheel, each of said plates extending beyond the outer circumferential rim of said cell wheel and the central portion of each respective plate having a cavity therein designed to receive the respective terminal portion of said shaft without restricting rotational motion of said shaft, one of said plates being rigidly fixed in location while the other is floatably mounted and is vertically movable a substantial distance toward and away from said fixed plate and each plate having an opening therethrough in an off-center position with said openings in the respective plates being positioned substantially diagonal to each other, means to restrain said plates together including means to continually resiliently urge said plates toward one another and into contact with the respective upper and lower edges of the rim and vanes of said cell wheel and means to rotate said cell wheel about said central shaft.

3,221,950
AEROSOL DISPENSER
William R. O'Donnell, Trumbull, Conn., assignor to Valve Corporation of America, Bridgeport, Conn., a corporation of Delaware
Filed Oct. 9, 1963, Ser. No. 315,070
8 Claims. (Cl. 222—394)



1. An aerosol dispenser comprising, in combination:
(a) a pressurized container having a valved outlet passage,
(b) an actuator cap movably carried by said container and having a discharge passage communicating with said valved outlet passage, said cap being movable toward the container to open said valved outlet passage valve to effect a discharge, and being movable in a direction away from the container to halt the discharge,
(c) an elongate tubular L-shaped nozzle member carried by the upper portion of the cap, said member communicating with the discharge passage of the cap,
(d) means pivotally mounting the nozzle member on the said upper portion of the cap for movement between a retracted position extending downward, closely adjacent and alongside the cap and container and an extended position extending laterally of the cap and container,
(e) said nozzle member including a straight exposed portion whose length is commensurate with the combined effective lengths of the cap and container,
(f) said cap and container having commensurate outside diameters, and a projection extending laterally from the bottom of the container to be engaged by the distal end of the spout to prevent downward movement thereof.

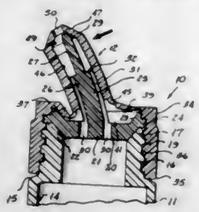
3,221,951
MEASURING DISPENSER
Augustine A. Souza, 431 Casa Blanca Drive, San Jose, Calif.
Filed Mar. 30, 1964, Ser. No. 355,828
5 Claims. (Cl. 222—456)



1. A measuring dispenser for granular material which comprises a body member having a first conduit arranged to receive material when in a substantially vertical position and to conduct material therethrough from its upper entrance end to its lower exit end, a second conduit in said body member and extending transversely relative to said first conduit, the entrance end of said second conduit communicating with the exit end of said first conduit and arranged to conduct material therethrough under gravitational force when said body member is rotated approximately 90° about a horizontal axis from its entrance end to its exit end, said body member having a smooth

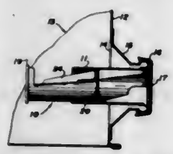
exterior configuration with said first and second conduits formed entirely therewithin wherefore projecting elements are eliminated.

3,221,952
DISPENSING CONTAINER CLOSURE
Peter G. De See, Hawthorne, N.J., assignor to Halkey-Roberts Corporation, Paramus, N.J., a corporation of New Jersey
Filed Nov. 27, 1963, Ser. No. 326,577
12 Claims. (Cl. 222—525)



9. A dispensing closure device for a container, comprising an integral body made of flexible resilient plastic material, said body having an annular upper portion in the form of a thick substantially rigid ring, an elongated substantially rigid sleeve coaxial of the ring, having a passage therethrough, and projecting outwardly therefrom, and a relatively thin flexible annular diaphragm coaxial of the ring and the sleeve, the diaphragm having a width when relaxed measured from its axis which exceeds the radial distance between the ring and the sleeve, the ring, diaphragm, and sleeve forming an imperforate conduit, the diaphragm being the sole means securing the sleeve to the ring, the relaxed dimensions of the diaphragm relative to the diameters of the ring and the sleeve being such that the sleeve may be advanced into an outer terminal position with the diaphragm in an outwardly converging frusto-conical shape, and that the sleeve may be retracted into an inner terminal position wherein the diaphragm is in inwardly converging frusto-conical shape, during travel of the sleeve between its advanced and retracted positions, the diaphragm first being radially compressed following which it expands radially, whereby the diaphragm functions as a toggle to hold the stem stably in each of said two positions, the outer end of the passage in the sleeve having a central orifice therein, a central stem-like member connected at an inner portion thereof to the ring, the stem-like member having an outer free end aligned with the orifice and adapted to enter and seal the orifice when the sleeve is retracted and to be withdrawn from the orifice when the sleeve is advanced outwardly, the closure device providing communication for the passage of a fluid therethrough from inwardly of the stem-like member to the orifice in the sleeve.

3,221,953
VALVE FOR LIQUID CONTAINER
Wood B. Shurtleff, 8113 Rush St., and Philip N. Rawson, 2320 Westbrook, both of Fort Worth, Tex.
Filed Sept. 11, 1964, Ser. No. 395,776
4 Claims. (Cl. 222—538)



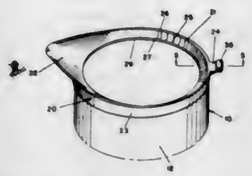
1. A container for liquids having gas pressure therein, a removable closure around an opening in a wall of said container, a movable manually operated valve having a body and an operator within said container, said body being positioned in abutting contact against said closure by said gas pressure when said closure is in its closed position and said operator being in non-operating condition, and whereby said valve is extended at least partially outwardly of said wall when said closure is removed, and means sealing said valve with said opening at all times.

3,221,954
BLOW MOLDED FOAMED PLASTIC CONTAINER
John H. Lux, Charlestown, Md., assignor, by mesne assignments, to Haveg Industries, Inc., a wholly owned subsidiary of Hercules Powder Company, New Castle, Del., a corporation of Delaware
Filed June 11, 1963, Ser. No. 287,129
13 Claims. (Cl. 222—566)



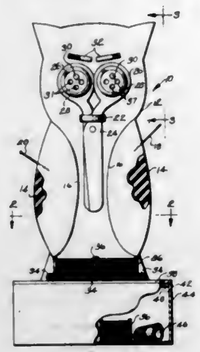
1. A container having (a) a blow molded container main body wall consisting of (1) a foam thermoplastic resin core, (2) a non-porous, impervious, tough, outer skin of the thermoplastic resin, and (3) a non-porous, impervious, tough, inner skin of the thermoplastic resin, said core comprising 50 to 94% of the total thickness of the skins and core, said core being integral with said skins, and (b) a nozzle of non-porous material directly welded to the top portion of said main body wall.

3,221,955
PAINT CAN PROTECTIVE ATTACHMENT
Stephen M. Banaszak, 3042 Springfield Road, Cross Plains, Wis., and Edward A. Dvorak, 5111 Wallace Ave., Madison, Wis.
Filed Mar. 2, 1965, Ser. No. 436,451
8 Claims. (Cl. 222—570)



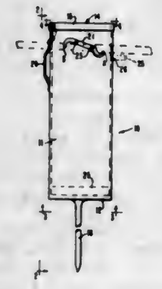
1. An attachment adapted to be mounted on the annular brim of a pain can, said brim having an outer edge secured to the wall of said paint can, an inner edge, and a gutter between said edges, said attachment comprising:
(a) a continuous annular rim portion having a dished top surface,
(b) a pair of spaced annular ridges depending from the underside of said rim portion and being adapted to grip the inner edge of the brim of said paint can therebetween for preventing paint from accumulating in the gutter of the brim of said paint can,
(c) an annular skirt depending from said rim portion,
(d) an annular flange depending from the underside of said rim portion and spaced inwardly from said depending annular skirt to define a groove adapted to receive the outer edge of the brim of said paint can.

3,221,956
OWL SEWING KIT
Wilbur E. Larson, 4802 William Ave., Olympia, Wash.
Filed Nov. 13, 1962, Ser. No. 237,231
1 Claim. (Cl. 223—106)



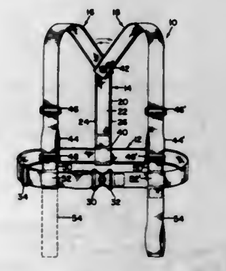
A sewing kit comprising in combination a substantially square box for containing sewing accessories, said square box having a pair of parallel, spaced apart side walls, a pair of parallel, spaced apart end walls, a substantially square bottom and a removable square top carried upon said box, means secured to the underside of said square top and extending within said box to prevent sliding movement therebetween, an upstanding owl-shaped figure secured at one end thereof to the upper side of said box top, means on said figure for supporting a pair of scissors, said owl-shaped figure having opposite concave sides having pin cushions secured thereto for retaining pins and needles, loop means secured adjacent the other end of said owl-shaped figure for receiving the shank portions of a pair of conventional scissors, a pair of spaced apart pins secured above said loop means, button means removably received by said pair of pins, said pair of pins and said button means adapted to receive the finger openings of a pair of conventional scissors, bracket means secured to the upper side of the square top and being spaced forwardly of the owl-shaped figure whereby spools of thread are retained between said owl-shaped figure and said bracket means.

3,221,957
SUPPORT FOR ARCHERY EQUIPMENT
August F. Roloff and Mina S. Roloff, both of R.D. 1, Box 539A, Matawan, N.J.
Filed July 9, 1963, Ser. No. 293,680
4 Claims. (Cl. 224—1)



1. A support for a bow and arrows for target practice comprising an elongated rigid enclosed shell shaped container having an open top and a closed solid base, said base provided with an elongated prong having an end for insertion into the ground, said enclosed shell shaped container provided with a handle for carrying and said shell shaped container provided with a bracket on the side adjacent the top for supporting a bow in a resting horizontal position while unattached, said bracket having a pair of horizontally spaced end portions, one of which is formed as an upturned supporting portion and the other as a downturned retaining portion.

3,221,958
SAFETY BELT
Edward R. Straight, Penfield, N.Y., assignor to Vogt Manufacturing Corporation, Rochester, N.Y., a corporation of New York
Filed Aug. 1, 1963, Ser. No. 299,381
4 Claims. (Cl. 224—1)

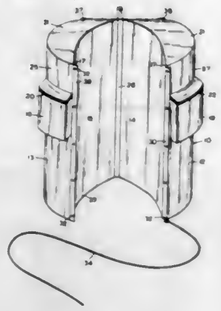


1. A safety belt comprising a waistband, a pair of shoulder straps, one of said straps to be worn over each shoulder of the wearer, and a connector strap, said waistband comprising an elongate strip, a pair of detachable fastener sections mounted at spaced locations on said waistband strip respectively for detachably securing the waistband about the body of the wearer, said connector strap being mounted to be worn in a generally upright position with its lower end secured to the waistband, means connecting the back ends of the shoulder straps to the upper end of the connector strap at a location to be disposed at the back of the wearer and for pivotal movement of the shoulder straps relative to the upper end of the connector strap and for movement of the shoulder straps relative to each other from one side of the waistband to the other at the front of the wearer, and means connecting the front ends of the shoulder straps to the waistband for sliding movement relative to the waistband to permit the respective positions of the front ends of the shoulder straps to be adjusted along the length of the waistband and from one side of the wearer to the other, one of said shoulder straps being formed with a downwardly dependent extension to provide a carrying sling below said waistband.

3,221,959
KNAPSACKS
Earl W. Southwick, 170 N. Harrison Blvd., Ogden, Utah
Filed June 3, 1963, Ser. No. 285,000
7 Claims. (Cl. 224—8)

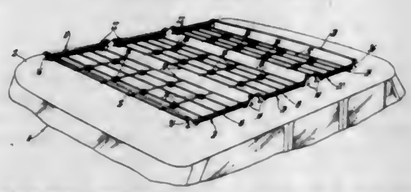
1. A flexible knapsack devoid of a rigid framework and adapted to be attached to shoulder worn substantially rigid backpacks comprising, two pairs of internal and external sides joined lengthwise at their front and rear edges, the external sides folded over at the top and bottom of the knapsack and thence connected to the internal sides thus forming two separate sacks joined at their rear edges and both sacks terminating in a front edge containing a multiude of eyelets, said sacks each having a closable opening therein, a thong for lacing through the eyelets in the front edges of the said sacks in order to secure

the front edges of the two sacks stationary one with respect to the other when loaded while permitting relative movement between the front and rear edges thereof and



also to force the two sacks in close adherence to a bedroll when carried therebetween and a plurality of straps secured on the back of the knapsack for attaching to a suitably rigid backpack.

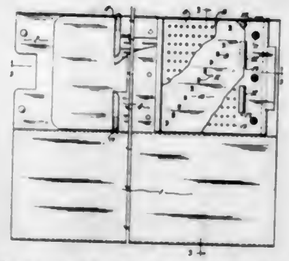
3,221,960
CAR TOP CARRIER
Richard J. Gleason, Warren, Clyde W. Morris, Livonia, and La Verne B. Ragsdale, Birmingham, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Mar. 11, 1964, Ser. No. 351,020
5 Claims. (Cl. 224—42.1)



1. A car top type carrier rack, comprising: interchangeable side rail members including means of attachment to a vehicle body panel in parallel spaced and tandem relation, cross rail members secured between the terminal ends of said side rail members, and a wire rod basket member received and supported between said side rail members, said basket member including a load carrying bottom wall having hanger hooks provided at the corners thereof and engaging the ends of said side and cross rail member, cushion supports provided under said basket bottom wall, and said hanger hooks being outwardly open and received in spring tensioned engagement between the ends of said side rail members.

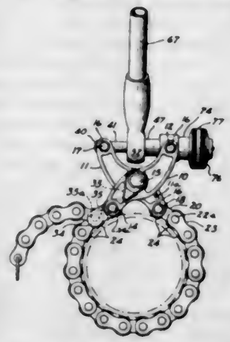
3,221,961
PERFORATING APPARATUS
John W. Whitson, 120 Cabrini Blvd., New York 33, N.Y.
Filed July 3, 1962, Ser. No. 207,345
7 Claims. (Cl. 225—93)

1. Backing means for use in removing punch-outs from an area of a sheet-like member as the latter is punched, comprising: a plurality of pairs of stationary and movable means normally disposed in close relationship to form a surface with a depression formed at the meeting of pairs of said means and underlying the area of a punch-out; means for laterally biasing a movable means against a stationary means; means for aligning and receiving a sheet-like member with the area thereof to be punched and the portion of the sheet-like member immediately adjacent thereto aligned with and juxtaposed to said surface; and holding means for supporting said plu-



rality of stationary and movable means for a movable means to move laterally under pressure and open a slot for receiving a punch-out from said sheet-like member and to close said slot when said pressure is removed.

3,221,962
APPARATUS FOR CUTTING PIPE
Charles B. Small, Elyria, John W. Meese, Avon, and Heinrich H. Frank, Elyria, Ohio, assignors to The Ridge Tool Company, Elyria, Ohio, a corporation of Ohio
Filed Nov. 22, 1963, Ser. No. 325,692
14 Claims. (Cl. 225—103)

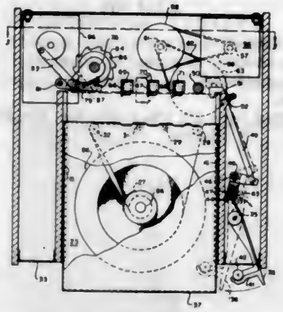


1. A pipe cutter comprising a pair of levers connected together intermediate their ends and each having a cutter member at its end for engagement with the pipe, a link chain having one end connected to one lever and the other end connected to the other lever, said chain having link pins and cutter members carried by said link pins and arranged to be placed in surrounding relation to said pipe, means to actuate said levers to place tension on said chain comprising screw means connected between the ends of said levers remote from the pipe ratchet means in engagement with said screw means and including a ratchet handle movable longitudinally of the pipe.

3,221,963
TAPE DRIVING APPARATUS
Charles V. Andersen, Los Altos Hills, Calif., assignor, by mesne assignments, to Continental Capital Corporation and Sierra Capital Company, both of San Francisco, Calif., corporations of California
Filed Sept. 23, 1963, Ser. No. 310,784
4 Claims. (Cl. 226—109)

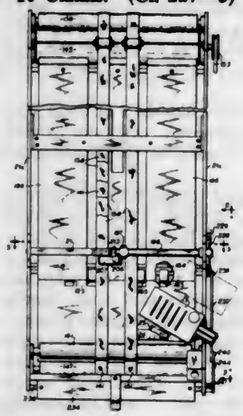
1. Apparatus of the character described including transducing means, means for supporting a tape-like medium for movement past said transducing means, an idler roller for cooperation with said tape-like medium and a capstan arranged to engage said tape-like medium whereby the medium is pinched between the idler roller

and the capstan to be driven by the capstan, said capstan comprising a cylindrical member grooved to define lands arranged so that any section taken perpendicular to the



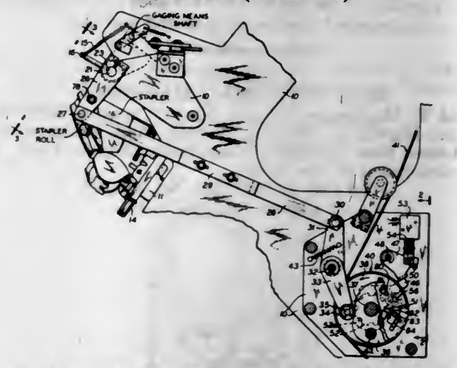
axis of the cylinder will intercept both lands and resilient material in equal amounts, the surface of said land coinciding with the surface of said cylindrical member, and resilient means filling said groove and having a cylindrical outer surface substantially coincident with said surface.

3,221,964
STAPLING MEANS AND GAGING AND STAPLING COMBINATION
Luis Mestre, 305 E. 46th St., New York, N.Y.
Filed Dec. 10, 1962, Ser. No. 243,345
10 Claims. (Cl. 227—5)



1. A gaging and stapling combination for use with a collator comprising a frame, transporting means carried by the frame to feed a book of sheets longitudinally in a sheet path in staggered sheet relation, a drive shaft, means connecting the drive shaft, with the transporting means to drive the latter, stop means, stop mounting means carried by the frame and mounting the stop means adjacent to the transporting means and between the ends thereof to be engaged by the book of sheets in its path of movement said stop mounting means mounting the stop means for movement towards and away from the path of movement of the book of sheets, means connecting the drive shaft with the stop means to operate the latter, stapling means carried by the frame adjacent to and above the stop means so as to be over the book when halted at the stop means including at least one stapler, stapler operating means connecting the drive shaft with the stapling means to operate the latter when the sheets are halted at the stop means, gaging means carried by the frame spaced rearwardly of the stop means to engage the book of sheets including a gage responsive to a thin book and a gage responsive to a thick book, a gage switch connected with each gage and operated thereby, means operated by a gage switch and connected with the stapler operating means to render the same inoperable whereby the book is not stapled a book deflector at the end of the transporting means, a normally inoperative connecting means between the drive shaft and the deflector to operate the latter, and means operated by the gaging means and connected with the deflector connecting means to render the same operative.

3,221,965
STAPLER MECHANICAL OPERATING MECHANISM FOR COLLATORS
Luis Mestre, 305 E. 46th St., New York, N.Y.
Filed July 22, 1963, Ser. No. 296,589
11 Claims. (Cl. 227—7)



1. A mechanical stapler operating mechanism for a collator for operating a book stapler comprising a frame, mounting means adjustably mounted on the frame and adapted to carry a stapler, a stapler operating shaft oscillatably mounted on the frame, stapler lever means mounted on the operating shaft including a first operating lever, a pivotal operating lever pivotally mounted with respect to the first lever adapted to engage and operate a stapler and spring means operatively connected between the first operating lever and the pivotal operating lever; operating means operatively connected with the stapler operating shaft including a clutch and a linking connection between the clutch and stapler operating shaft, the clutch having a rotatable driving member adapted to be connected with the collator and a driven member which rotates one revolution upon engagement of the clutch, and the linking connection operatively connecting the driven member and the stapler operating shaft to oscillate the latter including means having a fixed extent of movement; and control mechanism operated by the collator to control the clutch for engagement of the clutch once for each cycle of operation of the collator to rotate the driven member for one revolution.

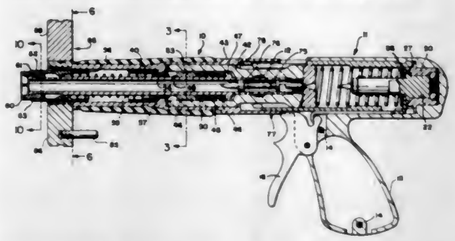
3,221,966
POWDER ACTUATED TOOL
Rowland Joseph Kopf, Bay Village, John F. Humphrey, Cleveland, and Thomas E. Shoup, Amherst, Ohio, assignors, by mesne assignments, to Omark Industries, Inc., Portland, Oreg., a corporation of Oregon
Filed Jan. 11, 1963, Ser. No. 250,926
6 Claims. (Cl. 227—11)

1. In a powder actuated tool having a sleeve surrounding a barrel, a combination of:

(a) a generally rectangular guard body eccentrically fixed to the sleeve, and a generally circular guard attachment removably connectable to the guard body;

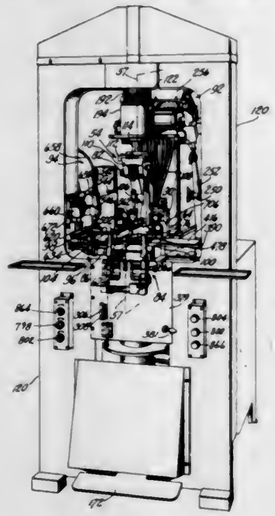
(b) said guard attachment being connectable to the body in at least two positions;

(c) said body and attachment together being generally circular and concentric with respect to the sleeve when the attachment is secured in one position; and,



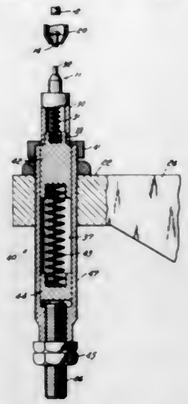
(d) said body and attachment being generally circular eccentric to the sleeve when the body and attachment are connected together in a second position.

3,221,967
HEEL ATTACHING MACHINES
Fred T. MacKenzie, Beverly, Karl V. Becker, Boxford, and Harold G. Peterson, Beverly, Mass., assignors to United Shoe Machinery Corporation, Boston, Mass., a corporation of New Jersey
Filed Feb. 7, 1963, Ser. No. 256,885
43 Claims. (Cl. 227—28)



3. In a heel attaching machine, a movable piston, a housing coupled for movement with the piston, a nailing die having passages, a driver head movable with the housing and having secured to it drivers which are slidable in the passages of the nailing die, fluid pressure operated means cooperating with the nailing die for clamping together a heel and a heel seat of a shoe, fluid pressure operated means for moving the piston in one direction to cause the housing to move the drivers in one direction and accordingly to drive nails in the passages of the nailing die into the heel and the heel seat of the shoe, a stop for limiting movement of the piston in said one direction, a striker secured to the coupling housing, means for initially adjusting the stop lengthwise of said one direction of movement of the piston, a switch initially adjustable in response to adjustment of the stop, and means responsive to operation of the switch by the striker just before movement of the piston in said one direction is limited by the stop for causing said second-named fluid pressure operated means to move the piston and accordingly the housing and the drivers with it in a direction opposite to said one direction.

3,221,968
SAFETY MOUNTING
Delphio J. Bracci, Haverhill, and Jason M. Davidson, Stoneham, Mass., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed June 10, 1963, Ser. No. 286,685
5 Claims. (Cl. 227—62)



1. In a machine having a reciprocating driving member and an impact receiving means, apparatus for mounting said driving member and said impact receiving means in said machine so as to reduce the space therebetween without reducing the active stroke of the driving member comprising:

a body member having a channel therein which is in spaced relationship with said driving member,

a plunger mounted for rectilinear motion in said channel,

means attached to said body member for restricting the rectilinear movement of said plunger between two predetermined limits in said channel,

spring means mounted in said channel for biasing the plunger toward one of said predetermined limits,

means connected to said body member for adjusting the quiescent position of said plunger and said impact receiving means relative to the driving member,

said impact receiving means including an anvil, and

a spring-loaded rod normally projecting upwardly through the anvil a short distance beyond the upper surface thereof, and

the spring means biasing said plunger being more resilient than said spring biasing the rod of said anvil such that upon the impact of the driving member with the upper end of said anvil rod, the spring-biased plunger is depressed downwardly until it abuts one of said predetermined limits for restricting the rectilinear movement of said plunger whereupon the rod of said anvil is depressed until said driving member impacts the upper portion of said anvil which is rigidly supported against said plunger.

3,221,969
APPARATUS FOR FABRICATING A PIECE PART HAVING A METALLIC BIT SECURED THERETO
Thomas R. Henry, Columbus, Ohio, assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Oct. 16, 1963, Ser. No. 316,554
2 Claims. (Cl. 228—18)

1. Apparatus for securing the leading end of a metallic tape to a piece part and for shearing the secured portion

of the tape from the remaining portion of the tape, which comprises:

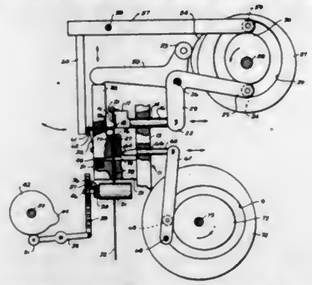
means for movably supporting the piece part,

means for securing the leading end of the tape to the supported piece part,

means cooperating with the piece part upon movement of the piece part for shearing the portion of the tape secured to the piece part from the remaining portion of the tape,

means for holding the shearing means spaced from the piece part during a period when the tape end is being secured to the piece part,

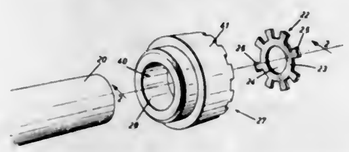
means for removing the holding means from engagement with the shearing means when the tape end is secured to the piece part,



means for moving the shearing means into cooperative shearing position with respect to the piece part to define a shear plane between the shearing means and the piece part, and

means for moving the piece part supporting means along the shear plane and toward the shearing means so that the piece part cooperates with the shearing means to shear the secured tape end from the remaining portion of the tape.

3,221,970
FLUX DISC
Louis Leon Lockshin, 329 Richview Ave., Toronto, Ontario, Canada
Filed Mar. 21, 1962, Ser. No. 181,370
4 Claims. (Cl. 228—56)



1. In stud welding for use with a stud having an end adapted to be welded which end has a terminal projection: a unitary element of fluxing material having a hole therethrough adapted to surround at least a portion of the cross-sectional area of said projection, said hole being dimensioned to permit the passage of the extremity of the projection therethrough in spaced relationship and arms formed integrally with said unitary element and extending outwardly therefrom.

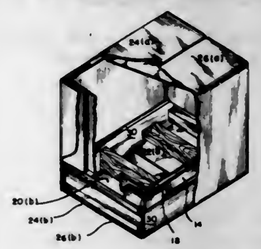
3,221,971
PACKAGING TRAY
Richard E. Reny, 3 Beverly Gardens, Bronxville, N.Y.
Filed Jan. 2, 1964, Ser. No. 335,202
10 Claims. (Cl. 229—2.5)

1. A packaging tray comprising a bottom portion, a plurality of finger portions spaced from one another around the periphery of the bottom portion in scallop-like array, the finger portions being formed integrally with the bottom portion and curving upwardly therefrom to provide side support for articles resting on the bottom portion, and depressions integrally molded at



the base of each of the finger portions, each depression including a curved wall portion integrally merging with the tray but being essentially of dissimilar curvature.

3,221,972
REINFORCED CARTON
Renile E. Bowles, Janesville, Wis., and Robert L. Craig, Gurnee, Ill., assignors to Hoerner Boxes, Inc., Keokuk, Iowa
Filed Nov. 8, 1963, Ser. No. 322,292
13 Claims. (Cl. 229—14)



1. A combination wood and corrugated paperboard skid comprising

a pair of longitudinal members each formed from a single blank of corrugated paperboard folded to a hollow rectangular cross section,

two pair of reinforcing pads having a wooden block imbedded in each pad,

one pad of each pair of pads being positioned in opposite ends of one of said longitudinal members and the other pad of each pair being positioned in the opposite ends of the other of said longitudinal members,

a pair of wooden cross members interconnecting the longitudinal members and resting on said wooden blocks in said pads,

and a pair of lateral members secured to and interconnecting the ends of the longitudinal member.

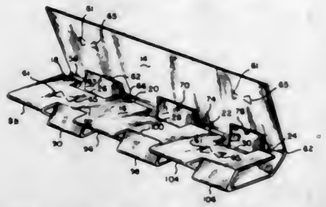
3,221,973
SPACER PAD
Thomas S. Kalbrener, Minneapolis, Minn., assignor to Hoerner Boxes, Inc., Keokuk, Iowa, a corporation of Delaware
Filed July 15, 1964, Ser. No. 382,795
8 Claims. (Cl. 229—14)

1. A reinforced pad for supporting heavy loads, comprising

a pair of overlapping sections and a bottom section formed from a single blank of carton forming material, said sections being substantially parallel to each other with the overlapping sections spaced from the bottom section,

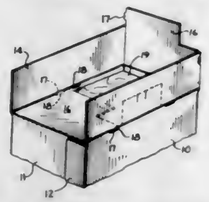
a first set of legs and a second set of legs along each longitudinal edge of the bottom section, the legs on one longitudinal edge being connected to one edge of one of the overlap sections and the legs on the other

longitudinal edge connected to one edge of the other overlap section, the first set of legs on each longitudinal edge of the bottom section lying in a common plane which intersects the bottom section at a first



angle, the second set of legs on each longitudinal edge of the bottom section lying in a common plane which intersects the bottom section at a second angle, the first and second legs intersecting in a criss-cross fashion at their midpoints.

3,221,974
CONTAINER
William R. Scholle, Long Beach, Calif., assignor to Scholle Container Corporation, Northlake, Ill., a corporation of Illinois
Filed Mar. 16, 1964, Ser. No. 352,001
3 Claims. (Cl. 229—39)



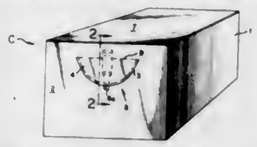
1. A rectangular paperboard container comprising side walls and end closure flaps hinged to each of said walls, and an opposed staggered pair of laterally extending outwardly tapering tongue means on each of one opposed pair of end flaps engageable with slot means formed in said side walls for anchoring said flaps in parallel relationship to each other and normal to said side walls.

3,221,975
CARTON
Richard J. Zoeller, Murraysville, Pa., and Ben E. Hunter, Minneapolis, Minn., assignors to The Pillsbury Company, Minneapolis, Minn., a corporation of Delaware
Filed Sept. 30, 1963, Ser. No. 312,536
4 Claims. (Cl. 229—51)



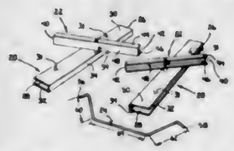
1. A tubular container comprising a substantially cylindrical fibrous core having a label adhered to the outer surface thereof and a liner adhered to the interior thereof so as to transmit forces between the liner and label through the core, an internal and external edge and an internal marginal portion adjacent said internal edge and an external marginal portion adjacent said external edge, said external marginal portion overlapping said internal marginal portion to form an overlap area extending the full length of said core, tear means extending the full length of said overlap area aligned in said overlap area for continuously severing said external marginal portion, adhesive in said overlap area between said tear means and said external edge, the free edge of the internal marginal portion on the other side of the tear means from said external edge being detached from the overlying portion of the external marginal portion and at least one end closure secured to at least one end of said core, whereby removal of the tear means will entirely disconnect th overlapped marginal portions.

3,221,976
HAND HOLD FOR CARTONS AND THE LIKE
Jay A. Steckert, 5615 Brockway, Saginaw, Mich.
Filed June 5, 1964, Ser. No. 372,807
2 Claims. (Cl. 229—52)



1. A carton construction comprising a bottom wall and single thickness, substantially planar side walls forming an enclosure, at least one of said side walls having an opening therein; a flap hingedly joined at one of its edges to said one of said walls and occupying said opening in the plane of said side wall, the remaining edges of said flap being free of said side walls so as to permit said flap to be swingable out of the plane of said side wall to form a hand hold; an elongated elastic member; first means securing said elastic member adjacent one of its ends to said side wall parallel to and substantially in the plane of the latter; and second means securing said elastic members to said flap, said first and second securing means being located on opposite sides of the juncture of said flap and said side wall, that portion of said elastic member lying between said first and second securing means being constantly under tension whereby said elastic member constantly exerts a force on said flap tending to resist swinging of said flap out of said plane in one direction, the remaining edges of said flap and the confronting edges of said side wall being oblique to said plane and engageable with each other when said flap occupies said opening to prevent swinging of said flap out of said plane in a direction other than said one direction.

3,221,977
CARTON CLOSURE-CARRIER
Carl F. Pollert, 523 W. Brown St., Seymour, Ind.
Filed July 1, 1964, Ser. No. 379,588
12 Claims. (Cl. 229—52)



1. A combination carton closing and carrying device comprising a pair of first channel members having a pair of parallel first flange portions, each of said first channel members having opposite open first ends and a first web portion interconnecting and spacing apart said first flange portions a first distance, one of said first flange portions of each pair having a first circular opening adjacent a medial position between said first ends and adjacent said first web portion, a pair of second channel members having a pair of parallel and spaced-apart second flange portions, each of said second channel members having opposite second ends and a second web portion interconnecting said second flange portions, each of said second flange portions having a second circular opening adjacent a medial position between said second ends and adjacent said second web portion, each of said second web portions having a third circular opening, said second openings being in registry with each other, respectively, said third opening being adjacent said medial position intermediate said second ends, said second web portions being wider than said first web portions, said first flange portions being wider than said second flange portions, a pair of spacers each having an interior passageway and a length equal to said first distance, each of said spacers being inserted between one of said first channel members and one of said second channel members, a pair of pivot rods being inserted through said first and second openings and said passageways, respectively, thereby pivotally connecting one of said first channel members to said one of said second channel members, and a handle member having opposite ends, adjacent end portions and an intermediate gripping portion, said handle ends being removably inserted into said third openings with said first and second web portions respectively facing each other in spaced-apart and parallel position, whereby said first channel members are adapted to receive the facing edges of the end flaps of a carton between said first flanges and said first and second channel members are adapted to receive side flaps of said carton therebetween with said second channel members positioned parallel to said first channel members, said handle member resiliently holding said first and second channel members in spaced-apart position thereby holding said end and side flaps in their carton-closing positions and providing a means by which said carton can be lifted and transported.

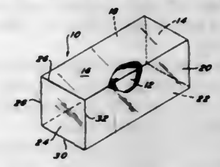
3,221,978
PACKAGE
Russell L. Hoelzer, Fairview Park, and George H. Lacy, Cleveland, Ohio, assignors, by mesne assignments, to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Application June 2, 1955, Ser. No. 512,781, now Patent No. 2,962,843, dated Dec. 6, 1960, which is a continuation of abandoned application Ser. No. 480,494, Jan. 7, 1955. Divided and this application Dec. 5, 1960, Ser. No. 94,098
10 Claims. (Cl. 229—53)



1. A container comprising a continuous, longitudinally seamless, tubular ply of thermoplastic resinous film material and a ply of fibrous web material fused together throughout the interface between said film and web material, said ply of web material having marginal longitudinal portions joined together in an unfolded condition to provide a longitudinally extending seam, and transversely extruding heat-seals to enclose packaged products.

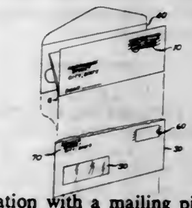
3,221,979
TRANSPARENT CONTAINER
Arthur Hurewitz, Philadelphia, Pa., assignor to Avram G. Adler and Samuel H. Landy, Philadelphia, Pa.
Filed Mar. 4, 1963, Ser. No. 262,430
6 Claims. (Cl. 229—57)

1. A container comprising a body of heat sealable polymeric material, said material being a single sheet which is waterproof and transparent, said container being closed at one end by an end panel integral with one side of said body, said end panel lying in a plane substantially perpendicular to the remainder of said container, edges of said end panel being connected to sides of said body by spaced parallel thermofused joints lying in the plane



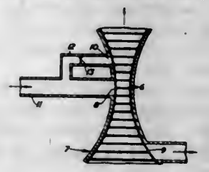
of said end panel and at the intersection of said plane with the plane of sides of said body and the thickness of said end panel being the same as the thickness of said body.

3,221,980
SYSTEM FOR VALIDATING MAIL BY POSTAL CERTIFICATION
Dave Mercur, 164 Maryal Drive, Pittsburgh, Pa.
Filed Aug. 13, 1963, Ser. No. 301,708
2 Claims. (Cl. 229—71)



1. The combination with a mailing piece having postage applied thereon, of a pair of envelopes each having an open window located to expose the postage for cancellation by the postal authorities, said mailing piece having the addressee's name and address in one area and the sender's name and address in another area to which areas separate postage is applied so that when inserted in one envelope with an open window for exposing the postage, the addressee's name and address will appear through a window in the envelope and by inserting the mailing piece another way in the other envelope the sender's name and address will appear through a window of that envelope and the postage will be exposed through the open window of said envelope.

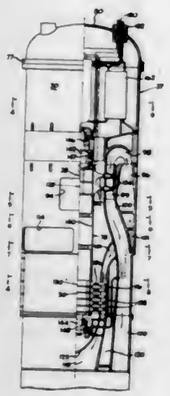
3,221,981
PRESSURE EXCHANGERS
Dudley Brian Spalding, London, England, assignor to Power Jets (Research & Development) Limited, London, England, a British company
Filed May 13, 1963, Ser. No. 280,032
Claims priority, application Great Britain, May 17, 1962, 19,146/62
3 Claims. (Cl. 230—69)



1. A pressure exchanger including:
(a) an outer tubular member having an internal circumferential surface,
(b) an inner member having an external circumferential surface mounted within the tubular member,

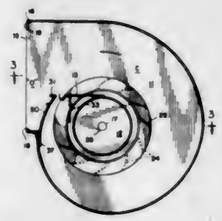
(c) a plurality of walls carried by one of said members and extending from the circumferential surface thereof to positions adjacent the circumferential surface of the other of said members to define therebetween a plurality of open-ended cells the wall-carrying member being constructed to permit the walls to slide therein,
(d) end-plate structure effective to close the ends of the cells but having ports therein, including a port to convey fluid at a high-pressure and a port to convey fluid at a lower-pressure,
(e) means to permit rotation of the wall-carrying member,
(f) the inner and outer members being eccentric to each other, the arrangement being such that the distance between their opposed circumferential surfaces is a minimum adjacent the port to convey fluid at a high-pressure and is a maximum adjacent the port to convey fluid at a lower-pressure, the walls sliding inwardly and outwardly of the wall-carrying member as the distance between said surfaces varies from a minimum to a maximum, and
(g) the end-plate structure having a subsidiary port to convey fluid to the cells, which port is located to follow, in the desired direction of rotation of the wall-carrying member, the port to convey fluid at a high-pressure but precede the port to convey fluid at a lower-pressure.

3,221,982
TURBOCIRCULATOR
Jack S. Yampolsky, San Diego, Calif., assignor, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission
Filed Aug. 10, 1964, Ser. No. 388,737
10 Claims. (Cl. 230—116)



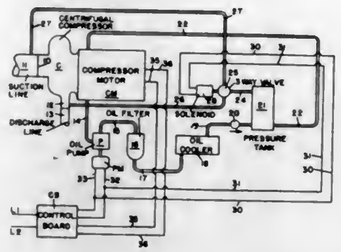
1. A gas turbocirculator adapted for use within a pressure vessel, said turbocirculator comprising:
(a) a vertically extending, generally cylindrical, relatively thin-walled casing,
(b) a vertically extending rotor supported centrally within said casing, said rotor having an upper turbine section and a lower compressor section,
(c) a first inlet duct extending to the turbine section of said rotor,
(d) a first diffusor extending downwardly from the turbine section of said rotor, the outwardly facing wall of said diffusor forming part of said turbocirculator casing and being perforated to permit gas to pass therethrough, said first diffusor being proportioned so as to maintain a generally increasing static pressure throughout its length while avoiding flow separation and resultant energy losses in the gas stream passing therethrough,
(e) a second inlet duct extending to the compressor section of said rotor, said compressor inlet duct being interleaved through said first diffusor, and
(f) a second diffusor extending downwardly from the compressor section of said rotor to lower the velocity of the gas passing therethrough without flow separation prior to its leaving the turbocirculator.

3,221,983
CENTRIFUGAL FAN
Calvin Jack Trickler and Robert L. Lanier, La Porte, Ind., assignors to The New York Blower Company, La Porte, Ind., a corporation of Indiana
Filed Dec. 6, 1963, Ser. No. 328,600
5 Claims. (Cl. 230—127)



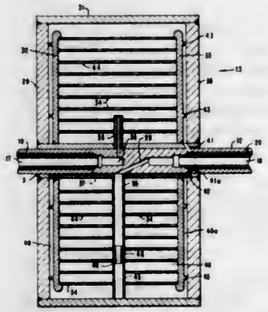
1. A centrifugal fan comprising,
a. scroll-type housing with one wall having
an axial air-inlet therein, and an air-outlet in a plane parallel to the axis of rotation,
b. a fan-wheel with an axial air-inlet in one plate thereof rotatively
journaled in the housing in axially-spaced relationship to the one wall of the housing,
c. an annular element connecting the housing air-inlet to the fan-wheel air-inlet, and
d. a flat diverter plate of a width substantially equal to the axial dimension of the annular element
having one edge contoured to conform to the exterior of the annular element and subtending a right angle formed by the two other edges thereof,
being mounted on the annular element with the contoured edge in direct supporting contact with the element and one of the two other edges predeterminedly spaced from the air-inlet wall of the fan-wheel,
with the other of the two edges spaced from the upper end of the cut-off sheet, and
having the plane of the diverter plate disposed substantially in alignment with that portion of the housing which defines the axially-disposed inner perimeter of the air-outlet most directly adjacent the fan-wheel and thereby,
restricting the recirculation of an air current within the housing while allowing a small amount of air to pass through the space between the diverter plate and housing cut-off to stabilize the flow, but
not interfering with an air current created skin-friction of the air-inlet wall of the fan-wheel, and thereby
restricting the recirculation of an air current within the housing but
not interfering with an air current created skin-friction of the air-inlet wall of the fan-wheel.

3,221,984
OIL SUPPLY SYSTEMS FOR REFRIGERANT COMPRESSORS
John L. Ditzler, Staunton, Va., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 16, 1964, Ser. No. 360,400
4 Claims. (Cl. 230—207)



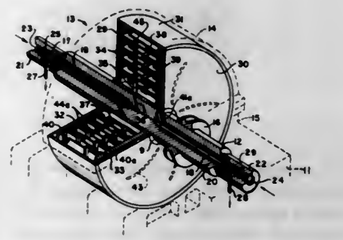
1. An oil supply system for a compressor-motor unit, comprising an oil pump, an oil pressure tank connected to the outlet of said pump, an oil return tube connected to said unit and to the inlet of said pump, an oil supply tube connected to the lower portion of said tank and to said unit, a valve, a third tube connecting said valve to the outlet of the compressor of said unit, a fourth tube connecting said valve to the upper portion of said tank, and means for adjusting said valve to connect said fourth tube to said third tube for supplying discharge gas from said compressor into the upper portion of said tank to force oil from said tank through said oil supply tube to said unit.

3,221,985
COUNTERCURRENT FLOW CENTRIFUGAL EXCHANGERS
Joseph W. Burdett, Houston, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed June 13, 1961, Ser. No. 116,752
6 Claims. (Cl. 233—15)



1. In centrifugal apparatus for the countercurrent exchange of at least partially immiscible principal fluids of different densities, the combination of:
(a) a rotor including an enclosing wall and an axial shaft mounted for rotation,
(b) a plurality of spaced partition walls within said rotor extending annularly about said shaft and defining a series of contacting compartments siutated at progressively different distances from said shaft, said partition walls having passages therethrough whereby said compartments are in intercommunication,
(c) a wall structure within said rotor defining a centrifugal separating chamber which extends radially throughout a plurality of said intercommunicating compartments,
(d) means communicating with the outside of the rotor and with the interior of said chamber for supplying a mixture of one of said principal fluids and an auxiliary fluid which is substantially immiscible therewith and has a different density from outside the rotor to said separating chamber for separation of the mixture therein by centrifugal force,
(e) separate outlet passageways from said separating chamber communicating with the interior of said chamber at different radial distances from said shaft for the separate discharge from the chamber of the separated principal and auxiliary fluids, said passageways being respectively further in communication with separate, intercommunicating contacting compartments situated at different radial distances from said shaft,
(f) means communicating with the interior and exterior of said rotor for supplying another principal fluid from outside the rotor to a contacting compartment other than those mentioned in (e), and
(g) separate discharge means communicating with interior and exterior of the rotor for discharging respectively the less dense fluid from the rotor interior near the radially inner portion thereof and the denser fluid from the rotor interior near the radially outer portion thereof.

3,221,986
CENTRIFUGAL EXCHANGERS
Joseph W. Burdett, Houston, and Kenneth E. Train, Pasadena, Tex., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed June 13, 1961, Ser. No. 116,827
14 Claims. (Cl. 233—15)



1. In centrifugal apparatus for the countercurrent exchange of at least partially immiscible fluids of different densities by repeated dispersion of one in the other, the combination of:
(a) a rotor having an axial shaft mounted for rotation,
(b) a plurality of parallel, radially closely spaced partition walls within said rotor surrounding said shaft substantially concentrically and defining inter-wall compartments between juxtaposed walls,
(c) means communicating with the interior of said rotor for supplying the denser fluid to and discharging the less dense fluid from the rotor interior at the radially inner portion thereof, and means communicating with the interior of said rotor for discharging the denser fluid from and admitting the less dense fluid to the rotor interior at the radially outer portion thereof,

(d) said partition walls having two sets of passages for the predominantly separate flows of said fluids through the passages of the respective sets,

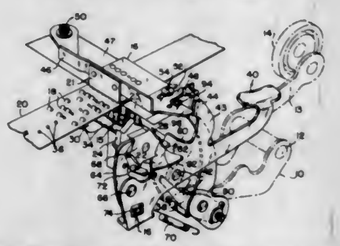
(1) said passages being situated in said partition walls opposite imperforate areas in the respectively opposite partition walls, each inter-wall compartment having at least one inlet passage of each of said sets formed in opposite walls and relatively positioned to disperse the fluid that flows through the first set of passages into the other fluid to form a dispersion,

(2) each said inter-wall chamber having at least one outlet passage of each of said sets formed in opposite walls and spaced from said inlet passages by an intermediate settling zone which is bounded by imperforate wall regions for the flow of said dispersion through said zone,

(3) the passages of the said first set including surge chambers enclosed by chamber walls which extend from the respective partition walls into the contiguous inter-wall compartments in the radial flow direction of said fluid which is dispersed for distances less than the depths of said inter-wall compartments, and

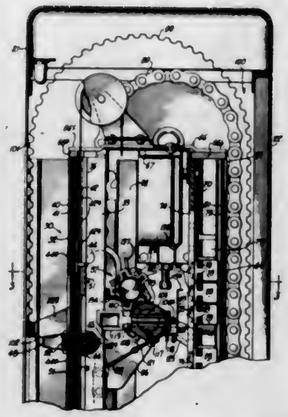
(4) each said enclosed chamber having at the radial downstream end thereof an outlet opening which is restricted in relation to the area of said enclosed chamber, whereby bodies of said fluid that is dispersed can, after coalescence, collect within said chambers.

3,221,987
RECORD FEEDING DEVICE WITH BACKSPACE MECHANISM FOR CHADLESS PERFORATED RECORDS
Ralph L. Berke, Park Ridge, Ill., assignor to SCM Corporation, New York, N.Y., a corporation of New York
Filed Sept. 20, 1963, Ser. No. 310,366
11 Claims. (Cl. 234—129)



1. In combination, a perforator for punching lidded aperture coded information perforations in record media with record media feed means comprising: a lidded aperture punch and die assembly; means adapted to positively engage with a record medium to enable spacing the record medium in both directions through said punch and die assembly; a cyclically operated power means; feed linkage means connected to said power means adapted to incrementally engage and drive said record media spacing means one step in a forward feed direction responsive to each operative cycle of said power means; oscillatory backspace operating means adapted upon a single operation to engage and drive said record media spacing means one step in a backspace direction; shiftable means mounted for shifting movement into blocking position between the lidded aperture portion of said record medium and the entrance portions of the die holes of said punch and die assembly to provide an unbroken plane surface engaging and leveling the lidded apertures in the vicinity of the entrance to said die holes; and means on said backspace operating means enabling shifting of said shiftable means into blocking position upon initial operation of said backspace operating means.

3,221,988
VOTING MACHINE
Edward J. Crossland and Marshall P. Ragan, Tulsa, and James E. Hawkins, Broken Arrow, Okla., assignors to Seismograph Service Corporation, Tulsa, Okla., a corporation of Delaware
Original application June 28, 1961, Ser. No. 120,250. Divided and this application May 23, 1963, Ser. No. 282,731
18 Claims. (Cl. 235—54)



1. In a voting machine of the type having a planar voting panel containing a plurality of side by side columns eacn supporting at least one voting selector manually movable linearly along the column from a nonvoting position to different voting positions respectively representing the choices to be made by the voter on a particular issue, together with detent means disposed rearwardly of the panel for holding each selector in the different voting positions, and means movable along the rear of the panel for restoring the selectors from the voting positions to the nonvoting positions at the completion of the vote casting operation, the improvement which comprises a selector key having a one piece body having a through slot for accommodating at least a portion of the column to mount the key for sliding movement along the column, a finger grip portion at one end of said body and extending outwardly from the column for grasping by the voter to facilitate movement of the key, an indicator formed on said body adjacent the finger grip portion to indicate the different positions along the column to which the key is moved, a detent receiving portion at the end of said body opposite to the finger grip portion and rearwardly of the panel to engage the detent, and a restoring gear tooth formed on said body adjacent said detent receiving portion and rearwardly of the panel, said tooth having its longitudinal axis extending normal to but spaced from the axis of the column to engage the restoring means during its movement along the rear of the panel.

3,221,989
RESETTING MECHANISM
Clarence W. Braatz, Watertown, Wis., assignor to Durant Manufacturing Company, Milwaukee, Wis., a corporation of Wisconsin
Filed Dec. 2, 1963, Ser. No. 327,391
4 Claims. (Cl. 235—144)

1. A counter comprising:

a frame;

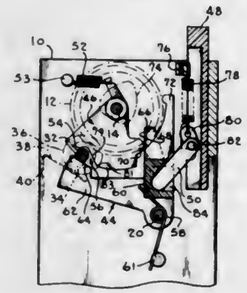
a plurality of number wheels having resetting cams and being rotatably carried by a number wheel shaft which is fixed to said frame;

means for actuating one of said number wheels;

transfer means for transferring rotary motion from wheel to wheel, said transfer means including transfer pinions carried on a pinion shaft which is slidably mounted in said frame for movement between counting and resetting positions, said transfer means also including means biasing said pinion shaft towards said counting positon;

a resetting button carried by said frame for lineally slidable motion between a first and a second position corresponding to said counting and resetting positions of said pinion shaft;

cam means pivotally fixed to said frame and movable in response to said motion of said resetting button, said cam means having a notch with an inclined side leading to a generally arcuate cam portion, said pinion shaft being located in said notch when said shaft is in said counting position and said shaft being moved against the biasing force of said biasing means by said inclined side to said resetting position when said cam means is moved to an intermediate



position and said arcuate cam portion engaging said pinion shaft to maintain it in said resetting position as said cam means is moved past said intermediate position thereby reducing the force of said biasing means which opposes said pivotal motion of said cam means;

tine means including a cam engaging section operable to move said cam means and including tines which are operable to engage said resetting cams and thereby move said number wheels to a predetermined position;

a link pivotally connected to said resetting button and to said tine means to transfer said motion of said resetting button to said tine means, said link passing through a position at which the actuating force of said resetting button will have its maximum component in a direction causing pivotal motion of said cam means at the same time mhen said cam means is moved to said intermediate position.

3,221,990
PURE FLUID SHIFT REGISTER
Raymond W. Warren, McLean, Va., assignor to the United States of America as represented by the Secretary of the Army
Filed Jan. 30, 1964, Ser. No. 341,464
5 Claims. (Cl. 235—201)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. A pure fluid shift register comprising:

(a) a source of fluid synchronizing pulses;

(b) a plurality of successive pure fluid bistable information storage elements connected to a fluid power source;

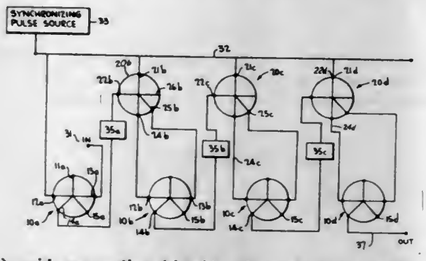
(c) a plurality of pure fluid AND gates;

(d) each of said AND gates being connected between a preceding and a succeeding bistable element;

(e) an input of a first one of said bistable elements and an input of each of said AND gates being connected to said source of fluid pulses;

(f) the output of each of said bistable elements indicating one stable state thereof being connected thru an RC time delay to the other input of each of said AND gates;

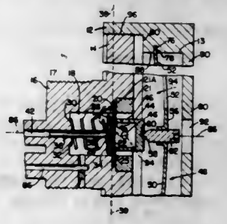
(g) said succeeding bistable elements being switched to one stable state in response to said AND gates receiving only a synchronizing fluid pulse;



(h) said succeeding bistable elements being switched to the other stable state in response to said AND gates receiving a synchronizing fluid pulse simultaneously with a delayed fluid signal produced by a preceding bistable element; whereby

(i) the state of a preceding bistable element is transferred to a succeeding bistable element with each synchronizing fluid pulse.

3,221,991
PNEUMATIC THERMOSTAT AND SYSTEM CONTROLLED THEREBY
Roy W. Houser, Orange, Calif., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
Filed Apr. 26, 1962, Ser. No. 190,487
21 Claims. (Cl. 236—87)

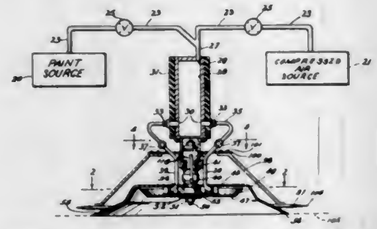


12. In combination: a stationary tube connectable to a source of vacuum; a vacuum chamber surrounding an end of said tube and being connectable to a slave member; a flexible diaphragm across said vacuum chamber and having one diaphragm side covering and uncovering said end of said tube by the flexing of said diaphragm; an atmospheric bleed hole in said diaphragm offset from the end of said tube; a cover plate having an opening surrounding the end of said tube, said plate covering and uncovering said bleed hole; biasing means yieldingly biasing said cover plate toward said diaphragm; and thrust means on the opposite diaphragm side movable to open the end of said tube while closing said bleed hole and closing the end of said tube while opening said bleed hole.

3,221,992
COATING MATERIAL MOTIVE AGENT ATOMIZER HEAD
John Sedlacsik, Jr., and John Sedlacsik, both of 111 Monroe St., Garfield, N.J.
Filed Feb. 8, 1962, Ser. No. 171,945
6 Claims. (Cl. 239—15)

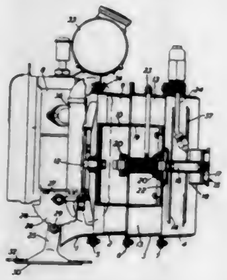
1. A spraying device comprising: a source of fluid material to be sprayed; a source of air under pressure;

supporting means; a circular extending atomizer member mounted for free rotation about an axis passing through its center, said atomizer member being supported by said supporting means and having an obliquely inclined free peripheral edge portion; an annular rotor member connected to said atomizer member for rotation therewith, said rotor member being disposed interiorly of said free edge portion concentrically with said atomizer member, said rotor member comprising a regularly arranged series of angularly spaced blades the inner and outer ends of which terminate at radially spaced imaginary cylindrical surfaces coaxial with said axis, each of said blades having at least a portion which is inclined with respect to a radial



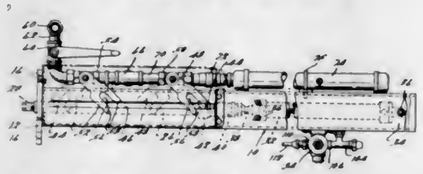
plane passing through said axis and the particular blade, the inclination being uniform for all of said blades; preatomizing means connected to said sources for combining said fluid material and said compressed air to form an atomized mixture thereof; conduit means extending between said preatomizing means and a location within said rotor member, said conduit means directing said mixture outwardly of said rotor member between the blades of said rotor member and over said atomizer member to drive said rotor and atomizer members as a unit; and generally annular electrode means located concentrically with said axis beyond the periphery of said atomizer member for electrostatically guiding the atomized material which has passed over said free edge portion.

3,221,993
SPRAYING EQUIPMENT
Edward Julius Bals, Pedmore, near Stourbridge, England, assignor to Birfield Engineering Limited, London, England, a company of Great Britain
Filed Oct. 22, 1962, Ser. No. 232,220
Claims priority, application Great Britain, Oct. 24, 1961, 37,994/61
1 Claim. (Cl. 239—77)



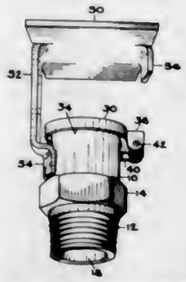
Liquid spraying equipment comprising an internal combustion engine, an axial-flow fan mounted on the crankshaft of said engine, a rotary atomiser, a windmill for driving the atomiser and connected to the upstream side of the atomiser, said windmill embodying blades of comparatively small pitch as compared with the blades of said fan, fixed deflector blades positioned between said fan and said windmill, and a common duct comprising four annular cowlings bolted together, namely an upstream end cowling forming an air intake, a next adjoining cowling forming a housing for said fan, a next adjoining cowling housing said fixed deflector blades, and a downstream end cowling housing said windmill.

3,221,994
RETRACTABLE FURNACE SLURRY SPRAYER
Robert E. Chappell, Lancaster, Ohio, assignor to Diamond Power Specialty Corporation, Lancaster, Ohio, a corporation of Ohio
Filed May 21, 1963, Ser. No. 281,971
3 Claims. (Cl. 239—186)



1. A spray apparatus comprising a frame, a spray tube movably mounted on said frame and formed with a nozzle in the forward end portion thereof, an air operated means connected to said spray tube for effecting reciprocation thereof to and from a retracted position and a projected position, first conduit means including a first valve for supplying a pressurized liquid additive to said spray tube, second conduit means including a second valve for supplying pressurized air to said spray tube, supply means including control means for supplying pressurized air to said air operated means and said second conduit means, coacting means on said spray tube and said first and said second valve for engaging and closing said second valve and thereafter engaging and opening said first valve in response to the projecting travel of said spray tube and for closing said first valve and opening said second valve in response to the retracting travel of said spray tube, pressure accumulating means disposed in communicaation with said supply means and said second conduit means for accumulating air under pressure upon closing of said second valve and for discharging the accumulated air and purging said spray tube upon the opening of said second valve.

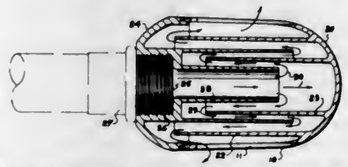
3,221,995
SELF-CLOSING NOZZLE
James A. Sievert, Marinette, Wis., assignor to The Ansul Company, a corporation of Wisconsin
Filed July 25, 1963, Ser. No. 297,713
3 Claims. (Cl. 239—452)



1. A self-closing nozzle for providing a normally protectively sealed discharge outlet in a fire extinguishing system supplying a source of fire extinguishing agent under pressure, and discharging a stream of fire extinguishing agent when the agent is presented to the outlet at a predetermined pressure, said nozzle comprising: a generally tubular body having an outlet therein and

a bore leading to said outlet; means in said bore for directing a stream of fire extinguishing agent in a desired path through said outlet, said means having at least one orifice so positioned as to effect a desired dissemination of said discharged stream; a cover having sealing means therein; means mounting said cover for movement between a first position wherein said outlet is closed and said orifice is protectively sealed within said body member by said sealing means and a second position wherein said outlet is open to permit the discharge of the stream of fire extinguishing agent; means normally maintaining said cover in said first position and capable of allowing said cover to be moved to said second position in response to a stream of fire extinguishing agent presented to said outlet at said predetermined pressure to discharge said stream and returning said cover to said first position upon completion of said discharge; and means adjacent said outlet for distributing said discharged stream of fire extinguishing agent into a predetermined pattern, said means mounting said cover upon said body member comprising a hinge; said means normally maintaining said cover in said first position comprises a spring biasing said cover toward said outlet and said sealing means against said body member, said means for distributing said discharged stream comprises a plate-like element, and a bracket plate mounting said plate-like element upon said body member with said plate-like element projecting into the path of said stream to divert said stream into said predetermined pattern.

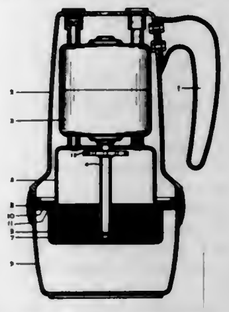
3,221,996
IRRIGATING DEVICE
George W. Emmert, Tucson, Ariz., and Dorothy G. Emmert, Rte. 5, Box 263, Tucson, Ariz.; said George W. Emmert assignor to said Dorothy G. Emmert
Filed Oct. 8, 1963, Ser. No. 314,700
6 Claims. (Cl. 239—542)



1. An irrigating device comprising: a cylindrical shell including a plurality of longitudinally extending circumferential openings therein to permit liquid to pass therethrough; means forming a unitary structure with said shell defining a first closure for one end thereof, said circumferential openings extending through said first closure; means forming a unitary structure with said shell defining a second closure for the opposite end thereof and including an axial opening to admit liquid; a first cylinder extending inwardly of said shell from said second closure and communicating with said axial opening; a second and third cylinder, each of larger diameter than said first cylinder, extending inwardly of said shell from said first closure and extending over a portion of said first cylinder; a fourth cylinder having a diameter intermediate said second and third cylinders extending from said second closure between said second and third cylinders to provide counter-flowing paths for liquid entering said axial opening and leaving through said circumferential openings.

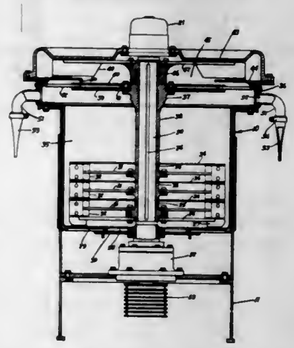
3,221,997
ELECTRIC COFFEE MILL
Gerard Clement Smit, Utrechtse Straatweg 26, Amerongen, Netherlands
Filed Oct. 28, 1963, Ser. No. 319,403
2 Claims. (Cl. 241—48)

1. An electrically operated coffee mill comprising: an electric motor having a downwardly extending output shaft, a downwardly opening cup secured to the bottom of said motor and surrounding the upper portion of said shaft, a ring detachably mounted at the bottom end of said cup, a perforated basket carried by said ring and opening upwardly toward said cup and enclosing the lower portion of said shaft, said cup and basket forming a closed chamber in which the entire projection of said shaft is located, a receiver cup opening upwardly and



connected to said ring and surrounding said perforated basket, a cutter blade mounted on the lower end of said shaft so as to rotate within said basket when the motor is energized, and said downwardly opening cup being smaller in diameter than said perforated basket and having a radially outwardly projecting flange at the bottom engaging said ring and forming an abrupt constriction in the closed chamber formed by said basket and downwardly opening cup.

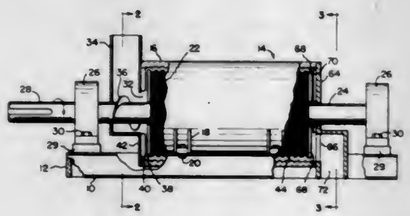
3,221,998
PULVERIZER AND CLASSIFIER
William H. Lykken, Springfield, Ohio, assignor to The Microcyclomat Co., Minneapolis, Minn., a corporation of Delaware
Filed Apr. 29, 1963, Ser. No. 276,457
6 Claims. (Cl. 241—56)



1. Extraction apparatus for the removal of coarser and denser impurities and contaminants from non-metallic solid materials to upgrade the quality of the same, said apparatus comprising a first generally cylindrical vertical casing, a second generally cylindrical vertical casing of greater diameter but lesser axial depth mounted on top of said first casing, the top of said first casing being open and in communication with said second casing, an involute scroll fan housing mounted on top of said second casing; a vertical axis shaft extending centrally through said casings and fan housing and journaled for rotation therein, means to drive said shaft; a plurality of stacked closed end grinding rotor stages mounted on said shaft for rotation therewith in said first casing, each of said grinding rotor stages including an annular horizontally disposed

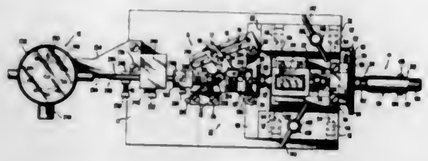
disk and a plurality of spaced vertically disposed radial blades uniformly distributed around the periphery of the disk, the free ends of said blades being spaced closely inwardly from the inner wall of said first casing, an annular horizontally disposed disk between each pair of grinding rotor stages, a material inlet to said first casing adjacent the lowermost of said grinding rotor stages; an independent air inlet to the bottom of said first casing and below said material inlet, means for regulating the amount of air admitted to said air inlet, auxiliary fan means mounted on said shaft between said air inlet and the lowermost of said grinding rotor stages; a classifier rotor mounted on said shaft for rotation therewith in the upper portion of said second casing, said classifier rotor comprising an annular horizontally disposed disk and a plurality of spaced horizontally disposed radial finger-like blades uniformly distributed and extending around the periphery of said disks, the free ends of said blades being spaced closely inwardly from the inner walls of said second casing; a horizontally disposed diaphragm ring mounted between said second casing and said fan housing closely spaced from said classifier rotor blades, the inside diameter of said ring defining the outer periphery of an annular passage between said second casing and said fan housing and being less than the diameter of said classifier rotor disk; at least one extraction port in the wall of said second casing disposed below the level of said classifier rotor disk, a conduit in communication with said port; and a fan rotor mounted on said shaft for rotation therewith in said fan housing.

3,221,999
MATERIAL REFINING MACHINE
Edward H. Cumpston, Jr., Bronxville, N.Y. (43 Monument Ave., Old Bennington, Vt.)
Filed Dec. 11, 1962, Ser. No. 243,860
14 Claims. (Cl. 241—247)



1. A machine for processing viscous materials comprising a container having therein a chamber with a substantially cylindrical side wall and an inlet at one end and an outlet at the other end thereof, a substantially cylindrical rotor mounted coaxially inside said chamber with its cylindrical side wall adjacently spaced from the side wall of said chamber to leave an annular passageway therebetween, means for rotating said rotor about its axis, means for feeding material into said chamber inlet, the cylindrical side walls of said chamber and rotor being formed with alternating lands and grooves of helical shape and of opposite hands, respectively, to clear but coact with one another to feed said material axially of said chamber, said chamber grooves having a substantially curved shape in cross section, and said rotor being rotated in a direction to produce feeding of said material toward said chamber outlet by the coaction of said grooves of said chamber and rotor, said lands having a radial spacing of between 0.01 and 0.5 inch, and means for discharging said material from said chamber outlet, whereby said material is sheared, mixed, refined and transported through said machine by the continuously crossing coaction of said grooves of said chamber and rotor walls.

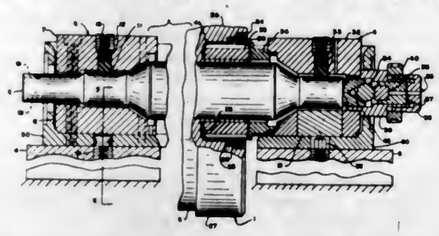
3,222,000
COIL WINDING APPARATUS
Howard P. White, Philadelphia, Pa., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed May 7, 1962, Ser. No. 192,730
3 Claims. (Cl. 242—9)



2. Coil winding apparatus comprising:
(a) a demountable workpiece holder,
(b) means mounting said holder in a predetermined position relative to said winding apparatus,
(c) a demountable supply of strand material arranged for applying wire strands to a workpiece,
(d) drive means for rotating said supply of strand material with respect to said workpiece,
(e) demountable means for guiding said strand material from said supply to said workpiece,
(f) means for causing relative movement between said supply and said workpiece in a direction substantially parallel to the axis of rotation of said workpiece, said last means including an angularly disposed slidable member adjustable for changing the pitch spacing between adjacent turns of said strand material,
(g) a follower member engageable with said last member and movable thereby in either of two opposite directions for distributing said strand material over said workpiece,
(h) means for adjusting the angular orientation of said slidable member relative to said drive means and said follower,
(i) means for rotating said drive means whereby relative movement between said slidable member and said follower member relative to said strand supply means and said workpiece causes winding turns of strand material to be withdrawn from said supply and distributively applied to said workpiece as said drive means is rotated,
(j) individual, selectively, alternately, engaged, controllable clutch members disposed on opposite sides of said apparatus and including means engageable with said drive means effective to change the direction of movement of said follower relative to said slidable member thereby causing said strand material to be applied to said workpiece in either of two opposite transverse directions.

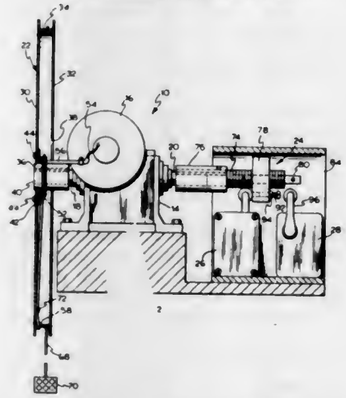
3,222,001
ROTOR ASSEMBLY
Martin Dvorin, Brighton, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed Oct. 1, 1963, Ser. No. 313,018
5 Claims. (Cl. 242—18)

5. A fiber winding unit having an interchangeable rotor and a predetermined alignment means comprising, a shaft supporting a fiber winding rotor, a frame, a yoke carrying a rotor bearing means rotatably and slidably supporting said shaft, alignment means removably aligning said yoke on said frame, an adjustable thrust bearing positioned on said rotor bearing means and engaging an end surface of said shaft to control the axial position of said rotor relative to said yoke, a magnetic circuit formed in said rotor and said rotor bearing means constructed and arranged to define an air gap intermediate said rotor and said rotor bearing means, a clearance ring controlling the air gap in said magnetic circuit and thereby the axial force maintaining contact between said shaft and said thrust bearing, said unit thereby having means



for establishing a predetermined dimensional relationship between the frame of said winding unit and said rotor and eliminating axial vibration by controlling the axial force to thereby control the winding of a fiber on the periphery of said drum.

3,222,002
CONDUIT WINDUP REEL
William L. Holberg, Glassboro, N.J., assignor to Socony Mobil Oil Company, Inc., a corporation of New York
Filed Apr. 8, 1963, Ser. No. 271,429
8 Claims. (Cl. 242—54)

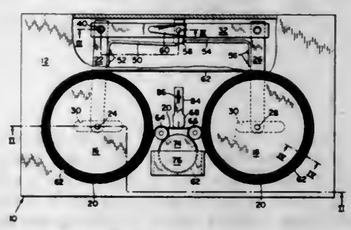


1. In combination, a windup reel having an outer cylindrical wall, drive means for rotating said windup reel in either of two directions, control means for automatically stopping said windup reel in each direction of rotation, a flexible conduit wound in a plurality of inner loops within said reel and extending through an opening in the outer cylindrical wall and wound in outer loops about the outer cylindrical wall with the free end thereof extending downwardly from the windup reel, means for fixing the other end of said conduit against movement to facilitate connection thereto, said inner and outer loops being arranged so that the inner loops loosen and tighten in response to the rotation of the outer cylindrical wall to raise and lower said free end of the conduit.

3,222,003
DRIVE MECHANISM FOR TAPE RECORDERS AND/OR REPRODUCERS
Fritz A. Guerth, 50 Lori Road, Camarillo, Calif.
Filed May 23, 1963, Ser. No. 282,816
4 Claims. (Cl. 242—55.14)
(Granted under Title 35, U.S. Code (1952), sec. 266)

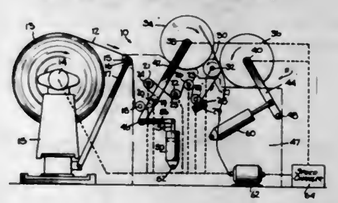
1. In a device for recording and/or reproducing data the combination of:
(a) a pair of reels lying essentially in a single plane

(b) a sensitized magnetic tape adapted to be wound on one reel as it is unwound from the other reel, the two said reels lying in spaced-apart relation within said single plane,
(c) a pair of capstans disposed intermediate the two reels,
(d) a continuous belt composed of flexible, non-stretchable material overlying the outer layer of tape on each of said reels and in direct contact with such outer layers, said belt being so arranged as to pass sequentially over each of said pair of capstans as said tape is unwound from one reel and wound on the other,
(e) means for causing said belt to form a loop between



said capstans so that it is out of contact with said tape between said capstans,
(f) a recording and/or reproducing head disposed to contact said sensitized tape as it passes between said capstans, and
(g) means for applying an equal drawing force to each of said capstans to synchronously rotate the latter and hence apply a driving force to said belt and to the tape wound on said reels,
(h) whereby said tape is caused to freely pass between said capstans solely in response to the frictional action of said belt, and without any longitudinal stress or tension whatsoever being present on said tape from the time it leaves one capstan until it reaches the other.

3,222,004
REWIND MACHINE
Thomas J. Crowe, Dover, N.J., assignor to Cameron Machine Company, Dover, N.J., a corporation of New York
Filed Sept. 5, 1963, Ser. No. 306,791
10 Claims. (Cl. 242—56.9)

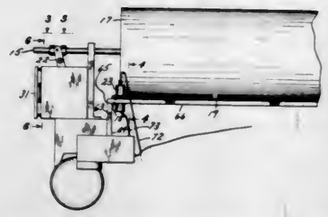


1. In a rewind machine, a frame, a main drum mounted on said frame, a rewind shaft mounted on said frame adjacent said drum and having peripheral external cylindrical driving means, motive means for driving said rewind shaft, a plurality of pairs of rewind mandrels each having an internal bore, the diameter of which being greater than the diameter of said driving means, each pair of mandrels being adapted to carry a rewind roll, and said rewind shaft being mounted within said bores in epicyclic-like relation with respect to said mandrels by virtue of the relationship of said diameters, the points of contact between each pair of mandrels and said rewind shaft being positionable for maintaining peripheral engagement between each of the rewind rolls and said main drum respectively during rewinding of multiple rolls.

3,222,005
EDGE ALIGNMENT DEVICE FOR CLOTH LAYING MACHINES

Gerard J. Wendelken, Harrington Park, N.J., assignor to Cutting Room Appliances Corp., New York, N.Y., a corporation of New York

Filed Dec. 13, 1963, Ser. No. 330,419
1 Claim. (Cl. 242—57.1)

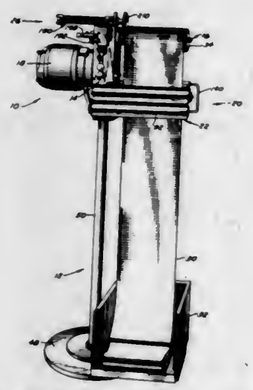


In an edge control device for use in conjunction with a cloth laying machine, said cloth laying machine having means supporting a roll of cloth upon a spindle and dispensing layers of cloth upon a table in superimposed folds, said edge control device including sensing means disposed in the path of travel of a continuous web of cloth fed from said cloth roll, and motor means controlled by said sensing means for shifting said roll of cloth axially in either of two directions to maintain an edge of said web continuously substantially in a fixed vertical plane, as said web is advanced, improved control means comprising: first and second limit switches for limiting the path of axial displacement of said roll of cloth in either of two oppositely disposed directions, diode means and resistance means selectively connectable in series by said limit switches to short the armature of said motor means when said armature is rotating in a direction toward a limit position, and permitting the flow of current in a opposite direction to move said armature in a direction away from said limit position.

3,222,006
TOWEL WINDING MACHINE

Erwin B. Bahnsen, Hinsdale, Ill., assignor to Steiner American Corporation, Salt Lake City, Utah, a corporation of Nevada

Filed May 7, 1963, Ser. No. 278,539
11 Claims. (Cl. 242—67.1)

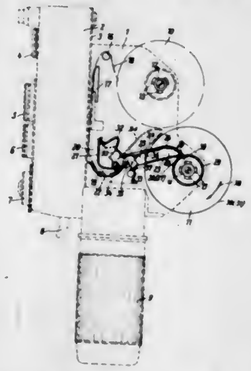


1. In a towel winding machine, a mandrel rotatable about its axis for winding toweling in a roll thereon, drive means for rotating said mandrel, and tensioning means in advance of said mandrel for tensioning toweling being wound on the mandrel, said tensioning means comprising a pair of spaced apart towel breakers having adjacent supported ends and free ends, means for supporting said breakers for hinged movement relative to each other at said supported ends, means for adjusting said supporting means for varying the spacing of said breakers and the resulting tension on the toweling, and releasable means for holding said free ends together, whereby toweling may be inserted between said breakers at said free ends for winding.

3,222,007
APPARATUS FOR OPERATING CAMERAS IN WHICH COMPONENT STRIPS OF A FILM ARE EXPOSED IN SUCCESSION

Peter Schmuck, Mauren, Liechtenstein, assignor, by mesne assignments, to Keystone Camera Company, Inc., Boston, Mass., a corporation of Massachusetts

Filed Jan. 19, 1962, Ser. No. 167,319
15 Claims. (Cl. 242—71)

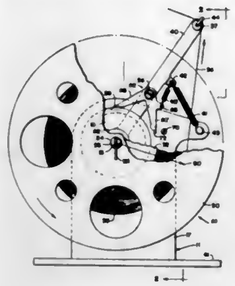


1. In a camera, in combination, support means for supporting a take-up spool for rotary movement, said take-up spool having a hub formed with a slot through which a leading end of a film strip is adapted to pass to be attached to the spool and wound thereon; film guide means supported by said support means for free movement to and from a position where a free end of said guide means is aligned with said slot to direct the leading end of a film strip through said slot into said hub, said guide means having an elongated curved portion extending up to and including said free end thereof and presenting to a film strip which advances toward said hub a concave surface promoting in the film strip, when the leading end of the film strip encounters in the hub a surface preventing further movement of the film strip into the hub while the film continues to advance toward the hub, the formation of a bulge which increases in size during the continued advance of the film strip toward the hub and presses against said guide means to urge the latter away from said hub; directing means carried by said support means for directing the film strip, while it advances toward the hub, along a path which places the film strip in engagement with said concave surface of said guide means to slide therealong, so that the film strip will bulge between the slot of the hub and a surface portion of said guide means; and yieldable means urging said guide means toward said hub with a force which is too small to prevent movement of said guide means away from said hub as the bulge in the film strip increases in size and presses with an increasing force against said guide means, the space which is located at that side of said guide means which includes said concave surface being large enough to provide unobstructed formation of the film bulge which urges said guide means in opposition to said yieldable means away from said hub.

3,222,008
REEL ACCELERATOR AND BRAKE MECHANISM

Alfred Z. Purzycki, Mount Prospect, Ill., assignor to Teletype Corporation, Skokie, Ill., a corporation of Delaware

Filed May 16, 1963, Ser. No. 280,821
6 Claims. (Cl. 242—75.43)



1. In a tape reel mechanism having a freely rotatable reel supporting a coil of tape thereon and wherein the leading end of the tape is pulled from the coil of tape by an external force to cause the coil of tape and the tape reel to rotate and the tape to unwind the combination comprising;

(a) a tape guiding means pivotally mounted on said tape reel mechanism for rotation in one direction by the leading end of the tape as the tape is pulled from the tape reel,

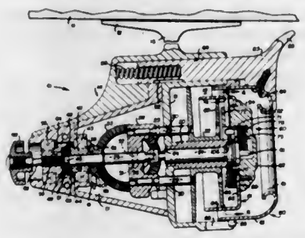
(b) biasing means urging said tape guiding means in an opposite direction from said one direction, and

(c) a one-way clutch means including a grooved disc fixed to said tape reel and a pawl means pivotally mounted on said tape guiding means for movement by said tape guiding means in said one direction to clutch together said tape reel and the tape guiding means to cause said tape guiding means to act as a lever arm for rotating said coil of tape and said reel.

3,222,009
SPINNING REEL

Thomas F. Sarah, Akron, Ohio, assignor to Pflueger Corporation, Akron, Ohio, a corporation of Ohio

Filed Aug. 8, 1963, Ser. No. 300,790
10 Claims. (Cl. 242—84.21)

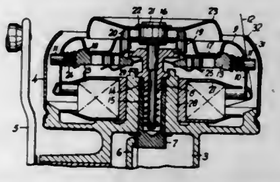


1. In a spinning reel having a housing and a normally nonrotatable line spool, a flyer rotatably mounted adjacent to the spool, said flyer comprising a carrier and a holder, said carrier fixed to a selectively rotatable shaft, said holder mounted on said carrier for radial movement, a pick-up pin attached to said holder and normally extending radially outwardly of said carrier but retractable with respect thereto, a cap supported on said housing and positioned radially of said flyer, said cap having a guide opening for permitting the passage of the line therethrough outwardly and off the end of the spool, means mounting said cap for movement axially with respect to said flyer, means on said cap to engage said holder upon axially rearward movement of said cap, said engaging of the cap with said holder snubbing the fishing line therebetween and moving said holder radially with respect to said carrier to retract said pick-up pin.

3,222,010
SPINNING REELS

Carl Göte Lennart Borgström and Per Enar Lennart Frode, both of Svangsta, Sweden, assignors to Ab Urfabriken, Svangsta, Sweden, a corporation of Sweden

Filed Apr. 4, 1962, Ser. No. 184,987
Claims priority, application Sweden, Feb. 9, 1960, 1,299/60
3 Claims. (Cl. 242—84.2)

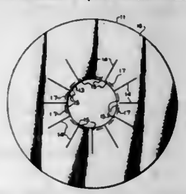


1. A fishing reel of the spinning type comprising in combination, a line guide cap rotatably mounted for winding line on a spool, an open front annular casing about said line guide cap to provide the sole confining means about said cap to define an annular channel circumferential of said cap for passage of line, at least one line guide pin slidably mounted in the cap for projection to a position radially outside said cap and retraction to a position within said cap, means yieldably biasing said line guide pin toward one of said positioning other means operable to displace said line guide pin to the other of said positions, a retaining member mounted for rotation coaxial said cap for rotation therewith, said cap and said member being substantially axially adjacent each other and at least one of said cap and said member being axially displaceable with respect to the other to relatively displace said member from a retaining position for retaining said pin in said cap in said other position, a first instrumentality secured to said retaining member, a second instrumentality secured to said cap, said first and second instrumentalities being axially displaced from each other, and an operating member rockably connected to one of said instrumentalities and engageable with the other of said instrumentalities to selectively rock to axially displace said instrumentalities to selectively position said retaining member in a non-retaining position with respect to said cap and said pin.

3,222,011
FLAT PAPERBOARD BLANK ASSEMBLY READILY SHAPED TO REEL FORM

Lewis Benton Webb, Mount Airy, N.C., assignor to Essex Wire Corporation, Fort Wayne, Ind., a corporation of Michigan

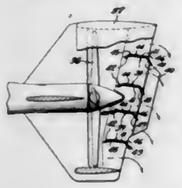
Filed Mar. 11, 1963, Ser. No. 264,291
1 Claim. (Cl. 242—118.8)



In a flat reel blank assembly readily shaped into a reel comprising a pair of annular spaced heads joined at their inner peripheries by a tubular body,

a pair of superposed, flat, substantially identical, annular blanks formed of paperboard material;
each blank having a central circular opening and inner and outer peripheral portions;
the inner peripheral portion of each blank having equally-spaced, open-ended radial slits defining a series of uniform tabs integrally joined at their outer edges to said outer peripheral portion;
said blanks being positioned in coaxial alignment with the tabs of one blank in register with the tabs of the other blank;
said blanks being united solely by staple type fasteners securing the inner end portions of the tabs of one blank to the inner end portions of the corresponding tabs of the other blank;
all said tabs being readily bendable simultaneously along their united inner end portions to force apart the outer peripheral portions of the blanks in response to the application of radial outwardly-directed forces to the inner peripheries of the united blanks.

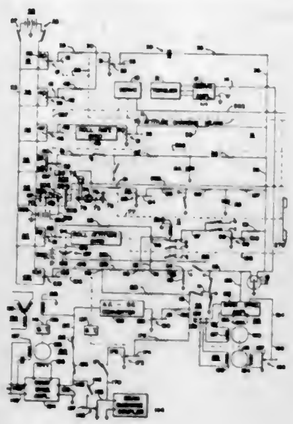
3,222,012
SLIP STREAM DEFLECTOR ASSEMBLY FOR AIRCRAFT
Frank N. Piasecki, Haverford, Pa., assignor to Piasecki Aircraft Corporation, Philadelphia, Pa., a corporation of Pennsylvania
Filed Aug. 29, 1963, Ser. No. 305,269
6 Claims. (Cl. 244—51)

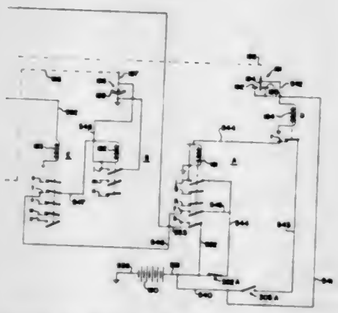


2. Slip stream deflector assembly for aircraft comprising, an annular shroud having leading and trailing edges, a propeller mounted within the shroud for rotation concentrically of the shroud, a vane support mounted on the shroud adjacent the trailing edge of the shroud rearwardly of the propeller, a plurality of vertical vanes mounted on the support each having a leading edge with the leading edges of all the vanes lying in a common plane, each vane having leading, central and trailing sections, means pivotally interconnecting the three vane sections, means pivotally connecting the central vane sections to the support, means intercoupling the vane sections to cause simultaneous movement of the leading and trailing vane sections when the central section is moved about its pivot to change the camber of the vanes, and means to move the central vane sections about their pivots.

3,222,013
AUTOMATIC PILOTS FOR AIRCRAFT
Corles M. Perkins, Anoka, Minn., assignor to Honeywell Inc., a corporation of Delaware
Filed Dec. 14, 1955, Ser. No. 553,131
25 Claims. (Cl. 244—77)

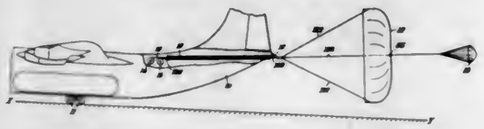
1. In control apparatus for controlling a flight condition of an aircraft including motor means operating a flight condition control device, including manual selector means to render the motor means effective or engaged, in combination: a balanceable D.C. signal summing network; means including a flight condition responsive device connected thereto for unbalancing said network; movable means responsive to said balanceable network means on unbalance thereof and momentarily displaced from a normal position and connected in feedback relation to said network for balancing said network; and further means connected to be energized in the displaced position of said movable means and effective on balance of said network to substantially maintain said balance





despite return of said movable means to normal position for enabling manual selective control of said motor means by said balanceable network means on subsequent unbalance of said network.

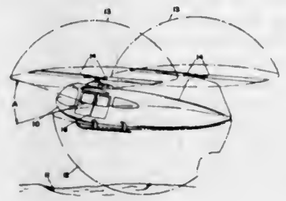
3,222,014
PARACHUTE BRAKING APPARATUS FOR AIRCRAFT
Malcolm K. Bowden and James C. Buck, Belfast, Northern Ireland, assignors to Short Brothers & Harland Limited, Belfast, Northern Ireland, a company of Northern Ireland
Filed Mar. 2, 1964, Ser. No. 348,714
3 Claims. (Cl. 244—113)



1. Parachute braking apparatus for aircraft comprising; a first parachute, a second reversible parachute canopy attached to said first parachute adapted to be streamed behind the aircraft, and means for varying the shape of said parachute canopy between a collapsed condition and a fully extended condition, the arrangement being such that the rapid changes in canopy configuration are effected by aerodynamic loads acting on the canopy which changes in configuration are controlled by winch means located in the aircraft through the medium of auxiliary rigging

means connected with the canopy, wherein the configuration of the canopy is varied by two separately operable means, respectively connected with the apex of the canopy and with the periphery of the canopy, whereby variation in the position of the apex is caused to alter the canopy from an introverted condition to a partially or fully deployed position and vice versa.

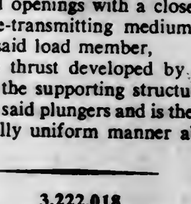
3,222,015
HELICOPTER ESCAPE MEANS
Agnew E. Larsen, New Britain, Mannel Weinstock, Philadelphia, and Robert F. Le Vino, Huntingdon Valley, Pa., assignors to the United States of America as represented by the Secretary of the Army
Filed Apr. 23, 1964, Ser. No. 362,210
10 Claims. (Cl. 244—141)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A seat construction for helicopters comprising
a seat structure having an upwardly facing seat member for normally supporting a substantial portion of the weight of a helicopter occupant and a forwardly facing back member extending above said seat member at a predetermined angular relationship;
horizontally disposed track means affixed to the rearward surface of said back member for guiding lateral movement of said seat structure along mating horizontally disposed supporting track means;
catapult means extending substantially horizontally along said back member rearward surface for laterally ejecting said seat structure and its occupant in their upright positions a predetermined distance beyond an opened adjacent door frame of said helicopter; and
rocket means carried by said seat structure for subsequent rocketing of said laterally ejected seat structure and occupant to an altitude position allowing safe parachute deployment;
so constructed and arranged that said seat structure and occupant may be moved to said altitude position after avoiding such dangers as moving rotor blades.

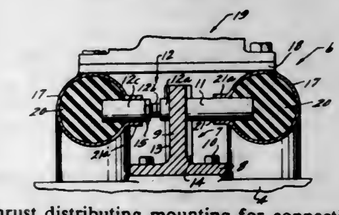
3,222,016
VARIABLE POROSITY FABRIC FOR AERONAUTICAL DECELERATOR
Jay D. Boone, Seeley, Calif., assignor to the United States of America as represented by the Secretary of the Navy
Filed Mar. 26, 1964, Ser. No. 355,131
2 Claims. (Cl. 244—145)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. A parachute adapted to provide increased porosity on opening shock and decreasing porosity after the occurrence of opening shock comprising:
a canopy made of a plurality of gores joined together;
each of said gores being formed of a material having interwoven warps at least some of which are of ribbon material and wefts of elastic material; and
said warps of ribbon material being substantially thicker than the warps of non-ribbon material;
so that opening shock will produce a greater force on said warps of ribbon material causing stretching of said wefts and consequent distention of said canopy



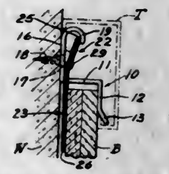
and resulting in increased porosity of the canopy while the greater force thereon is maintained.

3,222,017
ENGINE MOUNTING
Melvin Bobo, Topsfield, Mass., assignor to General Electric Company, a corporation of New York
Filed Mar. 30, 1964, Ser. No. 355,687
9 Claims. (Cl. 248—5)



1. A thrust distributing mounting for connecting a jet propulsion engine to a supporting structure comprising:
(a) mounting structure secured to and circumferentially disposed about the engine, said mounting structure projecting radially outward from the engine periphery,
(b) a substantially closed load member circumferentially disposed about the engine, axially spaced from said mounting structure and attached to the supporting structure, said load member containing a force-transmitting medium and having a plurality of circumferentially spaced openings therein,
(c) and a plurality of axially extending plungers contacting said mounting structure,
(d) each of said plungers extending into contact with said force-transmitting medium through a corresponding one of said openings with a close sliding fit such that said force-transmitting medium is entirely enclosed within said load member,
(e) whereby the thrust developed by the engine and transmitted to the supporting structure is distributed equally among said plungers and is thereby distributed in a substantially uniform manner about the engine periphery.

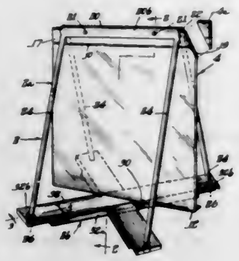
3,222,018
BOARD MOUNTING MEANS
Albert M. Masters, P.O. Box 155, Pen Argyl, Pa.
Filed May 11, 1961, Ser. No. 111,418
11 Claims. (Cl. 248—28)



1. A mounting means for mounting on a wall at least one board such as a chalkboard or corkboard or both and

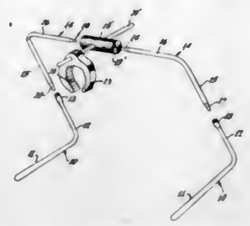
having thickness comprising a clip cut from an extruded bar having ledge means including at least a first ledge with a forward edge and a rear edge and a depth adapted to receive a board of the desired thickness, a forward flange integral with the forward edge and extending at right angles to the ledge in one direction, a rear flange integral with the rear edge extending at right angles to the ledge and having at least a portion extending in the opposite direction to that of the forward flange and having a front face, the rear flange having aperture means to secure the clip to a wall, the ledge means and flanges being of the same width and having side edges in the same plane, clamping means having a connecting and locking portion and having resilient legs extending therefrom and forming a clamping portion, the legs of the clamping portion being spaced apart a distance to straddle the edges of the ledge, the clamping means having an obtuse angle bend at the midsection of the clamping means so that the clamping portion and the connecting and locking portion extend at an obtuse angle with respect to each other, the clamping means engaging the front face of the rear flange at the midsection of the clamping means as a fulcrum point; the angle being such that with the fulcrum of the clamping means engaging the front face of the rear flange the clamping means must be flexed to clamp a board, and means carried by the clip forming at least a part of a holding means to hold the clamping means flexed.

3,222,019
SUPPORT STAND
Sydney R. Weisberg, 1715 S. Halsted St., Chicago, Ill.
Filed Nov. 5, 1962, Ser. No. 235,253
3 Claims. (Cl. 248—97)



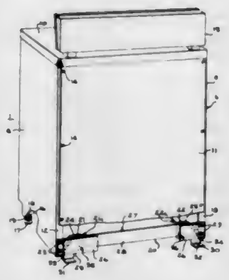
2. The combination comprising: a flat, non-self-supporting flexible bag having closely spaced confronting walls which sealingly engage each other on all sides thereof to form a flat bag having an article-containing compartment therein and a spout forming section at the top of the bag from which the contents of the bag can be passed, a stand supporting the bag in an upright position above a bag contacting surface, with said spout forming section projecting beyond the stand, said stand comprising an elongated support section at the top of the stand, said support section having means for engaging the top of said flexible bag at two horizontally spaced points, said stand further having a first pair of leg members inclining downwardly and outwardly from the opposite sides of one end portion of said support section, a second pair of leg members inclining downwardly and outwardly from the opposite sides of the opposite end portion of said support section, and means holding the bottoms of said leg members in place comprising cross members each secured between the bottom ends of two of the leg members.

3,222,020
APPARATUS FOR HOLDING NURSING BOTTLES
Herman K. Rea, 73 Prescott Turn, Clark, N.J.
Filed Mar. 9, 1964, Ser. No. 350,310
5 Claims. (Cl. 248—106)



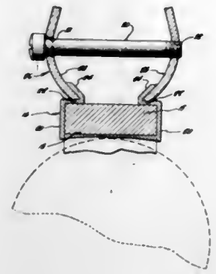
1. Apparatus for holding a nursing bottle comprising a knock down supporting frame including (a) a pair of detachable L-shaped base members, each having a socket at the end of one of the legs, (b) a pair of L-shaped bridge members, the ends of said bridge members being tapered, one end of each bridge member being received within a cooperating socket of a base member, (c) a bridge bushing having cavities for receiving the other ends of said bridge members, said bushing being rotatable with respect to said bridge members, (d) an adjustable supporting arm slidably and rotatably mounted in said bushing and mounted transversely of said bridge members, and (e) a flexible bottle supporting clamp mounted adjacent one end of said supporting arm.

3,222,021
SELF-LEVELING SUPPORT STRUCTURE
Robert R. Sisler, Louisville, Ky., assignor to General Electric Company, a corporation of New York
Filed Aug. 13, 1964, Ser. No. 389,366
2 Claims. (Cl. 248—188.3)



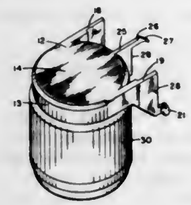
1. In a cabinet, a self-leveling support structure including a pair of inwardly extending plates attached to opposite sides of said cabinet, each of said plates including an inclined offset portion intermediate its ends, a retainer flange extending across said cabinet between said plates and attached to said plates, said retainer flange and said plates forming a bracket assembly, said offset portions of said plates forming spaced support surfaces which face each other and converge in the upward direction, and a mounting leg including an elongated, generally horizontal central portion with a downwardly extending support foot formed on each end thereof, each of said feet being formed with an arcuate outer edge, said mounting leg being received in the bracket assembly with each of said arcuate edges in sliding engagement with a corresponding one of said support surfaces.

3,222,022
MOUNTING FOR TELESCOPIC SIGHT
Alfred A. Akin, Jr., West Covina, Calif., assignor to David P. Bushnell, Altadena, Calif.
Filed Mar. 19, 1962, Ser. No. 180,437
3 Claims. (Cl. 248—205)



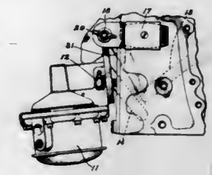
1. In combination, a clip for securing a telescopic sight to a gun, the clip being generally U-shaped in cross section, the clip having a bottom wall adapted to fit across the lower portion of a gun and side walls each joining the bottom wall at their respective lower edges and adapted to extend up along side portions of the gun, and a separate respective outwardly extending flange at the upper edge of each side wall, and a bracket for the telescopic sight, a pair of downwardly extending legs on the bracket to fit on the the outside of the flanges, and adjustable means for drawing the legs toward each other so they clamp the flanges and clip firmly to the gun.

3,222,023
JAR MOUNTING DEVICE
Earl O. Schweitzer, 29353 Luxona Ave., Wickliffe, Ohio
Filed Feb. 4, 1965, Ser. No. 430,332
9 Claims. (Cl. 248—225)



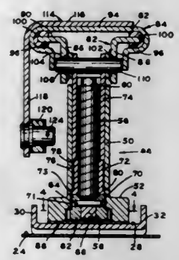
1. A mounting device for mounting a screw-type jar to a vertically extending perforated panel board, comprising, a cup-shaped plastic cap having a top face and downwardly extending cylindrical side wall means the inner surface of which is threaded to engage the screw threads on the jar, said plastic cap having two integral outer arms extending away from said side wall and on opposite sides of said cap and each arm terminating with hook means for extending through said perforated panel board and for engaging said board on the back surface thereof, and said plastic cap having a third integral inner arm located between the aforesaid two outer arms and extending radially outwardly from said side wall and terminating with hook means for extending through said perforated panel board and for engaging said board on the back surface thereof.

3,222,024
TOOLS FOR MOUNTING FUEL PUMPS ON ENGINES
Everett H. Newman, Duncan, Okla., assignor of one-half to M. J. Smothers, Amarillo, Tex.
Filed May 26, 1964, Ser. No. 370,237
4 Claims. (Cl. 248—316)



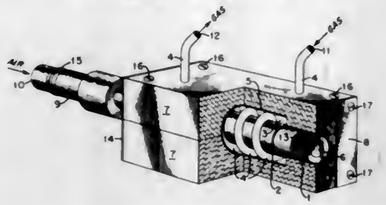
1. In an automobile engine of the V-8 type of the class wherein a fuel pump is mounted adjacent an opening in the block and is actuated by a push rod which is free-floating in the block near the opening, the combination with a push rod of a tool consisting of an arm having means for attaching the arm to the front end of the block, a shank attached to the arm and extending to the side of the block above the opening therein, a single blade of resilient material pivotally mounted on the shank and extending into the opening in the block, and a spring clip on the lower end of the blade frictionally and yieldably grasping the push rod in the block.

3,222,025
BUCKET SEAT ADJUSTER
Joseph Pickles, Dearborn, Mich., assignor to Ferro Manufacturing Corporation, a corporation of Michigan
Filed Apr. 23, 1964, Ser. No. 361,964
18 Claims. (Cl. 248—397)



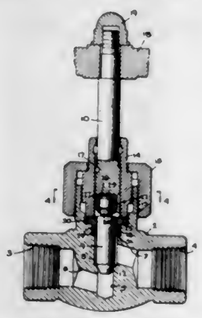
1. A seat adjuster mechanism comprising a base adapted to be securely fastened to the floor of a vehicle and extending from front to rear thereof, a track assembly spaced above and arranged substantially parallel to said base comprising a track and a slide for the seat, said slide being movable with respect to said track, a pair of substantially vertically extending actuating mechanisms mounted on said fixed base adjacent the front and rear ends thereof in the space between said base and track assembly for supporting said track assembly above said base, said actuating mechanisms each comprising a threaded support member and a threaded nut member mounted on said threaded support member for relative movement therebetween, first means operatively connecting one of said members of each mechanism to said track, second means operatively connecting the other member to said fixed base, said first means being effective to hold said track against substantial lengthwise displacement, and power operated means to drive the other member of each mechanism with respect to the corresponding member to vertically position said track and said slide.

3,222,026
LEAK VALVE
Joe T. Green, Orlando, Fla., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Mar. 1, 1963, Ser. No. 262,278
3 Claims. (Cl. 251—5)



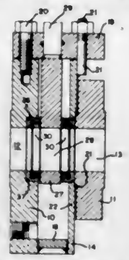
1. An adjustable leak valve comprising a housing provided with a cylindrical cavity therein, an expandable core disposed within said cavity, a resilient, flexible tube for connection to a source of gas, said tube being spirally wound on said core, the tube being in contact with the inner wall of said cavity, and means connected to said core to expand said core, thereby compressing said tube against the said inner wall of said cavity to change the cross sectional area of said tube.

3,222,027
VALVE WITH MEANS FOR PREVENTING ACCIDENTAL DISASSEMBLY
James F. Gilleeny, Waldwick, N.J., assignor to Hoke Incorporated, Cresskill, N.J., a corporation of New York
Filed Dec. 12, 1962, Ser. No. 244,121
2 Claims. (Cl. 251—264)



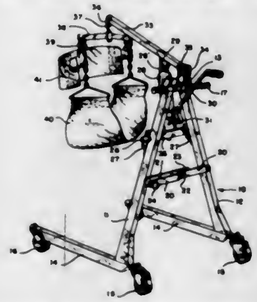
1. In a valve the combination of a valve body having spaced inlet and outlet ports and a seat, an integral outwardly extending hollow flange on said body, the hollow flange having both an internal polygonal surface and an external threaded surface, a valve stem guide mounted in said hollow flange and having an external polygonal surface for registry with the internal surface of the hollow flange, said guide having a threaded aperture therethrough and a restricted terminal portion around one end and concentric with the aperture, a valve stem aligned with said seat and having a point at one end for engaging the valve seat and having a threaded portion intermediate its ends for engagement with threaded aperture of the guide, a retainer threadedly mounted on said hollow flange for normally engaging and restraining the stem guide against movement along the valve stem whereby rotation of the valve stem within said threaded aperture moves the valve point toward or away from the valve seat, and said restricted terminal portion and the polygonal surfaces on the guide and the hollow flange cooperating to prevent rotation of the valve stem and the retainer when the stem threads abut the restricted terminal portion of the guide.

3,222,028
VALVE CONSTRUCTION
Marvin H. Grove, 340 Hillside Ave., Piedmont, Calif.
Filed Mar. 4, 1963, Ser. No. 262,738
1 Claim. (Cl. 251—327)



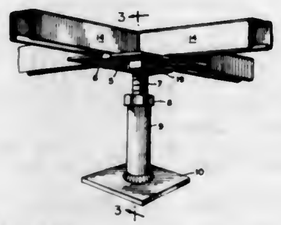
In a gate valve construction, a plate-like member having an opening therein forming a flow passage, a section of a structural steel channel positioned adjacent one side of said plate-like member, the edges of the flanges of said channel being welded to said plate-like member, the web of the channel having an opening therein in alignment with the openings in the plate-like member, a closure welded to one end of the channel and to the adjacent portion of said plate-like member, a bonnet plate secured to the other end of the channel and to the adjacent extremity of said plate-like member, a movable gate disposed within the channel, said gate being spaced from the web of the channel a distance substantially greater than its spacing from the plate-like member, an operating stem extending through the bonnet plate and connected to said gate, a second member positioned against the exterior surface of the web of the channel, said second member having an opening therein in alignment with said first named opening and forming a flow passage, means forming a seal between said second member and the web of the channel, clamping means extending between said members and serving to clamp the same against the channel, a pair of annular sealing assemblies interposed between the sides of the gate and the body, one of said sealing assemblies being accommodated in an annular recess formed in the said one plate-like member, and the other sealing assembly being accommodated within an opening formed in the web of the channel, both said members being adapted for making connections with associated piping.

3,222,029
INVALID LIFT
Victor R. Hildemann, Oshkosh, Wis., assignor to Ted Hoyer & Company, Incorporated, Oshkosh, Wis., a corporation of Wisconsin
Filed Jan. 20, 1964, Ser. No. 338,909
6 Claims. (Cl. 254—8)



1. A transportable invalid lift, comprising: an upright frame formed of a pair of legs pivotally associated at their upper ends, said frame legs being swingable from a position wherein they are drawn together in closely adjacent relationship to a diverging position wherein their lower ends are widely spaced; a pair of wheeled base members on and projecting outwardly from the lower ends of said frame legs; a hinged crossarm on and extending between said frame legs, said hinged crossarm being manually pivotal from a straight horizontal position wherein said frame legs are maintained in a diverging relationship to a jackknifed condition wherein said frame leg and base members are drawn together; a lift arm vertically-pivotally mounted on and projecting outwardly from the top of said frame, the outer end of said arm being adapted to have invalid-supporting elements removably secured thereto; a jack-supporting bar removably revolubly supported by and between said frame legs; a jack rotatably mounted on said bar and having an extendable piston detachably secured to said lift arm intermediate its length, said jack being adapted to raise the outer end of said arm; and operating means on said jack.

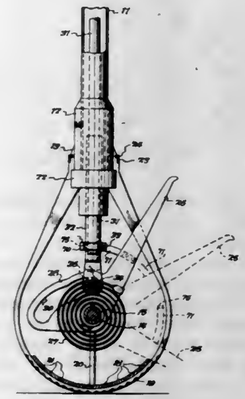
3,222,030
FLOOR STRUCTURE ELEVATING DEVICE
William J. Thorpe, Dearborn, Mich., assignor to Unistrut Corporation, Wayne, Mich., a corporation of Michigan
Filed June 22, 1964, Ser. No. 383,537
3 Claims. (Cl. 254—100)



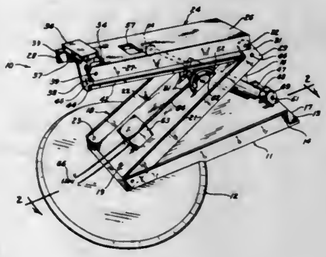
1. In combination
(a) a pair of channel shaped framing members each having a pair of longitudinally extending coplanar inturned flanges, the free edges of said inturned flanges being turned inwardly at substantially right angles to said inturned flanges to define a longitudinal recess therebetween,
(b) a plate having a planar surface for supporting said framing members in abutting and substantially coplanar position,
(c) said plate having a plurality of lugs formed of portions struck upwardly from said plate and extending upwardly from said surface and into said recess, each of said lugs being provided with upper lateral outwardly extending portions dimensioned to embracively engage said free edges of said inturned flanges and to urge said inturned flanges against said surface of said plate,
(d) a positioning base plate, and
(e) a threaded bolt and nut connection interposed between said plates to affect their vertical relationship.

3,222,031
LIFTING AND SUPPORTING DEVICE
John B. Gormley, 60 McClellan Circle, Buffalo, N.Y.
Filed Sept. 30, 1963, Ser. No. 312,427
13 Claims. (Cl. 254—114)

1. An adjustable supporting device including a base, an upright standard formed of telescopically arranged tubes, the outer of which is secured to said base and the inner of which is slidable within said outer tube, a lift rod extending into said inner tube and movable vertically up and down,
a gripping device releasably connecting said lift rod and said inner tube and forming a connection between said tube during upward movement of said lift rod,
means for supporting said inner tube in raised position, and including a gripping device connecting said inner and outer tubes and holding said inner tube against downward movement when said lifting rod is moved downwardly, said gripping devices being formed by wires woven in spiral form in opposite directions and contractable when the gripping device is stretched lengthwise.

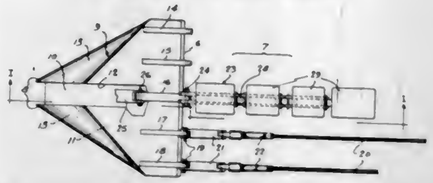


3,222,032
FOLDABLE LIFT DEVICE
Berthold W. Schneider, Des Moines, Iowa, assignor to Den-Tal-Ez Chair Manufacturing Co., Des Moines, Iowa, a corporation of Iowa
Filed Dec. 23, 1963, Ser. No. 332,745
8 Claims. (Cl. 254—124)



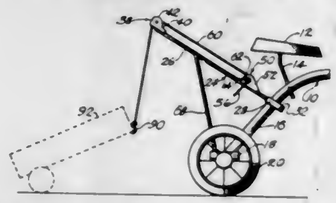
1. A lift apparatus comprising:
(a) base means,
(b) a first lift arm pivotally connected at one end to the base means,
(c) a second lift arm pivotally connected at one end to the other end of the first lift arm,
(d) fluid cylinder means pivotally connected at one end to the base and at the other end to said second arm means, and
(e) cam and cam follower means interconnecting said first arm means and said fluid cylinder means.

3,222,033
CONDUCTOR STRINGING RUNNING BOARD
Reginald G. Doel and Albert K. Jordan, Woodstock, Ontario, Canada, assignors to Timberland-Ellicott Limited, Woodstock, Ontario, Canada
Filed Dec. 16, 1963, Ser. No. 330,858
Claims priority, application Canada, July 25, 1963, 881,030
9 Claims. (Cl. 254—134.3)



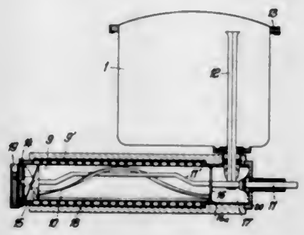
1. A running board for stringing conductors including travel through a traveller having a plurality of grooved sheaves comprising
(a) a rigid body having an undersurface portion extending uninterruptedly from front to rear,
(b) an articulated tail secured to the rear of said body to depend therefrom when the running board is oriented horizontally in use thereby to stabilize the running board against transverse tilting,
(c) attachment means for pivotal attachment of a plurality of conductors, said attachment means being mounted on said body at the rear thereof,
(d) and further attachment means for a pulling cable mounted on said body forwardly of said conductor attachment means,
(e) all said attachment means being located beneath said body in such location that cable and conductor connectors secured thereto project downwardly below said undersurface portion and below all the lowermost portions of said body to provide a substantially smooth transition between travel of the running board with the pulling cable running in a grooved sheave of a traveller and travel of the running board with said undersurface portion running on the sheave rims and travel of the running board with one or more conductors in said grooved sheaves.

3,222,034
TOY LIFTING DEVICE FOR CHILD'S VEHICLE
James R. Jackson, Cobb County, Ga.
(62 Hillside Ave., Smyrna, Ga.)
Continuation of application Ser. No. 184,910, Mar. 27, 1962. This application Mar. 12, 1963, Ser. No. 264,521
1 Claim. (Cl. 254—139.1)



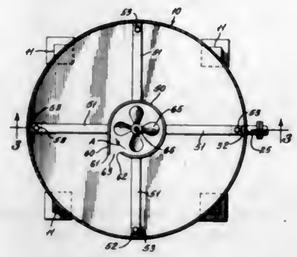
In a toy lifting device attached to a child's tricycle having a flat foot tread on the rear thereof and a frame member extending upwardly therefrom with a seat thereon,
(a) an elongated toy boom constructed from tubular metal,
(b) a U-shaped attachment member fastened on one end of said boom, and have spaced, aligned pairs of openings therein,
(c) bolt means inserted through the aligned openings in said U-shaped member attaching same to the frame member of said child's tricycle at an elevated position thereon between said seat and tread member,
(d) a pair of tubular support members each having the ends thereof flattened and each having bolt openings formed in the ends thereof,
(e) the ends of each of said members being attached to said boom member intermediate the length thereof,
(f) the other ends of said support members opposite from those recited in the preceding paragraph (e) being attached to said child's vehicle at spaced positions on the tread member to support said boom in inclined, protruding position from said child's vehicle,
(g) a wind-up pulley mounted on the end of said boom adjacent said vehicle,
(h) a guide means mounted on the terminal ends of said boom,
(i) a rope mounted on said take-up spool and adapted to be spooled thereon or extended therefrom,
(j) crank means attached with said wind-up means for rotating same,
(k) and ratchet means for stopping said wind-up means from unwinding and including a pawl member actuatable manually to release said rope to allow same to extend,
(l) whereby a child may operate said lifting device actually to lift an article to simulate the operation of a lifting vehicle.

3,222,035
APPARATUS FOR THE PREPARATION OF SOFT ICE OR MILK ICE
Hans Georg Lutz, Hans Hacker Str. 9, Kulmbach, Germany, and Waldemar Menzel, Siedlung 163, Burghaig, near Kulmbach, Germany
Filed Jan. 19, 1962, Ser. No. 167,323
Claims priority, application Germany, Jan. 21, 1961, G 31,440
2 Claims. (Cl. 259—25)



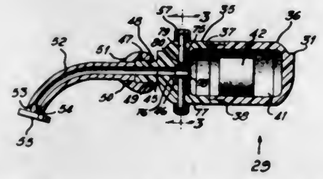
2. Apparatus for making a frozen food product such as milk ice arranged for dispensing the product in portions, said apparatus comprising a freezing kettle serving simultaneously as storage container for the ice product ready to be dispensed and including an air space maintained above atmospheric pressure, an ice mix supply container having an air space maintained above atmospheric pressure, feed means connecting said supply container to said storage container, means adapted to be connected to a source of compressed air for supplying air under pressure to said mix supply container, a wall extending transversely of said freezing kettle and into close proximity of the periphery thereof dividing said kettle into a receiving chamber and into a freezing chamber, and stirring means being disposed in said freezing chamber and having a shaft extending through said wall and said receiving chamber and projecting outwardly therefrom and said feed means extending from said supply container to said receiving chamber, said wall being in the form of a disk defining a narrow gap between the upper end thereof and the top of said kettle.

3,222,036
APPARATUS FOR PREPARATION OF SOLIDS IN LIQUID DISPERSIONS
Arvel O. Franz, Box 465, Cartersville, Ga., and Burton P. Lovinggood, Emerson, Ga.
Filed Feb. 7, 1963, Ser. No. 257,018
4 Claims. (Cl. 259—44)



1. Apparatus for producing a dispersion of particulate material in liquid comprising
a container for liquid to have particulate material introduced therein to form the dispersion,
a member supported within said container to provide a generally vertical passage therethrough,
means associated with said member adjacent the lower end thereof operable to induce flow of the liquid into a vortex path of predetermined direction and to draw liquid downwardly through said passage,
said member having an elongated upstanding inlet opening communicating with said passage, and
baffle wall means associated with said inlet opening to direct liquid moving in said predetermined direction into said opening and into said passage.

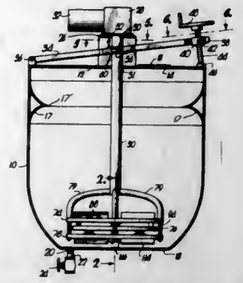
3,222,037
AMALGAM AGITATOR AND DISPENSER
Charles J. Thiel, 625 6th Ave., and Louis J. Michaels, 1210 6th Ave., both of Dayton, Ky.
Filed Oct. 18, 1961, Ser. No. 145,878
15 Claims. (Cl. 259—72)



2. Apparatus for loading amalgam into a tube comprising, a mixing chamber having an orifice, agitating means in said mixing chamber, an elongated tube mounted at one end on said mixing chamber at said orifice, said tube and orifice having substantially the same diameter, a valve in said orifice between said mixing chamber and said tube, and a removable stopper positioned in the other end of said tube.

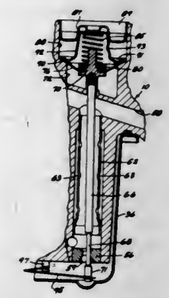
3,222,038
MIXING MACHINE
George W. Ashcraft, 5818 E. 12th St., Kansas City, Mo.
Filed Aug. 9, 1963, Ser. No. 301,102
7 Claims. (Cl. 259—105)

1. Apparatus for mixing products comprising:
a receptacle for receiving said products;
an inner disc and a pair of outer discs in parallel, coaxial relationship with one another, each of the discs having a plurality of apertures therethrough communicating opposed sides thereof;
means mounting the discs in the receptacle for rotation of the outer discs as a unit in one direction about said axis and for rotation of said inner disc in the other direction about said axis with the discs disposed in sufficiently closely spaced relationship



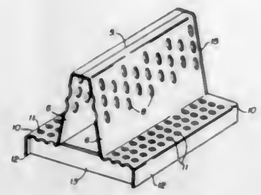
to one another to cause shear forces to be impressed upon said products when the discs are rotated; and
means operably coupled with said discs for driving the latter in said directions, whereby to produce said shear forces.

3,222,039
CARBURETOR
Vernon D. Newman, Normandy, and Charles E. Barry, St. Louis, Mo., assignors to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed Feb. 15, 1963, Ser. No. 258,870
2 Claims. (Cl. 261—69)



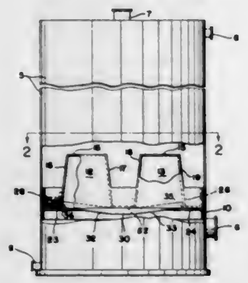
1. A carburetor comprising a body having an air and fuel mixture conduit therethrough, a main fuel passage within said carburetor body, means forming a restricted jet portion of said fuel passage, a metering rod movably mounted within said fuel passage and having a free end of varying thickness extending through said restricted jet passage portion, means attached to the other end of said rod for supporting said rod and for providing reciprocable motion of said rod along its longitudinal axis, and a spring biasing said free rod end against the wall of said jet passage portion, said spring consisting of a single strand of wire forming a single loop and having spaced outwardly biased ends each being formed with an arcuate portion, a stud projecting from said carburetor body in a direction substantially parallel to the longitudinal axis of said metering rod and closed spaced therefrom on the downstream side of said restricted jet portion, one arcuate end portion of said spring loop being fixed to said free rod end and the other arcuate end portion thereof being fixed to said stud, the movement of said rod along its longitudinal axis moving the end portion of said spring fixed to the rod relative to said end portion fixed to said stud whereby friction from said spring upon movement of said metering rod is minimized.

3,222,040
SUPPORT PLATE FOR PACKED TOWER
John S. Eckert, 3000 Millboro, Silver Lake, Ohio
Filed June 25, 1962, Ser. No. 204,907
5 Claims. (Cl. 261—94)



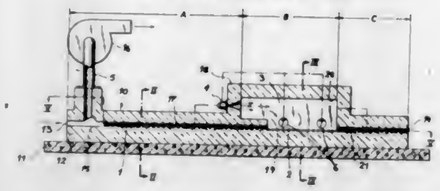
1. A support plate to support a bed of packing elements, which support plate is composed of sections adapted to be supported only at their ends, each section being of metal, the upper portion of the support plate being generally arched in cross section, the distance between the sides of the arch gradually widening from a location adjacent the top of the arch to a location adjacent the bottom of the arch, the walls of the arch being perforated at least in the upper part of each, a perforated base portion extending horizontally outward from the bottom of each wall of the arch with the outer edge thereof turned down at right angles from a location adjacent one end of the section to a location adjacent the other end of the section whereby the weight of packing elements which the section can carry is materially increased, the middle of said sections, at least, being braced to maintain the strength and shape of the section.

3,222,041
SUPPORT PLATE
John S. Eckert, 3000 Millboro, Silver Lake, Ohio
Filed Mar. 21, 1963, Ser. No. 266,979
7 Claims. (Cl. 261—94)



1. A metal support plate for a gas-and-liquid treating tower with at least one riser which tapers upwardly and extends from one end to the other of the plate, and with a base portion extending horizontally outward from the base of the wall of each riser in the same horizontal plane, there being no base under the riser, said base portions being integral with the bottoms of the riser walls, the risers and base portions being perforated; at least one reinforcing bar on the undersurface of the support plate and extending transversely of said riser with one end welded in abutting relation to the inner surface of the riser wall which is adapted to be adjacent the wall of the tower and the other end welded to the support plate against its opposite edge, the edge of each base portion being turned up with each edge of a turned-up portion welded to the adjacent wall of a riser.

3,222,042
ANNEALING FURNACE
Karl Fritz, Feithstr. 25, Hagen, Westphalia, Germany
Filed Sept. 6, 1963, Ser. No. 307,259
Claims priority, application Germany, Sept. 12, 1962, O 6,699
6 Claims. (Cl. 263—3)



1. A furnace for continuously annealing elongated metal stock passing longitudinally through said furnace, comprising:

a housing forming an elongated transport path for said stock from an inlet end to an outlet end of said housing;

first means defining in said housing a plurality of generally horizontal, parallel, longitudinally extending, circumferentially enclosed passages for said stock, said passages having respective entrances generally in the region of said inlet end and extending over a relatively major fraction of the length of said path;

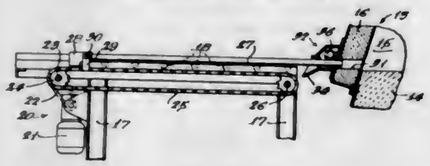
second means defining a generally horizontal, upwardly open channel for said stock communicating with said passages forwardly thereof along said path and remote from said entrances;

a downwardly open burner chamber formed in said housing at a location above said channel and communicating therewith while extending therealong over a length of said path less than the length of said passages;

burner means in said chamber for generating a heating gas by combustion of fuel; and

means including an exhaust compartment at said inlet and communicating with said passages and an exhaust blower for drawing said gas from said chamber in a direction counter to the direction of displacement of said stock whereby substantially all of the gas generated in said chamber is withdrawn therefrom along said passages.

3,222,043
FURNACE TRANSFER MECHANISM
Vincent R. Troglione and Jonathan Smith, Meadville, Pa., assignors to Sunbeam Equipment Corporation, Meadville, Pa., a corporation of Delaware
Filed Apr 17, 1964, Ser. No. 360,510
5 Claims. (Cl. 263—6)



1. Heat treating apparatus comprising a furnace enclosure having an entrance through which work to be heat treated may be inserted, a movable door for said entrance, work transfer mechanism including a longitudinally movable rod, said door being formed with an opening through which said rod may extend, means for reciprocating the rod through said opening to transfer work within said enclosure, sealing means for said opening including a ball seated by gravity in a seat member, said ball and seat member sealing said opening into said enclosure, means guiding said rod into engagement with said ball whereby said ball is displaced out of sealed engagement with said seat member permitting said rod to enter said enclosure.

3,222,044
APPARATUS FOR DELIVERING A FLUID INTO A FURNACE
Richard F. Obenchain, Pittsburgh, Pa., assignor to Koppers Company, Inc., a corporation of Delaware
Continuation of application Ser. No. 840,635, Sept. 17, 1959. This application Oct. 11, 1962, Ser. No. 229,796
2 Claims. (Cl. 266—41)



1. A lance for feeding oxygen to the molten bath of metal in a metallurgical furnace comprising:

(a) first, second, and third concentric spaced apart tubular members with the innermost first tubular member being adapted to feed the oxygen into said furnace;

(b) a collar member fixed to the first and to the intermediary second tubular members adjacent one pair of ends whereby one end of a first annular space between said first and second tubular members is closed;

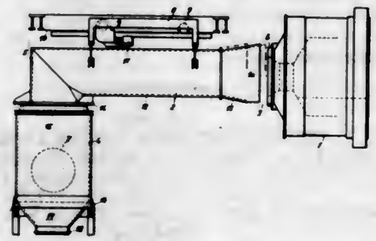
(c) means connecting the other end of the first tubular member and the adjacent end of the outermost third tubular member whereby one end of a second annular space between said first and third tubular members is closed;

(d) flexible means connecting the free end of said third tubular member and said collar whereby the other end of the second annular space is closed and whereby said third tubular member can expand when heated relative to said first and second tubular members;

(e) means to flow cooling liquid into said first annular space adjacent its closed end whereby said liquid courses said first annular space longitudinally and courses a third annular space between said second and third tubular members; and

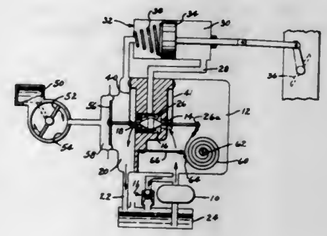
(f) means to conduct said liquid from said third annular space.

3,222,045
METHOD AND APPARATUS FOR WASTE HEAT ECONOMY IN ROTARY CONVERTER PLANTS
Edgar Spetzler, Oberhausen, Rhineland, Germany, assignor to Huttenwerk Oberhausen A.G., Oberhausen, Germany
Filed Nov. 19, 1962, Ser. No. 238,365
Claims priority, application Germany, Jan. 10, 1962, H 44,570
5 Claims. (Cl. 266—35)



1. Apparatus for effecting efficient burning of combustibles in hot waste gas including converter means having an opening for discharging the waste gas, a pipe having an opening at least the same size as said converter means opening being axially aligned therewith but spaced therefrom, means mounting the pipe for movement so that the opening thereof is moved in parallel relation to the converter means opening a selective distance to control the amount of air drawn through the space between the converter means opening and the pipe opening by the flow of waste gas through the opening and to pass only substantially sufficient air to the waste gas to burn the combustibles therein, a stationary cinder collecting chamber positioned adjacent the end of the pipe remote from the converter, means for slidably connecting the chamber to the pipe so that the chamber receives the waste gas from the pipe regardless of the position thereof relative to the converter means, said chamber having a waste gas outlet at its side, and a movable closure for the bottom of the chamber.

3,222,046
SPIRAL SPRING CONSTRUCTION FOR SPEED GOVERNORS
Robert H. Thorner, 19754 Monte Vista, Detroit, Mich.
Filed Aug. 27, 1962, Ser. No. 219,710
7 Claims. (Cl. 267—1)

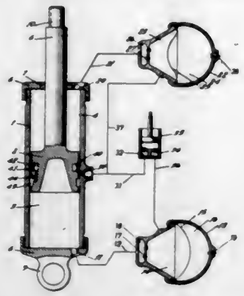


1. In a mechanism having an element requiring spring means to produce forces biasing said element, the combination of: means comprising a spiral spring acting on said element to produce said biasing forces, swingable means connected at substantially one end thereof to a portion of said spiral spring and acting in a direction to constrain said portion from moving in a direction opposite to the direction of said biasing force due to the reaction thereof for preventing at least the outer coil of said spiral spring from contacting the other coils thereof as said spring is wound, and said swingable means including means connected at substantially the other end thereof to a fixed support.

3,222,047
SEALING ARRANGEMENT FOR PISTON OF SUSPENSION UNIT FOR MOTOR VEHICLES
Franz Tuczek, Eltorf (Sieg), Germany, assignor to Boge G.m.b.H., Eltorf (Sieg), Germany, a firm of Germany
Filed Aug. 12, 1963, Ser. No. 301,429
Claims priority, application Germany, Sept. 13, 1962, B 68,831
8 Claims. (Cl. 267—64)

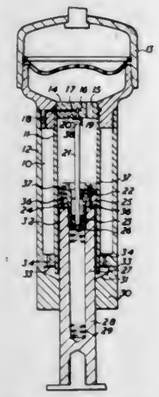
1. A hydropneumatic suspension device for motor vehicles comprising, in combination: a cylinder having piston means reciprocable therein dividing said cylinder into a high pressure and low pressure fluid chamber, said piston means having first and second axially spaced and circumferentially arranged annular grooves and a fluid passageway provided therebetween; a piston ring seated within radially outward portions of said first groove engaging the wall of said cylinder for sealingly separating said chambers; and said cylinder having a fluid pressure relief

port associated with fluid pressure control means, said port being located for periodic juxtaposition with said



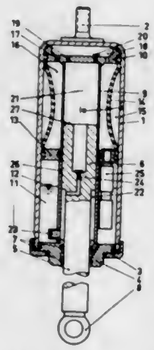
second groove to relieve the fluid pressure in said first groove when said motor vehicle is in motion.

3,222,048
HYDRO-PNEUMATIC SUSPENSION UNITS FOR VEHICLES
Douglas Bryan Wilkins, Solihull, England, assignor to Girling Limited, Birmingham, England, a British company
Filed Oct. 17, 1963, Ser. No. 316,905
Claims priority, application Great Britain, Oct. 17, 1962, 39,245/62
9 Claims. (Cl. 267—64)



1. A hydro-pneumatic suspension unit for a vehicle adapted to act as a self-adjusting strut comprising a cylinder having a first end and a second end, a pressure chamber communicating with one end of the cylinder and containing a gas and a liquid, a piston member working in the cylinder, a piston rod member at one end carrying said piston and at its other end projecting from the other end of said cylinder, a working chamber in said cylinder between said one end and said piston, a pumping chamber in said cylinder between said piston and said other end of said cylinder, a first one-way valve in said piston to allow liquid flow from said pumping chamber into said working chamber, a reservoir for liquid, passage means connecting said reservoir to said pumping chamber, a second one-way valve associated with said passage means to allow liquid flow from said reservoir into said pumping chamber, outlet means from said working chamber located at said one end of the cylinder, means defining a passage connecting said outlet means and said reservoir directly, a valve co-operating with said outlet means, spring means engaging said valve to bias said valve to a position closing said outlet means whereby said valve maintains said outlet means closed while said piston occupies a first range of positions relative to said cylinder, and mechanical means co-operating with said piston and said valve to move said valve positively to open said outlet means when said piston moves into a second range of positions relative to said cylinder, the position of the piston in said first range, when the piston is about to enter said second range, corresponding to the preferred adjusted length of the unit.

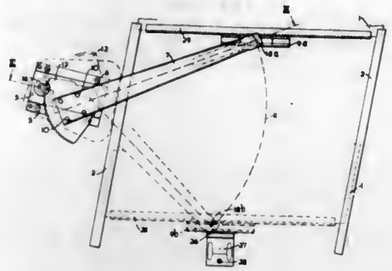
3,222,049
HYDROPNEUMATIC SUSPENSION UNIT
Franz Tuczek, Eitorf (Sieg), Germany, assignor to Boge G.m.b.H., Eitorf (Sieg), Germany, a firm of Germany
Filed Dec. 5, 1963, Ser. No. 328,341
Claims priority, application Germany, Dec. 7, 1962, B 69,899
6 Claims. (Cl. 267—24)



1. In a hydropneumatic suspension device of the self-pumping type for motor vehicles comprising: a cylinder providing a cylinder chamber and a pump chamber located remote from said cylinder chamber; a piston reciprocably disposed within said cylinder and in working relationship to said cylinder and pump chambers; a housing axially extending forming an outer chamber around said cylinder; an annular partition member disposed in said last mentioned chamber transversely between said housing and said cylinder for establishing a sealingly disconnected first and second portion within said housing, said first portion providing a high pressure chamber and said second portion providing a fluid reservoir; a flexible partition coaxially disposed relative to said cylinder dividing said first portion into two compartments, one of which is filled with gas under relatively high pressure and the other with a hydraulic medium; means for establishing and controlling fluid intercourse between the compartment containing the hydraulic medium and the cylinder chamber; means for establishing and controlling fluid intercourse between the fluid reservoir of said second portion and said pump chamber; and a pressure relief valve operably secured to said annular partition member for establishing fluid communication from said high pressure chamber directly to said fluid reservoir when the fluid pressure in said high pressure chamber exceeds a predetermined value.

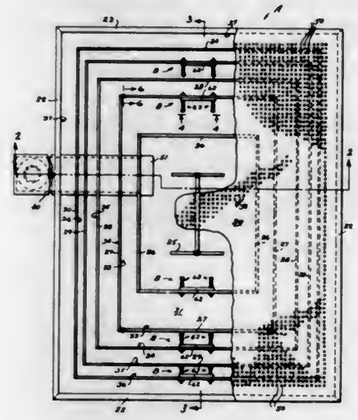
3,222,050
VEHICLE WINDOW REGULATORS
Norman Sidney Moss, Shirley, Solihull, England, assignor to Wilmot-Breeden Limited, Birmingham, England
Filed June 19, 1961, Ser. No. 117,967
Claims priority, application Great Britain, June 18, 1960, 21,503/60
1 Claim. (Cl. 268—126)

In a vehicle having a window and guide means for guiding vertical movement of the window along a path that is curved in a vertical direction and is inwardly concave and outwardly convex, a window raising arm connected to the window, means mounting the window raising arm for vertical swinging movement about an axis fixed relative to said guide means in an inwardly inclined relationship to the longitudinal axis of the window and inclined at an



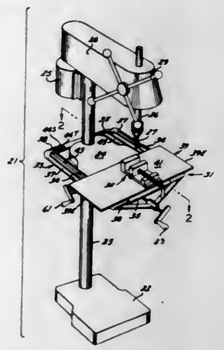
angle less than a right angle with the longitudinal axis of the window as viewed in plan, said mounting means including means for restricting movement of said arm remote from said fixed axis to a path that is curved in a vertical direction and is inwardly concave and outwardly convex as viewed in the direction of said longitudinal axis.

3,222,051
VACUUM COPY HOLDER
Edmund J. Bevilacqua, Kensington, and George F. Moyer and Douglas F. Muir, Jr., Silver Spring, Md., assignors, by direct and mesne assignments, to Elmer F. Blanchard
Filed Nov. 30, 1962, Ser. No. 241,306
13 Claims. (Cl. 269—21)



1. A vacuum copy holder including a receptacle having a plurality of sides, said sides defining a chamber in said receptacle, one of said sides forming a material receiving face adapted to receive copy and provided with a plurality of spaced and distributed openings leading individually into said chamber, a plurality of walls mounted within said chamber and dividing said chamber into a plurality of channels, each of said channels opening to said material receiving face through a predetermined number of the spaced and distributed openings leading to said chamber, exhaust means opening into at least one of said channels for reducing the air pressure therein, baffle means, said baffle means being juxtaposed with respect to said exhaust means to divert air exhaust flow from the direction of the spaced and distributed openings adjacent the opening of said exhaust means and to distribute the air pressure reduction effect of said exhaust means throughout the channel area with which it intercommunicates, and valve means for establishing air flow communication between said channels.

3,222,052
CONTROLLABLY ADJUSTABLE MOUNTING MEANS
Francis Freda, 1522 N. Boylston St., Los Angeles, Calif.
Filed Oct. 18, 1963, Ser. No. 317,267
12 Claims. (Cl. 269—69)



1. Controllably adjustable mounting means for mounting an object in a selected relationship with respect to an auxiliary support member, comprising: telescopic framework means lying substantially in a selected plane and being of substantially rectangular configuration including two longitudinal laterally spaced substantially parallel outer tubular sleeve elements, two longitudinally spaced laterally directed substantially parallel outer tubular sleeve elements, two longitudinally directed laterally spaced substantially parallel inner slide elements longitudinally relatively slidably received within said two longitudinal outer tubular sleeve elements for longitudinal sliding movement relative thereto, and two longitudinally spaced laterally directed inner slide elements laterally relatively slidably received within the corresponding two longitudinally spaced laterally directed outer tubular sleeve elements for lateral sliding movement relative thereto; a mounting member rigidly firmly attached with respect to said laterally spaced longitudinally directed outer sleeve elements for longitudinal sliding movement therewith; at least one attachment member connected with respect to said longitudinally spaced laterally directed outer sleeve elements for lateral sliding movement therewith and being provided with fastening means for fastening said attachment member to an auxiliary support member; controllably operable longitudinal extension and retraction actuator means including two relatively movable portions with one of said relatively longitudinally movable portions being connected with respect to at least one of said laterally spaced longitudinally directed inner slide elements of said framework means, and with the other of said portions being connected with respect to at least one of said laterally spaced longitudinally directed outer tubular sleeve elements carrying said mounting member for relative longitudinal movement with respect to said inner slide elements in response to operation of said longitudinal actuator means; and controllably operable lateral extension and retraction actuator means including two relatively movable portions with one of said relatively movable portions being connected with respect to said attachment member connected relative to said longitudinally spaced laterally directed outer sleeve elements, and with the other of said portions being con-

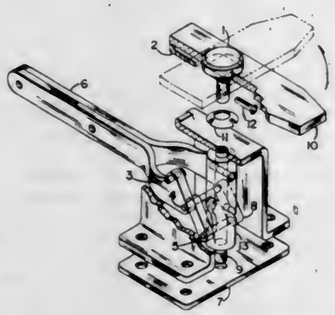
nected with respect to at least one of said laterally spaced longitudinally directed inner slide elements of said framework means for relative lateral movement thereof in response to operation of said lateral actuator means.

3,222,053
TOOLMAKER'S CLAMP
Anton M. Severdia, Portola Valley, Calif. (% Severdia Manufacturing Co., 1590 Laurel St., San Carlos, Calif.)
Filed Aug. 16, 1963, Ser. No. 302,572
3 Claims. (Cl. 269—91)



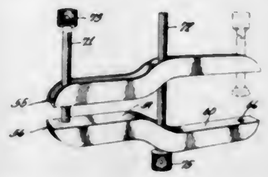
1. A machinist's clamp comprising a rod threaded at least on its upper end, means for securing an end of said rod to a supporting base, a clamp bar formed with an aperture for said rod and extending outward laterally of said rod for engagement with a workpiece on said support, a nut in threaded engagement with said rod positioned to apply pressure on the upper surface of said clamp bar having a downward extension through said aperture, a helical spring surrounding said rod and bearing against the bottom surface of said clamp bar, and abutment means on said extension below said spring restricting movement of said spring away from said clamp bar.

3,222,054
CLAMPING DEVICE
Anthony A. Bisulca, 45 Elwood Road; James W. Cunningham, 52 Tidewater Ave.; and Andrew A. Warenius, 47 James St., all of Nassau County, N.Y.
Filed May 29, 1962, Ser. No. 198,575
3 Claims. (Cl. 269—93)



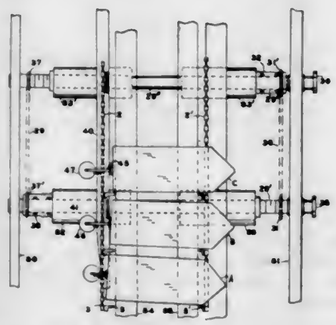
1. A workpiece holding clamp comprising, a base frame, a heel frame connected thereto, a barrel cam activated center post including a helical slot terminating between the ends thereof, said post being confined within said heel frame by means of a pivot pin slidably and pivotally engaging said post at one end, a clamping arm, a clamping arm actuator member connected to the other end of said post, said actuator member passing through said clamping arm and through a spring washer positioned between said clamping arm and said heel frame, a handle pivotally connected to said heel frame, linkage means pivotally connected to said handle, and a rivet connected to said linkage means, said rivet being slidably engaged in the slot of said post.

3,222,055
CLAMPS
Cedric E. Cook, Rte. 3, Box 163, Cortland, Ohio
Filed Nov. 15, 1963, Ser. No. 324,011
4 Claims. (Cl. 269—219)



1. A parallel clamp, comprising a pair of jaws in overlying relation and having paired aligned openings adjacent each end and intermediate said ends, one opening in each pair being threaded, a pair of hand screws connected between said jaws and providing for parallel adjustment of said jaws toward and away from each other, one screw being threaded through the threaded one of the intermediate pair of openings and having its end seating in the unthreaded one of such openings, and the other screw being threaded through the threaded one of one end pair of openings and having its end seating in the unthreaded one of such openings, whereby the jaw portions at the other pair of end openings are operable to clamp a workpiece therebetween, said hand screw at said one end pair of openings being removable therefrom and similarly engaged with said other pair of end openings, whereby the jaw portions at said one pair of openings may now be utilized to clamp a workpiece therebetween.

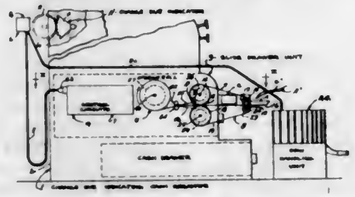
3,222,056
ALIGNMENT MEANS FOR CONVEYOR
Floyd A. Lyon, Brookville, and Clement R. Konazewski, Glen Cove, N.Y., assignors to Halm Instrument Co., Inc., Glen Head, N.Y.
Filed Mar. 19, 1962, Ser. No. 180,899
1 Claim. (Cl. 271—2)



Conveying means for blanks having one straight end and one irregular end,
a pair of bottom rails to support said blanks,
a pair of driven chains extending parallel to said rails,
a plurality of locating pins mounted on and equally spaced along said chains, said pins extending above said rails and being adapted to push blanks along said rails,

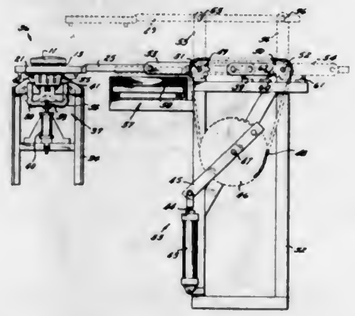
and means to align blanks having one straight end and one irregular end comprising means to push and align said blanks in one direction with reference to one side only of said conveying means comprising,
a plurality of side pushers pivotally mounted on one side on one of said chains,
a long tapering side rail cam mounted along one of said bottom rails, said cam being adapted to activate each of said pushers to gradually push the straight end of one of said blanks sideways into predetermined alignment as said pushers ride with said blanks in a horizontal plane for a distance equal to the lengths of at least four blanks.

3,222,057
APPARATUS AND METHOD FOR CONTROLLING AND RECEIVING AND/OR DISPENSING PAPER MONEY
Joseph M. Couri, 1002 W. St. James St., Peoria, Ill.
Filed Nov. 29, 1961, Ser. No. 155,774
40 Claims. (Cl. 271—3)



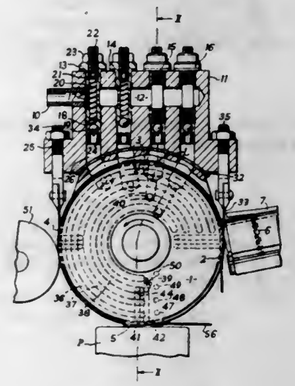
1. In combination,
(a) reversible rotary means to move successive currency bills into and out of storage,
(b) adjacent, moving means to cooperate therewith to separate such successive bills to prevent overlapping thereof at least while they are being mechanically moved towards storage, and
(c) means to separately control and actuate said first two means.

3,222,058
APPARATUS FOR COVERING BERRY BOXES AND THE LIKE
Curtis M. Beacham, 5226 Park Lake Road, East Lansing, Mich.
Filed May 20, 1963, Ser. No. 281,427
5 Claims. (Cl. 271—26)



1. In a device for pick up and positioning of sheets of thin stock such as cellophane sheets the combination including:
(a) a movable annular frame providing a hollow peripheral structure said annular frame defining an opening peripherally inwardly;
(b) a stretcher flap extending from said frame and diminishing said opening defined by said frame;
(c) and depending vacuum pick up elements secured to said frame on the underside thereof and outside said opening defined by said frame.

3,222,059
SUCTION APPARATUS
Frederick Southcott, London, England, assignor to The Molins Organisation Limited, London, England, a corporation of Great Britain
Filed Dec. 17, 1962, Ser. No. 245,220
7 Claims. (Cl. 271—28)

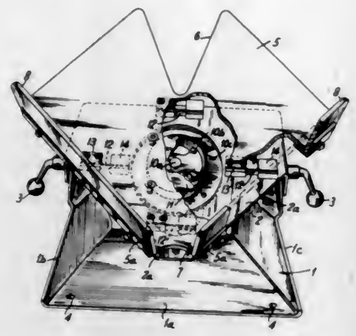


1. Suction apparatus for transferring articles serially from a first position to a second position, comprising a rotatable drum having a series of openings at a plurality of suction stations at each of which one of said articles can be suctionally held to the drum, a common source of suction, conduit means by which each suction station can communicate with said source and individual valve means in said conduit between each suction station and said source, each valve means comprising a seat and a valve member, said valve member being biased away from said seat to open the valve to free passage of air, and an air-leak passageway between said valve member and said seat affording restricted passage of air when the valve is closed.

3,222,060
JOGGING MACHINE
Åke Waldemar Svantesson, Bandhagen, Sweden, assignor to Lindaco Aktiebolag, Stockholm, Sweden, a company of Sweden
Filed Dec. 2, 1963, Ser. No. 327,287
Claims priority, application Sweden, Jan. 8, 1963, 158/63
8 Claims. (Cl. 271—89)

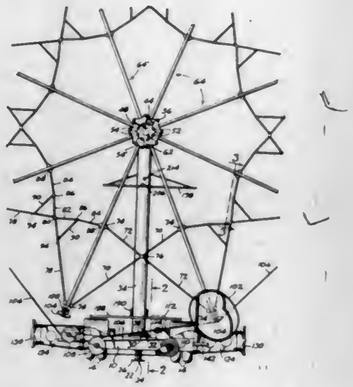
1. A jogging machine for aligning the edges of sheet material such as paper leaves comprising a base, a table for holding a pile of leaves adapted to be supported on said base in a slanting position with one corner lowermost, first and second adjacent side walls on said table extending substantially perpendicularly outwardly therefrom for supporting two adjacent edges of the leaves stacked on the table, spring means mounting said table on said base, and vibration means for causing vibration of said table connected to said table and carried thereby, said spring means being at least one leaf spring mounted in a plane extending substantially perpendicularly to said

table and to a bisector of the angle formed by said walls and resiliently supporting said table for movement paral-



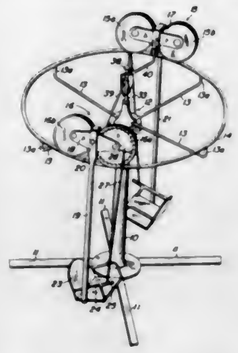
lel to the bisector of the angle formed by said walls upon actuation of said vibration means.

3,222,061
PORTABLE AMUSEMENT RIDE
Russell B. Eyerly and Ernest M. Johnson, Salem, Oreg., assignors to Eyerly Aircraft Co., Salem, Oreg., a corporation of Oregon
Filed Dec. 27, 1962, Ser. No. 247,664
14 Claims. (Cl. 272—29)



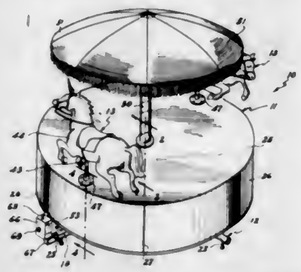
10. A portable amusement ride, comprising a frame, an elongated column supported at its lower end on the frame for pivotal movement on an axis extending transversely of the frame between an operative, vertical position and a folded, substantially horizontal position longitudinally of and over the frame, rotary spoke support means mounted at the upper end of the column for rotation on an axis substantially normal to the pivot axis of the column, means mounting a plurality of spokes on the support means for adjustment between an operative position in which the spokes radiate outwardly from the support means in circumferentially spaced relation, and a folded position in which the spokes are disposed in a substantially horizontal plane substantially parallel to each other and to the folded column, a plurality of carriages, and support means on each spoke for detachably mounting a carriage when the spokes are in unfolded operative position.

3,222,062
PASSENGER-DRIVEN CARROUSEL
Faustina Segna and Adriano Segna, both of 232 John St., Orillia, Ontario, Canada
Filed Apr. 8, 1963, Ser. No. 271,236
2 Claims. (Cl. 272—33)



1. A passenger-driven carrousel comprising in combination, a pedestal, a post tiltably mounted on said pedestal, a circular track surrounding said post and being supported thereby via track support arms extending outwardly from said post, a plurality of pairs of grooved wheels rotatably mounted on said circular track, each of said pairs of wheels being united by a cross-bar, a chair support arm pivotally suspended from each of said cross bars, a chair rockably supported at the lower end of each of said chair support arms, a ratchet drive arm pivotally attached at its lower end adjacent the forward portion of each of said chairs and at its upper end to a pawl mounted on each of said cross-bars on one of said pair of wheels, said pawl co-operating with ratchet teeth recessed in said wheel and causing rotation of said wheel when the chair therebelow is rocked, an arbor extending centrally upwardly from said post, a collar in sliding engagement on said arbor, and a plurality of connecting arms each pivotally connected at one end to one of said wheel cross bars and at the other end pivotally connected to said sliding collar.

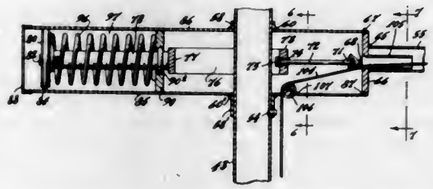
3,222,063
TOY MERRY-GO-ROUND
Harry Bloom, Brooklyn, N.Y., assignor to Bayshore Industries, Incorporated, Amsterdam, N.Y., a corporation of Maryland
Filed June 18, 1963, Ser. No. 288,664
9 Claims. (Cl. 272—48)



1. A child-carrying merry-go-round comprising a base, a turntable having a fully exposed depending peripheral skirt of resilient sheet metal with an elastomeric rim along the lower edge thereof, means mounting said turntable in vertically spaced relation to said base for rotation about a vertical axis, seat defining members mounted

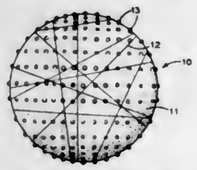
on said turntable and each adapted to carry a child, an electric motor having an elongated shaft, mounting means supporting said motor on said base at a location radially inward from said skirt and with said shaft extending horizontally under said rim substantially radially relative to said axis of rotation of the turntable, said mounting means permitting movement of said motor in directions having vertical components for displacing said shaft toward and away from said rim, and spring means urging said motor to move in the direction displacing said shaft toward said rim for frictionally driving said turntable.

3,222,064
POLE VAULT AND HIGH JUMP STANDARD
Harold F. Langton, 307 N. Main St., Pleasantville, N.J.
Filed Apr. 12, 1962, Ser. No. 187,054
2 Claims. (Cl. 272—59)



1. In a pole vault or high jump standard, an upright, a horizontal member supported by said upright comprising an arm, disc means on said arm, tangs extending from said disc means, a piston rod and piston pivotally attached to said disc means, a cylinder having slots normally receiving said tangs and a cylinder opening, said piston and rod slidably disposed in said cylinder, and a helical spring biasing said piston away from said cylinder opening.

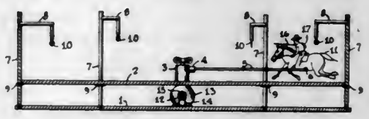
3,222,065
BALL CONSTRUCTION
Harold K. Dwork, 152 Sussex Ave., Newark, N.J.
Filed Nov. 22, 1961, Ser. No. 154,119
1 Claim. (Cl. 272—67)



A ball construction comprising a spherical rubber core, said core having a plurality of outwardly projecting protuberances spaced over the surfaces thereof, and a series of endless elastic bands stretched at random about said core whereby said endless bands are adapted to be randomly superimposed one on the other to form a covering for said ball to the extent permitted by the height of said protuberances projecting therefrom, said protuberances providing means for retaining the endless bands stretched over said core in position thereon whereby said bands may be disposed over any said core along any cord length thereof.

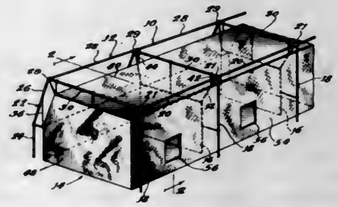
3,222,066
COW BOY TOURNAMENT GAME
Louis F. Durrell, 1710 W. Woodlawn Ave., San Antonio, Tex.
Filed Sept. 7, 1962, Ser. No. 222,234
2 Claims. (Cl. 273—1)

1. In a game, a circular track, a carrier movable around said track, a game piece mounted on said carrier to move therewith, said game piece including a spear, means for releasably supporting game rings adjacent to said track, normally above the line of travel of said spear, and manually operated means for elevating said game



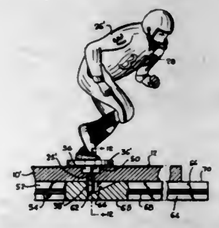
piece within a range of positions, with at least one position being in line with a game ring for spearing and removing said ring from its supporting means.

3,222,067
BASEBALL BATTING CAGE
Danny Litwhiler, 308 Mayo St., Tallahassee, Fla., and Murray G. Grabowsky, 933 1st St., Menominee, Mich.
Filed Nov. 6, 1962, Ser. No. 235,699
7 Claims. (Cl. 273—26)



3. A device of the character described comprising, in combination, a flexible rear wall, a flexible roof connected to the rear wall, a pair of side walls cooperative with the roof and the rear wall, a net front wall cooperative with the flexible roof and the side walls, said net front wall having a rectangular aperture approximating a strike zone for a batter and being observable through to permit the batter to observe a ball flying toward said net front wall, and means for supporting the rear wall, roof, side walls and net front wall.

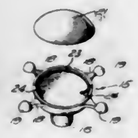
3,222,068
APERTURED GAME BOARD WITH SELECTIVELY ROTATABLE PEGGED PLAYING PIECES
Clinton J. Cowels, Jr., 72 Oakland St., Englewood, N.J.
Filed Sept. 16, 1963, Ser. No. 308,982
4 Claims. (Cl. 273—134)



3. A game in simulation of a regulation football game comprising a game board having a flat solid rectangular body, intersecting longitudinal and transverse lines applied to the top surface of said body, said lines defining square boxes, said body having socket holes therethrough at the centers of the square boxes, said holes having countersunk portions at the tops thereof, said countersunk portions being non-circular in cross section, playing pieces constituted by figures shaped to simulate football players in action, said figures supported on integral disc-shaped platforms, pegs depending from the centers of said platforms, said pegs having an enlarged upper end non-

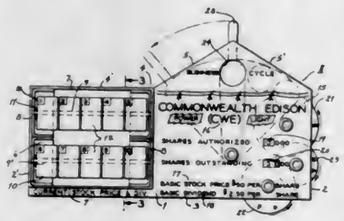
circular in cross section fitted in the countersunk portion and having a round portion extending through the hole and therebelow, the end of said round portion being curved, and means for engaging the curved ends of the pegs for moving the pegs upwardly and outwardly of the socket holes whereby the figures may be rotated.

3,222,069
ROULETTE GAME SPINNER
Constantino Ruizzo, Cranston, R.I. (55 Porter St., Providence, R.I.)
Filed May 14, 1963, Ser. No. 280,284
4 Claims. (Cl. 273—142)



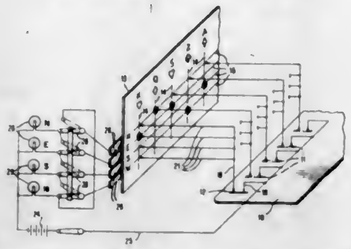
1. A spinning device for a roulette type game comprising a base, a rotatable member mounted on said base, a central vertical shaft extending from said member, means mounted on said shaft for manually spinning said rotatable member, a compartment in said manual spinning means, and a removable cover for said compartment, said compartment comprising a cup-shaped member, and said means mounted on said shaft comprising manually engageable arms extending integrally from the edge of said cup-shaped member, said cup-shaped member having slots extending downwardly from the upper edge to render said member resilient.

3,222,070
INDICATOR FOR STOCK MARKET GAME
Bernard L. Derrington, 2 Tyson Court, Florissant, Mo., and Gerald F. Brown, 3545 St. Joachim Lane, St. Ann, Mo.
Filed July 27, 1962, Ser. No. 212,951
3 Claims. (Cl. 273—148)



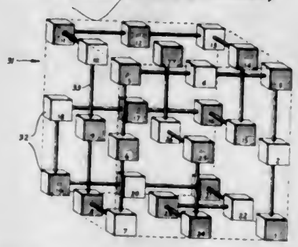
1. A table game involving simultation of investment in stocks of various corporations comprising data recording devices for each such corporation, each device comprising a flat base of relatively rigid and thin material, a plurality of openings provided in one zone of said base, at least one disk associated with each opening, said disks being rotatably mounted on the under-face of said base for exposure of a preselected radial portion through the related opening, spaced apart bearings mounted on said base member in another zone thereof, a shaft journaled in said bearings, and a three-sided stock valuation indicating member mounted on said shaft for rotation thereupon, stock valuations being presented on various of the sides of said indicating member.

3,222,071
PREARRANGED HAND PLAYING CARD DEALING APPARATUS
William Lang, 15 Herkimer Road, Scarsdale, N.Y.
Filed Feb. 14, 1963, Ser. No. 258,451
15 Claims. (Cl. 273—149)



1. A device for use in the dealing of predetermined hands of playing cards from a deck of cards in which each card contains a single indicium representing its suit and value, comprising means for sensing each of successively presented cards of a deck for the indicium representing the suit and value of the card, a selectively settable device pre-conditioned in accordance with a desired composition of hands, an indicator for each player, operating means therefor, and means jointly controlled by said sensing means and said settable device upon sensing the single indicium on a playing card for causing the operating means to operate the indicator associated with the player to whom the card is to be dealt.

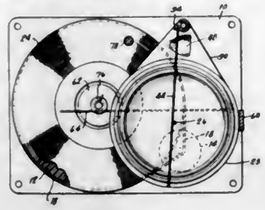
3,222,072
BLOCK PUZZLE
Allen F. Dreyer, Richmond, Calif., assignor to Universal Research, Berkeley, Calif., a partnership
Filed June 11, 1962, Ser. No. 201,393
12 Claims. (Cl. 273—157)



4. A block puzzle comprising a plurality of blocks all congruent with each other and in the shape of a regular polyhedron, and an elongated elastic string-like element extending between two terminal blocks and passing through the remainder of the blocks, said elastic string-like element being of such a length that it normally holds all adjacent blocks together while leaving them free for relative rotation around the string-like element as an axis, the faces of each block being unrelieved except for the faces having said elastic string-like element extending therethrough whereby all of the blocks may be oriented into a regular polyhedron with only said unrelieved faces of said blocks exposed.

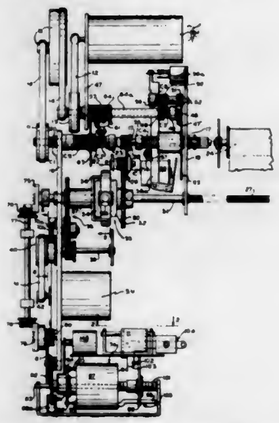
3,222,073
PHONOGRAPH FOR TOYS
Ben Degaetano, 177 White Plains Road, Tarrytown, N.Y.
Filed Apr. 1, 1963, Ser. No. 269,302
4 Claims. (Cl. 274—9)

4. In a toy sound producing apparatus of the type having a rotatable spirally grooved record and a pickup needle resiliently biased against said record and mounted on a swingable arm for translatory movement along said record as it turns, the improvement which comprises a generally wedge shaped cam element fixed on said swingable arm and facing on the needle side of said arm, an elongated cam actuator member mounted on said ap-



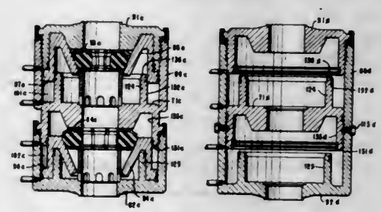
paratus for longitudinal movement against said cam element in a direction transverse to the direction of swing of said arm for lifting said arm and swinging it simultaneously to reposition said needle as said cam atcuator member is pushed against said cam element and spring bias means urging said cam actuator member away from said cam element.

3,222,074
DICTATING MACHINE
Richard K. Walker, Convent, N.J., assignor to McGraw-Edison Company, Elgin, Ill., a corporation of Delaware
Filed Jan. 22, 1963, Ser. No. 253,133
12 Claims. (Cl. 274—11)



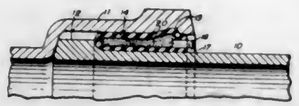
4. In a phonographic machine including a rotatable record support and a record cooperable translating device, and means mounting said translating device for traveling movement relative to the record support: the combination of a drive system for rotating said record support and for concurrently progressively advancing said translating device to cause said translating device to describe a helical track of uniform pitch on a supported record, a scan mechanism operable selectively to backspace and advance said translating device across track while said record support is at standstill, control means for said scan mechanism comprising a playback control for activating said scan mechanism in a backward direction, a forward scan control and means timed with said scan mechanism for maintaining operation thereof after return of either of said controls to a stop position until completion of movement of the translating device through the track pitch interval then underway whereby each scan movement is limited to an integral number of track pitch distances, an advance marker means for said translating device including a first marker switch operated by the translating device when the same is at least one full track pitch distance from its prior position of farthest advance, and means rendered operative by said first marker switch during a forward scan operation for stopping said scan mechanism when said translating device reaches its next in-track position and for thereupon starting said drive system.

3,222,075
UNDERWATER BLOWOUT PREVENTER
John A. Haeber, Houston, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Aug. 30, 1961, Ser. No. 134,939
2 Claims. (Cl. 277—9)



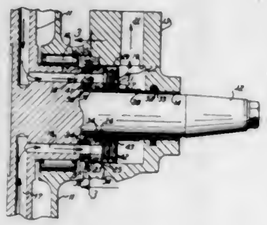
1. A blowout preventer for use on an underwater drilling wellhead assembly comprising a substantially cylindrical unitary housing, upper and lower closure plate members closing the top and bottom of said housing, one of said plate members being removable from said housing to open the associated end, a transverse wall member removably secured within said housing intermediate the ends thereof and removable through said openable end of said housing, connector means operatively securing said transverse wall member to said housing, said plate members and said transverse wall member having centrally-positioned and coaxially aligned openings therethrough for passage of a well member therein, said transverse wall member dividing the interior of said housing into first and second axially-spaced annular chambers while forming the bottom of said first chamber and the top of said second chamber, each of said chambers being of a size sufficient to contain a radially-contractible resilient packing member and a packing actuation means therefor, first and second annular resilient packing members carried within said first and second chambers adjacent the tops thereof, each of said packing members having a bore therethrough susbtantially the size of the aligned openings in said closure plate members, coaxially-located positioning means carried in each of said chambers for positioning said packing members in the upper ends thereof against vertical displacement, an annular piston-type packing-actuating member carried within each of said chambers and having a downwardly and inwardly tapering face at least a portion of which is arranged adjacent and in contact with the outer peripheral face of one of said packing members for applying a radially inwardly directed pressure thereto, an annular piston formed on each of said packing-actuating members as a part thereof, and inlet and outlet pressure fluid port means extending separately through said housing to expansible spaces on either side of each of said pistons within said chambers for introducing a pressure fluid, independently to one side of each of said pistons to force selectively each of said packing members radially inwardly.

3,222,076
PIPE JOINT PACKING
Albert A. Hollingsworth, Anniston, Ala., assignor to Woodward Iron Company, Woodward, Ala., a corporation of Delaware
Filed Apr. 24, 1962, Ser. No. 189,847
11 Claims. (Cl. 277—34)



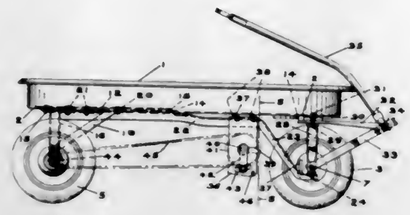
1. A fluid tight packing device for insertion between the mating surfaces of the hub and spigot ends of two adjacent pipe sections, comprising an annular, hollow ring of deflatable and inflatable material, the outer peripheral edge wall of said ring being provided with a thickened injection needle receiving member of penetrable, self-sealing material which intersects said peripheral edge wall and projects substantially, both internally and externally thereof, to provide laterally compressible areas respectively responsive to internal pressure of fill material introduced within said ring and external atmospheric pressure, to thereby serve as a double check valve.

3,222,077
CARTRIDGE-TYPE SEAL ASSEMBLY
Casmir J. Snabes, Garden City, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Dec. 31, 1962, Ser. No. 248,337
7 Claims. (Cl. 277—40)



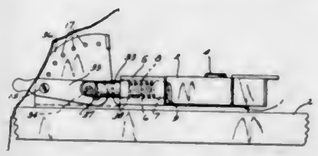
1. A sealing device to effect a pressurized fluid seal between a stationary member and a rotatable member, said rotatable member having at least one pressurized fluid discharge port in a face thereof, and said stationary member having a counterbore and a discharge conduit in communication with said counterbore; said sealing device being nonrotatably positioned in said counterbore and comprising a pair of concentric annular sealing elements with each sealing element being placed in abutment with said face on opposite sides of said port, a pair of concentric annular support members with each support member being in abutment with one of said pair of sealing elements respectively, and a generally cylindrically shaped housing sealingly received in said counterbore intermediate said face and said discharge conduit, said housing nonrotatably receiving said pair of sealing elements and said pair of support members, means for providing a seal between said pair of support members and said housing, said sealing elements being urged into sealing engagement with said face by an axial force exerted by pressurized fluid flowing from said port through said spaced support members to said discharge conduit.

3,222,078
COMBINATION WAGON
Robert E. Clarke, 1410 Saratoga Drive, Bel Air, Md.
Filed Jan. 15, 1964, Ser. No. 337,818
4 Claims. (Cl. 280—7.17)



1. A toy wagon, the combination with a body having a door and a door opening in the floor thereof, axles and a pair of supporting wheels thereon at the front and rear of the body respectively, an inverted U frame rigidly connected to the body and supporting the axle for the rear wheels, one rear wheel being rigidly connected to its axle, a beam rigidly connected centrally to said inverted U frame and body, supporting the latter and extending forwardly and downwardly and being centrally and horizontally pivotally connected to the axle of the front wheels, a second inverted U frame centrally and horizontally pivoted to the body and supporting said last named axle adjacent its ends, stabilizing the same for horizontal turning between the body and beam connections thereto, a bracket depending from said beam and rigidly connected therewith within the body door opening, a sprocket with pedals thereon supported by said bracket, a sprocket on the rear wheel axle and a chain connecting said sprockets.

3,222,079
ADJUSTABLE SPRING-LOADED POSITIONING DEVICE IN SAFETY-SKI BINDINGS
Hannes Marker, 37 Alpspitzstrasse, Garmisch-Partenkirchen, Germany
Original application July 17, 1961, Ser. No. 124,549, now Patent No. 3,172,677, dated Mar. 9, 1965. Divided and this application Nov. 18, 1964, Ser. No. 417,532
3 Claims. (Cl. 280—11.35)



1. An adjustable detent device for safety ski bindings, comprising:
- a cheek mountable on a ski in a position for engaging the toe of a ski boot, said cheek being pivotable about a first axis extending transversely of the ski and having recess means therein;
- a housing disposed adjacent said cheek and having an elongated passage therethrough;
- a ball disposed in said passage and being movable in a lengthwise direction therealong, said ball being partly extendable through one end of said passage for reception in said recess means to yieldably prevent pivotal movement of said cheek;
- a coil spring disposed within said passage and having one end thereof engaging said ball for urging same toward said one end of said passage;
- a pressure member engaging the other end of said spring and means supporting said pressure member for sliding movement lengthwise of the passage whereby the compression of said spring and thereby the force urging said ball toward said one end of said passage can be adjusted, said pressure member having an extended end extending away from said housing;
- operating means for effecting such lengthwise movement of the pressure member, said operating means including an operating member connected to the extended end of said pressure member and mounted outside of said housing for pivotal movement through an arc of less than 360 degrees around a second axis transverse of said passage, said second axis being spaced from the connection between said pressure member and said operating member for moving said pressure member lengthwise from its most remote position with respect to said one end of said passage to its closest position in response to pivotal movement of said operating member; and
- detent means for releasably holding said operating member in selectable intermediate positions between the ends of said arc.

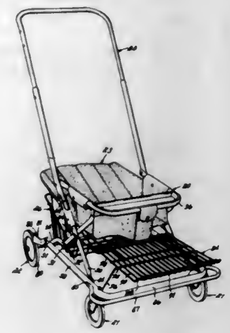
3,222,080
LOAD CARRYING AND RESCUE SLED
William T. R. Kinraide, 113 Virginia Road, Waltham, Mass.
Filed Oct. 10, 1963, Ser. No. 315,170
16 Claims. (Cl. 280—18)



1. A sled for use in carrying an injured skier or other load, said sled including an elongated, disk-shaped body to receive the skier and slidable on the ice and snow, a pair of handles, one for each side of said body, a saddle extending transversely of said body and including downturned ends, each overlying a side thereof, a brace for each end connected to said body above the bottom thereof, and transversely alined pivot means interconnecting each handle to said body and extending through the appropriate saddle end and the brace therefor, each handle including a keel and brake means for engagement with the ice and snow by swinging the handles in the appropriate vertical direction and to an appropriate extent.

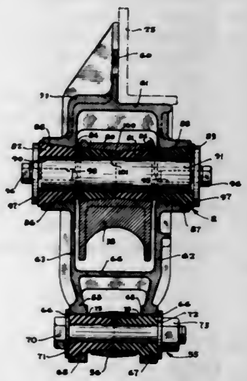
3,222,081
WALKER STROLLER
Major K. Harmon, Jr., Cincinnati, Ohio, assignor to The Frank F. Taylor Company, Cincinnati, Ohio, a corporation of Ohio
Filed Dec. 6, 1963, Ser. No. 328,597
3 Claims. (Cl. 280—36)

1. In a walker stroller having at each side a pair of crossed legs and wheels mounted adjacent the lower ends of said legs, and a seat supported by said legs, a foot supporting structure comprising,
- a generally planar, normally horizontal foot rest,
- at least one elongated front support pivoted at one end adjacent the lower end of a forward leg and at the other end to said foot rest,
- a U-shaped rear support having free ends pivotally connected to said legs and having a bight portion slidably receiving said foot rest,



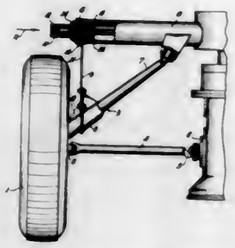
- cooperating detent means on said rear support and foot rest respectively for releasably holding said foot rest in an elevated horizontal position.

3,222,082
TANDEM SUSPENSIONS
John E. Raidel, Springfield, Mo., assignor to A. J. Industries, Inc., Springfield, Mo., a corporation of West Virginia
Filed Oct. 8, 1963, Ser. No. 314,735
5 Claims. (Cl. 280—104.5)



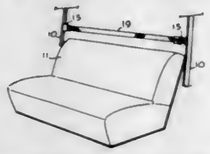
1. In a tandem suspension of the kind described wherein the tandem suspension is adapted to be secured to the frame of a vehicle and wherein elongated spring means have adjacent inner ends thereof engaging an equalizer beam, an equalizer bracket for attachment to the frame of the vehicle, a shaft means in said bracket for pivotally mounting said equalizer beam; resilient bearing means on said shaft means for supporting said equalizer beam for oscillatory movement within said supporting bracket; shaft supporting bearings disposed in said equalizer supporting bracket and supporting said shaft means for turning movement, said shaft supporting bearings having inner ends adapted to be abutted against opposed ends of said equalizer supporting bearings to load said equalizer supporting bearing means with predetermined compression forces; and a bearing separating means of a lower friction material than the resilient bearing material disposed between and secured to each of the opposed ends of said supporting bearing means and said shaft supporting bearing means.

3,222,083
WHEEL SUSPENSION FOR VEHICLES
Erich Stotz, Rommelshausen, Wurttemberg, and Karl Sommerer, Stuttgart-Zuffenhausen, Germany, assignors to Firma Dr. Ing. H.c.F. Porsche K.G., Stuttgart-Zuffenhausen, Germany
Filed Dec. 4, 1963, Ser. No. 328,029
3 Claims. (Cl. 280—124)



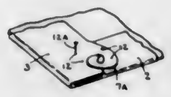
1. A wheel suspension for vehicles, especially motor vehicles having a vehicle superstructure, comprising:
torsion-resistant swinging strut means serving for purposes of wheel guidance,
torsion rod spring means operatively connected with said strut means,
and means rotatably supporting said swinging strut means at said vehicle superstructure including coupling sleeve means operatively connected with said swinging strut means and elastic joint means between said coupling sleeve means and said superstructure, said elastic joint means including bearing ring means arranged on each side of said swinging strut means, bushing means with slight friction value interposed between said bearing ring means and said coupling sleeve means, and means for clamping said bearing ring means against one another,
said bushing means being guided on said coupling sleeve means and being provided with flange means supported against said swinging strut means,
and said bearing ring means being provided with sealing lip means partially surrounding the flange means of the bushing means, said sealing lip means projecting beyond said flange means in the unstressed condition thereof.

3,222,084
WHIPLASH-PREVENTING SAFETY DEVICE
Joseph A. Hesen, Burbank, Calif., assignor to John B. Miller, Jr., Glendale, Calif.
Filed May 27, 1964, Ser. No. 370,499
4 Claims. (Cl. 280—150)



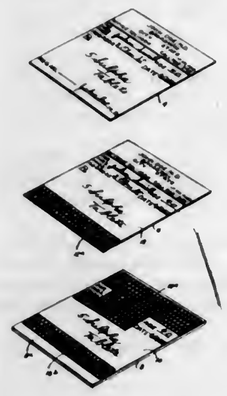
1. A whiplash-preventing safety device for use above an automobile seat, said safety device comprising:
a non-elastic support means positioned above the automobile seat, said support means including a collapsible pole assembly having a plurality of bolster members positionable above the seat so as to support the head of a person occupying the seat; and
clamp means for pivotally attaching said support means between frame members of the automobile, each of said clamp means including a jaw clamp having a pair of hinged clamp members for gripping the automobile frame member and a lever arm rotatably coupled to said pair of hinged clamp members for gripping said support means.

3,222,085
BOOK COVERS
Mamie Dodson Young, 3201 St. John Drive, Dallas, Tex.
Filed May 16, 1962, Ser. No. 195,295
4 Claims. (Cl. 281—34)



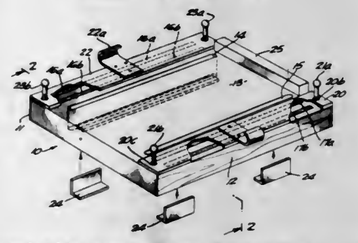
1. A covering structure for a book, comprising:
(a) a unitary, generally-rectangular body having a longitudinal axis and a transverse axis perpendicular to said longitudinal axis;
(b) said body having each of its corners cut out to define a cut-out edge curving inwardly toward said longitudinal axis and thence outwardly toward the transverse side edge of said body, and thereafter following a first straight line inwardly toward said longitudinal axis, a second straight line outwardly toward said side edge, a third straight line inwardly toward said longitudinal axis and a fourth line outwardly toward said side edge;
(c) a hook portion integrally formed at each of the corners of said body member adjacent the point at which said fourth line approaches said side edge of said body;
(d) said hook portion continuing as an extension of said fourth line, and, therafter, extending transversely outwardly, longitudinally inwardly, and transversely inwardly to form a hook having at least about 270 degrees of closure;
(e) said hook portion having a pair of transversely spaced perforations formed in the transverse outward section of said hook portion;
(f) said body portion having a second pair of perforations, transversely spaced the same distance as the said first pair of perforations, formed therein the same distance from said longitudinal axis of said body as said first pair of perforations;
(g) said first and second perforations being located and spaced such that, when the longitudinal flaps of said body are folded inwardly over the longitudinal edges of said book and the transverse flaps of said body are folded inwardly over the transverse edges of said book and over said longitudinal flaps, marks made on said longitudinal flaps by a marker passing through said perforations will define the terminal ends of a pair of parallel, longitudinal slits through which said hook portions can pass in hooking engagement with the longitudinally-formed, narrow bar between said slits;
(h) a first guide line formed on said body co-incident with the central transverse axis of said body;
(i) a plurality of pairs of second guide lines formed on said body and extending outwardly from each side of said first guide line toward the longitudinal edges of said body to form acute angles with said first guide line;
(j) said pairs of second guide lines being spaced from points adjacent the ends of said first guide line to points transversely spaced apart a distance substantially less than the height of the smallest book to be covered and given pairs of said second guide lines defining pairs of points at opposite corners of the spline of said book;
(k) a pressure-sensitive adhesive on the interior surface of said body adjacent each of the corners of said body member defined by said fourth line of said cut-out and said transverse side edge of said body;
(l) a removable, non-adhesive covering mounted over said pressure-sensitive adhesive; and
(m) said body being of sufficiently thin and pliable plastic material that cutting along said first guide line to the edges of the spline of a book and along said given pair of second guide lines to the corners of said spline and, thereafter, tucking the two resultant outwardly-flared tabs into the space between said spline and the bound back edges of the pages of said book, in a manner such that said tabs overlap one another at the first guide line cut, said tabs do not interfere with the closing of said book when so inserted.

3,222,086
METHOD AND MEANS FOR REPRODUCING WRITTEN SUBJECT MATTER INCLUDING DRUG PRESCRIPTION DATA
Raymond A. Gosselin, Wellesley, Mass., assignor to R. A. Gosselin & Company, Inc., Dedham, Mass., a corporation of Massachusetts
Filed Mar. 6, 1963, Ser. No. 263,332
1 Claim. (Cl. 282—23)



An improved prescription tablet comprising a plurality of multi-form units superimposed one upon another and adhesively secured together along one side thereof, each of said units comprising a patient's prescription copy, an underlying doctor's record copy and a bottom data processing pressure arresting copy, adjacent surfaces of each of said sheets bearing chemical coating means capable of reproducing on the upper surface of said underlying doctor's copy and said bottom data processing pressure arresting copy written characters when the characters are written with pressure on the outer surface of said patient's prescription copy, said patient's prescription copy having printed indicia adjacent the upper portion thereof for inserting the patient's name and other pertinent data relating to the patient, a blank space in the central portion thereof for writing the patient's prescription and printed indicia adjacent the bottom thereof for receiving the doctor's signature, said doctor's copy having printed indicia thereon adjacent the upper portion thereof corresponding to the printed indicia adjacent the upper portion of the patient's prescription copy and a blank space in the central portion thereof so that the patient's name and other pertinent data relating to the patient and the written prescription will appear on the doctor's copy, said doctor's copy having an ink bearing surface area composed of random printed designs underlying the printed indicia on the patient's prescription copy adjacent the bottom thereof so that the doctor's signature made on the patient's prescription copy will not be reproduced thereon, said bottom data processing pressure arresting copy having ink bearing surface areas composed of random printed designs adjacent the top and bottom thereof and a blank space in the central portion thereof, said ink bearing surface area composed of random printed designs adjacent the bottom portion on said bottom data processing pressure arresting copy underlying the printed indicia adjacent the bottom of the patient's prescription copy and the ink bearing surface area composed of random printed designs adjacent the upper portion underlying only a portion of the printed indicia adjacent the upper portion of the patient's prescription copy so that only certain parts of the details relating to the patient pressure written on the patient's prescription copy will appear thereon and the prescription pressure written on the patient's prescription copy will appear in the central portion thereof, said data processing pressure arresting copy being of a thickness sufficient to absorb the inscribing pressure made by the doctor when writing the prescription to prevent reproduction on the next underlying unit.

3,222,087
BOARD WITH MAGNET MEANS FOR HOLDING ACCOUNTING FORMS
William H. Keenan, 7546 Cowan Ave., Los Angeles, Calif.
Filed Nov. 12, 1963, Ser. No. 323,023
9 Claims. (Cl. 282—29)



1. A board with magnet means for holding accounting forms, comprising:
a substantially rectangular board having a flat writing surface;
a pair of holding means extending in parallel relationship along respective side portions of said board, and adapted to hold the side edges of respective sheets of paper whose main portions are disposed in superimposed relationship upon said writing surface of said board;
at least one of said holding means including a magnet and a magnetizable member, one of which is embedded in the surface of said board while the other is movable relative thereto;
said board having an elongated slot formed therein between said writing surface and said one holding means, whereby a third sheet of paper may rest on said writing surface beneath said first-mentioned sheets with its side edge extending into said slot;
and magnetic holding means cooperating with said slot for retaining said side edge of said third sheet of paper.

3,222,088
WELLHEAD CONNECTOR WITH DIAGONALLY DIRECTED LATCHES
John A. Haeber, Houston, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Oct. 30, 1961, Ser. No. 148,492
2 Claims. (Cl. 285—18)

1. A wellhead connector assembly comprising
a body member having a passage extending axially

therethrough, said body member being positionable and connectible in axially telescopic relation with a longitudinally projecting well member having an axial passage therethrough forming an unimpeded throughbore passing through said body member and said well member, said well member being of a size to fit within the passage of said body member,

cooperating connector means carried in the adjacent walls of said body member and said well member,

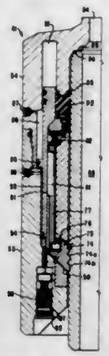
one portion of said connector means comprising shoulder means formed on the outer wall of said well member,

the other portion of said connector means comprising shoulder-engaging locking means carried by said body member in recesses in the adjacent wall thereof in a position for registering with said shoulder means,

at least the wall of each recess toward the end of the body member which is first in telescopic relation with said projecting well member being diagonally-directed toward said end of said body member,

said locking means being diagonally movable along said diagonally-directed walls of said recesses into and out of engaging relation with said shoulder means,

a plurality of circumferentially-disposed spring-finger actuating means carried by said body member for radial and axial movement relative to said body



member and being operatively connected to said locking means when urging said locking means to a locked position in engagement with said shoulder means whereby said engaged locking means prevents relative axial separation of said body member and said well member,

said diagonally-directed walls of said recess blocking movement of the locking means away from engagement with said shoulder means when forces are applied to separate axially said body member and said well member,

blocking means separate from and independent of said actuating means carried within said body member independently and outwardly of said locking means, said blocking means being movable to a position adjacent said locking means to block movement of said locking means from a locked position thereof,

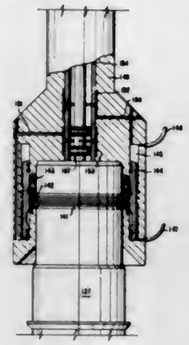
piston means operatively connected to said blocking means for moving said blocking means relative to and independent of said locking means, said body member having conduit means in the wall thereof which pressure fluid is communicable to said actuating means, and

annular packing means carried by one of said members on the wall carrying a portion of said cooperating connector means and axially-displaced therefrom for sealing off between the adjacent walls of said body member and said well member.

3,222,089
SECONDARY RELEASE MECHANISM FOR FLUID ACTUATED COUPLINGS

Lloyd G. Otteman, Metairie, La., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Nov. 9, 1962, Ser. No. 236,645
6 Claims. (Cl. 285—18)



1. An apparatus for selectively uncoupling a conduit from an underwater installation, said conduits having a substantially vertical passage through which a smaller-diameter conduit may be lowered, said apparatus comprising:

a lockdown assembly secured to the conduit adjacent a free end thereof said lock-down assembly having a substantially vertical passage in register with the passage of said conduit;

a lockdown receiver fixed to the underwater installation, said receiver being dimensioned to receive said lockdown assembly in telescopic engagement therewith;

locking means carried by said lockdown assembly and being moveable with respect thereto into and out of locked engagement with said lockdown receiver when said assembly is in telescopic engagement with said receiver;

fluid pressure operated actuating means carried by said lockdown assembly and operatively associated with said locking means to move said locking means at least to unlocked disengagement with said receiver;

said manifold including at least two separate passageways for conducting pressurized fluid to said actuating means, said passageways providing a primary and a secondary fluid conduit means to provide a source of pressure fluid to at least unlock said actuating means, the volumetric flow capacity of said primary fluid conduit means being less than the volumetric flow capacity of said secondary fluid conduit means, said primary fluid conduit means extendable to a primary external source of fluid under pressure; and

rupturable diaphragm means interposed between said secondary conduit means of said manifold means and the interior of the conduit.

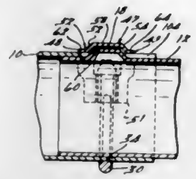
3,222,090
CLAMPED CONNECTION

Walter H. Powers and Joseph J. Vlasak, Racine, Wis., assignors to Walker Manufacturing Co., a corporation of Delaware

Filed Feb. 9, 1962, Ser. No. 172,268
1 Claim. (Cl. 285—27)

A clamping arrangement for telescopically connecting a first pipe within an end of a second pipe, said first pipe being provided with a pair of circumferentially spaced ribs extending radially outwardly relative to the outer

periphery of said first pipe, said second pipe being formed with longitudinally extending circumferentially spaced slots receiving said ribs, said ribs and said slots being spaced circumferentially no more than 90 degrees from each other, clamping means comprised of a first member received around substantially 180 degrees of the periphery of said second pipe, a saddle member received around substantially the remaining 180 degrees of the

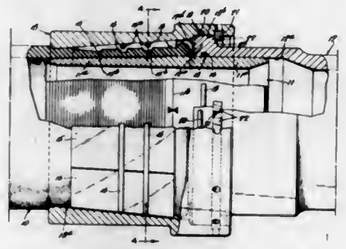


periphery of said second pipe and means securing said first member to said saddle member, said saddle member including means defining a recess into which said ribs extend, said last named means having a first pair of facing surfaces engaging said ribs to preclude relative circumferential movement and a second pair of facing surfaces engaging said ribs to preclude relative movement in the direction of the axes of said pipes.

3,222,091
PRESSURE RESPONSIVE FLUID TIGHT HOSE COUPLING

Don J. Marshall, Edgewater, Md., assignor to Dixon Valve & Coupling Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Aug. 30, 1962, Ser. No. 220,400
5 Claims. (Cl. 285—95)

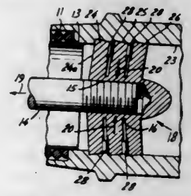


1. In a hose connection for securing the terminal end of a hose, a tubular coupling member axially aligned with said hose and having a radial flange forming an end wall stop for the terminal end of said hose; a tubular nipple mounted interiorly of said hose and having a portion slidably mounted interiorly of said coupling member; said nipple having an exteriorly tapered portion positioned interiorly of said hose, said nipple having a greater effective transverse area at the end of the nipple interiorly of said coupling member than the effective transverse area at its other end; a plurality of axially oriented wedges circumscribing said hose, superimposed of said tapered portion of said nipple mounted interiorly of said hose, said wedges having an axially tapered outer surface; a tubular sleeve having a tapered conical inner surface circumscribing said wedge segments and engageable therewith, said taper of said sleeve being substantially the same as the taper of said wedges, and means securing said sleeve to said coupling member to hold it against axial movement relative thereto, whereby when in operation a differential force is set up in said nipple tending to force said nipple out of said coupling member and to cause axial movement of said hose and said wedges thereby increasing the radial pressure between said nipple and said wedges upon said hose.

3,222,092
CABLE ANCHOR

Delwyn L. Olson, Newton, N.J., assignor to Fluid Dynamics Incorporated, a corporation of New York

Filed Mar. 4, 1964, Ser. No. 349,446
3 Claims. (Cl. 285—114)



1. In a hose provided with an axial tension member, the combination comprising:

(a) an annular member engaged with the periphery of the hose;

(b) anchoring means including a plurality of radial members disposed in contact with the internal circumferential periphery of the annular member;

(c) said radial members depending from a hub provided with peripheral means for gripping the tension member;

(d) each of said radial members including a plurality of columns spaced axially of said hose;

(e) said axial spacing between adjacent of said columns being maintained by a radially disposed pin seated upon radial surfaces of the adjacent of said columns;

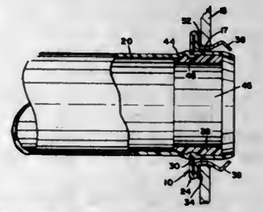
(f) said columns also being supported upon a shoulder formed upon the internal periphery of the annular member;

(g) said columns being urged to indent the internal circumferential periphery of the annular member when stress is exerted upon the tension member, thereby seating said columns within the indentations thus formed.

3,222,093
FASTENING APPARATUS

Walter H. Simmons, Mattydale, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware

Filed Apr. 11, 1963, Ser. No. 272,401
1 Claim. (Cl. 285—162)



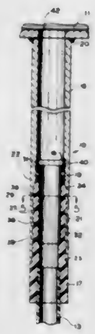
Fastening apparatus for attaching a deformable tubular element to a wall having an opening therein through which said tubular element is adapted to pass, the combination of

(a) a cylindrical member having an outside dimension slightly greater than the inside dimension of said tubular element forceably insertable within said

tubular element and cooperable therewith to form a subassembly, the outer surface of said member having an annular recess therearound, and
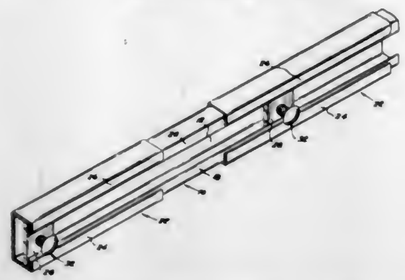
(b) a collar-like connector having a generally U section with one end projecting radially inwardly to define an opening having a dimension less than the outer dimension of said tubular element through which said subassembly may be forceably inserted to bring the portion of said connector one end defining said opening within said member recess with a part of said tubular element trapped therebetween, the opposite end of said collar-like connector having a plurality of circumferentially disposed resilient fingers projecting outwardly therefrom in a direction paralleling the axis of said connector, the dimension across said fingers being greater than the dimension of said wall opening, said fingers being compressible upon insertion of said connector within said wall opening to releasably secure said connector and said subassembly to said wall.

3,222,094
PLASTIC PIPE TO METAL PIPE COUPLING
Myron L. Robinson, 411 S. Chandler Ave., Monterey Park, Calif., and Donald C. Hill, 998 Glen Oaks Blvd., Pasadena, Calif.
Filed July 26, 1961, Ser. No. 126,911
2 Claims. (Cl. 285—256)



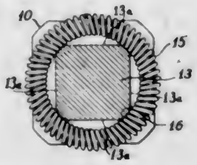
1. A plastic pipe to metal pipe coupling which comprises the combination of a substantially rigid plastic pipe and a metal pipe with an end portion of said plastic pipe axially disposed within an end portion of said metal pipe, said plastic pipe end portion having an intermediate section terminating in an end section, a metal sleeve disposed within said plastic pipe in circumferential abutment to said intermediate and end sections, said intermediate section provided with grooves in its outer peripheral surface with the depth of said grooves decreasing as a function of the distance of the groove from said end section, the existence and shape of said annular grooves being substantially independent of said metal pipe, said metal pipe end portion having a thick-wall zone terminating in the direction of the orifice in a thin-wall zone with said plastic pipe end section at the thick-wall zone and the plastic pipe intermediate section at the thin-wall zone, said metal pipe thin-wall zone provided with annular depressions in its outer peripheral surface with said depressions indexed to engage said grooves in substantially interlocking, complementary, abutting alignment, said plastic pipe end section provided with at least one external annular groove and a seal gasket positioned in said groove in sealing engagement with the inner peripheral surface of said metal pipe.

3,222,095
LOCK FOR TELESCOPING RODS
Michael Gerus, 11660 Gallagher, Hamtramck, Mich.
Filed Sept. 10, 1963, Ser. No. 307,933
1 Claim. (Cl. 287—2)



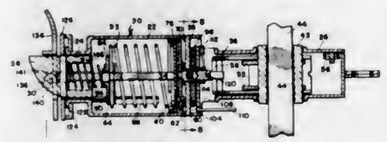
A lock adapted to restrain a first, smaller U-shaped channel section at any axial position within a second, larger U-shaped channel section, each channel section having a continuous in-turned lip formed along the full length of each of its flanges, said first channel section telescoping within said second section, said lock comprising a hole in the web of the first channel section; a plate having a width less than the distance between the flanges but greater than the distance between said lips of said first channel section disposed within said first channel section with its surface parallel to the webs of the channel sections; a central threaded hole in said plate, and a male threaded member engaged with said threaded hole in said plate and adapted to pass through said hole in the web of the first channel section to engage the web of said second channel member, whereby said threaded member may be rotated so as to force said plate and lips of the first channel member against the lips of said second channel section and thereby lock said channel sections together.

3,222,096
ROTARY TOOL SPINDLE
Frank A. Kaman, West Prospect Heights, Ill., assignor to Skil Corporation, Chicago, Ill., a corporation of Delaware
Filed Apr. 15, 1963, Ser. No. 273,143
1 Claim. (Cl. 287—53)



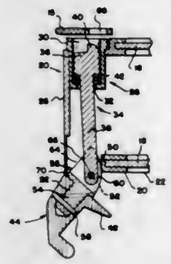
In rotary tool spindle adapted to project into a complementary shaped socket of a work-engaging member for driving the same, the improvement comprising, said spindle including a continuous groove encircling the spindle and thereby forming a neck portion having a perimeter less than the perimeter of said spindle, a continuous resilient and substantially annular ring capable of being shortened along the length thereof, which ring is seated in said groove, said groove having a plurality of linear base portions forming chords with the circle defined by the inner periphery of said ring thereby to provide spaces to receive portions of the ring upon their deflection in entering an associated socket, said groove also including a plurality of seat portions equal in number to the number of base portions and joining with the base portions between opposite ends thereof, which seat portions each engage said ring along a portion of the length thereof and support the ring in concentric relation with the spindle, the radius of said neck portion at each seat portion being greater than the distance from the axial center of said neck portion to the midpoint of each of said base portions, said ring having the first mentioned portions thereof extending beyond the peripheral limits of said spindle for frictional engagement with the walls of an associated socket.

3,222,097
DOOR LOCK WITH AUTOMATIC DEADLOCK ACTION
Ernest A. Behrmann, 5921 Lamont Drive, San Diego, Calif.
Filed Aug. 26, 1963, Ser. No. 304,598
11 Claims. (Cl. 292—61)



1. A door lock, comprising:
an elongated casing;
a bolt longitudinally slidably mounted in said casing and having a frame thereon;
a lock disc axially rotatably mounted in said casing and having slots through which said frame is slidable in a first position relative to said lock disc;
said bolt being rotatable to a second position relative to said lock disc;
said frame having stop portions engageable with said lock disc in said second position to prevent longitudinal sliding of the bolt;
a striker plate in which said bolt is engageable;
said striker plate having alignment means engaging said bolt and holding said bolt, in said second position.

3,222,098
AUTOMATIC WINDOW LOCK
Gerald E. Hausfeld, Union Lake, Mich. (10325 Highland Road, Milford 2, Mich.)
Filed Sept. 24, 1963, Ser. No. 311,099
1 Claim. (Cl. 292—173)



A lock for a sliding window assembly having a rectangular fixed frame including a medial locking bar, a rectangular pane, retaining members surrounding said pane and slidable in said fixed frame between open and closed positions respectively occupying opposite halves of said fixed frame and on opposite sides of said medial bar, comprising:

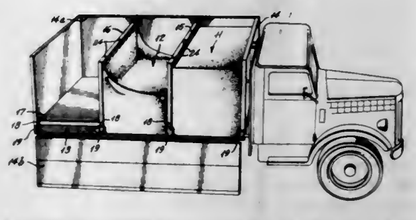
(a) a bolt guide mounted midway along and within one of said retaining members, said last member substantially abutting said locking bar when said pane is in said closed position, said guide having an opening registering with at least a portion of an opening in the adjacent locking bar in the direction perpendicular to the plane of said pane;

(b) an elongated bolt extending in the direction perpendicular to the plane of said pane, the head of said bolt extending through said guide and having a lip engaging said opening in said locking bar when said bolt is axially disposed in a forward position;

(c) spring means in said guide biasing said bolt axially toward said forward position; and

(d) a handle disposed on the side of said retaining member away from said locking bar, said handle being independent of said retaining member and pivotally connected to the free end of said bolt, said handle contacting said retaining member along a line perpendicular to and displaced from the axis of said bolt, said handle including a quadrant-shaped member to which said bolt is pivotally connected, said last member normally projecting between said retaining member and said pane, said line of contact between said handle and said retaining member being substantially the center of the arc formed along the face of said quadrant-shaped member, and said bolt being retracted axially from engagement with said locking bar by pivoting said handle about said line of contact so that the surface of said quadrant moves against said retaining member.

3,222,099
TRANSPORT VEHICLES OR LORRIES PROVIDED WITH A PLATFORM AND FIXED COLLAPSIBLE CONTAINERS FOR FLUID
Sven Arild Swallert, Geneva, Switzerland, assignor to Frode Lund Aktiebolag, Malmo, Sweden, a joint-stock company limited of Sweden
Filed May 12, 1965, Ser. No. 455,189
Claims priority, application Sweden, July 7, 1961, 7,087/61
5 Claims. (Cl. 296—10)

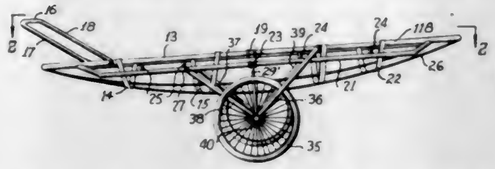


1. A transport vehicle comprising a lower platform supported from its chassis and having vertical hinged side flaps disposed around said lower platform, horizontal floor flaps hinged on shafts extending transversely of the vehicle, said floor flaps constituting an upper platform, substantially parallelepipedal fluid containers of flexible material folded down between said platforms, said hinged floor flaps covering said containers, each of said containers having a bottom wall secured to said lower platform and a fluid inlet and outlet pipe communicating with the interior of the container, said containers having a side wall secured to the underside of the floor flap covering the container, said side flaps and floor flaps in folded-up position supporting the side walls of said containers when filled with fluid.

3,222,100
PERSONNEL OR GAME CARRIER
Leo K. Lindzy, 34641 Chestnut St., Wayne, Mich.
Filed Mar. 26, 1962, Ser. No. 182,370
3 Claims. (Cl. 296—20)

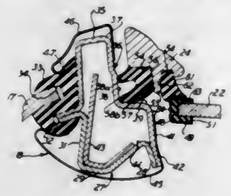
1. A device of the class described, comprising a frame embodying a pair of sections detachably connected together, each of said sections comprising a first pair of

longitudinally extending side rails, a second pair of longitudinally extending side rails attached to said first-mentioned side rails and forming with said first-mentioned side rails a truss, the longitudinal extremities of said first and second pair of side rails being detachably secured to the corresponding side rails of the other section in longitudinal alignment, a U-shaped transport means support-



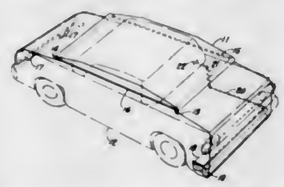
ing member connected to said frame at the opposite sides thereof and depending therefrom and a cross bar mounted on the lower end thereof and projecting therefrom at opposite sides for providing an axle, a pair of braces secured at opposite sides of said frame, each adapted for mounting on said axle and flexible support means attached to said frame and extending below said frame and between said U-shaped transport means.

3,222,101
VEHICLE BODY CORNER PILLAR CONSTRUCTION
Charles Belsky, Detroit, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Original application May 21, 1962, Ser. No. 196,101, now Patent No. 3,155,420, dated Nov. 3, 1964. Divided and this application Apr. 14, 1964, Ser. No. 359,665
1 Claim. (Cl. 296—28)



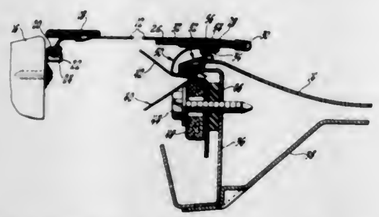
In a vehicle body construction, a door mounted for movement to an opened or closed position, a windshield pillar comprising a generally upright hollow structural member having a rearwardly facing surface and an inwardly facing surface, said rearwardly facing surface having an offset beginning at its outer edge, said offset being defined by a rearwardly facing inner surface beginning at the outer edge and an outwardly facing inner surface intermediate the outer edge and said inwardly facing surface of said structural member, a vent window supporting frame member attached to said door, said supporting frame member in a door closed position being in a contiguous relationship to said rearwardly facing inner surface of said offset at the outer edge of said pillar, said supporting frame member having an inwardly facing surface, said inwardly facing surface of the supporting frame member being laterally outwardly spaced from said outwardly facing inner surface of the offset when said door is in a closed position, a vent window, means pivotally connecting said vent window to said supporting frame member for movement between opened and closed positions, said vent window being longitudinally spaced rearwardly from said hollow structural member and laterally inwardly from said supporting frame member, and a first weather strip extending in a generally upright direction and affixed to the inwardly facing surface of said support frame member, said first weather strip having a first portion with two inwardly extending lips below the pivotal connection and a second portion with one inwardly extending lip above said pivotal connection, one of said lips of said first portion being in sealing contact with said rearwardly facing inner surface of said offset, the second of said two lips of said first portion being in sealing contact with said outwardly facing inner surface of said offset, the lip of said second portion being in sealing contact with one of said inner surfaces of said offset, and a second weather strip affixed to the inwardly facing surface of said support member, said second weather strip being longitudinally rearwardly spaced from said first weather strip, said second weather strip being in sealing contact with said vent window when said vent window and said door are in closed positions.

3,222,102
VEHICLE COVER
James W. Lucas, 1480 N. Doheny Drive, Los Angeles 69, Calif.
Filed Sept. 13, 1963, Ser. No. 308,867
13 Claims. (Cl. 296—136)



1. A vehicle cover comprising a body having two ends, said body being folded upon itself along a first line intermediate said ends and along a second line intermediate said ends, each of said folded portions being substantially spirally wound towards a line intermediate said first line and said second line.

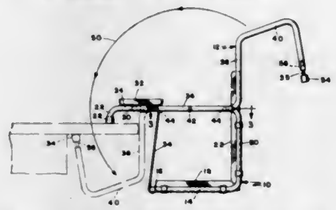
3,222,103
CONVERTIBLE BOOT RETAINING MEANS
James H. Wernig, Birmingham, and Virgil R. Hallenbeck, Royal Oak, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Continuation of abandoned application Ser. No. 224,873, Sept. 19, 1962. This application Dec. 24, 1963, Ser. No. 334,969
5 Claims. (Cl. 296—136)



1. In a vehicle body having a convertible top housing well opening transversely of the body,
means on the vehicle body forming a recess opening outwardly of the body away from an adjacent edge of the body defining one side of the well opening,
a dust boot for closing said well having a reinforced edge portion overlying said recess forming means,
a plurality of hooks mounted inwardly and on the undersurface of said reinforced boot edge portion at spaced intervals and each of said hooks having a depending tongue portion extending inwardly of the boot from the adjacent boot edge,
said hook tongue portions being insertable into and maintainable in boot retaining engagement within

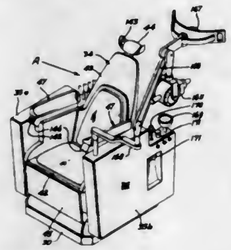
said recess by tensioning forces normally applied to the body secured boot,
and resilient means securing a second boot edge portion opposite said reinforced hook mounting edge portion to an adjacent corresponding edge of the body well opening,
said resilient boot securing means being deflectable in direction longitudinally of the body to permit insertion of the several boot retaining hooks within said recess and to tension the boot smoothly to maintain hook retaining engagement therein.

3,222,104
CHILD'S CONVERTIBLE CAR AND TABLE SEAT
William F. Remington, 6653 Avenida Manana, La Jolla, Calif., and Remington R. Jackson, P.O. Box 104, Del Mar, Calif.
Filed Oct. 30, 1964, Ser. No. 407,642
3 Claims. (Cl. 297—134)



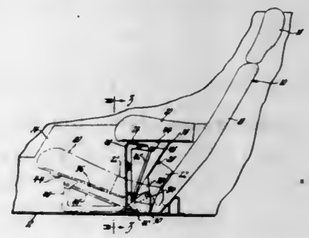
1. In a child's convertible car and table seat, the combination of:
a seat frame having a seat portion, back portion and arms extending forwardly from said back portion;
first means extending forwardly of said arms for engaging the top horizontal surface of a table;
a hanger frame including hook-like elements and second means adjustably mounting said hanger frame on said arms said hanger frame being shiftable from a first position in which said hook-like elements are disposed to engage the back of an automobile seat, to a second position in which said hook-like elements are disposed to engage the bottom surface of the top of a table and spaced forwardly of said first means.

3,222,105
DENTAL CHAIR WITH CONSOLES
James W. Cross, 842 Altos Oaks Drive, Los Altos, Calif.
Filed Jan. 23, 1964, Ser. No. 339,654
11 Claims. (Cl. 297—188)



1. A dental chair comprising
(a) a base frame,
(b) a pair of upright side frames mounted in laterally spaced relation on the base frame,
(c) a seat support comprising an elongated back portion mounted between the side frames for selective upward, downward, forward and rearward bodily movement, and for forward and rearward tilting movement,
(d) a head rest mounted on the upper end of the back portion of the seat support,
(e) a seat member having a short back portion mounted on the back portion of the seat support for travel lengthwise thereof, and
(f) power drive means for selectively moving the seat support bodily upwardly, downwardly, forwardly and rearwardly, for tilting the seat support between a forward position wherein the back portion thereof is substantially upright and a rearward position wherein the back portion thereof is inclined at a substantial angle from upright condition, and for traversing the seat lengthwise along the back portion of the seat support to position on the head rest the head of a person of any height within a selected maximum and minimum when such person is seated on the seat.

3,222,106
VEHICLE SEAT
William Douglas Stout, Warren, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 7, 1963, Ser. No. 314,366
1 Claim. (Cl. 297—332)

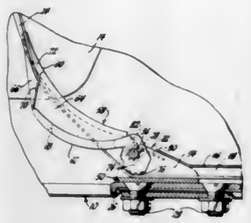


A seat assembly having a seat back unit and a movable seat unit, said seat unit comprising a first member and a second member, said members having a juxtaposed seat forming position and a folded easy entrance position and being movable therebetween, support means for said seat unit including a plate adapted to be supported on a supporting floor, a support link having one end pivotally connected to said first member and the other end pivotally connected to said plate for supporting said first member in said positions and for controlling movement therebetween, a pivotal connection between said second member and said plate for supporting said second member in said positions and permitting rotative movement therebetween, a hinge connection between said members for controlling movement of said members relative to each other, and a torque rod for biasing said members to said easy entrance position, said torque rod having a fixed end secured to said plate and a movable arm connected to said seat unit whereby movement of said seat unit from easy entrance position increases the plastic deformation of said torque rod.

3,222,107
RETRACTABLE SEAT BELT ASSEMBLY
Rudolph A. Ferrara, Warren, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 16, 1962, Ser. No. 230,847
1 Claim. (Cl. 297—388)

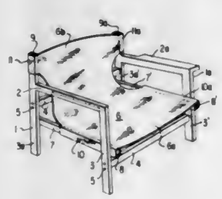
In a vehicle body, a seat belt assembly comprising a housing adjacent one side of a vehicle seat, a seat belt secured at one end within said housing and having a free end portion movable from a stored position within the housing across the seat and secured to the vehicle body adjacent the side of the seat opposite from said housing, means for retracting the seat belt from said

secured position, and belt locking means including a belt guide member having an elongated lateral upper surface, said member pivotally mounted adjacent the open end of the housing member and receiving said belt in one end thereof and said surface being formed on a bias at the other end of said member whereby said belt



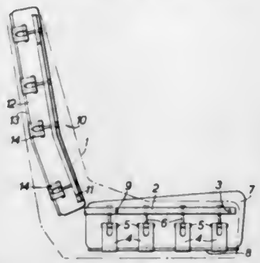
engages said biased surface to be guided into a flat operable position, said belt locking means being swingable by angular movement of the guided belt portion between a normal operating position automatically locking the belt and a second position releasing the free end of the belt.

3,222,108
CHAIR CONSTRUCTION WITH FLEXIBLE SEAT AND BACK
Vicente Sánchez Pablos, Gran Via 4 y 6, Salamanca, Spain
Filed Feb. 18, 1964, Ser. No. 345,806
Claims priority, application Spain, Apr. 2, 1963, 286,686
4 Claims. (Cl. 297—441)



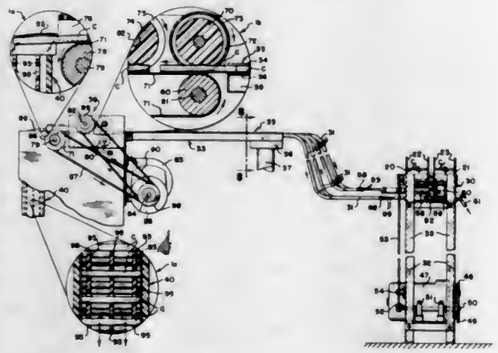
1. A chair construction comprising a pair of complemental, symmetrical rigid, side pieces, each side piece having the lateral form of a chair and including rigid arm rests and front and rear rigid legs depending from each of the arm rests, cross pieces connecting the side pieces in spaced fixed relation, said side pieces lying in parallel vertical planes, a seat and a back portion constituted solely by a flexible and non-stretchable element of a width to fill in the transverse spacing between the side pieces, said side pieces having similar projections extending beyond the arm rests at each front and rear leg, said projections on each side piece lying substantially in the same vertical plane as the side piece, and said element having opposing side edge portions, each side edge portion being provided with corner sections having tubular sleeves disposed substantially in the same vertical plane as the side pieces, and said sleeves being sleeved onto the projections to form the sole attachment of the element to the rigid pieces, with the seat and back portions solely supporting an occupant of the chair and the cross pieces being disposed out of contact with the seat and back portions when the chair is occupied thus permitting the element to adjust to the body of the occupant of the chair.

3,222,109
SEATS
William Henry Seward, Emsworth, England, assignor to Irving Air Chute of Great Britain Limited, Letchworth, England, a British company
Filed Sept. 16, 1964, Ser. No. 396,973
Claims priority, application Great Britain, Sept. 19, 1963, 36,940/63
11 Claims. (Cl. 297—452)



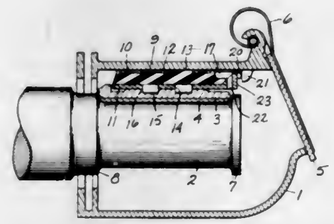
1. In a seat construction adapted for use in vehicles wherein the same is subject to vibration incident to travel, the combination of rigid side frame standards, a seat construction comprising a frame movably mounted on the rigid standards, said frame including spaced rigid side bars, flexible means connected to said side bars and hanging in position to provide a shallow cradle having a bottom portion and upstanding side portions, a flat resilient stiff panel capable of being bowed supported upon the lower portion of said flexible means with the sides of the panel lying inwardly of the side portions of the flexible means, and a flexible shape returning cushion supported by said panel having the lower portion thereof disposed in said cradle with the lower portions of the sides thereof facing the side portions of said flexible means, the top portion of said cushion extending above the rigid side bars, said panel when bowing under the influence of seat vibrations deforming the cradle provided by said flexible means by drawing the side portions of said flexible means inwardly and exerting side pressures tending to hold and locate the cushion and occupant secure on the seat.

3,222,110
CIGARETTE TRANSFER APPARATUS
James G. Kelly and Vernon C. Stant, Richmond, Va., assignors to The American Tobacco Company, New York, N.Y., a corporation of New Jersey
Filed Mar. 11, 1964, Ser. No. 350,998
8 Claims. (Cl. 302—2)



1. Apparatus for transferring cigarettes overhead from a maker to a collector which comprises air lift means adapted to be positioned adjacent the discharge end of the maker from which the cigarettes are received by the air lift means, a substantially horizontally disposed carrier positioned adjacent the discharge end of the air lift means and capable of carrying cigarettes in axially aligned relationship as received from the air lift means, discharge means associated with the horizontal carrier for discharging the cigarettes therefrom individually in axially aligned position, speed control means adapted to establish a uniform linear speed of the discharged axially aligned cigarettes not less than the linear speed with which the cigarettes are produced in the maker, speed increasing means adapted to increase the linear speed of cigarettes leaving the speed control means by an amount sufficient to establish a space between adjacent ends of the axially aligned cigarettes, and vertical transfer means for lowering the spaced cigarettes to a collector, said transfer means being provided with a serpentine channel adapted to receive the axially moving spaced cigarettes and to lower the cigarettes individually while in a substantially horizontal axial position.

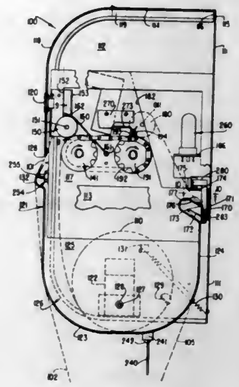
3,222,111
RAILROAD JOURNAL WEDGE
David G. Thomas, Erie, Pa., assignor to Lord Manufacturing Company, Erie, Pa., a corporation of Pennsylvania
Filed May 24, 1963, Ser. No. 283,090
6 Claims. (Cl. 308—54)



1. In combination with a railway journal box and bearing, a top plate receiving load from the top of the journal box, said plate and box having interengaging parts positioning the plate relative to the box, said bearing and its journal having interengaging parts providing relatively little end play, a bottom plate transmitting load to the bearing, a body of elastomer in load carrying relation between said plates and having upper and lower surfaces respectively anchored to said top and bottom plates, and means for keying the bottom plate to the bearing in order that the loads from the journal box to the bearing both laterally and longitudinally with respect to the car are transferred by shear stress of the elastomer.

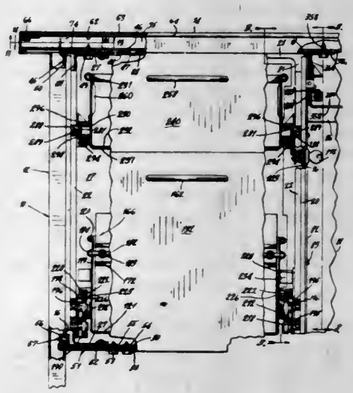
3,222,112
TOWEL DISPENSER
Erwin B. Bahnsen, Hinsdale, Ill., assignor to Steiner American Corporation, Salt Lake City, Utah, a corporation of Nevada
Filed May 8, 1963, Ser. No. 278,937
19 Claims. (Cl. 312—38)

1. A towel dispenser of the continuous towel type comprising a clean toweling drive roll for dispensing clean toweling from a supply thereof, an electric motor for operating said drive roll to dispense a section of fresh toweling to a use position therefor, an actuator mounted for engagement by the toweling adjacent to said use position and movable upon use of the toweling to an operative position, and control mechanism for said motor mechanism and including a time delay mechanism having a predetermined time delay, said control mechanism being responsive to the movement of said actuator to said operative position for actuating said time delay mechanism and after said predetermined time delay causing said motor mechanism to operate said drive roll to dispense



fresh toweling to said use position, whereby the next user is presented with a section of fresh toweling at said use position.

3,222,113
ARTICLE OF FURNITURE
Earl F. Hamilton, Donald L. Moore, and Ralph B. Lay, Columbus, Ind., assignors to Hamilton Cosco, Inc., Columbus, Ind., a corporation of Indiana
Filed Oct. 30, 1962, Ser. No. 234,183
26 Claims. (Cl. 312—195)

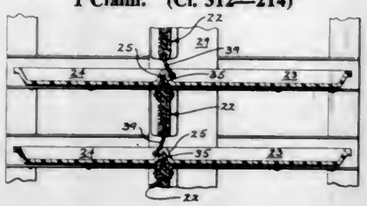


1. In an article of furniture,
(a) a pedestal comprising a pair of side walls interconnected by a floor and back wall,
(b) pluralities of transversely extending upper and lower braces operatively interconnected to the upper ends of said side walls and floor, respectively, and said back wall having inwardly projecting means connected to the rearmost of said upper braces,
(c) a plurality of vertically extending braces connected to said upper and lower braces and each abutting the inner face of one of said side walls,
(d) a top rigidly connected to said upper braces and closing the top of said pedestal,
(e) at least one pair of aligned drawer guides mounted on said vertically extending braces, and
(f) a drawer slidably supported in said guides.

3,222,114
THERMAL BARRIER PARTITION FOR A HOT AND COLD FOOD SERVICE CART

Blair E. Stentz, Murfreesboro, Tenn., assignor to United Service Equipment Co., Inc., Palmer, Mass., a corporation of Delaware

Filed Mar. 12, 1963, Ser. No. 264,584
1 Claim. (Cl. 312—214)



A thermal barrier partition for a walled tray compartment of a food service apparatus in which a plurality of said thermal barrier partitions are installed in a vertically juxtaposed relationship, whereby in a first position a tray, having a longitudinally extending divider of a predetermined vertical cross-sectional configuration, is inserted between adjacent ones of said thermal barrier partitions and in a second position wherein such tray is removed, comprising in combination, a semi-rigid horizontally elongated support member, said support member having on its top edge an integral tray rib, having a vertical cross-sectional configuration complementary with such predetermined vertical configuration of such tray divider, and defining at its lower edge a downwardly opening longitudinal slot having a restricted opening, an elongated resilient flap member comprising a vertically extending body section having an enlarged upper portion, a longitudinally extending reinforcing member located in said upper portion, said enlarged upper portion being slidably engaged within said longitudinal slot in said support member, said body section being inwardly and downwardly tapered from said upper portion to a lower portion, said lower portion having an integral rib located thereon, said resilient flap having a vertical length greater than the distance defined between the uppermost point on said integral tray rib of said support member and a lower edge of an upper adjacent thermal barrier partition, whereby in such first position said flap engages the tray rib of an adjacent thermal barrier partition and in such second position said flap engages the longitudinal extending divider of an adjacent tray, and mounting means at one end of said support member for securing said support member to said walled tray compartment.

3,222,115
SLIDABLE COOKING TOP

Joseph R. Urbank, Oak Lawn, Ill., assignor to General Electric Company, a corporation of New York

Filed Mar. 13, 1964, Ser. No. 351,773
4 Claims. (Cl. 312—223)

3. A cooking range, including structure providing a fixed base having a bottom panel and parallel side walls defining an open-front housing,

a channel-shaped stop structure extending partially across said bottom panel adjacent the rear thereof, said stop structure having upstanding side walls formed to provide an opening near the rear and near the front thereof,

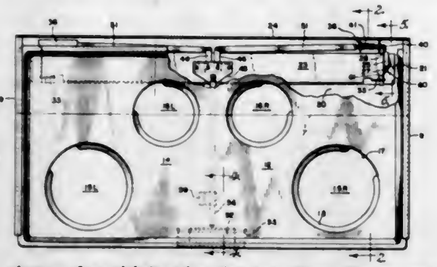
structure providing a drawer-like cooking top having a width substantially equal to the distance between said housing side walls and being arranged to contain the side walls of said stop structure,

means for mounting said cooking top for sliding movement within said housing,

a plunger mounted adjacent the respective rear corner portions of said cooking top for movement into or out of the openings of the immediately adjacent side wall of said stop structure,

spring means for biasing said plunger to project through the respective openings,

a rigid link pivotally connected with each of said



plunger for withdrawing the same from the respective stop structure openings,

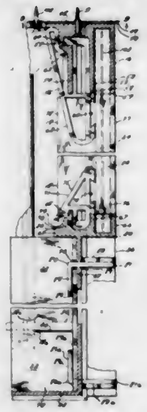
a bell crank individual to each said link,

and means including a handle disposed at the front of said cooking top for actuating each said bell crank to conjointly withdraw the respective plungers to the extent necessary to release said cooking top for movement in a desired direction.

3,222,116
KITCHEN CABINETS

Nat Levenberg, 2 Windsor Place, Lynbrook, N.Y.

Original application Jan. 13, 1961, Ser. No. 82,435, now Patent No. 3,149,587, dated Sept. 22, 1964. Divided and this application June 29, 1964, Ser. No. 386,809
5 Claims. (Cl. 312—245)



1. Cabinet construction comprising:

(a) an upper front horizontal support element having a plurality of depending flanges, one of said flanges having an upwardly facing surface;

(b) an upper front vertical support element;

(c) an upper connector which has a portion thereof resting on the said upwardly facing surface of the upper front horizontal support element, has a second portion engaging a front surface of one of said flanges, and a third portion engaging a rear surface of one of said flanges, said upper connector being adjustably positionable along said upper front horizontal support element, said upper connector having a horizontally disposed groove within which is disposed a portion of the upper front vertical support element;

(d) and, an intermediate front horizontal support element having a plurality of flanges and a downwardly facing surface;

(e) and a lower connector detachably interconnecting the lower portion of the upper front vertical support element and the intermediate front horizontal support element, and engaging said downwardly facing surface.

3,222,117
STORAGE RACK

Milton Schwartz, Syosset, N.Y., assignor to Advance Food Service Equipment, Inc., Westbury, N.Y., a corporation of New York

Filed Mar. 8, 1963, Ser. No. 263,844
2 Claims. (Cl. 312—264)

1. A rack assembly for storing bakers pans and the like comprising:

front and rear rectangular frames each including a pair of spaced parallel elongated members connected by a pair of spaced parallel cross members;

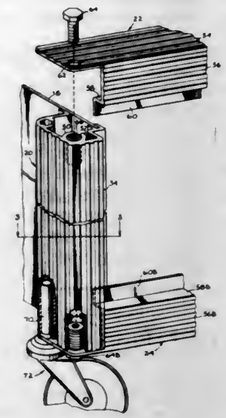
each of said elongated members defining a channel therein;

said frames being oriented in spaced parallel relationship with the channels defined in the members of said front frame being opposed to and opening toward the channels defined in the members of said rear frame and;

first and second sidewalls each respectively extending between and into opposed channels of the members of said front and rear frames;

means securing each of said side walls to the members between which it extends;

each of said side walls having spaced parallel shelves extending substantially perpendicularly therefrom and directed toward the other sidewall;



each of said elongated members being provided with a pair of spaced elongated arcuate arms defining a cylindrical receptacle therebetween whose axis extends parallel to said elongated members.

CHEMICAL

3,222,118
ELIMINATION OF CATIONIC DYEABILITY OF ACRYLIC FIBERS

Denis Coleman, Stamford, Conn., assignor to American Cyanamid Company, New York, N.Y., a corporation of Maine

No Drawing. Filed May 21, 1962, Ser. No. 196,501
18 Claims. (Cl. 8—115.5)

1. A process for substantially eliminating the dyeability by cationic dyes of polymeric materials of acrylonitrile containing a vinylpyridine polymerized therewith, said process comprising treating such polymeric material with a compound selected from the group consisting of iodoalkyl phosphates and bromoalkyl phosphates and heating the thusly-treated polymeric material.

3,222,119
PROCESS FOR TREATING CELLULOSIC TEXTILE MATERIALS WITH BIS(BETA-METHOXYETHYL) SULFONE

Irving Tashlick, Springfield, and Scott H. Foster, Longmeadow, Mass., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed Mar. 10, 1959, Ser. No. 798,339
1 Claim. (Cl. 8—116)

A process which comprises impregnating a cellulosic textile material containing cellulosic hydroxyl groups with an aqueous solution of an alkaline catalyst and bis(beta-methoxyethyl)sulfone.

3,222,120
METHOD FOR PREPARING HIGH PURITY CRYSTALS OF LITHIUM BOROHYDRIDE

Frank P. Del Giudice, Beverly, Mass., assignor to Metal Hydrides Incorporated, Beverly, Mass., a company of Massachusetts

No Drawing. Filed July 22, 1960, Ser. No. 44,568
8 Claims. (Cl. 23—14)

1. The method for preparing crystals of unsolvated lithium borohydride which comprises forming a three component system consisting of (1) lithium borohydride, (2) a solvent for lithium borohydride, and (3) a liquid hydrocarbon, said solvent being saturated with lithium borohydride, and causing lithium borohydride to be precipitated from said system while maintaining the ratio of the amount of said hydrocarbon by weight to the amount of lithium borohydride by weight in said system at not less than about 6 to 1, said solvent being selected from the group consisting of lower dialkyl ethers, primary alkylamines, pyridine, tetrahydrofuran, liquid ammonia and mixtures thereof, said liquid hydrocarbon being selected from the group consisting of benzene, toluene, xylene, ligroin, aliphatic hydrocarbons containing from about 6 to 10 carbon atoms, and mixtures thereof.

3,222,121
PREPARATION OF SODIUM BOROHYDRIDES

Herbert Jenkner, Cologne-Deutz, and Hans Werner Schmidt, Hannover, Germany, assignors to Kali-Chemie Aktiengesellschaft, Hannover, Germany

No Drawing. Filed Oct. 31, 1960, Ser. No. 65,894

Claims priority, application Germany, Oct. 30, 1959, K 39,049

The portion of the term of the patent subsequent to June 13, 1978, has been disclaimed

5 Claims. (Cl. 23—14)

1. A process for the preparation of sodium borohydrides comprising reacting sodium hydride at a temperature of 50 to 200° C. with diborane in the presence of at least 0.1 mole percent, calculated on the sodium hydride, of an organoboron compound as activator, said organoboron compound having the composition $BH_xR_yR'_z$, wherein R is lower alkyl, R' is lower alkoxy, x is an integer from 0 to 2, y and z are integers from 0 to 3, and $x+y+z=3$.

3,222,122

COMPACTED ALUMINUM-CONTAINING HYDRIDES

Sidney Johnson, Manchester, and Charles H. Lewis, Jr., Danvers, Mass., assignors to Metal Hydrides Incorporated, Beverly, Mass., a company incorporated of Massachusetts

No Drawing. Filed Jan. 19, 1962, Ser. No. 167,407
4 Claims. (Cl. 23—14)

1. A compacted aluminum-containing hydride having a density of not less than about 65 percent of the theoretical density of the aluminum-containing hydride produced by compaction under a pressure between about 14,000 and 72,000 pounds per square inch, said aluminum-containing hydride being selected from the group consisting of alkali metal aluminum hydrides, alkaline earth metal aluminum hydrides, aluminum hydride, and Lewis base complexes of aluminum hydride.

3,222,123

PROCESS FOR PREPARING CYANOGEN HALIDES AND CARBONYL HALIDES

Roger L. Welchman and William L. Fierce, Crystal Lake, Ill., assignors, by mesne assignments, to Union Oil Company of California, Los Angeles, Calif., a corporation of California

No Drawing. Filed Mar. 28, 1962, Ser. No. 183,019
7 Claims. (Cl. 23—14)

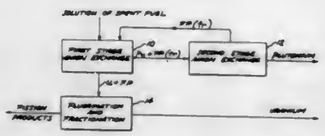
1. A method of preparing at least one compound selected from the group consisting of CNX and COX_2, where X is selected from the group consisting of chlorine and bromine, which comprises heating a compound selected from the group consisting of chloroform and bromoform with nitrogen dioxide to a temperature from about 250° to about 400° C. in contact with an activated carbon-containing catalyst.

3,222,124

IRRADIATED FUEL REPROCESSING

Cleve R. Anderson, Menlo Park, and Henry Ward Alter, Danville, Calif., assignors to General Electric Company, a corporation of New York

Filed Dec. 26, 1962, Ser. No. 247,029
10 Claims. (Cl. 23—14.5)



1. A method for treating an aqueous solution of irradiated nuclear reactor fuel which comprises contacting said solution with an anion exchange resin to retain plutonium and to produce an aqueous feed effluent stream containing uranium and substantially all of the fission products, eluting said plutonium from said anion exchange resin; dehydrating said aqueous feed effluent stream to form substantially plutonium-free anhydrous solids, directly fluorinating said solids to form the corresponding fluorides, and separating uranium fluoride in the absence of plutonium fluorides from the fission product fluorides.

3,222,125

DISSOLUTION OF NUCLEAR ALUMINUM-BASE FUEL

Wallace W. Schulz, Richland, Wash., assignor to the United States of America as represented by the United States Atomic Energy Commission

No Drawing. Filed Sept. 17, 1964, Ser. No. 397,347
2 Claims. (Cl. 23—14.5)

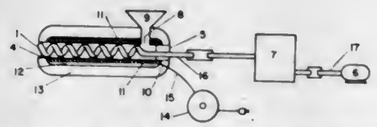
1. A process of dissolving neutron bombarded nuclear aluminum-base fuel, comprising immersing said fuel in boiling nitric acid of a concentration of between 0.8 and 1.2 M and containing mercuric ion catalyst in a concentration of between 0.003 and 0.015 M until said fuel assumes a grey color; adding concentrated nitric acid at boiling temperature in a quantity to obtain a concentration of between 4 and 6 M whereupon said fuel is dissolved.

3,222,126

PROCESS FOR PREPARING CALCIUM CYANATE

Herbert A. Baskin, Covington, Tenn., assignor to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

Filed July 30, 1963, Ser. No. 298,557
7 Claims. (Cl. 23—75)



1. In the process for preparing agricultural grade calcium cyanate analyzing about 35–50% $Ca(OCN)_2$ by weight from lime and urea in a heated reaction zone at substantially atmospheric pressure, the improvement comprising mixing one part by weight of a feedstock consisting essentially of particulate urea and particulate lime blended in a urea:lime mole ratio of about 0.8–1.2:1 with about 8–20 parts by weight of a diluent consisting essentially of product from said process and passing the thus formed mixture through said reaction zone at such rate as to provide a residence time therein of at least about ½ minute while maintaining the reaction zone at about 200–320° C., thereby obtaining a free flowing particulate product consisting essentially of calcium cyanate, calcium carbonate, and unreacted lime and urea.

3,222,127

MANUFACTURE OF ALUMINIUM CHLORIDE

Harry Brian Wilson, Little Gaddesden, near Berkhamstead, England, assignor to Laporte Titanium Limited, London, England, a company of Great Britain

No Drawing. Filed June 13, 1960, Ser. No. 35,451
Claims priority, application Great Britain, June 16, 1959, 20,680/59
12 Claims. (Cl. 23—93)

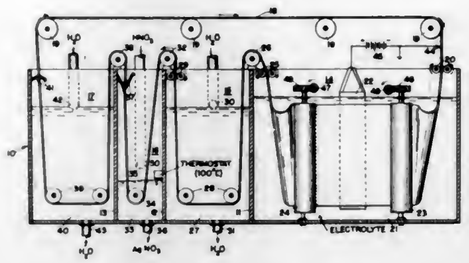
1. A process for the manufacture of aluminum chloride, which comprises maintaining a bed consisting substantially of aluminium particles in a fluidised condition in a an inert gas upwardly through the bed, and separately influidisation zone having zone bounding walls by passing troducing into the fluidised aluminium particles so produced a chlorinating gas selected from the group consisting of chlorine and a mixture of chlorine and an inert gas, the chlorinating gas being introduced at an intermediate zone in the fluidised bed which is remote from said zone bounding walls at a linear velocity equal to at least 10 times the linear velocity at which the inert fluidising gas is introduced, the temperature within the fluidised bed being maintained within the range of from 100 to 600° C., the total rate of introduction of inert gas into the fluidised bed being at least twice the rate of introduction of chlorine into the fluidised bed on a volume basis.

3,222,128

PROCESS FOR PRODUCING SILVER NITRATE

Vsevolod Sooryn, Paris, France, assignor to Benjamin B. Doeh, New York, N.Y.

Filed Mar. 21, 1960, Ser. No. 16,304
6 Claims. (Cl. 23—102)



1. A process for producing silver nitrate, comprising the steps of depositing a loosely adherent mass of silver oxide on a conductive endless band by passing said band through an electrolyte containing the ions of a soluble silver salt while maintaining said band at a negative potential with respect to a silver anode in said electrolyte, compressing said mass against said band, passing the band carrying said mass through a heated nitric-acid bath whereby said silver oxide is converted to silver nitrate, and stripping said silver nitrate off said band.

3,222,129

METHOD FOR PRODUCING ACTIVE ALUMINA NODULES

Harry E. Osment and Robert B. Emerson, Baton Rouge, La., assignors to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware

No Drawing. Filed Feb. 26, 1962, Ser. No. 175,835
2 Claims. (Cl. 23—141)

1. In a method for producing nodules of active alumina by partially calcining alumina hydrate particles to a transition alumina, grinding the partially calcined particles, mixing the ground particles with water to form nodules, curing the resultant nodules and heat treating the same to activate, the improvement in the partial calcining step comprising:

(a) surrounding the alumina hydrate particles with a fuel-air mixture;

(b) passing the alumina hydrate particles surrounded with the fuel-air mixture through a combustion zone at a flame temperature in the range of 3000° F. to 3500° F. for a period of time to ensure that each particle is partially calcined;

(c) quenching the partially calcined product prior to grinding.

3,222,130

PROCESS FOR THE PREPARATION OF NORDSTRANDITE ALUMINA

Ulrich Hauschild, Hannover, Germany, assignor to Kalle-Chemie Aktiengesellschaft, Hannover, Germany

No Drawing. Filed July 19, 1962, Ser. No. 211,112
Claims priority, application Germany, July 21, 1961, K 44,303
7 Claims. (Cl. 23—143)

1. A process for the preparation of nordstrandite $Al(OH)_3$ comprising reacting aluminum with an aqueous solution of an alkylenediamine having 2 to 4 C atoms at a temperature of 0 to 80° C. and filtering and washing the obtained precipitate which is essentially trihydrate alumina substantially only in the form of nordstrandite.

3,222,131

PREPARATION OF CARBON BLACK

Kenneth E. Powell, Houston, Fletcher A. Hinson, Aransas Pass, and David C. Williams, Houston, Tex., assignors, by mesne assignments, to Ashland Oil & Refining Company, Ashland, Ky., a corporation of Kentucky

Filed July 31, 1962, Ser. No. 213,762
6 Claims. (Cl. 23—209.4)

1. A process for preparing a reinforcing oil furnace carbon black product and for controlling the structure value of said product as it is produced, said process comprising the steps of: introducing a normally liquid hydrocarbon feedstock into a tubular heating zone along its axis and through one end thereof as a conical spray, said spray defining an included feedstock spray angle; introducing a hydrocarbon fuel and a combustion-supporting oxygen-bearing gas into said one end of said heating zone and directing a flow of mixture thereof substantially radially away from said axis in all directions; igniting said radially flowing mixture whereby a uniformly expanding disc-shaped burning stream is formed, said disc-shaped burning stream being out of intimate contact with said flow of feedstock; changing the direction of flow of said radially flowing burning stream so that it flows substantially parallel to said axis toward the opposite end of said heating zone and then inwardly towards said axis as it approaches said opposite end of said heating zone; mixing said feedstock in the resultant stream of combustion products and passing the resultant mixture into a reaction zone, said feedstock being thermally decomposed to carbon black; recovering the resultant carbon black product; controlling process conditions, including the rates of introduction of said feedstock, hydrocarbon fuel and combustion-supporting oxygen-bearing gas for producing a grade of carbon black having substantially the surface area and mean particle size of a member of the group consisting of HAF, ISAF, and SAF carbon blacks; and, while continuing to control process conditions as aforesaid, whereby the particle size of the carbon black product being produced by the process remains substantially constant, varying the included angle of the feedstock spray to a value no greater than about 180° for controlling the structure of said carbon black product.

3,222,132

STEAM REFORMING OF HYDROCARBONS

Dennis Albert Dowden, Norton-on-Tees, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Sept. 6, 1962, Ser. No. 221,903
Claims priority, application Great Britain, Nov. 6, 1961, 39,607/61; May 17, 1962, 19,097/62
4 Claims. (Cl. 23—212)

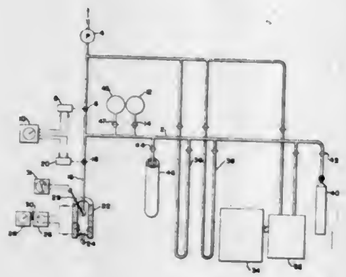
1. A continuous process of steam reforming normally liquid hydrocarbons boiling at temperatures up to 350° C. which comprises reacting the hydrocarbon with steam at a temperature in the range of 550° to 1100° C. and a pressure in the range 1 to 50 atmospheres in the presence of a catalytic composition consisting essentially of a gamma alumina refractory inorganic oxidic material and an active constituent selected from the group consisting of ruthenium, palladium, osmium, iridium and platinum and compounds thereof, the said active constituent being

present in an amount between 0.01 and 20% calculated as the weight of metal and based on the weight of the composition after calcination at 900° C.

3,222,133
METHOD AND APPARATUS FOR DETERMINING SURFACE NEUTRALIZABILITY OF SOLID MATERIALS

Edward V. Ballou, Palo Alto, Calif., and Ralph T. Barth, Penn Hills Township, Allegheny County, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

Filed Nov. 28, 1961, Ser. No. 155,418
12 Claims. (Cl. 23—230)



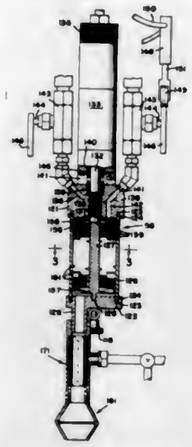
1. A method for determining the surface neutralizability of a solid material, comprising contacting a measured sample of the solid material in a closed system with a measured amount of a neutralizing agent that is gaseous at the conditions of said contacting and that is effective to neutralize the neutralizable sites on the surface of said solid material, so as to effect chemisorption of said neutralizing agent by said sample, said neutralizing agent being employed in excess of the amount required to completely neutralize the neutralizable sites at the lowest temperature at which surface neutralizability is to be determined, said contacting being carried out at a temperature above the condensation temperature of said neutralizing agent, subjecting the sample in said closed system to a plurality of temperatures at which surface neutralizability is to be determined and measuring the gas pressure of the system at equilibrium at each such temperature, the gas pressure so measured being indicative of the amount of neutralizing agent that is not chemisorbed by the sample at the conditions of the system, this amount in turn being indicative of the amount of neutralizing agent chemisorbed by the sample at the same conditions, the amount so chemisorbed being indicative of the surface neutralizability of the solid material at these conditions.

3,222,134
DISPENSING HEAD FOR FOAM SYSTEM

Fred D. Peterson, San Mateo County, Calif., assignor to Peterson Products of San Mateo, Inc., Belmont, Calif.

Filed Aug. 3, 1962, Ser. No. 214,690
11 Claims. (Cl. 23—252)

10. A mixing dispensing head comprising a first end cap formed with a substantially cylindrical, central recess, a second cap formed with a discharge port, a hollow cylinder between said caps, a shaft extending between said caps and journalled therein, said shaft extending through said central recess, and means for rotating said shaft, mixing means on said shaft, said first cap formed with a pair of first component inlet ports directed into said central recess, said first cap formed with a second component inlet port spaced outwardly from said central

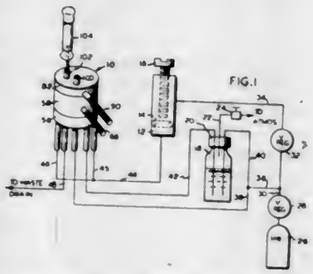


recess, a portion of said shaft extending into said central recess having a roughened surface.

3,222,135
APPARATUS FOR THE PREPARATION OF FLUID SAMPLES

Howard L. Ashmead, Newark, Del., assignor to F & M Scientific Corp., a corporation of Delaware

Filed Nov. 27, 1962, Ser. No. 240,314
16 Claims. (Cl. 23—253)



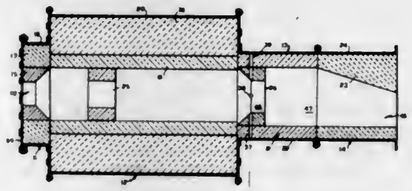
1. In blood gas measuring apparatus, the combination comprising a reservoir of gas releasing reagents; means for degassing said gas releasing agents; a storage chamber for storing a quantity of the gas releasing reagents; a reaction capsule; a sampling valve having a fixed valve block, a rotor valve member on said block and a top valve member on said rotor valve member; said valve block having a bore communicating with a drain, a pair of bores communicating with said storage chamber, and a bore communicating with said reservoir; said top valve member being an inlet bore receiving a blood sample and a bore communicating with said reaction capsule; said rotor valve member having a plurality of controlling positions and a plurality of communication bores, one of said communication bores permitting a flow of the blood sample from said inlet bore to said drain bore and another of said communication bores permitting a flow of the gas releasing reagents from said reservoir through one of said pair of bores to said storage chamber when said rotor valve member is in one controlling position; the said one communication bore trapping a volume of the blood sample therein as said rotor valve member is rotated from

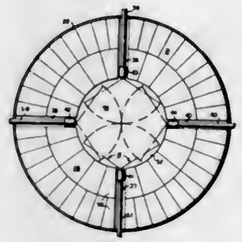
said one controlling position to another controlling position, the said one communication bore permitting a flow of the gas releasing reagents from said storage chamber to said reaction capsule together with the volume of the blood sample when said rotor valve member is in said another controlling position.

3,222,136
CARBON BLACK APPARATUS

Frank R. Hess, Houston, Tex., and James A. Guthrie, Mojave, Calif., assignors, by mesne assignments, to Ashland Oil & Refining Company, Ashland, Ky., a corporation of Kentucky

Filed Nov. 13, 1962, Ser. No. 236,858
15 Claims. (Cl. 23—259.5)



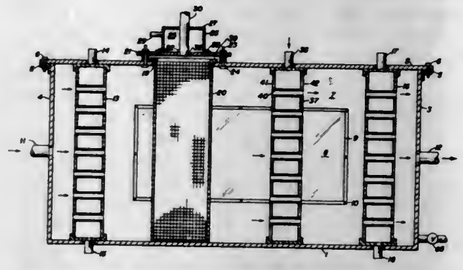


1. In a generally tubular, refractory-lined furnace combustion-type carbon black reactor having an upstream inlet, a furnace section, a quench section, a downstream outlet, and means for injecting a hydrocarbon feedstock into the reactor in the presence of feedstock-decomposing hot combustion gases, the improvement which comprises: a ring-like constriction in said quench section, said constriction including a frusto-conical surface intersecting at one end thereof with the tubular surface of said quench section and narrowing to an opening of considerably reduced cross-sectional area with respect to the cross sectional area of said furnace section, said opening comprising a generally cylindrical surface extending longitudinally downstream from said frusto-conical surface and terminating in a planar surface generally perpendicular to the axis of said quench section; an expansion chamber in said reactor defined by said planar surface at its upstream end, by said outlet at its downstream end and by the reactor lining intermediate said ends, said expansion chamber having a relatively larger cross sectional area than said opening; a plurality of radially disposed passageways in the body of said constriction, said passageways intersecting the juncture of said frusto-conical and cylindrical surfaces and communicating with the exterior of said reactor; and quench nozzles and supply pipes therefor situated in said passageways, said nozzles being mounted substantially entirely within said passageways and adapted to produce oval spray patterns, said nozzles being situated that the major semi-axes of the spray patterns produced thereby will be perpendicular to the axis of said construction.

3,222,137
APPARATUS FOR SURFACE REACTIONS

Thomas W. Martinek, Crystal Lake, Ill., assignor, by mesne assignments, to Union Oil Company of California, Los Angeles, Calif., a corporation of California

Filed Dec. 20, 1961, Ser. No. 160,882
2 Claims. (Cl. 23—285)

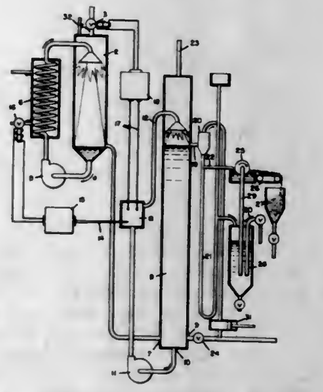


1. An apparatus comprising, in combination, an enclosure having top, bottom, side and end walls defining an elongated reaction chamber, means in one end wall for introducing liquid reactant into said chamber, means in the opposite end wall for removing liquid product from said chamber, a first heat-exchange means extending transverse said chamber adjacent said first end wall, a second heat-exchange means extending transverse said chamber adjacent said opposite end wall, means for dispersing a comminuted solid reactant comprising a conduit for conveying same into said chamber through said top wall between said first and second heat-exchange means, cooling means associated with said conduit at the discharge end thereof, a perforated basket transverse said chamber to receive said solid reactant, and means for dispersing a gaseous reactant transverse said chamber between said means for dispersing said comminuted solid reactant and said second heat-exchange means.

3,222,138
APPARATUS FOR THE CONTINUOUS MANUFACTURE OF CHLORINATED CYANURIC ACID

Robert Léon Pierre Becanne and Claude Jacques Henri Marie Pierre Ferrand, Haute-Garonne, France, assignors to Office National Industriel de l'Azote, Haute-Garonne, France

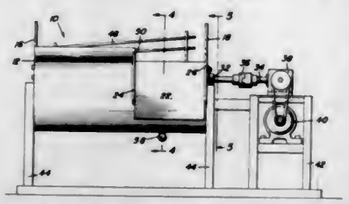
Filed Mar. 2, 1964, Ser. No. 348,544
Claims priority, application France, Dec. 19, 1960, 4,685; Mar. 4, 1963, 4,864
1 Claim. (Cl. 23—285)



Apparatus for preparing chlorinated derivatives of cyanuric acid which comprises a chlorination column containing means for introducing gaseous chlorine in the

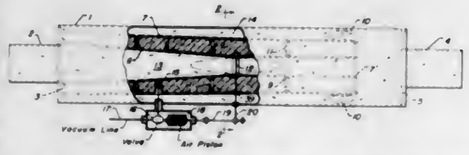
lower portion thereof, means for controlling flow through said means for introducing gaseous chlorine, an inlet attached to the lower portion of said chlorination column for introducing a cooled aqueous solution of cyanuric acid and alkaline hydroxide, bypass means for recycling a portion of the thus-formed reaction mixture from the lower portion of said chlorination column to the upper portion of said chlorination column, a supply column, means for introducing an aqueous solution of cyanuric acid and alkali hydroxide into said supply column, means for controlling flow through said means for introducing said aqueous solution, circulating means for circulating said aqueous solution from the lower portion of said supply column to the upper portion of said supply column, cooling means operably connected to said circulating means to cool said aqueous solution, an outlet for removing said cooled aqueous solution from said supply column, said outlet attached to the inlet located in the lower portion of the chlorination column for introducing said cooled aqueous solution into said chlorination column, a temperature controller operably connected to said cooling means, a temperature sensing device in said by-pass means and operably connected to said temperature controller, an oxidation-reduction potential sensing device in said by-pass means and operably connected with at least one of the means for controlling the flow of gaseous chlorine and aqueous solution of cyanuric acid and alkaline hydroxide, means connected to the upper portion of said chlorination column for introducing the recycled portion of said reaction medium to a degassing chamber where part of the chlorine gas contained in said reaction medium is separated from the remaining portion of the reaction medium, means for introducing the remaining portion of said reaction medium to a separation chamber comprising means for separating the chlorinated cyanuric acid from the mother-liquors, means for introducing the mother-liquors into a reaction chamber comprising means for the introduction of an acid whereby said mother-liquors and said acid enter into a reaction with the liberation of chlorine gas, and means for combining the chlorine gas separated in the degassing chamber with the chlorine gas liberated in the reaction chamber and recycling same into the chlorination chamber.

3,222,139
COLD WATER QUICKLIME SLAKER
Virgil S. Reller, St. Cloud, Minn.
(7237 Stevens Ave., Richfield 23, Minn.)
Filed Sept. 11, 1962, Ser. No. 222,778
2 Claims. (Cl. 23—287)



2. In a cold water quicklime slaker, a longitudinally extending tank, an elongated shaft extending therethrough, means rotatably mounting said shaft, agitating blades, means fixedly securing said blades to said shaft for rotation therewith so as to effect the slaking of lime introduced into the tank, an inlet means provided adjacent the first end of said tank, a discharge chute provided adjacent the second end of said tank, means for constantly indicating the temperature within the slaker tank, said temperature indicating means consisting of a thermometer mounted against the outer surface of the tank circumferentially aligned with and spaced from the discharge chute, and means for maintaining the inner surface of the tank free of any scale build-up in the area of the thermometer so as to insure a reading indicative of the true temperature within the tank, said build-up preventing means consisting of a paddle of substantially the same width as the discharge chute, said paddle being mounted on one of said blades for rotation therewith, the outer longitudinal edge of said paddle being in wiping engagement with the inner surface of the tank in line with the discharge chute thus preventing the accumulation of scale while also insuring the discharge of the lime grit through the discharge chute, said agitating blades each consisting of a plurality of elongated spaced rods, the means securing said blades to said shaft consisting of radially extending spokes provided adjacent each end of the shaft, said rods secured to and extending between said spokes, said rods as they approach the discharge end of the tank being inclined rearwardly in relation to the direction of travel of the blades.

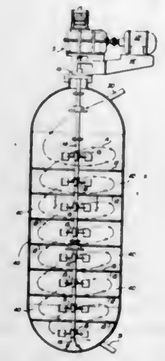
3,222,140
MEANS AND APPARATUS FOR CATALYTICALLY OXIDIZING AN EXHAUST GAS STREAM
Herschell Robert Scivally, La Canada, Calif., and Fletcher Thorne-Thomsen, Shreveport, La., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
Filed Oct. 29, 1962, Ser. No. 233,688
4 Claims. (Cl. 23—288)



1. A catalytic converter-muffler for treating an exhaust gas stream which comprises in combination, an elongated outer housing having an inlet port at one end and an outlet port at the other end thereof, an elongated perforate catalyst retaining section extending for at least a major portion of the interior length of said housing, subdivided catalyst particles maintained within said catalyst retaining section and forming a catalyst bed, an inlet manifold means from the inlet port at one end of said housing that is coextensive with one face of said perforate catalyst retaining section and suitable for distributing a gas stream therethrough, an opposing gas collection manifold coextensive with the opposing face of said catalyst retaining section and connective with the outlet port of said housing, whereby an exhaust gas stream may be passed through said housing and through the catalyst maintained therein, and movable damper means positioned within said housing and the inlet manifold serving to partition the bed into an upstream and downstream section, with said damper means adjustable to preclude gas flow when closed only through the downstream end section of said inlet manifold and through said catalyst retaining section opposing such downstream end thereof.

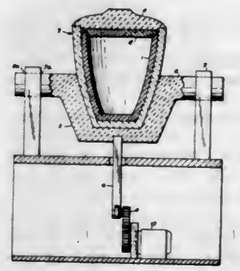
3,222,141
DIGESTING APPARATUS
Donald J. Donaldson, Baton Rouge, La., assignor to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware
Original application Mar. 23, 1960, Ser. No. 17,177, now Patent No. 3,112,994, dated Dec. 3, 1963. Divided and this application July 9, 1962, Ser. No. 214,155
2 Claims. (Cl. 23—290.5)

1. An apparatus for continuously digesting an aluminous ore in a caustic aluminate liquor under conditions of high temperatures and pressures, comprising an elongated vertically disposed vessel, a plurality of horizontally disposed and spaced baffle rings extending inwardly a short distance from the inner wall of said vessel and forming a plurality of successive intercommunicating and separate unobstructed reactor compartments in vertical stacked relationship, an elongated shaft concentrically disposed within said rings and projecting through said compartments, a plurality of horizontally disposed baffle plates having paddles affixed thereto and projecting outwardly therefrom with the major surface areas of said paddles arranged in vertical planes, said baffle plates



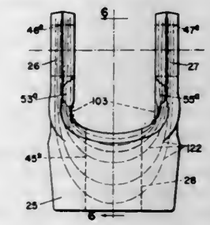
being mounted on said shaft in spaced relationship to each other such that a baffle plate is disposed in each reactor compartment intermediate a pair of baffle rings, said baffle plates being concentrically disposed on said shaft and within said baffle rings, the outside diameter of said baffle plates with paddles being less than the inside diameter of said baffle rings, means for slowly rotating said shaft and the baffle plates whereby a circular motion with a minimum amount of vertical flow and agitation is imparted to the contents of the vessel, and inlet and outlet means at opposing end portions of the vessel.

3,222,142
SYNTHESIS OF LARGE CRYSTALS OF FLUORPHLOGOPITE MICA
Haskiel R. Shell and Norman A. Pace, Norris, and Earl F. Nichols, Andersonville, Tenn., assignors to the United States of America as represented by the Secretary of the Interior
Filed Sept. 10, 1963, Ser. No. 308,036
4 Claims. (Cl. 23—302)
(Granted under Title 35, U.S. Code (1952), sec. 266)



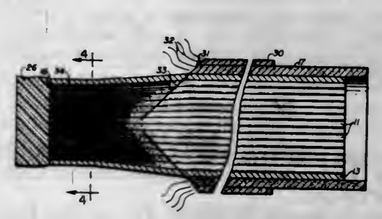
1. A method for crystallizing fluorphlogopite mica from a liquid melt in a reaction vessel, said melt being at an elevated temperature, which comprises rocking the vessel at a relatively slow rate of motion through an angle of about 30°, while cooling the melt whereby the fluorphlogopite crystallizes out and the growing crystals are bathed in fresh liquid melt, said rocking motion extending throughout the period of cooling and crystallization.

3,222,143
UNIVERSAL JOINT YOKES
Mario Macchini, 281 Shenstone Road, Riverside, Ill.
Original application May 31, 1961, Ser. No. 124,252, now Patent No. 3,124,877, dated Mar. 17, 1964. Divided and this application Feb. 17, 1964, Ser. No. 345,471
3 Claims. (Cl. 29—183)



1. As a new article of manufacture, a forged steel yoke, including a body hub having a shaft receiving opening extending axially of such hub, and having oppositely disposed ears connected to one end of the body hub at opposite sides of the axis of such shaft receiving opening by curvilinear roots, said ears including substantially flat portions lying in parallel planes parallel to and located at opposite sides of the axis of the shaft receiving hub opening, said yoke comprising an integral body of steel wherein the grain of the ears extends lengthwise of such ears, and wherein such grain of the ears includes lines extending through the hub in continuous curves concave upwardly through the hub at both sides of the shaft receiving opening between the ears and through the roots of the ears.

3,222,144
POLYCELLULAR TUBULAR GRID STRUCTURES AND METHOD OF MANUFACTURE
Donald E. Davenport, Palo Alto, Calif., assignor, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission
Filed Feb. 25, 1963, Ser. No. 260,929
22 Claims. (Cl. 29—191)



13. A polycellular tubular grid structure comprising an outer annular metallic shell member, and a polyhedral honeycomb grid having tubular passages extending longitudinally within said shell, said grid comprising at least two metallic layers bonded integrally and homogeneously

in an interface region, said interface region comprising an explosively intermixed and fused zone of material derived from said metallic layers to form the walls defining said passages.

3,222,145
STABILIZATION OF THERMALLY UNSTABLE LIQUID HYDROCARBON FUELS

George Belo, Franklin Township, Allegheny County, and Arthur V. Churchill, Oakmont, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed Dec. 28, 1960, Ser. No. 78,854
20 Claims. (Cl. 44—66)

12. A fuel composition comprising a major amount of a normally thermally unstable liquid hydrocarbon combustion gas turbine fuel and a small amount, sufficient to improve the thermal stability of said fuel, of a combination of (A) a monoester of a fatty acid containing 8 to 18 carbon atoms per molecule and a polyglycerol having an average molecular weight of about 166 to 462, and (B) a member selected from the group consisting of (1) an anticlogging, oil-soluble phosphosulfurized aliphatic hydrocarbon selected from the group consisting of paraffins, olefins, and olefin polymers having molecular weights in the range of about 50 to 10,000 and (2) an oil-soluble, nitrogen-containing anticlogging copolymer of (i) a monomeric, copolymerizable alkyl ester of an acid selected from the group consisting of acrylic and lower alkacrylic acids whose alkyl ester substituent contains 8 to 18 carbon atoms, and (ii) a monomeric copolymerizable unsaturated compound containing an ethylenic linkage as the sole functional group that is copolymerizable with the aforesaid monomeric alkyl ester and having a nitrogen-containing substituent group, said monomeric components being present, respectively, in the copolymer in a weight ratio of about 0.03 to 1:1, said small amount comprising at least about 2.5 pounds of each member of said combination per thousand barrels of fuel.

3,222,146
GLYCEROL ESTERS IN LEADED GASOLINE

Everett N. Case, Homewood, and Seymour H. Patinkin, Chicago, Ill., and Dennis R. Carlson, Anoka, Minn., assignors, by mesne assignments, to Sinclair Research Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Jan. 9, 1961, Ser. No. 81,247
5 Claims. (Cl. 44—69)

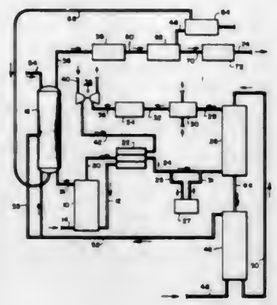
1. A leaded gasoline consisting essentially of base hydrocarbon gasoline containing at least about 10 volume percent unsaturated hydrocarbons, a small amount of lower-alkyl lead anti-knock agent sufficient to reduce knock and about 1 to 50 moles per mole of lead compound of a gasoline-compatible ester containing up to 20 carbon atoms and comprising a glycerol triester of an aliphatic carboxylic acid of 1–9 carbon atoms in an amount sufficient to increase the octane number of the leaded gasoline.

3,222,147
PROCESS FOR THE PREPARATION OF MIXTURES OF HYDROGEN, CARBON MONOXIDE AND METHANE

Homer E. Benson, Pittsburgh, Pa., assignor to Con-Gas Service Corporation, Pittsburgh, Pa., a corporation of Delaware

Filed Feb. 12, 1962, Ser. No. 172,687
7 Claims. (Cl. 48—197)

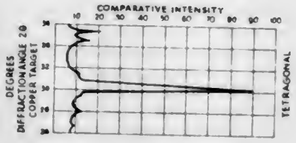
1. A process for preparing a mixture of gases comprising hydrogen, carbon monoxide and methane which comprises, reacting an oxidizable metal with steam at an elevated pressure to produce a first gas mixture consisting essentially of hydrogen and steam, and thereafter reacting said gas mixture with carbonaceous solids at substantially the same elevated pressure and at a temperature in excess of approximately 1650° F. to produce a second gas mixture having a high B.t.u. content containing hydrogen, carbon monoxide and methane.



3,222,148
TETRAGONAL ZIRCONIUM OXIDE CONTAINING CALCIUM OXIDE

John O. Hay, Cleveland, Ohio, assignor to The Harshaw Chemical Company, Cleveland, Ohio, a corporation of Ohio

Filed Mar. 15, 1963, Ser. No. 265,553
3 Claims. (Cl. 51—309)



1. Tetragonal zirconium oxide consisting essentially of zirconium oxide and calcia, said tetragonal zirconium oxide being stable at all temperatures from room temperature to about 1150° C., the calcia being present in a proportion of 0.5% to 5% by weight of the zirconium oxide.

3. A glass polishing composition consisting essentially of a major amount of water and a minor amount of the composition of matter defined in claim 1, the zirconia content of the polishing composition being from 10% to 60% by weight and the water content of such composition being from 90% to 40% by weight.

3,222,149
METHOD FOR PRODUCING CONDUCTIVE GLASS FIBER YARN

Warren W. Drummond, Allison Park, Pa., assignor to the United States of America as represented by the Secretary of the Air Force

Filed Feb. 19, 1963, Ser. No. 260,101
1 Claim. (Cl. 65—3)

The method of making a flexible electrical heat-conductive glass fiber yarn which comprises forming a narrow sandwich strip of outer "Mylar" layers having an intermediate metallic electrically and heat-conductive foil of a width from 1/20 to 1/64 inch therebetween bonded thereto, simultaneously drawing an annular group of fine glass fibers from a glass melt with the "Mylar"-foil-"Mylar" sandwich strip centered therein to be completely surrounded by the glass fibers, converging the glass fibers into surrounding contacting relation with the "Mylar"-foil-"Mylar" sandwich strip, and applying heat having approximately 350° F. temperature to the contacting fibers and enclosed sandwich strip to fuse the "Mylar" surfaces of the strip to the surrounding glass fibers to cause the glass fibers to tenaciously adhere to the foil in encasing relation to form the flexible electrical and heat-conductive yarn aforesaid.

3,222,150
METHOD OF MAKING GLASS-TO-METAL SEALS

Robert N. Shepard, Pine City, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York

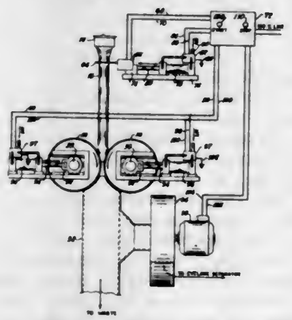
Filed Mar. 11, 1960, Ser. No. 14,250
2 Claims. (Cl. 65—18)

1. In the method for producing a glass-to-metal seal which comprises forming a sintered glass element from a mixture of finely-divided glass particles and organic forming-aid which is shaped to the desired configuration and heated in an oxidizing atmosphere to a temperature sufficiently high to burn out the organic material and sinter the glass particles to a unitary structure, and thereafter softening the glass element in juxtaposition with a metal element and cooling to seal the elements together, the improvement which comprises forming the sintered glass element by heating the shaped mixture of glass particles and organic forming-aid in an oxidizing atmosphere at a rate not exceeding about 15° C./minute to a temperature of at least about 450° C., but less than that temperature at which the glass has a viscosity less than 10^9 poises, maintaining thereat for at least one hour to completely burn out all of the forming-aid, thereafter exposing the shape to a temperature within the range at which the viscosity of the glass is between 10^6 and 10^9 poises in a surrounding atmosphere having a pressure of less than 2000 microns of mercury for a period of time varying from about 10 minutes at the higher end of the temperature range to about 60 minutes at the lower end of the temperature range to sinter the body to a substantially transparent unitary structure.

3,222,151
FLAKE GLASS BREAKOUT DETECTOR AND METHOD OF CONTROLLING GLASS BREAKOUT

Robert Z. Schreffler, Brigham City, Utah, assignor to Owens-Corning Fiberglas Corporation, a corporation of Delaware

Filed Oct. 16, 1961, Ser. No. 145,378
6 Claims. (Cl. 65—29)



2. In a method of producing glass flakes from a body of molten glass by feeding the glass from the molten body through an annular orifice and drawing the molten glass directly into a thin-walled cylinder by pulling on the cylinder,

the steps of

moving the glass from the body as a molten annular mass through the annular feed orifice,

pulling the glass directly from said molten annular mass to cause it to neck down into a thin-walled cylinder, by passing the cylinder between a pair of separable pull cylinders spaced from the annular orifice,

exposing the thin-walled cylinder to the ambient atmosphere to cool and harden the thin-walled cylinder,

fracturing the thin-walled cylinder into flakes during passage through the cylinders,

collecting the flakes,

positioning a movable sensing device alongside said thin-walled cylinder and in axial alignment with the periphery of the molten annular mass issuing from the annual feed orifice, to detect glass moving away from said annular orifice without necking down,

detecting rupture of said thin-walled cylinder by physically sensing glass moving away from said molten annular mass without necking down,

upon detecting a rupture of said cylinder, moving said pull cylinders apart and moving said sensing device to avoid contact with said non-necking glass,

and diverting the non-necking glass away from contact with the collected flakes,

whereby the recovered product is separated from the non-product glass issuing from said annulus.

5. In apparatus for producing flakes from a body of molten glass,

a melter having a forming orifice to produce a cylinder of glass,

a pair of opposed pull cylinders positioned in spaced relation to said forming orifice to engage the glass cylinder and pull it directly away from said orifice, thereby reducing the diameter and wall thickness and then fracture the thin-walled cylinder so produced into flakes,

means mounting said cylinders for movement between an operating position and a retracted, non-operating position,

collecting means to collect flakes from said cylinders,

means for actuating and deactuating said collecting means between collecting and non-collecting conditions,

a detector positioned between said forming orifice and said cylinders in operable alignment with the periphery of said orifice and thus normally out of detecting relation with the reduced diameter, thin-walled cylinder,

means for moving said detector between detecting and non-detecting positions,

and time sequence actuator means conected to said detector to receive a signal therefrom, to said detector moving means, to said pull cylinder moving means, and to said actuating means for said collecting means,

whereby said detector will sense non-attenuated glass issuing from said orifice, indicating a rupture of said thin-walled cylinder, and in turn will signal said actuator which will in a time sequence retract said detector, retract said pull cylinders, deactuate said collecting means, or return the pull cylinders and detector and actuate the collecting means.

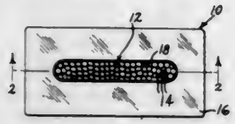
3,222,152
SOLDER SEALING GLASS MEMBERS

Lee O. Upton, Sturbridge, Mass., assignor to American Optical Company, Southbridge, Mass., a Voluntary Association of Massachusetts

Filed Nov. 22, 1960, Ser. No. 71,084
3 Claims. (Cl. 65—32)

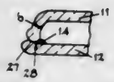
1. The method of connecting a surface of one glass member to a surface of another glass member comprising the steps of positioning said members so as to dispose

said surfaces in adjacent spaced relationship with each other, placing a granulated solder glass in the space between said surfaces of said members, said solder glass being fusible to said members at a temperature lower than the softening temperature of the glasses of said members, heating the combination of said members and solder glass to a temperature below the softening temperature



of said members but sufficiently to fuse said solder glass to said surfaces of said members and maintaining a vacuum at one side of said members relative to the other whereby air and gases are withdrawn from said solder glass and said solder glass is compacted into said space and said members are hermetically sealed one to the other.

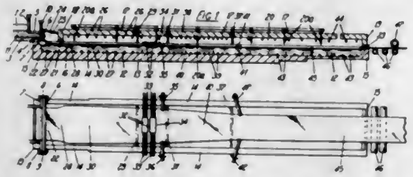
3,222,153
METHOD OF PRODUCING MULTIPLE SHEET GLAZING UNITS
Charles M. Browne, Toledo, Ohio, assignor to Libbey-Owens-Ford Glass Company, Toledo, Ohio, a corporation of Ohio
Original application Jan. 10, 1955, Ser. No. 480,759. Divided and this application Oct. 4, 1960, Ser. No. 65,557
3 Claims. (Cl. 65—43)



1. A method of producing multiple sheet glazing units of a type having sheets of glass disposed in spaced face-to-face relationship with the marginal edge portions thereof fused together to provide a sealed chamber between the sheets, comprising placing a ridge of low melting point glass on one face of a first glass sheet spaced inwardly from the peripheral edges thereof, positioning a second sheet in spaced face-to-face relationship to said one face of said first sheet with the marginal edge portions overhanging said ridge, heating the marginal edge portions of said sheets to the fusion temperature of glass and bending the edge of said second sheet toward said first sheet and into fusion contact therewith outwardly of said ridge with the inner surface of said edge of said second sheet contacting said ridge whereby said low melting point glass will fuse to the sheets at the line of joinder therebetween.

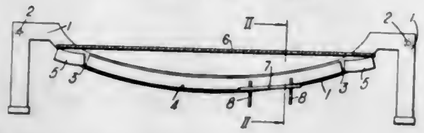
3,222,154
MANUFACTURE OF FLAT GLASS
Lionel A. B. Pilkington, Rainhill, England, assignor to Pilkington Brothers Limited, Liverpool, England, a company incorporated of Great Britain
Filed Mar. 26, 1962, Ser. No. 182,438
Claims priority, application Great Britain, Mar. 29, 1961, 11,586/61
5 Claims. (Cl. 65—91)

1. A method of manufacturing flat glass having a predetermined thickness, comprising the steps of advancing a ribbon of glass forwardly along a bath of molten metal, thermally conditioning the glass as it is advanced to ensure that a part of the ribbon of glass passing along a zone of said bath is stiffened sufficiently at said zone to be capable of being gripped, gripping the stiffened part of the ribbon at said zone in order to control the velocity of that part of the ribbon along the bath at said zone, continuing the advance of the stiffened part of the ribbon along the bath beyond said zone at the controlled velocity, progressively heating the stiffened part of the ribbon forwardly beyond said zone to a transitional plastic state as it is further advanced while imposing longitudinally directed tractive force on the glass in that transitional plastic state to accelerate the plastic glass, thereby effecting a predetermined reduction in thickness of the ribbon, the gripped



stiffened part of the ribbon advancing at said zone at a controlled velocity constituting a barrier to resist transmission beyond the stiffened part of the ribbon of any longitudinally directed tractive force transmitted through the plastic glass to the stiffened part of the ribbon, then stabilising the ribbon of glass at the desired reduced thickness, and sufficiently cooling the stabilised ribbon to permit it to be taken unharmed from the bath.

3,222,155
METHOD AND APPARATUS FOR THE PRODUCTION OF BENT TOUGHENED GLASS
Harold Francis Harper, Aughton Green, near Ormskirk, and Bernard Wilfred Lee and Arthur Davies, Eccleston, near St. Helens, England, assignors to Pilkington Brothers Limited, Liverpool, England, a corporation of Great Britain
Filed Sept. 19, 1961, Ser. No. 139,272
13 Claims. (Cl. 65—103)

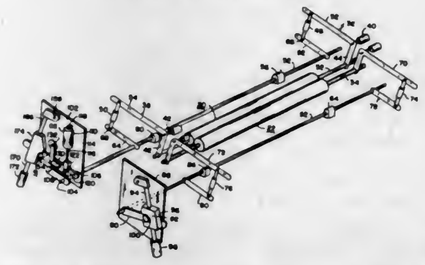


1. A method of producing bent toughened glass comprising the steps of supporting a glass sheet horizontally on a frame having a curvature corresponding to the curvature which it is desired to produce in the toughened glass, placing in spaced relation to and below a selected area of the lower face of the glass sheet an apertured sheet made of such material and having a mass such that the apertured sheet is ineffective to the heating of the glass sheet, said apertured sheet presenting an obstruction to the flow of a quenching fluid towards the selected area of the glass sheet, and being sufficiently smaller in area than the glass sheet to leave regions of said glass sheet outwardly beyond the edge of the apertured sheet unobstructed, heating the glass sheet by heating means which are effective to obtain a desired heating pattern in the glass sheet unaffected by said apertured sheet, permitting the glass sheet to sag onto the frame and to assume thereby a desired curvature corresponding to the curvature of the frame, and directing towards both faces of the bent glass sheet a gaseous chilling medium to effect quenching of the glass sheet and to toughen thereby said glass sheet, the chilling medium directed against the lower face of the glass sheet being directed upwardly not only from below the apertured plate but also from the unobstructed regions outwardly beyond the edge of the apertured plate, the chilling medium directed against the lower face of the glass sheet in the selected area of the glass sheet passing upwardly through the apertures in said apertured sheet and impinging upon said lower face, to obtain a modified

degree of toughening in the area of the glass sheet opposed to the apertured sheet as compared with the higher degree of toughening obtained in the ambient glass, the apertured sheet being present in said spaced relation to the selected area of the lower face of the glass sheet during the whole operation of the heating, bending and quenching the glass while the upper face of the glass sheet is free from any obstructions to the flow of quenching fluid towards said upper face during quenching that would interfere with the lifting of the toughened glass sheet from the frame after quenching.

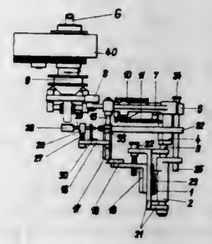
6. An apparatus for producing bent toughened glass comprising a bending structure including a carriage and a bending frame for the glass mounted on the carriage, the bending frame being adapted, when the glass is heated, to permit the glass to bend to a predetermined shape under gravity, an apertured quench-obstructing sheet of heat-resisting metal in wafer form including a continuous imperforate marginal area, means for mounting said obstructing sheet on the bending structure in spaced relation to and below the glass when the glass has conformed to the shape of the frame, said apertured sheet in mounted position underlying a selected area of the glass intended to form the vision zone in quenching position of the glass, while leaving regions of the glass outwardly beyond the edge of the glass unobstructed, a furnace structure adapted to receive the bending structure, and means for toughening the bent glass comprising upper and lower quenching frames between which the bent glass is adapted to be moved on the bending structure on leaving the furnace structure for the toughening operation, the lower quenching frame being located below the apertured plate in quenching position of the glass and having means for directing a quenching medium upwardly against the lower face of the bent glass, not only from below the apertured plate for upward passage through the apertures in said mounted apertured plate but also from unobstructed regions outwardly beyond the edge of the apertured plate, to obtain a modified degree of toughening in the area of the sheet opposed to the apertured sheet as compared with the degree of toughening in the unobstructed regions of the glass, said apparatus being free from any obstructions to the flow of quenching fluid towards the upper face of the glass that would interfere with the lifting of the toughened glass from the bending frame after quenching.

3,222,156
APPARATUS FOR DRAWING GLASS SHEET WITH CONTROL DEVICE
Thomas A. Insolio, Jeannette, Pa., assignor to American-Saint Gobain Corporation, Kingsport, Tenn., a corporation of Delaware
Filed June 20, 1962, Ser. No. 203,786
6 Claims. (Cl. 65—159)



1. In an apparatus for vertically drawing a glass sheet:
(A) a primary roll;
(B) a secondary roll;
(C) rotatable lever means supporting said primary roll for movement relative to said secondary roll;
(D) control means for said lever means to rotate said lever means and thereby move said primary roll relative to said secondary roll; said control means including
(1) power means for normally rotating said lever means in a direction to move said primary roll away from said secondary roll,
(2) rotatable coupling means attached to said lever means and to said power means whereby said power means rotates said lever means, and
(3) stop means limiting the rotation of said coupling means and thereby limiting the rotation of said lever means to position said primary roll a predetermined distance from said secondary roll, said coupling means including
(a) a release member responsive to a force exerted between said rolls for disengaging said stop means to permit further rotation of said coupling means and said lever means to thereby permit said primary roll to move away from said secondary roll when a force is exerted between said rolls, and
(b) actuator means to shut off said power means after said release member disengages said stop means.

3,222,157
APPARATUS FOR THE MANUFACTURE OF AMPULES
Jakob Dichter, Sachsendamm 93, Berlin-Schoneberg, Germany
Filed Jan. 3, 1962, Ser. No. 164,108
Claims priority, application Germany, Jan. 10, 1961, D 35,138
7 Claims. (Cl. 65—280)



1. In an ampule making machine having a chuck adapted to support the glass tube in a vertical position with the lower end of the tube projecting downwardly below said chuck, smelting off means, bottom forming means adjacent said smelting off means, and means for driving said chuck along a fixed horizontal path past said smelting off means and said bottom forming means to successively advance the lower end of a tube supported in said chuck into operative relationship with said smelting off means and said bottom forming means; the improvement wherein said bottom forming means comprises a bottom shaping member having an upwardly opening recess adapted to receive the smelted off end of a tube in seated relationship therein, support means on said forming means supporting said shaping member for horizontal movement to and from a normal rest position located adjacent said smelting off means, means effecting vertical movement to said shaping member during said horizontal movement, said support means including arm means po-

sitioned to be engaged and moved by said chuck for moving said shaping member horizontally from said rest position with said chuck during movement of said chuck along a portion of said horizontal path, said chuck engaging means being operable to maintain said recess in vertical registry with the smelted off end of a tube carried by said chuck from said smelting off means along said portion of said path, said means effecting vertical movement to said shaping member including cam means positioned relative to said portion of said path to engage cam follower means on said support means during horizontal movement of said shaping member with said chuck for elevating said shaping member to seat the smelted off end of the chuck supported tube within said recess and for lowering said shaping member out of engagement with said tube before said chuck arrives at the end of said portion of said path remote from said smelting off means, and means for returning said shaping member to its rest position upon movement of said chuck beyond said remote end of said portion of said path.

3,222,158
ORGANOTIN COMPOSITIONS

Frank J. Sowa, 9 Besler Ave., Cranford, N.J.

No Drawing. Filed May 26, 1960, Ser. No. 31,828
17 Claims. (Cl. 71—2.3)

1. A stable concentrate consisting essentially of one part by weight of an organotin compound selected from the group consisting of:

$$Y_nSnX_{4-n}(Y_2SnO)_a$$

and

$$(YSnO_{1.5})_a$$

wherein n is an integer from 1 to 3, Y is selected from the group consisting of alkyl from 1–18 carbon atoms, lower alkenyl, cyclohexyl, arylalkyl where the aryl is phenyl and the alkyl is lower alkyl, pheny, naphthyl, anthracenyl, pyridyl, furyl and thiophenyl; X is a radical attached to the tin by other than a (C=Sn) bond selected from the group consisting of the halide, sulphide, acyloxy of up to 18 carbon atoms, phenoxide, naphthoxide, alkyltinoxy, and mercaptobenzothiazolate; and a has a value of at least 2, said compound being dissolved in from 0.25 to 9 parts by weight, of a surfactant having a critical balance of hydrophobic and hydrophilic groups therein whereby said tin compound remains dissolved in said surfactant on standing and does not separate out and the resulting single phase stable solution is soluble in water to give a stable solution, said surfactant having the formula:

$$R(R'O)_{x+y}H$$

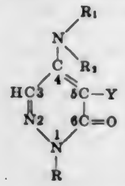
wherein R is a hydrophobic radical selected from the group consisting of alkoxy containing from 8–18 carbon atoms, phenoxy, alkylphenoxy, fatty acid amido containing from 8–18 carbon atoms, abietyl, alkylamino wherein the alkyl contains from 8–18 carbon atoms and fatty acid containing from 12–18 carbon atoms (R'O) is oxyalkylene containing from 2 to 4 carbon atoms; x is an integer equal to the total number of hydrophilic oxyalkylene groups required to give a threshold water solubility corresponding to about 1% by weight to the hydrophobic radical at room temperature while y is an integer from 1 to 15 except that, in the case where R is one of the indicated amido and amino radicals and includes oxyalkylene $(R'O)_{x+y}$, the sum of the x's equals the number of hydrophilic oxyalkylene groups required to give said threshold water solubility and the sum of the y's is between 3 and 25.

3,222,159
METHOD OF DESTROYING UNDESIRABLE PLANT GROWTH

Franz Reicheneder and Karl Dury, Ludwigshafen (Rhine), Herbert Stummeyer, Limburgerhof, Pfalz, and Adolf Fischer, Mutterstadt, Pfalz, Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed Apr. 13, 1964, Ser. No. 359,508
Claims priority, application Germany, Nov. 21, 1958, B 51,155; Mar. 25, 1961, B 61,873
10 Claims. (Cl. 71—2.5)

1. A method of controlling weeds which comprises treating the weeds with a phytotoxic amount of a compound of the formula:

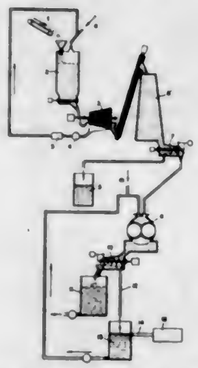


in which R represents a radical selected from the group consisting of phenyl, monochlorophenyl and dichlorophenyl, R_1 represents a member selected from the group consisting of hydrogen, allyl, alkyl having from 1 to 4 carbon atoms, monohydroxyalkyl having from 1 to 3 carbon atoms, α-hydroxy-β-trichloroethyl, acetyl, chloroacetyl, dichloroacetyl, trichloroacetyl, propionyl, chloropropionyl, dichloropropionyl, carbamyl, N-phenyl-carbamyl and N-3-chlorophenyl-carbamyl, R_2 represents a radical selected from the group consisting of hydrogen, alkyl having from 1 to 4 carbon atoms and monohydroxyalkyl having from 1 to 3 carbon atoms, and Y represents a member selected from the group consisting of chlorine and bromine.

3,222,160
PROCESS FOR MANUFACTURING A HUMIC FERTILIZER

Yves Ramus, Seyne-les-Alpes, France

Filed Feb. 6, 1961, Ser. No. 87,218
Claims priority, application Germany, Feb. 15, 1960, E 18,894
7 Claims. (Cl. 71—23)



1. A process for manufacturing a humic fertilizer comprising impregnating a cellulosic containing material with a solution of nitric acid in an amount in excess of the amount capable of being absorbed by said cellulosic material, draining the excess of said solution, digesting said cellulosic material impregnated with nitric acid in order to produce celulose, separating said cellulosic material from the liquid therein, reacting said cellulosic material and liquid remaining therein with a compound selected from the group consisting of ammonia, potash and lime in an amount sufficient to neutralize said cellulosic material and liquid remaining therein in order to produce a neutralized solution of lignins and oxidized hemi-celluloses, comminuting said cellulosic material, separating said cellulosic material from the neutralized solution of lignins and oxidized hemi-celluloses contained therein, and concentrating said neutralized solution to produce a humic fertilizer material.

3,222,161
VACUUM TREATED HIGH SILICON CAST IRON AND PROCESS FOR MAKING SAME

Walter A. Luce and Glenn W. Jackson, Dayton, Ohio, assignors to The Duriron Company, Inc., Dayton, Ohio, a corporation of New York

Filed June 10, 1963, Ser. No. 286,676
11 Claims. (Cl. 75—49)

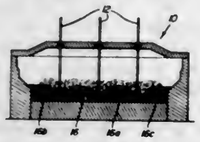
1. The method of improving the mechanical properties of high silicon cast iron containing at least about 12% silicon, 1% carbon, the balance substantially all iron to obtain a minimum transverse load strength of 1600 pounds in the as-cast metal, which comprises the steps of subjecting the molten cast iron to vacuum to reduce the gas content thereof to not over about 2 p.p.m. of hydrogen, 6 p.p.m. of nitrogen and 20±10 p.p.m. of oxygen, and immediately casting the metal.

7. High silicon cast iron having a silicon content of at least 12%, carbon of about 1%, the balance being substantially all iron; said alloy as cast having not over about 2 p.p.m. of hydrogen, 6 p.p.m. of nitrogen, 20±10 p.p.m. of oxygen; said alloy further having a minimum transverse load strength of at least 1600 pounds and characterized by a microstructure of fine acicular graphite uniformly distributed in a fine grain dendritic iron silicide matrix.

3,222,162
REVERBERATORY MATTE-SMELTING PROCESS

George C. Beals, John Kocherhans, and Kendal M. Ogilvie, Salt Lake City, Utah, assignors to Kennecott Copper Corporation, New York, N.Y., a corporation of New York

Filed Apr. 17, 1963, Ser. No. 273,767
5 Claims. (Cl. 75—73)



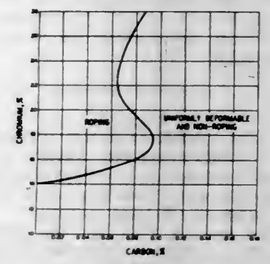
1. In matte-smelting practice utilizing a reverberatory furnace, wherein a bath of matte and slag is produced and maintained in molten condition by burners which are located at one end of the furnace and generate smelting heat active on masses of ore materials charged into said furnace along a major portion of its length commencing at the burner end thereof, said bath being maintained in quiescent condition along a portion of the length of the furnace at its opposite end, and wherein matte and slag are separately drawn off, the latter from the quiescent portion of said bath, the improvement comprising:

splashing molten material from said bath onto exposed, superficial areas of the masses of charged ore materials, while increasing the available furnace heat; and agitating the molten bath across its width in advance of the said quiescent portion of the bath, both the agitation and the splashing of molten material being effected by the injection of an oxygen-rich gas into the molten bath in the vicinity of the masses of charged ore materials.

3,222,163
DEFORMABLE CHROMIUM STEEL

James Thompson, Niagara Falls, John W. Farrell, North Tonawanda, and John L. Lamont, Niagara Falls, N.Y., assignors to Union Carbide Corporation, a corporation of New York

Filed Apr. 12, 1963, Ser. No. 272,620
2 Claims. (Cl. 75—126)



1. A non-roping, cold workable, uniformably deformable, ferritic chromium-bearing steel consisting essentially of from 21 to 25 percent chromium, a maximum of 1 percent manganese, 0.3 to 1 percent silicon, a maximum of 0.4 percent nickel, 0.022 to 0.04 percent nitrogen, and from 0.078 percent up to about 0.17 percent carbon, the actual carbon content for a selected chromium content being restricted to amounts to the right of the curve in the accompanying diagram, the balance being iron and incidental impurities.

3,222,164
BRAZING ALLOY AND PROCESS USING THE SAME

Charles David Pugh, Birmingham, Ala., assignor to Chicago Bridge & Iron Company, Hinsdale, Ill., a corporation of Illinois

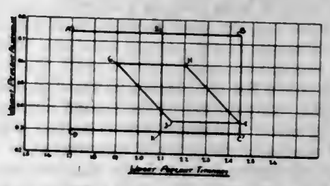
No Drawing. Filed Oct. 7, 1963, Ser. No. 314,551
11 Claims. (Cl. 75—170)

1. A brazing alloy composed of nickel, manganese, silicon and copper having a ratio of nickel to manganese by weight in the range of about 2.12 to 3.0 parts of nickel per part of manganese, a silicon content of about 0.25 to 1.8% by weight and a small amount of copper up to about 20% by weight.

3,222,165
NICKEL CHROMIUM BASE ALLOY PRODUCTS

Jack Raymond Bird, Chellaston, Geoffrey William Meetham, Derby, and Marcus Alan Wheeler, Darley Abbey, England, assignors to Rolls-Royce Limited, Derby, England, a corporation of Great Britain

Filed Nov. 24, 1959, Ser. No. 855,076
Claims priority, application Great Britain, Nov. 26, 1958, 38,217/58; May 15, 1959, 16,721/59
2 Claims. (Cl. 75—171)



1. A formed metal article having a weld therein, the metal of said article and of said weld consisting by weight essentially of approximately 21.00% chromium, 20.00% cobalt, 6.1% molybdenum, 2.12% titanium, 0.45% aluminum, 0.40% manganese, 0.30% silicon, and the balance nickel, apart from impurities and residuals from de-oxidizers.

3,222,166

TUNGSTEN-BASE ALLOY

Vernon R. Thompson, Greentree, and Robert C. Westgren, Pittsburgh, Pa., assignors to Crucible Steel Company of America, Pittsburgh, Pa., a corporation of New Jersey

Filed Oct. 11, 1963, Ser. No. 315,643
4 Claims. (Cl. 75—176)
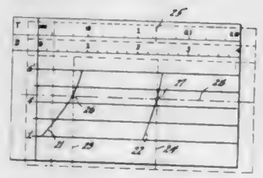
1. An alloy consisting essentially of about 0.005 to 0.20% carbon, about 5 to 15% columbium, about 0.05 to 1.0% zirconium, up to about 2% vanadium, balance essentially tungsten.

3,222,167

PROCESS FOR DETERMINING EXPOSURE AND DEVELOPING TIMES

Jacques Leon Vanheerentals, Wilrijk-Antwerp, Belgium, assignor to Gevaert Photo-Producten N.V., Mortsel-Antwerp, Belgium, a Belgian company

Filed Aug. 23, 1963, Ser. No. 306,962
Claims priority, application Netherlands, Aug. 27, 1962, 282,542
5 Claims. (Cl. 96—27)



1. Method for determining by means of a test exposure and a test development, the light exposure and the developing time of a photographic material onto which an original has to be reproduced, which method comprises the steps of making a test print by means of a wedge gradually varying in optical density from one end to the other on at least three strips of a photographic material, the characteristics of which are essentially the same as the material to bear the reproduction, photographically developing the said three strips for different developing times, determining on each strip the point of maximum density and the point of minimum density which are to be attained in the final reproduction, plotting said points to a first nomograph where the axis of abscissas is a density scale corresponding to the wedge used for making the test prints and the axis of ordinates is a time scale of developing times, joining on the said first nomograph the points of minimum density and the points of maximum density so as to obtain a continuous curve for both minimum and maximum density, indicating on a second nomograph, where the axis of abscissas is a density scale corresponding to that of the first nomograph, the minimum and the maximum density of the original by means of two straight lines running parallel to the axis of ordinates, adjusting the general position of the nomographs in the direction of the axis of abscissas, while the same are in superposed relation with their abscissas parallel, so as to make the two curves of the first nomograph intersect the straight lines of the second nomograph at two points lying on a straight line extending parallel to the axis of abscissas, the point of intersection of the ordinate axis of the first nomograph by the said last-mentioned straight line indicating the right developing time, and the relative shift in position of both nomographs in the direction of the abscissa axis indicating on a logarithmic exposure scale of the first nomograph, which exposure scale corresponds with the density scale, the factor by which the test exposure time must be multiplied in order to attain the correct exposure time.

3,222,168

DIFFUSION TRANSFER PROCESS

Edwin H. Land, Cambridge, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

No Drawing. Filed May 17, 1960, Ser. No. 29,593
5 Claims. (Cl. 96—29)

1. A process of forming photographic images by diffusion transfer, said process including the steps of exposing a silver halide emulsion, applying an aqueous alkaline solution to said exposed silver halide emulsion to effect development thereof, and forming, as a function of said development, an imagewise distribution of a diffusible image-forming component, transferring by diffusion at least part of said imagewise distribution of diffusible image-forming components to a superposed image-carrying layer to form a visible transfer image, said image-carrying layer having length, width and thickness and being adapted to be expanded and comprising a member selected from the group consisting of (a) rubber and (b) a 60:40 butyl methacrylate/methyl methacrylate copolymer, and substantially expanding said image-carrying layer in at least one of its length and width dimensions thereby providing a transfer image substantially enlarged as compared with the initially formed transfer image.

3,222,169

PHOTOGRAPHIC PRODUCTS, COMPOSITIONS AND PROCESSES EMPLOYING AZO DYE DEVELOPERS

Milton Green, Newton Center, and Howard G. Rogers, Weston, Mass., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

No Drawing. Filed May 8, 1962, Ser. No. 193,326
39 Claims. (Cl. 96—29)

20. In a process of forming a photographic image in color, the steps which comprise developing an exposed silver halide emulsion with an aqueous alkaline solution containing an azo dye developer of the formula:

$$Y-S-(R)_p-Ar-(N=N-X^1-)_n N=N-X^2$$
$$\qquad\qquad\qquad\qquad\qquad\quad (Z)_a$$

wherein Y is selected from the group consisting of 2,5-dihydroxyphenyl and alkyl and halogen nuclear substituted 2,5-dihydroxyphenyl groups; Ar is a divalent aryl nucleus selected from the group consisting of benzene and naphthalene nuclei, a ring carbon of said aryl nucleus being directly attached to an —N=N— group; R is a divalent alkylene group directly attached to a ring carbon of said aryl nucleus Ar; each Z is selected from the group consisting of alkyl and halogen groups; p is an integer from 0 to 1, inclusive; n is an integer from 0 to 2, inclusive; m is an integer from 0 to 1 inclusive; X^1 is the radical of an azo coupling component; and X^2 is selected from the group consisting of the radical of an azo coupling component and a

$$Y-S-(R)_p-Ar-$$
$$\qquad\qquad\quad (Z)_a$$

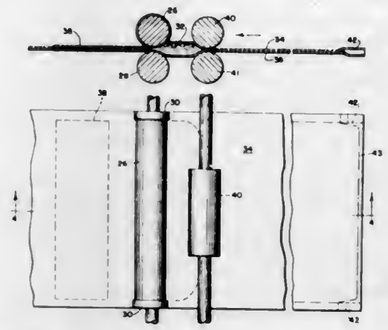
radical, provided that X^2 is the radical of an azo coupling component when m is 0; said azo coupler radicals completing said azo dye developer, to provide in said emulsion an imagewise distribution of unoxidized dye developer in undeveloped areas of said emulsion, and transferring at least part of said imagewise distribution of unoxidized dye developer by imbibition from said emulsion to an image-receiving layer in superposed relationship with said emulsion to impart a transfer image in color to said image-receiving layer.

3,222,170

PHOTOGRAPHIC PROCESS FOR FORMING A PHOTOSENSITIVE ARTICLE WITH A PROCESSING SOLUTION SPREAD THEREON

Vaito K. Eloranta, Needham, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

Original application Aug. 29, 1958, Ser. No. 757,976, now Patent No. 2,791,703, dated July 11, 1961. Divided and this application Sept. 8, 1960, Ser. No. 54,740
10 Claims. (Cl. 96—29)



1. A method of distributing a photographic liquid in contact with an area of a first photographic sheet to produce a composite photographic structure comprising a plurality of superposed layers, at least one of said layers including said liquid and at least one of said layers including a photographic image-recording material, said method comprising:

superposing said first sheet with a second sheet;

dispensing a quantity of said processing liquid from a container located between said sheets in a mass between said sheets adjacent an end edge of said area;

moving said sheets and mass of liquid relative to means for applying compressive pressure to said sheets, in a direction opposite the direction of distribution of said liquid in contact with said area;

during movement of said sheets, applying compressive pressure to a first transverse section of said superposed sheets ahead of said mass of liquid to distribute said liquid in contact with said area and cause said liquid to flow in a direction opposite the direction of movement of said sheets toward the opposite end edge of said area; and,

simultaneously applying compressive pressure to a second transverse section of said superposed sheets behind said mass of liquid to restrict said flow of said liquid and cause said liquid to flow transversely of said direction of movement of said sheets.

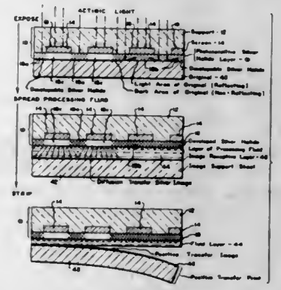
3,222,171

REFLEX COPYING BY DIFFUSION TRANSFER

Edwin H. Land, Cambridge, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

Filed July 21, 1961, Ser. No. 125,855
6 Claims. (Cl. 96—29)

1. A method of reflex copying comprising superposing a photosensitive sheet including a photosensitive material adapted, as a function of exposure thereof, to prevent diffusion transfer of an image-forming component, with the surface of a subject to be copied with said photosensitive material adjacent said surface, directing light, actinic to said photosensitive material, toward said sheet and onto an area thereof at least coextensive with the area of said surface to be copied, transmitting said actinic light through minute spaced-apart, submacroscopic areas of said sheet arranged in the form of a regular photographic screen pattern to said surface, and thereby fully exposing any photosensitive material opposite said minute areas, reflecting said actinic light from said surface toward said photosensitive material for exposing said photosensitive material provided in other minute spaced-apart, submacroscopic areas of said photosensitive sheet, said other areas being arranged in a screen pattern and comprising a substantial remaining portion of said area of said sheet and including the spaces between the first-mentioned minute areas on which said actinic light is incident, restricting said photosensitive material in said other areas to being exposed substantially only to said actinic light reflected from said surface, and thereafter superposing said photosensitive sheet with another sheet, distributing a fluid processing reagent containing a film-forming agent in a thin layer between said sheets to provide a layer



having a thickness approximately one-half the width of the first-mentioned minute areas, permeating said fluid into said photosensitive material, forming diffusible, transferable image-forming components in said other minute areas and transferring, by diffusion, said diffusible image-forming components to an image-receiving layer superposed with said photosensitive material to form, in said image-receiving layer, an image which is a positive copy of said subject, said diffusion-transfer including, in addition to a depthwise diffusion from said photosensitive material to said image-receiving layer, a substantial predetermined lateral diffusion of said image-forming components from said other minute areas of said photosensitive material whereby a portion of said diffusible image-forming components is deposited in said image-receiving layer opposite said first-mentioned minute areas of said photosensitive material, said lateral diffusion being sufficient to provide a substantially continuous tone transfer image.

3,222,172

METHOD FOR MAKING COLOR TELEVISION PICTURE TUBES

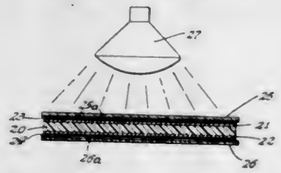
Joseph Giuffrida, Peabody, Mass., assignor to Columbia Broadcasting System, Inc., a corporation of New York, doing business as CBS-Hytron, a division of Columbia Broadcasting System, Inc., Danvers, Mass.

Filed Apr. 27, 1955, Ser. No. 504,287
8 Claims. (Cl. 96—35)

1. The method of photographically forming the image of a shadow mask on a photosensitized material disposed on the viewing end of a color television picture tube having at least one electron beam producing source therein capable of producing an electron beam within and subject to the earth's magnetic field and deflection means for said electron beam operative on an electron beam deflection plane, including the steps of exposing said photosensitized material to light from a light source through the apertures in said shadow mask to form said image, said light source being disposed at a predetermined point in said electron beam deflection plane, said point being

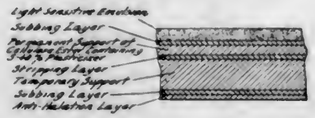
displaced a predetermined distance from the intersection of said electron beam with said electron beam deflection plane, in an amount sufficient and opposite to the offset of said electron beam on said viewing screen to compensate for the effect of the earth's magnetic field on the trajectory of said electron beam and removing the unexposed photosensitized material from said viewing end.

3,222,173
METHOD OF MAKING AN ELECTRICAL UNIT
William R. Belko, Jr., Huntington, and Roger C. Vandermark, Sandy Hook, Conn., assignors to Vitramon, Incorporated, Monroe, Conn., a corporation of Delaware
Filed May 15, 1961, Ser. No. 110,202
6 Claims. (Cl. 96—35)



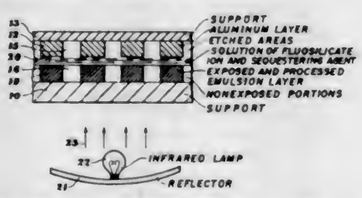
1. The method of making an electrical unit comprising the steps of providing a base member having specific electrical properties, coating opposite surfaces of said base member with a radiation sensitive material adapted to harden on being exposed to light, said radiation sensitive material having suspended therein particles of electrically conductive material and a flux for bonding said particles to said base member, simultaneously controllably exposing at least a portion of each of said coated surfaces to radiation to harden the coating in said portions in predetermined patterns, said portions being predeterminately located relative to one another so that said patterns are similarly located, removing the unexposed coating, and then firing the unit to remove the hardened coating to leave the electrically conductive material suspended therein on said surfaces in said predetermined patterns and bond the same thereto.

3,222,174
PROCESS AND MATERIAL FOR THE MANUFACTURE OF ETCHED PRINTING PLATES
André Rott, Berchem-Antwerp, and Johan Lodewijk Verelst, Deurne-Zuid-Antwerp, Belgium, assignors to Gevaert Photo-Producten N.V., Mortsel-Antwerp, Belgium, a company of Belgium
Filed Oct. 31, 1960, Ser. No. 66,316
Claims priority, application Netherlands, Nov. 3, 1959, 244,985
2 Claims. (Cl. 96—36)



1. A process of making an etched printing member by means of a photographic light-sensitive stripping film, said film having an unhardened gelatino silver halide emulsion layer carried on a thin permanent support of cellulose ester containing about 5–40% by weight plasticizer, which support is adhesively joined to a temporary support by a stripping layer, by the steps comprising:
(1) Exposing the emulsion layer separately through a screen and to an image to be printed;
(2) Photographically developing the thus-exposed film by tanning development, fixing, and washing;
(3) Applying the film to a metal printing member by pressing the washed, developed gelatino layer thereof into contact with the moistened surface of said member;
(4) Stripping the temporary support from the film so applied while said permanent support and gelatino layer remain on said member;
(5) Infusing the remainder of the film while in place on the printing member after step 4) with a liquid mixture containing by volume at least about 40% of a water-miscible organic ketone, which is a solvent for said permanent support, at least about 5% of water, and up to about 50% of a lower alkanol;
(6) Allowing the residual mixture remaining on the film after step 5) to evaporate for a brief period until tight adherence as a coherent sheet of the permanent support of the gelatino layer is loosened;
(7) Forcibly peeling said permanent support from said emulsion layer while mantaining the layer not substantially above room temperature, leaving said emulsion layer intact;
(8) Washing unhardened gelatin from said gelatino layer to produce a relief image in hardened developed gelatin emulsion of the image to be printed; and
(9) Applying an etching solution to the printing member carrying said relief image to etch the image into the member surface.

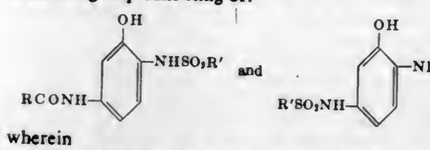
3,222,175
PROCESS FOR FORMING METALLIC NONSILVER IMAGES
Arthur A. Rasch, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Nov. 29, 1961, Ser. No. 155,735
9 Claims. (Cl. 96—36)



1. A process for etching imagewise a metal surface wherein the metal is selected from the class consisting of aluminum, cadmium, magnesium, zinc, indium, copper and germanium comprising
(A) contacting said metal surface with an emulsion surface of a photographic element comprising (a) an infrared transparent support and (b) a photoexposed silver halide emulsion layer which has been developed to a silver image and fixed,
(B) and irradiating said silver image through said infrared transparent support with infrared radiation, said irradiation being performed while said emulsion layer has imbibed therein an aqueous solution containing a sequestering agent and fluosilicate ion.

3,222,176
PHOTOGRAPHIC COLOUR IMAGES FROM AMINO SUBSTITUTED PHENOLS
Jan Jaeken, Hove-Antwerp, Belgium, assignor to Gevaert Photo-Producten N.V., Mortsel, Belgium, a Belgian company
Filed Oct. 2, 1961, Ser. No. 142,334
Claims priority, application Belgium, Oct. 4, 1960, 40,105, Patent 595,694
2 Claims. (Cl. 96—55)

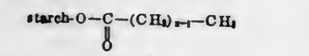
1. A process for the production of photographic color images comprising the development in a photographic material of a latent silver salt image by means of a primary aromatic amino developing substance in the presence of a color coupler to form a cyan-colored indophenol dyestuff, said coupler having a formula selected from the group consisting of:



wherein
each of R and R' is a radical selected from the group consisting of an alkyl radical, a carboxy substituted alkenyl radical, an alkyl phenyl radical and a thienyl radical, one of R and R' comprising an aliphatic carbon chain of 10 to 20 carbon atoms.

3,222,177
LIGHT SENSITIVE MULTILAYER ELEMENT HAVING A SCRATCH-RESISTANT LAYER CONTAINING A STARCH CARBOXYLATE
José Thérèse Lemmerling, Jan de Sadelerslaan 13, Edegem, Belgium; Lodewijk Felix De Keyser, Nieuwelei 9, Mortsel-Antwerp, Belgium; Adam Marcel Schouwenaars, Zwaluwenlei 25, Edegem, Belgium; and Jules Edmond Beersmans, Zurenborgstraat 48, Antwerp, Belgium
No Drawing. Filed Oct. 3, 1962, Ser. No. 228,028
Claims priority, application Belgium, Mar. 22, 1962, 615,411
6 Claims. (Cl. 96—67)

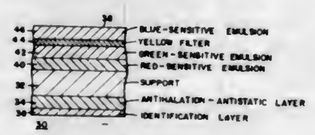
1. A photographic material comprising a support, which on the one side is provided with at least one silver halide emulsion layer and on the other side with at least one layer containing finely divided grains consisting of a hydrophobic starch ester of the formula



wherein x is an integer from 1 to 25.

6. A photographic material comprising a support which on the one side is provided with at least one silver halide emulsion and the other side with at least one layer containing finely divided grains consisting of the reaction product of urea, formaldehyde, and rice starch applied to said support from a coating composition comprising a dispersion of said reaction product in a solution of a binding agent in an organic solvent.

3,222,178
COMPOSITE FILM ELEMENT
Gale F. Nadeau and George W. Pierce, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Oct. 9, 1961, Ser. No. 143,815
4 Claims. (Cl. 96—69)



4. A photographic film product comprising (1) a film support, (2) a layer having antihalation and antistatic properties disposed on one surface of the film support and being comprised of finely divided carbon black and a water-insoluble, alkali-soluble resin, and (3) an identification layer disposed over layer (2) comprised of finely divided titanium dioxide, a copolymer of butyl methacrylate and methacrylic acid, and castor wax, and (4) a plurality of silver halide emulsion layers separately sensitive to the red, green, and blue spectral regions disposed on the other side of the film support.

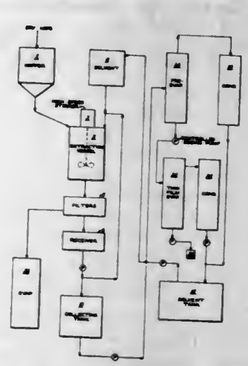
3,222,179
FEED ADDITIVE CONTAINING RENNET AND CALCIUM CHLORIDE
Stefan Schöner, Munich, Germany, assignor to Aktiengesellschaft Fuu, Schaan, Liechtenstein, a corporation of Liechtenstein
Filed Dec. 21, 1961, Ser. No. 161,142
Claims priority, application Germany, Dec. 21, 1960, A 36,339
1 Claim. (Cl. 99—2)

An animal feed comprising proteins and carbohydrates as the principal ingredients and as a growth accelerating additive 0.05 to about 0.2 percent by weight of a mixture comprising rennet and calcium chloride in the ratio of about 1:5.

3,222,180
WHISKEY STABILIZATION
Richard R. Suciletto, Cincinnati, Ohio, assignor to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia
No Drawing. Filed May 2, 1962, Ser. No. 191,720
9 Claims. (Cl. 99—48)

1. A method of treating aged distilled alcoholic liquor which comprises contacting said liquor with activated carbon, in an amount which is at least about 0.5 pound per 1000 wine gallons, and cross-linked polyvinylpyrrolidone, in an amount which is at least about 2 pounds per 1000 wine gallons, for at least about 15 minutes to reduce the haze-producing constituents below contaminating levels, and separating the thus treated alcoholic liquor from said carbon and said polyvinylpyrrolidone.

3,222,181
METHOD OF PRODUCING HOP EXTRACTS
Alfred Hoelle and Heinrich Vollmar, Rheinfelden, Germany, assignors to Maria Briem, Au, Hallertau, Germany, a German person
Filed Sept. 27, 1962, Ser. No. 226,529
Claims priority, application Germany, Mar. 11, 1960, B 57,029
2 Claims. (Cl. 99—50.5)



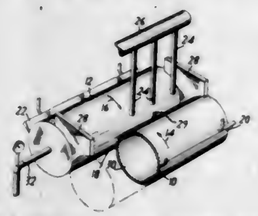
1. A process of preparing a hop extract which comprises 70 to 80% referred to the total extract of bitter principles comprising introducing the hops into an extraction zone, introducing an organic solvent into said extraction zone and comminuting the hops in said extraction zone in the presence of said solvent, by passing said solvent hops mixture into a zone defined by at least two concentrically arranged rings, applying a rotational com-

ponent of movement to said material within said zone whereby the material is moved rapidly outwardly through the ring unit while it is subjected to rotational and shearing action, whereby a dispersion of fine hop particles in said solvent is produced.

3,222,182
DRYING INSTANT TEA

Richard W. Henderson, Colonia, and Edward Seltzer, West Englewood, N.J., assignors to Thomas J. Lipton, Inc., Hoboken, N.J., a corporation of Delaware

Filed May 16, 1963, Ser. No. 280,991
8 Claims. (Cl. 99—77)



1. A method of drying a tea extract comprising supplying a tea extract containing from 2% to 70% tea solids by weight at a temperature between 70° F. and 140° F. to the well formed above the nip of a pair of horizontally adjacent rolls, the spacing between said rolls at the nip being between 0.002 inch and 0.015 inch, and, while maintaining an absolute pressure of between about 20 mm. and about 125 mm. Hg, rotating the surfaces of said rolls downwardly through said well to form a film of said extract on said surfaces, heating said rolls to a temperature between about 200° F. and about 280° F. to dry said film, said drying being continued until the moisture content of the film is below about 7%, and scraping the dried film from said rolls, thereby obtaining a dried, soluble powder having a bulk density between 0.06 and 0.17 gm./cc.

3,222,183
SORGHUM GENUS FLOUR FRACTIONATION PROCESS

Tibor A. Rozsa, Rezsoe Gracza, William Truman Manning, and Chastain G. Harrel, Minneapolis, Minn., assignors to The Pillsbury Company, Minneapolis, Minn., a corporation of Delaware

Filed Feb. 11, 1963, Ser. No. 257,517
8 Claims. (Cl. 99—93)



1. The commercial process of producing a low-protein, high-starch, new flour product from sorghum genus grain which contains heterogeneous particles including a portion constituting discrete protein shreds, a portion constituting free starch granules and a portion constituting agglomerates of starch granules adhered to protein matter, comprising those method steps which consist in first subjecting the said flour in an air current at a critical cut between 13 and 15 microns (nominal) with the fine fraction including protein shreds suspended in one stream of said current and the coarse fraction in another stream of said current and collecting the coarse fraction, and then subjecting the coarse fraction to an air current and fractionating the same at a cut between 25 and 35 microns (nominal) to remove from said last mentioned coarse fraction the larger particles constituting mainly large agglomerates of starch granules adhered to protein matter, and collecting the fine fraction from said last air separation which comprises for the most part volumetrically, discrete larger starch granules of the sorghum genus flour, having a protein content at least 1½% below that of the original grain, and having a Fisher value between 12 and 19, and having less fat and fiber content than the original parent flour.

3,222,184
CULINARY MIX UTILIZING LIQUID OIL SHORTENING AND PROCESS FOR PREPARING SAME

Robert M. Weiss, Joseph M. Sinner, and Walter F. Bloch, Minneapolis, Minn., assignors to The Pillsbury Company, Minneapolis, Minn., a corporation of Delaware

No Drawing. Filed Mar. 21, 1962, Ser. No. 181,453
9 Claims. (Cl. 99—94)

6. A prepared package cake mix for producing a cake having at least 13% shortening basis dry ingredients comprising: a container containing a dry admixture comprised of sugar, flour, leavening and an oil-emulsifier concentrate, in which said oil-emulsifier concentrate the ratio of liquid oil and emulsifier is about one part by weight liquid oil to about one part by weight emulsifier, and in which the total quantity of liquid oil in said oil-emulsifier concentrate does not exceed about 25 percent of the total shortening necessary to shorten the cake.

9. A method of preparing a packaged cake mix for use in producing a cake with liquid oil shortening and having at least 13% shortening basis dry ingredients comprising the steps of: preparing a composition comprised of sugar, flour, leavening, 1 to 3 parts emulsifier and 1 to 3 parts of a quantity of liquid shortening in the range of 10–50 percent of the total shortening used in the cake, as the principal ingredients by thoroughly admixing said ingredients; placing said composition in an outer container together with a second container containing liquid oil shortening in an amount to provide the balance of the shortening needed to produce a cake; and closing said outer container.

3,222,185
FOOD MIXES WITH LOWER ALKYL DERIVATIVES OF GUAR GUM INCORPORATED THEREIN

Mao H. Yueh, Minneapolis, Minn., assignor to The Pillsbury Company, Minneapolis, Minn., a corporation of Delaware

No Drawing. Filed June 18, 1963, Ser. No. 288,616
17 Claims. (Cl. 99—94)

1. In a food mix formed predominately from a carbohydrate material, the improvement characterized by the incorporation in said mix of a hydrophilic colloid as an additive comprising an effective amount of at least one guar gum derivative selected from the group consisting of hydroxyloweralkyl and salts of carboxyloweralkyl guar gums to improve the baking qualities and tolerance to variations in mix manufacture.

3,222,186
PROCESS FOR SOFTENING THE SHELL PORTIONS OF CRUSTACEANS FOR EDIBLE PURPOSES

Esler L. D'Aquin, 5959 Colbert St., Apt. 3, New Orleans 24, La.

No Drawing. Filed Oct. 8, 1962, Ser. No. 229,229
1 Claim. (Cl. 99—111)

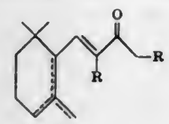
A process for softening the shells of raw crabs for edible purposes comprising soaking the raw crabs at a temperature not above 80 degrees Fahrenheit in an aqueous solution containing about from 3% to 5% by weight of acetic acid for a period of about from 15 hours to 35 hours.

3,222,187
FLAVORING COMPOSITION

Max Winter, Petit-Lancy, Switzerland, assignor to Firmenich & Cie, Geneva, Switzerland

No Drawing. Filed May 2, 1963, Ser. No. 277,459
Claims priority, application Switzerland, May 2, 1962, 5,286/62
4 Claims. (Cl. 99—140)

1. A flavoring composition for imparting a raspberry-like flavor to foodstuffs and beverages which comprises as essential flavor ingredients cis-3-hexen-1-al, at least one member selected from the group consisting of α-, β- and γ-ionones, α-, β- and γ-irones and α, β- and γ-methyl-ionones of the formula



wherein one R is methyl and the other is hydrogen, and 4-p-hydroxyphenyl-butan-2-one.

3,222,188
FOOD CONTAINER MADE OF SYNTHETIC RESIN AND HAVING ITS INNER SURFACE MODIFIED BY TREATMENT WITH AN ELECTRIC DISCHARGE

Peter Blandford Feldman, Broom Hill, Stoke Poges, England, assignor to Monsanto Chemicals Limited, London, England, a British company

No Drawing. Filed Apr. 24, 1962, Ser. No. 189,706
Claims priority, application Great Britain, May 26, 1961, 19,050/61
11 Claims. (Cl. 99—171)

1. A thermoplastic synthetic resin container containing a hot-filled edible material in direct contact with its inner surface, said inner surface having been subjected to an electric discharge prior to being contacted with the hot edible material.

3,222,189
CONVENIENCE FOOD PACKAGE AND PROCESS

Joseph R. Perrozzi, Minneapolis, Minn., assignor to The Pillsbury Company, Minneapolis, Minn., a corporation of Delaware

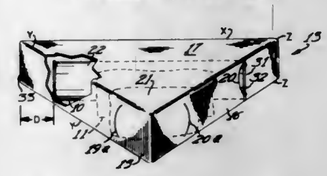
No Drawing. Filed July 5, 1963, Ser. No. 293,178
13 Claims. (Cl. 99—172)

1. A convenience food article consisting in;
a dough admixture comprising water-washed starch, water-washed gluten, water and a sufficient quantity of ethyl alcohol to improve shelf-stability and quality of said food article, said ethyl alcohol not in excess of about 60% of the total liquid in said dough;
and a container empervious to alcohol-vapor and having said dough admixture sealed therewithin.

3,222,190
MERCHANDISING PACKAGE

Charles L. Davis, Jeffersonville, Ind., assignor to The Pillsbury Company, Minneapolis, Minn., a corporation of Delaware

Continuation of application Ser. No. 258,408, Feb. 14, 1963. This application Nov. 19, 1964, Ser. No. 419,623
12 Claims. (Cl. 99—172)



7. A merchandising package comprising in combination:
(a) a carton comprising:
(1) a pair of spaced triangular face members,
(2) three side members connecting the opposing edges of said members,
(b) an elongated dough package disposed within said carton adjacent to one of said side members and being restrained therein by the other two of said side members,
(c) at least one additional fragile article disposed within said carton adjacent to said elongated dough package, and
(1) the restraint of the two side members upon the dough package being adapted to secure the dough package in a fixed position and prevent the dough package from crushing or damaging the fragile article during shipment.

3,222,191
NOVEL PACKAGING FILM AND PROCESSES THEREFOR

Robert H. Steiner, Rochester, Theodore B. Simpson, Macedon, and John E. Hammond, Rochester, N.Y., assignors to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Nov. 7, 1961, Ser. No. 151,417
7 Claims. (Cl. 99—174)

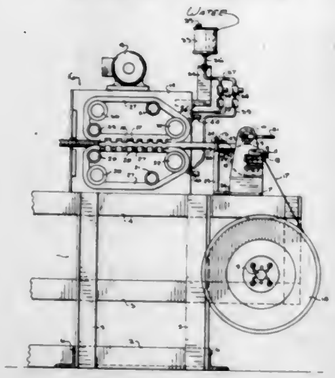
1. A polyolefin film having an anti-fogging coating on one surface thereof, said anti-fogging coating being selected from the group consisting of (1) at least one water-soluble cellulose ether and a water-soluble inorganic salt and (2) at least one wetting agent, at least one water-soluble film-forming agent, and at least one water-soluble inorganic salt, said film having been prepared by extruding at relatively high speeds a polyolefin resin of not more than 0.923 density at a temperature between about 550° and 700° F., a pressure between about 1,000 and 10,000 pounds per square inch, and a speed of at least 100 feet per minute, and said coating being capable of dispersing moisture condensed thereon in the form of a thin, transparent film, thereby preventing the fogging of said film upon exposure to changes in temperature.

4. As an article of manufacture, freshly cut red meat encased in a strong, transparent polyolefin film, the inner surface of which is coated with an anti-fogging composition selected from the group consisting of (1) at least one water-soluble cellulose ether and a water-soluble inorganic salt and (2) at least one wetting agent, at least one water-soluble film-forming agent, and at least one water-soluble inorganic salt, said substrate film having been prepared by extruding a polyolefin resin at a temperature between about 550° and 700° F., a pressure between about 1,000 and 10,000 pounds per square inch, and a speed of at least 100 feet per minute.

3,222,192
PROCESS OF SHIRRING SYNTHETIC SAUSAGE CASINGS

Lionel C. Arnold and Harry G. Washburn, Danville, Ill., assignors to Tee-Pak, Inc., Chicago, Ill., a corporation of Illinois

Filed June 14, 1963, Ser. No. 288,008
10 Claims. (Cl. 99—176)



1. In the shirring of synthetic sausage casings wherein dry casing is fed from a storage reel, inflated, and shirred mechanically, the improvement in moistening the casing uniformly which comprises feeding water into contact with the casing subsequent to removal from the storage reel and prior to removal from the shirring process at a predetermined rate sufficient to produce shirred casing having a predetermined higher moisture content.

3,222,193
METHOD OF SPRAY DRYING LIQUID FOOD PRODUCTS

Francis P. Hanrahan, Silver Spring, Md., assignor to the United States of America as represented by the Secretary of Agriculture

Filed Sept. 12, 1962, Ser. No. 223,599
9 Claims. (Cl. 99—203)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. A process for drying a liquid food comprising pasteurizing the liquid food, concentrating the liquid food to about from 40 to 50% solids to produce a liquid food concentrate, forcing the concentrate under a first pressure of about 1800 p.s.i.g. into a mixing zone, injecting an inert relatively insoluble gas at a pressure in excess of said first pressure into the concentrate in the mixing zone to produce in the mixing zone a concentrate in which the gas is uniformly dispersed, then conducting the gas-concentrate mixture by means of the existing pressure to a spray drying zone, and spray drying the gas-concentrate mixture to produce a dry, free-flowing powder.

3,222,194
METHOD OF PREPARING A DRIED EGG PRODUCT

James M. Gorman and Veri H. Hannah, Topeka, Kans., assignors, by mesne assignments, to Norris Grain Company, Chicago, Ill., a corporation of Illinois

No Drawing. Filed Sept. 11, 1961, Ser. No. 137,012
4 Claims. (Cl. 99—210)

1. The method of preparing a dried egg product particularly adapted for reconstitution with water and for use in the preparation of cooked egg dishes, said method comprising separating the white and yolk constituents of fresh whole eggs, desugarizing said constituents, separately drying said constituents, dry blending said constituents in proportions corresponding to whole egg composition, neutralizing the dry blend, and adding a dry edible starch to said dry blend in quantities ranging from about 2% to 20% based on the dry weight of the product.

3,222,195
STABILIZED ELECTROLESS COPPER SOLUTION

Fred Pearlstein, Philadelphia, Pa., assignor to the United States of America as represented by the Secretary of the Army

No Drawing. Filed Feb. 23, 1962, Ser. No. 175,372
8 Claims. (Cl. 106—1)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. In an electroless copper plating solution consisting essentially of Fehling's solution and a reducing agent, the combination therewith of a stabilizing amount of 2-mercaptobenzothiazole.

3,222,196
BURNED BRICK

Ben Davies and Ernest P. Weaver, Pittsburgh, Pa., assignors to Harbison-Walker Refractories Company, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed Oct. 29, 1963, Ser. No. 319,697
13 Claims. (Cl. 106—58)

1. That method of making a ceramically bonded refractory brick of refractory material selected from the group consisting of dead burned dolomite and dead burned magnesia which comprises initially bonding the refractory with a mixture of from 0 to 3 parts of a member of the group consisting of medium pitch and hard pitch and from 1 to 2 parts of fatty acid pitch, the medium pitch having a softening point between 150 and 250° F., the hard pitch having a softening point between 250 and 450° F., the fatty acid pitch having a softening point of between 120 and 450° F., the fatty acid pitch being derived from the distillation of materials of the group consisting of animal fatty acids, fish oil, and vegetable fatty acids, the mixture of fatty acid pitch, medium pitch, and hard pitch being heated to a fluid state before mixing with the refractory, firing the bonded mixture of refractory and pitch to a temperature sufficient to obtain ceramic bonding through the refractory, and for a time period sufficient to eliminate the pitches and any carbonaceous residue.

3,222,197
INORGANIC SURFACE COATINGS

Merle E. Sibert, Menlo Park, and James Tsukamoto, Redwood City, Calif., assignors to Lockheed Aircraft Corporation, Burbank, Calif.

Filed Jan. 25, 1962, Ser. No. 168,690
3 Claims. (Cl. 106—84)

1. A high reflectivity, low absorptivity, inorganic surface paint having an absorptivity to emissivity ratio of less than unity consisting of:

(a) 10 to 30% by weight of a lithium silicate vehicle wherein the Li_2O to SiO_2 ratio is 0.22 to 0.28,

(b) 35 to 70% by weight of a pigment having a maximum particle size of 40 microns selected from the group consisting of refractory metal oxide, refractory metal double oxide and refractory silicate, the ratio by volume of said pigment to dried vehicle being from 3 to 6, and

(c) A diluent consisting of water of sufficient quantity to produce a total solids content of less than 80% by weight.

3,222,198
VISCOSE SPINNING SOLUTION FOR THE MANUFACTURE OF SHAPED ARTICLES FROM REGENERATED CELLULOSE

Hanswilli von Brachel, Cologne-Sulz, and Heinz Dietrich Jordan, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Oct. 24, 1962, Ser. No. 232,892
Claims priority, application Germany, Nov. 2, 1961, F 35,263
4 Claims. (Cl. 106—165)

1. Viscose spinning solution which contains 0.1–4.0% by weight of a polyether sulphone compound containing one member of the group consisting of a sulfone group for every four carbon atoms in the polymer chain, an ether group for every four carbon atoms in the polymer chain and a sulfone group plus ether oxygen for every four carbon atoms in the polymer chain, said compound being soluble at least to the extent of 0.1% in 5% aqueous sodium hydroxide solution and having a molecular weight between 300 and 20,000.

3,222,199
STABILIZATION OF AMYLOSE

Lawrence J. Hickey, Livingston, N.J., assignor to National Starch and Chemical Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed May 4, 1962, Ser. No. 192,334
18 Claims. (Cl. 106—213)

1. A method for the stabilization of aqueous amylose solutions which comprises mixing, under alkaline pH conditions, an aqueous amylose dispersion with: (a) a member selected from the group consisting of paraformaldehyde, aqueous solutions of methanol stabilized formaldehyde, aqueous solutions of formaldehyde, and (b) a member selected from the group consisting of urea, monomethylol urea, succinamide and adipamide.

3,222,200
COMPOSITIONS FOR IMPARTING WATER-REPELLENT PROPERTIES TO FIBROUS MATERIALS

Harold Garton Emblem, 51 Middlehurst Road, Grappenhall, England

No Drawing. Filed Dec. 28, 1960, Ser. No. 78,823
Claims priority, application Great Britain, Jan. 8, 1960, 748/60
9 Claims. (Cl. 106—271)

1. A solution suitable for imparting water-repellent properties to a fibrous material, said solution consisting essentially of:

(a) an aminoalkyl silicate consisting of monoethanolamine ethyl polysilicate,

(b) a wax consisting of paraffin wax, and

(c) an organic mutual solvent for said aminoalkyl silicate and wax, said solvent consisting of tetrachloroethylene,

(d) said aminoalkyl silicate being present in said organic mutual solvent in an amount between about 2 and 8% by weight,

(e) said wax being present in said organic mutual solvent in an amount between about 2 and 8% by weight.

3,222,201
CLEANING AND COATING FORMULATION

Francis K. Boyle, Tonawanda, Salem T. Clark, Grand Island, and Charles F. Swain, Niagara Falls, N.Y., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Dec. 28, 1962, Ser. No. 247,832
6 Claims. (Cl. 106—285)

6. A cleaning and coating concentrate which is an oil-in-water emulsion consisting essentially of about 1 to about 15 percent by weight of an organic cationic surfactant which is selected from the group consisting of a reaction product of a long-chain fatty acid containing from 8 to 22 carbon atoms with an alkylene polyamine, a reaction product of a long-chain fatty acid containing from 8 to 22 carbon atoms with an alkylol amine, a reaction product of a long-chain fatty acid containing from 8 to 22 carbon atoms with ammonia, a condensation product of a primary fatty amine containing from 8 to 22 carbon atoms with an alkylene oxide, and a quaternary ammonium salt of a fatty amine having at least one substituent containing from 8 to 22 carbon atoms; about 4 to about 20 percent by weight of an organic nonionic surfactant represented by the formula:

$$R—(Y—H)_y$$

wherein R is the hydrophobic portion of a hydrophobic organic compound which is a member of the group consisting of an aliphatic alcohol containing from about 8 to about 22 carbon atoms and an alkylated phenol containing from about 4 to about 22 carbon atoms in the alkyl group thereof, Y is an alkenyleneoxy chain, H is a hydrogen atom bonded to an oxygen atom of said alkyleneoxy chain, and y is an integer from 1 to about 6; about 2 to about 12 percent by weight of an emulsifiable mineral oil selected from the group consisting of a paraffin oil and a naphthene oil, and having a viscosity in the range from about 20 to about 200 SUS at 100° F.; about 1 to about 5 percent by weight of a foam stabilizer which is a fatty acid alkylolamide represented by the formula

$$R'CONHR''OH$$

wherein R' is an aliphatic hydrocarbon radical containing from 8 to 22 carbon atoms, and R'' is an alkylene radical containing from 1 to 8 carbon atoms; and the remainder water.

3,222,202
CARBON BLACK PROCESS

Merrill E. Jordan and Harvey M. Cole, Walpole, Mass., assignors to Cabot Corporation, Boston, Mass., a corporation of Delaware

No Drawing. Filed May 21, 1962, Ser. No. 196,455
9 Claims. (Cl. 106—307)

1. In the furnace process for making carbon black wherein a fluid hydrocarbon raw material is heated to dissociation temperatures by means of a combustion reaction conducted in direct contact with said hydrocarbon within an enclosed conversion zone the improvement which comprises controlling the quality of the carbon black product obtained by supplying to said conversion zone at a controlled rate an additive chosen from the group consisting of elemental zinc and zinc compounds in amounts sufficient to provide to said conversion zone between about 100 and about 100,000 parts of zinc per million parts of said hydrocarbon, the proportion of zinc to hydrocarbon being directly related to the degree of quality adjustment needed in said black.

3,222,203
N-ACYL DERIVATIVES OF CYCLIC IMINES

Evald L. Skau, Robert R. Mod, and Frank C. Magne, New Orleans, La., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Original application Nov. 8, 1963, Ser. No. 322,542. Divided and this application Feb. 5, 1964, Ser. No. 354,190
16 Claims. (Cl. 106—316)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. N-2-ethylhexanoylpiperidine.

4. N-oleoyl-2-ethylpiperidine.

13. The binary mixture of the piperidide of linoleic acid and the piperidide of oleic acid in which binary

mixture the weight percent of the piperidide of oleic acid amounts to at least 65 percent.

15. The ternary mixture of the piperidides of oleic acid, linoleic acid and palmitic acid in which ternary mixture, the weight percent of the piperidide of linoleic acid is not more than about 35 percent.

3,222,204

PROCESS OF MAKING BEADED COATINGS AND FILMS FROM GLASS BEADS TREATED WITH OLEOPHOBIC SIZING AGENT

Victor Weber and John D. Tomlinson, St. Paul, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

No Drawing. Filed Apr. 20, 1960, Ser. No. 23,391
4 Claims. (Cl. 117—27)

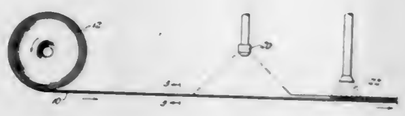
1. A process of making beaded coatings and films by forming a liquid organic binder coating layer on a base surface, partially embedding a layer of glass beads in the coating, and solidifying the binder to a solid bead-retaining state, characterized by using oleophobic fluorocarbon-surfaced glass beads having an imperceptibly thin surface coating of an oleophobic fluorocarbon sizing agent, and floating the beads in a sufficiently thick and fluid binder layer so that they are approximately half-submerged prior to and during solidification; said surface coating being of a nature which permits adherent bonding of the beads to the dried binder.

3,222,205

RECORDING TAPE

Lew W. Karalus, 925 William St., Bridgeport, Conn.

Filed Feb. 15, 1963, Ser. No. 258,688
1 Claim. (Cl. 117—27)



A magnetic sound recording tape having non-adhesive opposite sides, comprising a thin, flexible, elongate strip adapted to be stored in roll form and having a width substantially greater than its thickness, said strip further having isolated and separated individual permanent magnet particles comprising north and south poles at opposite ends of polar axes, said particles being disposed on the strip with all of their polar axes substantially in parallelism and extending transversely of the length of the strip, said tape including binding means on one side of the strip, in which the particles are embedded and by which they are coated, said individual particles having undercoatings over which the coating of said binding means is disposed, of non-magnetic substance by which they are pre-spaced and isolated from each other, the orientation of the individual coated particles being maintained by the binding means and the spacing of the particles effected by said undercoatings enabling strong flux lines to emanate from any one magnet particle regardless of surrounding magnet particles, said undercoatings on the permanent magnet particles being disposed under the coating provided by said binding means and maintaining a positive isolation of the particles from each other.

3,222,206

METHOD OF MANUFACTURING REINFORCED CATHODE-RAY TUBE FOR TELEVISION DISPLAY

Johannes Cornelissen, Anton Maarten Kruithof, and Hendrik Willem Johan Hubertus Meyer, all of Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Feb. 2, 1962, Ser. No. 170,638
Claims priority, application Netherlands, Feb. 24, 1961, 261,680
5 Claims. (Cl. 117—40)



1. A method of strengthening a cathode-ray tube having a transparent window and a glass wall adjoining said window against bruising due to impact and shock forces comprising the steps, heating the cathode-ray tube to a temperature of about 300° C., covering a portion of the surface of the heated glass wall with a porous layer of glaze having a coefficient of expansion between about 30° C. and 300° C. which is lower than that of the glass to thereby place the layer under compression when it cools, and spraying over the first layer a second layer of a liquid glaze having a coefficient of expansion lower than that of the glass to form a porous, rough glaze layer covering said first glaze layer.

3,222,207

PROCESS OF PRODUCING METALLIC DEPOSITS

John H. Marshall, Tivoli, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Oct. 6, 1961, Ser. No. 143,289
6 Claims. (Cl. 117—47)



1. A process for electrolessly depositing copper on a nonconductive filamentous, fibrous, granular or like body by the steps of:

immersing said body in a reducible copper sulfate solution, said solution comprising: 1 to 15% by weight copper sulfate; one member selected from the group consisting of 0.5 to 2% by weight glycerine, 10 to 20% by weight lactic acid, 20 to 35% by weight citric acid and 10 to 15% by weight sodium-potassium tartrate; 1 to 25% by weight sodium hydroxide; 0.9 to 9.4% by weight formalin and the balance water;

removing said body from said solution and heating said body to a temperature sufficient to reduce substantial portions of said sensitizing solution while simultaneously maintaining said body under pressure sufficient to maintain the physical configuration of said body free from deformation; and,

reimmersing said body in said reducible copper sulfate solution to deposit a layer of copper thereon.

3,222,208

COMPOSITION AND METHOD FOR MAKING WATER VAPOR PERMEABLE COATED FABRIC

Norman J. Bertollo, Hawthorne, N.J., assignor to Interchemical Corporation, New York, N.Y., a corporation of Ohio

No Drawing. Filed Jan. 7, 1963, Ser. No. 262,813
4 Claims. (Cl. 117—63)

1. A method for making a water vapor permeable coated fabric comprising dispersing flock in a mixture of water having dissolved therein colloidal magnesium aluminum silicate and a solution in an organic solvent selected from the group consisting of methyl ethyl ketone, tetrahydrofuran and cyclohexanone of an essentially linear polyesterurethane elastomer which is the reaction product obtained by heating a mixture comprising as essential polyesterurethane forming ingredients (1) one mol of an essentially linear hydroxyl terminated polyester of a saturated aliphatic glycol having from 4 to 10 carbon atoms and having hydroxyl groups on its terminal carbon atoms and a material selected from the group consisting of a dicarboxylic acid of the formula

HOOC—R—COOH

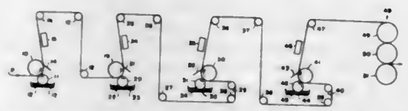
where R is an alkylene radical containing from 2 to 8 carbon atoms and its anhydride, said polyester having an average molecular weight between 600 and 1200 and having an acid number less than 10, and (2) from 1.1 to 3.1 mols of a diphenyl diisocyanate having an isocyanate group on each phenyl nucleus in the presence of (3) from about 0.1 to 2.1 mols of a saturated, aliphatic free glycol containing from 4 to 10 carbon atoms and having hydroxyl groups on its terminal carbon atoms, the molar amount of said polyester and said free glycol combined being essentially equivalent to the molar amount of said diphenyl diisocyanate whereby there are essentially no groups of the class consisting of isocyanate and hydroxyl groups in said reaction products, then applying said dispersion to the surface of a textile substrate and leaching said coated textile with water to remove the solvent.

3,222,209

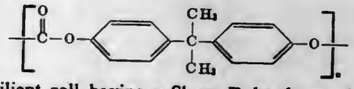
PROCESS OF MANUFACTURING AND FINISHING COATED PAPER, AND RESULTANT PRODUCT

Maurice M. Brundige, Westernport, and David N. Obenshain, Luke, Md., John H. Fredrickson, Keyser, W. Va., and Harry F. Kohne, Jr., Bloomington, Md., assignors to West Virginia Pulp and Paper Company, New York, N.Y., a corporation of Delaware

Filed June 8, 1964, Ser. No. 375,413
10 Claims. (Cl. 117—64)



1. The continuous on-the-machine method of producing high grade printing paper having a high degree of printing smoothness and freedom of mottle without supercalendering which comprises applying a first layer of an aqueous coating composition comprising mineral pigment and adhesive to a traveling web of paper, smoothing the first coating layer and wiping excess coating from the web, substantially setting the first coating layer, applying a second layer of an aqueous coating composition comprising mineral pigment and adhesive to the surface of the first coating layer, smoothing said second coating layer over the first coating layer and wiping excess coating from the web, drying the resultant coated web, passing the coated web through a nip formed by a metal roll and a resilient roll to finish the coated web, the improvement which comparises pressing the coated surface of the web against the metal roll by a resilient roll having a solid, cast cover of a non-fibrous synthetic polymeric composition selected from the group consisting of polycaprolactam, polyhexamethylene adipamide, poly-ω-aminoundecanoic acid, and a polyaryl carbonate having the structural formula:



said resilient roll having a Shore D hardness of at least 53 at room temperature.

3,222,210

POLYOLEFIN PACKAGING FILM

John E. Hammond, Rochester, N.Y., assignor to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Aug. 3, 1962, Ser. No. 214,501
10 Claims. (Cl. 117—68)

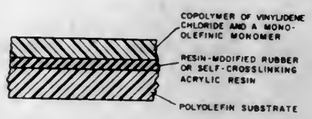
1. A polyolefin film having on at least one side an anti-cling coating formed from a coposition consisting essentially of at least one alkali-soluble resin selected from the group consisting of shellac, Manila Loba gum, gum accroides, rosin-maleic acid, rosin-fumaric acid adducts, rosin-fumaric acid adducts modified with polyhydric alcohols, zein, polyvinyl acetate-crotonic acid copolymers, polyacrylic ester acid copolymers, and mixtures thereof, at least one inert finely divided filler, and at least one fusible polymer latex selected from the group consisting of unplasticized polyvinyl chloride latex; emulsions of unoxidized polyethylene; polystyrene, polyacrylate, and methacrylate latexes; styrene-butadiene copolymers; and mixtures thereof, said inert filler being present in an amount between 20 and 150 parts per hundred parts of said resin and said fusible polymer latex being present in an amount between about 1 and 60 parts per hundred parts of said resin.

3,222,211

NOVEL PACKAGING FILMS AND PROCESSES THEREFOR

Louis B. Updegrove, Fairport, Edwin L. Mincher, Ballston Lake, and Robert H. Steiner, Rochester, N.Y., assignors to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia

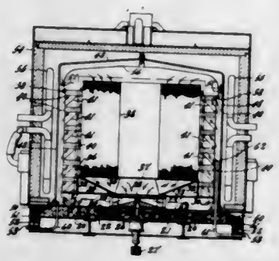
Filed Feb. 15, 1962, Ser. No. 173,364
5 Claims. (Cl. 117—76)



1. A wrapping film comprising essentially a polyolefin substrate pre-coated on at least one side with a composition selected from the group consisting of a resin-modified rubber and a self-crosslinked acrylic resin and thereafter coated with a top coating composition comprising a copolymer obtained from polymerization of about 80 to 97

percent of vinylidene chloride and about 3 to 20 percent of a polymerizable mono-olefinic monomer copolymerizable therewith.

3,222,212
PROCESS FOR CHROMIZING
George A. Samuel, Pas de Calais, France, and Jerome V. Bell, Wilmington, Del., assignors to Alloy Surfaces Company, Inc., Wilmington, Del., a corporation of Delaware
Filed Nov. 29, 1962, Ser. No. 240,858
13 Claims. (Cl. 117—107.2)



1. A process of chromizing ferrous metal work, which comprises providing a retort which is closed with respect to the atmosphere, placing in the retort ferrous metal work to be chromized and closing the retort, introducing into the retort a halogen acid gas, introducing into the retort a carrier gas free from nitrogen contamination, maintaining the retort and the work at a temperature of between 1500° and 2300° F., providing a source of chromium out of contact with the work, distributed in a series of layers through which the gas can flow sequentially, there being a ratio of the total surface area of the source of chromium to the total surface area of the work which is between 0.8 to 1 and 5 to 1, maintaining the source of chromium at a temperature between 1500° and 2300° F. providing a channel from the source of chromium to the work and providing a return channel from the work to the source of chromium, circulating the halogen gas and the carrier gas in admixture under positive pressure sequentially through the layers of the source of chromium and then in contact with the work to chromize the work and then back through the source of chromium to regenerate the gas, maintaining the chromizing potential high by withdrawing from the retort increments of carrier gas and halogen gas and maintaining a sufficiently low dew point in the inlet gases, so that the dew point in the exit gas is not in excess of +5° F., and continuing the circulation of the gas and the chromizing for a time of at least 5 hours.

3,222,213
RINSING FORMULATION
Salem T. Clark, Grand Island, N.Y., assignor to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Dec. 28, 1962, Ser. No. 247,831
5 Claims. (Cl. 117—119.6)

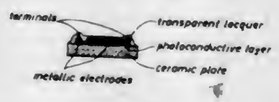
1. A method for drying a cleaned surface which comprises applying thereto an oil-in-water emulsion consisting essentially of effective amounts of an organic cationic surfactant, an emulsifiable mineral oil, and water until a beading of water droplets on said surface is observed, and thereafter removing said droplets from said surface; said amounts being effective to produce beading of water on the surface.

3,222,214
METHOD OF PREPARING ELECTROLUMINESCENT DEVICES
Costas C. Lagos and Lester W. Strock, Salem, Mass., assignors to Sylvania Electric Products Inc., a corporation of Delaware
Filed Sept. 5, 1961, Ser. No. 135,746
4 Claims. (Cl. 117—201)



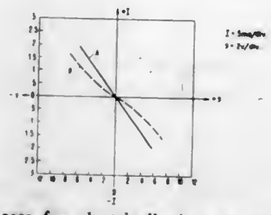
1. In the process for preparing an electroluminescent device, the steps which comprise: mixing together starting materials including an activator which are necessary for the formation of an electroluminescent phosphor; placing said starting materials in the furnace and firing to form substantially ordered, essentially non-electroluminescent crystals including said activator; removing said substantially ordered, non-electroluminescent crystals from said furnace and fragmenting to break up agglomerates; intermixing said essentially non-electroluminescent crystals with a finely divided, light transmitting ceramic dielectric having a melting point lower than the sintering temperature of said crystals; coating and said mixture on electrically conductive base; firing as the next firing in the process said coated base to activate the crystals and form a base coated with an adherent layer of electroluminescent phosphor dispersed within a fused, light transmitting ceramic dielectric.

3,222,215
METHOD OF PRODUCING A PHOTOCONDUCTIVE LAYER
Walter Dürr, Schulstrasse 15, Wolfschlugen, Kreis Nurtingen, Germany
Filed May 23, 1962, Ser. No. 196,900
Claims priority, application Germany, May 26, 1961, F 34,022
13 Claims. (Cl. 117—201)



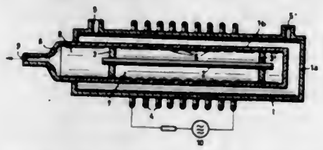
1. A method of producing on a support a photoconductive layer, comprising the steps of forming on a support a pulverulent layer consisting essentially of at least one substance selected from the group consisting of cadmium sulfide and cadmium selenide, and an activating agent therefor, said activating agent including a salt of a member of the group consisting of copper and silver; and heating said layer in the presence of a gas adapted to improve crystallization and sintering of the same and selected from the group consisting of hydrogen chloride, hydrogen bromide and hydrogen iodide to a temperature of between 550° C. and 1000° C. so as to cause crystal growth and sintering of said layer to form a coherent solid body of improved photoconductivity.

3,222,216
PROCESS FOR AFFIXING OHMIC CONTACTS TO PHOTOCONDUCTOR ELEMENTS
Melvin Berkenblit, Yorktown Heights, George Cheroff, Peekskill, and Frederick Hochberg and Arnold Reisman, Yorktown Heights, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed June 4, 1962, Ser. No. 199,799
7 Claims. (Cl. 117—212)



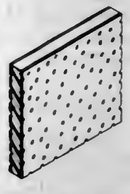
2. A process for electrically integrating electrodes to photoconductor elements which comprises treating the photoconductor element with nitric acid; affixing electrodes to the treated photoconductor element by a screening process to produce thereby photoconductor elements having electrodes which are ohmic in nature.

3,222,217
METHOD FOR PRODUCING HIGHLY PURE ROD-SHAPED SEMICONDUCTOR CRYSTALS AND APPARATUS
Josef Grabmaier, Munich, Germany, assignor to Siemens & Halske Aktiengesellschaft Berlin and Munich, a corporation of Germany
Filed Aug. 24, 1960, Ser. No. 51,630
Claims priority, application Germany, Sept. 23, 1959, S 65,059
9 Claims. (Cl. 117—213)



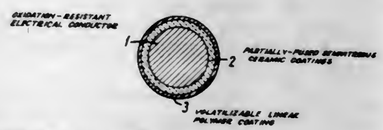
1. A method of producing rod shaped semiconductor crystals of very high purity, by thermal decomposition, at a highly pure, relatively thin rodlike and electrically heated carrier made of identical semiconductor material and positioned within a reaction chamber delimited by quartz walls, of a highly purified gaseous compound of the desired semiconductor material which is intermixed with highly pure hydrogen, thereby effecting liberation of said semiconductor material from the gaseous phase and precipitation thereof upon said carrier, the improvement which comprises, the steps of mounting said carrier on holder means made of quartz, positioning the entire carrier with the holder means therefor in said reaction chamber whereby the entire reaction structure involved, other than said carrier, is made of quartz, heating said carrier by induction means disposed outside of said reaction chamber, disposing the parts of said carrier which are directly in engagement with said holder means out of the induction zone, heating only the portions of said carrier intermediate said holder means to the operating temperature and particularly to the temperature required for the precipitation of said semiconductor material, and maintaining the temperature of the entire quartz structure below 800° C., whereby no substances capable of contaminating the produced semiconductor crystals are present in the reaction area.

3,222,218
METAL COATING PROCESS
Morton Beltzer, New York, N.Y., and Carl E. Heath, Jr., and Barry L. Tarmy, Berkeley Heights, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
Filed Jan. 2, 1962, Ser. No. 163,612
5 Claims. (Cl. 117—213)



1. A process for intimately bonding a continuous layer of metal upon a surface of a relatively nonconductive, nonmetallic material wtih a specific resistivity of greater than 10^{-4} ohm centimeters which comprises the steps of:
(a) contacting said material with an aqueous dye solution comprising a dye selected from the group consisting of Cochineal Red A, Orange I, Chromotrope 2R, Fast Red B, Crystal Ponceau 6R, Amaranth, Orange II, Methyl Orange, Trypan Blue, Trypan Red, Aniline Blue and Nicholson Blue,
(b) contacting said dyed material with an aqueous solution containing metal ions selected from the group consisting of gold, silver, platinum and palladium,
(c) contacting the surface with an aqueous solution of a reducing agent selected from the group consisting of hydroquinone and hydroquinone with gum arabic, and
(d) contacting the reduced membrane with an aqueous solution of a metal salt selected from the group consisting of silver and nickel and a reducing agent selected from the group consisting of hydroquinone and sodium hypophosphite and potassium hypophosphite.

3,222,219
CERAMIC-COATED ELECTRICALLY-CONDUCTIVE WIRE AND METHOD OF MAKING SAME
Hollis S. Saunders, Fort Wayne, and Robert W. Gehring, Grabill, Ind., assignors to Phelps Dodge Copper Products Corporation, New York, N.Y., a corporation of Delaware
Filed Nov. 29, 1961, Ser. No. 155,684
11 Claims. (Cl. 117—218)



1. Insulated wire comprising an elongated, oxidation-resistant electrical conductor, and multiple separately fired ceramic coatings on the conductor each consisting essentially of substantial proportions of both glassy and crystalline phases which are the product of partial fusion of a mixture of (a) a frit of a compound selected from the group consisting of lead borate, lead silico-borate, lead silicate, barium boro-silicate, barium-alumino-silico-borate and mixtures thereof and (b) a refractory dielectric material, said refractory material being 5 to 30 parts by weight of said mixture of (a) and (b), said glassy phase being formed from the melted frit in which only part of the refractory material is dissolved, said crystalline phase being formed from the remaining undissolved refractory material and being dispersed through said glassy phase.

3,222,220

WATER DISPERSIBLE HIGH AMYLOSE STARCH

Otto B. Wurzburg, Whitestone Station, and William Herbst, North Plainfield, N.J., assignors to National Starch and Chemical Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Feb. 7, 1963, Ser. No. 256,806
3 Claims. (Cl. 127—32)

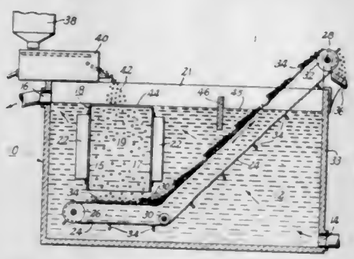
1. A dry non-retrograded high amylose starch which is indispersible in cold water and dispersible in hot water, comprising starch containing at least 50% of amylose by weight, admixed with from 10% to 75% of sorbitol by weight of the starch.

3,222,221

ULTRASONIC CLEANING METHOD AND APPARATUS

Norman G. Branson, Revonah Woods, Stamford, Conn., assignor, by mesne assignments, to Branson Instruments, Incorporated, Stamford, Conn., a corporation of Delaware

Filed Apr. 29, 1959, Ser. No. 809,718
5 Claims. (Cl. 134—1)



1. A method for removing contamination from small objects comprising the steps of dropping said objects into a solvent for the contamination, permitting said objects to fall freely through said solvent, and ultrasonically activating said solvent to the degree necessary to cause cavitation in the solvent as the objects fall through it.

5. Apparatus for cleaning aggregative material comprising, in combination, a tank for containing cleaning fluid, a plurality of ultrasonic transducers to create a field of ultrasonic energy in a vertical portion of the cleaning fluid in said tank, said plurality of ultrasonic transducers vertically and oppositely positioned in said tank to subject materials in said vertical portion to ultrasonic energy from at least two directions, and means for dropping a stream of the aggregative material into said portion of the cleaning fluid above said field of ultrasonic energy whereby the material freely falls during cleaning under the influence of gravity through said ultrasonic field of energy.

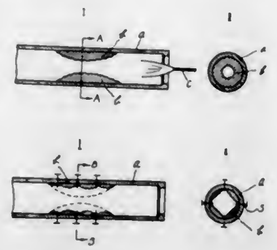
3,222,222

ROTARY KILN AND METHOD OF FREEING SAME OF A FIRE RING THEREIN

Kazunori Nakahara, % Shochiku-kan, Aza Hikage, Rokugo-mura, Azuma-gun, Japan

Filed Aug. 28, 1961, Ser. No. 134,476
Claims priority, application Japan, Sept. 9, 1960, 35/37,839
5 Claims. (Cl. 134—22)

1. The method of freeing the interior of a rotary kiln, of a fire ring accumulated therein, said kiln including a cylindrical metallic wall having an interior lining of refractory material, there being a plurality of spaced bores through said wall and lining over the area where said ring accumulates, each said bore being filled with a respective first plug of heat-resisting material, the radially-inward end of each said first plug projecting into said kiln beyond the inner surface of said lining, said method comprising the steps of, removing each said first plug in succession from its bore, inserting into said bore a second plug having an explosive charge at its tip, to locate said explosive charge within the space in said ring vacated by said first plug, fixing the radially-outward end of said second plug against radially-outward movement, and effecting explosion of said explosive tip to thereby fracture, loosen and free from said lining, the contiguous portion of said ring.



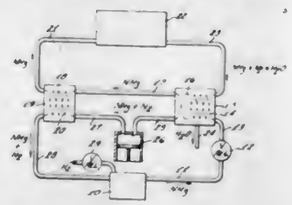
4. A rotary kiln comprising a cylindrical metallic wall having a lining of refractory material and a plurality of spaced bores at selected points over an area where a fire ring accumulates in said kiln during production, each said bore extending through said wall and lining, a plurality of first rod-like elements, each slidably fitting and plugging a respective one of said bores, and means secured to the kiln and rigidly engaging the radially-outward end of each said element to releaseably hold each said element against movement in and along its bore.

3,222,223

SYSTEM FOR FUEL CELLS

John L. Platner, Milwaukee, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.

Filed Oct. 27, 1961, Ser. No. 148,205
12 Claims. (Cl. 136—86)



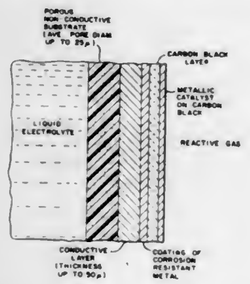
1. A fuel cell system comprising: a fuel cell module adapted to receive and react ammonia and an oxidant to produce electric current and a heated exhaust product consisting essentially of unreacted ammonia, nitrogen and water; an oxidant supply operatively connected to said module and supplying oxidant thereto; an ammonia supply; a compressor; a first heat exchanger having first and second independent conduits passing therethrough, said first conduit being connected at one end in series with said module and receiving said heated exhaust product therefrom, said first conduit being connected at the other end thereof in series with said compressor, said second conduit being connected at one end thereof in series with said ammonia supply and being adapted for connection, at the other end thereof, to a second heat exchanger; a second heat exchanger having first and second independent fluid conduits passing therethrough, said first conduit of said second heat exchanger being connected at one end thereof to said other end of said second conduit of said first heat exchanger and at the other end thereof, to said module and supplying warm ammonia vapor thereto; said second conduit of said second heat exchanger being connected at one end thereof in series with said compressor and at the other end thereof to said ammonia tank; means operatively associated with said first heat exchanger for withdrawing condensed water therefrom; and means operatively associated with said ammonia tank for venting nitrogen therefrom.

3,222,224

ELECTRODES FOR FUEL CELLS

Keith Rolls Williams, Little Sutton, and Richard Terence Short, Ellesmere Port, England, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed May 8, 1962, Ser. No. 193,317
Claims priority, application Great Britain, May 10, 1961, 17,119/61
The portion of the term of the patent subsequent to Dec. 31, 1980, has been disclaimed
9 Claims. (Cl. 136—86)



1. An electrode for use in a fuel cell, said electrode comprising: a base composed of porous non-conductive plastic material having pores of average diameters of from ¼ to 25μ with a porous electrically conductive metal layer thereon having a thickness of from 0.03 to 50μ and a layer of carbon black carried by said base and in contact with said conductive layer, the said pores providing passageways whereby electrolyte in contact with the plastic material can pass through said plastic material and the said layers thereon and contact gas from the other side of the electrode in the carbon black layer.

3,222,225

DEFERRED-ACTION BATTERY

Bernard Amiet, Ville-d'Avray, Seine-et-Oise, Pierre Langella, Marly-le-Roi, Seine-et-Oise, and Christian Sentenac, Mantes-la-Ville, Seine-et-Oise, France, assignors to Yardney International Corp., New York, N.Y., a corporation of New York

Filed Feb. 15, 1961, Ser. No. 89,507
Claims priority, application France, Feb. 16, 1960, 818,615, Patent 77,177
2 Claims. (Cl. 136—90)

1. A deferred-action battery comprising, in combination:

a battery casing containing an array of generally upright individual electrochemical cells in spaced relationship within said casing;

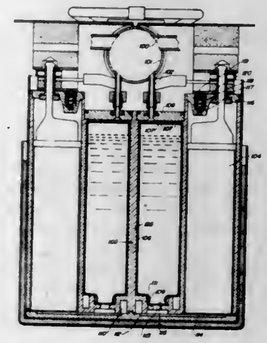
a plurality of generally upright flexible electrolyte-storage vessels individual to said cells and having closed upper ends provided with flexible walls deformable under externally applied pressure, each of said vessels being disposed laterally adjacent a respective one of said cells and communicating with a respective one of said cells at the bottom thereof;

individual conduit means formed in said casing at the bottom of said cells and said vessels for interconnecting each of said vessels with the respective cell;

respective rupturable diaphragm means interposed between each of said vessels and the respective cell for normally blocking passage of electrolyte from said vessels into said cells;

a plurality of compartments formed in said casing each adjacent a respective one of said cells and enclosing a respective one of said vessels for supporting same;

common pressure means for concurrently applying pressure to said compartments effectively acting upon said vessels at said upper ends to deform downwardly said walls of all of said vessels substantially concurrently for rupturing said diaphragm means and



driving electrolyte from said vessels into the respective cells, said pressure means including a source of a pressurizing fluid; and

manifold means chargeable with said fluid by said source and formed with individual passages communicating with said compartments for pressurizing said vessels exteriorly, each of said cells being provided with an individual valve communicating with the exterior and responsive to a pressure differential between ambient pressure and the pressure within the cell for venting the latter upon attainment of said pressure differential therein.

3,222,226

METHOD OF AND SOLUTION FOR IMPROVING CONVERSION COATED METALLIC SURFACES

James I. Maurer, St. Clair Shores, Richard E. Palmer, Farmington, and Vinod D. Shah, Detroit, Mich., assignors to Hooker Chemical Corporation, New York, N.Y., a corporation of New York

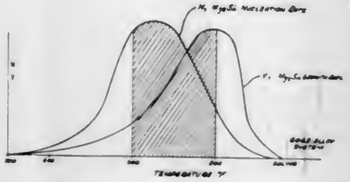
No Drawing. Filed Oct. 15, 1962, Ser. No. 230,744
4 Claims. (Cl. 148—6.16)

1. A method of preparing integral chemical coatings on a metal surface selected from the group consisting of phosphate, phosphate-oxide, chromate, oxalate and arsenate coating to receive an organic finish which comprises the steps of applying to said chemical coating a dilute aqueous solution containing at least about 0.001% trivalent chromium in the form of a chromium complex, said complex containing an anion capable of being displaced by the anion portion of said chemical coating upon contact by the said solution with said coating, said solution having a pH in the range of about 3.8 to about 6, and thereafter water rinsing said surface.

3,222,227
HEAT TREATMENT AND EXTRUSION OF ALUMINUM ALLOY

Elbert R. Baugh, San Marino, and John M. Lyons, La Crescenta, Calif., assignors, by mesne assignments, to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware

Continuation of application Ser. No. 28,814, May 13, 1960. This application Mar. 13, 1964, Ser. No. 351,760
20 Claims. (Cl. 148—11.5)

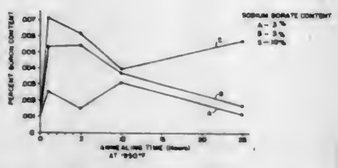


10. The process that comprises heating an extrusion billet formed of precipitation hardenable aluminum alloy containing magnesium and silicon as its primary hardening constituents, maintaining said billet at a temperature for a period sufficient to place most of said hardening constituents in solution, then cooling said billet from said temperature down to about 800° F., further cooling the billet at an average rate of at least about 300° F. per hour from about 800° F. to about 400° F., whereby said billet is capable of extrusion at a temperature below about 875° F. and at rates of speed and with resultant mechanical properties comparable to those of an extrusion formed from a billet slowly cooled from 800° F. to 400 degrees F. and subsequently extruded at a temperature in excess of about 875° F., subsequently reheating said billet to extrusion temperature, and then extruding the material of said heated billet to a predetermined shape.

3,222,228
METHOD OF BORONIZING STEEL

James Korynta Stanley and William Howard Schaefer, Jr., Pittsburgh, Pa., assignors to Crucible Steel Company of America, Pittsburgh, Pa., a corporation of New Jersey

Filed June 28, 1962, Ser. No. 205,930
5 Claims. (Cl. 148—16)



1. A method of combined controlled boronizing and annealing of ferrous metal sheet stock comprising applying to the surfaces of the stock a slurry comprising a volatilizable vehicle and a fused mixture of magnesium oxide and a material selected from the group consisting of boron oxides, borates of sodium, lithium, potassium, and magnesium, and mixtures thereof, heating the coated stock to volatilize the vehicle and continuing said heating in dry hydrogen at a temperature between about 1900° F. and 2100° F. for a period from about 0.5 to about 2 hours to anneal the stock and to effect impregnation of the stock with boron to a desired extent.

3,222,229
PROCESS OF HARDENING ALLOY STEELS

Robert Pribyl, Linz (Danube), Austria, assignor to Vereinigte Osterreichische Eisen- und Stahlwerke Aktiengesellschaft, Linz (Danube), Austria, a firm

No Drawing. Filed July 30, 1963, Ser. No. 298,585
Claims priority, application Austria, July 14, 1960, A 5,429/60
10 Claims. (Cl. 148—143)

1. A process for hardening alloy steels comprising the steps of

preparing a workpiece having a cross-sectional area extending 100 square centimeters and consisting essentially of 0.4–0.55% C, 0.25–0.35% Si, 0.5–0.8% Mn, 2.8–3.3% Cr and the balance iron,

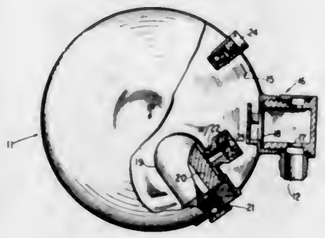
surface heating said workpiece to a surface temperature at least as great as the hardening temperature for the alloy steel,

quenching said workpiece in water, and tempering said workpiece.

3,222,230
GENERATION OF GASEOUS MIXTURES FOR INFLATABLE DEVICES

Lester V. Hebenstreit, Bloomfield, and Charles A. Heins, Clifton, N.J., assignors to Specialties Development Corporation, Belleville, Essex County, N.J., a corporation of New Jersey

Original application Nov. 3, 1961, Ser. No. 149,895, now Patent No. 3,122,181, dated Feb. 25, 1964. Divided and this application Oct. 24, 1963, Ser. No. 318,718
4 Claims. (Cl. 149—1)



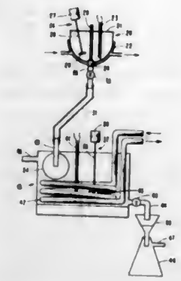
1. A charge for producing a mixture of cool gases under low pressure consisting essentially of about 0.56 to about 0.65 pound of a hot gas generating pyrotechnic substance, said pyrotechnic substance being one which produces about 974 to about 1121 B.t.u. when said 0.56 to 0.65 pound of substance is ignited, an expandable fluid coolant isolated from and surrounding said substance, said coolant consisting essentially of about 6.78 to about 7.33 pounds of carbon dioxide, said charge being a total weight of about 7.34 to about 7.98 pounds, said pyrotechnic substance and said isolated coolant being of an arrangement to cause said isolated coolant to admix with hot gases to be generated by said pyrotechnic substance when said pyrotechnic substance is ignited.

3,222,231
PROCESS FOR PRODUCING FINELY DIVIDED ROUNDED PARTICLES

Michael Markels, Jr., Alexandria, and Richard N. Eichbauer, North Springfield, Va., assignors to Atlantic Research Corporation, Fairfax County, Va., a corporation of Virginia

Filed Sept. 18, 1962, Ser. No. 224,895
20 Claims. (Cl. 149—2)

1. A process comprising physically precipitating a solid solute out of solution while simultaneously subjecting said solution to both mechanical agitation and high frequency vibration.



6. The process of claim 1 in which the solid solute is a solid fuel.

3,222,232
AQUEOUS EXPLOSIVE SLURRIES CONTAINING SULFUR COMPOUNDS HAVING A LOW COEFFICIENT OF EXPANSION

William L. Schwoyer, Allentown, Pa., assignor to Trojan Powder Company, Allentown, Pa., a corporation of New York

No Drawing. Filed Mar. 9, 1964, Ser. No. 350,550
15 Claims. (Cl. 149—43)

1. An aqueous slurried explosive composition characterized by a low coefficient of expansion with temperature comprising an inorganic nitrate oxidizer in an amount within the range from about 10 to about 95%, particulate aluminum in an amount within the range from about 0.5 to about 20%, an aqueous liquid in an amount to form a slurry, and a sulfur compound selected from the group consisting of inorganic thiosulfates and organic sulfonates in an amount sufficient to inhibit the thermal expansion of the slurry.

3,222,233
METHYLAMINE NITROFORM OXIDIZER IN NITROCELLULOSE, ALUMINUM AND METRIOL TRINITRATE PROPELLANTS

Anthony J. Matuszko and Marguerite S. Chang, both of Washington, D.C., assignors to the United States of America as represented by the Secretary of the Navy

No Drawing. Filed Feb. 27, 1964, Ser. No. 348,903
3 Claims. (Cl. 149—92)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. A process for preparing methylamine nitroform which comprises, reacting methylamine with a solution of nitroform in carbon tetrachloride.

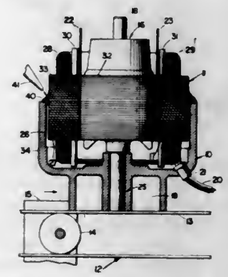
3. In a propellant composition comprising nitrocellulose, aluminum and metriol trinitrate the improvement comprising methylamine nitroform as an oxidizer in said composition.

3,222,234
METHOD FOR BONDING PARTS OF AN ELECTRICAL MOTOR

Milton V. De Jean and Michael J. Lacy, Fort Wayne, Ind., assignors to General Electric Company, a corporation of New York

Filed Dec. 26, 1962, Ser. No. 246,955
2 Claims. (Cl. 156—60)

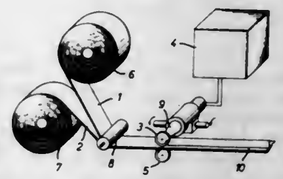
1. A method of joining metallic parts of an electric motor in assembled relation, said method comprising the steps of: positioning the metallic parts in fixed preassembled and overlapping relation to form a predetermined alignment and capillary spacing between the interfacial surfaces to be joined; applying an uncured thermosetting resin adhesive at an edge of the capillary spacing of said interfacial surfaces to be joined, with said resin adhesive having an epoxide equivalent in the range from 175 to 350; heating said uncured thermosetting resin adhesive to a predetermined temperature to cause the resin to reach its gelation state; said heating of the thermosetting resin adhesive causing its viscosity to be lowered, with substantially all of said thermosetting resin adhesive being drawn into the capillary spacing between the aligned interfacial surfaces to be joined by capillary action to wet these surfaces before the gelation state is reached, and with the capillary spacing being of sufficient size that said thermo-setting resin adhesive is retained therein between said interfacial surfaces by capillary action without spillage until gelation occurs; and curing said thermosetting resin adhesive to a solid infusible state thereby joining said metallic parts together.



3,222,235
METHOD OF MANUFACTURING INFUSION BAGS

Norbert Buchner, Hegnach, Waiblingen, Germany, assignor to Fr. Hesser Maschinenfabrik-Aktiengesellschaft, Stuttgart-Bad Cannstatt, Germany, a corporation of Germany

Filed Nov. 8, 1962, Ser. No. 236,355
Claims priority, application Germany, Dec. 11, 1961, H 44,366
1 Claim. (Cl. 156—73)

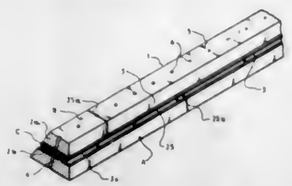


A method for forming an infusion bag which is adapted for containing a substance which when immersed in a liquid produces a beverage, said method comprising superimposing an even number of layers of non-thermoplastic fibrous permeable filter paper together, applying mechanical pressure to said layers along marginal seams in a direction normal to the layers, superimposing on said mechanical pressure ultrasonic pressure impulses directed parallel to the layers to destroy the fibrous structure at said seams and produce pulverized fibre particles in the layers which mix and bond together, the layers being joined to define an open cavity in which the substance may be introduced after which the layers are sealed to close the cavity, said seams having strength when wet to retain the substance in said cavity while having no effect on the taste of the beverage.

3,222,236
METHOD OF SPLICING A BELT

Alfred A. Burrell, 10323 106th St., Edmonton, Alberta, Canada

Filed Mar. 11,1963, Ser. No. 264,137
5 Claims. (Cl. 156—139)

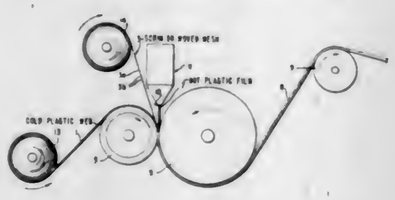


1. The method of manufacturing a V-belt comprising the steps of fabricating a belting material having a wide inextensible load-carrying ribbon in its neutral axis section centrally of its depth forming complementary steps on opposite ends of a length of said belting material by slitting said ends horizontally approximately midway of the thickness of said ribbon, removing the unwanted material above and below the slits in said respective ends; and bonding the confronting faces of said wide inextensible ribbon in the overlapped complementary stepped ends to provide an endless belt having a continuous load-carrying ribbon in its neutral axis section.

3,222,237
METHOD OF MANUFACTURING REINFORCED PLASTIC SHEET

William R. McKelvy, Atlanta, Ga., assignor to Lamex, Inc., Norcross, Ga., a corporation of Georgia

Filed Mar. 30, 1962, Ser. No. 183,776
4 Claims. (Cl. 156—177)



4. A continuous process for forming a sheet of homogeneous plastic material with reinforcing mesh enclosed therein comprising the steps of,

passing a thin sheet of said material in solid form over a resilient pressure roll and through the nip between said roll and a cooperating rigid roll urged thereagainst at a nip line,

passing a mesh of dimensionally stable strands into said nip on the side of said sheet opposite said resilient roll at a feed rate approximating the movement of said sheet,

inserting between said net and said rigid roll a laminar flow of said plastic material in fluid form moving at a rate not exceeding said feed rate and with the flow oriented to contact said rigid roll, said mesh and said sheet ahead of said line,

cooling said rigid roll sufficiently to cause congealing of said flow of plastic immediately adjacent thereto while leaving uncongealed the body of said fluid during its passage across said line of the nip,

urging said rolls together at said nip sufficiently to weld said part to said uncongealed material, and

stripping said sheet of reinforced plastic from said rigid roll after the temperature thereof has decreased sufficiently to provide self-sustaining strength.

3,222,238
PROCESS FOR BONDING RUBBER TO LINEAR CONDENSATION POLYESTER STRUCTURES

Henry R. Krysiak, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

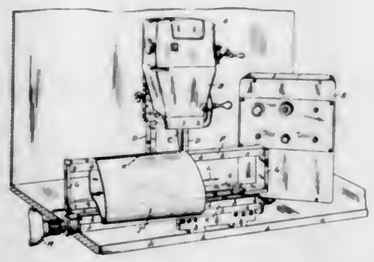
No Drawing. Filed May 22, 1962, Ser. No. 196,605
9 Claims. (Cl. 156—330)

1. The process for bonding rubber to a shaped structure composed of a linear condensation polyester which comprises (1) coating the structure with an aqueous medium containing about 5% to about 25% by weight of dispersed solids of (A) polyepoxide having an epoxy equivalent per 100 grams greater than about 0.20 and an average of at least about two epoxy groups per molecule, a melting point below about 150° C., and an average molecular weight below about 3000, (B) epsilon-caprolactam in a mol ratio of the polyepoxide to the caprolactam the range from about 0.05 to about 10.0, and (C) a catalytic amount of caprolactam polymerization initiator; (2) reacting the polyepoxide with the caprolactam by heating the coated structure to a temperature above 210° C. and below the melting point of the polyester until the coating is dry; (3) overcoating the structure with an aqueous phenol-aldehyde and butadiene-vinyl pyridine rubber latex mixture; (4) drying and curing the overcoating; (5) applying and curing a layer of rubber on the coated structure.

3,222,239
ULTRASONIC SEALING SYSTEM

Howard Deans, Secane, Pa., assignor to Kleer-Vu Industries, Inc., New York, N.Y.

Filed Mar. 30, 1961, Ser. No. 99,504
7 Claims. (Cl. 156—380)

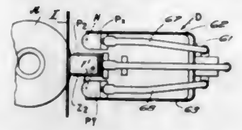


1. An ultrasonic sealing device for thermoplastic sheet materials comprising a housing, a vertical driving member within the housing, coils encircling said member, a source of high frequency alternating current energy applied to the coils, a depending inverted conical tool having a small constricted application area at the lower end thereof, an anvil against which said area presses said sheet materials, said driving member consisting of a laminated nickel stack structure provided with a plurality of parallel encircling energizing coils, an intermediate tubular member encircling said driving member between said driving member and said housing to supply cooling air thereto, a vertical standard at one side of said anvil and a counter balanced parallelogram suspension between said standard and said housing and an adjustable vertically positioned coil spring counterbalancing means to hold up said driving member and said tool so that only the energy of the ultrasonic vibration of the tool will be applied to the plastic sheet materials without effect of the weight of the driving member.

3,222,240
GRIP-FINGER ASSEMBLY FOR LABELING MACHINES

Sidney T. Carter, Shrewsbury, and Julian L. Fedler, Leominster, Mass., assignors to Geo. J. Meyer Manufacturing Co., Cudahy, Wis., a corporation of Wisconsin

Filed Feb. 12, 1963, Ser. No. 257,898
20 Claims. (Cl. 156—482)

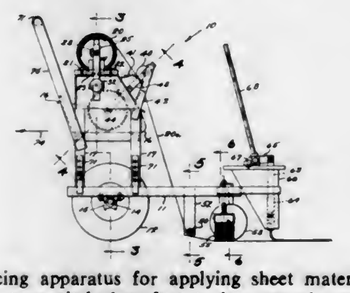


9. In a grip-finger assembly of the kind wherein a suction-type label-transfer pad, of a width substantially less than that of the label to be applied, is mounted on a movable part by means of which said transfer pad is carried from a transfer station where it receives a label to a position such as to contact the central part, only, of the label with the article to be labeled, in combination, a pair of pressure pads spaced apart to receive the transfer pad between them, movable supporting means for said pressure pads operative, after the transfer pad has contacted the central part of the label with the article to be labeled, to move said pressure pads relatively to the transfer pad so as to contact the respective pressure pads with those parts of the label which are located laterally beyond the edges of the transfer pads, and to press those portions of the label, which they so contact, into engagement with the article.

3,222,241
VAPOR BARRIER AND ADHESIVE APPLICATORS

Frank W. Curtis, Chagrin Falls, Ohio, assignor to Lexsuco, Incorporated, Solon, Ohio, a corporation of Ohio

Original application July 18, 1960, Ser. No. 43,614, now Patent No. 3,183,139, dated May 11, 1965. Divided and this application Dec. 8, 1964, Ser. No. 416,775
1 Claim. (Cl. 156—575)

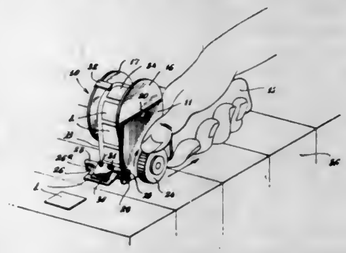


Surfacing apparatus for applying sheet material and adhesive to a pitched surface to be covered comprising in combination a base frame, pairs of upright frame members adjustably attached to said base frame, means for supporting a roll of sheet material between said frame members, an open adhesive reservoir supported in a horizontal plane on said frame members, a coating roll mounted on said frame members and in contact with the lower surface of said sheet material, a transfer roll in communication with said adhesive reservoir for transferring adhesive contained in said reservoir to said coating roll, an idler roll mounted between said frame members and in pressure engagement with the outer surface of said sheet material directly opposite said coating roll, means operatively engageable with said roll of sheet material and adjustable relative to said frame members for laterally aligning said roll of sheet material therebetween, guide means on said base frame for directing said sheet material toward the pitched surface to be covered, a brush and roller assembly mounted on said base frame extending therebelow and operable to apply pressure to the top surface of said sheet material as the latter engages said surface to be covered, means for movably adjusting said frame members relative to said base frame effective to tilt said base frame at an angle corresponding to the pitch of said surface to be covered, said relative adjustment being such as to retain said reservoir in said horizontal plane, and a hopper provided on said base frame with suitable discharge outlets for effecting discharge of continuous spaced ribbons of adhesive on the outer surface of that portion of said sheet material which has already been supplied to said surface to be covered.

3,222,242
LABEL DISPENSER

James E. Ingalls, P.O. Box 244, Brooklyn, Conn.; Richard S. Doran, Brooklyn, Conn.; and Knut A. Barstrom, Rte. 87, Columbia, Conn.

Filed Aug. 13, 1963, Ser. No. 301,819
4 Claims. (Cl. 156—584)



1. In an apparatus for dispensing labels detachably mounted on a continuous backing a side wall having a front edge and a bottom edge, means for holding a coil of label containing backing for subsequent unwinding at the upper portion of said wall, a windup shaft journaled in the lower portion of said wall and extending transversely therefrom to receive and wind up said backing after said labels have been removed therefrom, means for rotating said shaft, a first guide member mounted on said wall and extending transversely therefrom adjacent said front and bottom edges, a second guide member mounted on said wall above and parallel to said first guide member, said members so arranged as to receive therebetween said label bearing backing from said coil in said holding means and guide said backing to said wind up shaft, said first guide member provided with a peeling edge to effect separation of said labels from said backing as said label backing is drawn over said edge and around a portion of said first guide by being wound on said shaft, means for tensioning said backing, said first guide provided with a flat surface adjacent said peeling edge and means for rotatively adjusting the said first guide to effect the angle of the plane of said flat surface relative to said bottom edge to control the direction of ejection of said labels.

3,222,243
THERMAL INSULATION

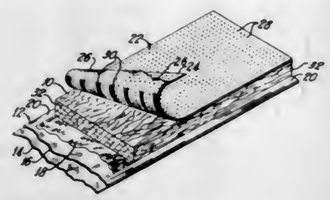
William R. Gaston, Anderson, S.C., and David O. Richards, Haddonfield, N.J., assignors to Owens-Corning Fiberglas Corporation, a corporation of Delaware

Filed July 11, 1962, Ser. No. 209,022
4 Claims. (Cl. 161—113)

1. In a thermal insulating material,

a coherent batt of long staple glass wool fibers positioned in random oriented interlay and joined to one another at point contact by cured thermosetting phenolic resin,

said batt having opposed major surfaces of rectangular shape and lateral edges of rectangular shape,
said edges being free of covering,
an imperforate kraft-roll laminate secured to one of said major surfaces by adhesive between said surface and laminate and with the foil exposed,
said laminate comprising about 30 lbs./ream natural brown sulphite paper and aluminum foil of a thickness of 0.00025 inch bonded with sodium silicate,



a kraft-foil laminate as defined above, and also perforated, secured to the other major surface by adhesive between said surface and laminate and with the foil exposed,
said perforated laminate having about 9025 punctures per square foot,
a major portion of said punctures being open to permit said batt to breath to the ambient atmosphere,
and said imperforate laminate extending beyond said edges to form fastening tabs.

3,222,244

PROCESS FOR PRODUCING WATER-LAID SHEETS FROM POLYAMIDE FIBERS PRETREATED WITH A TANNIN

Erwin Sommer, Obernburg, and Klaus Gerlach, Obernau, Germany, assignors to Vereinigte Glanzstoff-Fabriken AG., Wuppertal-Elberfeld, Germany

No Drawing. Filed Feb. 4, 1963, Ser. No. 256,149
Claims priority, application Germany, Feb. 2, 1962, V 21,977
12 Claims. (Cl. 162—157)

1. In a process for the production of a fibrous sheet material by water-laying synthetic polyamide fibers onto a supporting surface and withdrawing water from the resulting fibrous web, the improvement which comprises: pretreating said fibers in an aqueous bath containing an organic tannin having a molecular weight of about 200 to 1000, said aqueous bath being maintained at a pH of about 1 to 4.5; removing excess bath liquor from said fibers; and then dispersing the pretreated fibers into water to form an aqueous pulp slurry suitable for said water-laying of a fibrous web.

3,222,245

POLYVINYLSULFONATES WITH ALUM AS PRECIPITANTS IN THE PROTEIN SIZING OF PAPER

Franz Poschmann, Ludwigshafen (Rhine), Germany, assignor to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed Jan. 6, 1965, Ser. No. 423,872
Claims priority, application Germany, Oct. 31, 1961, B 64,596
4 Claims. (Cl. 162—168)

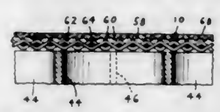
1. In a process for the internal sizing of paper with a protein sizing substance of animal origin wherein a precipitant is added to a slurry of cellulose fibers containing said sizing substance, the improvement of adding 1 to 20% by weight, with reference to the protein sizing agent, of a water-soluble addition polymer made up from at least 10% by weight of a monomer selected from the group consisting of vinylsulfonic acid and its alkali metal and ammonium salts, together with aluminum sulfate as said precipitant.

3,222,246

BACKUP WIRE FOR FOURDRINIER MACHINE

Charles A. Lee, Knoxville, Tenn., assignor to Huyck Corporation, New York, N.Y., a corporation of New York

Filed Dec. 14, 1961, Ser. No. 159,415
2 Claims. (Cl. 162—349)



1. For use in a papermaking machine and the like having an endless forming screen traveling through an endless path to receive an aqueous suspension of fibers from which water drains through said screen to leave a layer of fibers on the outer surface of said screen, and having one or more dewatering devices positioned along a portion of said endless path to promote the flow of water through said screen, an endless supplemental belt made of screen-like fabric substantially the entire area of which is woven exclusively from synthetic fiber-forming material characterized by having whether wet or dry great tensile strength great resistance to abrasion and great resistance to damage due to flexing, said belt being arranged on said papermaking machine to move in an endless path inside the endless path of said forming screen, the endless paths of said forming screen and said belt substantially coinciding in a portion of the endless path of said forming screen in which said forming screen is advanced over at least one of said dewatering devices whereby in said portion of said path said belt is interposed between said forming screen and said dewatering devices with the outer surface of said belt in face-to-face contact with the inner surface of said forming screen and the inner surface of said belt in contact with said dewatering devices, the fabric from which said belt is formed having the weft yarns extending longitudinally and the warp yarns extending transversely of the path of movement of said belt, and the fabric of said belt being stabilized with the transversely extending warp yarns set in undulating form to provide knuckles extending above and below the longitudinally extending weft yarns to protect said weft yarns from abrasive wear and to mesh with the inner surface of said forming screen to provide improved longitudinal driving engagement between those portions of said belt and said forming screen which are in face-to-face contact.

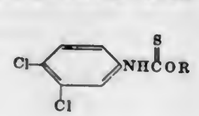
3,222,247

DIMETHYL FORMAMIDE MIXTURE AS A BACTERIOSTAT

Arthur F. McKay, Beaconsfield, Quebec, and Harold A. Baker, Montreal, Quebec, Canada, assignors to Monsanto Canada Limited, La Salle, Quebec, Canada, a Canadian company, and American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed June 20, 1961, Ser. No. 118,266
Claims priority, application Great Britain, June 24, 1960, 22,236/60
17 Claims. (Cl. 167—30)

1. The method of inhibiting the growth of bacteria which comprises exposing said bacteria to a bacteriostatic amount of a composition comprising dimethylformamide and 3,4-dichlorophenylthionocarbamate having the formula:



wherein R is selected from the group consisting of phenyl and phenyl substituted with at least one member selected from the group consisting of halogen atom, lower alkyl, lower alkoxy, and nitro.

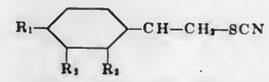
3,222,248

METHOD OF CONTROLLING MICROORGANISMS BY MEANS OF ORGANIC THIOCYANATES

George E. Lukes, Irvington, N.Y., and George P. Willsey, Jr., Houston, Tex., assignors to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 12, 1961, Ser. No. 158,897
7 Claims. (Cl. 167—30)

1. A method of inhibiting the growth of microorganisms which comprises applying thereto a small but effective amount of a phenacyl thiocyanate represented by the following formula:



wherein R_1, R_2 and R_3 are selected from the class consisting of hydrogen, lower alkyl thiocyanate, amino and nitro.

3,222,249

1,9,10,11,12,12-HEXACHLOROTRICYCLO [7.2.1.0^{2,8}] DODECA-3,6,10-TRIENE, PROCESS FOR PREPARING SAID COMPOUND, AND INSECTICIDAL COMPOSITIONS CONTAINING SAID COMPOUND AS THE ACTIVE INGREDIENT

Mitsunobu Koremura and Toshio Shono, Tokyo, Japan, assignors to Sankyo Company Limited, Tokyo, Japan

No Drawing. Filed Feb. 14, 1963, Ser. No. 258,647
Claims priority, application Japan, Feb. 22, 1962, 37/6,062
7 Claims. (Cl. 167—30)

3. An insecticidal composition comprising about 2–5% of 1,9,10,11,12,12-hexachlorotricyclo [7.2.1.0^{2,8}] dodeca-3,6,10-triene as the active ingredient with the remainder being a solid carrier in dust form.

3,222,250

INHALATION ANESTHETIC

Harry L. Yale, New Brunswick, N.J., assignor to Olin Mathieson Chemical Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Sept. 10, 1962, Ser. No. 222,632
3 Claims. (Cl. 167—52)

1. An inhalation anesthetic composed of a constant boiling mixture of about 18 percent by weight of diethyl ether and about 82 percent by weight of a compound selected from the group consisting of bromodifluoromethylchlorofluoromethane and chlorodifluoromethylbromofluoromethane.

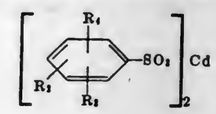
3,222,251

METHOD OF ELIMINATING HELMINTHS WITH CADMIUM COMPOUNDS

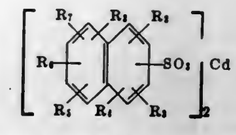
Kenneth K. Wyckoff, Ashland, Ohio, and James E. Guthrie, deceased, late of Beltsville, Md., by Magdelene Guthrie, legal representative, Ashland, Ohio; said Wyckoff assignor to Richardson-Merrell, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 18, 1961, Ser. No. 163,378
(Filed under Rule 47(a) and 35 U.S.C. 116)
5 Claims. (Cl. 167—53)

1. A method of eliminating helminths from an animal infected therewith which comprises supplying the animal with drinking water containing at least one aromatic sulfonic acid water soluble cadmium salt of the formula



and



wherein R_2, R_3, R_4, R_5, R_6, R_7 and R_8 are members of the group consisting of hydrogen, halogen, lower alkyl, hydroxy, lower alkoxy, amino, nitro, carboxy, carb-lower alkoxy, sulfo, mercapto and lower alkylthio groups in a concentration adequate to kill the helminths without having an appreciable toxic effect on the animal and for a time of at least 24 hours but not over a period sufficient to produce serious adverse effects to the animal.

3,222,252

PREPARATION AND METHOD FOR THE PREVENTION, TREATMENT, AND CONTROL OF MASTITIS IN BOVINE UDDERS

Heinz J. Kraus, 4273 Seven Hills Road, Castro Valley, Calif.

No Drawing. Filed Nov. 1, 1962, Ser. No. 234,856
17 Claims. (Cl. 167—53.2)

1. A preparation for the prevention, treatment and control of mastitis in udders comprising, a blend of non-toxic, substantially tasteless, odorless, edible semi-drying and drying oils; and a fatty acid ester skin emollient film forming agent, composed of the reaction product of a fatty acid and a member of the group consisting of low molecular weight monohydric alcohols, glycerol, propylene glycol, ethylene glycol and polyethylene gylcol.

3,222,253

ANTIMITOTIC COLCHICINES

Albert Eschenmoser, Zollikon, Richard Schindler, Bern, and Jakob Schreiber, Zurich, Switzerland, assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed May 16, 1962, Ser. No. 195,299
Claims priority, application Switzerland, May 26, 1961, 6,146/61; Mar. 23, 1962, 3,531/62
11 Claims. (Cl. 167—78)

9. A process for the production of a polyploid plant which comprises administering to a plant, an agent comprising an effective amount of a member selected from the group consisting of des-(acetylamino)-colchicine, des-(acetylamino)-isocolchicine and a mixture of the two compounds.

3,222,254

METHOD OF CONTROLLING THE REACTIVITY OF A NUCLEAR REACTOR

Pierre Edmond Jules Marie Maldague and Francois Albert de Waegh, Brussels, Belgium, assignors, by mesne assignments, to Société anglo-belge Vulcain, Société anonyme, Brussels, Belgium

Filed Feb. 5, 1963, Ser. No. 256,282
2 Claims. (Cl. 176—22)

1. A method of controlling the reactivity of the nuclear reactor having a core through which a water coolant-moderator flows, comprising the steps of: varying light to heavy water ratio to control reactivity variations, modifying during normal power operation of said reactor the concentration of a poison in response to the water tem-

perature to maintain a combined effect upon reactivity of xenon 135 and said poison substantially equal to that of xenon 135 equilibrium poisoning at reactor full power,

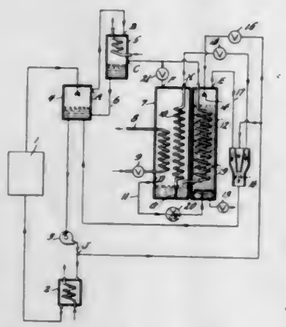


and providing for the derivation of a massflow from said primary fluid through a separate circuit in which the removal of said poison is carried out by distillation.

3,222,255
METHOD OF PURIFYING PRIMARY FLUID OF NUCLEAR REACTOR CIRCUIT

Pierre Edmond Jules Marie Maldague, Brussels, Belgium, assignor to Société Anglo-Belge Vulcain, Société Anonyme, Brussels, Belgium

Filed Aug. 2, 1963, Ser. No. 299,494
Claims priority, application Luxembourg, Aug. 11, 1962, 42,208
7 Claims. (Cl. 176—37)



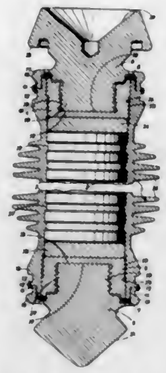
1. Method for the purification of the primary fluid of a nuclear reactor while operating and at power wherein said fluid circulates and accumulates impurities, comprising the steps of separating a portion of said fluid from its circuit, distilling said portion at a total pressure substantially equal to the pressure prevailing in the primary fluid circuit when the reactor is at power, thereby forming vapor of said primary fluid and residual liquid concentrate containing said impurities, returning said vapor to said primary fluid circuit at said total pressure and discarding said liquid concentrate.

3,222,256
NUCLEAR FUEL ELEMENT WITH IMPROVED END CAP ASSEMBLY

Frederick Owen Fletcher, Saughall, Chester, and Alan Frederick Taylor, Lea, Preston, England, assignors to United Kingdom Atomic Energy Authority, London, England

Filed Mar. 16, 1962, Ser. No. 180,253
Claims priority, application Great Britain, Mar. 24, 1961, 10,974/61
2 Claims. (Cl. 176—79)

1. A nuclear reactor fuel element comprising fissile material enclosed in a tubular sheath, each end of the sheath being closed by an end cap sealed to the sheath by a first circumferential edge weld, screw threads defined between and joining mechanically each of said end caps and said sheath, a shroud member at each end of the element enclosing each of said first edge welds and joined to the sheath by a second circumferential edge weld and to the end cap by screw threads, and a circumferential ridge adjacent the second circumferential edge members, said circumferential ridges projecting radially by at least the amount of projection of the edge weld.



3,222,257
PROCESS FOR PRODUCING NUCLEOSIDES BY MICROORGANISMS

Teruo Shiro, Kanagawa-ken, Shinji Okumura, Yokohama-shi, Kanagawa-ken, Yoshio Tamagawa, Tokyo, Toshinao Tsunoda, Kanagawa-ken, and Masahiro Takahashi and Shinichi Motozaki, Tokyo, Japan, assignors to Ajinomoto Kabushiki Kaisha, Chuo-ku, Tokyo, Japan, a corporation of Japan

No Drawing. Filed Apr. 16, 1962, Ser. No. 187,948
Claims priority, application Japan, Apr. 19, 1961, 36/13,579
6 Claims. (Cl. 195—28)

1. A method for producing inosine and guanosine which comprises aerobically culturing a biochemical mutant derived from *Bacillus subtilis*, which has a vigorous function of simultaneously producing inosine and guanosine outside the cells of the mutant and which require at least adenine and histidine for growth, in a culture medium containing an assimilabie carbon-containing substance, an assimilable nitrogen-containing substance, an adenine-providing substance, histidine, and an inorganic salt adapted to contribute to the growth of said mutant, at temperatures ranging from about 25° C. to about 37° C. and at a pH range from about 5 to about 9 whereby a substantial amount of inosine and guanosine is accumulated in culture liquid and recovering the inosine and guanosine.

3,222,258
METHOD OF PREPARING AMINO ACIDS BY FERMENTATION

Hiroshi Iizuka, Tokyo, Noboru Katsuya, Kanagawa-ken, Isamu Shiio and Kazuo Komagata, Tokyo, and Shin-Ichiro Otsuka, Kazuhiko Yamada, and Ryosuke Ishii, Kanagawa-ken, Japan, assignors to Ajinomoto Co., Inc., Tokyo, Japan

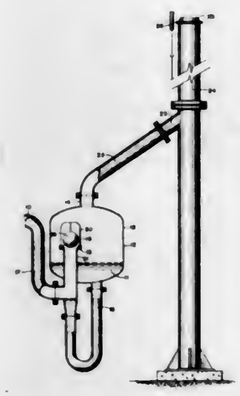
No Drawing. Filed July 15, 1963, Ser. No. 295,196
Claims priority, application Japan, July 14, 1962, 37/29,206
6 Claims. (Cl. 195—29)

1. A method of producing an amino acid which comprises culturing a microorganism under aerobic conditions on a medium containing a hydrocarbon as a principal source of assimilable carbon, and a source of assimilable nitrogen, and recovering said amino acid from said medium, said microorganism being capable of growing in any one of four media, the first medium consisting of 10 grams kerosene, 2 grams ammonium chloride, one gram disodium hydrogen phosphate dodekahydrate, 1.5 grams potassium dihydrogen phosphate, 0.5 gram magnesium sulfate heptahydrate, 2 grams sodium chloride, and sufficient distilled water to make one liter; the second medium consisting of 10 grams petroleum, 2.5 grams ammonium nitrate, one gram disodium hydrogen phosphate dodekahydrate, 1.5 grams potassium dihydrogen phosphate, 1.5 grams magnesium sulfate heptahydrate, 0.2 gram manganese chloride, traces each of calcium chloride, ferrous sulfate, and molybdenum sulfate, five grams calcium carbonate, and sufficient distilled water to make one liter; the third medium consisting of one gram ammonium chloride, 0.5 gram potassium dihydrogen phosphate, 0.2 gram magnesium sulfate, a trace of ferric chloride, sufficient water to make one liter, and being saturated with a mixture of equal parts of air and a compound selected from the group consisting of methane and propane; and the fourth medium consisting of any one of the first, second and third medium, and of at least one growth promoting agent selected from the group consisting of yeast extract, corn steep liquor, meat extract, peptone, protein hydrolyzate, and pastes and extracts prepared from crushed animal and vegetal tissue.

3,222,259
FLARE STACK WITH A LIQUID SEAL

Henry H. Wall, Jr., Baton Rouge, La., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia

Filed Oct. 25, 1963, Ser. No. 319,930
4 Claims. (Cl. 196—46)

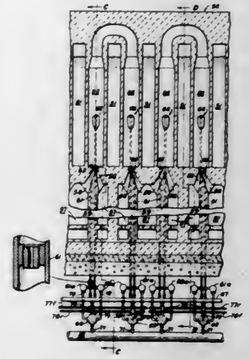


1. A flame-arresting discharge head for combustible vapors, said head having a liquid seal drum with a vapor discharge opening at its upper portion, a liquid seal loop trap opening into the lower portion of the drum, a vapor supply loop extending through the bottom of the drum and opening within the drum at a height above that at which the liquid seal trap loop opens so that the opening of the vapor supply loop is not covered by liquid from the liquid trap, the vapor supply loop extending downwardly from the bottom of the seal drum and joining the liquid seal loop trap at a branched connection, one branch extending downwardly for a distance and then upwardly to form the liquid seal trap loop and the other branch extending laterally for connection to a vapor supply above the level of the bottom of the seal drum, and a check valve closing the opening of the vapor supply loop within the seal drum against downward passage of flame and permitting upward travel of vapor through the last-mentioned opening only when the vapor is supplied under a pressure sufficient to open the check valve, said pressure being also sufficient to expel the trap liquid from the portion of the vapor supply loop above the branched connection, the liquid seal trap loop extending far enough below the branched connection so that liquid remains in it to form a trap when the vapor supply pressure is sufficient to open the check valve.

3,222,260
HEATING OF HIGH CHAMBERED HORIZONTAL COKE OVENS

Joseph Becker, Pittsburgh, Pa., assignor to Koppers Company, Inc., a corporation of Delaware

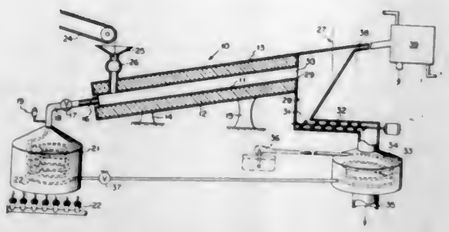
Filed Jan. 9, 1963, Ser. No. 250,336
6 Claims. (Cl. 202—12)



1. In a horizontal coke oven battery including elements to provide uniform heating for high-chambered ovens, the combination comprising:
   (a) paired groups of flame flues operable alternately in an "on" and "off" combustion condition;
   (b) a high burner and low burner in each of said flues;
   (c) a source of fuel gas connected to a fuel gas distributing system;
   (d) a supply of air under pressure connected to an air distributing system;
   (e) conduit means communicating said high burners;
   (f) conduit means communicating said low burners; and
   (g) valve means connecting said high and low burner conduit means and said air and fuel gas distributing systems, operable to pass said air simultaneously and continually to said high and low burners when said flame flues are in the "off" combustion condition.

6. In the method of underfiring a regenerative coke oven battery by means of a high burner and a low burner located in each vertical flame flue in the heating walls alongside the horizontal coking chambers, the low burners being at the base of the flues and the high burners being at a level above the low burners, the steps comprising:
   (a) supplying alternately fuel gas and decarbonizing air to said high burners during a given "on" heating period, and therewith simultaneously
   (b) supplying alternately decarbonizing air and fuel gas to said low burners during said "on" heating period; and thereafter
   (c) supplying simultaneously and continually decarbonizing air to both said high burners and said low burners during the "off" heating condition of said heating flues.

3,222,261
COKING PROCESS
Adrian Nagelvoort, Los Altos, Calif., assignor, by direct and mesne assignments, to Complex, Incorporated, Menlo Park, Calif., a corporation of California
Filed Jan. 10, 1963, Ser. No. 250,516
5 Claims. (Cl. 202—17)



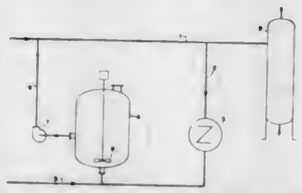
1. In a process of coking crushed coal, the steps of introducing the crushed coal into an enclosed and substantially unobstructed passage inclined at a predetermined angle, said passage being open at the elevated end to discharge material therefrom, injecting super-heated steam under pressure into the lower end of said passage to coke the coal thereby reducing its density, and to transport the coke formed, to the substantial exclusion of the coal, up said passage faster and farther than the coal, and collecting said coke substantially exclusive of coal from the elevated end of said passage.

4. Apparatus for preparing coke from coal comprising an enclosure including an elongated portion forming a substantially unobstructed passage extending therealong, said portion being formed to incline said passage at a predetermined angle to the horizontal, said portion having an opening in the elevated end of said passage, insulation around said elongated portion, said enclosure further having a trap portion disposed in communication with said opening, said trap portion including a hopper-like chamber having a wall thereof disposed to form a sill with respect to said opening, said chamber having an outlet adapted to exhaust gases therethrough, the bottom of said chamber having a port therein adapted to pass coke therethrough, means disposed at a region in said elongated portion remote from said opening fo. introducing coal into said passage, and means for injecting a continuous stream of super-heated steam under pressure into said passage to release volatiles from said coal and convert said coal to coke whereby said coke is separated by density from the coal and transported up said passage and into said chamber to the exclusion of the coal and whereby said volatiles are entrained by said stream to pass via said outlet to be exhausted from said trap portion.

3,222,262
PROCESS FOR THE RECOVERY OF METHANOL FREE AND WATER FREE METHYLAL
Eduard Enk, Fritz Knörr, and Hellmuth Spes, all of Burghausen, Upper Bavaria, Germany, assignors to Wacker-Chemie G.m.b.H., Munich, Germany
No Drawing. Filed Nov. 13, 1961, Ser. No. 152,008
Claims priority, application Germany, Nov. 22, 1960, W 28,965
1 Claim. (Cl. 202—39.5)

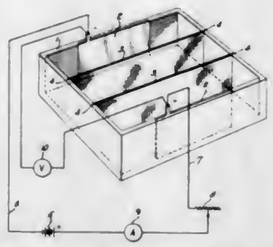
Process for the recovery of water free and methanol free methylal from methylal containing at least one of the impurities water and methanol which comprises subjecting such impure methylal to fractional distillation in a fractionating column while introducing a liquid compound of the formula RXX'_n into the upper portion of the fractionating column as an extraction agent, X being a radical selected from the group consisting of —OH and —NH_2, X' being a radical selected from the group consisting of —OH, —OR', —NH_2, —NHR' and —NR'_2 radicals in which R' is an alkyl radical, n is an integer and R is a radical selected from the group consisting of aliphatic hydrocarbon radicals containing at least two carbon atoms and such radicals interrupted by heteroatoms with drawing the water free and methanol free methylal from the head of the fractionating column and withdrawing the extraction agent containing the impurities entrained thereby from the sump of the column.

3,222,263
INHIBITING THE POLYMERIZATION OF VINYL AROMATIC HYDROCARBONS
Dan N. Campbell, Texas City, Tex., assignor to Monsanto Company, a corporation of Delaware
Filed July 23, 1962, Ser. No. 211,595
8 Claims. (Cl. 202—57)



1. In a process for the purification of a vinyl aromatic hydrocarbon by distillation in a distillation system, the improvement which comprises introducing a minor amount of molten sulfur into the distillation system to inhibit the polymerization of the said vinyl aromatic hydrocarbon.

3,222,264
METHOD OF DETERMINING THE CHLORIDE ION CONCENTRATION IN WATER
Florence Nesh, 164 Hart St., Brooklyn, N.Y.
Filed Apr. 25, 1960, Ser. No. 24,629
12 Claims. (Cl. 204—1)
(Granted under Title 35, U.S. Code (1952), sec. 266)



10. The method for use in determining the chloride ion concentration in suspect water where such concentration may be below one part per million, which comprises preparing an aqueous electrolyte solution containing copper sulfate, sulfuric acid and said suspect water, passing a direct current of known relationship of density to voltage through said electrolyte between spaced copper electrodes therein, connecting a voltmeter across said electrodes while said current is passing to indicate the then voltage fall between said electrodes, and also performing similar steps under a similar current density while using deionized water in a similar electrolyte instead of the suspect water, repeatedly with known and different amounts of added chloride ion concentrations, whereby one may, by physically comparing the voltage indicated when using an electrolyte containing the suspect water with the voltages indicated when using similar solutions containing deionized water with known and different chloride ion concentrations therein, ascertain the chloride ion concentration in the suspect water.

3,222,265
ELECTROLYSIS METHOD AND APPARATUS EMPLOYING A NOVEL DIAPHRAGM
Henri Bernard Beer, Schiedam, Netherlands, assignor to Amalgamated Curacao Patents Company N.V., Willemstad, Curacao, Netherlands Antilles, a corporation of the Netherlands
Original application Oct. 22, 1959, Ser. No. 848,037, now Patent No. 3,098,802, dated July 23, 1963. Divided and this application Nov. 13, 1962, Ser. No. 236,787
Claims priority, application Netherlands, Oct. 29, 1958, 232,721
3 Claims. (Cl. 204—1)



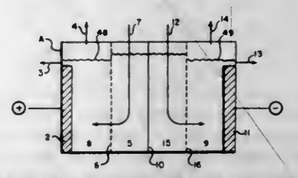
2. An apparatus for carrying out electrolysis in which it is desired to keep two portions of the electrolyte substantially separated yet allow ions to migrate to the electrodes, comprising an ion permeable, electrolyte substantially impermeable diaphragm of a metal selected from the group consisting of titanium and alloys consisting essentially of titanium, said diaphragm having pores therethrough and having a coating of a noble metal on one side thereof and having a barrier layer of titanium oxide on the uncoated parts of said diaphragm, a cathode spaced from the uncoated side of said diaphragm, a container for electrolyte in which said diaphragm and cathode are mounted, and current supply means connected to said diaphragm and to said cathode for passing current from said diaphragm to said cathode, said diaphragm coating acting as an anode, said diaphragm keeping the two portions of the electrolyte substantially separate and allowing passage of ions through said pores when said diaphragm coating is connected as an anode.

3,222,266
METHOD OF ENAMELING ANODIZED ALUMINUM
Harold A. Page, Spokane, Wash., assignor to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware
No Drawing. Filed Aug. 20, 1958, Ser. No. 756,081
13 Claims. (Cl. 204—38)

1. A method for producing vitreous enamel coatings on aluminum metal which comprises treating the aluminum metal in an aqueous acid solution containing fluoride ions and nitric acid in concentrations equivalent to from about 0.5 to 25 grams per liter of ammonium fluoride and from about 1.3 to 106 cc. per liter of an aqueous nitric acid solution containing 70% HNO_3 by weight and thereafter enameling the aluminum with a vitreous enamel.

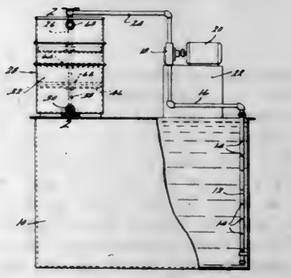
9. A method of coating aluminum with vitreous enamel which comprises electro-chemically producing an anodic aluminum oxide film having a thickness of from about 0.0002 to about 0.00005 inch on said aluminum, directly coating at least a portion of said film with a fusible vitreous material, and heating the coated film to at least the fusion temperature of said vitreous material.

3,222,267
PROCESS AND APPARATUS FOR ELECTROLYZING SALT SOLUTIONS
Charles E. Tirrell, Wayne, Pa., and Edgardo J. Parsi, Wellesley Hills, Mass., assignors to Ionics, Incorporated, Cambridge, Mass., a corporation of Massachusetts
Filed Apr. 5, 1962, Ser. No. 185,424
The portion of the term of the patent subsequent to June 2, 1981, has been disclaimed
10 Claims. (Cl. 204—98)



6. The method of converting electrolytic salt solutions into their corresponding acid and base solutions in a four-compartment electrolytic cell having a terminal anode compartment separated from its adjacent anode feed compartment by a first fluid-permeable porous diaphragm, a terminal cathode compartment separated from its adjacent cathode feed compartment by a second fluid-permeable porous diaphrgam, said feed compartments being separated and defined from each other by a cation-selective ion-exchange membrane, the method comprising introducing said salt solution into the anode feed compartment while maintaining a pressure in said feed compartment to cause said salt solution to pass through said first liquid permeable diaphragm into said anode compartment, introducing an electrolytic solution into the cathode feed compartment while maintaining a pressure in said feed compartment to cause said electrolyte solution to pass through said second liquid-permeable diaphragm into said cathode compartment, passing a direct current transversely through said compartments, membranes and porous diaphragms, to cause migration of cations from the anode feed compartment into the cathode compartment, and removing the corresponding acid and base solutions and gaseous electrode products from the anode and cathode compartments respectively.

3,222,268
PARTICLE SEPARATOR DEVICE FOR PLATING BATHS
Richard J. Clauss, Allen Park, Roy Walter Klein, St. Clair, and Leon J. Pianowski, Detroit, Mich., assignors, by mesne assignments, to The Udylite Corporation, Warren, Mich., a corporation of Delaware
Filed July 13, 1961, Ser. No. 123,718
3 Claims. (Cl. 204—238)



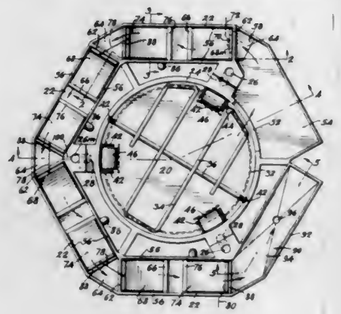
3. In a nickel plating apparatus for electrodepositing a satin-like nickel finish on the surface of a base metal, the combination comprising a tank, a liquid slurry in said tank including a soluble nickel salt and an extremely fine-sized insoluble particulated solids content suspended there-

in ranging in concentration from about 10 grams to about 500 grams per liter and having a particle size predominantly less than about 5 microns, pumping means including inlet means immersed in said slurry for withdrawing a quantity thereof, a filter apparatus disposed adjacent to said tank, conduit means connected to said pumping means for supplying a flow of slurry to said filter apparatus, said filter apparatus comprising a receptacle, filter means disposed transversely of said receptacle and positioned in a substantially horizontal plane, combination nozzle and deflector means for discharging said slurry from said conduit means in an outwardly directed radial direction adjacent to the upper surface of an above substantially the center portion of said filter means, said deflector means including a body defining an arcuate downwardly and outwardly flared surface of a circular cross section, said nozzle means including substantially vertically oriented discharge means disposed adjacent to the upper end of said deflector means for discharging the slurry downwardly along said flared surface and in a radial and outward direction from the circular peripheral edge thereof in the form of a substantially continuous curtain across the upper surface of said filter means, said filter means having a porosity to retain solids thereon of a size greater than about 10 microns entrained in said slurry and to pass the liquid and remaining solids content of said slurry by gravity flow through said filter means, and drain means at the lower portion of said receptacle for discharging the filtered said slurry from said filter apparatus to said tank.

3,222,269
APPARATUS FOR PRODUCING HYPOCHLORITE SOLUTIONS AND INTRODUCING SAME INTO CONFINED BODIES OF WATER

Robert E. Stanton, 171 Downing St., Denver, Colo.

Filed Mar. 28, 1962, Ser. No. 183,242
12 Claims. (Cl. 204—270)

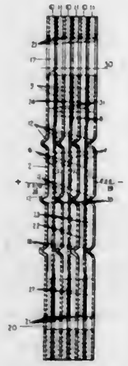


1. Apparatus for manufacturing a hypochlorite solution from a water-soluble electrically-decomposable metallic chloride salt and for introducing such solution into a confined body of water for purposes of purifying same which comprises, an immersible brine tank adapted to receive a charge of salt, said tank including means adapted to introduce the water in which said tank is immersed into the bottom thereof while preventing the return flow of brine, therethrough, said last means comprising vented conduit means opening beneath the water surface and a second conduit forming means connected into said vented conduit means at a point beneath the level to which the water rises therein while opening into the interior of said tank at a level spaced beneath the point of connection with said vented conduit, at least one electrolysis cell containing an upstanding cathode and anode operative upon the application of a suitable electrical potential therebetween to decompose the brine into the hydroxide of the salt's cation together with hydrogen and chlorine gases, means interconnecting the brine tank and at least one of the cells adapted to introduce the brine into the said one cell adjacent the lower end of the electrodes, buoyant supporting means attached to the brine tank and electrolysis cells adapted to float same partially submerged in a body of water, liquid discharge means connected into at least one cell in position to receive the liquid hypochlorite reaction product resulting from the chemical combination of the hydroxide and chlorine gas and deliver said product to the confined body of water being treated at a point underneath the surface thereof, and gaseous-discharge means connected into each cell above the liquid level therein adapted to receive the remaining unreacted gaseous products evolved during the electrolysis and deliver same into said body of water in which said cell is immersed adjacent the outside surface thereof so as to cause circulation sufficient to maintain the temperature inside said cell at a level effective to inhibit hypochlorate formation.

3,222,270
MULTI-ELECTROLYTIC CELLS

George Ernest Edwards, Widnes, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

Filed Mar. 3, 1959, Ser. No. 796,856
Claims priority, application Great Britain, Mar. 18, 1958, 8,715/58
15 Claims. (Cl. 204—269)



1. A multi-electrolytic cell comprising a plurality of unit electrolytic cells, each unit electrolytic cell having an anode and a cathode, said unit electrolytic cells being arranged with the anode of one unit electrolytic cell juxtaposed to the cathode of the next unit electrolytic cell with an inert partition separating the anode of one unit electrolytic cell from the cathode of the adjacent unit electrolytic cell, each inert partition being a chemically inert electroconducting partition of titanium metal sheet, each of said titanium metal sheets having on one surface an electrically conducting layer which is in electrical contact with said titanium sheet over essentially all of said titanium surface, said layer constituting the anode in each unit electrolytic cell, the other surface of each said sheet comprising titanium and constituting the cathode of the next adjacent unit electrolytic cell, said anode and cathode constituting the sole essential working electrodes in each said unit cell.

3,222,271
PROCESS FOR REJUVENATING CATALYSTS

Aubrey L. McClellan, El Cerrito, Calif., assignor to California Research Corporation, San Francisco, Calif., a corporation of Delaware

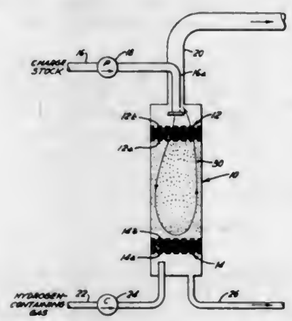
No Drawing. Filed July 30, 1963, Ser. No. 298,542
6 Claims. (Cl. 208—110)

5. In a process for hydrocracking hydrocarbon stocks at elevated temperatures and pressures with excess hydrogen and a supported hydrocracking catalyst which before long exposure to hydrocarbon feed under hydrocracking conditions is an active catalyst composed of at least one hydrogenating metal component selected from the group consisting of Group VIII metals and compounds thereof, other than the noble metals and compounds thereof disposed on a high surface area cracking support, but which catalyst after long exposure to hydrocarbon feed under hydrocracking conditions has accumulated carbonaceous deposits and has become deactivated with the metal hydrogenating component so changed that conventional removal of the accumulated carbonaceous deposits does not result in recovery of an adequate percentage of the original hydrocracking activity, the improvement which comprises extending the effective on-stream time by rejuvenating said catalyst when it becomes so deactivated by contacting said deactivated catalyst before removal of said carbonaceous deposits with dry liquid surfur chloride at a temperature above 100° F. up to the boiling point of the sulfur chloride for at least one hour, then removing unreacted sulfur chloride from the catalyst, thereafter heating said treated catalyst in a dry oxidizing atmosphere at 700° F. to 1000° F. for at least one hour to remove the carbonaceous deposit and to activate the catalyst, and subsequently conducting hydrocracking operations over the resulting rejuvenated catalyst.

3,222,272
PROCESS FOR HYDROCRACKING OF NITROGEN CONTAINING HYDROCARBON OILS WITH COUNTERCURRENT FLOW OF THE OIL WITH HYDROGEN IN THE REACTOR

Paul G. Bercik, O'Hara Township, Allegheny County, Alfred M. Henke, Springdale, and Leslie D. Moore, Glenshaw, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

Filed Sept. 22, 1961, Ser. No. 139,962
4 Claims. (Cl. 208—111)



1. In the process for hydrocracking a hydrocarbon oil containing a nitrogen compound which comprises the steps of disposing a solid hydrocracking catalyst whose activity is reduced by contact with nitrogen compounds in a single stage reaction zone, maintaining in said zone a temperature within the range of about 675° F. to 950° F. and a pressure of about 750 to 3,000 pounds per square inch, contacting the hydrocarbon oil with hydrogen in said reaction zone utilizing a space velocity between about 0.2 and 3, and removing the hydrocracked products from said reaction zone whereby a substantial fraction of the hydrocarbon is hydrocracked, the improvement which comprises contacting said hydrocarbon oil with hydrogen by introducing the hydrocarbon oil into the upper portion of said reaction zone and causing it to flow downwardly into said reaction zone, introducing said hydrogen into the lower portion of said reaction zone and causing it to flow upwardly through said reaction zone and utilizing specific temperatures and pressures within the ranges specified which result in the removal of at least 80 percent of the hydrocracked product from the top of the reaction zone.

3,222,273
HYDROGENATION OF MINERAL OILS IN THE PRESENCE OF A MINOR AMOUNT OF A HYDROGENATING CATALYST AND A MAJOR AMOUNT OF A SPECIFIC TYPE OF ACTIVATED ALUMINA

Richard A. Flinn, Penn Hills Township, Allegheny County, William L. Kehl, Indiana Township, Allegheny County, Bruce K. Schmid, McCandless Township, Allegheny County, and Meredith M. Stewart, Penn Hills Township, Allegheny County, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

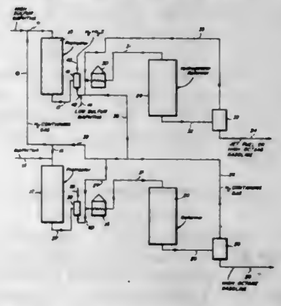
No Drawing. Filed June 20, 1961, Ser. No. 118,254
10 Claims. (Cl. 208—112)

4. The process for destructive hydrogenation with an over-all consumption of hydrogen of a residual fraction of petroleum, which comprises contacting said fraction with hydrogen under destructive hydrogenation conditions of temperature and pressure in the presence of a catalyst comprising essentially a minor amount of a hydrogenating catalyst composited with a major amount of an activated alumina prepared by drying and calcining a substance which is predominantly composed of an aluminum hydroxide containing from 1.2 to 2.6 mols of water of hydration, said aluminum hydroxide being prepared by precipitation from a solution of an aluminum salt at a pH between 7 and 12 and drying to the above specified water of hydration content prior to substantial transformation to an aluminum hydroxide having a higher or lower water of hydration content.

3,222,274
PROCESS FOR PRODUCING HIGH ENERGY JET FUELS

Paul R. Carl, Woodbury, N.J., assignor to Socony Mobil Oil Company, Inc., a corporation of New York

Filed Jan. 2, 1963, Ser. No. 250,202
7 Claims. (Cl. 208—143)



1. A process for producing a high energy jet fuel which comprises contacting a charge naphtha that (1) boils in the range of about 150 to about 400° F. and (2) contains at least about 60 volume percent paraffins and non-

cyclic olefins, not more than about 38 volume percent naphtenes and 2 to about 40 volume percent aromatics with a solid hydrogenation catalyst in the presence of hydrogen to substantially hydrogenate unsaturates in said naphtha and produce a substantially saturated naphtha having a luminosity number of at least 130, said hydrogenation reaction conditions comprising a temperature of 300 to 750° F., a hydrogen partial pressure of 50 to 2000 p.s.i.g. and a space velocity of 0.1 to 10 volumes of charge naphtha per volume of catalyst per hour.

3,222,275

PROCESS FOR REMOVING NAPHTHENIC ACIDS FROM MINERAL OILS

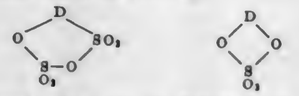
William A. Krewer, Arlington Heights, Donald L. Klass, Barrington, and George W. Ayers, Chicago, Ill., assignors, by mesne assignments, to Union Oil Company of California, Los Angeles, Calif., a corporation of California

No Drawing. Filed July 13, 1964, Ser. No. 382,358
13 Claims. (Cl. 208—180)

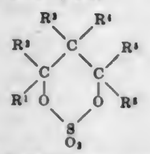
1. A method of removing naphthenic acids from a petroleum fraction which comprises mixing aqueous alkali metal hydroxide and a compound having a structural formula selected from the group consisting of



where A represents a hydrocarbon linkage of 3 to 5 carbon atoms, the bonds being attached to the end carbons of the linkage, of a hydrocarbon radical selected from the group consisting of alkylene, alkenylene, alkadienylene, arylene, and polyarylene, and the C_1–C_{20} alkyl-, C_2–C_8 alkenyl-, C_7–C_{38} aralkyl-, C_3–C_7 cycloalkyl- and C_6–C_{18} aryl-substituted derivatives thereof,



where D represents a member selected from the group consisting of ethylene and any two adjacent carbon atoms of a saturated hydrocarbon ring of 5–6 total carbon atoms and the C_1–C_{20} alkyl-, C_2–C_8 alkenyl-, C_7–C_{38} aralkyl-, C_7–C_{38} alkaryl-, C_3–C_7 cycloalkyl- and C_6–C_{18} aryl-substituted derivatives thereof, and



where R^1, R^2, R^3, R^4, R^5, R^6 are members selected from the group consisting of hydrogen, C_1–C_{20} alkyl, C_3–C_7 cycloalkyl, C_6–C_{18} aryl, C_2–C_8 alkenyl, C_3–C_{12} alkadienyl, C_7–C_{38} aralkyl, C_7–C_{38} alkaryl and C_5–C_8 cycloalkyl formed by joining two alkyl groups attached to any two adjacent carbon atoms in said formula, with said petroleum fraction, removing the aqueous layer, and water washing the peroleum fraction to remove the reaction product therefrom.

3,222,276

BROMINATION PROCESS

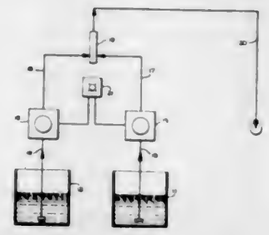
Leo Rudolf Belohlav and James Robert Underhill, Lafayette, Ind., assignors to Great Lakes Chemical Corporation, West Lafayette, Ind., a corporation of Michigan

Filed Feb. 6, 1963, Ser. No. 256,565
5 Claims. (Cl. 210—62)

1. In a process for producing an aqueous bromine solution from an aqueous solution of bromide-bromate salts and mineral acid, the improvement comprising the steps of

(a) pumping a stream of a concentrated aqueous solution of a mixture of bromide and bromate salts of about a 5:1 molar ratio, from a source thereof by pumping means positioned in flow relationship to a mixing zone between said solution source and said mixing zone,

(b) pumping a stream of aqueous mineral acid of a concentration sufficient to convert substantially all the bromide-bromate salts in said solution to elemental bromine in said mixing zone, from a source thereof to said mixing zone by pumping means positioned in flow relationship between said acid source and said mixing zone, in an amount sufficient to maintain excess acid in said mixing zone, thereby converting sub-



stantially all of the bromide-bromate solution into a concentrated aqueous bromine solution in said mixing zone,

(c) pumping the thus-obtained concentrated aqueous bromine solution as it is formed from said mixing zone to a second mixing zone,

(d) mixing the aqueous bromine solution in said second mixing zone with a stream of a larger volume of water, thereby producing a diluted stream of aqueous bromine, and

(e) mixing the stream of diluted aqueous bromine with a large body of water, thereby producing a highly dilute aqueous bromine solution in substantially quantitative yield from said mineral acid and said bromide-bromate salt solution.

3,222,277

REMOVAL OF IRON FROM WATER

Ronald S. Joyce, Pittsburgh, Pa., assignor to Pittsburgh Activated Carbon Company, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed Sept. 28, 1964, Ser. No. 399,846
The portion of the term of the patent subsequent to June 29, 1982, has been disclaimed
8 Claims. (Cl. 210—63)

1. A process of removing dissolved iron from water containing the same comprising passing the water through activated carbon particles impregnated with manganese dioxide which has been formed in situ.

3,222,278

METHOD FOR IMPROVING THE YIELD OF AN ATTAPULGITE CLAY

Paul D. Harryman, Texas City, and David T. Oakes, Dickinson, Tex., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed Apr. 20, 1962, Ser. No. 188,959
12 Claims. (Cl. 252—8.5)

1. The method of improving the yield of an attapulgite clay which comprises dispersing said clay in an aqueous medium, aging said dispersion for a period of time sufficient to at least partially hydrate said clay, and thereafter adding to said dispersion an amount sufficient to increase

the yield of said clay of a water-soluble interpolymer comprising an olefin having 2 to 4 carbon atoms and maleic anhydride, said interpolymer having a specific viscosity of at least 0.3.

3,222,279

LUBRICANT COMPOSITIONS

Donald E. Loeffler, Walnut Creek, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed June 25, 1963, Ser. No. 290,345
12 Claims. (Cl. 252—28)

1. A grease composition consisting essentially of a major amount of a lubricating base oil gelled to a grease consistency with a colloidally dispersed clay, said clay bearing on the surfaces thereof from at least about 0.7 to about 5 parts by weight, basis dry clay, of a polyepoxide resin produced by curing a polyepoxide possessing more than one vic-epoxy group with an organic amine curing agent, the ratio of organic amine to polyepoxide being from 0.5 to 5 times the stoichiometric amount required to react completely the polyepoxide said resin having formed in the presence of a mineral acid in an amount at least sufficient to acidify the surfaces of the clay.

3,222,280

LUBRICANTS HAVING IMPROVED COHESIVENESS AND ADHESIVENESS

George Wolfram, Des Plaines, and Theodore H. Szawlowski, Wonder Lake, Ill., assignors, by mesne assignments, to Union Oil Company of California, Los Angeles, Calif., a corporation of California

No Drawing. Filed Dec. 26, 1961, Ser. No. 162,201
16 Claims. (Cl. 252—32.7)

1. A composition of matter comprising a major portion of a mineral lubricating oil vehicle and about 0.1 to 10% by weight of the polymerized and esterified reaction product of

(1) polyepoxy monomers consisting of only the elements carbon, hydrogen and oxygen, having terminal epoxy groups attached to adjacent carbon atoms, a molecular weight of about 1000 to 3000 and an epoxide equivalent of at least about 140, and

(2) complex polynuclear aromatic carboxylic acids derived from solvent extracts obtaind in the solvent refining of mineral lubricating oils with a solvent selective for aromatic compounds by metalation of said solvent extracts to form the alkali metal adduct, carbonation of said adduct to form the corresponding alkali metal salt of the carboxylic acid and acidification of said salt to form the free carboxylic acid characterized by being complex, polynuclear aromatic, alkyl-aromatic acids predominating in carbon and hydrogen, containing about 0.5 to 4.5 wt. percent of sulphur, having a molecular weight of above about 300 and having 1.7 to 3.5 average number of aromatic rings per aromatic molecule, said reaction being conducted by heating said polyepoxy monomer with about 10% to 50% by weight of said complex carboxylic acids, based on the weight of said monomers, at a temperature of about 250° to 370° F. in the presence of a tertiary amine catalyst.

7. A composition of matter in accordance with claim 1 containing a minor amount sufficient to impart extreme pressure properties of an extreme pressure agent of the group consisting of lead naphthenate, cobalt naphthenate, zinc naphthenate, copper naphthenate, lead dithiocarbamate, zinc dithiocarbamate and lead dithiophosphate.

3,222,281

OXIDATION INHIBITORS FOR LUBRICANT OILS

Edwin L. De Young, Milwaukee, Wis., and Roger W. Watson, Highland, Ind., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana

No Drawing. Filed Jan. 16, 1962, Ser. No. 167,221
8 Claims. (Cl. 252—49.6)

1. A hydrocarbon lubricating oil normally susceptible to oxidation containing, in a minor amount sufficient to inhibit said oxidation, the reaction product obtained by reacting a $C_{1\text{-}20}$ aldehyde and silicon disulfide in a molar ratio of from about 1–2 moles of said aldehyde per mole of said disulfide under anhydrous conditions at a temperature of from about 50 to about 150° C. until hydrogen sulfide is no longer evolved, said aldehyde having the formula RCHO wherein R is a member of the group consisting of alkyl, chloro-substituted alkyl, alkenyl, phenyl, chlorophenyl and tolyl.

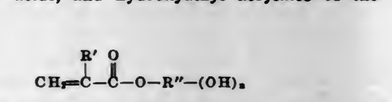
3,222,282

MODERATELY CROSSLINKED POLYMERS AS HYDROCARBON OIL ADDITIVES

Edward B. Berkowitz, Brooklyn, N.Y., and William H. Stadtmiller, Colonia, and Leonard Berkowitz, Elizabeth, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Dec. 27, 1962, Ser. No. 247,540
12 Claims. (Cl. 252—51.5)

1. An improved oil-soluble polymeric additive for hydrocarbon oils comprising the copolymerization product of from 15 to 50 mole percent of an ester of a C_8 to C_{20} aliphatic alcohol and a C_4 to C_5 alpha,beta-unsaturated dicarboxylic acid, from 50 to 85 mole percent of a C_2 to C_3 alkylene ester of a C_1 to C_4 fatty acid, and from 1 to 10 mole percent of a monomer selected from the group consisting of anhydrides of C_4 to C_5 unsaturated dibasic acids, and hydroxyalkyl acrylates of the formula:



wherein R′ is selected from the group consisting of hydrogen, methyl, and ethyl radicals, R″ is an alkylene hydrocarbon group of from 2 to 6 carbon atoms, and *n* is an integer of from 1 to 5, said copolymerization product having been modified by incorporating therein, prior to copolymerization, from 0.01 to about 5 weight percent, based on the total quantity of polymerizing monomers, of an allyl compound containing one allyl group and at least one additional group from the class consisting of allyl groups and vinyl groups, with the proviso that not more than one vinyl group is present, and with the additional proviso that if no vinyl group is present, there are two additional allyl groups.

2. An improved hydrocarbon composition comprising a major proportion of a hydrocarbon oil to which has been added from about 0.002 to about 10 wt. percent of a polymeric additive as defined by claim 1.

11. Polymeric additive as defined by claim 1 wherein said allyl compound is triallyl cyanurate.

3,222,283

LEAD BARIUM NIOBATE CERAMIC COMPOSITION

Alexis V. Illyn, Phoenix, Gerald G. Palmer, Liverpool, and Vladimir L. Popoff, Syracuse, N.Y., assignors to General Electric Company, a corporation of New York

No Drawing. Filed Apr. 2, 1962, Ser. No. 184,558
6 Claims. (Cl. 252—62.9)

1. A ferroelectric ceramic composition that is the reaction product consisting essentially of lead monoxide, barium oxide and niobium pentoxide in which the atomic

ratio of barium to barium plus lead extends from about .1 to about .7 and the niobium pentoxide content extends from a lower value in excess of 50 mol percent to an upper value of about 62.5 mol percent.

3,222,284

EMULSION HYDRAULIC FLUID, CONCENTRATE AND METHOD OF PREPARING SAME

George R. Cook, Arlington Heights, Ill., assignor, by mesne assignments, to Union Oil Company of California, Los Angeles, Calif., a corporation of California

No Drawing. Filed Oct. 6, 1961, Ser. No. 143,314

19 Claims. (Cl. 252—75)

1. A hydraulic-fluid concentrate consisting essentially of a major portion of a neutral mineral lubricating oil and the following ingredients:

Ingredient—	Weight percent
Alkali metal petroleum sulfonate (mol. wt. about 500–550)	1.55 to 3.72
Alkaline earth metal alkylaryl sulfonate (av. mol. wt. about 925–975) containing 10 to 14 carbon atoms in the alkyl portion and said aryl portion being a member of the group consisting of phenylene and naphthylene	0.45 to 2.03
Metal di-C_4 to C_{10} alkyl dithiophosphate wherein the metal is of the group consisting of zinc and cadmium	0.47 to 1.43

wherein the ratio of concentration of alkali metal petroleum sulfonate to alkaline earth metal sulfonate is about 0.71 to 8.26, and the total amount of said sulfonates is greater than about 2.77 weight percent and less than about 4.73 weight percent.

15. A fire-resistant hydraulic fluid consisting essentially of an emulsion of about 33 to 45% by weight of a water phase and about 67 to 55% by weight of an oil phase which consists in a major portion of a neutral mineral lubricating oil and the following ingredients:

Ingredient—	Weight percent
Alkali Metal petroleum sulfonate (mol. wt. about 500–550)	1.55 to 3.72
Alkaline earth metal alkylaryl sulfonate (av. mol. wt. about 925–975) containing 10 to 14 carbon atoms in in the alkyl portion and said aryl portion being a member of the group consisting of phenylene and naphthylene	0.45 to 2.03
Metal di-C_4–C_{10} alkyl dithiophosphate wherein the metal is of the group consisting of zinc and cadmium	0.47 to 1.43

wherein the ratio of concentration of alkali metal petroleum sulfonate to alkaline earth metal sulfonate is about 0.71 to 8.26, and the total amount of said sulfonates is greater than about 2.77 weight percent and less than about 4.73 weight percent.

3,222,285

NON-CORROSIVE DETERGENT COMPOSITIONS

Charanjit Rai, Crystal Lake, Walter E. Kramer, Niles, and Robert C. Kimble, Crystal Lake, Ill., assignors, by mesne assignments, to Union Oil Company of California, Los Angeles, Calif., a corporation of California

No Drawing. Filed July 23, 1962, Ser. No. 211,884

3 Claims. (Cl. 252—137)

1. A detergent composition consisting essentially of a major portion of water, about 0.0001 to about 0.2% by weight of a corrosion inhibitor of the group consisting of 1,2-bis(2-benzimidazolyl)-1,2-dihydroxyethane, 1,4-bis(2-benzimidazolyl)-1,2,3,4-tetrahydroxybutane, 1,2-bis(2-benzimidazolyl)ethane, 1,8-bis(2-benzimidazolyl)octane and 1,1-bis(2-benzimidazolyl)methane and about 0.1 to 10% by weight of a detergent composition consisting essentially of an alkyl aryl sulfonate detergent and about 5 to 20% by weight, based on said detergent composition, of at least one substance of the group consisting of sodium pyrophosphate and sodium tripolyphosphate.

3,222,286

DRY CLEANING COMPOSITION

Walter V. Barnes, Brixham, Devon, England, assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Oct. 19, 1962, Ser. No. 231,624

Claims priority, application Great Britain, Nov. 29, 1961, 42,660/61

4 Claims. (Cl. 252—161)

1. A detergent composition adapted for use in the dry cleaning of textiles consisting essentially of at least 10% and not more than 75% by weight of perchloroethylene and a mixture in the weight ratio between 60:40 and 40:60 of (a) alkali metal (C_{10}–C_{13})-alkyl benzene sulfonate and (b) (C_4–C_{10})-alkyl phenol-ethylene oxide condensation product in which the alkyl phenol is condensed with between 7 and 10 moles of ethylene oxide.

3,222,287

DETERGENT COMPOSITION

Robert G. Laughlin, Springfield Township, Hamilton County, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

No Drawing. Original application Jan. 23, 1962, Ser. No. 168,259, now Patent No. 3,147,295, dated Sept. 1, 1964. Divided and this application Sept. 11, 1963, Ser. No. 308,074

7 Claims. (Cl. 252—161)

5. A detergent mixture of a water soluble alkylbenzene sulfonate salt having an alkyl radical ranging from about 9 to about 15 carbon atoms and a dimethylalkylarsine oxide wherein the alkyl ranges in chain length from 12 to 14 carbon atoms, the ratio of alkylbenzenesulfonate to tertiary arsine oxide being in the range of about 10:1 to about 1:2, said mixture being milder to the skin than an equal amount of either component alone.

3,222,288

PROCESS FOR PREPARING SODIUM HYDRIDE

Virgil L. Hansley, Cincinnati, and Fred Keith Morgan, North College Hill, Ohio, assignors to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Dec. 12, 1960, Ser. No. 75,136

8 Claims. (Cl. 252—182)

1. In a process for preparing a sodium hydride dispersion by hydrogenation of sodium in an inert liquid reaction medium the improvement which comprises carrying out such hydrogenation in the presence of from about 0.5 to about 10% by weight, based on the sodium, of an organic compound selected from the group consisting of ethyl silicate, methyl silicate, butyl silicate, and butyl titanate to obtain a sodium hydride product having an average particle size of less than 10 microns.

3,222,289

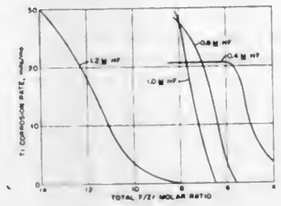
DISSOLUTION OF ZIRCONIUM IN TITANIUM EQUIPMENT

Walter E. Clark and Theodore A. Gens, Oak Ridge, Tenn., assignors to the United States of America as represented by the United States Atomic Energy Commission

Filed Oct. 5, 1962, Ser. No. 228,775

2 Claims. (Cl. 252—182)

1. A method of dissolving zirconium salts in a titanium container system which comprises reacting said zirconium in said system with a zirconium dissolvent consisting essentially of a 2–6 molar aqueous solution of nitric acid containing total fluoride not exceeding 3 molar and



a titanium corrosion-inhibiting concentration of (a) soluble boron salts in the range 0.2 M–0.4 molar as well as (b) hexavalent chromium to the extent of at least 0.05 molar.

3,222,290

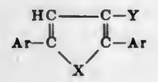
OPTICAL BRIGHTENING OF POLYSTYRENE AND POLYOLEFINS

Harry Braus, Springdale, and Fred D. Waas, Cincinnati, Ohio, assignors to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Oct. 17, 1962, Ser. No. 231,275

25 Claims. (Cl. 252—301.2)

1. A modified resinous composition consisting essentially of a plastic from the group consisting of polystyrene, a polymer of an aliphatic olefin, and a copolymer of styrene and an aliphatic olefin, and a small amount of a compound having the structural formula



wherein X represents a member of the group consisting of sulfur, oxygen, and NH, Y represents a member of the group consisting of hydrogen and



wherein R is an alkyl radical of from 1 to about 22 carbon atoms and Ar represents an aryl radical derived from a hydrocarbon having from 1 to 3 six-membered carbocyclic rings, said rings being fused when there is more than one ring, said composition having the property of improved optical brightness.

3,222,291

CORROSION INHIBITION COMPOSITIONS

Allyn H. Helt, Mount Holly, and Calvin Calmon, Birmingham, N.J., assignors to Pfaudler Permutit, Inc., Birmingham, N.J., a corporation of New York

No Drawing. Filed Sept. 11, 1962, Ser. No. 222,971

2 Claims. (Cl. 252—389)

1. A composition for inhibiting corrosion of both cupro-metals and ferrous metals in contact with the same aqueous solution at temperatures above about 140° F. consisting essentially of from about 45 to 55 p.p.m. of sodium polyphosphate having the formula $Na_6P_4O_{13}$; from about 2 to 10 p.p.m. of sodium mercaptobenzothiazole; from about 1 to 10 p.p.m. of at least one water soluble quaternary amine selected from the class consisting of n-alkyl dimethyl 1-naphthyl methyl ammonium chloride monohydrate where the alkyl group contains 10 to 14 carbon atoms and methyl dodecylbenzyl trimethyl ammonium chloride; and from about 1 to 10 p.p.m. of a water soluble glycol selected from the class consisting of 1-hydroxy cyclohexyl hydroxy methylisobutylacetylene, bis(1-hydroxy cyclohexyl) acetylene and a copolymer of 20% polyoxypropylene and 80% polyoxyethylene having a molecular weight of about 8760.

3,222,292

COMPOSITION FOR THE DETECTION OF MOISTURE IN POLAR ORGANIC LIQUIDS

Francis Joseph Nadolski, Piscataway Township, Middlesex County, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed June 8, 1962, Ser. No. 200,954

9 Claims. (Cl. 252—408)

3. A composition consisting essentially of (a) a non-acidic, polar organic liquid miscible with water to the extent of at least about 1.5% by weight thereof, (b) from about 0.0005% to about 1%, by weight, of the dye, 4-acetylamino-1-hydroxyanthraquinone, and (c) an organic amine having an ionization constant greater than 3×10^{-6} in an amount sufficient to effect a visible color change in said liquid when said liquid has a water content above about 1.5%.

3,222,293

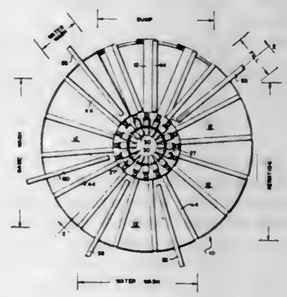
CATALYST DEMETALLIZATION

Henry Erickson and James P. Gallagher, Park Forest, Ill., and Howard G. Russell, Munster, Ind., assignors, by mesne assignments, to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware

Filed Jan. 19, 1961, Ser. No. 83,746

The portion of the term of the patent subsequent to Sept. 1, 1981, has been disclaimed

5 Claims. (Cl. 252—413)



1. In the method for treating a silica-based catalyst which has been contaminated with metal selected from the group consisting of nickel and vanadium by use in the catalytic conversion of hydrocarbons containing said metal in an amount sufficient to cause deterioration in said catalyst, the steps which comprise sulfiding the contaminating metal component of the catalyst by contact with sulfiding vapors at an elevated temperature of about 500 to 1500° F., contacting the catalyst with dilute aqueous nitric acid, feeding the resulting aqueous slurry to a rotating pan filter, passing the pan through a series of zones where, in the first zone oxygen-containing aeration gas is passed into the slurry in the pan, in a succeeding zone liquid is drained from the pan, in a further succeeding zone water is passed to the pan to wash the catalyst and the wash water is drained, in a further succeeding zone dilute aqueous ammonia solution is passed to the pan and aqueous ammonia solution is drained from the pan and removing catalyst filter cake from the pan and returning said catalyst to the hydrocarbon conversion system.

3,222,294
CATALYST FOR BULK AND SOLUTION POLYMERIZATION

Heinz W. Meyer, Munich, Germany, assignor to Elektrochemische Werke Munchen A.G., Munich, Germany

No Drawing. Filed Dec. 21, 1962, Ser. No. 246,342
Claims priority, application Germany, Nov. 5, 1957, E 14,888; Aug. 25, 1958, E 16,350
3 Claims. (Cl. 252—428)

2. A catalyst composition suitable for block and solution polymerization consisting essentially of a solution of about 10 to 25 percent by weight of hydrogen peroxide in a substantially anhydrous ester of an acid selected from the group consisting of phosphoric acid, and carbonic acid, with a member of the group consisting of saturated aliphatic alcohols containing not more than 4 carbon atoms and ether alcohols of the formula

$$HO—(CH_2)_x—O—(CH_2)_y—CH_3$$

wherein x is an integral from 1 to 4 and y an integral from 0 to 3, and at least one organic peroxide catalyst, said organic peroxide catalyst being present in the amount of about 10 to 70 parts by weight of the entire catalyst composition.

3. A catalyst composition suitable for block and solution polymerization consisting essentially of a solution of about 10 to 50 percent by weight of hydrogen peroxide in a substantially anhydrous phthalic acid ester of an ether alcohol of the formula

$$HO—(CH_2)_x—O—(CH_2)_y—CH_3$$

wherein x is an integer from 1 to 4 and y an integer from 0 to 3.

3,222,295
CATALYST PREPARATION AND COMPOSITION

Harold E. Swift, Gibsonia, Pa., assignor to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed Apr. 20, 1964, Ser. No. 361,236
14 Claims. (Cl. 252—429)

1. A process for producing a solid dispersion which consists essentially of reacting a titanium tetrahalide with a dialkylaluminum halide, wherein the alkyl portion thereof has from one to six carbon atoms, in the presence of cyclohexane, the molar ratio of said titanium compound to said aluminum compound being from about 2:1 to about 1.3:1 and the molar ratio of cyclohexane relative to the combined moles of said titanium compound and said aluminum compound being from about 32.20:1 to about 1.75:1 to obtain a solid complex and thereafter reacting said solid complex with a trialkylaluminum wherein the alkyl portion thereof has from one to eight carbon atoms to obtain a dispersion of a solid in a liquid.

3,222,296
LEWIS BASE STABILIZATION OF POLYMERIZATION CATALYST IN STORAGE

Victor D. Aftandilian, Watertown, Mass., assignor to Cabot Corporation, Boston, Mass., a corporation of Delaware

No Drawing. Filed July 29, 1963, Ser. No. 298,493
11 Claims. (Cl. 252—429)

1. A process for stabilizing, during storage, a polymerization catalyst component composition comprising a finely-divided inorganic solid having an average particle diameter of less than about 0.1 micron and carrying in chemical combination on the surface thereof at least about 1×10^{-4} equivalents per gram of structures conforming to the formula

$$TO_aX_b$$

wherein T is a metal chosen from the group consisting of the metals of Groups IVa, Va, and VIa; O is oxygen; a is a number from 0 to 2; each X is any halogen; and b is a number from 1 to 5; and where said structures are chemically linked directly from T to at least one oxygen atom in the surface of said solid, which process comprises maintaining during storage in the presence of said catalyst component composition between about 5 and about 10,000 parts per million parts by weight of said solid of a Lewis base chosen from the group consisting of ammonia; primary, secondary and tertiary amines; secondary and tertiary phosphines; tertiary arsines, and mixtures thereof; wherein the only substituents other than nitrogen, phosphorous and arsenic are hydrocarbon radicals and hydrogen.

3,222,297
AGGLOMERATION OF BAUXITE FINES

Aldo P. Allegrini, Westfield, and Tom A. Cecil, Highland Park, N.J., assignors to Mineral & Chemicals Philipp Corporation, Menlo Park, N.J., a corporation of Maryland

No Drawing. Filed July 12, 1962, Ser. No. 209,320
9 Claims. (Cl. 252—437)

1. A method for agglomerating bauxite fines which comprises:

mixing bauxite fines which have been calcined at a temperature within the range of about 600° F. to about 1600° F. to a volatile matter content below 10% with a sufficient quantity of a mixture of sulfuric acid and phosphoric acid to permit agglomeration of said fines,

said mixture of acids being of 90% to 100% concentration and containing from about 1½ to about 3½ parts by weight of H_2SO_4 to 1 part by weight of H_3PO_4,

forming the mixture into agglomerates,

heating said agglomerates at a temperature within the range of about 200° to about 400° F. for a time sufficient for said acids to react substantially completely with aluminum in said bauxite fines

and, without washing them, calcining the aged agglomerates at a temperature within the range of about 900° F. to about 1800° F. for a time sufficient to eliminate sulfate substantially completely therefrom.

3,222,298
INORGANIC POLYMER

Burton Peter Block, Wayne, and Joseph Simkin, Philadelphia, Pa., assignors to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Mar. 4, 1963, Ser. No. 262,378
6 Claims. (Cl. 260—2)

1. A polymer having an inorganic backbone consisting of zinc, oxygen and phosphorus atoms consisting of repeating units of the formula

$$[Zn_2[NH(C_5H_4N)_2](RPO_3)_2]_n$$

where C_5H_4N is a pyridine moiety, R is hydrocarbon containing one to six carbon atoms selected from the group consisting of alkyl, cycloalkyl, and aryl, and n is an integer from one to two.

4. The process of reacting 2,2'-iminodipyridinediacetatozinc(II) and a phosphonic acid of structure

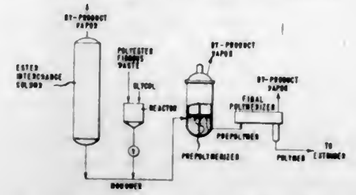
$$RPO(OH)_2$$

where R is a hydrocarbon containing from one to six carbon atoms selected from the group consisting of alkyl, cycloalkyl, and aryl and thereby obtaining the polymer of claim 1.

3,222,299
PROCESS OF RECLAIMING LINEAR TEREPHTHALATE POLYESTER

John T. MacDowell, Kinston, N.C., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Oct. 16, 1961, Ser. No. 145,239
7 Claims. (Cl. 260—2.3)



1. The process of reclaiming scrap linear terephthalate polyester which comprises heating the said scrap with a glycol, mixing the resulting diglycol terephthalate ester with a diglycol terephthalate ester prepared from purified starting materials and thereafter polymerizing the mixture under conditions of reduced pressure and elevated temperature in the presence of a minor amount of a metal salt of an aromatic ester-forming compound having the formula

$$X—Z—Y$$
$$\quad\quad SO_4M$$

where M is a member of the group consisting of alkali metals and alkaline earth metals; Z is an arylene radical; X is a member of the class consisting of

lower alkyl—$\overset{O}{\overset{\|}{C}}$—O—, HO—$\overset{O}{\overset{\|}{C}}$—, lower alkyl—O—$\overset{O}{\overset{\|}{C}}$—, $HO(CH_2)_n$—

$HO(CH_2)_nO$—, $HO(CH_2)_n$—O—$\overset{O}{\overset{\|}{C}}$—

$HO[(CH_2)_nO]_m$—$(CH_2)_n$—O—, and $HO[(CH_2)_nO]_m$—C—

n and m are integers with n being greater than 1; and Y is a member of the class consisting of X and hydrogen.

3,222,300
POLYURETHANE PLASTICS FROM A POLYALKYLENE ETHER BEARING SOLELY TERMINAL HYDROXYL GROUPS

Günther Loew, Cologne, Germany, assignor, by direct and mesne assignments, of one-half to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation, and one-half to Mobay Chemical Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed Nov. 3, 1958, Ser. No. 771,222
Claims priority, application Germany, Nov. 9, 1957, F 24,364
5 Claims. (Cl. 260—2.5)

1. In the preparation of a cellular polyurethane plastic by a process which comprises reacting an excess of an organic polyisocyanate with a polyhydroxy compound in a first step to prepare a prepolymer having free —NCO groups and subsequently reacting said prepolymer with water to produce a cellular polyurethane plastic, the improvement which comprises reacting an excess of said organic polyisocyanate with a polyhydroxyl compound having at least two hydroxyl groups on at least one end of the molecule, said polyhydroxyl compound having a molular weight of at least about 500, an hydroxyl number below about 225 and having been obtained by reacting a polyalkylene ether glycol, the alkylene radicals of which contain from 2 to 5 carbon atoms, at temperatures between about 30° C. and 130° C. in the presence of a member selected from the group consisting of alkaline catalysts and acid catalysts with at least one mol of a monomeric epoxide compound containing epoxide groups per mol of said polyalkylene ether glycol and containing a member selected from the group consisting of free hydroxyl groups and halogen atoms said halogen atoms being reactive with sodium hydroxide to yield free hydroxyl groups, provided that said halogen atoms are replaced with hydroxyl groups prior to reaction with said organic polyisocyanate, said monomeric epoxide being free from other groups reactive with —NCO groups, to prepare a prepolymer having free —NCO groups and reacting said prepolymer with water to yield a cellular polyurethane plastic.

3,222,301
PREPARATION OF A POLYURETHANE FOAM CONTAINING ELEMENTAL SULPHUR

Manfred Dahm, Leverkusen, Germany, assignor to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed Nov. 20, 1961, Ser. No. 153,712
Claims priority, application Germany, Dec. 24, 1960, F 32,846
6 Claims. (Cl. 260—2.5)

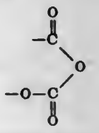
5. In the preparation of a polyurethane foam by a process wherein an organic polyisocyanate and an organic compound having reactive hydrogen atoms determinable by the Zerewitinoff method, said organic compound being capable of reacting with polyisocyanate to form a polyurethane, are mixed to form a foamable reaction mixture, the improved method of preparing a foam while avoiding discoloration in the center of the resulting block thereof which comprises mixing the said organic compound having reactive hydrogens with colloidal sulphur prior to its incorporation in the foamable composition.

3,222,302
METHOD OF FOAMING ORGANO-PLASTIC SYNTHETIC RESINS AND PRODUCTS PRODUCED THEREFROM

Volker Böllert, Krefeld, Gerhard T. Fritz, Krefeld-Bockum, Hermann Schnell, Krefeld-Uerdingen, and Hans Georg Lotter, Krefeld-Bockum, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Apr. 17, 1962, Ser. No. 188,271
Claims priority, application Germany, Apr. 19, 1961, F 33,706
8 Claims. (Cl. 260—2.5)

1. A method for making cellular plastics which comprises heating a gas retentive organo-plastic synthetic resin having chemically combined therein at least one



group, until the said groups decompose and split off carbon dioxide which becomes entrapped in the resin and forms cells therein.

3,222,303
TERTIARY AMINOPHENOL CATALYTIC POLYURETHANE PRODUCTION

Horace Neil Hampson, Egham, Surrey, England, assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Sept. 6, 1962, Ser. No. 221,866
Claims priority, application Great Britain, Sept. 11, 1961, 32,521/61
10 Claims. (Cl. 260—2.5)

9. A process for preparing a polyurethane plastic which comprises reacting (1) an organic polyfunctional compound selected from the group consisting of diisocyanates

and diisothiocyanates, (2) a compound containing a plurality of active hydrogen atoms as determined by the Zerewitinoff method selected from the group consisting of glycols, primary and secondary amines, dicarboxylic acids, hydroxyamines, hydroxycarboxylic acids, aminocarboxylic acids and glycerol, and (3) an organic compound containing terminal hydroxyl groups selected from the group consisting of polyesters and polyethers having an average molecular weight between 300 and 6000 in the presence of a heat-sensitive acid addition salt of 2,4,6-tris(dialkylaminoalkyl)phenols, in such amounts that the ratio of total isocyanato and isothiocyanato groups to total hydroxyl groups is greater than 1:1 and heating to a temperature between 40° C. and 300° C., and wherein heat-sensitive is deemed to mean that said salt is decomposable to form the free tertiary aminophenol upon the application of said heat.

10. A process as in claim **9** wherein the process is carried out in the presence of a volatile fluorochlorohydrocarbon blowing agent.

3,222,304
EXPANDABLE POLYETHYLENE

Alvin R. Ingram, Murrysville, Pa., assignor to Koppers Company, Inc., a corporation of Delaware

No Drawing. Filed Nov. 15, 1962, Ser. No. 238,031
4 Claims. (Cl. 260—2.5)

1. A method of making a foamed material consisting essentially of polyethylene having substantially uniform cells of average size of 5–20 mils comprising the steps of:

(1) intimately incorporating within polyethylene
  (a) 1–5 parts by weight of said polyethylene of a nitrogen releasing blowing agent selected from the group consisting of dinitrosopentamethylenetetramine, p,p' - oxybis(benzenesulfonylhydrazide), and azodicarbonamide, and
  (b) 0.1–4 parts by weight of said polyethylene of a blowing agent adjunct selected from the group consisting of glyceryl monostearate, propyleneglycol monostearate, ethyleneglycol monostearate, diethyleneglycol monostearate, polyethyleneglycol monostearate and polydimethylsiloxane,

(2) molding the expandable polymer composition at a temperature at least as high as the softening point of said polyethylene and the nitrogen generating temperature of the blowing agent,

(3) maintaining the temperature for a time sufficient to cause expansion of cells to the desired size, and

(4) said process being characterized by the absence of any appreciable cross-linking of said polyethylene with said blowing agent, whereby said resulting foamed material is soluble in xylene at 95° C.

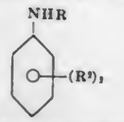
3,222,305
FLAME-RESISTANT URETHANE FOAMS AND PROCESS FOR PREPARING SAME

William M. Lanham, Charleston, W. Va., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Nov. 23, 1962, Ser. No. 239,764
The portion of the term of the patent subsequent to Jan. 29, 1980, has been disclaimed
7 Claims. (Cl. 260—2.5)

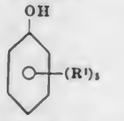
1. A process for the production of flame resistant polyurethane foams which comprises reacting an organic polyisocyanate with a polyol having a molecular weight in the range of from about 350 to about 7500 and which has at least 2 alcoholic hydroxyl groups, said polyol comprising the alkylene oxide adduct of an aromatic amine-phenol-formaldehyde condensation product; wherein the reaction of said organic polyisocyanate and said polyol takes place in the presence of a catalyst, blowing agent, emulsifier, from about 0.5 to about 5.0 weight percent antimony trioxide, and from about 1.0 to about 10.0 weight percent of vinyl chloride polymer, the percentages being based upon weight of polyol plus organic polyisocyanate; and wherein said aromatic amine-phenol-formaldehyde condensation product is produced from

(a) an aromatic amine of the formula



wherein R represents a number of the group consisting of hydrogen and alkyl of up to 4 carbon atoms, and each R^2 individually represents a member of the group consisting of hydrogen, alkyl, amino, alkylamino, dialkylamino, and hydroxyl, provided that at least one R^2 represents a hydrogen bonded to a reactive position on the aromatic nucleus,

(b) a phenol of the formula



wherein each R^1 individually represents a member of the group consisting of hydrogen, alkyl, hydroxyl, amino, chloro, and dialkylamino, provided that at least one R^1 represents hydrogen bonded to a reactive position on the aromatic nucleus, and

(c) formaldehyde, wherein the molar ratio of phenol: aromatic amine is in the range of from about 15:1 to about 1:15, and wherein the molar ratio of (phenol plus aromatic amine):formaldehyde is in the range of from about 6:1 to about 1.2:1.

3,222,306
WATER-RESISTANT POLYVINYL ALCOHOL ADHESIVES

Hideo Suzumura and Hisao Miyahara, Kurashiki, Japan, assignors to Kurashiki Rayon Co., Ltd., Kurashiki-shi, Japan, a corporation of Japan

No Drawing. Filed Mar. 19, 1962, Ser. No. 181,499
6 Claims. (Cl. 260—17.4)

1. A water-resistant adhesive comprising,

an intimate admixture in water of polyvinyl alcohol, a sugar, a highly siliceous clay, and an alkali metal silicate,

said sugar being present in an amount that is from about 25 percent to 100 percent by weight of said polyvinyl alcohol, said clay being present in an amount by weight which is about twice the amount by weight of said polyvinyl alcohol, and said alkali metal silicate being present in an amount by weight which is about one-fifth the amount by weight of polyvinyl alcohol.

3,222,307
ALKYD RESINS PREPARED FROM COMPLEX CARBOXYLIC ACIDS DERIVED FROM MINERAL LUBRICATING OILS

Walter E. Kramer, Niles, and Louis A. Joo, Crystal Lake, Ill., assignors, by mesne assignments, to Union Oil Company of California, Los Angeles, Calif., a corporation of California

No Drawing. Filed Dec. 30, 1960, Ser. No. 79,498
12 Claims. (Cl. 260—22)

1. The modified polyester resin reaction product at a temperature of about 70° to 500° F. under esterification conditions of

(1) a complex carboxylic acid derived from solvent extracts obtained in the solvent extraction of mineral lubricating oils using a solvent selective for aromatic compounds by metalation of said solvent extracts to form the alkali metal adduct, carbonation of said adduct to form the alkali metal salt of the corresponding carboxylic acid and acidification of said salt to form the free acid, said carboxylic acid being characterized by having complex, polynuclear, aromatic, alkyl aromatic and heterocyclic nuclei predominating in carbon and hydrogen, containing about 1.7 to 4.5% by weight of combined sulfur and also containing oxygen and nitrogen, having an average molecular weight of about 300 to 600, and having about 1.7 to 3.5 average number of aromatic rings per mean aromatic molecule,

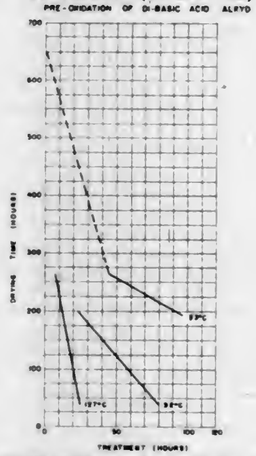
(2) a polyol having 2 to 54 carbon atoms to the molecule and 2 to 7 hydroxyl groups to the molecule, said polyol being present in an amount sufficient to provide about 0.1 to about 0.9 hydroxyl functions per carboxylic acid function of said complex carboxylic acid to form a linear polyester and followed by reaction of said linear polyester with

(3) a stoichiometric excess of an added amount of said polyol said reaction with said linear polyester being with a polyol different from the polyol used in the initial formation of said linear polyester.

3,222,308
PARTIALLY OXIDIZED ALKYD RESINS PREPARED FROM COMPLEX POLYBASIC ACIDS DERIVED FROM PETROLEUM FRACTIONS

Louis A. Joo, Crystal Lake, Ill., assignor, by mesne assignments, to Union Oil Company of California, Los Angeles, Calif., a corporation of California

Filed Aug. 31, 1961, Ser. No. 135,292
20 Claims. (Cl. 260—22)



1. The partially oxidized alkyd resin reaction product of (1) a carboxylic acid prepared from solvent extracts obtained in the solvent extraction of mineral lubricating oils using a solvent selective for aromatic compounds, by reaction of said solvent extracts with an alkali metal to form the alkali metal adduct, carbonation of said adduct to form the corresponding alkali metal salt of a carboxylic acid and acidification of said salt to form the free acid, said carboxylic acid being characterized by having complex polynuclear, aromatic, alkylaromatic and heterocyclic nuclei predominating in carbon and hydrogen, containing about 1.9 to 4.5% by weight of combined sulfur, having an average molecular weight of about 300 to 600, having about 1.7 to 3.5 average number of aromatic rings per mean aromatic molecule and having 2 to 5 carboxyl groups per molecule,

(2) a polyol of 3 to 10 carbon atoms per molecule and 3 to 10 hydroxyl groups per molecule, to form the polyester product, and

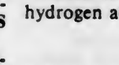
(3) partially oxidizing said polyester with an oxidizing agent of the group consisting of air, oxygen and ozone by passing said oxidizing agent through said polyester in a vessel at a temperature of about 80° to about 120° C. for 1 to 100 hours at an oxygen concentration equivalent to 5 to 50 ml. of air per minute per 100 ml. of said polyester.

3,222,309
INTERPOLYMERS OF ALDEHYDE MODIFIED AMIDES AND FATTY ACID ESTERS OF EPOXIDIZED POLYDIOLEFINS

Kazys Sekmakas, Chicago, Ill., assignor to De Soto Chemical Coatings, Inc., Chicago, Ill., a corporation of Delaware

No Drawing. Filed Apr. 11, 1963, Ser. No. 272,223
13 Claims. (Cl. 260—23.7)

1. A solvent-soluble, heat-hardening, non-gelled interpolymer of interpolymerized components comprising: (A) from 2–45% by weight of an amide of an ethylenically unsaturated carboxylic acid; and (B) from 2–50% by weight of ethylenically unsaturated epoxy polyolefin fatty acid ester copolymerizable with said amide; said percentages being based on the total weight of unsaturated polymerizable material and said interpolymer having amido hydrogen atoms replaced by the structure:



in which R is selected from the group consisting of hydrogen, furyl, and aromatic and saturated lower aliphatic hydrocarbon radicals containing up to 10 carbon atoms, and R_1 is selected from the group consisting of hydrogen and the etherification residue of aliphatic alcohol containing up to 10 carbon atoms.

3,222,310
METHOD FOR INHIBITING COLOR FORMATION IN AMINES

Alfred A. Hinckley, Beverly, Mass., assignor to Metal Hydrides Incorporated, Beverly, Mass., a corporation of Massachusetts

No Drawing. Filed Nov. 20, 1963, Ser. No. 325,151
6 Claims. (Cl. 260—29.6)

1. The method for inhibiting color formation in an amine selected from the group consisting of aniline, o-toluidine, pyrrole, and 2-pyrrolidone, and an aqueous solution of an amine selected from the group consisting of polyvinyl pyrrolidone, p-ethoxy aniline, quinoline, piperazine, and pyrazine amines which comprises dissolving therein a borohydride selected from the group consisting of sodium borohydride and potassium borohydride in an amount between about 10 and 150 parts per million by weight based upon the weight of the amine.

3. The method as claimed by claim 1 wherein the amine is an aqueous solution of polyvinyl pyrrolidone.

3,222,311
INCREASING VISCOSITY OF BUTYL RUBBER LATICES BY THE ADDITION OF METAL SALTS

Alfred L. Miller, Cranford, and Anthony J. Petro, Roselle Park, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

Filed Sept. 10, 1962, Ser. No. 222,581
18 Claims. (Cl. 260—29.7)

1. A method for increasing the viscosity of latices of a vulcanizable elastic copolymer of 80–99% by weight of an isoolefin of 4 to 7 carbon atoms and 1–10% by weight

of a conjugated multiolefin of 4 to 10 carbon atoms, said latex being prepared by the aid of an anionic emulsifier chosen from the group consisting of an alkali metal, an alkaline earth metal, amine and ammonium salts of a C_8 to C_{11} organic sulfate, which comprises adding to said latex an inorganic salt selected from the group consisting of ammonium fluoride, ammonium chloride, ammonium bromide, ammonium iodide, ammonium acetate, sodium acetate, ammonium sulfate, sodium sulfate, potassium chloride, sodium iodide, sodium bromide, sodium chloride, calcium chloride, magnesium chloride, and aluminum nitrate, said salts being added in the following amounts per 100 grams of copolymer solids:

	Mole-ions
ammonium fluoride	0.027–.054
ammonium chloride	0.037–0.056
ammonium bromide	0.0204–0.055
ammonium iodide	0.0138–0.0414
ammonium acetate	0.026–.052
sodium acetate	0.0247–0.0741
ammonium sulfate	0.0227–0.0454
sodium sulfate	0.0211–0.0847
potassium chloride	0.0268
sodium iodide	0.01335–0.1067
sodium bromide	0.0196–0.0784
sodium chloride	0.0342–0.0684
calcium chloride	0.0135
magnesium chloride	0.0315–0.0630
aluminum nitrate	0.0188–0.1125.

3,222,312
LACTONE MODIFIED EPOXIDE RESINS

John W. Wyart, Maplewood, Albert Schrage, East Orange, and Joseph A. Vona, Westfield, N.J., assignors to Celanese Corporation of America, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 29, 1960, Ser. No. 25,527
14 Claims. (Cl. 260—30.4)

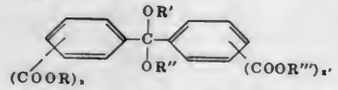
1. A composition comprising an epoxide resin containing unreacted 3-member epoxide groups, a monolactone having from three to six carbon atoms in the range of about 0.5 mole to about 1.5 moles of lactone per epoxy equivalent of the resin and a curing catalyst selected from the group consisting of amines, amine salts, anhydrides of dicarboxylic acids and boron trifluoride amine complexes, which catalysts will cure said resin when the composition is heated to a temperature of at least about 120° C.

3,222,313
VINYL HALIDE RESIN COMPOSITIONS PLASTICIZED WITH KETAL-ESTER COMPOUNDS

James E. Horan, Chicago, Ill., and Richard E. Van Strien, Griffith, Ind., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana

No Drawing. Original application Nov. 29, 1961, Ser. No. 155,833. Divided and this application June 30, 1964, Ser. No. 384,819
4 Claims. (Cl. 260—31.8)

1. A vinyl resin composition which comprises a vinyl chloride polymer selected from the group consisting of polyvinyl chloride and co-polymers of at least 70% vinyl chloride with up to 30% of other monomer containing a vinylidene group co-polymerizable therewith in the polymer molecule, plasticized with a ketal-ester compound having the formula:



where R, R′, R″ and R‴ are each selected from the group consisting of alkyl radicals having from 1 to about 12 carbon atoms, cycloalkyl radicals having from 3 to about 10 carbon atoms, and aralkyl radicals having from 7 to about 12 carbon atoms, x and x' are each an integer from 0 to 5, and $x+x'$ is equal to at least 1, said ketal-ester compound being present in an amount sufficient to improve the elongation and tensile properties of said composition.

3,222,314
POLYETHYLENE RESIN CONTAINING A SOLID POLYETHYLENE GLYCOL

Leon E. Wolinski, Buffalo, N.Y., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed June 20, 1956, Ser. No. 592,501
14 Claims. (Cl. 260—33.2)

1. A composition of matter consisting of a polyethylene resin having a weight average molecular weight of 15,000 to 3,000,000 and 0.1%–10%, based on the weight of said resin, of a solid polyethylene glycol, said polyethylene glycol having a normal melting point no greater than the lower temperature of the crystalline melting range of said resin, a normal boiling point above the optical melting point of said resin and a melt viscosity lower than that of said resin at a temperature above 110° C.

3,222,315
PROCESS FOR MAKING SAND CORES

Sidney L. Singer, 5509 Jackson St., Pittsburgh 6, Pa.

No Drawing. Filed June 13, 1960, Ser. No. 35,406
3 Claims. (Cl. 260—39)

1. The process for making a core composed principally of sand which comprises preparing a liquid resinous binder made by heating urea, aqueous formaldehyde, and furfuryl alcohol, in the mole ratio of 1 to 2 of urea to 1 to 2 of formaldehyde, to 1 to 4 of furfuryl alcohol in the presence of a basic condensing agent, and thereafter distilling off the major amount of water, adding the binder and acidic accelerator therefor to sand in quantity sufficient to form said core, agitating the mixture to effect thorough dissemination of the binder and accelerator through the sand, packing the disseminated mass about a pattern to form a core, and allowing the core to cure without the application of any extraneous heat.

3,222,316
STABILIZATION OF POLYALDEHYDES WITH THIOBENZANILIDE

Eli Perry, Galveston, Tex., assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed Sept. 20, 1962, Ser. No. 225,141
1 Claim. (Cl. 260—45.9)

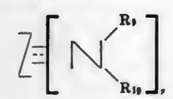
A thermally-stabilized polymeric composition comprising polypropionaldehyde and thiobenzanilide in an amount from about 0.01% to about 15% by weight of said polypropionaldehyde.

3,222,317
POLYVINYL CHLORIDE STABILIZED WITH A COMBINATION OF ORGANOTIN COMPOUNDS AND AROMATIC NITROGEN COMPOUNDS

Otto S. Kauder, Jamaica, N.Y., assignor to Argus Chemical Corporation, Brooklyn, N.Y., a corporation of New York

No Drawing. Filed Dec. 19, 1961, Ser. No. 161,769
13 Claims. (Cl. 260—45.75)

1. A polyvinyl chloride resin composition having improved resistance to deterioration when heated at 350° F., consisting essentially of a polyvinyl chloride resin and a polyvinyl chloride resin stabilizer system consisting essentially from about 0.2 to about 10% by weight of the resin of an organotin compound in which the tin is in a tetravalent state having organic radicals linked through tin only through carbon and oxygen, at least one organic radical being linked to tin through carbon, and at least one organic radical being linked to tin through oxygen, and an aromatic amine having the formula:



in which

is an aromatic hydrocarbon nucleus, R_9 and R_{10}, which can be taken together to form a heterocyclic group including the nitrogen, are present in sufficient number to satisfy the free valences of the nitrogen, and are selected from the group consisting of hydrogen, monovalent alkyl, aryl, alkaryl, aralkyl, and cycloalkyl groups, and bivalent alkylene, arylene, alkarylene, aralkylene and cycloalkylene groups, said groups having from one to about thirty carbon atoms, and y is an integer within the range from one to the maximum number of available substituent positions on the aromatic nucleus, the aromatic amine being in an amount within the range from about 0.0001 to about 2.5 parts per part of the organotin compound, sufficient to enhance the stabilizing effect of the organotin compound.

3,222,318
POLYPROPYLENE STABILIZED WITH DITHIOTRIGLYCOL DILAURATE

Hans Z. Lecher, Plainfield, N.J., and Harry Braus, Springdale, Ohio, assignors to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Sept. 11, 1962, Ser. No. 222,942
2 Claims. (Cl. 260—45.85)

1. Polypropylene stabilized with 0.05 to 0.5 part by weight per 100 parts of polymer with dithiotriglycol dilaurate having the formula:



2. Polypropylene stabilized with 0.05 to 0.5 part by weight per 100 parts of polymer with a mixture of dithiotriglycol dilaurate having the formula



and 2,2′-methylene-bis(4-methyl-6-tertiarybutyl-phenol).

3,222,319
ORGANOSILOXANE NITRATES

Walter Fink, Zurich, Switzerland, assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed June 16, 1961, Ser. No. 117,516
Claims priority, application Switzerland, June 24, 1960, 7,185/60
3 Claims. (Cl. 260—46.5)

1. Siloxane polymers of the formulas



and

wherein R is selected from the class consisting of aliphatic, cycloaliphatic and araliphatic hydrocarbon radicals having not more than 9 carbon atoms and having a nitrate group and a chlorine atom on adjacent carbon atoms and aliphatic, cycloaliphatic and araliphatic hydrocarbon radicals having not more than 9 carbon atoms and having a nitrate group and a chlorine atom separated by a vinylene group, R′ is a hydrocarbon radical having not more than 9 carbon atoms, and n indicates an integral repeating structure.

3,222,320
EQUILIBRATION OF ORGANOSILOXANE POLYMERS

Clarence J. Wolf, Kirkwood, Mo., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Oct. 16, 1961, Ser. No. 145,466
15 Claims. (Cl. 260—46.5)

1. The process which comprises contacting an organosiloxane polymer consisting essentially of units having the formula:



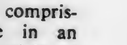
wherein R is a member selected from the group consisting of unsubstituted monovalent hydrocarbon radicals free of aliphatic carbon to carbon multiple bonds, and substituted monovalent hydrocarbon radicals free of aliphatic carbon to carbon multiple bonds, each substituent being a member selected from a group consisting of the cyano, carboxy, nitro and chloro groups and n has an average value of from 1 to 3 with a catalytic amount of a hydropolyhalide acid chosen from the group consisting of (HI—I_2), (HI—I_2—Br_2) and (HI—Br_2) at a reaction temperature of between 0° C. and 60° C. to effect rearrangement of the molecular structure of the organosiloxane polymer.

3,222,321
MODIFIED ACRYLAMIDE INTERPOLYMERS CONTAINING INTERPOLYMERIZED UNSATURATED EPOXY RESINS

Kazys Sekmakas, Chicago, Ill., assignor to De Soto Chemical Coatings, Inc., Chicago, Ill., a corporation of Delaware

No Drawing. Filed Aug. 16, 1962, Ser. No. 217,263
7 Claims. (Cl. 260—72)

1. A non-gelled interpolymer of: (A) from 5 to 45% by weight of an amide of a monoethylenically unsaturated carboxylic acid; (B) at least one other polymerizable ethylenically unsaturated material copolymerizable with said amide; and (C) from 2 to 50% by weight of unsaturated epoxy polyolefin copolymerizable with said amide and said other unsaturated material, said percentages being based on the total weight of unsaturated polymerizable material and said component (B) constituting the balance of said interpolymer, said interpolymer having amido hydrogen atoms replaced by the structure



in which R is selected from the group consisting of hydrogen, furyl, and saturated lower aliphatic hydrocarbon radicals containing up to 10 carbon atoms, and R_1 is selected from the group consisting of hydrogen, and alkyl and alkoxyl alkyl radicals containing up to 10 carbon atoms in the radical.

3,222,322
POLYURETHANE COATING COMPOSITIONS

Günther Nischk, Leverkusen, Gerhard Mennicken, Opladen, and Kuno Wagner, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed July 6, 1960, Ser. No. 41,017
Claims priority, application Germany, July 8, 1959, F 28,866
7 Claims. (Cl. 260—75)

1. A coating composition comprising a major portion of an inert organic solvent solution of a polyurethane prepared by a process which comprises reacting an organic

polyisocyanate containing at least one —NCO group bonded directly to a nonaromatic carbon atom in an amount corresponding to from about a 40 percent deficiency to about a 40 percent excess of —NCO groups based on the hydroxyl groups in the reaction mixture and a hydroxyl polyester prepared by a process which comprises condensing at a temperature of up to about 250° C. a polycarboxylic acid and an excess of a polyhydric alcohol based on the carboxylic acid groups of said polycarboxylic acid, said polycarboxylic acid comprising at least about 25 percent by weight of an alpha-beta-ethylenically unsaturated polycarboxylic acid Diels-Alder adduct of anthracene.

3,222,323

CARBOXY ETHYLENE KETO POLYMERS

Frederick C. Leavitt, Framingham, Mass., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed June 27, 1962, Ser. No. 205,554
33 Claims. (Cl. 260—78.4)

1. The process for preparing a carboxy ethylene keto derivative of an alkenyl aromatic polymer comprising the step of acylating a preformed polymer of an alkenyl aromatic compound of the formula $CH_2=C(R'')—Ar$ wherein R'' is a radical selected from the class consisting of hydrogen, methyl and ethyl radicals; Ar is an aromatic group selected from the class consisting of phenyl and naphthyl groups and the derivatives thereof in which each derivative group is selected from the class consisting of chloro, bromo, fluoro, cyano, alkyl, and phenyl groups, said alkyl, and phenyl derivative groups having no more than 8 carbon atoms, at least 5 percent by weight of said preformed polymer consisting of aromatic nuclei having at least 4 aromatic nuclear positions unsubstituted, with an acylating agent comprising the anhydride of an acid having a formula selected from the group consisting of

HOOC—C(R)=C(R)—COOH; and,

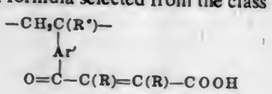
R'—CH=CH(R')—COOH

wherein one R is hydrogen and the other R is a radical selected from the class consisting of hydrogen, methyl, chloro and bromo radicals, and one R' is hydrogen and the other R' is $—CH_2—COOH$, said acylating being effected in the presence of $AlCl_3$ until at least 0.1 molar equivalents of said acylating agent have been attached to said aromatic nuclei per 100 aromatic nuclei in said preformed polymer.

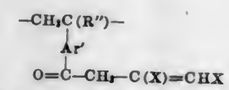
22. A linear polymer having in the polymer chain thereof a plurality of aromatic repeating units having the formula



and also a plurality of carboxy ethylene keto repeating units having a formula selected from the class consisting of



and



wherein one R is hydrogen and the other R is a radical selected from the class consisting of hydrogen, methyl, chloro and bromo radicals; one R' is hydrogen and the other R' is $—CH_2—COOH$; R'' is a radical selected from the class consisting of hydrogen, methyl and ethyl radicals; Ar is an aromatic group selected from the class consisting of phenyl and naphthyl groups and the derivatives thereof in which each derivative group is selected from the class consisting of chloro, bromo, fluoro, cyano, alkyl and phenyl groups, said alkyl derivative groups having no more than 8 carbon atoms; Ar' is an aromatic group similar to Ar except that it has a valency one greater than Ar; and one X is hydrogen and the other X is a COOH group, said carboxy ethylene repeating units being present in a molar equivalent proportion of at least 0.01 on the basis of each 100 aromatic nuclei in said polymer and no more than 25 percent by weight based on the total weight of said polymer, and any other repeating units present in said polymer molecule being those derived by polymerizing a comonomer selected from the class consisting of ethylene, propylene, butene, butadiene, isoprene, vinyl ethyl ether, acrylonitrile and methyl methacrylate, the amount of said any other repeating units being no more than 95 percent by weight of said polymer.

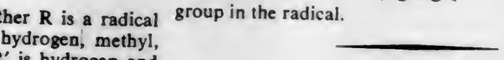
3,222,324

POLYMERS OF 3-ALKENYLOXY-1,2-EPITHIOPROPANE

Nicolas Brodoway, Claymont, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Jan. 29, 1962, Ser. No. 170,533
2 Claims. (Cl. 260—79.7)

1. A sulfur-curable, elastomeric polymer consisting of a multiplicity of units of the structure



in which structure R is selected from the group consisting of cyclic and acyclic hydrocarbon radicals containing from 3 to 8 carbon atoms, said radicals having one aliphatic

>C=C<

group in the radical.

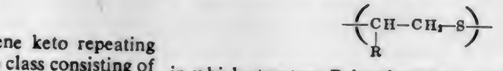
3,222,325

SULFUR-CURABLE ELASTOMERIC POLYMERS OF EPITHIOHYDROCARBONS

Nicolas Brodoway, Claymont, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Jan. 29, 1962, Ser. No. 170,534
2 Claims. (Cl. 260—79.7)

1. A sulfur-curable, elastomeric polymer consisting of a multiplicity of units of the structure



in which structure R is selected from the group consisting of cyclic and acylic hydrocarbon radicals containing from 3 to 8 carbon atoms, said radicals containing one aliphatic carbon-to-carbon double bond.

3,222,326

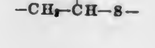
POLYMERS OF ALKYLENE THIOETHERS

Nicolas Brodoway, Claymont, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Jan. 29, 1962, Ser. No. 170,535
7 Claims. (Cl. 260—79.7)

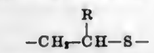
1. An elastomeric polymer selected from the group consisting of (A) a multiplicity of monomer units of the structure

(1)



and (B) a multiplicity of said (1) monomer units together with monomer units of the structure

(2)



wherein R of said monomer unit (2) is independently selected from the group consisting of R' and $R'—O—CH_2—$, said R' being selected from the group consisting of cyclic and acyclic hydrocarbon radicals containing one aliphatic carbon-to-carbon double bond and 3 to 8 carbon atoms; the number of said (2) units being no greater than the number of (1) units; said polymer having a minimum inherent viscosity of 0.45, determined at 30° C. as a solution of 0.1 gram of polymer in 100 ml. of toluene.

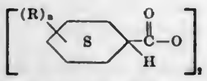
3,222,327

PEROXIDE CATALYSTS AND POLYMERIZATION PROCESSES EMPLOYING THE SAME

James E. Guillet and Edmund B. Towne, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed July 27, 1961, Ser. No. 127,107
7 Claims. (Cl. 260—80)

1. The process for the polymerization of at least one unsaturated polymerizable compound containing a $CH_2=C<$ group which comprises polymerizing said compound at a temperature range of about 30° to about 150° C., in the presence of a diacyl peroxide having the formula:



where R is a member selected from the group consisting of alkyl, cycloalkyl, alkaryl and halogen, and *n* is an integer from 0 to 2, inclusive.

3,222,328

PROCESS FOR POLYMERIZING VINYL MONOMERS WITH A CATALYST OF PERACETIC ACID AND AN ALKYL MERCAPTAN

Edward M. La Combe, Charleston, James H. Ankeney, South Charleston, and Bruce R. Thompson and Andrew T. Walter, Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Apr. 21, 1960, Ser. No. 23,660
12 Claims. (Cl. 260—80.5)

1. The method which comprises subjecting a polymerizable material consisting of at least one unsaturated organic compound, which contains a vinyl group represented by the general formula:

$CH_2=C<$

and which undergoes polymerization in an aqueous reaction mixture to form a high molecular weight polymer, to polymerization in the presence of a catalyst composition of from about 0.05% to about 3% by weight of peracetic acid with from about 0.1% to about 8% by weight of a water-insoluble, saturated alkyl mercaptan, the concentrations of the catalyst components being based on the weight of said polymerizable material.

3,222,329

TERPOLYMERS

Frederick Grosser, Midland Park, and Marvin R. Leibowitz, Nixon, N.J., and Andrew S. Wood, Calvert City, Ky., assignors to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Feb. 21, 1961, Ser. No. 90,628
5 Claims. (Cl. 260—80.5)

1. A film forming thermoplastic randomly distributed terpolymer consisting of 40 to 90 parts by weight of N-vinylpyrrolidone, 2 to 20 parts by weight of vinyl stearate and 8 to 58 parts by weight of a third component selected from the group consisting of vinyl acetate, ethyl acrylate, methyl acrylate and butyl acrylate.

3,222,330

COPOLYMERS OF ETHYLENE-$CH_2=CH—CH_2—$R-HALOGEN-2-NORBORNENES

Jack Leland Nyce, Meadowood, Newark, and Rolland Shih-yuan Ro, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Sept. 7, 1961, Ser. No. 136,449
15 Claims. (Cl. 260—80.5)

1. A normally solid, curable copolymer of (1) ethylene; and (2) at least one halogenated olefin selected from the group consisting of: (a) compounds having the structure $CH_2=CH—CH_2—R$ where R is a monovalent aliphatic hydrocarbon radical having from about 1 to 12 carbon atoms, said radical being substituted by at least one halogen atom; and (b) 2-norbornenes substituted in at least one of the 5- and the 6-positions with halogen-bearing hydrocarbon radicals having no more than 5 carbon atoms, the double bond at the 2-position being unsubstituted; said copolymers containing at least 2% by weight of side-chain substituted halogen, based on the weight of copolymer.

3,222,331

SULFUR-VULCANIZABLE INTERPOLYMERS COMPRISING AT LEAST ONE ALPHA-OLEFIN AND A POLYVINYLCYCLOALKANE AND A PROCESS FOR PREPARATION

Edward W. Duck and Rinke Berkenbosch, both of Amsterdam, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 25, 1962, Ser. No. 189,961
Claims priority, application Netherlands, July 26, 1961, 267,544
8 Claims. (Cl. 260—80.5)

1. Sulfur-vulcanizable unsaturated elastomeric random copolymers of at least one terminally unsaturated straight chain mono-olefin containing 2–6 carbon atoms per molecule and 2.5–10 mol percent of a trivinyl monocycloalkane, the cycloalkane ring having 5–6 carbon atoms in the ring, the copolymers having 2–25 double bonds per 1,000 carbon atoms.

3,222,332

PROCESS FOR THE TERPOLYMERIZATION OF MONOOLEFINS

Edward W. Duck, Rinke Berkenbosch, and Henricus G. P. van der Voort, all of Amsterdam, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 25, 1962, Ser. No. 189,968
Claims priority, application Netherlands, July 5, 1961, 266,693
6 Claims. (Cl. 260—80.5)

1. In the process for the copolymerization of ethylene with a C_{3-4} alpha-olefin and a higher alpha-olefin having at least 5 carbon atoms per molecule with a catalyst comprising as component A a halide of the group consisting of titanium chlorides, vanadium oxychlorides and vanadium chlorides and as component B a compound of the group consisting of aluminum trialkyls, aluminum alkyl halides and aluminum alkyl oxyalkyls, the improvement which provides better efficiency of catalyst components and higher cold solubility in hexane of the resulting product comprising admixing the higher olefin with only one catalyst component and thereafter with the remaining catalyst component and with ethylene and C_{3-4} alpha-olefin.

3,222,333

POLYMERIZATION PROCESS

Edward W. Duck and Philip M. Duinker, Amsterdam, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 12, 1962, Ser. No. 179,221
Claims priority, application Netherlands, Mar. 20, 1961, 262,576
10 Claims. (Cl. 260—80.7)

1. A process for the polymerization of olefinically unsaturated hydrocarbons comprising contacting

(a) a polymerization feed selected from the group consisting of

(1) butadiene,

(2) mixtures of two to four alpha-monoolefins wherein each monoolefin is present in a concentration of at least 0.5 mole percent, and

(3) mixtures of two to three alpha-monoolefins with one hydrocarbon having at least two olefinic double bonds per molecule, wherein said latter hydrocarbon is present in a concentration which results in a product containing from 0.5 to about 5 mole percent thereof and each monoolefin is present in a concentration of at least 0.5 mole percent,

(b) dissolved in an organic diluent, with

(c) a catalyst comprising

(1) an organometallic reducing compound of aluminum, and

(2) a hydrocarbon soluble vanadium complex resulting from reacting in aqueous solution an inorganic vanadyl salt and an alkali salt of an aromatic carboxylic acid substituted on the same aromatic ring with at least one carboxyl group, at least one alkyl group, and at least one group —XH where X is selected from the group consisting of sulfur and oxygen.

3,222,334

N,N-DIALKYLHYDROXYLAMINES AS SHORT-STOPPING AGENTS FOR EMULSION POLYMERIZATIONS

Fred P. Demme, Mexico City, Mexico, assignor to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Sept. 8, 1960, Ser. No. 54,596
15 Claims. (Cl. 260—84.7)

1. In the process of preparing a synthetic rubber latex by polymerizing a conjugated diolefin by addition through a free radical mechanism and terminating the polymerization by the addition of a stopping agent, the improvement which comprises using as said stopping agent an N,N-dialkylhydroxylamine containing from one to eighteen carbon atoms in each alkyl group.

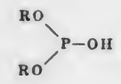
3,222,335

MOLECULAR WEIGHT REGULATION IN POLYMERIZATION OF VINYLIDENE MONOMERS USING A PHOSPHITE REGULATOR

Richard Delacretaz, Springfield, Mass., assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed Nov. 3, 1961, Ser. No. 149,865
7 Claims. (Cl. 260—85.5)

1. In a process for polymerizing a free radical-polymerizable material of the group consisting of (a) a polar vinylidene monomer of the group consisting of acrylonitrile, methacrylonitrile, vinyl chloride, an alkyl acrylate, an alkyl methacrylate, and mixtures thereof, (b) mixtures of said polar vinylidene monomer with a copolymerizable monomer of the group consisting of a dialkyl maleate, a dialkyl fumarate, acrylic acid, methacrylic acid, a conjugated diene, a monovinylidene aromatic hydrocarbon, and mixtures thereof, and (c) mixtures of a non-polar vinylidene monomer with a copolymerizable polar monomer of the group consisting of a monoalkyl maleate, a monoalkyl fumarate, a dialkyl maleate, a dialkyl fumarate, maleic anhydride, acrylic acid, methacrylic acid, and mixtures thereof in the presence of a free radical polymerization initiator, the improvement which comprises conducting the polymerization in the presence of 0.05–5%, based on the weight of the free radical-polymerizable material, of a molecular weight regulator which corresponds to the formula:



wherein R represents a member of the group consisting of an alkyl radical and an aryl radical.

3,222,336

COPOLYMERS OF ETHYLENE AND VINYL STEARATE

Thomas S. Heines, Jr., Arthur, and Charles Robert Donaldson, Tuscola, Ill., assignors to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Feb. 5, 1963, Ser. No. 256,256
5 Claims. (Cl. 260—87.3)

1. A process for copolymerizing ethylene and vinyl stearate which consists reacting a mixture of ethylene and about 0.1 to about 15 weight percent, based on the ethylene feed, of vinyl stearate at a temperature between about 250° and 500° F. and a pressure of about 18,000 to about 45,000 pounds per square inch in the presence of an organic peroxide copolymerization catalyst in a stirred closed reaction zone.

3,222,337

MONOSUBSTITUTED ALUMINUM DIHALIDE CATALYSTS FOR OLEFIN POLYMERIZATION

Harry W. Coover, Jr., Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Aug. 10, 1964, Ser. No. 388,704
The portion of the term of the patent subsequent to Aug. 30, 1977, has been disclaimed and dedicated to the Public
16 Claims. (Cl. 260—88.2)

1. In the polymerization of α-olefinic hydrocarbon material to form solid crystalline polymer, the improvement which comprises catalyzing the polymerization with a catalytic mixture of an aluminum dihalide having the formula R_1AlX_2 wherein R_1 is selected from the group consisting of alkyl radicals containing from 1 to 12 carbon atoms, phenyl and benzyl and X is a halogen selected from the group consisting of chlorine, bromine and iodine, an alkoxide of a transition metal selected from the group consisting of titanium, zirconium, vanadium, chromium and molybdenum, and a compound of a Group VA element having the formula R_3Z wherein Z is a Group VA element selected from the group consisting of arsenic and antimony and each R is a radical selected from the group consisting of hydrogen and hydrocarbon radicals containing 1–12 carbon atoms and selected from the group consisting of alkyl, aryl and aralkyl.

3,222,338

METHOD OF PRODUCING POLYVINYL FORMATE OF HIGH CRYSTALLINITY

Kiyoshi Fujii, Saburo Imoto, Junji Ukida, and Masakazu Matsumoto, all of Kurashiki, Japan, assignors to Kurashiki Rayon Co., Ltd., Okayama Prefecture, Japan, a corporation of Japan

No Drawing. Filed Aug. 23, 1961, Ser. No. 133,288
Claims priority, application Japan, Sept. 9, 1960, 35/37,475
5 Claims. (Cl. 260—89.1)

1. A method of preparing highly crystalline polyvinyl formate which comprises,

preparing a polymerization system containing vinyl formate monomer and a free radical polymerization catalyst and a normally-liquid aliphatic aldehyde solvent,

said aldehyde solvent being present in said polymerization system in an amount of at least 50 mol percent based on the weight of said vinyl formate monomer,

said normally-liquid aliphatic aldehyde solvent being selected from the group consisting of acetaldehyde, butyraldehyde, and a mixture of acetaldehyde and butyraldehyde;

polymerizing said vinyl formate monomer in said polymerization system;

and recovering highly crystalline polyvinyl formate from said system.

3,222,339

POLYMERIZATION PROCESS USING AN ORGANOMAGNESIUM COMPOUND AS CATALYST

Robert P. Fellmann, Levittown, Pa., and Mary J. Kampf, Erlton, N.J., assignors to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Aug. 14, 1962, Ser. No. 216,724
11 Claims. (Cl. 260—89.5)

1. A process for polymerizing at least one ester of an acid from the class consisting of acrylic acid and methacrylic acid, which esters are free of groups having hydrogen reacting in the Zerewitinoff test, which comprises mixing between about 3° and 40° C. said ester and about 0.3 to about 1.5 moles of an organomagnesium compound per mole of said ester, the organomagnesium compound being of the formula

R—Mg—Y

wherein R is a member of the class consisting of alkyl, cycloalkyl, aralkyl, aryl, alkenyl, aralkenyl, and alkynyl groups and Y represents a member of the class consisting of bromine and said R group, whereby a catalyst solution is formed, mixing said catalyst solution and a said ester in a ratio giving about 0.01 to about 0.2 mole of organomagnesium compound per mole of ester, cooling the resulting mixture, and maintaining it at a polymerizing temperature between 0° and −100° C. until polymer is formed.

3,222,340

PROCESS FOR PREPARING BEAD POLYMERS IN AQUEOUS MEDIUM CONTAINING CALCIUM PHOSPHATE AND AN AMINO POLYACETIC ACID COMPOUND

Alva F. Harris, Wilbraham, Mass., assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed Feb. 27, 1961, Ser. No. 91,581
6 Claims. (Cl. 260—93.5)

1. In a process for preparing a bead polymer by polymerizing a material comprising at least one suspension-polymerizable vinylidene monomer of the group consisting of methyl methacrylate, a vinyl ester, styrene, an armethylstyrene, a dichlorostyrene, and vinyl naphthalene in the presence of a free radical polymerization initiator in suspension in an aqueous medium containing about 0.1–5%, based on the weight of the polymerizable material, of a finely-divided calcium phosphate suspending agent, the improvement which comprises conducting the polymerization in the presence of about 0.5–15%, based on the weight of the suspending agent, of an amino polyacetic acid compound of the group consisting of amino polyacetic acids and the alkali metal salts, alkylamine salts, dialkylamine salts, and alkyl esters of amino polyacetic acids.

3,222,341

PROCESS FOR POLYMERIZING STYRENE

Gerald R. Barrett, Winchester, and Alva F. Harris, Wilbraham, Mass., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed Aug. 1, 1961, Ser. No. 128,370
5 Claims. (Cl. 260—93.5)

1. A mass polymerization process which comprises (1) forming a reaction mixture by dissolving in 100 parts by weight of styrene a monomer-soluble mixture of (a) 0.001–0.5 part by weight of an organic hydroperoxide having a half-life of at least 10 hours in benzene at 100° C., (b) 0.01–0.1 part by weight of a peroxy compound having a half-life of at least 10 hours in benzene at 100° C. and corresponding to the formula ROOR′, wherein both R and R′ represent organic radicals, and (c) at least 0.05 part by weight of a monocarboxyhydrocarbon of the group consisting of acetic acid, hexanoic acid, benzoic acid, phenylacetic acid, isopropylbenzoic acid, hexahydrobenzoic acid, and an alkanoic acid containing 12–20 carbon atoms (2) heating the reaction mixture at 75–125° C. until 15–45% conversion to polymer is obtained, the temperature being so regulated as to be in the 75–95° C. range at the time that this conversion is obtained, (3) gradually raising the reaction temperature to 180–200° C. over a period of about 3–7 hours, and (4) maintaining the reaction temeprature at 180–200° C. for about 0.5–5 hours.

3,222,342

POLYMERIZATION OF STYRENE UTILIZING FROZEN BORON TRIFLUORIDE ETHER COMPLEX AS THE CATALYST

Arthur D. Ketley, Silver Spring, Md., assignor to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Filed July 13, 1961, Ser. No. 123,668
9 Claims. (Cl. 260—93.5)

1. The method of producing crystalline polystyrene which comprises freezing solid a boron trifluoride ether complex, the ether being a lower dialkyl ether, diluting styrene in an inert solvent which is liquid at a temperature below the freezing point of the boron trifluoride ether complex, and contacting the solid boron trifluoride ether complex with the solution of monomer at a temperature below the freezing point of the boron trifluoride ether complex.

3,222,343

PROCESS FOR PRODUCING FLAT PARTICLES OF POLYMERS OF VINYL AROMATIC MONOMERS

Alvin R. Ingram, Murrysville, and Hans Wolfgang Jurgeleit, Pittsburgh, Pa., assignors to Koppers Company, Inc., a corporation of Delaware

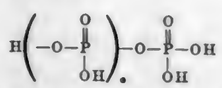
No Drawing. Filed Dec. 12, 1961, Ser. No. 158,901
5 Claims. (Cl. 260—93.5)

1. A method for the production of non-spherical polymer particles which comprises:

(a) suspending one part by weight of a vinyl aromatic monomer and a polymerization initiator in an aqueous medium with from 0.00075 to 0.0022 part of a synergistic agent comprising hydroxyethyl cellulose and an alkali metal phosphate, the ratio of said

hydroxyethyl cellulose to said alkali metal phosphate being between 1:0.2 and 1:2.0,

said alkali metal phosphate comprising a sodium salt of the acid



wherein n is an integer having a value of from zero to five and the pH of an aqueous one percent solution of said sodium salt is greater than 8.5,

(b) agitating said suspension, and

(c) simultaneously heating said suspension to cause polymerization of said monomer, and

(d) maintaining the pH of the mixture between about 5.0 and 7.5, whereby non-spherical particles of polymer are formed said particles being between about 1/16 and 1/2 inch in diameter and having a flatness index of at least 1.5.

3,222,344

THREE-COMPONENT METAL HYDRIDE-TRANSITION METAL HALIDE CATALYST AND OLEFIN POLYMERIZATION PROCESS THEREWITH

Harry W. Coover, Jr., and Frederick B. Joyner, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Aug. 31, 1964, Ser. No. 393,345

The portion of the term of the patent subsequent to Sept. 15, 1981, has been disclaimed and dedicated to the Public

9 Claims. (Cl. 260—93.7)

1. In the polymerization of olefinic hydrocarbon material containing at least three carbon atoms to form solid, crystalline polymer, the improvement which comprises catalyzing the polymerization with a catalytic mixture consisting essentially of a hydride of a metal selected from the group consisting of alkali metals and alkaline earth metals, a halide of a transition metal selected from the group consisting of titanium, zirconium, vanadium, chromium and molybdenum and an ester having the formula $RCCOR_1$ wherein R_1 has the formula

$$-(CH_2)_xOOCR$$

wherein x is a number from 2 to 6 and R is hydrogen, or an alkyl radical containing 1 to 12 carbon atoms, or phenyl, the molar ratio of hydride to said ester being within the range of 1:1 to 1:0.25.

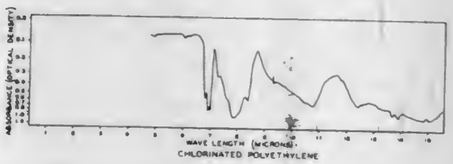
3,222,345

PROCESS FOR REDUCING THE INTRINSIC VISCOSITIES OF CHLORINATED POLYMERS OF C_2 TO C_3 OLEFINS

Charles L. Morris, Jr., Short Hills, and Paul W. Simon, Basking Ridge, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

Filed July 13, 1961, Ser. No. 123,751

5 Claims. (Cl. 260—93.7)



1. The method for improving the processability, while substantially preserving the strength characteristics, of a high molecular weight plastic polymer selected from the group consisting of chlorinated polyethylene and chlorinated polypropylene having intrinsic viscosities of at least about 1.5, which comprises subjecting said polymer in solid, pulverulent form to the action of a gas essentially consisting of nitrogen dioxide, at a temperature between about 100° C. and about 130° C. for a time sufficient to reduce its intrinsic viscosity to a value not below about 0.5.

3,222,346

POLYMERIZATION OF ISOPRENE

Herbert R. Appell, Pitcairn, Pa., and Herman S. Bloch, Skokie, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Jan. 10, 1962, Ser. No. 165,306

5 Claims. (Cl. 260—94.2)

1. A process for the stereoselective polymerization of an unsymmetrical conjugated diolefinic hydrocarbon which comprises polymerizing said hydrocarbon at a temperature in the range of from about 0° C. to about 100° C. and at a pressure in the range of from about atmospheric to about 100 atmospheres in the presence of an alkali metal selected from the group consisting of sodium and potassium disposed on a precalcined adsorptive solid support having a surface area of from about 25 to about 500 square meters per gram to form a polymer containing a predominant proportion of the 3,4-polymer.

3,222,347

PROCESS OF PRODUCING CIS-1,4 POLYBUTADIENE WITH A 3-COMPONENT CATALYST

Ralph C. Farrar and Floyd E. Naylor, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Aug. 8, 1960, Ser. No. 47,946

7 Claims. (Cl. 260—94.3)

1. A process for polymerizing 1,3-butadiene to form a polybutadiene containing at least 85 percent cis 1,4-addition which comprises contacting 1,3-butadiene under polymerization conditions with a catalyst selected from the group consisting of (1) a catalyst which forms on mixing (a) a compound having the formula R_nM, wherein R is a radical selected from the group consisting of alkyl, cycloalkyl, aryl, aralkyl and alkaryl, M is a metal selected from the group consisting of aluminum, gallium, indium and thallium, and n is an integer equal to the valence of the metal M, (b) a titanium halide having the formula TiX_4, wherein X is a halogen selected from the group consisting of chlorine and bromine, and (c) an inorganic iodide having the formula $M'I_x$, wherein M' is a member selected from the group consisting of aluminum, and antimony, and x is an integer equal to the valence of M' and (2) a catalyst which forms on mixing (a') a compound having the formula R_nM, wherein R, M and n are as defined above, (b') titanium tetraiodide, and (c') an inorganic halide having the formula $M''X_y$, wherein M'' is a member selected from the group consisting of phosphorus, antimony, arsenic and bismuth, X is as defined above, and y is an integer equal to the valence of M'', the mol ratio of said R_nM compound to said titanium halide and said inorganic iodide being in the range of 1.25:1 to 20:1, the mol ratio of said titanium halide to said inorganic iodide being in the range of 0.05:1 to 5:1, the mol ratio of said R_nM compound to said titanium tetraiodide and said inorganic halide being in the range of 1.25:1 to 20:1 and the mol ratio of said inorganic halide to said titanium tetraiodide being in the range of 0.5:1 to 5:1.

3,222,348

POLYMERIZATION OF CONJUGATED DIOLEFINS WITH A COBALT OR NICKEL COMPOUND-ALUMINUM HALIDE-TIN HYDROCARBYL HYDRIDE CATALYST

Edward W. Duck and Jacques A. Waterman, Amsterdam, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 25, 1962, Ser. No. 189,960

Claims priority, application Netherlands, July 17, 1961, 267,161

2 Claims. (Cl. 260—94.3)

1. A process for the preparation of an elastomer having a cis 1,4-content in excess of about 90%, which comprises polymerizing a C_{4-5} conjugated diene at temperatures from —40° to 150° C. in the presence of a catalyst comprising the reaction product of aluminum chloride, a tin alkyl hydride having the general formula

$$Sn(R)_{4-x}(H)_x$$

wherein R is an alkyl radical having 2–6 carbon atoms and x is 1–2, and a hydrocarbon-soluble cobalt salt of a carboxylic acid having at least 8 carbon atoms per molecule, the atomic ratio of aluminum to tin being between 0.1:1 and 5:1 and the atomic ratio of aluminum plus tin to cobalt being between about 10:1 and 100,000:1, said catalyst being prepared in the presence of a hydrocarbon diluent and being soluble in said diluent.

3,222,349

METHOD FOR SEPARATING HYDROCARBONS

Charles B. Holder, Beacon, N.Y., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 11, 1961, Ser. No. 144,316

7 Claims. (Cl. 260—96.5)

1. A method for recovering paradiisopropylbenzene from admixture with at least one other isomeric diisopropylbenzene which comprises contacting said mixture with thiourea to form an adduct of said thiourea and said paradiisopropylbenzene, separating said adduct from said mixture, decomposing said adduct to separate said paradiisopropylbenzene from said thiourea and recovering said paradiisopropylbenzene.

3,222,350

AZO QUINOLINOL DYE COMPOSITION

Ernest M. May, Summit, and Andrew Fono, Montclair, N.J., assignors to Otto B. May, Inc., Newark, N.J., a corporation of New Jersey

No Drawing. Filed Mar. 26, 1963, Ser. No. 267,948

3 Claims. (Cl. 260—155)

1. A dye composition which is 5-(2-trifluoromethylbenzeneazo)-8-quinolinol.

3,222,351

MONOAZO 8-QUINOLINOL DYESTUFFS

Ernest M. May, Summit, and Andrew Fono, Montclair, N.J., assignors to Otto B. May, Inc., Newark, N.J., a corporation of New Jersey

No Drawing. Filed Apr. 16, 1963, Ser. No. 273,307

1 Claim. (Cl. 260—155)

A dye composition which is 5-(2 - phenoxy - 5 - chlorobenzeneazo)-8-quinolinol.

3,222,352

MONOAZO FIBER REACTIVE DYES

John J. Monagle, Jr., Claymont, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Sept. 15, 1959, Ser. No. 840,029

The portion of the term of the patent subsequent to Nov. 5, 1980, has been disclaimed

4 Claims. (Cl. 260—157)

1. A bleach-fast, fiber-reactive dye having a formula



wherein

D is the radical of a water-soluble organic monoazo dye chromophore where the diazo group of said dye chromophore is a moiety selected from the group consisting of phenylnaphthotriazole, benzene, and naphthalene radicals, and where the coupling compound is a moiety selected from the group consisting of benzene and naphthalene radicals and the only substituents on said moieties are from the group consisting of (1) sodium sulfonate and (2) a combination of sodium sulfonate and methyl groups;

R is a phenyl radical which may be substituted with a substituent selected from the group consisting of methoxy, nitro and methoxycarbonyl; and

R' is a member of the group consisting of methyl, ethyl, benzyl, nitrobenzyl, chloroethyl, cyanoethyl, and cyclohexyl radicals.

3,222,353

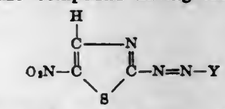
NITRO SUBSTITUTED THIAZOLE AZO PHENOL COMPOUNDS

Albin F. Turbak, New Providence, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed May 20, 1963, Ser. No. 281,766

3 Claims. (Cl. 260—158)

1. A monoazo compound having the formula



where Y is selected from the group consisting of naphthol and dimethyl phenol.

3,222,354

WATER-SOLUBLE REACTIVE AZO DYES

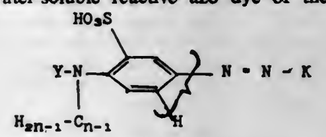
Guenter Lange, Ludwigshafen (Rhine), Germany, assignor to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed Mar. 15, 1963, Ser. No. 265,332

Claims priority, application Germany, Mar. 17, 1962, B 66,412

9 Claims. (Cl. 260—163)

1. A water-soluble reactive azo dye of the formula



wherein:

Y denotes a reactive acyl radical selected from the group consisting of acrylyl, methacrylyl, chloracrylyl and β-chlorpropionyl;

K denotes a coupling component selected from the group consisting of the hydroxynaphthalene and 3-methyl-porazolone-(5) series; and

n is an integer of from 1 to 3, inclusive.

3,222,355

DISAZO DYES

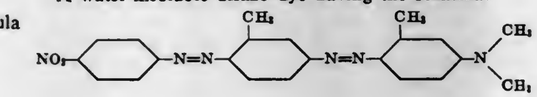
Ermanno Gaetani, Milan, Italy, assignor to Aziende Colori Nazionali Acna S.p.A., Milan, Italy

No Drawing. Filed Feb. 4, 1963, Ser. No. 256,089

Claims priority, application Italy, Dec. 15, 1959, 20,940/59

1 Claim. (Cl. 260—186)

A water-insoluble disazo dye having the formula:



3,222,356
4-(2-CYANO-2-PROPYLAZO)ANISOLE

Marion Burg, Metuchen, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Dec. 1, 1961, Ser. No. 156,529
1 Claim. (Cl. 260—193)

4-(2-cyano-2-propylazo)anisole.

3,222,357
METHOD FOR PREPARING POLYESTER POLYOL SUCROSE RIGID FOAMS

Marco Wismer and Louis R. Le Bras, Richland Township, Gibsonia County, John R. Peffer, Verona, and James F. Foote, Sarver, Pa., assignors to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed Feb. 26, 1962, Ser. No. 175,788
9 Claims. (Cl. 260—209)

2. A method of preparing a polyether having a molecular weight of about 700 to about 1800, and being substantially free of reaction by-products, which comprises forming a mixture comprising sucrose and water, in which the water is present in an amount from about 5 percent to about 90 percent by weight based upon the total weight of sucrose and water, introducing an alkylene oxide selected from the class consisting of ethylene oxide, propylene oxide, 1,2-butylene oxide and mixtures of the three oxides, incrementally into said aqueous mixture in an amount of about 10 to 25 moles of said alkylene oxide for each mole of sucrose, under a pressure not exceeding about 200 pounds per square inch at a temperature of about 70° F. to about 270 F., and in the presence of a basic oxyalkylation catalyst, the water being maintained in the mixture until substantially all the oxide present has reacted, and removing substantially all of the catalyst from the reaction mixture.

3,222,358
CYANOETHYLATED HYDROXYALKYLSUCROSE AND ITS PREPARATION

George P. Touey and Herman E. Davis, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Dec. 6, 1962, Ser. No. 242,597
3 Claims. (Cl. 260—209)

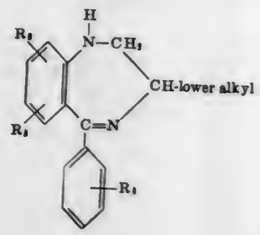
1. Cyanoethyl hydroxy (lower) alkyl sucrose in which 3–8 of the sucrose hydroxyls have been replaced by hydroxy (lower) alkyl and wherein substantially all of the hydroxyls of the said hydroxy (lower alkylated sucrose have been replaced by cyanoethyl.

3,222,359
PROCESS FOR PREPARING BENZODIAZEPINE COMPOUNDS

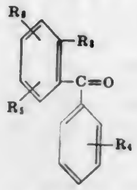
Earl Reeder, Nutley, and Leo Henryk Sternbach, Upper Montclair, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed June 21, 1962, Ser. No. 204,034
4 Claims. (Cl. 260—239)

1. A method for the preparation of compounds of the formula



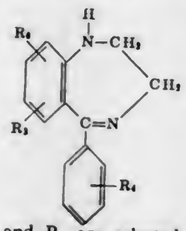
wherein R_4, R_5 and R_6 are selected from the group consisting of hydrogen, halogen, trifluoromethyl, nitro, amino, lower alkenoylamino, lower alkylthio, lower alkylsulfinyl, lower alkylsulfonyl, lower alkoxy, hydroxy, lower alkyl, cyano, carboxy, carbo-lower alkoxy, carbamyl and di-lower alkylamino which comprises reacting a compound of the formula



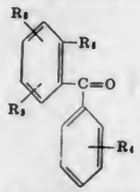
wherein R_4, R_5 and R_6 are as above and R_8 is halogen with a compound of the formula

lower alkyl
$H_2NCH_2CHNH_2$

4. A process for the preparation of compounds of the formula



wherein R_4, R_5 and R_6 are selected from the group consisting of hydrogen, halogen, trifluoromethyl, nitro, amino, lower alkanoylamino, lower alkylthio, lower alkylsulfonyl, lower alkylsulfinyl, lower alkoxy, hydroxy, lower alkyl, cyano, carboxy, carbo-lower alkoxy, carbamyl and di-lower alkylamino which comprises reacting a compound of the formula



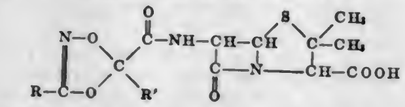
wherein R_4, R_5 and R_6 are as above and R_8 is halogen with ethylene diamine.

3,222,360
DIOXAZOLYLPENICILLINS

Josef Fried, Princeton, N.J., assignor to Olin Mathieson Chemical Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Dec. 3, 1962, Ser. No. 241,483
7 Claims. (Cl. 260—239.1)

1. A compound selected from the group consisting of 1,3,4-dioxazolylpenicillins of the formula



wherein R represents a member of the group consisting of X_m-phenyl and X_m-heterocyclic and R' represents a member of the group consisting of lower alkyl, X_m-phenyl, (X_m-phenyl)-lower alkyl, X_m-heterocyclic and (X_m-heterocyclic)-lower alkyl, X represents a member of the group consisting of hydrogen, halogen, nitro, hydroxy, amino, lower alkanoylamido, trihalomethyl, lower alkoxy and lower alkanoyloxy, *m* represents a member of the group consisting of 1,2 and 3, and heterocyclic represents a member of the group consisting of furyl, pyridyl, pyrimidyl, pyrazinyl and pyridazinyl,
and physiologically acceptable salts thereof with bases.

3,222,361
18-ETHYLENEDIOXY-17-ISOPREGNENES AND DERIVATIVES THEREOF

Albert Wettstein, Riehen, and Julius Schmidlin, Basel, Switzerland, assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 6, 1962, Ser. No. 235,851
Claims priority, application Switzerland, Nov. 17, 1961, 13,385/61
7 Claims. (Cl. 260—239.55)

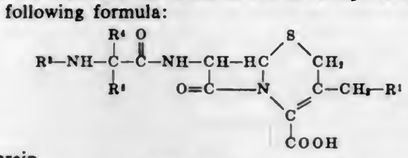
1. A member selected from the group consisting of Δ^4-3:11:20-trioxo - 18:18 - ethylenedioxy-17-iso-pregnene and its Δ^5-3-ethylene-ketal.

3,222,362
ARYLAMINOALKYL CEPHALOSPORINS

Edwin H. Flynn, Indianapolis, Ind., assignor to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana

No Drawing. Filed Aug. 23, 1961, Ser. No. 133,309
2 Claims. (Cl. 260—243)

2. An antibiotic substance of the class represented by the following formula:



wherein

R^1 is a member of the class consisting of acetoxy, N-pyridyl, and N-pyridyl having at least one substituent, said substituent being selected from the class consisting of carboxy, carbamyl, amino, methyl, hydroxymethyl, and hydroxy;

R^3 is a member of the class consisting of phenyl and naphthyl and the substitution products thereof having at least one substituent group, said substituent group being a member of the class consisting of halogen, nitro trifluoromethyl, C_1–C_4 alkyl, and C_1–C_2 alkoxy;

R^4 is a member of the class consisting of hydrogen and methyl;

R^5 is a member of the class consisting of hydrogen and methyl;

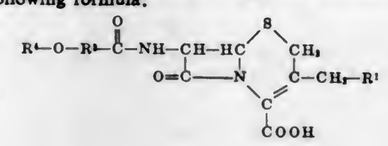
and the salts thereof with pharmaceutically acceptable cations and anions.

3,222,363
CARBOCYCLOXYALKYL CEPHALOSPORINS

Edwin H. Flynn, Indianapolis, Ind., assignor to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana

No Drawing. Filed Aug. 23, 1961, Ser. No. 133,339
3 Claims. (Cl. 260—243)

3. An antibiotic substance of the class represented by the following formula:



wherein

R^1 is a member of the class consisting of acetoxy, N-pyridyl, and N-pyridyl having at least one substituent, said substituent being selected from the class consisting of carboxy, carbamyl, amino, methyl, hydroxymethyl, and hydroxy;

R^3 is C_1–C_4 alkylene;

R^4 is a member of the class consisting of benzyl, naphthyl, naphthylmethyl, C_4–C_8 cycloalkyl, C_4–C_8 cycloalkylmethyl and the substitution products thereof having at least one substituent group, said substituent group being a member of the class consisting of halogen, nitro, trifluoromethyl, C_1–C_4 alkyl, and C_1–C_2 alkoxy;

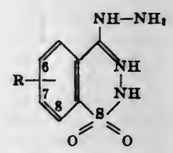
and the salts thereof with pharmaceutically acceptable cations and anions.

3,222,364
HYDRAZINO-BENZOTHIADIAZINE DIOXIDES

Paul Schmidt, Therwil, and Kurt Eichenberger and Max Wilhelm, Basel, Switzerland, assignors to Ciba Corporation, a corporation of Delaware

No Drawing. Filed Aug. 28, 1961, Ser. No. 134,110
Claims priority, application Switzerland, Oct. 7, 1960, 11,293/60; July 27, 1961, 8,840/61
9 Claims. (Cl. 260—243)

1. A member of the group consisting of compounds of formula



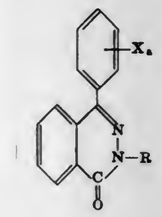
and their acid addition salts, in which R stands for a member of the group consisting of alkoxy containing 1 to 4 carbon atoms, halogen and trifluoromethyl, which substituent R is in one of the positions 6 to 8.

3,222,365
4-HALOPHENYL-2-ALKYL-1(2)-PHTHALAZINONES

Hugh R. Sullivan, Jr., Indianapolis, Ind., assignor to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana

No Drawing. Filed Jan. 15, 1962, Ser. No. 166,425
3 Claims. (Cl. 260—250)

3. A 4 - halophenyl - 2 - alkyl - 1(2) - phthalazinone of the formula



wherein R is a lower alkyl radical containing from 1 to 4 carbon atoms, X is halogen selected from the group consisting of fluorine, chlorine, bromine and iodine, and *a* is an integer from 1 to 5 indicating the number of said halogen atoms substituted on the phenyl ring.

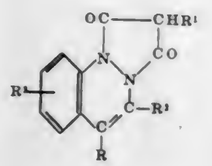
3,222,366

1,2-MALONYL-1,2-DIHYDROCINNOLINE DERIVATIVES AND PROCESS FOR PREPARATION THEREOF

Theodor Wagner-Jauregg, Franz Schatz, and Ulrich Jahn, all of Zofingen, Switzerland, assignors to Siegfried Aktiengesellschaft, Zofingen, Switzerland, a corporation of Switzerland

No Drawing. Filed Feb. 19, 1964, Ser. No. 345,842
Claims priority, application Switzerland, Feb. 26, 1963, 2,424/63
8 Claims. (Cl. 260—250)

1. A compound selected from the group consisting of 1,2-malonyl-1,2-dihydrocinnoline derivatives having the formula



and its tautomeric forms, wherein R is a member selected from the group consisting of lower alkyl, phenyl, lower alkyl phenyl, and lower alkoxy phenyl, R^1 is a member selected from the group consisting of hydrogen, lower alkyl, cyclohexyl, cyclopentyl, lower alkanoyl, and phenyl, R^2 is a member selected from the group consisting of hydrogen and lower alkyl, and R^3 is a member selected from the group consisting of hydrogen and halogen; their pharmaceutically acceptable alkali metal salts; and their salts with an amine selected from the class consisting of ethylendiamine, triethanolamine, trimethylamine, and cyclohexylamine.

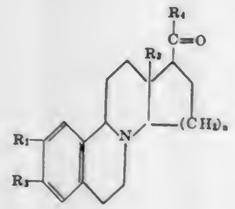
3,222,367

1-ACYL SUBSTITUTED QUINOLIZINES AND PROCESS FOR THEIR PRODUCTION

Richard E. Brown, Hanover, and Robert I. Meltzer, Rockaway, N.J., assignors to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware

No Drawing. Filed July 16, 1963, Ser. No. 295,540
4 Claims. (Cl. 260—289)

1. A member selected from the group consisting of compounds of the formula:



wherein R_1 and R_2 is each a member selected from the group consisting of hydrogen, hydroxy, and lower alkoxy; R_3 is a member selected from the group consisting of hydrogen and lower alkyl; R_4 is lower alkyl and n is an integer from 1 to 2, and the nontoxic pharmaceutically acceptable acid addition salts thereof.

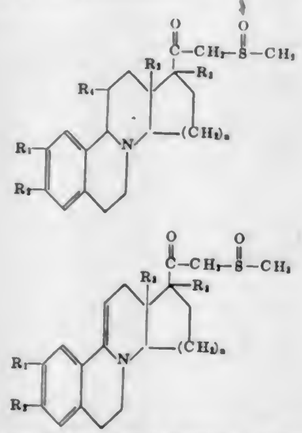
3,222,368

METHYLSULFINYLMETHYL KETONE DERIVATIVES OF SUBSTITUTED QUINOLIZINES

Richard E. Brown, Hanover, and Robert I. Meltzer, Rockaway, N.J., assignors to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware

No Drawing. Filed Feb. 16, 1965, Ser. No. 433,166
5 Claims. (Cl. 260—289)

1. A compound selected from the group consisting of those of the formula:



wherein R_1 and R_2 each is a member selected from the group consisting of hydrogen, hydroxy, and lower alkoxy, R_3 is a member selected from the group consisting of hydrogen and lower alkyl, and R_4 and R_5 is each a member of the group consisting of hydrogen and hydroxy, and n is an integer of from 1 to 2.

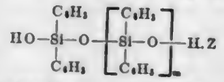
3,222,369

PHENYLSILOXANEDIOL AMINE COMPLEXES AND PROCESS FOR THEIR PRODUCTION

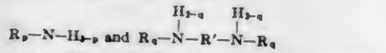
Paul I. Prescott and Terry G. Selin, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York

No Drawing. Filed Nov. 1, 1962, Ser. No. 234,884
14 Claims. (Cl. 260—290)

1. A composition of matter having the formula

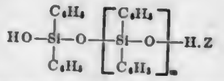


where Z is an organic amine selected from the class consisting of amines having the formulas

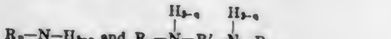


and pyridine, pyrrole, quinoline, isoquinoline, picoline, lutidine, collidine, and piperazine, where R is a monovalent hydrocarbon radical selected from the class of aliphatic and aromatic hydrocarbon radicals, p is a whole number from 1 to 3, and q is a whole number from 0 to 2, and m is a whole number equal to from 1 to 2, inclusive.

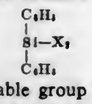
8. The process for making a pyridine complex of the formula



where Z is an orangic amine selected from the class consisting of amines having the formulas



and pyridine, pyrrole, quinoline, isoquinoline, picoline, lutidine, collidine, and piperazine, where R is a monovalent hydrocarbon radical selected from the class of aliphatic and aromatic hydrocarbon radicals, p is a whole number from 1 to 3, and q is a whole number from 0 to 2, and m is whole number equal to from 1 to 2, inclusive, which comprises forming an intimate mixture of an organic amine and a hydrolysis product of a dihydrolyzable silane having the formula



where X is a hydrolyzable group selected from the class consisting of halogen, acetoxy, propionoxy, methoxy, ethoxy, propoxy, and phenoxy radicals, and thereafter isolating the amine complex of the above formula, the aforesaid hydrolysis product containing as essential ingredients therein a siloxanediol selected from the class consisting of 1,1,3,3-tetraphenyldisiloxanediol-1,3 and 1,1,3,3,5,5-hexaphenyltrisiloxanediol-1,5.

3,222,370

4-PHENALKYL-1-DIALKYL-AMINO-ALKYL-PIPERIDINES

Chester John Cavallito and Allan Poe Gray, Decatur, Ill., assignors to Neisler Laboratories, Inc., Decatur, Ill., a corporation of Delaware

No Drawing. Filed Jan. 16, 1962, Ser. No. 166,694
6 Claims. (Cl. 260—293)

1. 4 - phenylalkyl-1-(di-lower-alkyl-aminoalkyl)-piperidine wherein alkyl of the phenylalkyl group contains from 1 to 3 carbon atoms and alkyl of the aminoalkyl group contains from 2 to 3 carbon atoms.

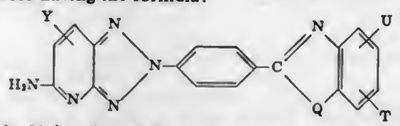
3,222,371

PYRIDOTRIAZOLE BRIGHTENERS

Bennett George Buell, Somerville, and Robert Sidney Long, Bound Brook, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

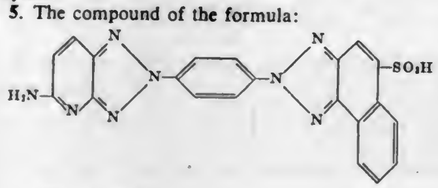
No Drawing. Application Feb. 8, 1961, Ser. No. 87,754, which is a division of application Ser. No. 698,930, Nov. 26, 1957, now Patent No. 3,058,989, dated Oct. 16, 1962. Divided and this application Apr. 19, 1962, Ser. No. 188,897
12 Claims. (Cl. 260—294.8)

1. Compounds selected from the group consisting of (1) those having the formula:



wherein Y is selected from the group consisting of hydrogen, lower alkyl, halogen, carboxy, lower carbalkoxy and unsubstituted carboxamide, Q is selected from the group consisting of —O—, —NH— and —S—, U is selected from the group consisting of hydrogen and methyl, and T is selected from the group consisting of hydrogen and sulfonic acid, and (2) quaternary salts of (1) with an alkylating agent selected from the group consisting of methyl iodide, ethyl bromide, butyl bromide, benzyl bromide, dimethyl sulfate, diethyl sulfate, ethylene chlorohydrin, beta-diethylamino ethyl chloride and methyl tosylate.

5. The compound of the formula:



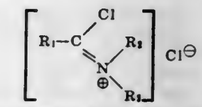
3,222,372

PRODUCTION OF 1,3,4-OXADIAZOLES

Hans Weldinger and Heinz Ellingsfeld, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed May 2, 1963, Ser. No. 277,447
Claims priority, application Germany, May 4, 1962, B 67,108
3 Claims. (Cl. 260—296)

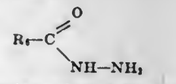
1. A process for production of 1,3,4-oxadiazoles which comprises reacting a carboxylic amide chloride of the formula



wherein R_1 is a member selected from the group consisting of hydrogen, alkyl with 1–4 carbons, cycloalkyl with 6–8 carbons, an aromatic group of the formula



wherein X is a member from the group consisting of hydogen, methyl, alkoxy with 1–4 carbons, chloro, nitro and dialkylamino with 1–4 carbon alkyl groups; R_2 and R_3 represent a member selected from the group consisting of alkyl of 1–4 carbons and, when R_2 and R_3 are taken together, $-(CH_2-)_{4-6}$ at a temperature between 20° C. and 200° C. in the presence of a tertiary amine and an alcobol of the formula R_4-O-R_5 wherein R_4 is alkyl of 1–6 carbons and R_5 is selected from the group consisting of —H and $-CH_2CH_2OH$ with a carboxylic hydrazide of the formula



wherein R_6 is a member selected from the group consisting of alkyl with 1–7 carbons, cycloalkyl with 6–8 carbons, C-pyridyl, anthraquinon-yl, anthraquinon-yl substituted with a member selected from the group consisting of a chloro group and 1–2 amino groups, phenyl, and phenyl substituted with a member selected from the group consisting of alkoxy with 1–4 carbons, chloro, dialkyl amino with 1–4 carbon alkyl groups, amino, nitro, and carboxylic hydrazide.

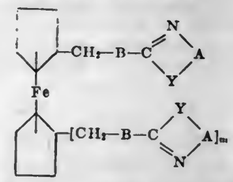
3,222,373

DERIVATIVES OF FERROCENE

Charanjit Rai, Crystal Lake, Ill., assignor, by mesne assignments, to Union Oil Company of California, Los Angeles, Calif., a corporation of California

No Drawing. Filed June 6, 1963, Ser. No. 285,866
12 Claims. (Cl. 260—299)

1. A compound of the formula



wherein B is a substituent of the group consisting of C_1 to C_{10} alkylene and arylene of 6 to 14 cyclic carbon atoms, Y is a substituent of the group consisting of oxygen; sulfur, and imino, A is a substitutent of the group consisting of vicinal arylene of 6 to 14 cyclic carbon atoms, C_1 to C_{20} alkyl-substituted vicinal arylene of 6

to 14 cyclic carbon atoms, C_1 to C_4 alkoxy-substituted vicinal arylene of 6 to 14 cyclic carbon atoms, chloro-substituted vicinal arylene of 6 to 14 cyclic carbon atoms and fluoro-substituted vicinal arylene of 6 to 14 cyclic carbon atoms and *m* is 0 to 1.

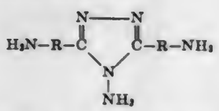
3,222,374
PROCESS FOR PREPARING 5-CYANO-4-LOWER ALKYL OXAZOLE
George Oswald Chase, Hawthorne, N.J., assignor to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey
No Drawing. Filed Nov. 20, 1964, Ser. No. 412,851
8 Claims. (Cl. 260—307)

1. In a process for the preparation of 5-cyano-4-lower alkyloxazole by means of the reaction of 5-carboxamide-4-lower alkyloxazole with phosphorus pentoxide, the improvement comprising performing the reaction utilizing a solvent medium containing a member selected from the group consisting of quinoline and dilower alkyl aniline.

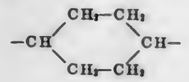
3,222,375
TRIAMINO-TRIAZOLES AND THEIR PRODUCTION
Fritz Wiloth, Klingenberg, and Erwin Sommer, Obernburg, Germany, assignors to Vereinigte Glanzstoff-Fabriken A.G., Wuppertal-Elberfeld, Germany
No Drawing. Filed July 11, 1962, Ser. No. 209,234
Claims priority, application Germany, July 19, 1961, V 21,021; Mar. 28, 1962, V 22,256
9 Claims. (Cl. 260—308)

1. A process for the production of a bis-3,5-(ω-aminoalkyl)-4-aminotriazole which comprises reacting a lactam with hydrazine at a temperature between about 150° C. and 250° C. and in the presence of an inert gas.

4. A compound of the formula



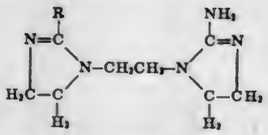
wherein R represents a member selected from the group consisting of $-C_nH_{2n}-$ and



n being an integer of from 3 to 7, inclusive.

3,222,376
DI-IMIDAZOLINES
Frederick Herman Siegele, Westport, Conn., assignor to American Cyanamid Company, New York, N.Y., a corporation of Maine
No Drawing. Filed Aug. 17, 1961, Ser. No. 131,988
6 Claims. (Cl. 260—309.6)

1. A composition of matter selected from the group consisting of a di-imidazoline, a di-imidazoline mixture and hydrohalides thereof, said di-imidazoline having the structure:



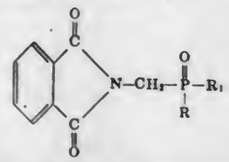
where R is an unsubstituted hydrocarbon from 4 to 22 carbon atoms selected from the group consisting of alkyl, alkenyl and alkadienyl.

3,222,377
HALOGENATION OF PHTHALOCYANINES
Richard M. Ferrill, Jr., Glens Falls, N.Y., assignor to Hercules Powder Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Feb. 12, 1963, Ser. No. 257,852
3 Claims. (Cl. 260—314.5)

1. The method of chlorinating a phthalocyanine which comprises suspending the same in a reaction medium formed by chlorinating a mixture of phthalic anhydride, molybdenum trioxide and sulfur, the amount of molybdenum varying from about 0.4% to about 5% by weight, based on the weight of reaction medium, and the amount of sulfur varying from about 0.30 part to about 2.0 parts per part of molybdenum calculated as molybdenum trioxide, and subjecting the suspension to a chlorinating agent at a temperature from about 80° C. to about 260° C. until the desired degree of chlorination is obtained.

3,222,378
PHTHALIMIDOMETHYL PHOSPHORUS COMPOUNDS
Ivan C. Popoff, Ambler, Burton Peter Block, Wayne, and Ludwig K. Huber, Philadelphia, Pa., assignors to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania
No Drawing. Filed June 24, 1963, Ser. No. 290,245
12 Claims. (Cl. 260—326)

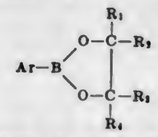
1. A compound of the formula



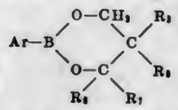
where R_1 is selected from the group consisting of alkyl of from 1 to 2 carbon atoms, phenyl, and naphthyl and R_2 is selected from the group consisting of hydroxyl, phthalimidomethoxy, alkyl of from 1 to 2 carbon atoms, alkoxy of from 1 to 2 carbon atoms, phenyl, and naphthyl.

3,222,379
CYCLIC DERIVATIVES OF ARYLBORONIC ACIDS AND OF 1,2- AND 1,3-DIOLS AND PROCESS FOR PREPARING SAME
Jean-Marie Farthouat, Romainville, France, assignor, by mesne assignments, to Roussel-UCLAF, S.A., Paris, France, a corporation of France
No Drawing. Filed Dec. 14, 1960, Ser. No. 75,678
7 Claims. (Cl. 260—340.9)

1. Process for the preparation of organic boron derivatives selected from the group consisting of the arylborolanes having the general formula:

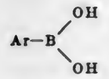


and the aryloborinanes having the general formula:

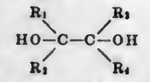


in which formulae Ar is a radical selected from the group consisting of the phenyl, tolyl and carboxyphenyl groups, R_1, R_2, R_3 and R_4 are each a radical selected from the group consisting of hydrogen, lower alkyl, tolyloxy lower alkyl, phenyl and monochloro-substituted phenyl groups and, when taken together and with the —O—C groups to

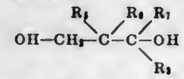
which they are attached, form the residue of a compound selected from the group consisting of the 16,17-dihydroxy steroids of the pregnadiene series and the vicinal diols of the glucose series, and R_5, R_6, R_7 and R_8 are each selected from the group consisting of hydrogen, lower alkyl, phenyl, mononitro-substituted phenyl and α-substituted acetamido groups, said process comprising condensing, in an alkaline reaction medium, an arylboronic acid having the formula:



with a diol selected from the group consisting of 1,2-diols having the general formula:



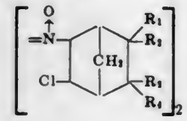
and 1,3-diols having the general formula:



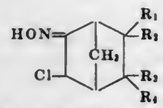
Ar, R_1, R_2, R_3, R_4, R_5, R_6, R_7 and R_8 having the aforementioned meanings, and subsequently acidifying the reaction medium, thereby precipitating said organic boron derivative and recovering said derivative.

3,222,380
NITROSOCHLORIDE DERIVATIVES OF BICYCLO [2.2.1]-2-HEPTENE
David T. Manning and Harry A. Stansbury, Jr., South Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Apr. 3, 1961, Ser. No. 99,989
9 Claims. (Cl. 260—346.3)

9. A compound selected from the group consisting of compounds of the formula:



and



wherein each R_1 and R_4 individually is a member selected from the group consisting of hydrogen, alkyl of from 1 to 4 carbon atoms, and phenyl, and wherein each R_2 and R_4 individually is a member selected from the group consisting of hydrogen, alkyl of from 1 to 4 carbon atoms, and X, wherein X is selected from the group consisting of carboxy, cyano, and two X variables taken together to form carbonyloxycarbonyl, provided that at least one of the variables designated as R_2 and R_3 represents an X.

3,222,381
STABILIZATION OF EPOXY COMPOUNDS
John G. Iacoviello and Rudolph Rosenthal, Broomall, Pa., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed Aug. 2, 1961, Ser. No. 128,659
10 Claims. (Cl. 260—348)

1. The method of stabilizing an epoxy organic compound containing color-forming acidic impurities arising in the epoxidation process, against color degradation on heating, which comprises contacting said compound at temperatures between about 20° C. and about 100° C. with a solution of an alkali metal hydroxide dissolved in a homogeneous mixture of water and a lower aliphatic alcohol containing water and alcohol in proportions between about 40 and about 60 percent by weight of water, the balance being alcohol, and containing an amount of alkali metal hydroxide in excess of that theoretically required to neutralize all the acidity in the said epoxy compound, until a substantial proportion of color-forming impurities has been removed.

3,222,382
EPOXIDATION
Raymond Lanthier, Shawinigan, Quebec, Canada, assignor to Shawinigan Chemicals Limited, Montreal, Quebec, Canada, a corporation of Canada
Filed Mar. 14, 1963, Ser. No. 265,294
8 Claims. (Cl. 260—348.5)

1. The process for the production of an olefin oxide of the group consisting of the epoxides of monoolefinic hydrocarbons containing from three to eight carbon atoms and alpha-methylstyrene epoxide by direct catalytic oxidation of the corresponding monoolefinic hydrocarbon which comprises (1) passing a stream of the corresponding monoolefinic hydrocarbon into a liquid solvent medium consisting essentially of a first component selected from the group consisting of benzene, monochlorobenzene and dichlorobenzene and a second component of the group consisting of acetone, methyl ethyl ketone, and tertiary butyl alcohol, the proportions of said first and second components in said solvent medium being in the range between 4:1 and 1:4 by volume, said medium containing a catalyst selected from the group consisting of cobalt and manganese oxidation catalysts dissolved therein, (2) simultaneously passing a stream of gas containing free oxygen through the solvent medium to react with the monoolefinic hydrocarbon, (3) with drawing liquid from the resulting reaction mixture, and (4) recovering olefin oxide from the withdrawn liquid.

3,222,383
6-TRIFLUOROMETHYL STEROIDS AND METHODS FOR THEIR PRODUCTION
Wagn Ole Godtfredsen, Copenhagen, Denmark, assignor to Løvens Kemiske Fabrik ved. A. Kongsted, Ballerup, Denmark, a firm of Denmark
No Drawing. Continuation of application Ser. No. 128,277, Mar. 6, 1961. This application May 16, 1961, Ser. No. 110,357
Claims priority, application Great Britain, Mar. 18, 1960, 9,758/60; June 8, 1960, 20,190/60, Patent 905,694
6 Claims. (Cl. 260—397.4)

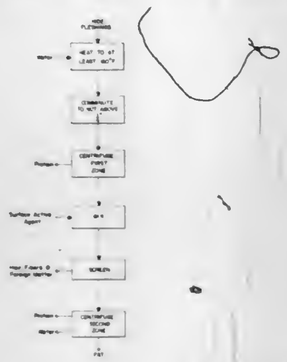
1. A process for the production of 3-keto-Δ^4-6α-trifluoromethyl steroids, which comprises the steps of reacting the corresponding 3-keto-Δ^4 steroid compound, in which the 3-keto group has been transformed into a group selected from the class consisting of 3-enol ether and 3-cycloketal groups, with trifluoroiodomethane in the presence of an organic base, while accelerating the reaction with an initiator and subjecting the reaction product to an acid hydrolysis.

5. 6α - trifluoromethyl-17α-acetoxyprogesterone-3-enol ethyl ether.

3,222,384
PROCESS FOR RENDERING ANIMAL FAT
Marvin E. Blumberg, Havertown, and Gerald J. Gould, Bristol, Pa., assignors to Pennsalt Chemicals Corporation, a corporation of Pennsylvania
Filed Dec. 31, 1962, Ser. No. 248,792
1 Claim. (Cl. 260—412.6)

In a process for rendering animal hide fleshings including the steps of heating the fleshings to at least 160° F.

in the presence of added water, comminuting the heated fleshings, centrifugally separating the heated fleshings into tissue and melted fat containing residual tissue, screening the residual tissue and the melted fat and then centrifugally separating the residual tissue from the melted fat, the improvement which comprises said screening and



said separating the residual tissue from the melted fat in the presence of at least one compound having the formula:

$$R—S—R'—O(R'—O)_nH$$

serving as a surface active agent, wherein R represents a tertiary alkyl radical containing 12 carbon atoms, R' is an ethylene radical, and *n* represents the number 9.

3,222,385

TETRACYANOETHYLENIDE SALTS

Samuel I. Weissman, St. Louis, Mo., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed July 25, 1962, Ser. No. 212,468
15 Claims. (Cl. 260—429)

1. Tetracyanoethylenide salts having the formula

$$M(C_6N_4)_x$$

where M is a metal cation and *x* is an integer equal to the valence of M.

3,222,386

PREPARATION OF ORGANIC ISOCYANATES

Thomas H. Cleveland, New Martinsville, W. Va., assignor to Mobay Chemical Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed Jan. 2, 1962, Ser. No. 163,865
2 Claims. (Cl. 260—453)

1. In a process for the preparation of an organic isocyanate selected from the group consisting of aromatic isocyanates having 1 to 2 benzene rings and aliphatic isocyanates having up to 18 carbon atoms in which the corresponding amine is reacted with excess phosgene in a primary phosgenation step to form a carbamyl chloride-amine hydrochloride slurry at a temperature below the decomposition point of said carbamyl chloride-amine hydrochloride and the slurry from the primary phosgenation step is heated in a second phosgenation step to a temperature above the decomposition point of said carbamyl chloride-amine hydrochloride up to about 300° C. to form the corresponding isocyanate, the improvement which comprises employing a solvent to amine ratio in said primary phosgenation step of from about 15:1 to about 50:1, removing a substantial portion of said solvent and excess phosgene prior to said second phosgenation step and recycling the removed excess solvent and phosgene to the primary phosgenation step.

3,222,387

1,3,4 - TRIMETHYLCYCLOHEX - 3 - ENE - CARBOXYLIC ACID - (1) - BETA - ISOCYANATOETHYL ESTER

Hanswilli von Brachel, Cologne-Sulz, and Otto Bayer, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed Jan. 24, 1962, Ser. No. 168,499
Claims priority, application Germany, Jan. 25, 1961, F 33,052
1 Claim. (Cl. 260—453)

The compound 1,3,4-trimethylcyclohex-3-ene-carboxylic acid-(1)-beta-isocyanatoethyl ester.

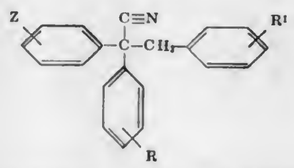
3,222,388

DIARYL-ACETONITRILES AND 2,2,3-TRIARYLPROPIONITRILES

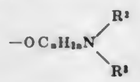
Melvin Perelman, Indianapolis, Ind., assignor to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana

No Drawing. Filed Apr. 20, 1962, Ser. No. 188,980
7 Claims. (Cl. 260—465)

1. A compound of the formula



wherein Z is selected from the class consisting of basic ethers of the formula



in which *n* is a whole number from 2 to 4, R^2 and R^3 when taken separately are selected from the group consisting of hydrogen and lower alkyl containing from one to four carbon atoms, and R^2 and R^3, when taken together with the nitrogen atom to which they are attached, form a 5 to 6 membered heterocyclic ring selected from the group consisting of pyrrolidino, piperidino, morpholino, and piperazino; R and R^1 are selected from the group consisting of hydrogen, chlorine, fluorine, methyl, methoxy, nitro, trifluoromethyl, and monocyclic aryl not more than one of R and R^1 being hydrogen; and the acid addition salts thereof with pharmaceutically acceptable acids.

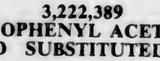
3,222,389

PHENYL-p-AMINOPHENYL ACETONITRILE COMPOUNDS AND SUBSTITUTED DERIVATIVES THEREOF

Ralph B. Davis, Notre Dame, Ind., assignor to University of Notre Dame, Notre Dame, Ind.

Filed Sept. 23, 1964, Ser. No. 398,704
7 Claims. (Cl. 260—465)

1. An aromatic amine compound having the formula



wherein Ar is a monovalent radical selected from the class consisting of phenyl and naphthyl and derivatives thereof having no more than two substituent groups thereon; Ar' is a divalent radical selected from the class consisting of 1,4-phenyl and 1,4-naphthylene and derivatives thereof having no more than two substituent groups thereon: each of said substituent groups on said Ar and Ar' radicals being selected only from the class consisting of —Cl, —Br, —I, —R, and OR, wherein R is a saturated aliphatic hydrocarbon group having no more than five carbon atoms therein.

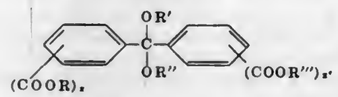
3,222,390

KETAL-ESTER COMPOUNDS

James E. Horan, Chicago, Ill., and Richard E. Van Strien, Griffith, Ind., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana

No Drawing. Filed Nov. 29, 1961, Ser. No. 155,833
4 Claims. (Cl. 260—473)

1. Ketal-ester compounds having the formula:



where R, R', R'' and R''' are each selected from the group consisting of alkyl radicals having from 1 to about 12 carbon atoms, cycloalkyl radicals having from 3 to about 10 carbon atoms, aralkyl radicals having from 7 to about 12 carbon atoms and mixtures thereof, *x* and *x'* are each an integer from 0 to 5, and $x+x'$ is equal to at least 1.

3,222,391

PROCESS FOR RECOVERING KETAL-ESTERS OF BENZOPHENONE DICARBOXYLIC ACID

James E. Horan, Chicago, Ill., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana

No Drawing. Filed Dec. 28, 1961, Ser. No. 162,960
2 Claims. (Cl. 260—473)

1. A novel process for recovering a ketal-ester of 4,4'-benzophenone dicarboxylic acid from a mixture of said ketal-ester and a keto-ester of 4,4'-benzophenone dicarboxylic acid, which process comprises, dissolving said mixture in an alkane to form a solution, said alkane having from about 5 to about 10 carbon atoms and being present in a volumetric ratio of from about 5 to about 40 volumes of said alkane to one volume of said mixture, cooling said solution to a temperature at least below about 0° C. for a time sufficient to precipitate said keto-ester from said solution, separating said solution from said precipitate, and recovering said ketal-ester from said solution.

3,222,392

N-METHYL 2,2-DIPHENYL-3-HYDROXYPROPYL CARBAMATE

Frank M. Berger, Princeton, and Bernard J. Ludwig, North Brunswick, N.J.

No Drawing. Filed Sept. 28, 1961, Ser. No. 141,315
1 Claim. (Cl. 260—482)

N-methyl-2,2-diphenyl-3-hydroxypropyl carbamate.

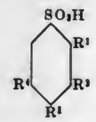
3,222,393

1,2,3,4-TETRAALKYL BENZENE SULFONIC ACID PRODUCTION

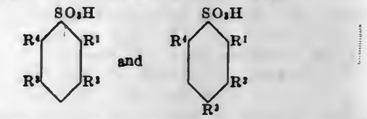
Charanjit Rai, Crystal Lake, Ill., assignor, by mesne assignments, to Union Oil Company of California, Los Angeles, Calif., a corporation of California

No Drawing. Filed May 7, 1962, Ser. No. 192,976
6 Claims. (Cl. 260—505)

1. A method of preparing a compound of the formula:



where R^1, R^2, R^3 and R^4 are selected from the group consisting of methyl and ethyl, which comprises heating a compound selected from the group consisting of:



where R^1, R^2, R^3, and R^4 are as above-defined, in admixture with polyphosphoric acid to a temperature of about 75°–150° C. wherein said polyphosphoric acid has a P_2O_5 content of 72–90% and is present in an amount sufficient to catalyze isomerization.

3,222,394

HYDROGENATED DIFUNCTIONAL ACIDS

Stanley P. Rowland and Ervin G. Pritchett, Cincinnati, Ohio, assignors to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Dec. 13, 1961, Ser. No. 159,165
2 Claims. (Cl. 260—515)

1. Saturated high molecular weight derivatives of carboxyl-terminated polymerized hydrocarbons prepared by the process which comprises reacting with hydrogen at pressures of about 50 to 5,000 p.s.i. and temperatures of about ambient to 300° C., in the presence of a catalyst selected from the group consisting of nickel, copper-chromite, cobalt-molybdenum, and palladium, unsaturated high molecular weight derivatives of carboxyl-terminated polymers, said unsaturated polymers having been prepared by the steps of (1) reacting a finely-divided alkali metal in an inert liquid reaction medium at a temperature between about reflux temperature of said reaction medium and about —60° C. with at least one hydrocarbon monomer selected from the group consisting of acyclic aliphatic conjugated diolefins, acyclic aliphatic conjugated diolefins in combination with styrene, and acyclic aliphatic conjugated diolefins in combination with an alkyl substituted styrene in substantial excess of a mole-to-mole ratio with the alkali metal to obtain a dialkali metal adduct of a polymer of said monomer, said polymer having a molecular weight in excess of about 300, and (2) reacting the so-formed dialkali metal polymerized hydrocarbon with carbon dioxide.

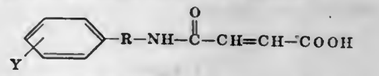
3,222,395

MALEAMIC ACID DERIVATIVES

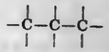
Everett M. Schultz, Ambler, John B. Bicking, Lansdale, and Virgil D. Wiebelhaus, Springfield, Pa., assignors to Merck & Co. Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Jan. 15, 1962, Ser. No. 166,399
14 Claims. (Cl. 260—518)

1. N-substituted maleamic acids selected from the class consisting of compounds having the formula



and alkali metal salts thereof, wherein Y is selected from the group consisting of hydrogen, chlorine, and bromine; and R is an alkylene radical having the structure



and having at least two and no more than three carbon atoms in a straight chain between the phenyl radical and the nitrogen atom of the maleamic acid residue each remaining valence of said radical being satisfied by a radical selected from the group consisting of hydrogen, a lower alkyl, phenyl, chlorophenyl, bromophenyl, benzyl, chlorobenzyl, and bromobenzyl radicals.

3,222,396
PROCESS FOR THE PREPARATION OF 4-HALOBUTANE-1-SULFONYL HALIDES
Robert E. Williams, Sherman Oaks, Calif., assignor to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware
No Drawing. Filed Apr. 16, 1962, Ser. No. 187,910
4 Claims. (Cl. 260—543)

1. A process of preparing 4-chlorobutane-1-sulfonyl chloride which comprises treating an aqueous solution of S-(4-hydroxybutyl)-isothiourea hydrochloride with chlorine gas at a temperature of about 0° C. to about 10° C. and recovering the product from the reaction mixture.

3,222,397
FUMARYL DICHLORIDE BY THE CATALYZED REACTION OF FUMARIC ACID AND PHOSGENE
Erach R. Talaty, Cambridge, Mass., assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania
No Drawing. Filed Jan. 2, 1962, Ser. No. 163,872
6 Claims. (Cl. 260—544)

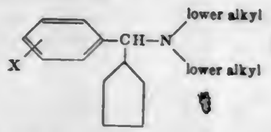
1. A method of preparing fumaryl dichloride which comprises contacting phosgene and fumaric acid in the presence of formamide catalyst at a temperature of 30° C. to 75° C. whereby to form fumaryl dichloride by reaction of two moles of phosgene per mole of fumaric acid.

3,222,398
HEPTYLOXYPHENYL BIGUANIDE COMPOUNDS
Joseph Patrick Brown, Bryn Castell, Geufron, Llangollen, Wales, assignor to Monsanto Chemicals Limited, London, England, a British company
No Drawing. Filed Mar. 6, 1963, Ser. No. 263,108
4 Claims. (Cl. 260—565)

1. A compound selected from the group consisting of heptyloxyphenyl biguanide, chloroheptyloxyphenyl biguanide, and the hydrochloride, hydrobromide and sulfate acid addition salts of such biguanides.

3,222,399
CYCLOPENTYLBENZYLAMINES
John Andrew Faust and Melville Sahyun, Santa Barbara, Calif.; said Faust assignor to Melville Sahyun, doing business as Sahyun Laboratories, Santa Barbara, Calif.
No Drawing. Filed Nov. 2, 1964, Ser. No. 408,373
6 Claims. (Cl. 260—570.5)

1. A compound of the formula



wherein X is selected from the group consisting of chlorine, bromine and fluorine.

3,222,400
PROCESS FOR THE PRODUCTION OF N-SECONDARY-ALKYL-ARYLAMINES
Hubert Suter, Guenter Poehler, and Heinrich Sperber, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany
No Drawing. Filed May 21, 1962, Ser. No. 196,474
Claims priority, application Germany, June 8, 1961, B 62,818
5 Claims. (Cl. 260—577)

1. A process for the production of N,N'-di-secondary alkylaryldiamines which comprises reacting a secondary alkanol having 3 to 8 carbon atoms with an aryldiamine with 1 to 2 aromatic rings in the presence of a nickel catalyst containing a promotor selected from the group consisting of copper and mixtures of copper and manganese, the molar ratio of nickel to copper being at least 1:1 and the amount of manganese being from 0 to 7% by weight based on the weight of the nickel, said aryldiamine being reacted in a 3 to 30% by weight solution in said secondary alkanol, said reaction being carried out at a temperature of between about 150° C. and 230° C. and at a pressure higher than the vapor pressure of the reaction mixture at the reaction temperature.

3,222,401
PROCESS FOR THE PRODUCTION OF NUCLEARLY ALKYLATED AROMATIC AMINES
Louis Schmerling, Riverside, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
No Drawing. Filed Feb. 13, 1963, Ser. No. 258,167
15 Claims. (Cl. 260—578)

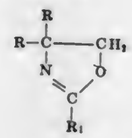
1. A process for the preparation of a cycloalkyl substituted aromatic amine which comprises alkylating an aromatic amine having from 1 to 2 benzene rings with a cycloalkene hydrocarbon containing from 5 to 12 carbon atoms in the ring in the presence of at least one catalyst selected from the group consisting of Friedel-Crafts metal halides, hydrogen chloride and hydrogen bromide at a temperature of from about 150° to about 300° C. and a pressure of from about atmospheric to about 100 atmospheres, said amine and hydrocarbon being the only reactants in the process, and recovering the resultant cycloalkyl substituted aromatic amine.

3,222,402
PREPARATION OF N-ALIPHATIC TRIMETHYLENE DIAMINES
Murray C. Cooperman, Chicago, Ill., assignor to Armour and Company, Chicago, Ill., a corporation of Delaware
No Drawing. Filed Mar. 20, 1962, Ser. No. 181,192
5 Claims. (Cl. 260—583)

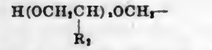
1. In a process for the preparation of N-aliphatic trimethylene diamines, wherein said aliphatic group contains from 8 to 18 carbon atoms, in which primary aliphatic amines containing from 8 to 18 carbon atoms are mono-cyanoethylated and after substantial removal of water the mono-cyanoethylated product reduced by catalytic hydrogenation to said diamines; the improvement consisting of forming a nearly quantitative yield of said mono-cyanoethylated product by heating to a temperature of about 50–90° C. a primary aliphatic amine containing from 8 to 18 carbon atoms, with water as a proton-transfer catalyst and an excess of acrylonitrile, said water being present in the range from a trace to less than 20% by weight based on the total weight of the reactants, and said acrylonitrile being employed in less than 20% molar excess.

3,222,403
STABILIZED FORMALDEHYDE SOLUTIONS
George N. Butter, Terre Haute, Ind., assignor to Commercial Solvents Corporation, New York County, N.Y., a corporation of Maryland
No Drawing. Filed June 5, 1961, Ser. No. 114,602
11 Claims. (Cl. 260—606)

1. An aqueous formaldehyde solution comprising an aqueous formaldehyde solution having a tendency to polymerize and a sufficient amount of a compound having the following general formula:



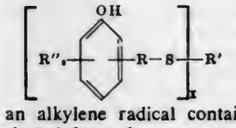
wherein R is the radical



wherein R_1 is alkyl, R_2 is selected from the group consisting of lower alkyl and hydrogen, and x is an integer ranging from 1–20 to stabilize said solution against deposition of solid material from the solution.

3,222,404
SULFUR-CONTAINING PHENOLS
Marinus J. van den Brink and Jan van Schooten, both of Amsterdam, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Dec. 14, 1961, Ser. No. 159,455
Claims priority, application Netherlands, Mar. 30, 1961, 263,102
10 Claims. (Cl. 260—609)

1. A sulfur-containing phenolic compound of the formula:



wherein R is an alkylene radical containing 3 carbon atoms, R″ is selected from the group consisting of norbornyl and tertiary butyl radicals, z is an integer of from 1 to 4, x is an integer having one of the values 1 and 2 and R′ is selected from the group consisting of alkyl and alkylene radicals containing from 8 to 18 carbon atoms.

7. A process for the preparation of sulfur-containing phenolic compounds which comprises reacting a compound Q—SH wherein Q is selected from the group consisting of hydrogen and alkyl radicals containing from 3 to 18 carbon atoms with a 4,6-dialkyl-2-allylphenol.

3,222,405
PRODUCTION OF PER(CHLOROFLUORO) BENZENES
Warren H. Powell, Woodland Heights, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed May 24, 1962, Ser. No. 197,271
6 Claims. (Cl. 260—650)

1. A process for preparing per(chlorofluoro)benzenes, which process comprises passing a per(chlorofluoro)cyclohexadiene containing from one to four chlorines over a metal which reacts with fluorine to form a stable fluoride, said metal being one selected from the class consisting of iron, nickel, cobalt, copper and steel, said process being conducted at a reaction temperature of from at least about 300° C. to about 390° C. for a time of from about 4 minutes to about 7 minutes, and recovering from the reaction mixture the resulting per(chlorofluoro)benzene, said resulting benzene compound containing the same number of chlorine atoms as the said per(chlorofluoro)cyclohexadiene compound.

3,222,406
PRODUCTION OF FLUOROCARBONS BY CATALYTIC PYROLYSIS OF FLUOROFORM
Murray Hauptschein, Glenside, and Arnold H. Fainberg, Elkins Park, Pa., assignors to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania
No Drawing. Filed Dec. 28, 1961, Ser. No. 162,975
4 Claims. (Cl. 260—653)

1. A method of preparing fluorocarbons which comprises pyrolyzing fluoroform in the presence of a metal fluoride catalyst selected from the class consisting of the fluorides of the metals of groups IA and IIA of the periodic table of elements, at a temperature below the melting point of said metal fluoride in the range of from 500° C. to 1100° C.

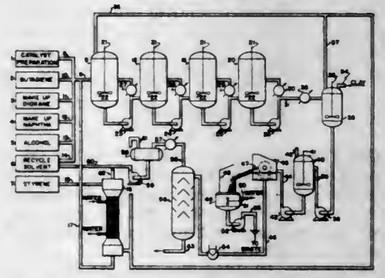
3,222,407
PRODUCTION OF VINYL CHLORIDE
Harry S. Leach and Glenn C. Marken, Texas City, Tex., assignors to Monsanto Company, a corporation of Delaware
No Drawing. Filed Mar. 8, 1962, Ser. No. 178,282
2 Claims. (Cl. 260—656)

1. In a process wherein ethylene dichloride is pyrolyzed at temperatures in the range from about 350° to about 600° C. in the presence of from about 0.5 to about 5% by weight of chlorine based on the ethylene dichloride, the improvement which comprises conducting said pyrolysis in the presence of from about 100 parts to about 2,500 parts of carbon tetrachloride per million parts of ethylene dichloride.

3,222,408
PREPARATION OF ETHYLENE DICHLORIDE
Harry Smith, Northwich, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
No Drawing. Filed May 13, 1963, Ser. No. 280,100
Claims priority, application Great Britain, May 16, 1962, 18,884/62
1 Claim. (Cl. 260—659)

A process for making ethylene dichloride comprising contacting a mixture consisting essentially of dry ethylene and dry air with a mixture of anhydrous ferric, potassium and cupric chlorides at 250° C.–300° C., said mixture of metal chlorides containing per gram atom of iron from 0.80 to 1.2 gram atoms of potassium and from 0.20 to 0.40 gramme atoms of copper.

3,222,409
RECOVERING ETHER DILUENT IN LIQUID POLYDIOLEFIN MANUFACTURE
Peter J. Creighton and Murray Nadler, Morristown, and Harold N. Wells, Florham Park, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
Filed Jan. 15, 1963, Ser. No. 251,608
5 Claims. (Cl. 260—669)



1. In a continuous process for producing a liquid copolymer in which a mixture of 80 parts by weight of butadiene-1,3 and 20 parts by weight of styrene, 50 to 500 parts by weight of a hydrocarbon diluent boiling between 100 and 200° C., 10 to 40 parts by weight of dioxane-1,4, 0.5 to 10 parts by weight of sodium and 0 to 35% of isopropyl alcohol, based on the weight of sodium, are continuously charged to the first stage of a multistage polymerization zone where it is heated to a temperature between 25 and 105° C., and in which a liquid polymerization product is continuously withdrawn from the final stage of the said polymerization zone, contacted with clay in a mixing zone to neutralize the sodium, filtered to separate the clay and adsorbed sodium, stripped to separate the hydrocarbon diluent and dioxane and in which the diluent and dioxane are condensed in a condensing zone, the improvement which comprises separating a first stream of uncondensed gases, including hydrocarbon diluent and dioxane, from the first stage of said polymerization zone, separating a second stream of un-

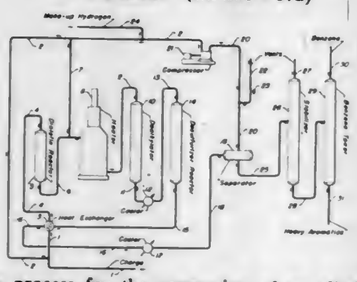
condensed gases, including diluent and dioxane, from said mixing zone and separating a third stream of uncondensed gases, including diluent and dioxane, from said condensing zone, combining said first, second, and third uncondensed gas streams and contacting the combined stream with styrene at temperatures of 0° to 35° C. and pressures of 1 to 5 atmospheres whereby said diluent and dioxane are absorbed in said styrene and passing said styrene containing said dioxane and diluent to said polymerization zone.

3,222,410

DEALKYLATION OF UNSATURATED SULFUR-CONTAINING ALKYLAROMATIC HYDROCARBONS

William M. Swanson, Arlington Heights, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

Filed Feb. 15, 1962, Ser. No. 173,573
15 Claims. (Cl. 260—672)



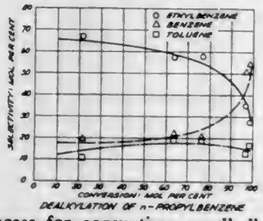
1. A process for the conversion of an alkylaromatic hydrocarbon charge stock containing mono-olefinic and di-olefinic hydrocarbons which comprises reacting said charge stock with hydrogen in a first reaction zone at conditions selected to hydrogenate at least a portion of said mono-olefinic and di-olefinic hydrocarbons, and including a temperature within the range of from about 300° F. to about 550° F.; reacting at least a portion of the resulting hydrogenated effluent with hydrogen in a second reaction zone at a temperature within the range of from about 1000° F. to about 1500° F., and selected to dealkylate alkylaromatic hydrocarbon in said charge stock.

3,222,411

PREPARATION OF ETHYLBENZENE BY DEALKYLATION OF HIGHER ALKYL BENZENES

Harold Beuther, Gibsonia, Jonas Dedinas, Pittsburgh, and Alfred M. Henke, Springdale, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

Filed Dec. 19, 1962, Ser. No. 245,891
11 Claims. (Cl. 260—672)



1. A process for converting an alkylbenzene selected from the group consisting of primary and secondary alkylbenzenes in which said alkyl substituent has from three to 20 carbon atoms to ethylbenzene which comprises reacting said alkylbenzene with hydrogen at a temperature of 900° F. to about 1600° F., terminating said reaction when no more than about 70 to about 90 mol percent of said alkylbenzene has been converted and thereafter recovering ethylbenzene from the reaction product, said conversion having been effected solely as a result of said alkylbenzene having been subjected to said temperature.

3,222,412

CARBONACEOUS ADSORBENTS

Ralph Burgess Mason, Denham Springs, and Paul Earl Eberly, Jr., Baton Rouge, La., assignors to Esso Research and Engineering Company, a corporation of Delaware

Filed June 27, 1960, Ser. No. 38,848
10 Claims. (Cl. 260—674)

1. An improved process for separating three-dimensional hydrocarbon molecules comprising doubly branched chain and naphthenic hydrocarbons from a feed containing other hydrocrabon types, said other hydrocarbon types comprising singly branched hydrocarbons, straight chain hydrocarbons, and aromatics which consists essentially of treating coal selected from the group consisting of anthracite bituminous with free oxygen containing gas at a temperature of about 650–850° F. and recovering 30–90 weight percent, based on said coal, of an adsorptive coal contacting said hydrocarbon feed with said adsorptive coal, which selectively excludes three-dimensional hydrocarbon molecules, in an adsorption zone absorbing said other hydrocarbon types and withdrawing from said adsorption zone a stream enriched in said three-dimensional hydrocarbons and depleted in said other hydrocarbon types.

9. An improved process for the preparation of a selective adsorbent which consists essentially of: oxidizing a coal charge at a temperature between 650 and 850° F. wherein said coal is selected from the group consisting of anthracite and bituminous forming an oxidized product of 30 to 90 weight percent of said charge; contacting the said oxidized product with a polar compound selected from the group consisting of water and an aqueous solution of a volatile electrolyte; and drying said contacted oxidized product at a temperature between 400 and 1000° F. in an inert atmosphere, thereby producing an adsorbent selective of normal and aromatic hydrocarbons.

3,222,413

EMULSION CONTROL IN HYDROCARBON PURIFICATION

Joseph F. Wolcik, Long Beach, and James A. Brumlow, Jr., Los Alamitos, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed June 22, 1961, Ser. No. 118,931
4 Claims. (Cl. 260—677)

1. In a process for the separation of tertiary amylenes from an essentially C_5 hydrocarbon fraction by intimately contacting said C_5 fraction with sufficient aqueous sulfuric acid to absorb the tertiary amylenes of said C_5 fraction to form a mixture of a fat aqueous acid phase containing absorbed tertiary amylenes, a residual C_5 hydrocarbon phase and an aqueous acid/residual C_5 hydrocarbon emulsion phase, the improvement of effecting rapid phase separation and de-emulsification by passing said mixture of aqueous acid phase, residual C_5 hydrocarbon phase and aqueous acid/residual C_5 hydrocarbon emulsion phase through a penetrable barrier of fibrous polyethylene having a fiber diameter from 1/64 to 1/8 inch and having a fiber length at least 100 times as long as its diameter prior to phase stratification whereby the rate of phase separation is materially increased and said emulsion is substantially broken.

3,222,414

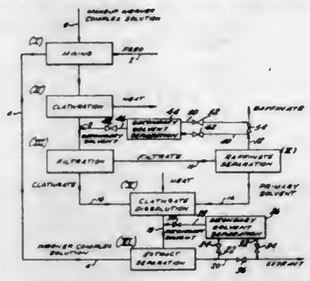
CLATHRATION PROCESS

William D. Schaeffer, Pomona, Calif., assignor to Union Oil Company of California, Los Angeles, Calif., a corporation of California

Filed Aug. 21, 1961, Ser. No. 132,881
13 Claims. (Cl. 260—674)

1. A method for resolving a feed mixture of organic

compounds differing in molecular configuration comprising: (1) forming a solution of a Werner complex in a substantially anhydrous primary solvent comprising a lower polyol and alkanolamine solution; (2) effecting intimate contact of said solution with said feed mixture;



and (3) cooling the resulting mixture to effect precipitation of a solid clathrate of at least one component of said feed mixture with said Werner complex.

3,222,415

PURIFICATION PROCESS

Herman S. Bloch, Skokie, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Oct. 16, 1961, Ser. No. 145,459
12 Claims. (Cl. 260—674)

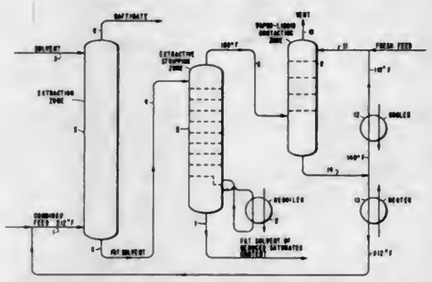
1. A process for removing (1) hydrogen halide and (2) trace quantities of water from a substantially anhydrous fluid mixture containing the same which comprises contacting said fluid mixture with a metal carbide selected from the group consisting of aluminum carbide and manganese tritacarbide and reacting at least a portion of said hydrogen halide and said water with said carbide and subsequently recovering purified fluid.

3,222,416

EXTRACTION PROCESS

Harry D. Evans, Oakland, and Eldred E. Young, Concord, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Dec. 18, 1961, Ser. No. 159,973
4 Claims. (Cl. 260—674)



1. A process for the recovery of benzene from a light hydrocarbon platformate fraction liquid feed mixture comprising:

(1) countercurrently contacting said feed mixture in a vapor-liquid contacting zone with a vapor fraction recovered from an extractive stripping zone whereby at least part of said vapor is directly condensed and wherein a combined feed fraction is formed;

(2) passing said combined feed fraction comprising a mixture of feed and condensed vapor from said extractive stripping zone to a liquid-liquid extraction zone;

(3) countercurrently contacting said combined feed fraction in said liquid-liquid extraction zone with an aromatic-selective sulfolane solvent whereby a raffinate comprising substantially non-aromatic hydrocarbons is withdrawn overhead, and wherein a fat solvent stream comprising substantially aromatics, sulfolane solvent, and a minor amount of non-aromatics is recovered;

(4) passing said fat solvent stream to an extractive stripping zone wherein a bottoms product comprising substantially sulfolane solvent and aromatics of reduced saturates content is recovered and later used as the source of aromatics product and solvent for recycle;

(5) recovering overhead from said extractive stripping zone a vapor product comprising aromatics and saturates which are directly contacted with said feed fraction in said vapor contacting zone.

3,222,417

CATALYTIC DEHYDROGENATION OF HYDROCARBONS

Lawrence J. Hughes, Hitchcock, Tex., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed June 6, 1963, Ser. No. 285,877
4 Claims. (Cl. 260—683.3)

1. An improved process for the dehydrogenation of long-chain n-paraffins to produce olefins having a corresponding number of carbon atoms in the molecule which comprises contacting n-paraffins containing from 9 to 16 carbon atoms in the vapor phase with a catalyst consisting essentially of copper molybdate supported on alumina at temperatures from about 350° C. to about 650° C. and at contact times from about 0.1 to about 10 seconds.

3,222,418

CURABLE COATING COMPOSITION COMPRISING CARBOXYL CONTAINING COPOLYMER, A SECOND COPOLYMER AND AMINE/ALDEHYDE CONDENSATE OR EPOXY RESIN

James David Murdock, St. Hilaire Station, Quebec, Canada, assignor to Canadian Industries Limited, Montreal, Quebec, Canada, a corporation of Canada

No Drawing. Filed July 13, 1961, Ser. No. 123,632
Claims priority, application Great Britain, July 19, 1960, 25,142/60; Dec. 12, 1960, 42,642/60
3 Claims. (Cl. 260—834)

1. A coating composition adapted to form a hard but flexible coating upon baking on a substrate which contains essentially a mixture selected from the group consisting of:

I. A mixture of

(A) a copolymer resulting from the copolymerization of at least one neutral monoethylenically unsaturated monomer having ethylenic unsaturation as the sole reactive group with a monoethylenically unsaturated monomer containing carboxylic acid groups; said copolymer being blended with from 5% to 30% by weight of a compatible polymeric resin selected from the group consisting of copolymers of ethylacrylate and dimethylaminoethyl methacrylate, copolymers of ethyl acrylate and acrylamide, copolymers of butyl acrylate and acrylamide, copolymers of methyl methacrylate and acrylamide, rubbery copolymers of butadiene, methyl methacrylate and dimethylaminoethyl methacrylate, and copolymers of styrene and 2-vinylpyridine and,

(B) a cross-linking agent selected from the group consisting of amine-aldehyde resins and materials containing at least two epoxide groups per molecule;

II. a mixture of

(A) a copolymer resulting from the copolymerization of at least one neutral monoethylenically unsaturated monomer having ethylenic unsaturation as the sole reactive group with acryl-

amide, said copolymer being blended with from 5% to 30% by weight of a compatible polymeric resin resulting from the copolymerization of ethyl acrylate with acrylic acid and,

(B) as cross-linking agent, an amine-aldehyde resin;

III. a mixture of

(A) a copolymer resulting from the copolymerization of at least one neutral monoethylenically unsaturated monomer having ethylenic unsaturation as the sole reactive group with a monoethylenically unsaturated monomer containing amide groups; said copolymer having been reacted with an aldehyde to form N-alkylolated amide groups, said copolymer being blended with from 5% to 30% by weight of a compatible polymeric resin resulting from the copolymerization of ethyl acrylate and acrylic acid and,

(B) as cross-linking agent, an epoxidized material containing at least two epoxide groups per molecule;

IV. a mixture of

(A) a copolymer resulting from the copolymerization of at least one neutral monoethylenically unsaturated monomer having ethylenic unsaturation as the sole reactive group with a monoethylenically unsaturated monomer containing carboxylic acid groups, said carboxylic acid groups having been in part reacted with an olefinic oxide to form β-hydroxyalkyl groups, said copolymer being blended with from 5% to 30% by weight of a compatible polymeric resin resulting from the copolymerization of ethyl acrylate and acrylamide and,

(B) as cross-linking agent, an amine-aldehyde resin; and

V. a blend of

(A) a copolymer resulting from the copolymerization of at least one neutral monoethylenically unsaturated monomer having ethylenic unsaturation as the sole reactive group with a monoethylenically unsaturated monomer having an epoxide group in the molecule and a monoethylenically unsaturated monomer containing carboxylic acid groups, and,

(B) from 5% to 30% by weight of a compatible polymeric resin resulting from the copolymerization of ethyl acrylate and acrylamide.

3,222,419

PRESSURE SENSITIVE ADHESIVE COMPOSITIONS

Benjamin D. Jubilee, Plainfield, and Leonard J. Fox, Union, N.J., assignors to National Starch and Chemical Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed July 5, 1962, Ser. No. 207,815

5 Claims. (Cl. 260—836)

1. A pressure sensitive adhesive composition comprising an organic solvent solution of a mixture of: (a) a non-crosslinking polymer selected from the group consisting of copolymers of vinyl acetate with a comonomer selected from the group consisting of the alkyl esters of acrylic and methacrylic acid wherein said alkyl groups contain from 2 to 8 carbon atoms; copolymers of vinylidene chloride with a comonomer selected from the group consisting of the alkyl esters of acrylic and methacrylic acid wherein said alkyl groups contain from 4 to 8 carbon atoms; and, homopolymers of monomers selected from the group consisting of alkyl esters of acrylic and methacrylic acid wherein said alkyl groups contain from 2 to 8 carbon atoms and wherein said homopolymers have a glass transistion temperature of less than —20° C.; and, (b) and crosslinkable copolymer capable of becoming crosslinked when heated at temperatures in the range of 150° to 275° F., said crosslinkable copolymer comprising a copolymer of at least one of the monomers used in preparing the non-crosslinking polymer of group (a) and at least one crosslinkable comonomer selected from the group consisting of N-methylol acrylamide, N-methylol methacrylamide, glycidyl acrylate, glycidyl methacrylate, hydroxyethyl acrylate, hydroxyethyl methacrylate, hydroxylpropyl acrylate and hydroxypropyl methacrylate.

3,222,420

CURABLE COATING COMPOSITION COMPRISING COPOLYMER CONTAINING GRAFTED CARBOXYL GROUPS AND EPOXY RESIN

Robert Louis Heppolette, McMasterville, Quebec, Canada, assignor to Canadian Industries Limited, Montreal, Quebec, Canada, a corporation of Canada

No Drawing. Filed July 13, 1961, Ser. No. 123,643

Claims priority, application Great Britain, July 19, 1960, 25,141/60

3 Claims. (Cl. 260—837)

1. A coating composition adapted to form a hard but flexible coating upon baking on a substrate which contains as essential ingredients (a) a copolymer of from 2 to 15 parts by weight of an α,β-monoethylenically unsaturated carboxylic acid and from 85 to 98 parts by weight of monoethylenically unsaturated monomer copolymerizable therewith and having ethylenic unsaturation as sole reactive group, the total parts being 100, the said acid and monomer having been copolymerized in the presence of from 2 to 20 parts by weight of a polymeric resin selected from the group consisting of polystyrene, poly(vinyltoluene), polyethylene of molecular weight greater than 10,000, and poly(methylmethacrylate); (b) from 5% to 55%, by weight of said copolymer, of an epoxidized material containing at least two epoxide groups per molecule; and (c) a basic catalyst.

3,222,421

POLYESTER RESINOUS COMPOSITIONS

Lennart A. Lundberg, Stamford, Conn., assignor to American Cyanamid Company, New York, N.Y., a corporation of Maine

No Drawing. Filed Dec. 1, 1961, Ser. No. 156,527

14 Claims. (Cl. 260—872)

1. A thermosetting polyester resinous composition consisting essentially of:

(A) a reactive ethylenically unsaturated polyester resin, prepared by reacting an α,β-ethylenically unsaturated polycarboxylic acid and a polyhydric alcohol,

(B) a member selected from the group consisting of monomeric diacrylate and dimethacrylate esters of a polyglycol corresponding to the general formula:



wherein m is an integer of from 2 to 3 and n is a number such that the average molecular weight of said polyglycol is from about 350 to about 850, and

(C) a polymerizable, mono-ethylenically unsaturated cross-linking monomer,

said (B) being present in an amount ranging from about 5% to about 15% by weight, said (C) being present in an amount ranging from about 5% to about 55% by weight, and the total amount of said (B) and said (C) present being from about 20% to about 60% by weight, all percentages being based on the total weight of polymerizable reactants present.

3,222,422

BLEND OF A DIENE RUBBER-BASED GRAFT COPOLYMER, AN EMULSION-POLYMERIZED STYRENE-ACRYLONITRILE TYPE INTERPOLYMER, AND A SUSPENSION-POLYMERIZED STYRENE-ACRYLONITRILE TYPE INTERPOLYMER

Lester A. Cohen, Springfield, Mass., assignor to Monsanto Chemical Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Sept. 21, 1961, Ser. No. 139,624

8 Claims. (Cl. 260—876)

1. A blend comprising (A) a suspension-polymerized monovinylidene aromatic compound-unsaturated nitrile interpolymer and (B) a sub-blend of (1) an emulsion-polymerized monovinylidene aromatic compound-unsaturated nitrile interpolymer and (2) a monovinylidene aromatic compound-unsaturated nitrile superstrate/diene rubber substrate graft copolymer containing 15–90 parts by weight of superstrate/100 parts by weight of substrate and having at least 80% of the superstrate chemically-combined with the substrate; said substrate being a rubbery polymer of 85–100% by weight of a conjugated diene of the group consisting of butadiene, isoprene, and mixtures thereof and up to 15% by weight of copolymerizable monovinylidene monomers; said graft copolymer superstrate and components A and B–1 each consisting essentially of 20–95% by weight of a chemically-combined monovinylidene aromatic compound of the group consisting of styrene, ar-halostyrenes, ar-alkylstyrenes, alpha-methylstyrene, and mixtures thereof and 80–5% by weight of a chemically-combined unsaturated nitrile of the group consisting of acrylonitrile, methacrylonitrile, and mixtures thereof; the components of the blend being so proportioned that the graft copolymer substrate constitutes 10–50% of the weight of the sub-blend and a lesser percentage in the range of 5–40% of the weight of the total blend.

3,222,423

METHOD OF INCREASING GRAFTING EFFICIENCY IN GRAFT COPOLYMERIZATION

David Samuel Petrie Roebuck, Newport, England, assignor to Monsanto Chemicals Limited, London, England, a British company

No Drawing. Filed Nov. 15, 1961, Ser. No. 152,653

11 Claims. (Cl. 260—877)

1. In a method of preparing a graft copolymer by polymerizing a free radical-polymerizable monomer of the group consisting of a monovinylidene aromatic hydrocarbon, a conjugated 1,3-diene, acrylonitrile, methacrylonitrile, a vinyl halide, a vinyl ester of an alkanoic acid, an alkyl methacrylate, and mixtures thereof in an aqueous dispersion of a preformed polymer consisting essentially of a chemically-combined monomer of the group consisting of an alpha-olefin, a monovinylidene aromatic hydrocarbon, acrylonitrile, methacrylonitrile, an alkyl methacrylate, an alkyl acrylate, a conjugated 1,3-diene, and mixtures thereof, the improvement which comprises the steps:

(a) forming free radicals on the preformed polymer chain, prior to the addition of the free radical-polymerizable monomer, by contacting a peroxy free radical polymerization initiator with the aqueous dispersion of preformed polymer in the absence of oxygen at a temperature at which the initiator decomposes to generate free radicals,

(b) adding the free radical-polymerizable monomer to the aqueous dispersion at a temperature at which any of said initiator which has not had its free radical-generating capacity completely consumed in step (a) does not generate free radicals, and

(c) conducting the graft copolymerization of the free radical-polymerizable monomer in the absence of any free radicals other than those which have been formed on the polymer chain in step (a).

3,222,424

POLYMERIZATION PROCESS USING ALPHA-HYDROXYACETOPHENONE / MONOCARBOXYLIC ACID CATALYST SYSTEM

Heinz J. Dietrich, Bethany, Conn., and Thomas Boyd, Des Peres, Mo., assignors to Monsanto Chemical Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Aug. 9, 1962, Ser. No. 215,805

11 Claims. (Cl. 260—880)

1. A process which comprises (1) dissolving a catalyst mixture consisting of:

(a) about 0.001–0.25 part by weight of alpha-hydroxyacetophenone,

(b) at least 0.05 part by weight of a monocarboxylic acid having a dissociation constant below 1.0×10^{-4} at 25° C., and

(c) up to 0.1 part by weight of a peroxy compound having a half-life of at least 10 hours in benzene at 100° C.

in 100 parts by weight of a polymerizable material of the group consisting of a monovinyl aromatic hydrocarbon, an ar-halo monovinyl aromatic hydrocarbon, mixtures thereof with one another, and mixtures thereof with lesser amounts of copolymerizable monomers and (2) heating to polymerize the polymerizable material; said process being conducted at 180–220° C. during the finishing stage of the reaction.

3,222,425

POLYMERIZATION PROCESS USING HYDROXYACETONE / MONOCARBOXYLIC ACID CATALYST SYSTEM

Heinz J. Dietrich, Bethany, Conn., and Thomas Boyd, Des Peres, Mo., assignors to Monsanto Chemical Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Aug. 9, 1962, Ser. No. 215,806

11 Claims. (Cl. 260—880)

1. A process which comprises (1) dissolving a catalyst mixture consisting of:

(a) about 0.005–0.5 part by weight of hydroxyacetone,

(b) at least 0.05 part by weight of a monocarboxylic acid having a dissociation constant below 1.0×10^{-4} at 25° C., and

(c) up to 0.1 part by weight of a peroxy compound having a half-life of at least 10 hours in benzene at 100° C.

in 100 parts by weight of a polymerizable material of the group consisting of a monovinyl aromatic hydrocarbon, an ar-halo monovinyl aromatic hydrocarbon, mixtures thereof with one another, and mixtures thereof with lesser amounts of copolymerizable monomers and (2) heating to polymerize the polymerizable material; said process being conducted at 180–220° C. during the finishing stage of the reaction.

3,222,426

POLYMERIZATION PROCESS USING ALPHA-HYDROXYCYCLOHEXANONE / MONOCARBOXYLIC ACID CATALYST SYSTEM

Heinz J. Dietrich, Bethany, Conn., and Thomas Boyd, Des Peres, Mo., assignors to Monsanto Chemical Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Aug. 9, 1962, Ser. No. 215,807

11 Claims. (Cl. 260—880)

1. A process which comprises (1) dissolving a catalyst mixture consisting of:

(a) about 0.005–0.1 part by weight of alpha-hydroxycyclohexanone,

(b) at least 0.05 part by weight of a monocarboxylic acid having a dissociation constant below 1.0×10^{-4} at 25° C., and

(c) up to 0.1 part by weight of a peroxy compound having a half-life of at least 10 hours in benzene at 100° C.

in 100 parts by weight of a polymerizable material of

the group consisting of a monovinyl aromatic hydrocarbon, an ar-halo monovinyl aromatic hydrocarbon, mixtures thereof with one another, and mixtures thereof with lesser amounts of copolymerizable monomers and (2) heating to polymerize the polymerizable material; said process being conducted at 180–220° C. during the finishing stage of the reaction.

3,222,427

POLYMERIZATION PROCESS USING ALPHA-METHYLBENZOIN/MONOCARBOXYLIC ACID CATALYST SYSTEM

Thomas Boyd, Des Peres, Mo., and Heinz J. Dietrich, Bethany, Conn., assignors to Monsanto Chemical Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Aug. 9, 1962, Ser. No. 215,808
11 Claims. (Cl. 260—880)

1. A process which comprises (1) dissolving a catalyst mixture consisting of:

(a) about 0.1–0.7 part by weight of alpha-methylbenzoin,

(b) at least 0.05 part by weight of a monocarboxylic acid having a dissociation constant below 1.0×10^{-4} at 25° C., and

(c) up to 0.1 part by weight of a peroxy compound having a half-life of at least 10 hours in benzene at 100° C.

in 100 parts by weight of a polymerizable material of the group consisting of a monovinyl aromatic hydrocarbon, an ar-halo monovinyl aromatic hydrocarbon, mixtures thereof with one another, and mixtures thereof with lesser amounts of copolymerizable monomers and (2) heating to polymerize the polymerizable material; said process being conducted at 180–220° C. during the finishing stage of the reaction.

3,222,428

POLYMERIZATION PROCESS USING ACETOIN/MONOCARBOXYLIC ACID CATALYST SYSTEM

Thomas Boyd, Des Peres, Mo., and Heinz J. Dietrich, Bethany, Conn., assignors to Monsanto Chemical Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Aug. 9, 1962, Ser. No. 215,809
11 Claims. (Cl. 260—880)

1. A process which comprises (1) dissolving a catalyst mixture consisting of:

(a) 0.02–0.4 part by weight of acetoin,

(b) at least 0.05 part by weight of a monocarboxylic acid having a dissociation constant below 1.0×10^{-4} at 25° C., and

(c) up to 0.1 part by weight of a peroxy compound having a half-life of at least 10 hours in benzene at 100° C.

in 100 parts by weight of a polymerizable material of the group consisting of a monovinyl aromatic hydrocarbon, an ar-halo monovinyl aromatic hydrocarbon, mixtures thereof with one another, and mixtures thereof with lesser amounts of copolymerizable monomers and (2) heating to polymerize the polymerizable material; said process being conducted at 180–220° C. during the finishing stage of the reaction.

3,222,429

POLYMERIZATION PROCESS USING BENZOIN/MONOCARBOXYLIC ACID CATALYST SYSTEM

Thomas Boyd, Des Peres, Mo., and Heinz J. Dietrich, Bethany, Conn., assignors to Monsanto Chemical Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Aug. 9, 1962, Ser. No. 215,810
11 Claims. (Cl. 260—880)

1. A process which comprises (1) dissolving a catalyst mixture consisting of:

(a) 0.02–0.08 part by weight of benzoin,

(b) at least 0.05 part by weight of a monocarboxylic acid having a dissociation constant below 1.0×10^{-4} at 25° C., and

(c) up to 0.1 part by weight of a peroxy compound having a half-life of at least 10 hours in benzene at 100° C.

in 100 parts by weight of a polymerizable material of the group consisting of a monovinyl aromatic hydrocarbon, an ar-halo monovinyl aromatic hydrocarbon, mixtures thereof with one another, and mixtures thereof with lesser amounts of copolymerizable monomers and (2) heating to polymerize the polymerizable material; said process being conducted at 180–220° C. during the finishing stage of the reaction.

3,222,430

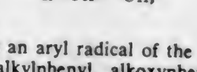
NOVEL POLYMERIZATION PROCESS USING A CATALYST SYSTEM COMPRISING AN ARYLETHYLENE OXIDE AND OXYGEN

Alva F. Harris, Wilbraham, and Fernao Rodrigues, Ludlow, Mass., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed Jan. 15, 1963, Ser. No. 251,482
12 Claims. (Cl. 260—880)

1. A process which comprises (1) dissolving a catalyst mixture consisting of:

(a) at least 0.0001 part by weight of an arylethylene oxide corresponding to the formula:



wherein R is an aryl radical of the group consisting of phenyl, alkylphenyl, alkoxyphenyl, halophenyl, naphthyl, alkylnaphthyl, halonaphthyl, and biphenyl radicals,

(b) about 0.001–0.03 part by weight of oxygen,

(c) 0.05–1 part by weight of a monocarboxylic acid having a dissociation constant not higher than 1.0×10^{-4} at 25° C., and

(d) up to 0.1 part by weight of a peroxy compound of the group consisting of hydrogen peroxide and an organic peroxy compound having a half-life of at least 10 hours in benzene at 100° C.

in 100 parts by weight of a polymerizable material comprising at least a major portion of a monovinyl aromatic monomer of the group consisting of a monovinyl aromatic hydrocarbon, an ar-halo monovinyl aromatic hydrocarbon, and mixtures thereof and (2) heating to polymerize the polymerizable material; said process being conducted at 180–220° C. during the finishing stage of the reaction.

3,222,431

PRINTABLE POLYETHYLENE CONTAINING OXIDIZED, THERMALLY DEGRADED POLYETHYLENE

George R. Greear and John W. Tamblyn, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed July 18, 1956, Ser. No. 598,525
5 Claims. (Cl. 260—897)

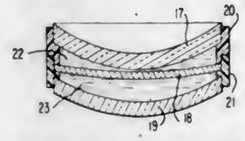
1. A new composition of matter consisting of solid polyethylene having a molecular weight within the range of 10,000 to 30,000 and 1 to 20 parts by weight of the composition of a thermally degraded and oxidized polyethylene having a molecular weight within the range of 1000 to 6000 and an acid number within the range of 5 to 35.

3,222,432

METHODS OF PRODUCING OPTICAL AND OPHTHALMIC LENSES FROM THERMOSETTING RESIN MATERIALS

René Grandperret, Saint-Maur, Seine, France, assignor to Lentilles Ophtalmiques Rationnelles, Saint-Maur, Seine, France, a corporation of France

Original application June 12, 1958, Ser. No. 741,629. Divided and this application Apr. 8, 1963, Ser. No. 271,109
Claims priority, application France, Apr. 25, 1958, 764,067, Patent 1,204,627
8 Claims. (Cl. 264—1)



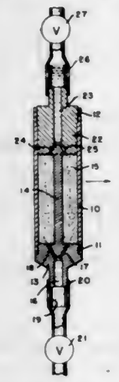
1. A method of manufacturing ophthalmic lenses of thermosetting resin having a thickness which varies from the center to the periphery thereof, comprising introducing liquid monomeric resin into a mold constituted by two plates, at least one of said plates being a thin plate of quenched glass having parallel opposite faces, said plates having the configuration of the corresponding face of the lens to be produced, the mold being bordered edgewise by a quantity of flexible material, heating the mold until the resin gels, removing said flexible material from the periphery of the gelled resin, applying a layer of said monomeric resin to the exposed periphery of the gelled resin, heating the mold until the resin polymerizes to form a solid lens, and removing the plates from the lens.

3,222,433

METHOD OF CASTING PROPELLANT WITHIN A ROCKET MOTOR CASING

Nicolas Makay, Jr., Rua Joaquim Nabuco 179, Apto. 602, Rio de Janeiro, Brazil

Filed July 18, 1961, Ser. No. 124,908
3 Claims. (Cl. 264—3)



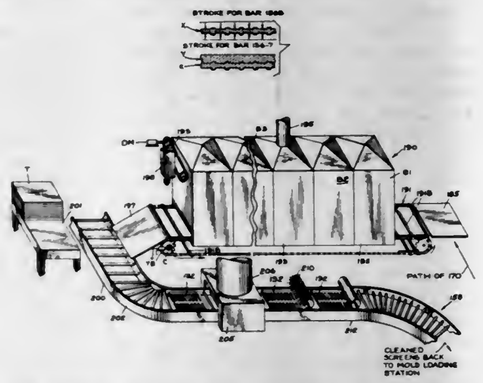
1. The method of making solid propellant fuel filled rocket motors which comprises filling a casing with granular oxidizer; applying closure members having passage means therethrough to each end of said casing made from a material capable of being changed into a different phase facilitating removal; applying a vacuum through one of said closures to evacuate all air and gas between said granules; while said vacuum is being applied through said one closure, admitting an unreacted polymerizable liquid fuel-binder through the other closure until the interstices between said granules are completely filled; heating said unreacted liquid filled casing to a sufficient temperature and for a sufficient time to effect polymerization of said fuel-binder; and thereafter subjecting said assembly to a condition effecting a phase change of said closure members for removing the same.

3,222,434

METHOD OF PRODUCING AN ACOUSTICAL TILE

Cresswell E. Stedman, deceased, late of Chicago, Ill., by Elizabeth K. Stedman, administratrix, Chicago, Ill., assignor to U.S. Perlite Corporation, Chicago, Ill., a corporation of Delaware

Original application Jan. 26, 1959, Ser. No. 788,998, now Patent No. 3,103,254, dated Sept. 10, 1963. Divided and this application June 14, 1963, Ser. No. 288,046
1 Claim. (Cl. 264—25)



The method of making an acoustical tile from a tile-forming composition, which includes urea as a binder, in a moist state and which is settable by heat, which comprises the steps of providing a mold having a generally rectangular-shaped mold cavity, inserting into the mold cavity a pallet comprised of a generally rectangular-shaped open grill work of bars having spaces therebetween, filling the said mold cavity over the said pallet with a mass of the tile-forming composition, compacting the said tile-forming composition in the said mold cavity and over the said pallet to provide a generally rectangular tile-shaped body containing the binder in a moist state, removing the pallet with the compacted tile-shaped body thereon from the said mold cavity and advancing the said pallet with the said tile-shaped body thereon through a heat-curing oven and subjecting the tile-shaped body on the pallet to radiant heating in progressive stages and at intervals wherein the progressive stages of heating involve progressively higher temperatures ranging from about 210° F. to about 320° F. at least, as it travels through the heat curing oven so that the binder in the tile-shaped body is gradually dried and cured in stages to prevent warping of the tile.

3,222,435

INJECTION MOLDING OF CERAMIC CORES

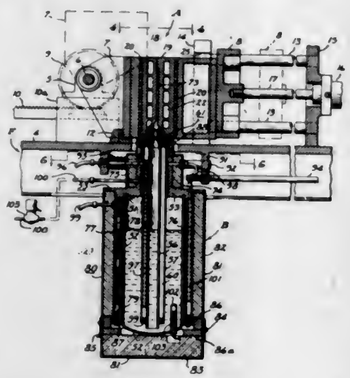
Edward J. Mellen, Jr., 2123 Lee Road, East Cleveland, Ohio; John M. Webb, 318 Overlook Drive, Chagrin Falls, Ohio; Robert J. de Fasselle, Timberidge Trail, Gates Mills, Ohio; and John A. Dudek, 261 E. 242nd St., Euclid, Ohio

Filed Apr. 30, 1963, Ser. No. 276,753
6 Claims. (Cl. 264—28)

1. A process for mass producing ceramic cores in a closed metal mold comprising preparing a ceramic slurry comprising a major proportion by weight of refractory particles and a minor proportion of a binder for said refractory particles, cooling the slurry to a temperature be-

tween −75° C. and 0° C., feeding the refrigerated slurry through a metal supply tube into the mold cavity by applying a pressure to the slurry sufficient to force all of the residual gas out of the mold cavity and to fill the cavity completely in no more than about 3 seconds, heating the mold cavity to cause the slurry to harden rapidly while simultaneously maintaining the temperature of the supply tube at about −20° to −75° C. to prevent hardening of the slurry at the entrance to the mold and in said supply passage, holding said supply tube out of contact with the metal of said mold to minimize heat transfer from said mold to said supply tube, reducing the pressure on said slurry to permit opening of the mold after the pattern in the mold cavity has become rigid, opening the mold, removing the pattern from the mold cavity to complete a first molding cycle, closing the mold, and repeating the cycle by again feeding the refrigerated ceramic slurry through said supply tube into said mold cavity.

3. A process for molding a ceramic pattern in a split die having two halves which fit together to form a mold cavity, motor means for moving said die halves to open and close the die, and fluid passages in said die halves for carrying heating and cooling fluid through the die, said process comprising the steps of forming a ceramic slurry comprising finely comminuted refractory particles and a binder for said particles, maintaining a temperature in



said mold cavity between 50° C. and 150° C. when heating fluid is directed to said cavity, placing said ceramic slurry in a closed insulated vessel mounted below the closed die and having an upright supply tube therein extending through the top of said vessel between the inlet to said mold cavity and the bottom portion of said vessel, periodically supplying a dry gas to said vessel at a high pressure by means of a gas valve means, maintaining the temperature of the slurry in said vessel between −75° C. and 0° C., preventing the supply of gas under pressure to said vessel until the die is fully closed, opening said gas valve means to supply the gas to said vessel at a pressure of at least 25 pounds per square inch gage and to initiate rapid flow of the ceramic slurry upwardly through said supply tube, closing said gas valve and initiating the flow of heating fluid through said die a short predetermined period of time after said rapid flow is initiated when the mold cavity is completely filled with ceramic material, venting said vessel a predetermined period of time not in excess of 2 minutes after said rapid flow is initiated to permit gravity flow of the ceramic material in said supply tube, preventing the opening of said die by said motor means until the pressure in said vessel is below a predetermined amount, opening said die, and initiating the flow of cooling fluid through said die before the die is again closed and filled with ceramic material.

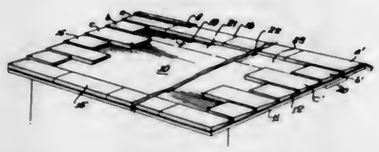
3,222,436

METHOD OF CASTING CEMENTITIOUS SHINGLES ON A SLOPING ROOF

Carroll L. Woodworth, Glendale, Ariz., assignor to Ari-Zonolite Co., Glendale, Ariz., a corporation of Illinois

Original application May 22, 1961, Ser. No. 111,548. Divided and this application Apr. 29, 1963, Ser. No. 276,391

6 Claims. (Cl. 264—34)



1. A method of forming a tiled roof surface of cementitious material on a sloping support surface, including the steps of:

(a) casting on an upper portion of said sloping support surface an upper tile of cementitious material having an upper edge and having a lower edge spaced downwardly along said sloping support surface from said upper edge of said upper tile;

(b) restraining the upper portion of the cementitious material of said lower edge of said upper tile against movement downwardly along said sloping support surface while simultaneously permitting cementitious material below said upper portion of said lower edge of said upper tile to flow downwardly along said sloping support surface to form a lower, spill-out portion;

(c) removing the restraint against movement of said upper portion of said lower edge of said upper tile downwardly along said sloping support surface after said lower edge of said upper tile has set sufficiently to substantially retain its cast shape; and

(d) casting on a lower portion of said sloping support surface, spaced downwardly along said sloping support surface from said upper portion thereof, a lower tile of cementitious material having an upper edge overlying said lower, spill-out portion of said upper tile and having a lower edge spaced downwardly along said sloping support surface from said upper edge of said lower tile.

3,222,437

PROCESS FOR SIMULTANEOUSLY MOLDING AND EXPANDING STEREOREGULAR POLYPROPYLENE TO FORM A HINGE

William M. Schilling, West Chester, Pa., assignor to Hercules Powder Company, Wilmington, Del., a corporation of Delaware

Filed June 18, 1962, Ser. No. 203,214

2 Claims. (Cl. 264—54)



1. A process for simultaneously molding and expanding stereoregular polypropylene to produce an article of manufacture comprising two body portions of expanded stereoregular polypropylene of substantially uniform thickness joined by an integrally molded hinge of substantially unexpanded stereoregular polypropylene which comprises heating in a mold a sheet of unexpanded stereoregular polypropylene having a blowing agent admixed therewith and causing the major portions of said sheet to expand to a uniform thickness while restraining a straight and relatively narrow section of said sheet from expanding by contacting during the period when expansion is being effected, at least one surface of the area which is to serve as the aforesaid straight and narrow section with an elongated substantially V-shaped member within the mold.

3,222,438

HEAT RESISTING MATERIAL AND METHOD FOR PRODUCING IT

Norman Lawrence Parr and George Frank Martin, Ridge, Wareham, Dorset, England, assignors to National Research Development Corporation, London, England, a British corporation

No Drawing. Filed Feb. 18, 1960, Ser. No. 9,416

Claims priority, application Great Britain, Feb. 27, 1959, 6,866/59

7 Claims. (Cl. 264—66)

4. A method of making an intricate shaped body of self-bonded silicon nitride designed to withstand high temperature and to resist creep and thermal shock at such temperature, comprising the steps of compacting powdered silicon into a block, prefiring the block in an atmosphere of nitrogen at a temperature in the region of 1000° C. for a time sufficient to effect such bonding of the silicon that the block can be gripped firmly and machined without producing destruction, machine working the block to the required intricate shape, firing the shaped body in an atmosphere of nitrogen initially at a temperature below the melting point of silicon for sufficient time to produce a rigid network of silicon nitride retaining the uncombined silicon, and then firing in nitrogen at a temperature above the melting point of silicon to complete nitriding of the silicon.

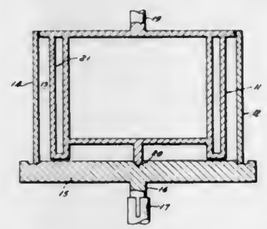
3,222,439

METHOD OF CASTING POLYMERIZABLE RESINS CONTAINING LAMELLAR PARTICLES

Rene A. Bolomey, Peekskill, and Charles E. Marks, Garrison, N.Y., assignors to The Mearl Corporation, Ossining, N.Y., a corporation of New York

Filed Feb. 20, 1963, Ser. No. 259,959

6 Claims. (Cl. 264—108)



1. A method for forming a plastic article incorporating light-reflecting lamellae dispersed throughout the thickness thereof and oriented substantially uniformly in a given direction parallel to a pair of opposite surfaces of said article, which comprises casting a substantially homogeneous dispersion of said lamellae in a polymerizable resinous material in layer form and, during gelling of the layer, subjecting the opposite faces thereof to a differential, substantially continuous unidirectional force acting parallel to said faces, said force producing differential orienting forces extending unidirectionally and parallel to one another across substantially the entire thickness of said layer to effect the substantially uniform orientation of said light-reflecting lamellae.

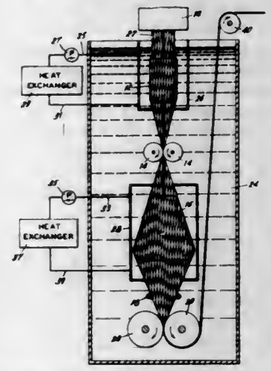
3,222,440

PROCESS AND APPARATUS FOR THE PRODUCTION OF ORIENTED PLASTIC NET

John J. Murphy, New York, N.Y., assignor to Union Carbide Corporation, a corporation of New York

Filed July 30, 1962, Ser. No. 213,281

9 Claims. (Cl. 264—167)



1. A process producing oriented tubular plastic net, comprising: forming extruded unset tubular plastic net; cooling said plastic net to a setting temperature thereof to set the net; passing said set tubular net over a mandrel having a diameter substantially greater than the internal diameter of said net; applying an axial stretching force to said net as it is withdrawn from said mandrel; subjecting said net, subsequent to the setting thereof and prior to passage over said mandrel, to a restraining force in cooperation with said axial stretching force to control the degree of axial stretching force applied to said net and substantially prevent said axial stretching force from extending to the unset portion of the extruded net, thereby simultaneously stretching the portion of said net around said mandrel in both axial and radial directions, said net being maintained at an orientation temperature while being stretched.

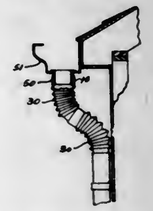
3,222,441

METHOD FOR MAKING A PLASTIC BELLOWS ELBOW WITH SPIGOT AND SOCKET ENDS

Seymour N. Schlein, University Heights, Ohio, assignor to The Fanner Manufacturing Company, a Division of Textron, Inc., Cleveland, Ohio, a corporation of Rhode Island

Original application Feb. 20, 1961, Ser. No. 90,383, now Patent No. 3,076,669, dated Feb. 5, 1963. Divided and this application Dec. 17, 1962, Ser. No. 245,163

1 Claim. (Cl. 264—230)



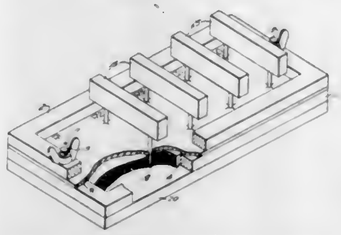
The method of connecting a guttering having a drain projection with a downspout which comprises forming a coupling of a material which may be caused to be pliable upon the application of heat and which has a limited cold flow characteristic at low temperatures and a plastic memory and wherein the coupling has a bendable intermediate portion and flexible tapered end portions substantially rectangular in cross section including sides for opposed off-

sets and opposed thickened portions to facilitate installation, warming said coupling to the point where it can be distorted and bent from its original condition, and connecting the gutter projection with the downspout by said coupling while it is still in the distortable and bendable state by distorting one flexible tapered end portion of the coupling by forcing it over said projection with at least the said portion of each of the side walls in contact with the outer wall of the projection, bending said intermediate portion of the coupling to align the opposite flexible tapered end portion of the coupling with the downspout, forcing said opposite end portion into the downspout with the sides having opposed offsets pressed inwardly and at least the corner portions in contact with the inner wall of the downspout, and allowing the assembly to cool so that due to the plastic memory and cold flow characteristics of the coupling material, both end portions of the coupling will gradually shrink wherein said one end portion will conform closely to and engage said projection substantially throughout the full length and inner periphery of said first end portion, and wherein the opposed offsets of said opposite end portion will gradually move out into engagement with the downspout substantially throughout the full length and outer periphery of said opposite end portion.

3,222,442
METHOD OF CASTING ELECTRICAL COMPONENT MOUNTING BOARDS

Herbert E. Parker, Newburyport, Richard A. Sullivan, Danvers, and Richard R. Whipple, Haverhill, Mass., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Original application Jan. 14, 1960, Ser. No. 2,376, now Patent No. 3,076,230, dated Feb. 5, 1963. Divided and this application Oct. 5, 1962, Ser. No. 228,548
1 Claim. (Cl. 264—277)



The method of casting electrical component mounting boards which supports one or more components comprising:

positioning a frame about the periphery of a pre-formed base of polystyrene foam, said base and frame forming a temporary mold, locating a non-porous pierceable surface having indicia markings thereon on the polystyrene foam,

forcing the terminals of one or more components through said indicia markings of the non-porous, pierceable surface and into the polystyrene foam base

introducing an insulating casting material into the cavity defined by said temporary mold and about at least a portion of the terminals extending from polystyrene foam base,

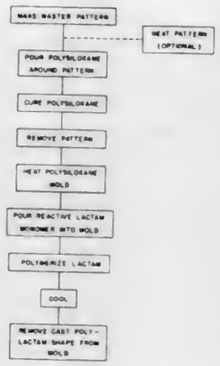
solidifying the insulating material to form a cast mounting board and to embed said portion of the component terminals therein, and

removing at least the cast mounting board with said portion of the component terminals embedded therein from said polystyrene foam base and with said component terminal ends projecting a short distance from the bottom surface of the cast mounting board.

3,222,443
METHOD OF MOLDING LACTAMS IN A POLYSILOXANE MOLD

Carl W. Dames, Jr., Reading, and Richard W. Boyer, West Lawn, Pa., assignors, by mesne assignments, to The Polymer Corporation, a corporation of Pennsylvania

Filed Dec. 4, 1962, Ser. No. 242,111
22 Claims. (Cl. 264—313)



1. A process for forming a shaped polylactam article comprising the steps of charging a higher lactam containing at least 6 carbon atoms in the lactam ring into a cured polysiloxane elastomeric mold obtained from acid-free siloxane polymers, and polymerizing said lactam in situ in said polysiloxane mold under substantially anhydrous conditions.

3,222,444
METHOD OF PRODUCING PLASTIC ARTICLES

John L. Lang, 42 Windgate Drive, Box 820–III, Murrysville, Pa.

Filed May 28, 1964, Ser. No. 370,803
3 Claims. (Cl. 264—317)



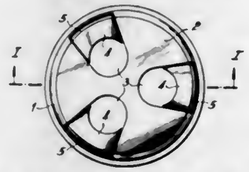
1. In a method of producing a substantially rigid plastic strainer the steps which comprise wrapping a mandrel with a soluble foil having elements projecting away from the mandrel, placing the so wrapped mandrel in a suitable mold such that the soluble elements projecting away from the mandrel extend to the surface of the mold, filling the mold with a substantially monomeric material capable of polymerizing to a rigid resin, polymerizing said monomer in situ to form a polymerized tubular element through which the soluble elements extend, and thereafter withdrawing the mandrel and subjecting the so-formed article to the action of a solvent which will dissolve the foil but not the formed article to provide radially-extending openings in the polymerized tubular element.

ELECTRICAL

3,222,445
COVER WITH REMOVABLE PARTS FOR ELECTRIC FURNACES

Alfred Rumberg, Hermulheim, near Cologne, Werner Krauss and Gunter Rittershausen, Knapsack, near Cologne, Wilhelm Dämgen, Alstadten, near Cologne, and Rolf Frühling, Balkhausen, Bezirk Cologne, Germany, assignors to Knapsack Aktiengesellschaft, Knapsack, near Cologne, Germany, a corporation of Germany

Filed Feb. 10, 1964, Ser. No. 344,525
Claims priority, application Germany, May 17, 1960, K 40,732
5 Claims. (Cl. 13—9)

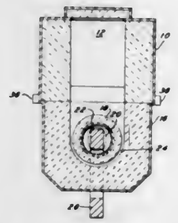


1. A cover for electric arc furnaces which comprises an annular jacket adapted to rest on the top annular edge of a furnace shell, a substantially circular cover plate supported by said jacket, apertures in said plate for accommodating electrodes, said apertures being disposed around the center of the cover plate, removable cut-outs in said cover plate extending from the outer edge of said plate to the allotted electrode apertures, and removable cut-outs in said jacket wall connected in depending relationship with said cut-outs at the outer edges thereof, the edges of the cut-outs of said cover plates being straight lines converging in the direction of the electrodes when supported in the apertures and being tangent to the electrode apertures.

3,222,446
BUSHING INSULATOR FOR CORE TYPE INDUCTION FURNACE

George F. Kolle, Yardley, Pa., assignor to Inductotherm Linemelt Corp., Rancocas, N.J., a corporation of New Jersey

Filed July 24, 1962, Ser. No. 212,032
7 Claims. (Cl. 13—29)

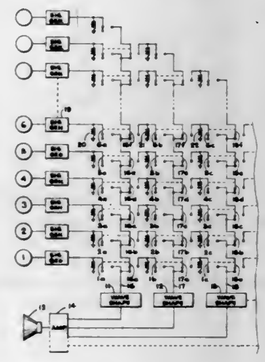


5. A liner for a core-type electric induction furnace comprising a split, thermally conductive, non-magnetic, hollow, elongated, metal former of uniform cross section, said former having a split along the axial length thereof, and a thermally conductive, electrically insulating refractory material on the entire outer peripheral surface of said former and in said split, said refractory material being metallurgically bonded to said metal former, said refractory material having a thermal conductivity approaching the thermal conductivity of the former.

3,222,447
MULTIPLE USE OF WAVE SHAPING CIRCUITS FOR TONE PRODUCTION

Jack C. Cookerly, 7655 Atoll Ave., North Hollywood, Calif., and George R. Hall, 13613 Huston St., Sherman Oaks, Calif.

Filed Nov. 20, 1961, Ser. No. 153,581
3 Claims. (Cl. 84—1.19)



1. In an instrument including a total number of tone signal generators and a like number of operating keys therefor in which no more than a given number of said keys less than said total number are normally played simultaneously and which includes a reproducing means providing sounds initiated by said tone signals, the combination including:

(a) a plurality of wave shaping circuits having outputs connected to said reproducing means and equal in number to said given number; and

(b) a switching means connected between said total number of keys and the inputs to said wave shaping circuits, said switching means connecting successive tone signals played to only those wave shaping circuits which are not already connected to receive tone signals whereby any combination of notes played simultaneously not exceeding in number said given number are individually passed to said wave shaping circuits so that said given number of wave shaping circuits are sufficient to accommodate tone signals selected for normal playing from said total number of keys.

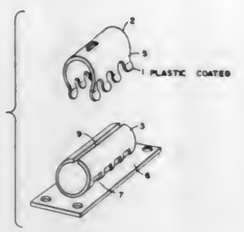
3,222,448
ELECTRICAL COMPONENT HOLDER

John W. Rogers, Lynn, and Armand J. Viscosi, Methuen, Mass., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Army

Filed June 23, 1964, Ser. No. 377,432
4 Claims. (Cl. 174—35)

1. An electrical component holder including: a support member; a base member connected to said support member so as to define a plurality of sides, each of said sides having a plurality of indentations therein; an electrical component mounted between the sides of said base member and substantially surrounded by the base member; and a spring clip mounted on said base member and including a plurality of spring fingers, each of said fingers having a tip which is completely coated with a resilient semi-rigid material and is received in one of said plurality of indenta-

tions, whereby the electrical component will be firmly held in position, and said resilient coating on said fingers will



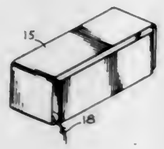
substantially dampen vibration of said base member relative to said clip.

3,222,449

MAGNETIC SHIELD ARRANGEMENTS

Edward L. Garwin, Redondo Beach, and Lee O. Heflinger, Torrance, Calif., assignors, by mesne assignments, to GTC Corporation, a corporation of Texas

Filed July 23, 1962, Ser. No. 211,507
3 Claims. (Cl. 174—35)



1. A magnetic shield for shielding an enclosed device comprising an open-ended cylinder enclosing said device and consisting of magnetic material, two cylindrical caps of magnetic material closing the open ends of said cylinder, and first, second, third and fourth elements of magnetic material, each element comprising a sheet of rectangular outline and closed upon itself to provide a continuous loop of substantially rectangular cross section, said four elements nesting in succession inside each other in such a manner that said second element is disposed to cover the open sides of said first element, said third element covering the open sides of said second element, and said fourth element covering the open sides of said third element, with the open sides of the respective elements being disposed in planes substantially parallel to the longitudinal axes of the cylinder and of the device.

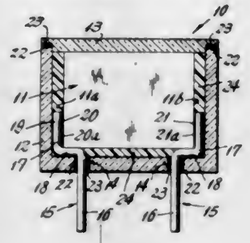
3,222,450

ENCAPSULATING FOR ELECTRICAL COMPONENT AND TERMINAL MEANS FOR USE THEREWITH

Henry George Lee, Denham, Bucks, England, and Barton L. Weller, Monroe, and Harlan P. Tripp, Easton, Conn., assignors to Vitramon, Incorporated, Monroe, Conn., a corporation of Delaware

Filed June 20, 1963, Ser. No. 289,202
3 Claims. (Cl. 174—52)

1. An encapsulated electrical component comprising a component body having specific electrical characteristics; a unitary open ended casing adapted to house said body and having upstanding side wall means and a closed end portion, said body being inserted through said open end, said casing being formed with a plurality of spaced openings in the closed end portion thereof; terminal means disposed in each of said openings and communicating outwardly thereof, said terminal means each including a tubular body portion positioned in its respective opening in said casing, said tubular body portion having an open end exposed outwardly of said casing, and a substantially flattened foot portion formed integral with said tubular body portion and offset therefrom, said foot portion extending inside said casing adjacent and



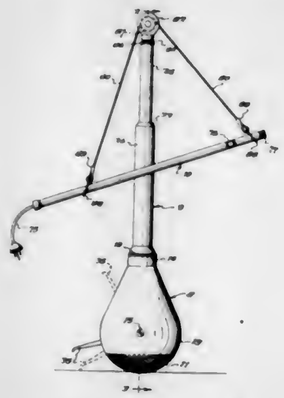
parallel said upstanding side wall means, said offset foot portions being predeterminately spaced to receive said body, said body being positioned in a predetermined manner between said offset foot portions in electrical engagement therewith, whereby said body is electrically communicated outwardly of said casing through said terminal means for connection in an electrical circuit; and potting means filling the voids in said casing between the walls thereof and said component body.

3,222,451

IMPLEMENT SUPPORTING DEVICE WITH A STANDARD SUPPORTED IMPLEMENT

John B. Gormley, 60 McLellan Circle, Buffalo, N.Y.

Filed Apr. 23, 1963, Ser. No. 275,101
13 Claims. (Cl. 174—70)



1. A supporting device including a base,
an upright standard comprising two members one of which is mounted on said base and the other of which is adjustable lengthwise of said first mentioned member,
means for adjusting said other standard member and supporting it in adjusted position,
a cord supported intermediate of its ends on the upper end of said other standard member to slide in the direction of its length crosswise thereof,

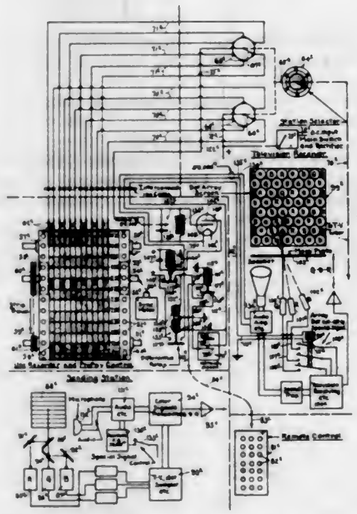
and an adjustable rod extending crosswise of said standard for supporting a weight on one end thereof, the ends of said cord being secured to said adjustable rod at opposite sides of said standard, whereby sliding of said cord relatively to said standard enables said rod to be moved into different angular relations to said standard.

3,222,452

PRE-PAY OR SUBSCRIPTION RADIO OR TELEVISION OPERATIONS

Thomas A. Banning, Jr., 5500–5520 S. Shore Drive, Chicago, Ill.

Original application July 16, 1956, Ser. No. 597,950, now Patent No. 3,070,652, dated Dec. 25, 1962. Divided and this application Dec. 17, 1962, Ser. No. 245,277
7 Claims. (Cl. 178—5.2)



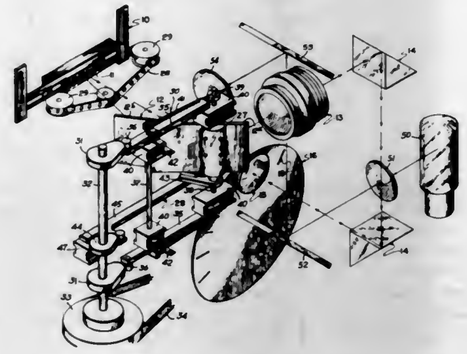
1. In a signalling system, a sending station for the transmission of signals translatable to produce a program of intelligence, and a plurality of receiving stations each of which includes means constituted to receive signals so transmitted by the sending station and translate to the user of such receiving station said signals, which signals when translated produce to the user a first intelligible translation of said program, said receiving means including means in a control station remote from said receiving station, constituted to cause such receiving station to receive and translate to the user, the signals which when translated by the receiving station produce to the user a second and different quality intelligible translation of said same program, said control station including means to make operative or inoperative the means which is constituted to cause such receiving station to receive and translate to the user of such receiving station said program of different quality; wherein the control station includes means constituted to cause selected receiving stations to receive and translate to the users of such receiving stations, the signals which when translated by the receiving stations so selected produce to the users of said selected receiving stations a second and different quality intelligible translation of said same program, said control station including means corresponding to each such selected receiving station, to make operative or inoperative the means which is constituted to cause each such receiving station to receive and translate to the user of such station, said same program of different quality.

3,222,453

OPTICAL SCANNING SYSTEM

William A. Whitesell, Albuquerque, N. Mex., and Harvey L. Cook, Jr., Falls Church, Va., assignors to Farrington Electronics Inc., Alexandria, Va., a corporation of Massachusetts

Filed July 6, 1962, Ser. No. 208,022
7 Claims. (Cl. 178—7.6)



1. Apparatus for scanning a flat planar object surface along a rectilinear scanning zone paralleling a preselected axis of the object surface comprising a light reflecting member having a planar light reflecting surface for receiving an incident beam of light from an elemental area of the object surface and redirecting the light along a reflected beam inclined to the incident beam toward fixed light sensing means, a fixed lens intercepting said reflected beam to focus an image of said elemental area in a selected image plane adjacent said light sensing means, motor driven means for continuously oscillating said light reflecting member through a scanning stroke about a pivot axis at said reflecting surface arranged parallel to the plane of said object surface and perpendicular to said preselected axis for sweeping said incident beam periodically back and forth rectilinearly across substantially the full dimension of said object surface to scan the elemental areas thereof intercepting said incident beam, and motor driven means for rectilinearly reciprocating said light reflecting member concurrently with oscillation thereof in a direction parallel to said reflected beam to continuously maintain images of said elemental areas sharply focused in said selected image plane, said means for oscillating said light reflecting member including means coordinated with the rectilinear reciprocation of said light reflecting member for continuously maintaining constant the sweep velocity of the incident beam at the planar object surface during its scanning stroke.

3,222,454

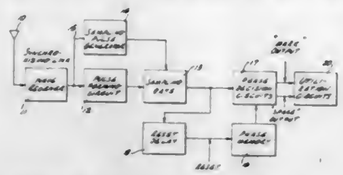
DIGITAL COMPARISON CIRCUITS

Ferril A. Losee, Los Angeles, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Continuation of application Ser. No. 774,782, Nov. 18, 1958. This application June 18, 1962, Ser. No. 203,282
14 Claims. (Cl. 178—88)

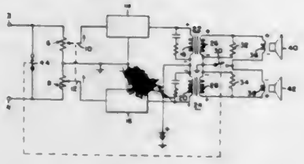
1. A receiver for demodulating a wave modulated by discrete shifts in the phase thereof in a predetermined manner, said wave having a modulation period, particular digital information being denoted by particular relationships between the phases of said wave during successive modulation intervals, said receiver comprising: wave-responsive means for developing phase-indicating pulses whose relative time positions are indicative of the relative phase of corresponding cycles of said wave, sampling means coupled to said wave-responsive means and syn-

chronized with said modulation period for selecting an individual one of said phase-indicating pulses during each modulation interval of said wave, digital phase memory means coupled to said sampling means for developing a periodic train of gate pulses having the same repetition frequency as that of said phase-indicating pulses and whose phase is successively synchronized by each selected one



of said phase-indicating pulses, and pulse-comparison means coupled to said sampling means and to said phase memory means for comparing the time of occurrence of each of said selected phase-indicating pulses with a different one of said gate pulses synchronized by an earlier one of said selected phase-indicating pulses to provide an output signal indicative of the relative phase of said wave during successive modulation intervals.

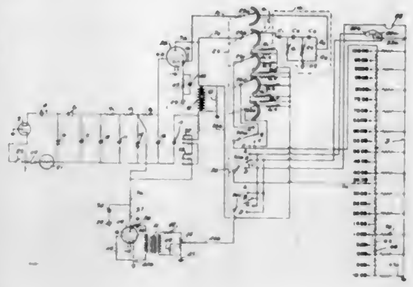
3,222,455
AURAL STEREOPHONIC BALANCE INDICATOR
Edwin R. Golik, Oreana, Ill., assignor to General Electric Company, a corporation of New York
Filed May 31, 1962, Ser. No. 198,834
4 Claims. (Cl. 179—1)



1. A circuit for aiding in indicating where the gains of two separate audio signal channels are in balance comprising a first channel having a first output transformer, a second channel having a second output transformer, each of said transformers having a secondary winding with a predetermined polarity, means electrically connecting an end of one of said secondary windings to an end of like polarity of the other of said secondary windings, first and second load impedances, and a single pole single throw switch connected so that said first and second load impedances are respectively connected in parallel with said secondary windings when said switch is closed and said secondary windings and said load impedances are connected in series when said switch is open.

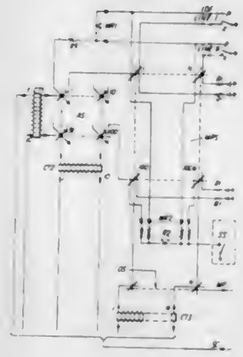
3,222,456
DIAGNOSTIC AUDIOMETER
Abraham Hyman, Nassau, N.Y., assignor to the United States of America as represented by the Secretary of the Army
Filed July 12, 1962, Ser. No. 209,476
7 Claims. (Cl. 179—1)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. An audiometer circuit for screening and diagnostic use comprising phase-shift oscillator means including a plurality of frequency determining networks, frequency masking generator means, audio transformer means connected to said oscillator means, step attenuating resistive network means selectively connected to said audio transformer means, a plurality of transducers selectively connected to said attenuation means, selective and interrupting switch means connecting said masking means to said selected transducer means to nullify the oscillator signal



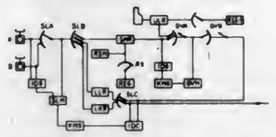
to a selected transducer during diagnosis and means for energizing said oscillator and masking means.

3,222,457
SUBSCRIBERS' METERING SYSTEMS
Francesco Ambrosino, London, England, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Sept. 10, 1962, Ser. No. 222,329
Claims priority, application Great Britain, Sept. 15, 1961, 33,191/61
6 Claims. (Cl. 179—9)



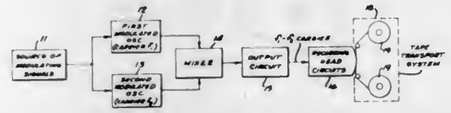
1. A telephone subscriber metering system for storing telephone subscriber meter records prior to recording on magnetic tape at a certain recording rate comprising a group of subscriber lines, a meter pulse magnetic core matrix having each core of said matrix individually associated with one of said lines, coil means capable of individually setting said cores responsive to electrical meter pulses on an associated calling one of said lines, enabling means for periodically enabling said coil means to transmit said meter pulses, reading means for continuously converting said stored electrical meter pulses to output pulses, translating means operated responsive to the operation of said reading means and said output pulses for translating said output pulses into coded pulses designating said associated calling line, temporary storage means operated responsive to said output pulses and said coded pulses for storing in succession the coded pulses, and tranfer control means operated responsive to an anticipated arrival rate of said coded pulses and said certain recording rate for successively transferring the stored coded pulses from the temporary store to said magnetic tape.

3,222,458
AUTOMATIC TELEPHONE EXCHANGE
Rolf August Dahlblom and Bernhard Lillsunde, Hagersten, Sweden, assignors to Telefonaktiebolaget L M Ericsson, Stockholm, Sweden, a corporation of Sweden
Filed May 16, 1960, Ser. No. 29,539
Claims priority, application Sweden, May 15, 1959, 4,679/59
4 Claims. (Cl. 179—18)



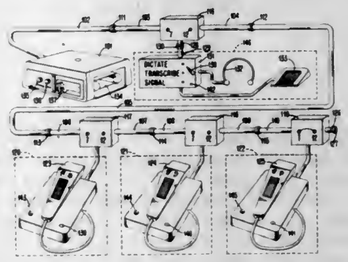
4. An automatic telephone exchange comprising a plurality of selecting stages including selectors for establishing a connecting path from a calling subscriber line to a called subscriber line, one idle selector being included in each stage, a plurality of connecting relay sets one of which is included in each connecting path for connecting the called subscriber line to said connecting path and for sending signals responsive to the condition of the called subscriber line, a marker having means for setting up a connecting path through idle selectors and through an idle connecting relay set, means for selecting an idle selector in each stage and an idle connecting relay set, means for testing the condition of the line of the called subscriber to determine whether the connection can be set up, said connecting relay sets being of at least two different types, a plurality of one type having means for setting up a connection to an idle subscriber line, and a plurality of another type having means for sending a busy signal in a revertive direction when a connection cannot be set up and further means for setting up a connection to an idle subscriber line, an input stage having an incoming line connected thereto and said connecting relay sets connected to outputs thereof, said marker including means for selecting one of said other connecting relay sets when said one type of connecting relay sets are busy, and means for setting up a connection through an input stage connected to a connecting relay set of the type which is selected and through an intermediate stage having its input connected to the selected connecting relay set.

3,222,459
WIDEBAND FREQUENCY MODULATION SYSTEMS
Paul E. Drapkin, San Francisco, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California
Filed Apr. 30, 1962, Ser. No. 191,198
3 Claims. (Cl. 179—100.1)



1. A circuit for generating a frequency modulated signal having upper modulating frequencies approaching the magnitude of the carrier frequency comprising:
- first and second oscillator circuits, each of said oscillator circuits including a transistor having base, emitter terminals;
- an inductor arranged between said emitter and base terminals;
- means for providing a variable capacitance in parallel with said inductor;
- and output means connected to the collector terminals of each of said transistors, the values of the components of the oscillators being such as to establish first and second spaced nominal frequencies; substantially higher than the upper modulating frequencies;
- means for providing an input signal to vary coincidently the capacitance of each of said oscillators, substantially equally but in opposite senses; and
- means for heterodyning the signals appearing at the output means of the transistors to derive a frequency modulated output signals at a carrier frequency equal to the frequency difference between said generated signals, said first and second nominal frequencies being spaced apart by a frequency slightly exceeding the upper modulating frequencies.

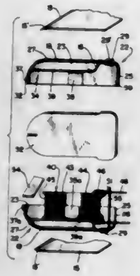
3,222,460
MULTIPLE STATION SELECTION SYSTEM
Nicholas J. Albanes, Bethesda, Md., and Matthew P. Langendorf, Lexington, Ky., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Aug. 10, 1962, Ser. No. 216,261
8 Claims. (Cl. 179—100.1)



1. A station selection system comprising:
- a plurality of diversely located control stations;
- a controlled station accessible to any of said control stations;
- a source of potential;
- interlock means at each of said control stations;
- selection means at each of said control stations for connecting each individual control station to said controlled station and for controlling the interlock means at each station;
- a first circuit connected to said source of potential and routed in sequence through each of the interlock means at said control stations in a serial path from one control station to another and according to a predetermined order of priority;
- an initial energizing second circuit connected to the termination of said interlocking first circuit and routed in parallel to all of said control stations for supplying an initial energizing potential to the selection means at said control stations, said second circuit being normally open at each of said control stations;
- an individual holding third circuit at each control station, each said holding circuit being connected in parallel to said first circuit just prior to the interlock means at the respective control station for supplying potential to hold the selection means energized at each said control station, each said holding circuit being normally open;
- means at each control station for closing said energizing second circuit connection to thereby energize the selection means at each said control station;
- and means under control of an energized selection means for closing the parallel hold circuit at the associated control station to maintain said selection means at said associated control station energized and to thereafter operate the interlock means in said serial interlocking path to thereby render ineffective

the energizing second circuit connections to all stations and to further render ineffective the holding circuits of all other control stations having a lower order of priority.

3,222,461
MAGNETIC HEAD CONSTRUCTION
John F. Wood and John Frisz, both of San Juan, Puerto Rico, assignors to Euphonics Corporation, Rio Piedras, Puerto Rico, a corporation of Puerto Rico
Filed Apr. 24, 1962, Ser. No. 189,753
8 Claims. (Cl. 179—100.2)



1. A scanning head for a magnetic track, comprising a casing having two opposing shells formed of material having high magnetic permeability, each of the shells having a front end wall, a rear end wall, opposing side walls, and a central wall disposed between the front, rear and side walls, each shell having a pair of spaced slots extending through the front end wall and central wall and defining a strip-like shell portion therebetween, a thin non-magnetic spacer member disposed between facing edges of the front end walls of the shells, a tab extending inwardly of each shell from each strip-like portion, rear ends of the strip-like shell portions being detached from the shells, and a coil assembly in the casing engaged on the tabs of the opposing shells, the strip-like portions of the opposing shells constituting cooperating magnetic pole pieces for the coil assembly.

3,222,462
ELECTROACOUSTIC TRANSDUCER
Richard Karmann, Munich-Solln, and Helmut Hoffmann and Otto Brünnert, Munich, Germany, assignors to Siemens & Halske Aktiengesellschaft, Berlin and Munich, Germany, a corporation of Germany
Filed Sept. 26, 1962, Ser. No. 237,419
Claims priority, application Germany, Sept. 29, 1961, S 76,040
10 Claims. (Cl. 179—110)



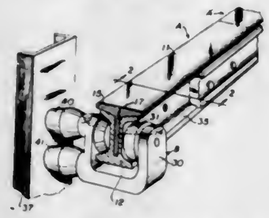
1. An electroacoustic transducer having a diaphragm in the form of a vibrating plate, said plate comprising at least one disk of electrostrictive material, a layer of a conductive contact material disposed on each face of the disk, the surface of the electrostrictive material disposed beneath such contact material having a roughness of at most about 5 microns, and means for supporting said vibrating plate at its edge, said means having a stationary supporting element and a resilient supporting element, between which elements said plate is disposed.

3,222,463
SOUND TRANSDUCER FOR DICTATING EQUIPMENT
Rudolf Görike, Vienna, Austria, assignor to Akustische u. Kino-Geräte Gesellschaft m.b.H., Vienna, Austria, a firm
Filed Aug. 21, 1962, Ser. No. 218,240
Claims priority, application Austria, Oct. 5, 1961, A 7,495/61
5 Claims. (Cl. 179—115.5)



1. A sound transducer for dictating equipment comprising, in combination, a hollow, flat and shallow, and elongated handle shape microphone housing having an elongated opening in the upper portion of its front wall formed with a peripheral seat, the opening extending more than half the length of the front wall; control means mounted on said front wall on the lower portion thereof; a substantially flat molded diaphragm of foamed plastic closing said opening, said diaphragm having a relatively thick main body portion within said opening and bounded by a thin peripheral rim portion superposed on said peripheral seat; and a flat and shallow drive system within the upper portion of said housing including a movable drive element in contact with a small area of the inner surface of the body portion of said diaphragm.

3,222,464
TROLLEY CONDUCTOR
Roy F. Dehn, Wickliffe, Ohio, assignor to The Cleveland Crane & Engineering Company, Wickliffe, Ohio, a corporation of Ohio
Filed Oct. 4, 1963, Ser. No. 313,959
1 Claim. (Cl. 191—22)



A trolley conductor bar comprising an elongated nonferrous metal member of high electrical conductivity having a central web and flanges along the opposite elongated edges thereof having flange portions which extend laterally from opposite sides of said web and form outwardly facing channels open along opposite sides of said member for receiving support members therein to engage the side walls of said channels to support said elongated member, one elongated edge of said web having an aperture therein coextensive with the length thereof and of a depth such that it terminates at approximately the junction of the plane of the adjacent laterally extending flange portions extending from the other elongated edge of said web, an elongated T-shaped ferrous metal member having a web closely received in said aperture and a transversely extending flange along one elongated edge thereof overlying and closely engaging the nonferrous flange portions extending from opposite sides of the opening to said aperture and forming a collector shoe slide surface.

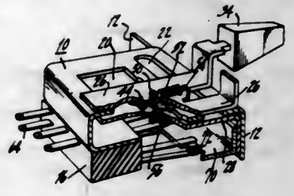
3,222,465
SUBMINIATURE SEALED THUMBWHEEL SWITCH WITH INDICATOR AND STOP MEANS
Charles B. Huntress and Henry Gabrielian, Santa Ana, Calif., assignors to Electronic Engineering Co. of California, Santa Ana, Calif., a corporation of California
Filed Mar. 23, 1964, Ser. No. 354,017
16 Claims. (Cl. 200—11)



1. A sealed thumbwheel switch comprising;
(a) an insulating board having conductive paths forming stationary switch contacts,
(b) a housing attached to said board,
(c) a recess in said housing,
(d) a journal and a stop upon said housing,
(e) a rotor within said recess,
(f) a shaft attached to said rotor and journaled in said journal,
(g) plural contacts upon said rotor to bear upon said stationary contacts,
(h) a thumbwheel attached to said shaft, outside of said recess,
(i) first resilient means surrounding said shaft to seal said shaft within said journal while allowing rotation of said shaft,
(j) second resilient means disposed between said board and the periphery of said housing to seal said board to said housing,
(k) said first and second resilient means adapted to seal said rotor and said stationary contacts within said recess, and
(l) means upon said thumbwheel coactive with said stop to limit the rotation of said thumbwheel.

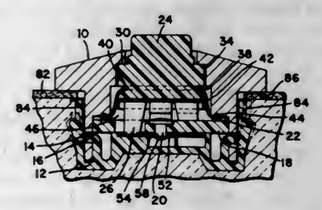
3,222,466
POSITIVE ACTING, MULTIPOSITION DETENT SWITCH
Richard R. Helus, Canoga Park, and Francis J. Jansen, Los Angeles, Calif., assignors to Radio Corporation of America, a corporation of Delaware
Filed Dec. 15, 1961, Ser. No. 159,633
8 Claims. (Cl. 200—16)

1. The combination comprising: a frame having an elongated slot defining first and second spaced inner walls in said frame; a number of equally spaced notches in one of said walls disposed along the length of said slot; a pair of members separated by said frame and movable together in a direction along the length of said slot, each of said members having an aperture therein; a rotatable member positioned in said slot between said pair of members and having a hub which projects through each said aperture, said rotatable member having spaced fingers for engaging said notches; and bias means coupled between



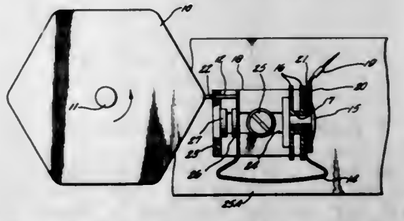
said hub and said pair of members and urging said rotatable member toward said one of said walls.

3,222,467
CAM CENTERED ELECTRIC SWITCH WITH MOISTURE-PROOF SEALING MEANS
Barthold F. Meyer, Tecumseh, Ontario, Canada, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed June 24, 1963, Ser. No. 290,006
12 Claims. (Cl. 200—16)



1. An electrical switch for a plurality of electrical circuits comprising a body having a switching chamber, an actuator means slidably disposed against a portion of said body within said switching chamber and biasedly carrying a resilient contact means to conduct current selectively to one or more of the plurality of electrical circuits, said actuator means having a portion engaging said contact means disposed within sealing means providing a moisture free switching chamber, said actuator means biased to a centered position by said resilient contact means.

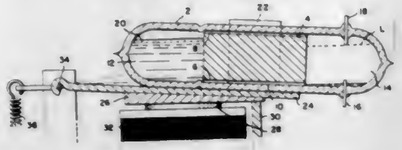
3,222,468
AUTOMOBILE BREAKER POINT ASSEMBLY
Robert N. Nanninga, West Covina, Calif. (2443 Country Club Drive, Glendora, Calif.)
Filed Nov. 13, 1962, Ser. No. 236,959
3 Claims. (Cl. 200—30)



1. A breaker assembly comprising a base plate, a frame, means for securing the frame to the plate to be movable with respect to it, an elongated spring secured to the frame at a point spaced from one end of the spring, a first electrical contact mounted directly on the spring at a location spaced from where the spring is secured to the frame, a second electrical contact mounted on the frame adjacent the first contact, the spring mounted first electrical contact being biased against

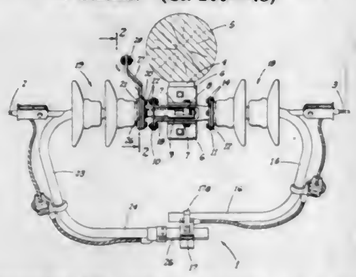
the second electrical contact, and an actuator bar disposed to engage the spring and move the contacts apart as the bar is reciprocated.

3,222,469
MERCURY TIME DELAY SWITCH
Marion H. Morris, Mountain View, Calif., assignor to Sperry-Sun Well Surveying Company, Houston, Tex., a corporation of Delaware
Filed Feb. 1, 1962, Ser. No. 170,423
4 Claims. (Cl. 200—33)



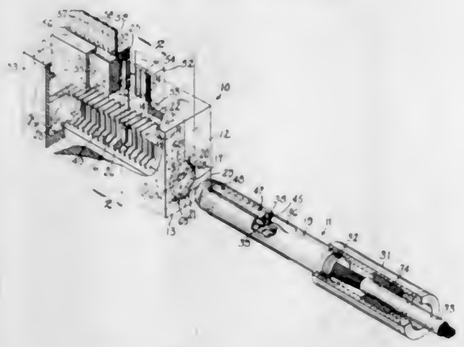
1. A mercury switch comprising means providing a pair of chambers, electrode means exposed to the interior of at least one of said chambers, means providing a restricted elongated passage for flow of mercury between said chambers, and mercury within the switch for conductive contact with said electrode means and adapted to flow from one chamber to the other through said restricted elongated passage, said mercury containing in solution a metal in an amount not substantially in excess of 1% and said passage having its walls formed of a metal wettable by said mercury containing the metal in solution, said metal in solution providing uniform wetting of said walls so that said mercury is capable of flowing as a uniformly and slowly moving stream through said passage under the action of gravity to accumulate as a pool in said other chamber, the restriction of said passage being such as to control the rate of flow of the mercury therethrough to provide a time delay, after initiation of flow, for change of the conductive relationship of the mercury to said electrode means.

3,222,470
POLE TOP SWITCH WITH MULTI-POSITION CONTROL ARM
John G. Pahl, P.O. Box 1257, Stockton, Calif.
Filed Apr. 20, 1964, Ser. No. 360,966
4 Claims. (Cl. 200—48)



1. A mounting and control structure for a pole top switch which embodies cooperating switch elements, and separate switch arms rigid with the elements and including inner end portions facing and axially alined with each other; said structure comprising a support member adapted to be mounted in a fixed position in connection with a line pole, the end portion of one arm being fixed with the member, the end portion of the other arm being mounted on the member for rotation about the axis of such portion, means between the fixed end portion and the related arm for adjustably rotating the latter about the axis of the other end portion, means between such other end portion and the related arm for adjustably rotating the latter about the axis of said other end portion, a control arm projecting radially of said other end portion, and means mounting the control arm in connection with the last named means for adjustably rotating said control arm about the axis of and relative to said other end portion.

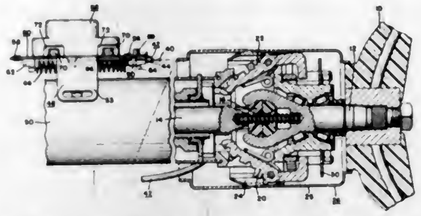
3,222,471
MULTIPLE ELECTRICAL CONNECTOR WITH LONGITUDINAL SPACED CONTACTS CARRIED BY INSULATING KEY
Robert A. Steinkamp, Middletown, Conn., assignor to Ripley Company, Inc., Middletown, Conn.
Filed June 10, 1963, Ser. No. 286,775
12 Claims. (Cl. 200—51.07)



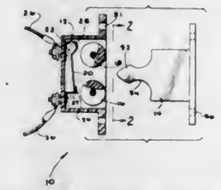
1. A multiple connector arrangement comprising first and second contact carrier members, said first member having interior walls, a plurality of ribs extending transversely from opposite interior walls and defining contact-receiving pockets therebetween, said ribs defining a longitudinally extending passage in said first member transverse to said ribs, contacts in said pockets on either side of said passage, said second member comprising a probe portion having a generally cylindrical surface adapted to be received in said passage, said ribs defining longitudinal keyways therein, elongated elastomeric insulators carried by said probe portion on opposite sides thereof and extending along the length thereof, said insulators being elevated above said cylindrical surface and forming keys arranged to mate with the defined keyways, a plurality of electrical contacts carried in each of said insulators in spaced relation along the lengths thereof according to the spacing of said pockets, means in said first member for positioning said second member therein so that the contacts of said second member are in predetermined lateral alignment with contacts in said pockets, said ribs being recessed in part to permit rotation of said second member in said first member after positioning of said second member in said first member, so that said second member with said insulators thereon may be rotated to bring the contacts on one side of said probe into engagement with contacts on one side of said passage and contacts on the other side of said probe into engagement with contacts on the other side of said passage.

3,222,472
TURN SIGNAL SWITCH FOR A TILTABLE STEERING WHEEL
Harold V. Elliott, Anderson, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 19, 1962, Ser. No. 238,354
7 Claims. (Cl. 200—61.27)

2. A circuit controller comprising, a first plate member which is adapted to be secured in a fixed position, a second plate member carried by said first plate member and shiftable relative thereto, resilient means connected between said plate members for applying a force to said second plate member to urge it axially in one direction relative to said first plate member, a switch housing formed of moldable plastic material supported by said second plate member and forming a compartment therewith, a fixed contact carried by said switch housing, a contact carrier movable along a predetermined path and between predetermined positions in said compartment, and an electrical contact carried by said contact carrier that engages said fixed contact in one of said predetermined positions.



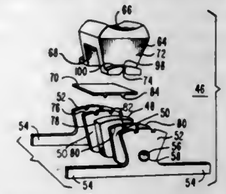
3,222,473
COMBINED SWITCH AND CLOSURE MEANS
José H. Delhase, 116 Blvd. de la Reine, Versailles, Seine-et-Oise, France
Filed June 28, 1961, Ser. No. 120,314
Claims priority, application France, Mar. 6, 1961, 854,639, Patent 79,314
1 Claim. (Cl. 200—61.62)



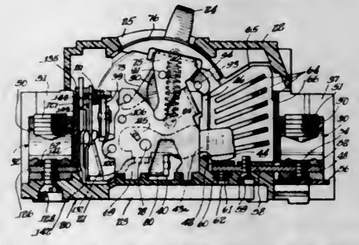
A mechanism for closing a movable member with respect to a stationary member comprising a projecting means fixed to one of said members having an enlarged end portion and a recessed portion at the base of said enlarged end portion, a fitting secured to the other of said members, rotatable means mounted in said fitting in endwise alignment with the projection means fixed to the other member with a sector of said rotatable means in the path of said enlarged end portion of said projecting means and in substantial alignment with said recess for nesting within said recess following clearance of said enlarged end portion during movement to closed position, at least one of said projecting and rotatable means being formed of a resilient material whereby the enlarged portion of said projecting means is adapted to ride over said rotatable means and said recess is adapted to fit about said rotatable means, a switch provided in said fitting behind said rotatable means and having a movable portion adapted to complete an electric circuit, said enlarged end of said projecting means engaging and moving said movable portion of the switch after the enlarged end rides over said rotatable means.

3,222,474
SWITCHING DEVICE HAVING MAGNETIC DETENT ACTION
Henry Fasola, Jr., Los Angeles, Calif., assignor to David Blonder as assignee for creditors of Brass Copper Lighting Fixture Co., Los Angeles, Calif.
Filed Aug. 27, 1963, Ser. No. 304,760
16 Claims. (Cl. 200—67)

1. An improved magnetic switch comprising, in combination, magnetic contact repositioning means and electrical switching means, the electrical switching means including movable electrical contact means, the magnetic contact repositioning means comprising a permanent magnet member, a pair of multi-faced magnetic elements disposed on opposite poles of the magnet member, the respective faces of the magnetic elements forming successive magnetic pole tip pairs of opposite magnetic polarity, generally planar magnetic rocker means in contact with the faces and movable into contact with each single pole tip pair to form a magnetic shunt, and electrically non-conductive means secured to the planar means and coupled to the movable electrical contact means, whereby movement of the planar means effects repositioning of the movable contact means.



3,222,475
OPERATING MECHANISM FOR MULTIPOLE ELECTRICAL CIRCUIT BREAKER
William H. Woods and Robert E. Dietz, Cedar Rapids, Iowa, assignors to Square D Company, Park Ridge, Ill., a corporation of Michigan
Filed Dec. 21, 1962, Ser. No. 246,522
10 Claims. (Cl. 200—88)

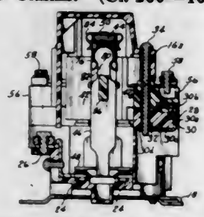


1. An electrical circuit breaker comprising
(a) an insulating case having a base wall portion,
(b) a terminal strap secured with respect to said base wall portion and having a portion extending generally perpendicularly to said base wall portion,
(c) a generally U-shaped magnetic core member having a bight portion secured to one side of said terminal strap portion adjacent the end thereof closer to said base wall portion and having a pair of arms extending beyond the other side of said terminal strap portion generally centrally thereof,
(d) an armature member pivotally mounted centrally thereof on said pair of arms, said armature member being generally flat but bent centrally thereof to provide first and second portions extending obtusely to each other,
(e) an air gap adjusting screw threadedly mounted in said terminal strap portion adjacent the end thereof remote from said base wall portion, said air gap adjusting screw extending generally perpendicularly away from said other side of said terminal strap portion through an end portion of said first portion of said armature member remote from said second portion thereof, said air gap adjusting screw having a reduced diameter portion between the ends thereof providing a pair of opposed shoulders,
(f) a compression spring mounted on said reduced diameter portion of said air gap adjusting screw and

seated on one of said shoulders remote from said terminal strap portion and normally biasing said first portion of said armature member into engagement with the other of said shoulders adjacent said terminal strap portion to space said second portion of said armature member from said core member and provide an air gap therebetween, and

(g) a trip bar actuating screw threadedly mounted in said first portion of said armature member, said core member being adapted to attract said second portion of said armature member to close said air gap and pivot said armature member on said arms upon occurrence of a predetermined electrical current in said terminal strap portion, and said air gap adjusting screw being adjustable to vary said air gap and said predetermined electrical current without substantially changing the effective force of said compression spring on said first portion of said armature member.

3,222,476
ELECTROMAGNETIC SWITCH
Harold E. Whiting, Bayside, Milwaukee, and Jordan F. Puetz, Milwaukee, Wis., assignors to Square D Company, Park Ridge, Ill., a corporation of Michigan
Filed Aug. 16, 1963, Ser. No. 302,591
9 Claims. (Cl. 200—104)



1. In an electric switching device, an insulating base having a plurality of pairs of spaced stationary contacts oriented as pairs in parallel rows on the base and insulating partitions separating each of said pairs from an adjacent pair of stationary contacts, a movable contact assembly including movable contacts and a magnet motor removable as a unit from the base and a cover enclosing the movable contact assembly and having portions engaging with portions of the magnet motor positioning the magnet motor on the base and slots engaging portions of the movable contact assembly guiding the movable contacts of said assembly into engagement with the stationary contacts.

3,222,477
TUBULAR CIRCUIT INTERRUPTER WITH MECHANICAL RELEASE OF ARC DRAWING TERMINAL WITHIN THE TUBE
Sigurd I. Lindell, Northbrook, Ill., assignor to S & C Electric Company, Chicago, Ill., a corporation of Delaware
Filed July 16, 1962, Ser. No. 210,093
30 Claims. (Cl. 200—114)

27. A circuit interrupter construction for use on an electric power transmission circuit operating at a voltage of the order of several thousand volts comprising, in combination:

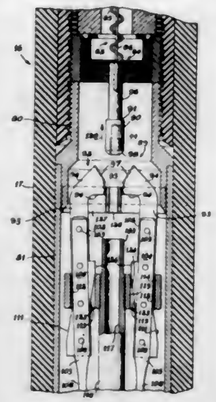
(a) a tubular insulating housing having terminals at its ends for connection to said circuit,

(b) means in said housing providing a bore from which an arc extinguishing medium is evolved due to the heat of an arc,

(c) arc drawing terminal means movable in said bore, connected at one end to one of said end terminals, and having a latching shoulder adjacent its other arc drawing end extending substantially at right angles to its path of movement,

(d) means biasing said arc drawing terminal means for movement in said bore toward said one end terminal,

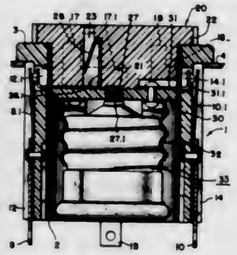
(e) resilient contact means mounted on and extending longitudinally inwardly of said other end terminal for contact engagement with said arc drawing terminal means, and having hook means engaging said



latching shoulder and restraining movement of said arc drawing terminal means, and

(f) means within said other end terminal for moving said hook means alterally out of engagement with said latching shoulder and said contact means laterally away from said arc drawing terminal means to free the same completely for movement through said bore under the influence of said biasing means.

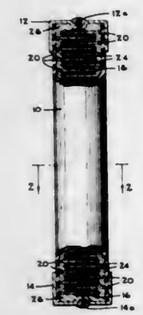
3,222,478
FUSED CONNECTOR FOR KITCHEN RANGE BACKSPLASHER PANEL
Philip J. More, Evanston, Ill., assignor to General Electric Company, a corporation of New York
Filed Sept. 11, 1964, Ser. No. 395,836
3 Claims. (Cl. 200—115.5)



2. In combination, an open ended cylindrical body of insulation material adapted to be secured to a mounting panel at which first and second power wires are accessible, said cylindrical body being open at the panel securement end and having a wall structure extending radially from said opening for overlying engagement with the panel, first and second conductor elements disposed in axially extending recesses along the exterior of said body in angular displacement one from the other and arranged respectively for connection to said first and second power wires, each said conductor element terminating in an exposed resilient contact facing interiorly of said cylinder, an insulating cap having a radially extending face portion and a body portion for axial insertion into said cylinder and subsequent rotation therein, means effective upon such rotation to removably secure said cap relative to said

cylinder with the face portion of said cap in tight surface engagement with said flat wall structure of the cylindrical body, contact means within said face portion for connection to the blade terminals of an attachment plug, conductor means extending radially from said cap body portion to make electrical connection with the resilient contact faces of the respective first and second conductor elements upon securement of said cap within said cylinder, and means at the rear of said body portion providing first and second contacts for a fuse element, said last-named contacts placing such a fuse in a series electrical circuit between one of the blade-connectible contact means of said cap and one of said cylinder-body conductor elements.

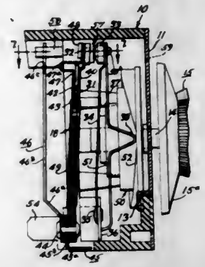
3,222,479
HIGH VOLTAGE CURRENT LIMITING FUSE
Le Roy H. Franklin, Los Altos, and Richard M. Trainer, Palo Alto, Calif., assignors to Overseas Finance and Trading Company, a corporation of California
Filed Jan. 5, 1961, Ser. No. 80,865
6 Claims. (Cl. 200—120)



1. A high voltage fuse which comprises an impervious housing having two spaced fuse terminals, a fusible element within said housing and having its opposite extremities connected to said terminals, said fusible element being composed of a conductive material capable of volatilization under fuse-blowing conditions, a body of pulverulent filter material filling said housing and substantially entirely encompassing said fusible element, said filler material being a non-conductor selected from the group consisting of sulphur, sodium chloride and ferric oxide and capable of chemically reacting rapidly with said fusible element when volatilized under fuse-blowing conditions, the product of the chemical reaction being non-conductive, said filler material having a negligible moisture content.

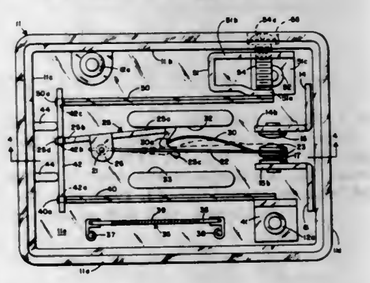
3,222,480
THERMAL SWITCH WITH CALIBRATION MEANS
Daniel E. Clapp, Churchville, Pa., assignor, by mesne assignments, to King-Seeley Thermos Co., Ann Arbor, Mich., a corporation of Michigan
Filed Nov. 3, 1961, Ser. No. 149,970
8 Claims. (Cl. 200—122)

1. A thermally actuated switch including a pair of cooperating contacts at least one of which is supported by a blade which is in turn supported by deflectable mounting means, housing means supporting said mounting means and enclosing said switch, calibration means comprising walls defining an aperture through a portion of said housing means, a control lever connected to said deflectable mounting means, and an adjusting member movably mounted in said aperture and being interconnected with said control lever so that movement of said adjusting member fixedly deflects said mounting means and moves the contacts in a direction to change the relative position of the contacts, said member being friction-



ally compressed by said walls and frictionally retained therein in any of a plurality of fixedly adjusted positions.

3,222,481
ELECTRICALLY POWERED BISTABLE THERMAL RELAY SWITCH
Jerome L. Lorenz, Columbus, Ohio, assignor to Ranco Incorporated, Columbus, Ohio, a corporation of Ohio
Filed Apr. 10, 1963, Ser. No. 271,898
4 Claims. (Cl. 200—122)



1. A thermal relay of the bistable character described comprising:

(a) support means,

(b) toggle switch means mounted on said support means and comprising a toggle lever and a switch arm pivoted about a common axis, stop means for limiting rotation of said toggle lever in opposite direction, and a toggle spring between one end of said lever and said arm for biasing the latter into first and second operative position upon rotation of said toggle lever between said stop means and through an overcenter position, said toggle spring being effective to resist movement of said toggle lever from said stop means with a predetermined force,

(c) a toggle driver member connected to the other end of said lever and reciprocable to effect said rotation thereof,

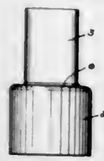
(d) an elongated bimetal element having one end fixed to said support means and the other end connected to said driver member,

(e) an electrical resistance heater mounted on said support means and adjacent said bimetal element in radiative heat transfer relation thereto,

(f) said bimetal being operative upon predtermined heating and cooling to effect said rotation of said toggle lever, yet having a spirng rate which is less than the spring rate of said toggle spring, and

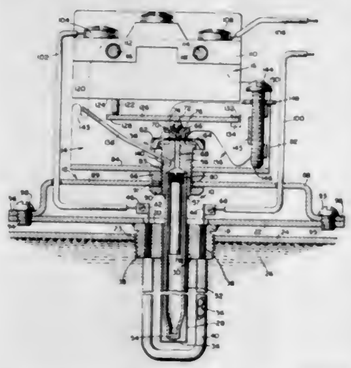
(g) said bimetal element being inoperative to effect said rotation of said toggle member upon less than said predetermined heating or cooling thereof, whereby said relay is bistable at less than a predetermined electrical power of energization.

3,222,482
ELECTRIC FUSE TERMINALS
Paul C. Hitchcock, Plum Island, Mass., assignor to The Chase-Shawmut Company, Newburyport, Mass.
Filed Nov. 2, 1962, Ser. No. 234,963
6 Claims. (Cl. 200—132)



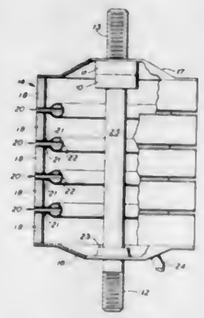
1. A terminal structure to be mounted on tubular casings of electric fuses comprising in combination:
(a) a terminal cap of sheet metal having a cylindrical lateral surface and a flat end surface, said end surface defining an oblong slot having a pair of longitudinal edges; and
(b) a knife blade contact press-fitted into said slot with one edge thereof, said blade contact being upset at spaced points of said one edge forming spaced points of increased cross-sectional area, said spaced points projecting into corresponding spaced recesses formed in said pair of longitudinal edges of said slot in said end surface of said cap.

3,222,483
THERMOSTAT DEVICE WITH OVER TEMPERATURE SAFETY MEANS
Hugh J. Tyler, Jeannette, Pa., assignor to Robertshaw Controls Company, a corporation of Delaware
Original application Dec. 28, 1959, Ser. No. 862,153, now Patent No. 3,143,620, dated Aug. 4, 1964. Divided and this application Mar. 12, 1964, Ser. No. 356,685
4 Claims. (Cl. 200—140)



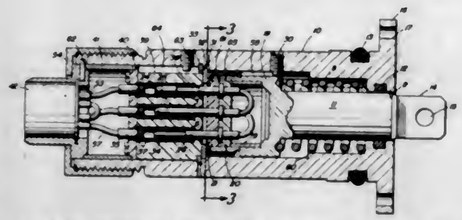
1. In a temperature responsive device for sensing the temperature of a fluid in a container, the combination comprising first means for mounting a well member within a container, frame means secured to said first means, temperature responsive means mounted on said frame means and having temperature sensing means connected thereto and extending into said well member for actuating said temperature responsive means, switch means mounted on said temperature responsive means by a support member, a fulcrum member biased into engagement with said support member, a lever pivoted at one end about said fulcrum member and positioned to engage at an intermediate portion with said temperature responsive means, a switch actuating button for actuating said switch means engaging the opposite end of said lever, said temperature responsive means having a first range of movement causing pivotal movement of said lever about said fulcrum member to actuate said switch button, said temperature responsive means having a second range of movement causing pivotal movement of said lever about said switch button to move said fulcrum member out of engagement with said support member whereby said second range is an abnormal temperature control.

3,222,484
EXPANSIBLE VACUUM ENVELOPE FOR ELECTRICAL DEVICES
Jo Emmett Jennings, San Jose, Calif., assignor, by mesne assignments, to Jennings Radio Manufacturing Corporation, San Jose, Calif., a corporation of Delaware
Filed June 1, 1961, Ser. No. 114,098
8 Claims. (Cl. 200—144)



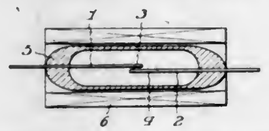
5. A vacuum switch comprising: an expansible evacuated envelope, said envelope being formed by a composite sidewall including a plurality of spaced axially aligned electrically insulating tubular sections and an expansible tubular section interposed between, coaxial with, and hermetically bonded to each two adjacent insulating tubular sections to permit relative axial movement between said insulating tubular sections, and rigid endwalls closing opposite ends of the composite sidewall, each endwall carrying an electric contact whereby relative movement of said endwalls engages and disengages said contacts.

3,222,485
ELECTRICAL PULL SWITCH UTILIZING SPRING BIASED PLUNGER
Thomas K. C. Hardesty, Ednor, and Allen J. Sondheimer, Chevy Chase, Md., assignors to the United States of America as represented by the Secretary of the Navy
Filed Aug. 13, 1963, Ser. No. 301,925
8 Claims. (Cl. 200—161)
(Granted under Title 35, U.S. Code (1952), sec. 266)



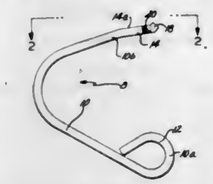
1. In an electrical pull switch, a switch housing having a plunger means slidable therein,
spring means located adjacent to said plunger means and within the housing to resiliently bias the plunger means in a biased position,
a plurality of male contact members securely housed within one end of the plunger means for movement in unison with said plunger, said male contact members being cylindrical and a selected number of said male contacts having insulation surrounding a portion of the length thereof,
a socket contact housing located within said switch housing adjacent to one end of the plunger means,
a plurality of female socket contact members insertable within said socket contact housing and mounted in such a manner to receive the male contact members and to slideably engage said male contact members over a constant surface area of electrical contact such that when the plunger means is in its biased position, certain of said male and female contact members are in electrically engaging contact with each other,
whereby when said plunger means is moved against the bias of said spring means a selected number of the male and female contact members in electrically engaging contact are electrically disconnected while other of said contact members are positioned into electrically engaging contact.

3,222,486
GAS-FILLED ENCLOSED ELECTRIC SWITCHGEAR WITH COPPER CONTACTS
Hiromi Moriyama, Hiroshi Yamada, Tsunemoto Nakanishi, and Toshikatsu Kiriyama, all of Totsuka-ku, Yokohama-shi, Japan, assignors to Kabushiki Kaisha Hitachi Seisakusho, and Keihin Hitachi Engineering Kabushiki Kaisha, both of Tokyo-to, Japan, and both joint-stock companies of Japan
Filed May 29, 1963, Ser. No. 284,053
Claims priority, application Japan, June 4, 1962, 37/22,323; June 5, 1962, 37/22,484, 37/22,485
3 Claims. (Cl. 200—166)



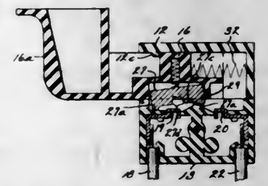
1. An enclosed type switchgear comprising at least two magnetic members, each having an electrical contact part which is copper plated, a gas-tight vessel containing in a sealed-in state the said electrical contact parts of the said magnetic members together with an inert gas containing a reductive gas, the said electrical contact parts being in mutually opposed juxtaposition suitable for switching operation, and means to actuate the said electrical contact parts in switching operation.

3,222,487
DUAL PURPOSE ELECTRICAL CONTACT ELEMENT
William F. Juptner, Laguna Beach, Calif., assignor to Babcock Electronics Corporation, Costa Mesa, Calif., a corporation of California
Filed May 29, 1963, Ser. No. 284,066
5 Claims. (Cl. 200—166)



1. A dual purpose electrical contact element for use in efficiently making and breaking either high or low current electrical energy comprising in combination, a contactor, a relatively large contact on said contactor for engagement with an electrically conductive member to efficiently conduct therebetween electrical energy of predetermined high current, and a relatively small contact on said contactor offset from said large contact to normally engage said member and thereby prevent engagement of said member by said relatively large contact, said small contact being sufficiently smaller than said large contact to be consumed by heat upon conduction therethrough of said predetermined high current energy, whereby said small contact is operable to conduct low current energy and said large contact is operable to conduct high current energy with said member.

3,222,488
ELECTRICAL SWITCH WITH CAMMING BRIDGING CONTACT
Benjamin H. Matthews, Peninsula, Ohio, assignor to Lucerne Products, Inc., Northfield, Ohio, a corporation of Ohio
Filed Mar. 31, 1964, Ser. No. 356,277
4 Claims. (Cl. 200—166)



1. In an electric switch, in combination, an insulator base, at least a pair of spaced stationary contacts mounted on said base with their contact-making faces coplanar, an electrically conductive bridging contact having opposite contacting ends spaced at approximately the same spacing as said stationary contacts, there being a recess in said bridging contact between said ends extending away from said flat surface, means supporting said bridging contact for linear sliding movement in line with said stationary contacts between a non-bridging position, where said ends lie respectively on the same side of associated stationary contacts and out of engagement therewith, and a bridging position where said ends engage said stationary contacts respectively, a projection on said base between said stationary contacts in engagement with said bridging contact as the leading contacting end thereof approaches the to-be-contacted stationary contact, said projection camming said bridging contact to lift said leading contacting end during said movement to a level above the contact-making face of the to-be-contacted stationary contact, said recess being formed on said bridging contact as to register with said projection only after said leading contacting end registers with at least a portion of said approached stationary contact, said recess being of a depth to then permit said leading contacting end of said bridging contact to engage said approached stationary contact, and means biasing said bridging contact toward said stationary contacts.

3,222,489
PROCESS FOR INHIBITION OF ELECTRICAL-CONTACT FAILURE
Saul W. Chaikin, Palo Alto, Calif., assignor to Stanford Research Institute, Menlo Park, Calif., a corporation of California
No Drawing. Filed May 4, 1964, Ser. No. 364,814
8 Claims. (Cl. 200—166)

1. In a process for inhibiting frictional polymer formation in sealed electric contact devices in which electric contacts are at least coated with a metal of the platinum family, and in which said contacts repeatedly make and break an electric circuit, the step of providing the vapor

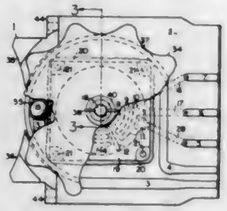
space within said sealed electric contact device with a volatile organo-metallic compound capable of forming free radicals under the operating conditions existing within said sealed contact device.

3,222,490

SEALED THUMBWHEEL SWITCH WITH INDICATOR AND REMOVABLE ILLUMINATING MEANS

Charles B. Huntress and Henry Gabrielian, Santa Ana, Calif., assignors to Electronic Engineering Co. of California, Santa Ana, Calif., a corporation of California

Filed Mar. 4, 1964, Ser. No. 349,394
8 Claims. (Cl. 200—167)



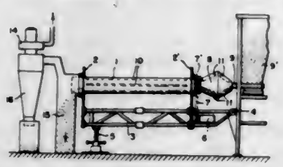
1. A sealed thumbwheel switch comprising;
(a) an insulated board having conductive paths forming stationary switch contacts,
(b) a housing,
(c) a first portion of cement to seal the periphery of said housing to said board,
(d) a shaft journaled through said housing and said board,
(e) a rotor attached to said shaft having wiper contacts to bear upon said stationary contacts,
(f) a thumbwheel attached to said shaft on the side of said housing opposite to said rotor,
(g) a resilient O ring having a lubricant surrounding said shaft within said journal in said housing,
(h) a cover over said insulating board on the side of said insulating board opposite said housing, adjacent to and enclosing said shaft,
(i) a peripheral depression in said cover, and
(j) a second portion of cement adjacent to and within said depression to seal said cover to said insulating board,
(k) said first and second portions of cement and said O ring sealing said stationary and said wiper contacts within an enclosure comprising said board, said cover and said housing.

3,222,491

APPARATUS FOR CONTINUOUS DRYING OF POWDERY OR GRANULAR MATERIALS IN A HIGH-FREQUENCY FIELD

Hans Schmid and Heinrich Feldhoff, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

Filed Oct. 12, 1962, Ser. No. 230,203
Claims priority, application Germany, Oct. 17, 1961, B 64,404
7 Claims. (Cl. 219—10.65)



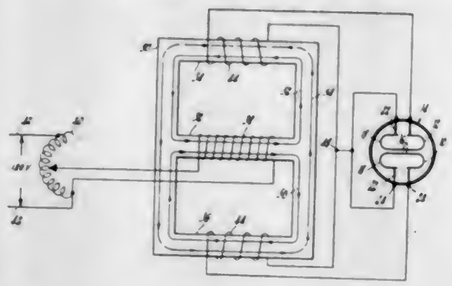
1. Apparatus for the continuous drying of a powdery or granular material in a high frequency field comprising:
a drying and conveying cylindrical tube essentially composed of insulating material and mounted in a horizontal to an inclined position for rotation about its longitudinal axis;
means to rotate said tube and continuously convey the material to be dried therethrough in a constant direction from the inlet end of said tube to the outlet end;
a feeder drum of greater diameter than said tube and provided with baffles on the inner surface thereof, said drum being rotatably mounted around said longitudinal axis in conjunction with said tube and adapted to continuously charge the material to be dried at a uniform rate into the inlet end of said tube;
means to recover the dried material at the outlet end of said tube; and
a pair of opposing high frequency electrodes adjustably mounted in positions adjacent the outer circumferential surface of said rotating tube such that said electrodes can be adjustably disposed from each other by an angle of from about 30° to 180° with reference to the longitudinal axis of rotation of said tube.

3,222,492

MANUFACTURE OF ELECTRONIC COMPONENTS

Philip Giuffrida, North Andover, and John Pratt, Braintree, Mass., assignors to Electronics Corporation of America, Cambridge, Mass., a corporation of Massachusetts

Filed Feb. 7, 1963, Ser. No. 256,932
6 Claims. (Cl. 219—50)



1. The method of purifying an electrode structure to provide symmetrical radiation sensitive characteristics comprising the steps of
mounting two electrodes of matched physical configuration in spaced relation,
connecting each said electrode in shunt to a corresponding electric current supply winding,
providing a magnetic flux path linking said two electric current supply windings,
and supplying magnetic flux over two identical paths to said electric current supply windings from a source located outside of said magnetic flux path
to induce an electric potential in said two windings and cause electric current flow through said electrodes in a resistance heating operation.

3,222,493

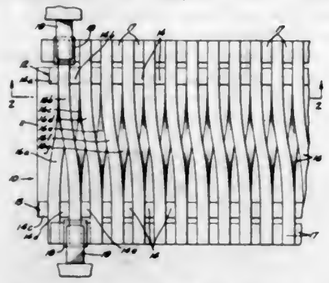
APPARATUS AND METHOD FOR POSITIONING AND HOLDING BARS DURING WELDING THEREOF INTO ZIGZAG SERIES-CONNECTED RELATIONSHIP

Arthur J. Wadsworth, Tujunga, Calif., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed Oct. 20, 1955, Ser. No. 541,862
4 Claims. (Cl. 219—58)

1. The method of assembling a plurality of elongated metal rods rigidly together in two superimposed layers

such that all rods are connected in series with the central body portions of each connected pair lying closely together with their respective axes in parallel planes but at slight angles to one another within said planes, said method comprising arranging a series of rods in two superimposed layers, oppositely flexing within their elastic limit the rods in each layer in the plane of their respective



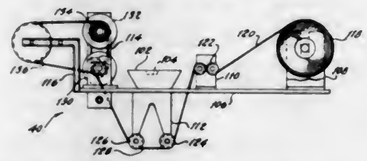
layers to bring the opposite ends of a rod in one layer into overlapping aligned relationship with the adjacent ends of different rods in the other layer, holding the overlapped, aligned ends of the rods of said superimposed layers to thereby maintain said rods in said oppositely flexed positions, electrically welding said overlapped, aligned rod ends together, and thereafter withdrawing said holding forces.

3,222,494

QUICK-CHANGE ELECTRODES SYSTEM FOR SPARK-CUTTING APPARATUS

Thomas J. O'Connor, Ann Arbor, Mich., assignor to Easco Products, Inc., Ann Arbor, Mich., a corporation of Michigan

Filed Jan. 9, 1963, Ser. No. 250,321
3 Claims. (Cl. 219—69)



1. A tool for use with apparatus for the electro-erosion of metals comprising a base adapted to be secured to the apparatus for the electro-erosion of metals, a reel of electrode wire, means carried by said base for supporting the reel of electrode wire on said base, means secured to said base for supporting a moving workpiece engaging portion of unreeled electrode wire, a second reel supported by said base, and a pair of synchronized motors supported by said base, one of which is operable to drive the second reel and the other of which is operable between the means supporting the workpiece engaging portion of the electrode wire and the second reel for unreeling the electrode wire and drawing it across the supporting means for subsequent winding on the second reel.

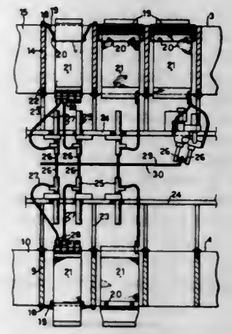
3,222,495

MULTIPLE WELDING MACHINE

Giuseppe Delzanno, Turin, Italy, assignor to Fiat Società per Azione, Turin, Italy

Filed Jan. 23, 1964, Ser. No. 339,669
Claims priority, application Italy, Jan. 24, 1963, 2,035/63
1 Claim. (Cl. 219—87)

Multiple electric welding machine of the type comprising a bedplate carrying posts supporting a stationary horizontal plate and acting as guides for vertical displacement of a movable horizontal plate, said stationary and movable plates having detachably secured thereto welding electrodes and feed transformers therefor, wherein each stationary and movable plate, respectively, comprises a peripheral frame confining a central opening of prismatic cells having formed therein tapped holes for substantially rectangular contour and two sets of vertical diaphragms arranged in the central opening in the frame, extending between pairs of opposite frame sides per-



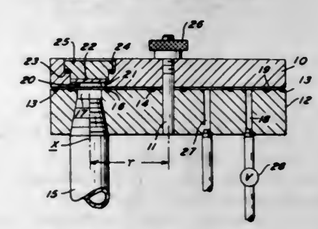
pendicular thereto, the diaphragms in each set being equally spaced, the spacing of adjacent diaphragms in one set equalling the spacing of adjacent diaphragms in the other set, said diaphragms defining together and with the inner contour of the frame a plurality of prismatic cells of square cross-sectional shape, opened at their top and bottom ends and of a size such as to accommodate the feed transformers for the electrodes, horizontal faces of said vertical diaphragms forming walls for the individual screw attachment of supporting straps carried by the transformers, and supports for the electrodes.

3,222,496

APPARATUS FOR WORKING MATERIALS BY MEANS OF AN ELECTRON BEAM

Robert W. Windebank, Middlesex, England, assignor to International Resistance Company, Philadelphia, Pa.

Filed Apr. 4, 1963, Ser. No. 270,728
Claims priority, application Great Britain, Apr. 18, 1962, 15,112/62
4 Claims. (Cl. 219—121)



1. Apparatus for working materials by means of an electron gun comprising a base disc; a carrier plate extending across and slightly spaced from a surface of said base disc; means rotably supporting said carrier plate on said base disc; first sealing means between the adjacent surface of said base disc and carrier plate, said first sealing means extending completely around the base disc adjacent to but spaced from the edge of the base disc; said base disc having an electron gun receiving aperture and a relief port extending therethrough, said electron gun receiving aperture and said relief port being equally spaced from the axis of rotation of said carrier plate and opening, into the space between the base disc and carrier

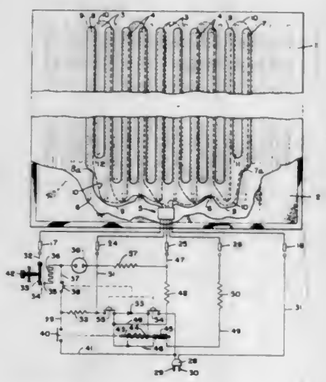
plate within said first sealing means; a second sealing means between the adjacent surfaces of said base disc and carrier plate, said second sealing means surrounding the electron gun receiving aperture; a third sealing means between the adjacent surfaces of the base disc and carrier plate, said third sealing means surrounding the relief port; said base disc having a pumping port extending therethrough and opening into the space between the base disc and carrier plate within said first sealing means and outside of said second and third sealing means, said pumping port adapted to be connected to means for reducing the pressure in the space between the base disc and carrier plate which is inside said first sealing means and outside of said second and third sealing means; said carrier plate having an aperture therethrough spaced from the axis of rotation of said carrier plate a distance equal to the spacing of each of the electron gun receiving aperture and the relief port from said axis of rotation, means in said carrier plate aperture for supporting the material to be worked; and a closure plug removably mounted across said carrier plate aperture; said carrier plate being rotatable with respect to said base disc between a first position in which the carrier plate aperture is over the electron gun receiving aperture and a second position in which the carrier plate aperture is over the relief port.

3,222,497

ELECTRICALLY HEATED BEDCOVER

Walter H. Gordon, Jr., Asheboro, N.C., assignor to General Electric Company, a corporation of New York

Filed Apr. 30, 1963, Ser. No. 276,931
2 Claims. (Cl. 219—212)



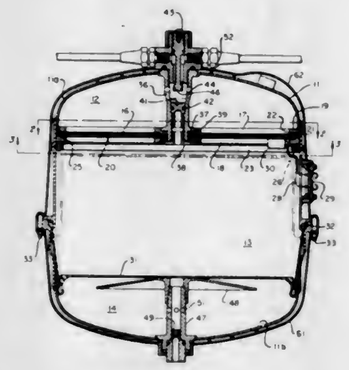
1. An electrically heated bedcover comprising:
(a) a fabric blanket shell;
(b) an electric heater distributed over said shell to provide an electrically heated area;
(c) a temperature sensor extending over the entire heated area of said shell independently of said heater and in a pattent to sense any abnormally high temperature of any portion of said heater,
said temperature sensor including a pair of low resistance conductors in closely spaced relation separated by an insulating material comprising a basic plastic compound and an ionic additive thereby to provide a continuous flexible layer between said conductors which is essentially an insulator at normal operating temperatures and conducts currents of control magnitude at temperatures above normal;
(d) and a control system to de-energize said electric heater responsive to temperature sensitive current flow through any portion of the layer of said temperature sensor.

3,222,498

VAPOR GENERATOR

Russell S. Miksch, Redwood City, and Robert E. Corridan, Los Altos, Calif., assignors to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware

Filed May 11, 1962, Ser. No. 194,049
10 Claims. (Cl. 219—271)



1. A vapor generator including a liquid reservoir for storing a liquid having a vapor phase, a vapor plenum for storing the vapor phase of said liquid in communication with said liquid reservoir, a semipermeable membrane separating the vapor plenum and the liquid reservoir, said semipermeable membrane serving to pass only the vapor phase of said liquid whereby vapor is transferred into said vapor plenum from said liquid reservoir, and means for continuously urging the liquid in said reservoir against the semipermeable membrane.

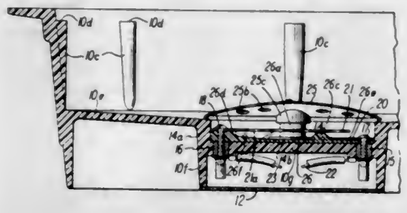
2. A vapor generator as in claim 1 wherein there is provided means for heating the liquid contained in said liquid reservoir.

3,222,499

LIQUID CONDUCTOR HEATER

Peter Conlin and William L. Schulz, Reedsburg, Wis., assignors to Hankscraft Company, Reedsburg, Wis., a corporation of Wisconsin

Filed Mar. 26, 1962, Ser. No. 182,513
4 Claims. (Cl. 219—289)



1. A liquid conductor heater comprising: a vessel made of a thermoset plastic material highly susceptible to tracking, said vessel having a bottom wall provided with in integral recess; first and second flat electrodes; an insulator plate effectively disposed on and coextensive with one surface of said recess and having a mounting

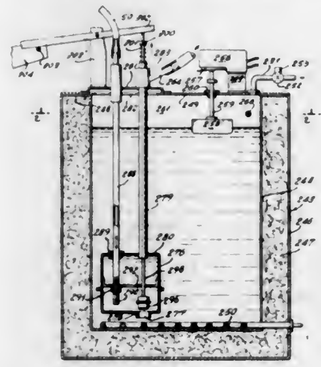
ledge and spacing boss projecting from a surface of said plate for supporting said second electrode, said plate being made of a thermoset plastic material effectively immune to tracking; first and second electrical terminals extending through the walls of said recess; first means electrically coupling said first terminal to said first electrode and effectively securing the latter and one side of said insulator plate in stacked relation to said one surface of the recess; second means for electrically coupling said second terminal to said second electrode and for securing the latter and a side of said insulator plate opposite said one side in mutually spaced-apart and overlying relation to the wall of said recess; an apertured cover for the opening of said recess; means for effectively securing said cover and opposite sides of said insulator plate ninety degrees removed in each direction from said first means to the wall of said recess; and means for applying a source of electrical power to said first and second terminals.

3,222,500

WATER STORING AND HEATING APPARATUS IN DEVICES FOR BREWING AND DISPENSING BEVERAGES

Sollie W. Small and David Herman, Newark, N.J., assignors to Coffee-Mat Corporation, Elizabeth, N.J., a corporation of New Jersey

Original application July 14, 1961, Ser. No. 124,207. Divided and this application July 29, 1964, Ser. No. 389,239
5 Claims. (Cl. 219—328)



5. A hot water supply system comprising a storage tank containing water, means for supplying water to said tank, means including an electrical heating unit for heating the water in said tank, a pipe communicating with the upper part of said tank and with the atmosphere and extending to a point above the water level in said tank, a thermostatic switch in operative relation to said heating unit, said thermostatic switch including a thermostatic element in heat transfer relationship with a wall of said pipe and positioned external to said tank and said pipe, said thermostatic element being responsive to a temperature not exceeding 100° C. to actuate said switch, and means responsive to said switch for deenergizing said heating element only upon the boiling of said water in said tank.

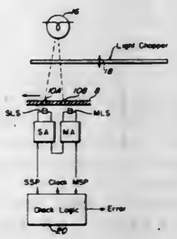
3,222,501

SPROCKET HOLE CHECKING SYSTEM

Brainerd Wood, Sudbury, Mass., assignor to Honeywell Inc., a corporation of Delaware

Filed Oct. 2, 1961, Ser. No. 142,071
8 Claims. (Cl. 235—61.7)

1. Apparatus responsive to the presence of spaced clock indicia on a moving record medium comprising a pair of indicia sensing elements positioned to detect each indicium passed thereby and produce an output signal indicative of each indicium sensed, said sensing elements being positioned apart by a distance different than the distance between the record indicia, and means sensing the outputs of said sensing elements at a predetermined time to produce a control signal if said outputs are both of a predetermined sense at said time, said sensing means comprising a signal gate having signals representative of each of said outputs connected thereto and being adapted to be activated at said predetermined time said sensing means being controlled to sample both of said output asynchronously, at times determined by the change in state of one of said elements.

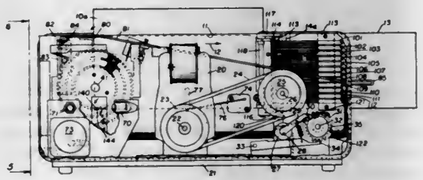


3,222,502

SYNCHRONISM FOR PUNCHED CARD READING SYSTEM

Donald M. Husted, Dallas, Tex., assignor, by mesne assignments, to Sperry Rand Corporation, Manhattan, N.Y., a corporation of Delaware

Filed May 8, 1961, Ser. No. 108,537
10 Claims. (Cl. 235—61.11)



4. In a card reading system the combination which comprises:
(a) structure forming a card way,
(b) drive means for engaging each card placed in said way and for moving each said card therethrough in uniform steps,
(c) a commutator disk rotated in synchronism with said drive means,
(d) a first ring of spaced apart contacts on said disk and a first brush means in the commutator, said disk and said brush means being movable, relative to each other into closed circuit relation at each commutator position corresponding with the terminus of a step of said card and into open circuit relation at each half step position,
(e) a second ring of spaced apart contacts on said disk and a second brush means in said commutator, one of said second ring and said second brush means being offset relative to said contacts of said first ring and said first brush means and movable one relative

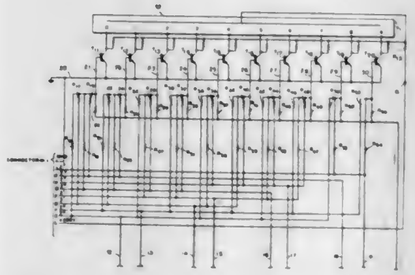
to the other into closed circuit relation at each said half step position and into open circuit relation at each said terminus, and

(f) a control circuit connected at one terminal to both said brush means and the other terminal formed of a continuous conductive ring in said commutator connected to all except a selected fraction of said spaced contacts in both said first ring and said second ring for generating a control function at any terminus or half step position occupied by members of said selected fraction of said contacts.

3,222,503
SET-RESET INDICATOR AND VARIABLE DIGIT COUNTER AND INDICATOR

Francis J. Cerulli, Berkeley Heights, N.J., assignor to the United States of America as represented by the Secretary of the Army

Filed Oct. 17, 1962, Ser. No. 231,309
6 Claims. (Cl. 235—92)



1. A multifunction binary circuit comprising a plurality of binary flip-flop stages each having an input AND gate; an inhibit generator transistor having an input terminal, an output terminal and a common terminal; means for supplying operating potentials of a reference potential, a voltage more negative than said reference potential and a voltage more positive than said reference potential; switch means connecting said common terminal to said positive potential of said reference potential; a first resistor and a first switch connected in series between said common terminal and said input terminal; a second resistor having one terminal connected to said output terminal; a third resistor connected between said negative potential and the terminal of said second resistor that is remote from said output terminal; a second switch connected in shunt with said second resistor; and means to connect the junction of said second and third resistors to each of said AND gates.

3,222,504
MONITORING SYSTEM FOR CONTROLLING A COMPONENT FABRICATING MACHINE

Howard H. Arnold, James H. Boatwright, and Jacob D. Schiller, all of Winston-Salem, N.C., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed June 23, 1961, Ser. No. 119,217
17 Claims. (Cl. 235—151.13)

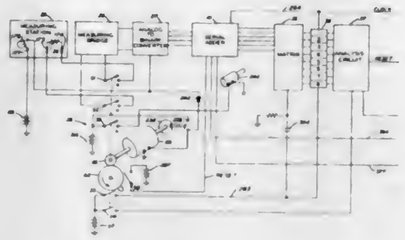
1. In a system for controlling an adjustable facility in a fabricating machine,

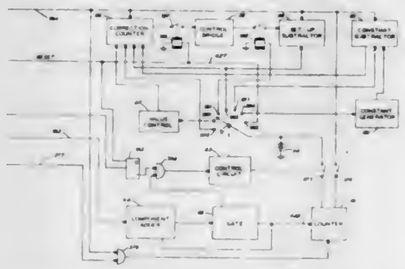
a device for measuring a predetermined parameter of a fabricated article and for generating a signal having a magnitude proportional to said parameter,

means for feeding articles from said machine to said device,

means rendered effective by the feeding of each article to said device for operating said device and for storing an item of data derived from said signal, and

means responsive to the storing of a predetermined number of items of data for indicating a trend of values of said parameter outside of predetermined



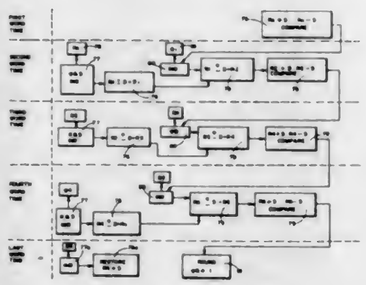


limits and for actuating said adjustable facility an amount proportional to the magnitude of said signal from which was derived the last item of data stored.

3,222,505
DIVISION APPARATUS

Robert K. Booher, Downey, Calif., assignor to North American Aviation, Inc.

Filed Nov. 20, 1961, Ser. No. 153,541
17 Claims. (Cl. 235—167)



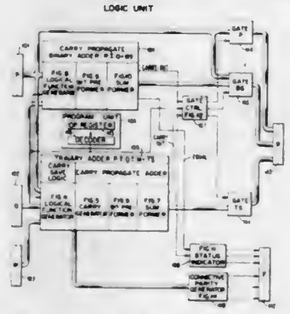
15. A digital computer for division comprising means for registering a divisor, means for registering a dividend, means for obtaining two successive remainders and quotient digits for each pair of computations during each cycle of the division but the first and last by either adding or subtracting the divisor to or from each of two successive remainders obtained during successive computations, first indicator means responsive to the signs of the divisor and the last of two successive remainders obtained during a given division cycle for determining whether the divisor is

to be added or subtracted from such last obtained remainder during the first computation of the next cycle, second indicator means responsive to a comparison of a carry or borrow of the second computation of a preceding cycle with the signs of the remainder from the second computation of the preceding cycle and the divisor for determining whether the divisor is to be added to or subtracted from the first remainder obtained during the first computation of the next cycle, and means for shifting the divisor relative to the remainder after each computation of each cycle except the last cycle.

3,222,506
VARIABLE RADIX ADDER AND SUBTRACTOR

Robert M. Meade, Wassaic, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Nov. 16, 1961, Ser. No. 152,831
10 Claims. (Cl. 235—169)



4. Means for logically combining multi-bit operands comprising:

(a) first input means for specifying a multi-bit binary representation of a first operand P;

(b) second input means for specifying a multi-bit binary representation of a second operand Q;

(c) third input means for specifying a multi-bit binary equivalent of a radix M;

(d) first binary arithmetic means controllable for performing in binary each of the operations $P+Q$, $P-Q$ and $Q-P$, and for providing for each operation, a full binary result together with an indication of whether the operation produced a high order carry out or borrow;

(e) second binary arithmetic means controllable for performing in binary each of the operations

$$P+Q-M,\ P-Q+M \text{ and } Q-P+M$$

and for providing for each operation a full binary result together with an indication of whether the operation produced a high order carry out or borrow;

(f) program control means for specifying an arithmetic operation to be performed with operands P, Q and M and for controlling said first and second arithmetic means to perform selected operations contemporaneously;

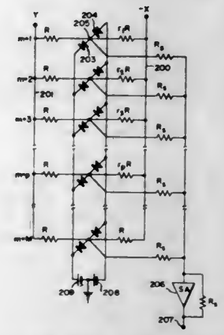
(g) gate control means responsive to the specification of said program control means and the carry out or borrow indications from said first and second arithmetic means for producing patterns of gate control signals which are unique to the specification of the program control means and the carry or borrow indications; and

(h) gating means responsive to said gate control means for selectively gating to a utilization device the full result produced by either of said first or second arithmetic means or either of the operands P and Q.

3,222,507
SPEECH COMPRESSION SYSTEMS

Samuel J. Campanella, Washington, D.C., and Thomas E. Bayston, Maitland, Fla., assignors, by mesne assignments, to Melpar, Inc., Falls Church, Va., a corporation of Delaware

Original application July 31, 1958, Ser. No. 752,253, now Patent No. 3,078,345, dated Feb. 19, 1963. Divided and this application Oct. 11, 1962, Ser. No. 243,965
6 Claims. (Cl. 235—196)

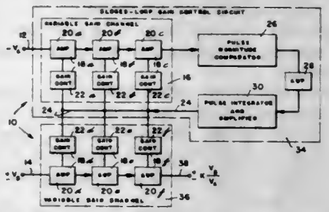


3. A voltage divider matrix for obtaining the voltage ratio X/Y, where X and Y are voltages of opposite polarities and X is smaller than Y, a plurality of discrete divider units each arranged to detect whether X/Y is above or below a fixed voltage interval and to generate a signal which is selectively of positive constant value or negative constant value according as X/Y is above or below said voltage interval, and means for algebraically adding said signals.

3,222,508
CIRCUIT AND TECHNIQUE FOR DIVIDING PULSE SIGNALS OVER A WIDE DYNAMIC RANGE OF INPUTS

William P. Mayne, Ridgecrest, Duane J. Russell, China Lake, and Langthorne Sykes, Manhattan Beach, Calif., assignors to the United States of America as represented by the Secretary of the Navy

Filed Feb. 4, 1963, Ser. No. 256,178
3 Claims. (Cl. 235—196)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. In a circuit for dividing a variable amplitude pulse divisor signal by a variable amplitude pulse dividend signal having therein:

(a) a matched pair of variable gain channels,

(b) consisting of divisor channel and

(c) dividend channel,

(d) an automatic gain control circuit operatively associated with the dividend channel adapted to furnish a gain control signal responsive to difference between the amplitude of signal at the said dividend channel and a fixed reference level, said gain control signal being operative to vary the gain of the dividend channel in a sense to eliminate said difference,

said gain control signal being applied to the divi-

dend channel to vary the gain thereof in accordance with the reciprocal of the divisor signal,

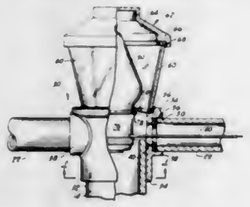
the improvements, in combination, comprising:

(e) each channel of said matched pair comprising a plurality of variable gain circuits connected in cascade,

(f) each of said plurality of variable gain circuits comprising a set of networks consisting of an amplifying network and gain control network for controlling the gain of the amplifying network,

(g) said automatic gain control circuit being adapted to apply said gain control signal to the gain control network of each set of networks to individually vary the gain of each of the cascade connected variable gain circuit.

3,222,509
ILLUMINATED FENCE
Russell E. Thedford, Rte. 1, Moore, Okla.
Filed Apr. 9, 1962, Ser. No. 186,114
6 Claims. (Cl. 240—2)



4. An illuminated fence comprising:

a series of spaced, vertically disposed posts; hollow cap means disposed on each of said posts; a tubular top rail interconnecting each adjacent pair of cap means, the tubular top rails communicating with the interior of the cap means for providing a continuous passageway through the several top rails and cap means;

at least one of said hollow cap means including,

a hollow, generally tubular body having a lower tubular shank portion receiving the upper end of a vertical post and having generally vertically extending side walls,

at least one aperture in the side walls for receiving an end of one of the tubular top rails,

stop means on the body abutting said vertical post received in the shank portion,

inwardly directed flange means adjacent the upper end of the generally vertically extending side walls,

an electric lamp socket having a peripheral flange therearound disposed within the body and supported by the inwardly directed flange means,

a light transmitting shield supported on top of the body, a cover member covering the top of the shield, and

fastener means extending between the cover member and body for drawing the cover member and body together and clamping the shield therebetween; and

insulated electrical conductor means extending through the passageway and connected with said lamp socket.

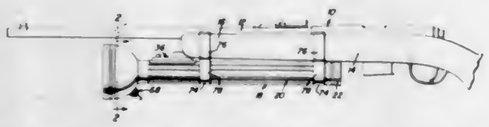
3,222,510
PROJECTING COLORED LIGHT
Edward C. Snyder, New York, N.Y., assignor of forty percent to Josephine Edgerton Mack, New York, N.Y.
Filed Jan. 18, 1962, Ser. No. 167,046
4 Claims. (Cl. 240—3.1)

1. Apparatus for the projection of a plurality of separate and colored light beams including a keyboard having a plurality of manually operable keys, a single source of light, a plurality of light focusing means for focusing a plurality of light beams from the source at angles to each other, color control means in the path of each fo-



cused light beam to control the color of the light beam, means connecting each key to a corresponding color control means, and means in the path of each focused light beam to distort the beam so that the image projected by each beam has a textured appearance.

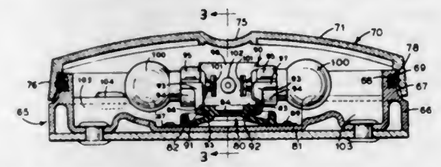
3,222,511
GUN BARREL MOUNTED FLASHLIGHT MOUNT AND SWITCH
Garnett M. Breeding, 3700 Leland Ave., Waco, Tex.
Filed July 7, 1964, Ser. No. 380,897
3 Claims. (Cl. 240—6.41)



1. In combination with a gun barrel having a muzzle end, a flashlight of the type including an elongated body and including illumination means at one end thereof adapted to be electrically connected to a source of electrical potential and also adapted to cast a beam of light outwardly of said one end of said body, said flashlight including first electrical circuit defining means having a first manually actuatable switch for electrically connecting said illumination means to said source, second electrical circuit defining means electrically connected to said first circuit defining means bypassing said first switch and including a second automatic switch responsive to positioning of said body for closing said second circuit, means supporting said body from said barrel with said body generally paralleling said barrel and said one end of said body facing in the direction of the muzzle end of the barrel so as to enable said flashlight to cast a beam of light along the line of sight of said barrel, said means securing said body to said barrel including means adapted to removably support said body from said barrel in selective positions of rotation of said body relative to said barrel disposed 180 degrees apart, said second switch being orientated relative to said body so as to be actuated to close said second circuit as said gun barrel has its muzzle end lowered from an upright position to a position with said muzzle end approaching a horizontal position and to maintain said second circuit closed as said muzzle end passes a downwardly directed vertical position and until said muzzle end again approaches a horizontal position facing in the opposite direction from the position it faces in the first mentioned horizontal position, said second switch also being orientated relative to said body so that, if said body is rotated 180 degrees about its longitudinal axis relative to said barrel, said second switch will be operative to close said second circuit only as said muzzle end is lowered so as to approach a muzzle down vertical

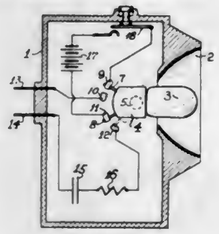
position and to maintain said second circuit closed until said muzzle end is swung past a muzzle down vertical position and thereafter past a horizontal position.

3,222,512
MOTOR VEHICLE CLEARANCE AND MARKER LAMPS WITH SHOCK ISOLATION
John B. Dickson, Kew Gardens, N.Y., assignor to Lehigh Valley Industries, Inc., New York, N.Y., a corporation of Delaware
Original application Mar. 16, 1961, Ser. No. 96,181, now Patent No. 3,145,933, dated Aug. 25, 1964. Divided and this application Dec. 27, 1963, Ser. No. 333,931
13 Claims. (Cl. 240—8.2)



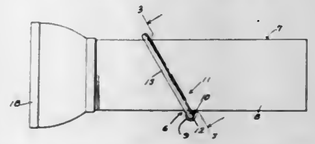
1. An automotive vehicle lamp comprising, in combination, a base having a substantially flat outer surface portion; a generally flat one-piece integral shock isolating mounting of relatively soft and flexible rubber-like material, having a substantially flat marginal portion engaging said substantially flat outer surface portion, and a substantially central hollow outwardly projecting nipple, of substantially rectangular lateral cross section, formed by walls sloping toward each other at a very small acute angle to said marginal portion, and then extending substantially normal to said marginal portion to form a relatively short substantially rectangular neck, the outer end of the neck terminating in a relatively short laterally extending peripheral lip; and a lamp socket assembly including a relatively rigid support member having a substantially planar portion formed with a substantially rectangular aperture closely embracing said substantially rectangular neck for support solely by engagement with the outer portions of said sloping walls and retention thereon by said lip; said lamp socket assembly including lamp bulb retaining means and lamp bulb engaging contact means; whereby said lamp socket assembly is resiliently supported solely by said nipple and isolated thereby from shocks received by said base.

3,222,513
NIGHT LIGHT
Michael De Feo, 46 Spring St., New Haven, Conn.
Filed Aug. 6, 1962, Ser. No. 215,014
6 Claims. (Cl. 240—37.1)



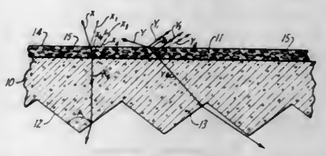
1. The combination comprising an alternating current electric supply; a direct current electric supply; a paraboloid shaped light reflecting surface having a focus and an opening; an electric light bulb inserted through said opening being pivotally mounted and having two positions: in one position producing light substantially in said focus, in the other position producing light out of said focus; an electrical switch mechanically connected to said bulb and having two positions, each corresponding to, and used with, one of said positions of the bulb; electrical connecting means, connecting said bulb through said switch to said direct current supply when said bulb is in said focus and connecting said bulb to said alternating current supply when said bulb is out of said focus; actuating means adapted to move said bulb and the connected switch from one of said positions to the other.

3,222,514
FLASHLIGHT HOLDER
Stuart R. Thornton, 3700 26th St., San Francisco 10, Calif.
Filed July 26, 1963, Ser. No. 297,934
1 Claim. (Cl. 240—52.5)



A flashlight holder comprising a bearing sleeve secured to the exterior of a flashlight case, crosswise thereof and intermediate of the ends of the case, and a split ring member formed from a single strand of resilient material of circular cross section and having an intermediate portion journaled in the bearing sleeve for swingably mounting said member on the flashlight case, said member having corresponding resilient end portions yieldably embracing the case in a folded inoperative position of the holder and extending transversely away from the case and adapted to yieldably embrace a supporting element to mount the flashlight thereon in an operative position of the holder.

3,222,515
ROOM LIGHT CONTROL
John B. Orr, Great Barrington, Mass., assignor to Sheffield Plastics, Inc., Sheffield, Mass., a corporation of Massachusetts
Filed Jan. 3, 1963, Ser. No. 249,210
5 Claims. (Cl. 240—106)



1. An article of manufacture which comprises, a relatively thin film-like member having a pair of opposed upper and lower major surfaces and whose upper surface is adapted to receive light from an overhead source and whose lower surface is adapted to transmit light therefrom, said film-like member having a body provided with a plurality of spaced-apart bubble-like portions therein that are flattened in a direction generally parallel to said opposed surfaces to selectively-reflect a large percentage of light from the light source of a high angular relation to the nadir and reflect a lesser percentage of light from the source of a lower angular relation to the nadir, a panel of light-transmitting material having a pair of opposed upper and lower major surfaces whose upper surface is positioned to receive light transmitted from the lower surface of said film-like member and whose lower surface is adapted to emit usable light therefrom, said panel having a body defining a lens for light transmitted from the source, said body having a substantial uniform dispersion of about microscopic-size light-absorbing par-

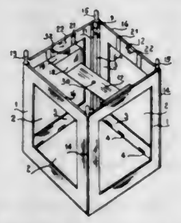
ticles therein having the characteristic of reflecting a greater percentage of light striking the upper surface of said panel at relatively high angles within the glare range and of passing a high percentage of light striking said surface at lower angles inside from the glare range, and the lower surface of said panel being prismatic along said body.

3,222,516
LENTICULATED LENS FOR TRAFFIC LIGHT
John R. Miles, Glenview, Ill., assignor to Lancaster Glass Corporation, Lancaster, Ohio, a corporation of Ohio
Filed June 24, 1963, Ser. No. 289,914
6 Claims. (Cl. 240—106.1)



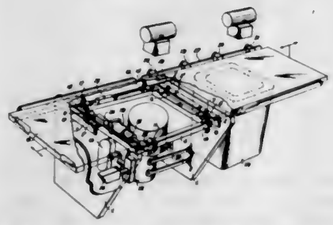
1. A lens for a signal light comprising a spherical section of light transmitting material having an inner face and an outer face, said inner face, when viewed with its chordal plane vertical, being provided with a plurality of contiguous transversely disposed flutes, each said flute having a vertical radius and a base disposed in a horizontal plane, and being scalloped along its horizontal axis to form a plurality of contiguous, bi-radial, convex, rectilinear segments, each said segment being canted so that the central vertical radius thereof intersects said outer face at a point below the point of intersection of said outer face by a radius of said face extending through the center point of said segment, each said bi-radial, rectilinear segment in any one flute being equally canted with respect to said radius of said outer face that extends through the center point of said segment, but with the degree of canting of said segments and the radii of said segments being equal in alternate flutes.

3,222,517
LAMPSHADES AND LAMPBASES
Joseph F. Peter, 411 Stanhope St., Brooklyn, N.Y.
Filed Oct. 7, 1963, Ser. No. 314,221
5 Claims. (Cl. 240—108)



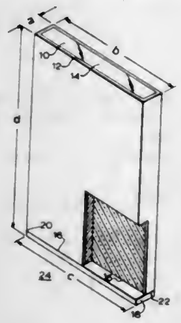
1. A collapsible lampshade, comprising a plurality of frames each having an opening to be covered with a shade material passing light therethrough, a shade holder surrounding one side of said opening for holding such material and attached to said frame with a plurality of bottom hinges, each frame having a plurality of spaced frame attaching ears at one end and a plurality of spaced frame attaching sockets at the other end, each of said frame attaching ears and each of said frame attaching sockets are provided with ear holding means, the frame attaching ears at one end being positioned opposite into the frame attaching sockets at the other end for connecting such frames with each other and said ear holding means securing the connected frame attaching ears and frame attaching sockets together, the side walls of the frame attaching sockets having at one end thereof a longitudinal supporting ear for supporting one end of the shade holder when the frames are connected, each shade holder having an upper hinge ear, said upper hinge ear being connected with the upper ear supporting means and a short shade holder pin is disposed through said upper hinge ear and through said upper ear supporting means, thereby securing said shade holder with the frame together, an outside light screen at one end of each frame sliding on the other end of the adjacent frame when said frames are connected for preventing the escape of light at the joint of the lampshade frames, a lampshade attaching brace connecting the lampshade with the lampbase, said brace comprising a substantially horizontal short base plate with a central hole, both ends of said base plate are bent upwardly forming at each end an arm, said arms extending upward to the two opposite facing lampshade attaching sockets and the degree of angle of said arms regulating the height of the lampshade on the lampbase, both of said arms ending vertically upward forming the eloganted brace attaching means, said brace attaching means being positioned into the two opposite facing lampshade attaching sockets for connecting said brace attaching means with said sockets, each of said sockets is cut open vertically at both ends for forming a flexible center door, each of said center doors and each of said brace attaching means having at one end a brace holding means for securing said brace attaching means with the center doors of said sockets together and connecting the lampshade attaching brace and the lampshade through the central hole of the base plate with the lampbase.

3,222,518
MOVABLE X-RAY TABLE WITH MEANS TO TAKE X-RAY PICTURES OF SUCCESSIVE PORTIONS OF THE OBJECT AND MEANS TO ALTERNATIVELY INSERT PHOTOGRAPHIC MEANS AND IMAGE AMPLIFIER MEANS
Jean Nagel, Vanves, France, assignor to Compagnie Generale de Radiologie, Paris, France, a corporation of France
Filed June 24, 1963, Ser. No. 289,931
Claims priority, application France, June 28, 1962, 902,284, Patent 1,335,544
5 Claims. (Cl. 250—58)



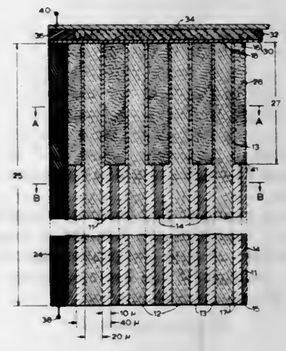
1. An X-ray system comprising in combination means producing an X-ray beam; a table adapted to support the body of a subject thereon in a plane generally normal to the beam, said table comprising a movable part including a top and a fixed part including a supporting frame therefor; means mounting the table top on the supporting frame for displacement in said plane longitudinally of the subject's body so as to position any selected part of the subject's body in the beam; X-ray camera means positioned on the opposite side of said table top from said beam producing means for radiographing said selected part positioned in the beam, said camera means being mounted to be stationary while said selected part is being radiographed; motor operated drive means mounted on said supporting frame for displacing the table top; switch means, a plurality of switch operating means separately positionable relative to the table in a direction parallel to table top displacement, said switch means being carried by one of said table parts while said switch operating means are mounted on the other in a cooperating position such that said switch means is actuated on displacement of the table top to each of a corresponding plurality of positions; said switch means being connected to said motor operated drive means for operating and disabling the latter in a controllable sequence on actuation of the switch means, whereby to displace the table top in a stepped sequence to each of said plurality of positions, means for operating said camera while the table top is at each position; means producing a second X-ray beam parallel to said first beam and intersecting the plane of said table top at a point longitudinally spaced from said first beam; a brightness amplifier unit including television camera and cinecamera means immovably connectable therewith; parallel linkage means on said supporting frame supporting said unit under the table top for parallel displacement in a direction generally parallel to the optical axis thereof towards the table top to an operative position in centered relation with said second beam and away from the table to an idle position; photographic plate carrier means mounted under the table top for sliding movement generally in the plane of said tabe top transversely thereto between an operative position in centered relation with said second beam and a withdrawn idle position; and means for alternatively moving said unit to its operative position and said carrier means to its idle position, and moving said unit to its idle position and said carrier means to its operative position.

3,222,519
INFRARED RESPONSIVE RECORDER WITH LAYERED MATERIAL
Joseph T. McNaney, 8548 Boulder Drive, La Mesa, Calif.
Original application Nov. 27, 1962, Ser. No. 240,241, now Patent No. 3,106,692, dated Oct. 8, 1963. Divided and this application Aug. 26, 1963, Ser. No. 313,715
2 Claims. (Cl. 250—65)



1. In an infrared heat responsive recorder means:
(a) a sheet;
(b) a layer of infrared heat sensitive photoconductor material;
(c) infrared radiation absorbable material disposed upon said sheet in the form of reproducible indicia;
(d) means for conducting infrared heat from said indicia to said layer;
(e) said indicia being spaced apart from said layer;
(f) said last stated means including an infrared heat conducting fiber intermediate said indicia and said layer, having one end adjacent said indicia and an other end adjacent said layer, for controlling the reflection of infrared heat therethrough to said layer upon the admission of said heat through said one end from said indicia; and
(g) a source of infrared radiation;
(h) said indicia being intermediate said source and said fiber and movable in relation to said one end.

3,222,520
INFRARED RADIATION IMAGE CONVERTER
Joseph T. McNaney, 8548 Boulder Drive, La Mesa, Calif.
Filed Mar. 11, 1963, Ser. No. 264,368
2 Claims. (Cl. 250—71.5)

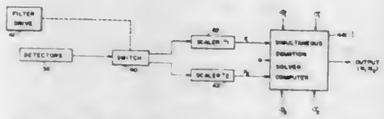


1. In an image converter,
(a) a plurality of radiant energy conducting fibers;
(b) said fibers each having first and second end surfaces;
(c) binder means intermediate said fibers for supporting said fibers in a spaced apart relationship to form a panel thereof and wherein said first end surfaces coincide with an outer surface of said panel;
(d) a layer of electroluminescent material adjacent said second end surfaces and spaced apart therefrom;
(e) a layer of visible radiation shielding material intermediate said second end surfaces and said electroluminescent material;
(f) said fibers each having a longitudinal surface extending from said outer surface of the panel to said second end surfaces, and each longitudinal surface thereof having a first portion and a second portion;
(g) said binder means being an electrical conductor material and being adjacent the first portion of each longitudinal surface;
(h) photoconductor material, intimately joined with said second portion of each longitudinal surface, extending from said binder means to said shielding material; and
(i) said fibers being adapted to control the reflection of infrared radiation from said outer surface of the panel to said photoconductor material.

3,222,521
METHOD AND APPARATUS FOR MEASURING FISSIONABLE ISOTOPE CONCENTRATION

Klaus Einfeld, Hannover, Germany, assignor to Interatom, Internationale Atomreaktorbau G.m.b.H., Duisburg, Germany, a corporation of Germany

Filed Oct. 6, 1960, Ser. No. 60,821
Claims priority, application Germany, Oct. 17, 1959, I 17,124
12 Claims. (Cl. 250—83.1)



2. A non-destructive method for measuring the concentration of at least two fissionable isotopes of elements selected from the group consisting of thorium, uranium and plutonium in a sample comprising the steps of sequentially irradiating the sample with a plurality of neutron spectrums, said number of neutron spectrums being equal to the number of fissionable isotopes to be measured, each of said neutron spectrums having a different average energy, sequentially counting after each irradiation the number of fissions resulting from each irradiation, and comparing said counting in accordance with the relationship

$$F_1=A(N'b'\sigma_1'+N^2b^2\sigma_1^2+\ \ldots\ b^nN^n\sigma_1^n)\phi_1$$

where

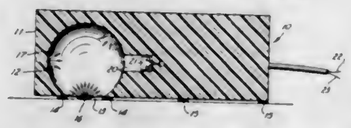
$$\sigma_1=\frac{\int\sigma(E).\phi_1(E)dE}{\int\phi_1(E)dE}$$

$_1$=integer values,
F_1=the number of counts resulting from one irradiation,
A=a constant,
N^1=number of atoms of first fissionable isotope,
N^n=number of atoms of nth fissionable isotope,
σ_1^1=cross section of first fissionable isotope (average value) for spectrum of first average value,
ϕ_1=neutron flux (neutrons/cm.^{2}/sec.).

3,222,522
INFRARED DETECTOR UTILIZING AN INTEGRATING SPHERE RADIOMETER

Richard C. Birkebak, 1828 Arona, St. Paul 13, Minn.

Filed Apr. 29, 1963, Ser. No. 276,238
11 Claims. (Cl. 250—83.3)

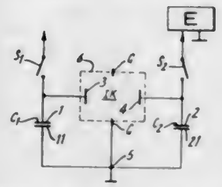


1. A radiation detecting apparatus comprising:
(a) an integrating sphere radiometer having a diffuse reflector surface with a constant and high reflectance value in the spectral direction for producing a substantially uniform radiation density within said sphere at any point on said diffuse reflector surface, said sphere having at least a pair of openings therein, one of which is adapted to face a source of radiation;
(b) thermal insulation means surrounding said integrating sphere radiometer and having an opening therein registering with the opening of said sphere and adapted to face a source of radiation and having at least one cavity registering with another of said openings in said integrating sphere;
(c) and radiation sensitive means mounted in said cavity of said insulation means and communicating with said opening in said sphere to receive said uniform radiation and produce a signal representative of said radiation.

3,222,523
IONIZATION CHAMBER TYPE RADIATION DOSIMETER

Emil Kowalski, Cham, Zug, Switzerland, assignor to Landis & Gyr, A.G., Zug, Switzerland, a corporation of Switzerland

Filed May 2, 1962, Ser. No. 191,836
Claims priority, application Switzerland, May 19, 1961, 5,916/61
13 Claims. (Cl. 250—83.6)

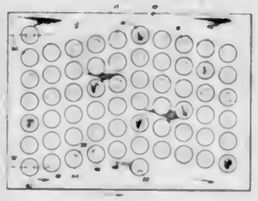


1. An irradiation dosimeter comprising an ionization chamber through which current can flow at a rate which is a function of the radiation to which the chamber is subjected; first capacitive means connected to said chamber and being electrically chargeable to supply an operating voltage to said chamber; second capacitive means connected to said chamber for integrating the current flow through said chamber and for providing a measure of the radiation dose; and electrical charging circuit means interconnecting said chamber and said first and second capacitances for charging said second capacitive means only from said first capacitive means via said ionization chamber.

3,222,524
RADIOGRAPHIC EXAMINATION APPARATUS COMPRISING A PLURALITY OF COLLIMATED SOURCES

James F. Lee, Menlo Park, Calif., assignor of forty-nine percent to Ind-X Corporation, Seattle, Wash., a corporation of Washington

Filed Nov. 13, 1961, Ser. No. 151,992
9 Claims. (Cl. 250—106)



4. A device for use in radiographic examination comprising a rectangular body of a material relatively opaque to penetrative radiation,
said body having a plurality of openings of like size in one surface thereof,
a source of penetrative radiation mounted in each of said openings,
each said source comprising a capsule having walls of uniform, predetermined thickness of a material transparent to said radiation defining a cavity,
an emitter of said radiation in each said cavity,
said body having a plurality of parallel passages therethrough concentric one with each of said cavities,
said passages having a cross-section substantially identical and aligned with said capsule cavities,
said body having a thickness such that said passages have a length at least several times their width,
said openings and passages being positioned in said body in such an array that between predetermined parallel limits said openings and passages define an equal volume in any increment of said body of a given width lying between and parallel to said limits and extending the full length of said body.

3,222,525
RADIOMETRIC DETECTION OF NON-RADIOACTIVE MATERIALS

Malcolm Thackray, Sutherland, New South Wales, Australia, assignor to Australian Atomic Energy Commission, Coogee, New South Wales, Australia, a statutory authority of Australia

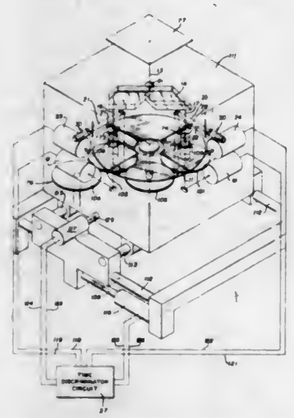
No Drawing. Filed June 27, 1962, Ser. No. 205,494
Claims priority, application Australia, June 30, 1961, 6,438/61
17 Claims. (Cl. 250—106)

1. A method for the detection of a non-radioactive material, which comprises the steps of impregnating a localized region of a porous medium with a portion of a solution suspected to contain said material; treating the impregnated region with a solution of a radioactive substance which forms a precipitate with said material; washing said impregnated region to remove unreacted radio-active solution; and passing said porous medium to a radiation measuring device to detect any radiation which may be present in said impregnated region.

3,222,526
PHOTOSENSITIVE LIGHT BEAM LOCATION INFORMATION DEVICE

Jack V. Franck and Paul S. Broadhead, Lafayette, Calif., assignors, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission

Filed June 27, 1961, Ser. No. 119,998
6 Claims. (Cl. 250—203)

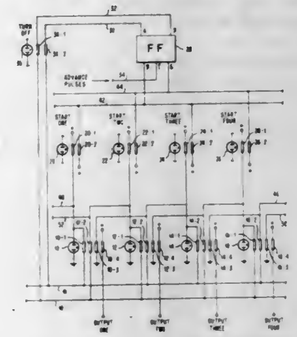


1. A light beam location information device comprising, a revolvably mounted scanning disc and motor drive therefor, optical means mounted for receiving said light beam and being formed for subdividing said beam into X and Y beams and directing said X and Y beams perpendicularly to the plane of said disc at 90° of arc separation, a reference light beam projected to said scanning disc, and photoelectric means mounted for receiving the projections of said X and Y and reference beams from said disc and detecting relative movement between said X and Y beams and said reference beam.

3,222,527
PHOTOSENSITIVE RING CIRCUIT

Paul R. Low, Palo Alto, Calif., and Rex Rice, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed July 24, 1961, Ser. No. 126,239
7 Claims. (Cl. 250—209)



1. A ring circuit having a plurality of ring positions and comprising: a storage device for each ring position; a starting device for each ring position connected to energize the storage device in that ring position in response to an individual start signal; at least a first and second drive line for said ring circuit connected to all said ring positions, said first drive line being connected to selected ones of said ring positions and said second drive line being connected to the nonselected ones of said ring positions; a commutator device connected to energize said drive lines to provide a repeating sequence of drive signals to successive ring position storage devices at a rate of one pulse at a time whenever an advance of the ring is required, said starting device for each ring position having a switch element connected to set said commutator device to energize the drive line connected to that ring position; connections, including a plurality of switch elements, for connecting said drive lines to said ring position storage devices, there being at least one said connection joined to each of said storage devices, said latching elements including a switch element for latching on the storage device joined to said connection, and said switch elements also including a pick up switch element for each ring position having a succeeding ring position, said pick up switch element being connected between both the storage device in said succeeding ring position and the drive line connected to said succeeding ring position and operating said storage device in said succeeding ring position when said last-recited drive line is energized by a ring shift signal from said commutator device.

3,222,528
MULTI-STATE PHOTOCONDUCTIVE LOGIC CIRCUITS

Robert A. Thorpe, Peekskill, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Nov. 2, 1961, Ser. No. 149,694
6 Claims. (Cl. 250—209)

1. A logical circuit arrangement for producing different outputs in response to different input voltage levels at a single input terminal comprising in combination:
first and second negative impedance voltage responsive light sources for producing an optical output in response to said input voltage levels;
means for connecting said light sources in series, said

means including an intermediate connection between said light sources;

a first bias voltage source for providing a first direct current bias voltage level to said first light source;

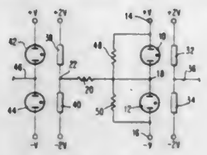
means for connecting said first bias voltage source to said first light source;

a second bias voltage source for providing a second direct current bias voltage level to said second light source, said second direct current bias voltage level being equal in magnitude but opposite in polarity to said first direct current bias voltage level;

means for connecting said second bias voltage source to said second light source;

means for providing a first input voltage level having a zero magnitude;

means for providing a second input voltage level hav-



ing a positive polarity in relation to said first input voltage level;

means for providing a third input voltage level having a negative polarity in relation to said first input voltage level;

means for connecting said second input voltage level to said intermediate connection and energizing said second light source;

means for connecting said third input voltage level to said intermediate connection and energizing said first light source; and

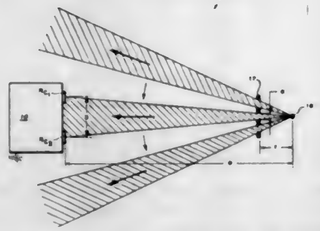
a first and second photoresponsive device for providing electrical output signals, said first photoresponsive device being positioned to be operable in response to illumination from said second light source and said second photoresponsive device being positioned to be operable in response to illumination from said first light source.

3,222,529

CIRCUIT WITH TWO PHOTOCELLS AND CHOPPING MEANS HAVING OPENINGS RELATED TO PHOTOCELL SPACING

Burton J. Askowith, Orlando, Fla., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed June 28, 1962, Ser. No. 206,561
3 Claims. (Cl. 250—209)



3. A photoconductive cell circuit for use in a modulated light field, comprising in combination: a first photoconductive cell, D.C. voltage source means connected electrically in series with said first photoconductive cell, a second photoconductive cell connected electrically in series with said first photoconductive cell and said D.C. voltage source means and arranged physically in the same plane and in side-by-side relationship with said first photoconductive cell, light source means, light chopper means interposed between said light source means and said first and second photoconductive cells for continuously sweeping individual beams of light over said first and second photoconductive cells, said chopper means having openings equal to the distance between said cells multiplied by the ratio of the light-to-chopper distance to the light-to-cells distance such that each of said beams rises on one of said photoconductive cells as it falls on the other of said photoconductive cell means, and means for measuring and amplifying the voltage across one of said cells.

3,222,530

ULTRA-SENSITIVE PHOTO-TRANSISTOR DEVICE COMPRISING WAFER HAVING HIGH RESISTIVITY CENTER REGION WITH OPPOSITE CONDUCTIVITY, DIFFUSED, LOW-RESISTIVITY, AND TRANSLUCENT OUTER LAYERS

Fritz R. Kalhammer, Philadelphia, Pa., assignor, by mesne assignments, to Philco Corporation, Philadelphia, Pa., a corporation of Delaware

Filed June 7, 1961, Ser. No. 115,383
5 Claims. (Cl. 250—211)



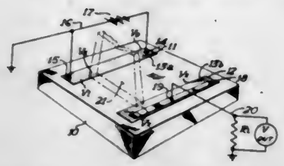
1. A photo-transistor device, comprising: a thin wafer of single-crystalline silicon having the resistivity of about 1000 to 2000 ohm-centimeters and having a given conductivity type; a pair of low-resistivity diffused layers in opposite surfaces of said wafer of a conductivity type opposite to said given conductivity type, said layers being sufficiently thin to leave between them a central region of said wafer of said given conductivity type and to form a pair of opposed rectifying barriers at the two interfaces between said central region and said pair of layers, at least one of said layers being open to illumination from the exterior of said device and transmissive of said illumination, the semiconductive material of said central region having a diffusion length for minority carriers which is at least as great as the thickness of said central region; and a conductive contact to each of said layers.

3,222,531

SOLID STATE JUNCTION PHOTOPOTENTIOMETER

Stanley R. Morrison, Minnetonka, Minn., assignor to Honeywell Inc., a corporation of Delaware

Filed June 26, 1962, Ser. No. 205,422
18 Claims. (Cl. 250—211)



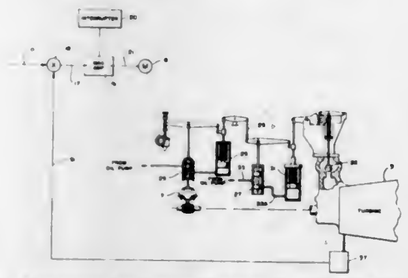
3. A light sensitive device comprising: a high resistivity semiconductor base of one conductivity characteristic having two regions of another conductivity characteristic disposed thereon; the first of said regions having a predetermined configuration and forming a first light sensitive junction area with said base; ohmic contacts in spaced relationship on said first region; means for applying a potential gradient across said first region between said contacts; the second of said regions forming a second light sensitive junction area with said base greater than one minority carrier diffusion length distant from said first region, said second region being located in a predetermined spaced orientation with respect to said first region; an ohmic contact on said second region; circuit means connected between one of said contacts on said first region and said ohmic contact on said second region, and means for impinging light on portions of said junction areas and for sweeping the light over the length of said areas to expose incremental portions thereof to the light.

3,222,532

INTERRUPTER CONTROL INCLUDING A PULSE WHICH INHIBITS ERROR SIGNAL TO MITIGATE OVERSHOOT

Gerald F. Oldenburg, Mentor, Ohio, assignor to Bailey Meter Company, a corporation of Delaware

Filed Nov. 1, 1962, Ser. No. 234,620
9 Claims. (Cl. 290—40)



1. Apparatus for controlling the energy input to a turbine generator, comprising in combination, a summing junction for algebraically adding two independent electrical signals, the sum of said signals being designated an error signal; a magnetic amplifying means including an output winding and a pair of oppositely wound input windings, the first of said input windings being connected to receive the error signal from said summing junction, a unijunction multi-vibrator switch cyclically operating in an open or closed position, said second input winding of said magnetic amplifying means being connected to said switch so as to be energized when said switch is in the closed position, said second winding being operably connected to inhibit amplification of small error signals when said second winding is energized, a synchronizing motor positioning means including a motor winding connected to the output widing of said magnetic amplifying means, said motor winding being energized by the uninhibited amplified error signal, valve means actuated by said positioning means for controlling the energy input to the turbine generator, and means responsive to the energy output of said turbine for generating an electrical signal proportional thereto, said proportional electrical signal being one of the two input signals to said summing junction.

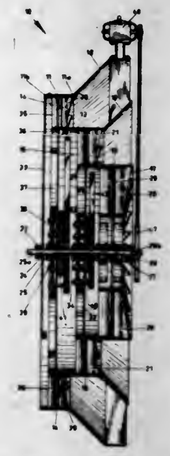
3,222,533

WINDMILL GENERATOR

James E. MacKay, 308 The Kingsway, Toronto, Ontario, Canada

Filed Aug. 1, 1963, Ser. No. 305,581
3 Claims. (Cl. 290—55)

1. A windmill operating on the turbine principle, including a plurality of open ended cylindrical casings in concentric conformation, having annular chambers formed therebetween, the centremost defining a cylindrical chamber; a plurality of first stator blades in the forward portions of each of said annular chambers, extending radially between said casings; a plurality of second stator blades extending radially inwardly of said cylindrical chambers and rigidly connected to said casings; a bearing housing rigidly connected to the inner ends of said second stator blades; said bearing housing defining a rotary axis concentric with said casings and located at the forward end of said windmill; a centre shaft extending between and rotatably supported by said bearing housing and said rear bearing; a plurality of first vanes extending radially outwardly from said centre shaft into said cylindrical chamber rearwardly of said second stator blades; rotor means rotatably mounted on a rear bearing



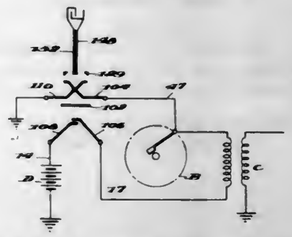
coaxial with said bearing housing, rigidly connected to said casings, said centre shaft rearwardly of said first vanes; a plurality of second vanes extending radially and mounted on said rotor means, rearwardly of said first stator blades in each of said annular chambers; epicyclic drive means, connecting each of said rotor members to said driving centre shaft whereby the latter is driven by said second vanes at substantially the same rotational speed as said first vanes; and means for connecting the said centre shaft to electric generator means.

3,222,534

ELECTRICAL ELEMENT AND SWITCHING MEANS

Charles H. Scott, 71 Weston Ave., Braintree 84, Mass.

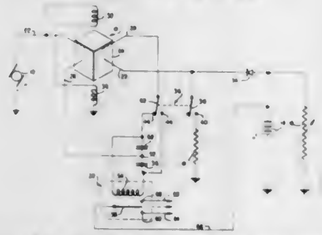
Filed Oct. 11, 1961, Ser. No. 144,327
9 Claims. (Cl. 307—10)



1. A switching device for an ignition system having a casing, a metal barrel movable in the casing from an "off" to an "on" position, said barrel having a key slot therein, a ring member of nonconducting material mounted on the forward end of the casing and having a central opening therein, a terminal on the front surface of said ring member, a second ring member of nonconducting material overlying said first ring member and having a rearwardly extending portion mounted in the central recess of the first ring member, means securing the rearwardly extending portion to the barrel for move-

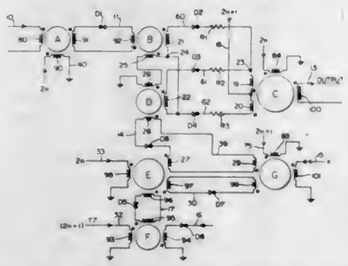
ment therewith, said second ring member having a central key opening therein aligned with the barrel key slot, a terminal in the wall of said second ring member central key opening, a second terminal on the rear surface of the second ring member engageable with the terminal of the first ring member, and a conductor interconnecting the terminals on the second ring member.

3,222,535
SYSTEM FOR DETECTION OF UTILIZATION OF MAXIMUM AVAILABLE POWER
Richard A. Engelhardt, Baltimore, Md., assignor to Martin-Marietta Corporation, Baltimore, Md., a corporation of Maryland
Filed Nov. 10, 1961, Ser. No. 151,532
12 Claims. (Cl. 307—66)



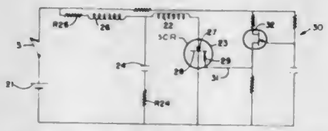
1. A system for detecting utilization of maximum available power from a source comprising: a solar-cell providing a source of power, a load connected across said solar-cell, a Hall effect device including output means, means connecting said Hall effect device in series with said given load and said solar-cell, means for subjecting said Hall effect device to a magnetic field proportional to solar-cell output voltage, a pair of capacitors connected in series, means for selectively connecting each of said capacitors across said output means of said Hall effect device, a polarized relay including a single relay coil connected across said series connected capacitors, said polarized relay further including a movable member normally biased to a neutral position but movable to at least one extreme position as a result of current flow within said relay coil, and means operable when one of said capacitors is connected across said output leads of said Hall effect device for incrementally changing the given load across said solar-cell, whereby said movable member of said polarized relay remains in said neutral position only when maximum power utilization of said solar-cell by said load occurs.

3,222,536
TIME-CONTROLLED LOGICAL CIRCUIT
John M. Witherspoon, Malvern, Pa., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Feb. 2, 1961, Ser. No. 87,057
7 Claims. (Cl. 307—88)



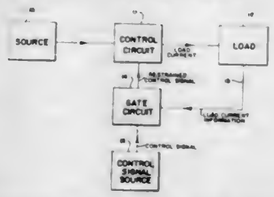
1. Operation control means comprising an AND gate, a first core responsive to transfer pulses to condition said gate ON when in predetermined set core state, Ping-pong means to set said first core, second core means responsive to information signals and to a start pulse to start said Ping-pong means, inhibit means to stop said Ping-pong means, third core means responsive to transfer pulses to provide input to said gate when in predetermined set core state, means to set said third core periodically, means to effect transfer simultaneously of said first and third core output at a time which is asynchronous to the means in which said third core periods are being set.

3,222,537
SYSTEM FOR PRODUCING RELATIVELY HIGH DIRECT CURRENT VOLTAGE PULSES FROM LOW VOLTAGE D.C. SOURCE
Norman J. Mellies, Houston, Tex., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Filed Feb. 28, 1961, Ser. No. 92,399
6 Claims. (Cl. 307—88.5)



1. A system for providing amplified direct current voltage pulses comprising:
a direct current voltage source;
circuit means, including inductive and capacitative components, said inductive and capacitative components of such values relative to the resistance of said circuit means such that twice the square root of the quotient of the inductance of said inductive component divided by the capacitance of said capactive component is at least as great as said resistance so that an oscillating voltage transient appears across said capacitative component on effective connection of said circuit means in series with said voltage source; and
means for alternately and at a predetermined frequency effectively connecting said circuit means in series with said voltage source and connecting a relatively low resistance current path across said capacitative component to coincide with the presence thereacross of a transient voltage overshoot.

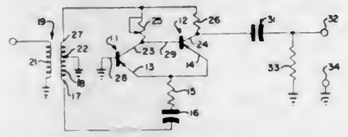
3,222,538
SURGE PREVENTING CIRCUITS
John H. R. Manners and Royston A. George, London, England, assignors to Westinghouse Brake and Signal Company Limited, London, England
Filed Dec. 8, 1961, Ser. No. 158,092
Claims priority, application Great Britain, Jan. 2, 1961, 22/61
8 Claims. (Cl. 307—88.5)



1. In combination with a source and a load, a circuit arrangement for controlling the supply of electric current from said source to said load and for preventing surge current to said load comprising sensing means connected to said load for providing an output signal representative of the magnitude of current supplied to said load, control

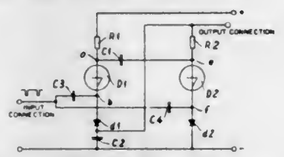
circuit means connected between said source and load for controlling the magnitude of said current, means connected to said control circuit for applying a control signal thereto, modifying means connected between said control signal applying means and said control circuit means for modifying said control signal, and time delay means connected to said sensing means and said modifying means and responsive to said output signal for causing said modifying means to modify said control signal.

3,222,539
TRIGGER CIRCUIT
Evander K. Fuller, Greensboro, N.C., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Mar. 4, 1960, Ser. No. 12,869
8 Claims. (Cl. 307—88.5)



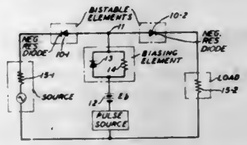
1. In a trigger circuit, a normally non-conductive transistor having an emitter, base, and collector, a source of varying signals for providing two components of substantially opposite phase relationship, means for applying said components to said emitter-base and collector-base, respectively to render said transistor conductive, and an emitter circuit including a series RC combination for advancing the phase of the emitter current such that a low emitter-to-collector potential is maintained for a predetermined time.

3,222,540
ELECTRONIC MULTIVIBRATOR CIRCUIT USING NEGATIVE-RESISTANCE ELEMENTS
Henry de Reynold, Neuchatel, Switzerland, assignor to Ebauches S.A., Neuchatel, Switzerland, a firm of Switzerland
Filed Jan. 9, 1961, Ser. No. 81,554
Claims priority, application Switzerland, Jan. 19, 1960, 557/60
9 Claims. (Cl. 307—88.5)



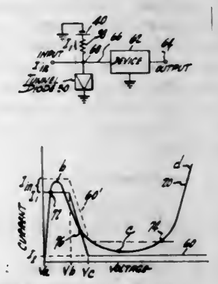
1. An electronic bistable circuit, comprising in combination, an input terminal and at least one output terminal, a first series circuit including a first negative resistance element, a first diode, a capacitor and a first resistor, a second series circuit including a second negative resistance element, a second diode, and a second resistor, said second series connection being connected shunting said first capacitor, a direct voltage source connected to ends of said first series connection and having a polarity corresponding to the forward direction of said first and second diodes and a voltage lower than the threshold voltage of said first and second negative resistance elements, first and second coupling capacitors coupling said input terminal to said first and second series circuits and adapted to transmit input pulses to said first and second negative resistance elements respectively, said output terminal being coupled to one of said first and second series circuits.

3,222,541
BISTABLE TRANSMISSION GATE
John H. McGuigan, Summit, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 11, 1961, Ser. No. 158,418
10 Claims. (Cl. 307—88.5)



1. Apparatus for gating a source to a load which comprises
a gating path interconnecting the source with the load and including a control point and tandem connected negative resistance diodes similarly poled with respect to said control point,
each diode having a current-voltage characteristic with low and high resistance regions of positive resistance separated by an intervening region of negative resistance,
a control path including means characterized by a load line intersecting both regions of positive resistance for biasing said diodes to have two stable equilibrium states respectively corresponding to said low and high resistance regions,
and means for momentarily shifting said load line to cause said diodes to shift from one of said stable equilibrium states to the other of said stable equilibrium states,
thereby to control the resistance of said gating path.

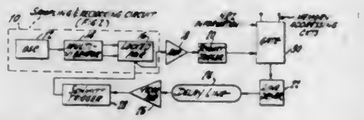
3,222,542
THRESHOLD CIRCUIT EMPLOYING NEGATIVE RESISTANCE DIODE AND DEVICE HAVING PARTICULAR VOLT-AMPERE CHARACTERISTIC
Juan J. Amodei, Levittown, Pa., assignor to Radio Corporation of America, a corporation of Delaware
Filed Mar. 1, 1962, Ser. No. 176,706
19 Claims. (Cl. 307—88.5)



1. The combination comprising:
a negative resistance diode having a volt-ampere characteristic defined by two regions of positive resistance, extending over first and second ranges of voltage values, respectively, separated by a region of negative resistance;
a device having at least two terminals;
said device having a volt-ampere characteristic defined by a first region of relatively low, constant current over a range of voltage values, which includes one of said first and second ranges, a second region of relatively high, virtually constant current over a range of voltage values which includes the other of said first and second ranges, and a third region of almost

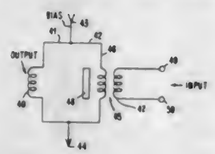
constant voltage between said first region and said second region;
means connecting said diode across said terminals;
means for quiescently biasing said diode and said device;
and means for applying input signals to said diode.

3,222,543
ULTRASONIC DELAY LINE CIRCULATING MEMORY SYSTEM
Robert G. Moy, Haddonfield, and Morton Silverberg, Riverton, N.J., assignors to Radio Corporation of America, a corporation of Delaware
Filed May 11, 1962, Ser. No. 193,923
3 Claims. (Cl. 307—88.5)



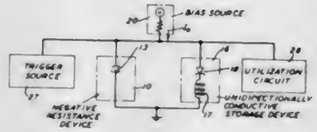
1. An electrical circuit comprising in combination,
an ultrasonic delay line,
means for providing to said delay line non-return-to-zero information signals having first and second signal levels with interposed transitions therebetween,
said delay line providing in response to each of the transitions in said information signal a sinewave signal having an initial polarity that corresponds to the direction of the transition producing said sinewave signal,
a trigger circuit having first and second conductive states corresponding to the initial polarity of said sinewave signals,
means coupling said trigger circuit to said delay line to be triggered into one of said conductive states depending upon the polarity of said information signals so as to produce a non-return-to-zero output signal,
a tunnel diode circuit including a pair of serially connected tunnel diodes,
means for providing first and second trains of clocking pulses of opposite polarity to opposite ends of said serially connected tunnel diodes to forward bias said diodes to operate as a balanced pair circuit, and
means for coupling said tunnel diode circuit to said trigger circuit to sample the conductive state of said trigger circuit to produce bipolar pulses of the same frequency as said clocking pulses and having a polarity that corresponds to the conductive state of said trigger circuit.

3,222,544
SUPERCONDUCTIVE, VARIABLE INDUCTANCE LOGIC CIRCUIT
Tsung-Hsien Cheng, Croton-on-Hudson, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed May 25, 1962, Ser. No. 197,774
5 Claims. (Cl. 307—88.5)



2. A cryogenic circuit comprising,
first and second superconductive current paths connected in parallel, means for establishing a bias current in both said paths, a variable inductance threshold device for controlling the current in said second path comprising,
a first superconductive conductor connected in series with said first current path, said conductor being made of hard superconductive material,
an input conductor, means for supplying current to said input conductor,
said input conductor having a small amount of mutual inductance with said first conductor, and
a segment of soft superconductive material located within the magnetic fields produced by said input and first conductors,
whereby current changes in said input conductor effect no appreciable changes in the current in said second current path so long as the current in said input conductor is below a certain threshold and whereby current changes in said input conductor effect an appreciable change in the magnitude of the current in said second current path when the current in said input conductor is above said threshold.

3,222,545
SEMICONDUCTOR MULTISTATE CIRCUITS
Charles J. N. Candy, Newark, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed June 29, 1962, Ser. No. 206,329
5 Claims. (Cl. 307—88.5)

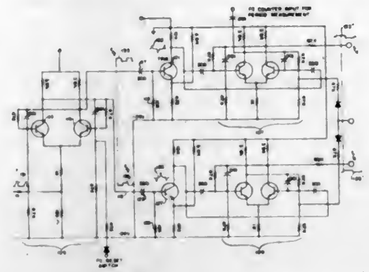


1. Apparatus which comprises
a negative resistance diode having two terminals,
a unidirectionally conductive diode having two terminals,
a terminal of the negative resistance diode and a terminal of the unidirectionally conductive diode being jointly and directly connected to a common point, the other terminal of said negative resistance diode being connected directly to ground,
and storage means interconnecting said other terminal of said negative resistance diode directly with the other terminal of said unidirectionally conductive diode.

3,222,546
PHASE SPLITTER
John P. Woods and Edwin B. Neitzel, Dallas, and Tom Prickett, Jr., Richardson, Tex., assignors to The Atlantic Refining Company, Philadelphia, Pa., a corporation of Pennsylvania
Original application Oct. 20, 1960, Ser. No. 63,750. Divided and this application July 1, 1963, Ser. No. 291,769
3 Claims. (Cl. 307—88.5)

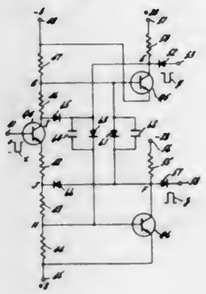
1. A novel 90-degree phase shifting circuit designed to operate with inputs of varying frequency comprising
(a) a drive flip flop,
(b) a first differentiating circuit connected to said drive flip flop,
(c) a first trigger circuit,
(d) a first driven flip flop, said first trigger circuit connected between said first differentiating circuit and said first driven flip flop,
(e) a second differentiating circuit connected to said drive flip flop,

(f) a second trigger circuit, and
(g) a second driven flip flop, said second trigger circuit



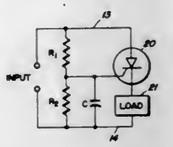
connected between said second differentiating circuit and said second driven flip flop.

3,222,547
SELF-BALANCING HIGH SPEED TRANSISTORIZED SWITCH DRIVER AND INVERTER
Byron H. Boan, Richardson, Tex., and Alfred E. Popodi, Glen Burnie, Md., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Sept. 12, 1963, Ser. No. 308,602
9 Claims. (Cl. 307—88.5)



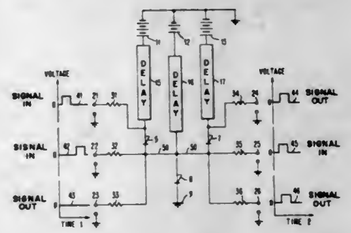
1. A self-balancing, high speed, electronic switch driver and inverter circuit comprising:
first, second, and third electron emission devices, each having two conduction electrodes and a control electrode;
biasing circuit means coupled to the conduction electrodes of said first electron emission device and to the conduction and control electrodes of said second and third electron emission devices;
an input coupled to the control electrode of said first electron emission device and an output coupled to one of said conduction electrodes of each said second and third electron emission devices;
means coupling the output of said second electron emission device with the control electrode of said third electron emission device through a unidirectional means;
means coupling the output of said third electron emission device with the control electrode of said second electron emission device; and
unidirectional means coupling one each conduction electrode of said first electron emission device respectively with each said output whereby signals applied to said input will be reproduced on one of said outputs and inverted on the other of said outputs simultaneously and substantially instantaneously from said input signals.

3,222,548
RF PROTECTION CIRCUIT
Richard J. Sanford, Silver Spring, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed Sept. 30, 1963, Ser. No. 312,805
4 Claims. (Cl. 307—88.5)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. An electrical circuit designed to protect circuit elements against R-F energy comprising:
a controlled rectifier having an anode, a cathode, and a gate electrode,
first and second input terminal means for receiving D.C. and R-F signals, said first input terminal means connected to said anode,
first and second resistors connected in series between said first and second input terminal means,
capacitor means having a first plate thereof connected to the junction point of said resistors and said gate electrode and the second plate thereof connected to said second input terminal means, and
output terminal means connected to the cathode electrode for supplying only D.C. signals to a load connectable between said output terminal means and said second input terminal means when both D.C. and spurious R-F signals are present at said input terminal means, said capacitor means and said first resistor providing R-F signal blocking thereby preventing any spurious R-F signal from firing said controlled rectifier.

3,222,549
MONOSTABLE LOGIC CIRCUIT
Arnold S. Farber, Yorktown Heights, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Nov. 1, 1963, Ser. No. 320,794
16 Claims. (Cl. 307—88.5)

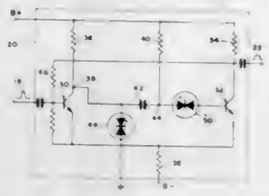


1. A logic circuit comprising:
a first and a second tunnel diode connected in series and biased for monostable operation, said first diode having a larger peak current than said second diode; and
a pair of input means for applying one input signal across said first diode and another input signal across both of said diodes.

3,222,550
PULSE WIDTH STABILIZED TRANSISTOR MULTIVIBRATOR

Frank H. Willard, 1046 Pacific Beach Drive, and James A. Pollard, 4107 Loma Alta Drive, both of San Diego, Calif.

Filed Jan. 14, 1964, Ser. No. 337,650
4 Claims. (Cl. 307—88.5)



1. In a transistorized multivibrator circuit including a timing capacitor, the combination comprising:

a D.C. source;

a first transistor having a collector;

a resistor having one end connected to said D.C. source and the other end connected to said collector;

means in the charge-discharge path of said capacitor ensuring that said capacitor consistently charges linearly to a predetermined charge level and discharges to a predetermined discharge level, said means including a double back-to-back zener diode having one terminal connected to the juncture of said collector, said other end of said resistor and one terminal of said capacitor, and having the other terminal connected to ground, so that said double back-to-back zener diode conducts at fixed and equal positive and negative potential levels to maintain the charge and discharge levels independently of nonlinear current changes in said first transistor;

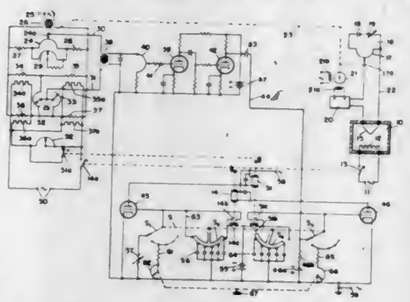
means connected to the other terminal of said capacitor ensuring that said capacitor consistently starts to discharge at the same charge level; and

a second transistor having a base, said base being connected to the last mentioned means to discharge said capacitor abruptly when said discharge path is closed by said last mentioned means.

3,222,551
SYSTEM FOR CYCLICALLY PRODUCING CONTROL IMPULSES OF PREDETERMINED LENGTH AND FREQUENCY

Harry B. Rath, Elkins Park, Pa., assignor to Leeds and Northrup Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Sept. 1, 1961, Ser. No. 135,538
13 Claims. (Cl. 307—97)

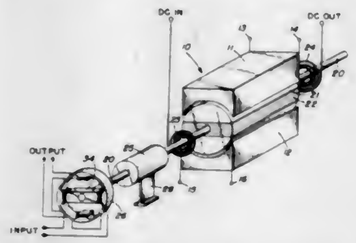


1. A system for cyclically producing control impulses of predetermined length and frequency comprising first and second electron control devices having input and output electrodes, resistive-capacitive networks, biasing means for each of said resistive-capacitive networks, circuit controllers associated with said devices and selectively operable concurrently to connect the capacitance of one of said networks to said biasing means to receive a charge and to establish a discharge circuit for the capacitance of the other of said networks, said polarity of said biasing means developing charges on said capacitances to render said devices non-conductive and upon dissipation of the charge rendering said devices conductive, operating means for the circuit controller associated with said first control device including an energizing circuit connected to an output electrode of said second control device, and operating means for the circuit controller associated with said second device including an energizing circuit connected to an output electrode of said first device whereby said capacitances of said networks are alternately charged and discharged for cyclically producing conduction of first one and then the other of said control devices for development of control pulses the lengths and frequencies of which pulses are determined by the respective time constants of said networks.

3,222,552
INTEGRATOR MODULATOR

Barry David Brown, Englewood, N.J., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed Nov. 14, 1961, Ser. No. 152,366
1 Claim. (Cl. 307—106)

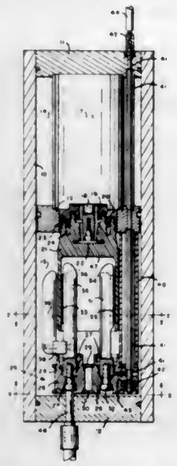


An integrator comprising the combination of a rotatable shaft; a pair of magnetic coils disposed about said shaft; a cylindrical core mounted on said shaft between said pair of coils; a third coil wound on said core so that a portion of said third coil lies parallel to said shaft, to said pair of magnetic coils, and to the longitudinal axis of said cylindrical core; first and second spring means electrically connected to said third coil and mounted on said rotatable shaft at opposite ends of said cylindrical core; electrical inputs and outputs connected respectively to said first and second spring means; an A.C. pickoff mounted at an extremity of said rotatable shaft comprising a circular iron core having four poles spaced 90° apart, input reference windings wound on two opposite poles, output windings wound on the other two opposite poles and a magnetizable rotor connected to said rotatable shaft for rotation between said four poles; and a silicone oil damper mounted on said rotatable shaft between said pickoff and one of said spring means comprising a fixed housing mounted about said rotatable shaft, silicone oil in said housing, and vanes mounted on rotatable shaft for rotation through said silicone oil whereby rotation of said third coil caused by the interaction of the fields of said pair of magnetic coils and said third coil is damped by a damping force greater than the mass of said third coil and the return force of said spring means and is equal to a constant times the integral of the current applied to said third coil.

3,222,553
ELECTROSTATIC GENERATOR

Peter U. Reusser, Box 502, Ridgefield, Conn.

Filed Aug. 28, 1962, Ser. No. 219,863
7 Claims. (Cl. 310—6)

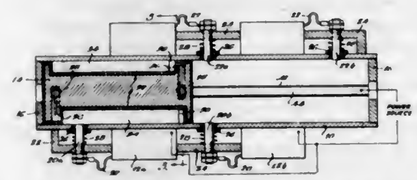


1. A high voltage electrostatic generator comprising in combination, a rotor of dielectric material; a plurality of electrodes having cross sections of substantially the same dimensions, and upper end portions of a compound spheroidal shape including curved surfaces on said electrodes that face each other having a radius greater than a cross sectional dimension of said electrodes; means for mounting said electrodes with a dielectric therebetween, and spaced from each other a distance in relation to a cross sectional dimension of said electrodes such that a minimum field strength exists within said dielectric between said electrodes; means for mounting said rotor so that its peripheral surface moves tangentially relative to a surface of said electrodes; means for applying charges of a predetermined polarity to said rotor at one of said electrodes; and means for removing said charges from said rotor at another electrode.

3,222,554
ELECTROMAGNETIC RECIPROCATING MOTOR

John A. Blomquist, Aurora, Ill., assignor of one-half to New-Mark Builders, Inc., Aurora, Ill., a corporation of Illinois

Filed Mar. 4, 1963, Ser. No. 262,572
10 Claims. (Cl. 310—35)

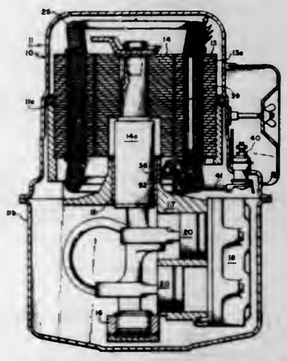


1. An electromagnetic reciprocating motor comprising a non-magnetic cylinder having abutments adjacent its ends, a plurality of electric coils arrayed in longitudinally spaced relation to one another along said cylinder, each coil being connected to one side of an electric power source and including a pair of contacts extending through said cylinder in circumferentially spaced relation to one another, corresponding contacts of the coils defining two sets of longitudinally spaced contacts, a magnetic armature slidably mounted in said cylinder, switch means on said armature responsive to engagement of the armature with said abutments and including a pair of alternately energized contacts circumferentially spaced from one another and respectively engageable with the contacts of said two sets, a power supply element extending from adjacent one end to adjacent the other end of said cylinder and connected to the other side of the electric power source, and conductor means connecting said supply element to said switch means.

3,222,555
MOTOR PROTECTION MEANS FOR HERMETICALLY SEALED MOTOR-COMPRESSOR UNITS

Philip H. Snoberger, Orange, Conn., and Oskar H. Buschmann, Sidney, Ohio; said Snoberger assignor to Ranco Incorporated, Columbus, Ohio, a corporation of Ohio

Filed Mar. 6, 1962, Ser. No. 177,778
5 Claims. (Cl. 310—68)



1. In an hermetically sealed motor-compressor unit comprising a refrigerant compressing portion and an electric motor portion including a field winding having a plurality of turns for carrying the motor current, said turns including straight intermediate portions extending axially of the motor and turned portions at the ends of said turns, motor protection means comprising:

(a) a pressure responsive switch connected to control energization of said motor,

(b) said switch comprising an hermetically sealed casing mounted within said unit,

(c) one of said turns comprising a current carrying tubular member means containing thermally expansible fluid,

(d) said tubular member means being connected by capillary tube means to said switch to effect opening thereof upon said tubular member means being heated to a predetermined temperature,

and

(e) said tubular member means being in close heat exchange relation and co-extending with the intermediate portion and an end portion of said winding.

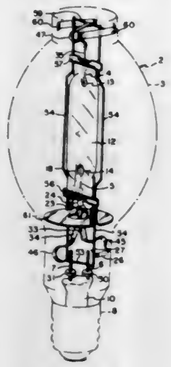
3,222,556
ELECTRIC DISCHARGE DEVICE

Daniel S. Gustin, Londonderry, N.H., assignor to Sylvania Electric Products Inc., a corporation of Delaware

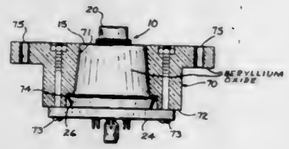
Filed Apr. 17, 1962, Ser. No. 188,091
5 Claims. (Cl. 313—25)

1. A high pressure electric discharge device comprising: an outer bulbous envelope; a first and a second stiff lead-in wire disposed at the base of said envelope, each of said lead-in wires being adapted to conduct current from opposite sides of a power line; a metallic harness disposed in said envelope and supported upon said first stiff lead-in wire; an arc tube supported upon said metallic

harness; electrodes disposed at either end of said arc tube, one of said electrodes being electrically connected to said harness and the other of said electrodes electrically connected to said second stiff lead-in wire; conductive means disposed within said envelope and upon each of said lead-in wires for preferentially forming an arc therebetween when an arc cannot strike between said electrodes in said arc tube.

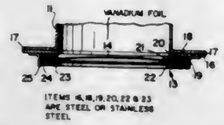


3,222,557
TUBE HAVING A HEAT CONDUCTING MOUNT
David D. Meacham, San Carlos, William D. Smith, Santa Clara, and Ruth Carlson Talcott, San Mateo, Calif., assignors to Eitel-McCullough, Inc., San Carlos, Calif., a corporation of California
Filed Oct. 3, 1961, Ser. No. 142,626
9 Claims. (Cl. 313—44)



1. An electron tube having a hermetically sealed envelope and cylindrical electrodes within the envelope, said envelope comprising an inverted cup-shaped beryllium oxide member forming one end of the envelope, a disk-shaped beryllium oxide header forming the other end of the envelope, terminal pins for some of said electrodes hermetically sealed in said header, one of said electrodes being a grid connected to one of said pins internally of said envelope, said cup-shaped member having a frusto-conical outside wall surface with its large diameter end adjacent the header end of the tube, said cup-shaped member having a cylindrical inside wall surface, one of said electrodes being an electron receiving electrode formed by an electrically conductive layer on said cylindrical inside wall surface of said cup-shaped member, another of said electrodes being a second grid, a metal support ring for said grid, said support ring having an annular U-shaped section, the bottom of said U-shape being flat and metallically bonded to the face of said header, a metal sealing ring metallically bonded to the rim of said cup-shaped member and having an outer flange portion nested within the outer leg of said U-shaped section, and a metallic bond sealing said flange to said outer leg.

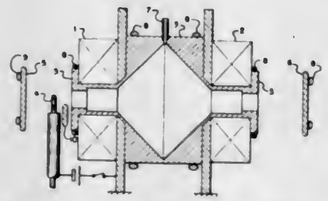
3,222,558
VANADIUM WINDOW FOR AN ATOMIC PARTICLE AND RADIATION EMITTING DEVICE
Robert E. Hueschen, Hales Corners, Wis., assignor to General Electric Company, a corporation of New York
Filed May 22, 1961, Ser. No. 111,706
7 Claims. (Cl. 313—59)



BRAZING METAL 25 MAY BE
72% Ag 28% Cu
50% Ag 50% Cu
100% Ag
38% Au 62% Cu
100% Cu
35% Au 62% Cu 3% Ni

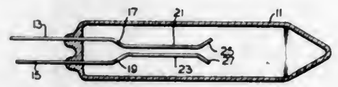
1. A discharge device comprising wall means defining an evacuated chamber in which high speed electrons are produced, and a vanadium foil window disposed across an aperture in one of said wall means through which said high speed electrons may exit from said chamber.

3,222,559
PRODUCTION OF COMPLETELY IONIZED PLASMA
Igor Alexeff, Oak Ridge, and Rodger V. Neidigh, Knoxville, Tenn., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed Dec. 11, 1964, Ser. No. 417,849
3 Claims. (Cl. 313—61)



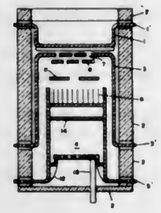
1. A device for producing a substantially completely ionized, high energy plasma for producing neutrons, comprising an evacuated enclosure, a pair of annular magnetic mirror coils spaced apart a selected distance from 3 to 22 inches and axially aligned and being disposed within said enclosure, a cylindrical anode disposed between said mirror coils, said anode being provided with axial extensions extending into and beyond the throats of said coils, said anode defining an effective plasma containing volume as defined by the magnetic field lines of a selected value from 10 to 500 cc., an electron emissive cathode mounted exterior and in spaced relation from one coil throat and aligned on the axis of said coils, a first electron reflector spaced beyond the cathode, a second electron reflector spaced exterior and in spaced relation from the other coil throat, means for cooling said anode and said electron reflectors, means for energizing said cathode, means for energizing said magnetic mirror coils to provide a magnetic field in the mirror region of a selected value from 13,500 to 50,000 gauss and a magnetic field in the midplane between the coils of a selected value from 9000 to 25,000 gauss, and means for feeding gas at a controlled and selected rate into said cylindrical anode at the center thereof midway between said coils such as to maintain the pressure within said anode cavity at a higher vacuum pressure than the vacuum pressure within said enclosure, whereby a pressure gradient arc discharge is established and maintained within said anode cavity to produce a high energy, substantially completely ionized and magnetically confined plasma within said anode cavity, and high energy plasma effecting a neutron production rate of a selected value in the range from 10^3 to 1.5×10^7 neutrons per second.

3,222,560
RADIATION SENSITIVE SPARK TUBE
Herbert Friedman, 2643 N. Upshur St., and Talbot A. Chubb, 5023 N. 38th St., both of Arlington, Va.
Filed Nov. 20, 1961, Ser. No. 153,589
9 Claims. (Cl. 313—93)



1. A radiation sensitive spark counter comprising a sealed envelope, a first wire electrode extending within said envelope, a second wire electrode extending within said envelope parallel to said first wire, said wires having a configuration such that the distance between the center of the electrodes is less than the distance between the ends of said electrodes, and a gaseous filling within said envelope consisting essentially of an electronegative gas having a partial pressure between 5 and 60 millimeters of mercury and an inert gas having a partial pressure between 70 and 7000 millimeters of mercury.

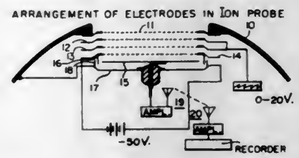
3,222,561
GASEOUS RESERVOIR
Nicholas Reinhardt, Lexington, Mass., assignor to Edgerton, Germeshausen & Grier, Inc., Boston, Mass., a corporation of Massachusetts
Filed Feb. 25, 1963, Ser. No. 260,654
2 Claims. (Cl. 313—180)



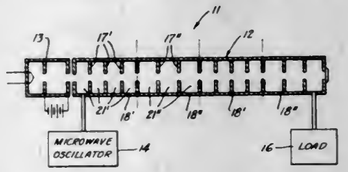
1. A gaseous-discharge device comprising:
a closed vessel containing a plurality of electrodes and a gaseous medium of predetermined pressure;
a gas reservoir within the vessel comprising a pair of thin plates disposed substantially parallel to each other, each plate containing an absorbed gas, a heater disposed between and in surface-to-surface contact with said plates, substantially coextensive therewith, said heater having a wide, thin heating element disposed with its broad dimension substantially equidistant from said plates and having a minimum spacing between adjacent portions, said heater element being covered with a thin insulating material;
means for connecting the heater to a source of potential; and
mounting means for securely positioning the reservoir within the vessel, said mounting means having a low heat conductivity constant.

3,222,562
ION PROBE FOR MEASURING INTERPLANETARY MEDIUM
Willard H. Bennett, 5032 Kaplan Drive, Raleigh, N.C.
Filed Dec. 29, 1961, Ser. No. 163,373
10 Claims. (Cl. 313—231)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. A device for detecting and measuring ions and electrons in the upper atmosphere which comprises an ion and electron inlet in which said inlet is open to ambient atmosphere, at least two grid type electrodes positioned across said inlet, a collector electrode positioned relative to one of said electrodes, and a shielding electrode positioned on the opposite side of said collector from said grid type electrodes, said electrodes being secured in spaced relationship in axial alignment relative to said inlet.



3,222,563
LINEAR ACCELERATOR WAVEGUIDE STRUCTURES ADAPTED TO REDUCE THE PHENOMENON OF PULSE SHORTENING
Neil J. Norris, Danville, Roy C. Marker, Orinda, and Richard F. Post, Walnut Creek, Calif., assignors, by mesne assignments, to High Voltage Engineering Corporation, Burlington, Mass., a corporation of Massachusetts
Filed June 13, 1960, Ser. No. 35,789
7 Claims. (Cl. 315—5.39)

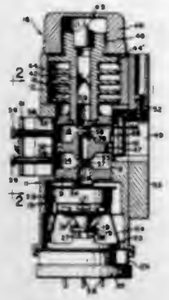


1. An accelerating waveguide structure for electrons comprising a plurality of sections of periodically loaded waveguide disposed in electrically coupled axially aligned relation with the periodic loadings of sets of alternate sections differing from each other to sustain varied modes of electromagnetic wave propagation therein, said alternate sections having loadings mutually compatible with the coupling of a fundamental electron accelerating mode of electromagnetic wave propagation therethrough at a phase velocity substantially equal to the velocity of light while being incompatible with the coupling of higher order modes of electromagnetic wave propagation between sections.

3,222,564
HIGH FREQUENCY ELECTRON DISCHARGE DEVICE WITH TEMPERATURE COMPENSATION CONTROL MEANS
James M. De Pue, Jr., Mountain View, and Norman E. Oaks, Woodside, Calif., assignors to Varian Associates, Palo Alto, Calif., a corporation of California
Filed July 12, 1963, Ser. No. 294,558
8 Claims. (Cl. 315—5.48)

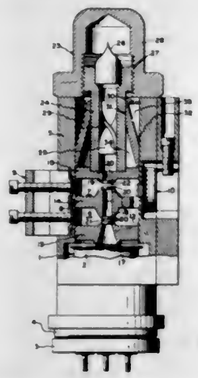
6. A high frequency klystron apparatus including a metal body having a bore therethrough, an electron gun assembly disposed at the upstream end portion of said klystron apparatus for projecting an electron beam along the beam axis of said klystron apparatus, a collector assembly disposed at the downstream end portion of said klystron apparatus and at least one cavity resonator disposed along said beam axis intermediate said electron gun and said collector, said at least one cavity resonator having an interaction gap therein which is disposed about the beam axis of said klystron apparatus, said at least one cavity resonator having a downstream end wall which has a field free region therein through which the beam travels into said collector, said collector including a hollow member mounted on said downstream end wall, said hollow member having a thermal coefficient of expansion which

is different than the thermal coefficient of expansion of the metal body of the klystron apparatus, said hollow



member being adapted and arranged in conjunction with said body such that temperature compensation of said klystron apparatus is effected in use.

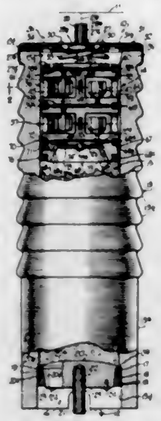
3,222,565
HIGH FREQUENCY ELECTRON DISCHARGE DEVICE WITH TEMPERATURE COMPENSATED GAP CONTROL MEANS
Norman E. Oaks, Woodside, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California
Filed July 12, 1963, Ser. No. 294,559
8 Claims. (Cl. 315—5.48)



1. A high frequency apparatus comprising a metal body having a bore therein, electron gun means operatively connected thereto at the one end thereof, collector means operatively connected thereto at the other end thereof, an interaction gap formed by opposing drift tube sections disposed within said bore between said collector and gun means, and a frusto-conical strut disposed about said collector and operatively connected to said collector and said body, said frusto-conical strut being made of a material having a higher thermal coefficient of expansion than the material of said body and said collector whereby frequency stabilization of said apparatus is achieved.

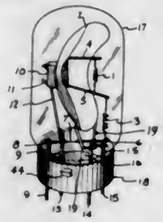
3,222,566
VALVE TYPE LIGHTNING ARRESTER
Edward H. Yonkers, Glencoe, Ill., assignor to Joslyn Mfg. and Supply Co., Chicago, Ill., a corporation of Illinois
Continuation of abandoned application Ser. No. 769,737, Oct. 27, 1958. This application Nov. 16, 1961, Ser. No. 157,293
5 Claims. (Cl. 315—36)

1. For use in a lightning arrester a quenching structure including at least one spark gap unit having a somewhat cylindrically shaped gap unit housing formed by upper and lower housing members, a first conducting plate secured to the top of the upper housing member, a second conducting plate secured to the bottom of the lower housing member, a plurality of spaced apart spark gap electrodes mounted upon said upper and lower housing members, said electrodes being arranged along a circle having a center substantially coinciding with the longitudinal axis of the housing and defining a series of spark gaps, means securing a first of said electrodes to said upper



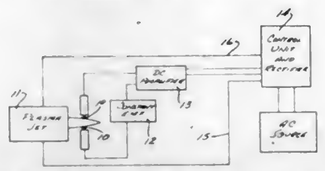
housing member and providing an electrical connection to said first plate, means securing a second of said electrodes to said lower housing member and providing an electrical connection to said second plate, a plurality of spaced apart projections extending upwardly from the lower housing member respectively supporting the lower ends of the remaining electrodes, and a similar group of projections extending downwardly from the upper housing member and respectively aligned vertically with the projections on the lower housing member for supporting the upper ends of said remaining electrodes.

3,222,567
PROJECTION LAMP
Richard E. Smith, Lexington, Ky., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Mar. 9, 1962, Ser. No. 178,625
5 Claims. (Cl. 315—71)



1. An electric incandescent lamp having an active filament coil operating at high temperature to act as a source of light for an optical system and a ballast filament coil operating at lower temperature in series with said first-mentioned filament coil and having sufficient resistance to act as a ballast to inhibit tendency to arc-out across the active coil, said ballast coil having a filament of smaller diameter than the filament of the active coil and of such resistance compared to the resistance of the active coil that it will come to its full temperature quicker than said active coil, and being of a more open pitch to operate at a lower temperature than the active coil.

3,222,568
CONTROL OF PLASMA
Keith C. Richards, Cleveland, Ohio, assignor to Owens-Illinois Glass Company, a corporation of Ohio
Filed Sept. 18, 1963, Ser. No. 309,746
6 Claims. (Cl. 315—111)



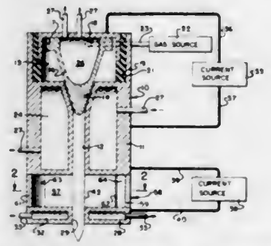
1. In a plasma generator wherein a plasma jet is formed and maintained between a cathode and an anode by the application of electric power to the cathode and anode, a control device comprising

a pair of oppositely disposed electrodes adapted to be placed in a relatively cool portion of the plasma jet,

means for measuring variations in conductivity across said electrodes when the electrodes are in position,

and means for controlling the current flow between the cathode and anode of the plasma generator in response to variations in conductivity between the electrodes to maintain the current between the electrodes substantially constant and, in turn, the ionization level and heat content of the plasma jet constant.

3,222,569
APPARATUS AND METHOD FOR GENERATING HIGH-INTENSITY LIGHT
John W. Winzeler and James F. Tucker, Santa Ana, Calif., assignors, by mesne assignments, to Giannini Scientific Corporation, Long Island, N.Y., a corporation of Delaware
Original application May 22, 1961, Ser. No. 111,763. Divided and this application Sept. 30, 1963, Ser. No. 312,573
11 Claims. (Cl. 315—111)



3. Apparatus for generating a high-intensity light, comprising

an electrical plasma-jet torch having a back electrode and a nozzle electrode,

means to maintain a first arc between said back electrode and said nozzle electrode,

wall means to define a chamber communicating with the nozzle opening in said nozzle electrode,

said chamber having an outlet opening therefrom,

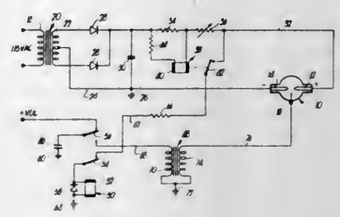
means to pass gas through said torch and said nozzle opening for ionization by said first arc,

said gas passing through said chamber and out said outlet opening,

means to maintain a second and high-current arc in said chamber through said ionized gas and between said nozzle electrode and an additional electrode having at least a portion disposed in said chamber, and

window means to transmit light from said second arc through said wall means defining said chamber.

3,222,570
STARTER FOR MULTIPLE ELECTRODE LAMPS
John R. Clark and Glee David, Jr., Tulsa, and Lloyd W. Fuller, Okmulgee, Okla., assignors to Midwestern Instruments, Inc., Tulsa, Okla., a corporation of Oklahoma
Filed Nov. 23, 1962, Ser. No. 239,637
10 Claims. (Cl. 315—124)



1. A circuit for igniting and operating a continuous arc lamp provided with a starting electrode in addition to the normal discharge electrodes comprising:

first unidirectional electric current supply means having an output voltage under load at least equal to the voltage required for continuous operation of said discharge electrodes;

first circuit means for coupling said discharge electrodes with said first supply means;

electrically responsive switching means coupled with said first circuit means and responsive to current flow therein resulting from starting of said lamp;

second unidirectional electric current supply means separate from said first supply means;

switch structure;

electrical energy storing means coupled with said switch structure;

means coupling said switch structure and storing means with said second supply means;

second circuit means for coupling said starting electrode with said switch structure, the latter having a normal, first switch position permitting electrical energy from said second supply means to flow into said storing means and a second switch position permitting electrical energy to flow from said storing means to the starting electrode;

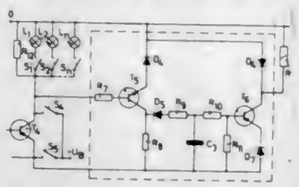
electrically responsive actuator means coupled with said switch structure for cyclically operating the latter to repeatedly place said switch structure in said second position momentarily and then return the same to said normal position; and

means electrically coupling said actuator means with said first supply means and said electrically responsive switching means, the latter interrupting current flow from said first supply means to said actuator means when current flows in said first circuit means, whereby the starting electrode is pulsed with electrical energy until current flows between the discharge electrodes and hence in said first circuit means.

3,222,571
ARRANGEMENT FOR CONTROLLING THE BRIGHTNESS OF DIRECT CURRENT OPERATED ILLUMINATING AND SIGNALLING LAMPS IN AIR VEHICLES AND THE LIKE
Heinz Timm, Regensburg, Germany, assignor to Diehl, Nurnberg, Germany
Filed Oct. 18, 1962, Ser. No. 231,492
Claims priority, application Germany, Oct. 21, 1961, D 37,294
1 Claim. (Cl. 315—130)

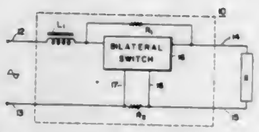
A circuit for controlling the brightness of direct current fed illuminating and signalling lamps, especially in aircraft, which comprises a plurality of lamps, a common feeding line connected to said lamps and also connected

to a direct current network, an electronic switch in said common feeding line and having a control element, an astable multivibrator connected to said control element of said electronic switch and operable for periodically supplying pulses to said element for opening said switch, adjustable means connected to said astable multivibrator and adjustable to adjust the duration of the pulses supplied to said element by said multivibrator to control the degree of brightness of said lamps while the frequency of said astable multivibrator is maintained high enough that the lamps burn without flickering even in dimmed condition, a direct current control relay, a voltage divider means, a condenser having one side connected to a point along said voltage divider means and having the other side connected to one side of said network, npn-transistor



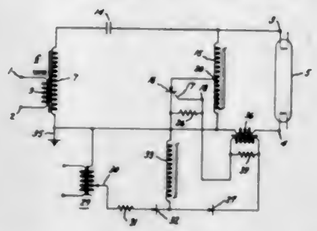
means and a diode connected to the collector thereof arranged in series, said diode on the side thereof opposite said transistor means being connected with one end of said voltage divider means and operable for feeding a direct current voltage interrupted in the rhythm of the voltage of said lamp circuit to said one side of said condenser, a resistor connecting the base of said transistor means to the other side of said network, a diode connecting the emitter of said transistor means to said other side of said network, a pnp transistor connected to receive voltage from said condenser, the collector of said pnp-transistor being connected with said control relay, the silicon diode connecting the emitter of said pnp transistor to said one side of said network, and a further resistor connecting the base of said pnp transistor to said one side of said direct current network.

3,222,572
APPARATUS FOR OPERATING ELECTRIC DISCHARGE DEVICES
Walter F. Powell, Jr., Danville, Ill., assignor to General Electric Company, a corporation of New York
Filed July 23, 1962, Ser. No. 211,555
17 Claims. (Cl. 315—151)



5. A system for operating at least one electric discharge lamp from an alternating power source, said system comprising: an alternating power source, at least one electric discharge lamp, at least one bilateral switch, means for repetitively driving said bilateral switch to a high impedance state and to a low impedance state in each half cycle of the alternating power source, a first impedance element connected in shunt with said bilateral switch, an inductance connected in series circuit relation with said bilateral switch, circuit means including input leads for connection with the power source and output leads for connection with the electric discharge lamp to supply the output of the apparatus to the lamp, said circuit means connecting said bilateral switch in circuit with at least one of said input leads and one of said output leads, said bilateral switch when driven from one of said impedance states to the other in each half cycle causing the energy supplied to said output leads to be changed from one level to a second level, a feedback device coupled to said lamp for indicating the energy utilized by said lamp, and means coupling said feedback device to said driving means for repetitively changing said energy levels at a rate proportional to the energy utilized by said lamp to vary the impedance of said inductance and dynamically balance the energy provided by said source with the energy required for operation of the electric discharge lamp.

3,222,573
FLUORESCENT LAMP DIMMING CIRCUIT
Harold W. Lord, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Dec. 11, 1962, Ser. No. 243,833
10 Claims. (Cl. 315—194)

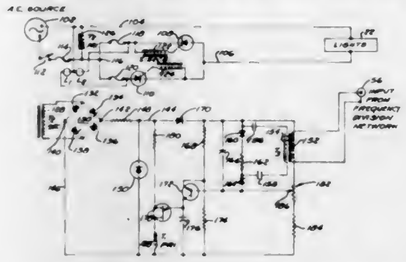


9. A fluorescent lamp dimming apparatus comprising a pair of alternating current power input terminals, output terminals for supplying a lamp circuit, a high reactance ballast transformer having a primary winding coupled across said power input terminals, said high reactance ballast transformer having a high leakage reactance secondary coupled to said output terminals and operating on non-linear portion of its excitation magnetization characteristic near rated current for said secondary, a capacitance serially interposed between said secondary and said output terminals to cause the high reactance secondary to operate on a non-linear portion of its characteristic, a fluorescent lamp circuit coupled across said output terminals, a silicon-controlled rectifier having first and second power transmitting terminals coupled substantially across said output terminals and having a control terminal, means coupled to said control terminal for operating said silicon-controlled rectifier to adjustably divert current otherwise flowing through said fluorescent lamp circuit during a controlled portion of successive half cycles of the A.C. input power waveform as received at said input power receiving terminals, and a saturating reactor coupled substantially across said output terminals, the flux density of said reactor being less than the flux density at the knee of the magnetization curve of the core thereof when said fluorescent lamp is drawing current, and drawing an average current equal to the current drawn by the silicon-controlled rectifier during the next succeeding half cycle after the silicon-controlled rectifier draws said average current.

3,222,574
MULTICHANNEL ILLUMINATION SYSTEM FOR CONTROLLING THE INTENSITY OF ILLUMINATION IN EACH CHANNEL IN RESPONSE TO SELECTED FREQUENCY BAND OF AN INPUT CONTROL SIGNAL
George Silvestri, Jr., Chicago, Ill., assignor to Silvestri Art Manufacturing Co., Chicago, Ill., a corporation of Illinois
Filed Nov. 22, 1963, Ser. No. 325,725
1 Claim. (Cl. 315—200)

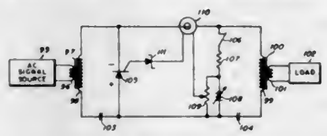
The improvement of a frequency controlled illumination system comprising the combination of an input source of electrical signals of different frequencies and varying

amplitudes, a frequency division network connected to said source, said frequency division network comprising tuned filter means for separating said signals into a plurality of different frequency range portions, a plurality of output channels connected to said frequency division network, there being at least a bass output channel for the low frequency range portion output of the frequency division network, a midfrequency output channel for the middle frequency range portion output of the frequency division network, and a treble output channel for the high frequency range portion output of the frequency division network, individual selectively operable amplitude control means in each of said output channels for enabling the amplitude of the frequency range portion output of each channel to be separately adjusted, an intensity control circuit connected in each output channel, each intensity control circuit comprising a source of power for a lighting circuit load, and phase controller means for varying the intensity of the power supplied to the lighting circuit load in accordance with the am-



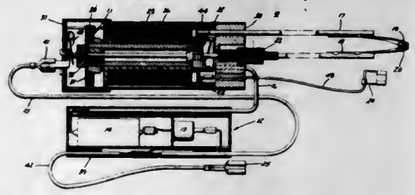
plitude of the signals supplied to the output channel from the frequency division network, said phase controller means having an input connected to receive the signals from the output channel of the frequency division network, a delay capacitor connected across said input to be charged by the signals received from the frequency division network, trigger means connected to said capacitor so as to be fired into conduction to produce a gate pulse having a phase angle determined by the amplitude of said input signals when the charge on said capacitor attains the firing potential of said trigger means, and a pair of reversely poled silicon controlled rectifiers connected to receive said gate pulse produced upon the firing of said trigger means to selectively apply power to the lighting circuit load from said source of power, and a lighting circuit load connected to the output of each intensity control circuit and adapted to be selectively energized thereby for providing lighting effects in accordance with the multi-frequency electrical signals at the input of the system.

3,222,575
CIRCUIT OVERLOAD PROTECTOR
Fred A. Dexter, 4715 Filipo St., San Diego, Calif.
Filed Oct. 29, 1962, Ser. No. 233,975
22 Claims. (Cl. 317—20)
(Granted under Title 35, U.S. Code (1952), sec. 266)



21. An electrical circuit overload protector comprising in combination,
an A.C. signal source,
a first transformer incorporating a primary winding having a pair of terminals and a secondary winding having a pair of terminals,
said pair of terminals of the primary winding of said first transformer coupled to the outputs of said A.C. signal source, said pair of terminals of the primary winding of said second transformer effectively coupled to said pair of terminals of the secondary winding of said first transformer,
an electrical load having a pair of inputs respectively connected to said pair of terminals of the secondary winding of said secondary transformer,
means interposed between said A.C. signal source and said electrical load for sensing the current flowing therebetween,
a pair of series connected capacitors connected between one of the terminals of the secondary winding of said first transformer and one of the terminals of the primary winding of said second transformer,
and means connected to said current sensing means and between the junction of said series connected capacitors and the other interconnected terminals of the secondary and primary windings of said first and second transformers for simultaneously shorting out the secondary winding of said first transformer and the primary winding of said second transformer when the current sensed by said current sensing means exceeds a predetermined value.

3,222,576
ELECTRIC IGNITION DEVICES
Paige W. Thompson, Morrison, Ill., assignor to General Electric Company, a corporation of New York
Filed June 1, 1964, Ser. No. 373,604
11 Claims. (Cl. 317—97)



1. In an electric ignition device, an igniter having a pair of ignition electrodes relatively movable between closed and open positions, biasing means urging said electrodes to the closed position, electric actuating means for driving the electrodes from the closed position to the open position at a selected frequency to provide an intermittent arc across the electrodes, circuit means connecting said electrodes and said actuating means in series circuit, said actuating means when energized causing said electrodes to be driven to the open position providing an arc and breaking said circuit allowing said biasing means to close said electrodes and reenergize said circuit, and an auxiliary circuit means for energizing said actuating means upon foreign matter preventing the electrical closing of said electrodes, said auxiliary circuit means being connected in parallel to said electrodes and in series with said actuating means and forming an electrical path for intermittently energizing said actuating means when said electrodes fail to close normally.

3,222,577
CONTROL SYSTEM FOR PNEUMATIC CONVEYORS OF THE TUBE DUCT TYPE
Bruce A. Kennedy, Toronto, Ontario, Canada, assignor to Electronic Sound Company, Toronto, Ontario, Canada
Filed Oct. 11, 1962, Ser. No. 229,939
5 Claims. (Cl. 317—148.5)

1. A switch control comprising:
a monostable multivibrator having at least two output signals;

a bistable multivibrator in operative relationship with said monostable multivibrator;

a first electrical switch means having on and off positions responsive to impulses from said bistable multivibrator;



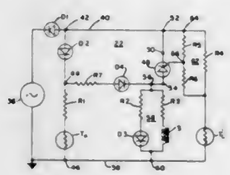
an electrical actuator operable by said first electrical switch means; and pulse generating means including a series of coils associated with diodes to form an AND gate triggering said monostable multivibrator responsible to motion of a permanent magnet past said coils.

3,222,578

SILICON CONTROLLED RECTIFIER ACTUATED LIQUID GAS FILLER

Alfred Almstedt Thiele, Box 307C, Graduate House, 305 Memorial Drive, Cambridge, Mass.

Filed Sept. 26, 1963, Ser. No. 311,902
11 Claims. (Cl. 317—148.5)



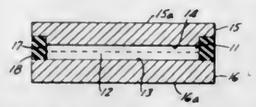
7. For use in a means for maintaining the level of a liquid between an upper and a lower limit in a container, said means including storage means for said liquid and motive means for transferring said liquid from said storage means to said container, a control circuit for said motive means comprising a solenoid winding adapted to effect actuation of the said motive means; first thermistor means adapted to be submerged in said liquid at the upper limit thereof; second thermistor means adapted to be submerged in said liquid above said lower limit thereof; a power source; a silicon controlled rectifier means in circuit with said solenoid winding and said power source selectively controlling the flow of power from said power source through said winding; bias circiut means connected across said power source controlled by and including said second thermistor means, rendering said controlled rectifier means conductive and energizing said winding when the level of the said liquid is below said lower limit; and holding circuit means including said first thermsitor and said solenoid winding maintaining said controlled rectifier means conductve once the latter has been rendered conductive by said bias means and until the said liquid reaches its upper level.

3,222,579

SEMICONDUCTOR RECTIFIER CELL UNIT AND METHOD OF UTILIZING THE SAME

George E. Fitzgibbon, Herbert Packer, and Clarence Huetten, Indianapolis, Ind., assignors to P. R. Mallory & Co., Inc., Indianapolis, Ind., a corporation of Delaware

Filed Mar. 13, 1961, Ser. No. 95,085
11 Claims. (Cl. 317—234)



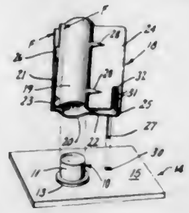
1. A self-protected semiconductor rectifier cell unit of minute size and standard physical configuration adapted to be readily assembled into a complete rectifier structure of specified physical configuration, said cell unit comprising: a longitudinally thin semiconductor wafer having a transverse PN junction therein and substantially planar transverse end surfaces; a pair of longitudinally short studs of gold metal so as to be etch-resistant each having a substantially planar surface at each transverse end thereof, one such transverse surface of each stud being bonded to and completely covering respective ones of the transverse surfaces of said wafer, and at least a portion of the longitudinal periphery of each stud overhanging the longitudinal peripheral surface of the wafer so that both studs together form a channel there-between transversely encompassing said peripheral surface of said wafer; one of said studs including a recessed longitudinal periphery, said recess for polarity identification of said semiconductor rectifier cell unit; and a moisture-resistant cohesive protective coating contained in said channel between said studs so as to seal the longitudinal peripheral surface of said wafer against external contamination, the channel serving to support and retain said coating intact and in contact with that surface.

3,222,580

HEAT EXCHANGE APPARATUS

Allan R. Curll, Jr., Ardmore, Pa., assignor to Philco Corporation, Philadelphia, Pa., a corporation of Delaware

Filed Oct. 29, 1963, Ser. No. 319,868
7 Claims. (Cl. 317—234)



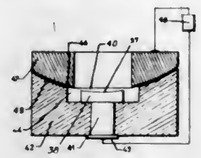
4. In combination with a semiconductive device having a generally cylindrical casing, a unitary sheet of flexible and resilient thermally conductive material including confronting plate portions interconnected by a bent portion; said confronting plate portions each having an outwardly curved section spaced laterally from said bent portion and cooperatively disposed as respects one another to form a generally cylindrical section extending generally parallel with said bent portion, said curved sections engaging said cylindrical casing; and means for maintaining very slight spacing between free edge portions of said plate portions, said means for spacing disposed intermediate end portions of said generally tubular section and about which means said free edge portions and said curved plate sections are resiliently pivotable, thereby resiliently urging said curved sections into the recited engagement with said cylindrical casing.

3,222,581

CAPACITIVE PICKUP DEVICES

René André Lenfant, Paray-Vieille-Poste, France, assignor to Office National d'Etudes et de Recherches Aerospatial, a corporation of France

Filed June 29, 1961, Ser. No. 120,711
Claims priority, application France, July 1, 1960, 831,794, Patent 1,327,719
11 Claims. (Cl. 317—246)



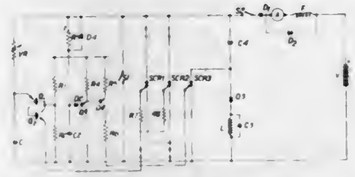
3. A variable pressure detecting device comprising an annular first block having an outer surface and an inner surface disposed coaxially with the center axis of said block, said inner surface defining a chamber the pressure in which is to be detected, a cylindrical second block having an outer diameter substantially equal to the outer diameter of said first block, said blocks being superimposed and the adjacent surfaces defining surfaces of revolution disposed symmetrically in reference to said center axis, a diaphragm clamped between said adjacent surfaces and sealing said chamber, said diaphragm constituting a flexible first electrode of a capacitor, the diaphragm being deflected in accordance with the pressure in said chamber, said second block including a recess in its surface facing the first block and a bore extending from the base of said recess, said recess and said bore being disposed coaxially with the center axis of the first block, and a rigid electrode of the capacitor, said second electrode including a cylindrical plate member and a cylindrical shank mounting said plate member and fitted in said bore, the side of said plate member facing the diaphragm being concave in reference to the diaphragm.

3,222,582

VARIABLE SPEED MOTOR SYSTEM UTILIZING CONTROLLED RECTIFIERS

Horace W. Heyman, Whickham, Newcastle upon Tyne, James Hambleton, Dunston-on-Tyne, Gateshead, and David Gurwitcz, Gosforth, Newcastle upon Tyne, England, assignors to Sevcon Engineering Limited, Gateshead, England, a British company

Filed Aug. 9, 1961, Ser. No. 130,392
Claims priority, application Great Britain, Aug. 20, 1960, 28,893/60; Mar. 11, 1961, 8,975/61
2 Claims. (Cl. 318—139)



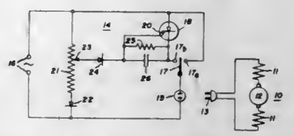
2. A control system for a battery-supplied electric motor comprising a transistor pulse generator having a manually variable resistance controlling the pulse generation frequency, a delay circuit with transistors, a main circuit including a battery, a variable speed motor, a diode connected in parallel therewith, a diode in series therewith, and a first controlled rectifier; a parallel path across said controlled rectifier comprising a capacitor and an inductor, and a second controlled rectifier connected across the inductor, an inter-connection between said pulse generator and first controlled rectifier to control the pulse frequency thereof, and an inter-connection between said delay circuit, and said second controlled rectifier to determine the pulse length.

3,222,583

CONTROL SYSTEMS

Frank W. Gutzwiller, Auburn, N.Y., assignor to General Electric Company, a corporation of New York

Filed Mar. 23, 1962, Ser. No. 181,947
10 Claims. (Cl. 318—246)



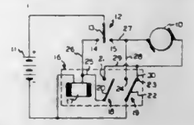
1. A control circuit for controlling the speed of an electric motor having series connected armature and field windings including in combination a first pair of terminals for connection to a source of alternating voltage; a second pair of terminals for connection to a motor to be controlled; a solid state controlled rectifier having an anode, a cathode, and a gate control element, said rectifier having its anode and cathode connected in a series circuit with said second pair of terminals, said series circuit connected across said first pair of terminals; and reference voltage supply means including a series circuit having a variable resistance element and a rectifier connected across said first pair of terminals, said rectifier element poled to pass the same half cycle of an alternating voltage source as said controlled rectifier element, a movable tap on said resistance element to select the magnitude of said reference voltage, said movable tap connected to said gate control element through another rectifier element poled to prevent current flow from said gate control element to said voltage source whereby said reference voltage is opposed by motor counterelectromotive force developed across said second pair of terminals due to residual motor field.

3,222,584

MOTOR REVERSING CIRCUIT

Gideon A. Du Rocher, Mount Clemens, Mich., assignor to Essex Wire Corporation, Fort Wayne, Ind., a corporation of Michigan

Filed May 14, 1962, Ser. No. 194,352
4 Claims. (Cl. 318—293)



1. A reversing circuit for a reversible D.C. motor adapted to be energized from a unidirectional power source and having an armature through which current may pass in opposite directions to reverse the direction of rotation of the motor, said reversing circuit comprising, in combination with said motor and power source:

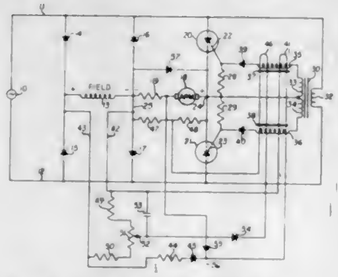
(a) a control switch having movable contact means connected to one side of the power source, and first and second contacts selectively engaged by the movable contact means;

(b) a relay having an operating coil, a first pair of normally open contacts, a second pair of normally open contacts and a third pair of normally closed contacts, said pairs of normally open contacts being closed and said pair of normally closed contacts being opened when said coil is energized;

(c) first conductor means connecting the relay coil

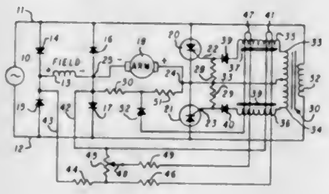
between the first control switch contact and the other side of the power source;
(d) second conductor means connecting one side of the motor armature to the second control switch contact;
(e) third conductor means connecting the first pair of normally open relay contacts between said one side of the motor armature and said other side of the power source;
(f) fourth conductor means connecting the second pair of normally open relay contacts between the first control switch contact and the other side of the motor armature;
(g) fifth conductor means connecting the third pair of normally closed relay contacts between said other side of the motor armature and said other side of the power source;
(h) the control switch when the movable contact means engages the control switch second contact and the third pair of normally closed relay contacts comprising a first armature energizing circuit for causing current flow through the armature in a certain direction; and
(i) the control switch when the movable contact means engages the control switch first contact and the first and second pairs of normally open relay contacts when closed comprising a second armature energizing circuit for causing current flow through the armature in a reversed direction.

3,222,585
SHUNT MOTOR CONTROL WITH CURRENT LIMITER
Earl D. Lobb, Garland, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Feb. 13, 1962, Ser. No. 173,025
6 Claims. (Cl. 318—308)



1. A motor control circuit comprising:
(a) an alternating current source,
(b) a controlled rectifier having an anode, a cathode and a gate, said anode being connected to one side of said source,
(c) a motor armature winding connected between said cathode and the other side of said source,
(d) a saturable core reactor coupled between said source and gate of said controlled rectifier,
(e) a bias winding and a control winding encircling the core of said reactor,
(f) a bias voltage source coupled to said bias winding to provide current therein tending to bias said core in a direction opposing conduction through said reactor from said source to said gate,
(g) means responsive to current in said armature winding and adapted to provide additional bias current in said bias winding when the armature winding current exceeds a predetermined level,
(h) a variable reference source to provide a voltage related to the desired motor speed,
(i) and a resistor coupled across the armature winding and exhibiting a potential thereon related to the armature winding voltage, said resistor and said reference source being connected in series opposition across said control winding to provide current therein tending to bias said core in a direction opposite to the effect of said bias winding.

3,222,586
SHUNT MOTOR CONTROL CIRCUIT
William J. Fontenote, Dallas, and Earl D. Lobb, Garland, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Apr. 13, 1962, Ser. No. 187,412
5 Claims. (Cl. 318—308)

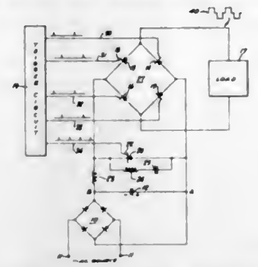


1. In power supply apparatus:
(a) an A.C. source,
(b) a controlled rectifier having an anode, a cathode and a gate,
(c) a variable load connected in series with said A.C. source and the anode and cathode of said controlled rectifier,
(d) a saturable core reactor coupled between said A.C. source and the gate of said controlled rectifier,
(e) a bias winding and a control winding encircling the core of said reactor,
(f) a bias voltage source coupled to said bias winding to provide current therein tending to saturate said core in a direction opposing conduction through said reactor from the A.C. source to the gate,
(g) a variable reference voltage source adapted to provide a reference voltage related to a selected load voltage,
(h) resistance means coupled across said load and exhibiting a potential related to the actual load voltage,
(i) and conductive means connecting said reference voltage source and said resistance means in series opposition across said control winding, the reference voltage being poled to bias said core in a direction opposite to the effect of said bias winding.

3,222,587
ALTERNATING CURRENT CONVERTING CIRCUIT
Abraham Lichowsky, San Carlos, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California
Filed Mar. 14, 1961, Ser. No. 95,554
12 Claims. (Cl. 318—380)

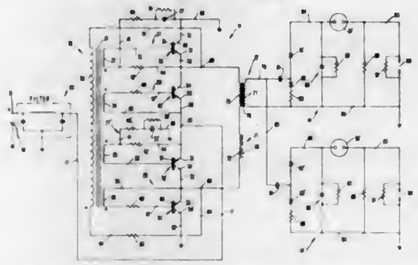
10. A circuit for transforming a D.C. voltage to an A.C. voltage of controllable frequency for driving a motor comprising four silicon controlled rectifiers connected in a bridge circuit, means connecting a first pair of terminals of the bridge circuit to a source of direct voltage, means connecting a second pair of terminals of the bridge circuit to a motor, means for triggering respective opposed pairs of said silicon controlled rectifiers to conduct in alternate sequence, means for extinguishing conduction in the silicon controlled rectifiers at selected intervals in order to apply a signal wave to the motor of a selected fundamental frequency which is substantially free of even

harmonics, the third harmonic and integral multiples of the third harmonic, and means for causing a selected pair



of silicon controlled rectifiers to maintain conduction of current to the motor to provide dynamic braking thereof.

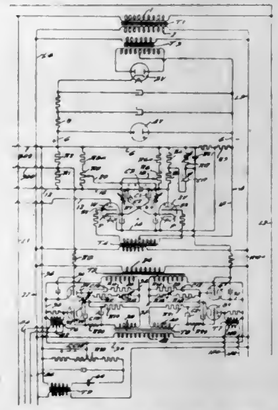
3,222,588
SERIES RESISTOR-CONDENSER STARTER FOR A TRANSISTORIZED OSCILLATOR
David F. Campbell, Sidney, N.Y., assignor to The Bendix Corporation, Sidney, N.Y., a corporation of Delaware
Filed Dec. 5, 1960, Ser. No. 73,623
7 Claims. (Cl. 320—1)



7. A circuit for generating electric current pulses comprising a bridge coupled transistor oscillator including an intercoupled feedback transformer and four transistors serially conductive in pairs, different pairs being alternately conductive, a source of electrical energy connected to supply electrical energy to the primary inding of said feedback transformer through the emitter-collector path of the conductive pair of transistors, a feedback loop circuit for each transistor including a secondary winding of said transformer and the emitter and base of the respective transistor, an output power transformer including a primary winding connected in series with a choke coil, said series connected winding and coil being connected in parallel with said primary winding of the feedback transformer, and an output circuit including the secondary winding of said power transformer, a storage condenser connected to be charged by said secondary winding of the power transformer and means for intermittently discharging said storage condenser.

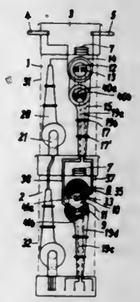
3,222,589
ELECTRICAL CONTROL SYSTEM FOR WELDING APPARATUS
Lloyd C. Poole, 310 E. Lewiston Ave., Ferndale 20, Mich.
Continuation of application Ser. No. 214,999, Mar. 10, 1951. This application Mar. 14, 1956, Ser. No. 576,512
52 Claims. (Cl. 321—7)

1. In an electrical controlling apparatus for supplying an electrical load from an alternating electrical source, a pair of normally de-energized voltage producing devices, a pair of current controlling means individually associated with said pair of devices for controlling the energization thereof, one of said means normally being conductive and the other of said means normally being nonconductive, means for actuating said current controlling means to render them alternately conductive and nonconductive at a desired frequency to energize said devices, said actuating means including means responsive to the frequency of said source for synchronizing the instant of initiation of conduction of said current controlling means with respect to the voltage wave of said source, means associated with the one of said devices which is associated



with said one current controlling means for rendering said one device energized solely for a predetermined time interval irrespective of the continued conduction of said one current controlling means, a pair of asymmetric current conducting devices connected to conduct current between said source and said load in opposite directions, and means responsive to the energization of one of said voltage producing devices for rendering one of said asymmetric devices conductive and responsive to the energization of the other of said voltage producing devices for rendering the other of said asymmetric devices conductive.

3,222,590
HIGH-VOLTAGE INSTRUMENT TRANSFORMER
Hans Ritz, 72 Alsterkrugchaussee, Hamburg, Germany
Filed Feb. 13, 1962, Ser. No. 173,048
8 Claims. (Cl. 323—48)



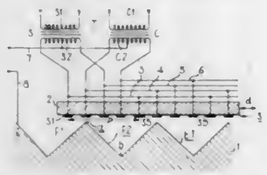
1. A transformer adapted to be coupled to conductors of a single phase electrical system comprising a hollow insulating housing, two ring-like cores in said housing each having a central opening, said cores being disposed adjacent one another in the same plane, separate secondary windings each around one of said cores, conductors extending from said separate secondary windings and adapted to be connected to electrical circuits, a common body of rigid insulating material encasing both said cores, said secondary windings and portions of said conductors,

said body having a first aperture located within the opening of one of said ring-like cores, said body having a second aperture located within the opening of the other of said ring-like cores, a first primary winding passing through said first aperture and a second primary winding passing through said second aperture, said first and second primary windings being adapted for connection to conductors of a single phase electrical system, and a liquid insulator filling said housing and encasing said body and said primary windings.

3,222,591
APPARATUS FOR PRODUCING SIGNALS INDICATIVE OF RELATIVE POSITION

Dennis J. Mynall, Rugby, England, assignor to Associated Electrical Industries Limited, London, England, a British company

Filed Nov. 20, 1963, Ser. No. 325,010
Claims priority, application Great Britain, Nov. 23, 1962, App. 44,455/62
10 Claims. (Cl. 323—61)

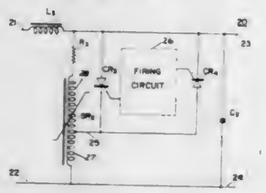


1. Apparatus for providing electrical signals indicative of positional relationship, comprising two relatively movable members of which the first has an electrically conductive surface having a toothed profile and the second has a plurality of equally spaced conductive strips which, being disposed in sensible capacitive proximity to the teeth of the first member and extending transversely of the direction of relative movement between the two members, are connected together into at least three sets and have a centre-to-centre spacing between adjacent strips which is related to the tooth pitch by the expression $m=pn\pm1$ where n is the number of sets of strips, greater than 2, p is an arbitrary number which can be zero, and m is an integral number of tooth pitches corresponding to the centre-to-centre spacing of successive strips of the same set, each set being constituted by strips which have a similar positional relationship to respective teeth of the first member and the several sets being connected to a transformer arrangement for correlating in a positional output signal therefrom the cyclic variations of capacitance which will occur between the toothed member and the several sets of strips during relative movement between the two members.

3,222,592
VOLTAGE STABILIZING CIRCUITS

Harry L. Kellogg, Fort Wayne, Ind., assignor to General Electric Company, a corporation of New York

Filed Dec. 19, 1962, Ser. No. 245,842
6 Claims. (Cl. 323—89)

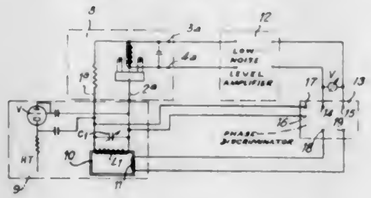


1. A voltage stabilizing circuit for connection to a source of potential and for supplying a substantially constant output voltage therefrom, said voltage stabilizing circuit comprising: an input means including leads for connection to the source of potential and including a linear reactor connected in circuit with one of said leads to cause current from said source to pass therethrough, a saturable reactor, said saturable reactor including a tap dividing said saturable reactor into a first winding portion and a second winding portion, an impedance element connected in a series circuit relation with said saturable reactor, a stabilizing capacitor, circuit means connecting said stabilizing capacitor in circuit with said input means and in parallel circuit relation with the series circuit of said saturable reactor and said impedance element, at least one multilayer of semiconductor control device connected in parallel circuit relation with the series connection of one of said winding portions and said impedance element, output leads for connecting said capacitor in circuit with a load, and means for firing said multilayer semiconductor control device at selected intervals from a nonconducting to a conducting state to cause said stabilizing capacitor to discharge through said second winding portion and change the effective volt-second capacity of said saturable reactor for providing a substantially constant output voltage.

3,222,593
MEASURING THE CHARACTERISTICS OF A MAGNETIC FIELD AT ANY GIVEN POINT BY NUCLEAR RESONANCE

André Denis, Herblay, and Guy Ripart, Plessis-Robinson, France, assignors to Sud-Aviation Société Nationale de Constructions Aéronautiques, Paris, France

Filed July 13, 1962, Ser. No. 209,540
Claims priority, application France, July 13, 1961, 867,872; Patent 1,303,505
5 Claims. (Cl. 324—.5)

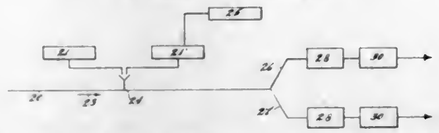


1. In an apparatus for measuring the strength of a magnetic field at a given point, of the type comprising a conventional proton probe consisting of a proton sample subjected to an Overhauser effect and surrounded by the coil of an L.C. circuit, said coil being weakly coupled to a self-oscillator which is connected to a phase discriminator to which is also connected said self-oscillator by a low-noise level amplifier whereby the phase discriminator generates a direct current which is a function of the phase difference between the signals delivered by said amplifier and by said oscillator, means connected to said self-oscillator and to said phase discriminator for feedback controlling said self-oscillator by said direct current to cancel said phase difference, and means for measuring the frequency of the signals delivered by said amplifier in order to determine the strength of the magnetic field, the improvement according to which the self-oscillator has a resonant element comprising a saturatable core, a self-induction coil wound on said core, an adjustable tuning capacitor connected in parallel across said self-induction coil and a saturation winding wound on said core, the means for feedback controlling the self-oscillator comprising a feedback controlling circuit interconnecting the output of the phase discriminator and said saturation winding, whereby said winding and said circuit act as a feedback control for said self-oscillator.

3,222,594
EDDY CURRENT TESTING METHOD OF DISTINGUISHING SIMILAR WELDING ELECTRODES HAVING DISSIMILAR COATINGS

Clyde V. Prestowitz, Wilmington, Del., assignor to Arcos Corporation, Philadelphia, Pa., a corporation of Pennsylvania

Filed Mar. 29, 1962, Ser. No. 183,627
4 Claims. (Cl. 324—40)

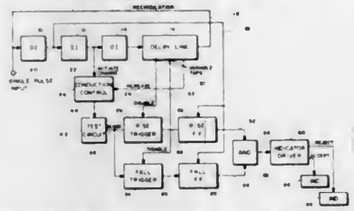


1. The method of distinguishing between welding electrodes which have similar compositions of metallic core wire using eddy current testing, which comprises adding powdered iron to one of either a first or second electrode coating composition, coating a first electrode with the first composition, coating a second electrode with the second composition, subjecting the first electrode to eddy current testing and obtaining a first eddy current response and subjecting the second electrode to said eddy current testing and obtaining a second eddy current response different from the first eddy current response.

3,222,595
TRANSITION TIME DELAY TESTING DEVICE

Mauritz Lelad Granberg, Richfield, Minn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed June 30, 1961, Ser. No. 121,088
17 Claims. (Cl. 324—57)



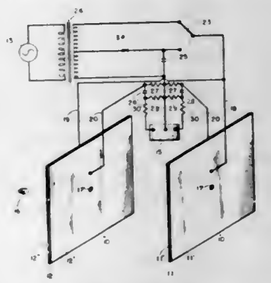
1. Apparatus for determining the relative operational delays in an electronic device, comprising: an electronic timing chain for developing a series of sequential timing signals; means responsive to at least a first timing signal for initiating change in an electronic device from a first operational state to a second operational state at a first time and for initiating change in said electronic device from said second operational state to said first operational state at a second time; a trigger circuit for sensing the operational state of said electronic device and for developing signals indicative of said first and second operational states; and means coupled to said trigger circuit responsive to second and third timing signals for respectively inhibiting said first and second state indicating signals.

3,222,596
DEVICE FOR MEASURING THE VELOCITY OF A PROJECTILE USING SPACED PENETRABLE ACTUATORS IN SHEET FORM

Earl A. Meyer, Madison, Wis., and James B. Spencer, Corvallis, Oreg., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Army

Continuation of abandoned application Ser. No. 157,535, Dec. 6, 1961. This application Mar. 31, 1965, Ser. No. 447,599
5 Claims. (Cl. 324—70)

1. A re-usable device for measuring the velocity of ballistic projectiles comprising in combination a first thin sheet and spaced therefrom a second thin sheet of penetrable electrically nonconductive material, said sheets being arranged parallel to each other and substantially normal to the flight path of a projectile and having provided on each face thereof substantially continuous electrically conductive meltable films, said films being spaced from each other and mutually insulated by means of said nonconductive sheets; means for applying a direct current to said films from a voltage source, said films on either side of each of said sheets being charged to opposite polarity by said direct current; electrical timing means operably

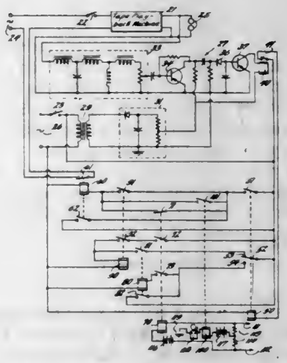


connected to the electrical circuit comprising said films and said voltage source; said films on each sheet being smeared into short-circuiting contact with each other by a projectile penetrating said thin sheets, whereby said timing means are actuated to indicate the time elapsed between the occurrence of the short circuit in said first sheet and the occurrence of the short circuit in said second sheet; and means for selectively applying an alternating current from the same voltage source to said sheets for melting the short-circuiting smeared contacts between said conductive films, whereby said short circuits are eliminated and said device is restored for re-use.

3,222,597
AUDIO SYSTEM FOR INSTRUCTING AN OPERATOR IN THE PERFORMANCE OF CONTINUITY TESTING

Charles M. Beatenbough, Burlington, and Thomas J. Griffin, Jr., Graham, N.C.; said Beatenbough assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York, and said Griffin assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed Mar. 2, 1961, Ser. No. 92,994
2 Claims. (Cl. 324—73)

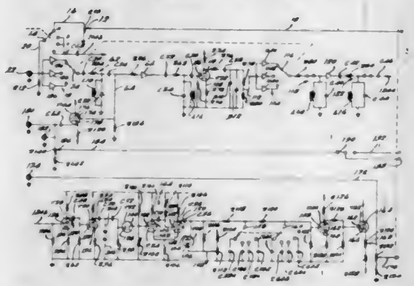


1. In an apparatus for instructing a human operator to make a plurality of electrical continuity tests between selected terminals of a unit;

a magnetic tape having a plurality of recurring audible

instruction signals, inaudible control signals and audible continuity indicating signals successively recorded thereon;
a tape playback machine for transposing said recorded signals into electrical signals;
a power supply means connected to said machine for energizing said machine to generate the signals;
means for rendering only said audible electrical signals intelligible to a human operator;
means responsive to said inaudible electrical control signals for interrupting said power supply means to deenergize said machine;
circuit means having a pair of probes for connection by the operator to selected terminals of the unit under test in accordance with said audible instruction signals; and
means actuated by the connection of said probes to said terminals and only responsive to a closed circuit between said probes for rendering effective said power supply means to reenergize said machine to produce said audible continuity indicating signals to indicate to the operator that the terminals tested are acceptable.

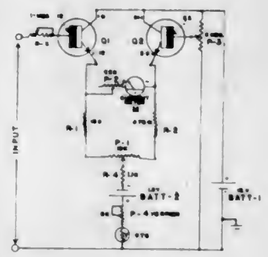
3,222,598
ELECTROENCEPHALOGRAPH WAVE ANALYZER
Patrick J. Pollard, Clawson, Mich., assignor to Ralph L. Sherman, Grosse Pointe Park, Mich.
Filed Mar. 16, 1961, Ser. No. 96,243
13 Claims. (Cl. 324—77)



4. Apparatus for continuously determining the varying frequency of a desired component of a complex electrical wave comprising means responsive to the complex wave and having an electrical signal with a frequency of a preselected multiple of the frequency of the desired component of the complex wave including tuned network means tuned to a preselected band of frequencies including the frequency range of the desired component of the complex wave for amplifying the amplitude of those components of the complex wave having frequencies within said preselected band and for attenuating the amplitude of components of the complex wave having frequencies outside of said preselected band and means for increasing the frequency of the wave out of said tuned network means by a preselected factor, and means responsive to said electrical signal and having an output signal with an amplitude varying in accordance with the frequency of said electrical signal.

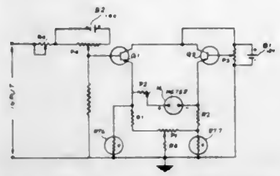
3,222,599
DIFFERENTIAL AMPLIFIER METERING CIRCUIT WITH TEMPERATURE COMPENSATION
Stanley Gewirtz, New York, N.Y., assignor to Solid State Systems, Inc., New York, N.Y.
Filed Jan. 17, 1961, Ser. No. 83,307
5 Claims. (Cl. 324—123)

1. A metering circuit for measuring a voltage applied across two input terminals of said circuit, comprising
(a) a current responsive meter having two meter terminals;
(b) a first transistor having a base, emitter and collector;
(c) a second transistor having a base, emitter and collector;
(d) a first potentiometer including:
(1) a first resistor connected at opposite ends to respective opposite terminals of said meter, and
(2) a movable tapping arm electrically connected to ground and to one of said input terminals, said first potentiometer serving to adjust the meter to zero reading;
(e) a direct current source having one terminal connected to ground and another terminal connected to the collectors of the transistors; and
(f) a second potentiometer including a second resistor connected at opposite ends to ground and to the collectors of the transistors, said second potentiometer having a movable tapping arm connected to the base of the second transistor, the said second potentiometer providing a reference voltage from the first transistor to the base of the second transistor;
(g) the emitters of said first and second transistors being connected respectively to opposite terminals



of the meter, the emitters of said first and second transistors also being connected to opposite ends of the first resistor by means of first and second emitter resistors, respectively, the ratio of resistance of said first emitter resistor to said second emitter resistor being 10 or greater, the base of the first transistor being connected to the other one of said input terminals, said two transistors constituting an asymmetrical differential amplifier circuit whereby any change in emitter current of the first transistor caused by power supply voltage variations is neutralized by a similar change in emitter current of the second transistor;
(h) a second direct current source; and
(i) variable resistance means including a resistor element having a negative coefficient of resistance connected in series with said second direct current source between the movable tapping arm of the first potentiometer and ground, said variable resistance means and said second direct current source producing a voltage having a polarity opposite to that of the thermally generated E.M.F. in said first transistor to track and balance out said thermally generated E.M.F. in the first transistor, whereby sensitivity and impedance of the meter is increased while linearity, accuracy and stability of the meter are maintained.

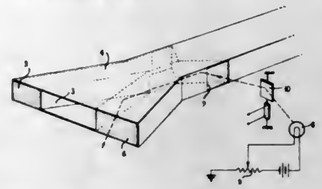
3,222,600
ASYMMETRICAL DIFFERENTIAL AMPLIFIER MEASURING CIRCUIT INCLUDING TRANSISTORS AND THERMAL COMPENSATION MEANS
Stanley Gewirtz, New York, N.Y., assignor to Solid State Systems, Inc., New York, N.Y.
Filed Mar. 26, 1962, Ser. No. 182,510
4 Claims. (Cl. 324—123)



1. A metering circuit for measuring voltage applied across two input terminals of said circuit, comprising in combination:
(a) a current responsive meter;
(b) a first transistor having a base, emitter and collector;
(c) a second transistor having a base, emitter and collector; said emitters of the two transistors being connected to opposite ends of the meter, said two transistors forming a part of an asymmetrical differential amplifier;
(d) a first potentiometer including:
(1) a first fixed resistor connected at opposite ends to respective opposite terminals of said meter, and
(2) a movable tapping arm;
(e) a second fixed resistor connected between ground and said tapping arm;
(f) a first direct current source;
(g) a second potentiometer including
(1) a fixed resistor connected across opposite terminals of said direct current source, and
(2) a movable tapping arm connected to the base of the second transistor;
(h) one terminal of said direct current source being connected to the collectors of the two transistors, the other terminal of said direct current source being connected to ground;
(i) a first one of said two input terminals being connected to ground, the other of said input terminals being connected to the base of the first transistor; and
(j) voltage supply means having a polarity opposite to that of the thermally generated electromotive force of said transistor for neutralizing currents generated thermally therein, said voltage supply means being connected in series circuit between one of said two input terminals and the differential amplifier.

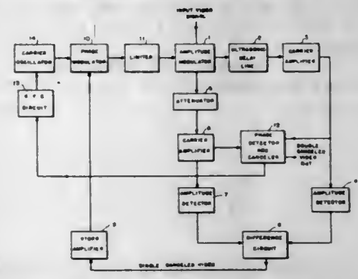
3,222,601
ANTENNA BEAM SCANNER
David R. Sartorio, Cockeysville, and Edward R. Flanagan, Monkton, Md., assignors to Martin-Marietta Corporation, Baltimore, Md., a corporation of Maryland
Filed July 10, 1962, Ser. No. 208,767
4 Claims. (Cl. 325—130)

1. A system for selectively altering the beam pattern of a beam of radio frequency energy emanating from the aperture of a horn antenna comprising:
a sheet of photoconductive material positioned over at least a portion of said aperture;
a body of light conducting material positioned in said antenna and terminating at said aperture;
said sheet of photoconductive material being located contiguous to said light conducting material so that light conducted through said light conducting material illuminates said sheet of photoconductive material;
a source of visible light;
means for introducing light from said source into said



light conducting material so that light conducted through said material illuminates said sheet of photoconductive material; and
light beam scanning means adapted to repetitively illuminate different portions of said sheet of photoconductive material with light from said source.

3,222,602
APPARATUS FOR DOUBLE CANCELLATION UTILIZING ONE DELAY LINE IN A MOVING TARGET INDICATING SYSTEM
Charles H. Gager, West Islip, and Abraham E. Ruvin, North Massapequa, N.Y., assignors to the United States of America as represented by the Secretary of the Army
Filed June 12, 1959, Ser. No. 820,061
4 Claims. (Cl. 325—476)

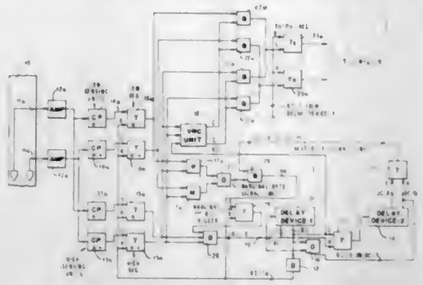


4. A double cancellation circuit for moving-target indicating systems comprising: a carrier oscillator; means coupled to said carrier oscillator for amplitude-modulating the output of said carrier oscillator with recurrent pulses; means coupled to said amplitude-modulating means for detecting the amplitude difference between successive pulses of said recurrent pulses; means coupled to said amplitude difference detecting means for phase modulating the output of said carrier oscillator with the output of said difference detector; and means coupled to said phase-modulating means for detecting the phase difference of successive pulses of said recurrent pulses.

3,222,603
FIRST BIT GENERATOR FOR BINARY TAPE SYSTEMS
Donald Robert Dustin, Salt Point, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Oct. 30, 1962, Ser. No. 234,151
11 Claims. (Cl. 328—59)

1. Means for selectively causing a substitute byte cycle with a marginal data byte, with means for sensing the existence of a marginal data byte to provide a marginal-byte signal therefrom,
comprising delay means being actuated by a received byte,
means for generating a next-byte signal in response to

an actuation of said delay means, said next-byte signal beginning approximately one bit period after said actuation and terminating before approximately one and one-half bit periods after said actuation,



and means for actuating a substitute byte cycle in response to an occurrence of any part of said marginal-signal output simultaneously with any part of said next-byte signal.

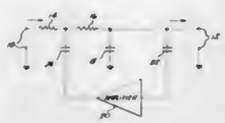
3,222,604
ELECTROMETER AND MEMORY CIRCUIT FOR GUIDED MISSILE CONTROL SYSTEM
Frederick C. Alpers and Fred S. Atchison, Corona, Calif., and Wilfrid A. Yates, Silver Spring, Md., assignors to the United States of America as represented by the Secretary of the Navy
Original application July 1, 1952, Ser. No. 296,772. Divided and this application Nov. 26, 1958, Ser. No. 789,219
4 Claims. (Cl. 328—121)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. In a guided missile control system, a voltage responsive circuit comprising a pentode, the suppressor grid thereof providing a high impedance input to the circuit, a cathode follower having its grid and cathode connected respectively to the cathode and plate of the pentode to substantially fix the potential drop thereacross, means for effecting substantially constant cathode current for said pentode, means responsive to the said pentode plate potential causing the plate potential of said follower to vary substantially with its cathode and grid potentials, and a resistor connecting the pentode screen grid and follower plate thus substantially fixing the screen grid current, the pentode control grid being tied to its cathode to remove the former functionally from the circuit, the application of input voltages to said pentode suppressor grid thereby varying the level of the pentode plate and cathode potentials without substantially changing the net pentode plate to cathode potential difference and with substantially no suppressor grid current flow.

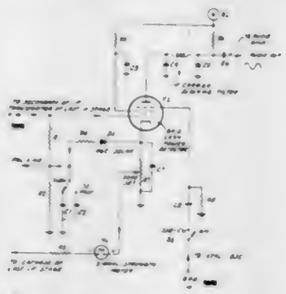
3,222,605
LOW PASS, LOW LEVEL FILTER
Laurence I. Chase and Francis C. Douglas, Seattle, Wash., assignors to The Boeing Company, Seattle, Wash., a corporation of Delaware
Filed July 1, 1963, Ser. No. 291,742
3 Claims. (Cl. 328—209)

1. Low-pass dynamic filter means comprising an input, an output, a passive network including interconnected resistance and capacitance elements, said network forming a direct-current signal transfer path between said input and output, said passive network having a low-pass signal transfer characteristic with predetermined upper-frequency region cut off; and dynamic filter network means operatively associated with said passive network and having a response characteristic which varies with frequency in the cut-off frequency region of the passive network,



said dynamic filter network means including a positive feedback amplifier having an input responsively connected to the passive network and having an output connected to said transfer path operatively to boost the response of said passive network in said region, and direct-current blocking means comprising first and second capacitors respectively connected in the amplifier input and output connections isolating said amplifier from direct-current components in said transfer path.

3,222,606
DETECTOR FOR AM, CW, OR SSB SIGNALS PROVIDING INHERENT AGC SIGNAL
John E. Steup, Arlington, Calif., assignor to Philco Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Sept. 4, 1962, Ser. No. 221,291
6 Claims. (Cl. 329—1)



3. A detector comprising:
(a) a pentode biased for grid leak power detection,
(b) means for applying an intelligence-bearing carrier signal to the control grid of said pentode,
(c) means for selectively applying a beat frequency signal to the suppressor of said pentode,
(d) means for deriving automatic gain control signal from the cathode of said pentode, and
(e) means for deriving a detected output from the plate of said pentode.

3,222,607
TRANSISTOR AMPLIFIER CIRCUIT
James R. Patmore, Neptune, N.J., assignor to Electronic Associates Inc., Long Branch, N.J., a corporation of New Jersey
Filed Feb. 20, 1964, Ser. No. 346,318
7 Claims. (Cl. 330—9)

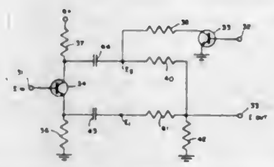
1. A stabilized direct coupled amplifier system comprising in combination,
an input terminal and an output terminal,
a multistage direct coupled amplifier having at least an input stage and an output stage,

a feedback circuit connected between said output terminal and said input terminal,
input signal means for applying to said input terminal D.C. signals which vary with time,
means including an A.C. stabilizing amplifier coupled between said input terminal and said input stage,
said input stage including a first and a second transistor of opposite conductivity types each having similar base-to-emitter junction voltages which vary similarly as a function of temperature and each having at least a base, an emitter and a collector,
means connecting said base of said first transistor to said input terminal, said first transistor being connected in an emitter follower configuration to provide at said input terminal a high input impedance



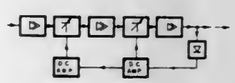
and at its emitter electrode a low output impedance,
said second transistor being connected in a common emitter configuration with the base thereof directly connected to said emitter of said first transistor,
means directly connecting said collector of said first transistor and said emitter of said second transistor to a point of reference potential, and
means for deriving from said collector of said second transistor said D.C. signals which have been amplified for application to the next succeeding stage of said multistage amplifier which amplified D.C. signals have been substantially unaffected by D.C. drift caused by the thermal variations in said first and said second transistors.

3,222,608
CONTROLLED SIGNAL INVERTER
Donald R. Chick, Dallas, Tex., assignor to the United States of America as represented by the Secretary of the Army
Filed July 12, 1963, Ser. No. 294,779
7 Claims. (Cl. 330—14)



1. A controlled signal inverter comprising; a voltage polarity splitter having an input, and two outputs which are of opposite polarity and are each replicas of said input; first means connected to said polarity splitter for making the average absolute intensity of one of said outputs larger than the average absolute intensity of the other of said outputs; a control signal input terminal connected to a switching means; said switching means connected to said polarity splitter and said first means for making the average absolute intensity of said one output smaller than the average absolute intensity of said other output upon the application of a control signal applied to said control signal input terminal; and means connected to said outputs for combining said output signals to form an output which is directly proportional to their algebraic sum and is a replica of said input.

3,222,609
WIDE-BAND AUTOMATIC GAIN-CONTROLLED AMPLIFIER
Wolfgang Ulmer and Eduard Seibt, Munich, Germany, assignors to Siemens & Halske Aktiengesellschaft, Berlin, Germany, a German company
Filed June 28, 1962, Ser. No. 206,080
Claims priority, application Germany, June 30, 1961, S 74,572
6 Claims. (Cl. 330—29)

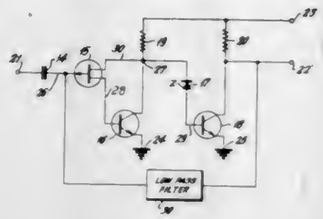


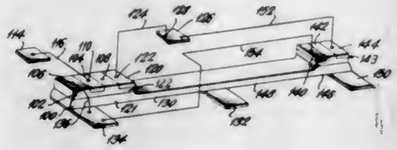
6. A wide-band automatic gain-controlled transistor amplifier comprising a plurality of transistor amplifying stages each having input and output terminals, a plurality of variable attenuators each arranged between an adjacent pair of said amplifying stages, each connected between the output of the preceding stage and the input of the following stage, and each having at least one arm containing a non-linear element and a resistance capacitor network presenting substantially the same frequency response at the minimum and maximum attenuation levels of said attenuator; and signal level detecting means connected from the output of the last one of said stages to one side of each non-linear element for increasing the attenuation of each attenuator in accordance with the output from said last stage, the attenuation introduced by the attenuator last in the direction of transmission being increased from its minimum to its maximum with increasing signal level and the attenuation introduced by each successive preceding attenuator being increased from its minimum to its maximum with further increase in signal level whereby at any given signal level only one of the attenuators is operative to vary the gain.

3,222,610
LOW FREQUENCY AMPLIFIER EMPLOYING FIELD EFFECT DEVICE
Arthur D. Evans, Farmers Branch, and Jack S. Kilby, Dallas, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed May 2, 1960, Ser. No. 26,136
3 Claims. (Cl. 330—38)

1. A semiconductor network comprising a body of single crystal semiconductor material, a first region of one conductivity type defined by the major bulk of said body, a second region of opposite conductivity type defined by said body adjacent the surface thereof and contiguous to said first region, a third region of said one conductivity type defined in said second region adjacent the surface thereof and spaced from said first region, an isolated portion of said second region being connected to the remainder of said second region by a thin channel portion of said second region underlying said third region, a fourth region of said one conductivity type defined in said second region of said body adjacent the surface thereof and spaced from said first region by a thin base portion and from said third region by an amount greater that the thickness of said base portion, first conductive

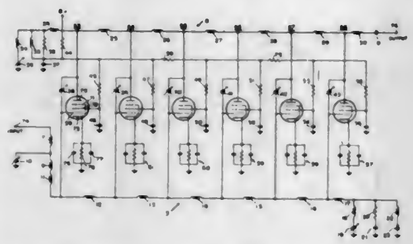
means contacting said first region at a position closely adjacent said second region, second conductive means contacting said first region at a position spaced from said second region by an amount substantially greater than the spacing between said first conductive means and said second region, third conductive means contacting said isolated portion of said second region, fourth conductive means contacting said third region, and fifth conductive





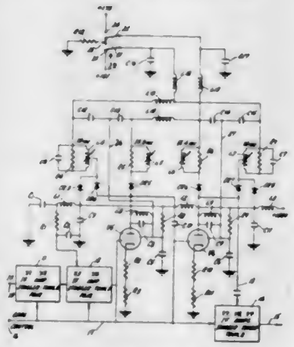
means contacting said fourth region, said first and third conductive means being connected together, means connecting a voltage source between said second and fifth conductive means and means connecting an input signal between said fourth and fifth conductive means, an output signal being derived at said first conductive means, thereby providing operation of the semiconductor network as an amplifier with low input impedance.

3,222,611
DISTRIBUTED AMPLIFIER
Charles W. Norton, Jr., Belmar, N.J., assignor to the United States of America as represented by the Secretary of the Army
Filed Mar. 1, 1962, Ser. No. 176,833
6 Claims. (Cl. 330—54)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. In a distributed amplifier of the type in which a plurality of tubes are arranged with their control grids connected to spaced points along a first transmission line, said transmission line comprising a series of inductors with an input terminal at one end of said series of inductors and a reflectionless termination connected from the other end of said series of inductors to a point of reference potential and with the plate circuits of said tubes connected to spaced points along a second transmission line and in which each tube is provided with cathode self-bias; the improvement comprising, means connected between said series of inductors and said point of reference potential to prevent the direct current voltage along said series of inductors from becoming poistive with respect to said point of reference potential, whereby a grid-to-cathode short of any said tubes will not result in the burnout of any of the other of said tubes.

3,222,612
BANDWIDTH SWITCHING CIRCUIT
Kenneth M. Ray, New Hyde Park, and Rolf W. Bohnsack, North Babylon, N.Y., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Apr. 5, 1963, Ser. No. 271,035
10 Claims. (Cl. 330—126)

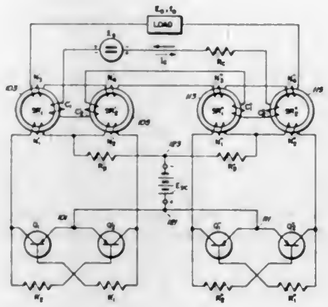


1. A bandwidth switching circuit comprising:
a pair of electron emission means, each having two conduction electrodes and at least one control electrode;
first and second branch circuits coupled in common to one conduction electrode of each electron emission means;
a diode in each first and second branch circuit;
a low, a high, and two intermediate tuned networks, said low and high tuned networks being coupled each in said first branch circuit of each electron emission means and said two intermediate tuned networks each being coupled in said second branch circuit of each electron emission means; and
means for applying potentials to said diodes in pairs to provide conduction through said electron emission means and said low and high tuned networks and to block conduction through said two intermediate tuned networks in one condition, and to provide conduction through said electron emission means and said two intermediate tuned networks and to block conduction through said low and high tuned networks in another condition whereby the wide and narrow frequency bands are selectable.

3,222,613
D.-C. TO A.-C. SIGNAL CONVERTER WITH VARIABLE FREQUENCY OUTPUT
William A. Geyger, Takoma Park, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed Nov. 8, 1963, Ser. No. 322,558
3 Claims. (Cl. 331—52)
(Granted under Title 35, U.S. Code (1952), sec. 266)

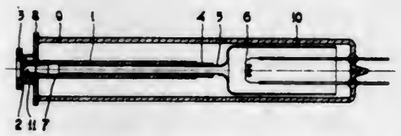
3. A differential type D.-C. to A.-C. converter having a frequency proportional to the magnitude of a D.-C. signal voltage comprising
a first switching transistor multivibrator having an input circuit and an output circuit,

a second switching transistor multivibrator having an input circuit and an output circuit,
a D.-C. voltage source
means connecting said D.-C. voltage source to the input circuits of said first and second multivibrators,
a first saturable reactor system having a first primary circuit, a first control circuit and a first load circuit,
a second saturable reactor system having a second primary circuit, a second load circuit and a second control circuit,



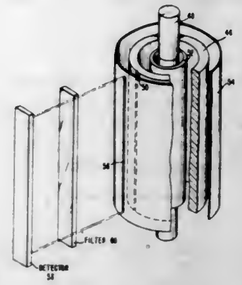
means connecting said first primary circuit to the output of said multivibrator,
means connecting said second primary circuit to the output of said second multivibrator,
load means,
a polarity reversible D.-C. control signal source,
means connecting said first and second load circuits to said load means in series aiding relationship,
means connecting said first and second control circuits to said D.-C. control signal source in series opposing relationship.

3,222,614
NOISE GENERATOR FOR MICROWAVES COMPRISING A GAS DISCHARGE TUBE WITHIN A WAVEGUIDE
Paul Anton Herman Hart and Gerrit Herman Plantinga, both of Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Mar. 9, 1962, Ser. No. 178,770
Claims priority, application Netherlands, Mar. 16, 1961, 262,479
5 Claims. (Cl. 331—78)



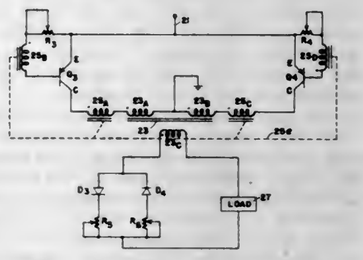
1. A microwave noise generator comprising a waveguide closed at one end by a microwave energy transmissible window, an ionizable medium at least partly contained within the wave-guide, and means to produce a positive column discharge in said ionizable medium comprising a tubular insulating member having an open end in the wave-guide spaced from the window and extending partly within a portion of the wave-guide surrounding the ionizable medium, a cathode within the tubular insulating member adjacent the other end of the wave-guide, and an anode adjacent the end of the tubular insulating member and within the wave-guide.

3,222,615
CYLINDRICAL LASERS UTILIZING INTERNAL REFLECTION TECHNIQUES
Sandor Holly, Briarcliff Manor, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Oct. 10, 1961, Ser. No. 144,080
4 Claims. (Cl. 331—94.5)



1. A laser comprising a cylindrical active element including a doping material having a pair of energy levels, means for energizing said active element to produce coherent radiation therein at a frequency defined by said energy levels, said active element having an optically smooth cylindrical side wall parallel to the longitudinal axis of said element for repeatedly totally internally reflecting in a plane transverse to the longitudinal axis the coherent radiation produced therein, and means for extracting a portion of said repeatedly reflected radiation from said active element.

3,222,616
STABLE BLOCKING OSCILLATOR FOR GENERATION OF ASYMMETRIC BIDIRECTIONAL CURRENT PULSES
Keith A. Harriger, Glen Burnie, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed Sept. 12, 1962, Ser. No. 224,592
3 Claims. (Cl. 331—113)



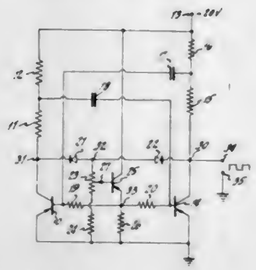
1. An asymmetric wave generator comprising:
(a) a source of direct current power;
(b) a saturable transformer having a pair of primary windings and a secondary winding;
(c) a pair of transistors;
(d) means coupling the source to one primary winding through the emitter-collector circuit of one of the transistors;
(e) means coupling the source to the other primary winding through the emitter-collector circuit of the other transistor;
(f) a pair of oppositely phased alternating current sources;
(g) means coupling one alternating current source between the base and emitter of one transistor;

(h) means coupling the other alternating current source between the base and emitter of the other transistor;
(i) a load;
(j) a first variable resistor;
(k) a first diode;
(l) means connecting the secondary winding, the load, the first variable resistor, and the first diode in series, the first diode being oriented so as to permit flow current through the secondary winding in one direction;
(m) a second variable resistor;
(n) a second diode;
(o) and means connecting the secondary winding, the load, the second variable resistor, and the second diode in series, the second diode being oriented so as to permit flow of current through the secondary winding in the opposite direction.

3,222,617
WIDE RANGE VARIABLE FREQUENCY FREE-RUNNING MULTIVIBRATOR

Lee V. Hedlund, Riverton, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed Dec. 19, 1962, Ser. No. 245,761
7 Claims. (Cl. 331—113)

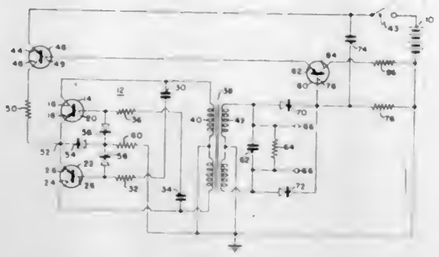


6. In combination,
a first transistor having first, second and third electrodes,
a second transistor having first, second and third electrodes corresponding to said respective first, second and third electrodes of said first transistor,
means connected to said first electrodes and to said second electrodes for applying operating potentials to said first and second transistors,
a first resistor connected between said third electrodes of said first and second transistors,
first and second unidirectional current conducting devices each including first and second electrodes,
means connecting said devices in series opposition between said second electrodes of said transistors with said first electrodes of said devices each individually connected to a respective one of said second electrodes of said transistors and said second electrodes of said devices directly connected together,
a second resistor connected at one end directly to the junction of said second electrodes of said devices and at the other end to said first electrodes of said transistors,
means connecting a point on said second resistor intermediate the ends of said second resistor to a point on said first resistor intermediate the ends of said first resistor,
and means coupling said third electrode of said first transistor to said second electrode of said second transistor and said third electrode of said second transistor to said second electrode of said first transistor for driving each of said transistors into the current conducting state opposite to that of the other of said transistors.

3,222,618
STABILIZED DIRECT CURRENT TO ALTERNATING CURRENT ANALOG CONVERTER

Erhard O. Ressler, Cincinnati, Ohio, assignor to Avco Corporation, Cincinnati, Ohio, a corporation of Delaware

Filed July 9, 1963, Ser. No. 293,743
4 Claims. (Cl. 331—113)



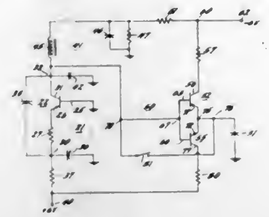
1. An electronic circuit for converting the direct voltage output of a two-terminal direct current source to an alternating voltage having a stable magnitude proportional to the magnitude of said direct voltage output, the combination comprising:
a free-running multivibrator including first and second electron flow control devices, each having an emitting electrode, a collecting electrode, and a control electrode, said emitting electrodes being interconnected, each of said collecting electrodes being capacitively coupled to the control electrodes of the other of said devices, and a transformer having center tapped primary and secondary windings, the center taps of said windings being connected to a point of reference potential, the primary winding being connected between said collecting electrodes;
a control transistor having base, emitter, and collector electrodes;
a resistive impedance connected between the collector of said control transistor and the junction of said emitting electrodes;
series circuit connections from one terminal of said source through the collector-emitter junction of said transistor and said resistive impedance to the junction of said emitting electrodes for operatively energizing said multivibrator for generating an alternating voltage, the other of said terminals being connected to said point of reference potential;
a second transistor having base, emitter, and collector electrodes, the collector electrode of said second transistor being connected to said point of reference potential through a biasing impedance;
another impedance connected to said base electrode of said second transistor, said another impedance being connected in a series circuit comprising said source and the base-emitter junctions of both of said transistors; and
means for rectifying said alternating voltage and for applying said rectified alternating voltage across said another impedance.

3,222,619
FREQUENCY SHIFT KEYING GENERATOR

Norris Carroll Hekimian, Kensington, Md., assignor to The United States of America as represented by the Secretary of the Army

Filed Oct. 29, 1963, Ser. No. 319,900
3 Claims. (Cl. 331—179)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. A frequency shift keying generator which comprises a first reactive storage element having an oscillatory voltage thereacross substantially equal in value to the oscillatory voltage present across at least a second reactive storage element with which it forms a resonant circuit, and switching means having two states and connecting the first and second elements such that when the switching means are in a first state the first element presents a first value causing oscillations of a first frequency and when

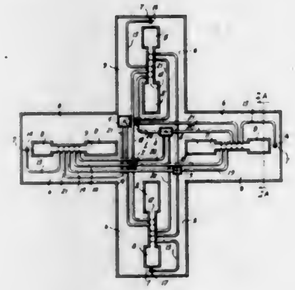


the switching means are in a second state the first element presents a second value causing a shift in frequency to a second frequency, the substantially equal oscillatory voltage across the first element during both states eliminating any transients that might otherwise occur during the shifting.

3,222,620
MULTIMODE RADIO FREQUENCY STRUCTURE EXHIBITING HYBRID OPERATION

William C. Cummings, Alexandria, Va., assignor to Scanwell Laboratories, Inc., Springfield, Va., a corporation of Virginia

Filed May 21, 1962, Ser. No. 196,421
8 Claims. (Cl. 333—11)

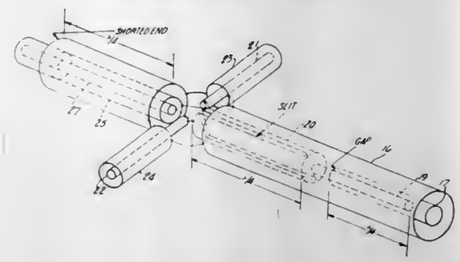


1. A multiple-mode structure comprising: a metal enclosure having a plurality of coaxial cable input terminals in a wall thereof; an even number of symmetrical pairs of hollow extensions on said enclosure, each pair having opposed spaced wall portions defining a balun gap structure; a plurality of coaxial transmission lines leading from each of said input terminals to said gap structures and being connected thereacross, all the transmission lines from any one input terminal being of the same electrical length; said coaxial transmission lines being connected across said gaps, with transmission lines from any one input terminal being connected across certain of said gaps in the same direction as the corresponding lines from another input terminal and across an equal number of gaps in the opposite direction as lines from that same other terminal, whereby all currents from any one input terminal that appear at any other input terminal appear thereat in bucking relation so as to cancel out, whereby said input terminals are effectively isolated from each other.

3,222,621
COUPLING DEVICE

Tetsuo Yoshida, Minato-ku, Tokyo, Japan, assignor to Nippon Electric Company, Limited, Tokyo, Japan, a corporation of Japan

Filed Jan. 8, 1962, Ser. No. 164,749
Claims priority, application Japan, Jan. 28, 1961, 36/2,597
3 Claims. (Cl. 333—26)



1. A device for transferring power between first and second terminals and third and fourth terminals, connected respectively to a high power source, a low power source, and two loads comprising:
(a) first and second coaxial line terminals and third and fourth coaxial line terminals, the four lines being arranged in a cross with the third and fourth terminal lines constituting colinear members thereof;
(b) said first terminal line comprising an outer conductor and a central conductor having several sections in series including: a split conductor section, which together with the adjacent portion of said outer conductor serves as an impedance transformer, a hollow cylindrical section, an inner conductor section positioned coaxially within at least a portion of but spaced from said hollow cylindrical section with at least a portion of said inner conductor extending beyond at least one end of said hollow section, the gap between the central and outer conductor of said first terminal line being in communication with the space between said spaced apart hollow cylindrical section and inner conductor section, said inner conductor section forming together with said hollow section an open ended coaxial line with said gap serving as the open end of said coaxial line;
(c) the central conductor of the said third and fourth terminal lines being connected respectively to the two adjacent ends of said split conductor section;
(d) the outer conductor of said second terminal line penetrating an extended shorted portion of the outer conductor of said first terminal line;
(e) and the central and outer conductors of said second terminal line being connected respectively to the central conductors of said third and fourth terminal lines.

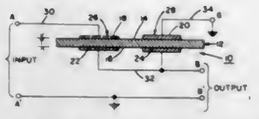
3,222,622
WAVE FILTER COMPRISING PIEZOELECTRIC WAFER ELECTRODED TO DEFINE A PLURALITY OF RESONANT REGIONS INDEPENDENTLY OPERABLE WITHOUT SIGNIFICANT ELECTRO-MECHANICAL INTERACTION

Daniel R. Curran, Cleveland Heights, and Adolph Berohn, Chesterland, Ohio, assignors to Clevite Corporation, a corporation of Ohio

Filed Aug. 14, 1962, Ser. No. 216,846
31 Claims. (Cl. 333—72)

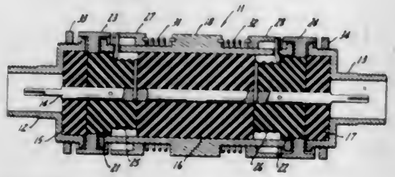
1. A piezoelectric circuit component comprising: a relatively thin wafer of piezoelectric material having a relatively smooth surface finish; at least two spaced electrodes positioned on one major surface of said wafer, counter electrode means positioned on the opposite major sur-

face of said wafer in opposition to said electrodes; said electrodes and counter electrodes means coacting with the intervening piezoelectric material to form at least two individual resonators independently vibratory in a thickness mode of vibration; each of said resonators having a predetermined range of electro-mechanical action (R) in wafer thicknesses in said wafer material surrounding its electrode on said one major surface within which an electro-mechanical action is excited by the resonator and



beyond which no significant electro-mechanical action is present, the range of action being a function of the physical properties of the wafer material and electrode configuration; said electrodes on said one major surface being spaced from each other and the wafer edge by a distance in the range of RT to 10RT where (T) is the wafer thickness to provide simultaneous independent operation of said resonators without significant electro-mechanical interaction.

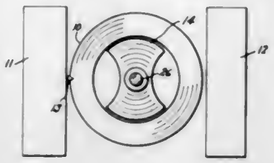
3,222,623
COAXIAL LINE TUNER HAVING TWO SPACED ADJUSTABLE SHUNT INDUCTORS
John A. Geikler, Linthicum Heights, and Fred T. Pitts, Baltimore, Md., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Feb. 20, 1962, Ser. No. 174,634
8 Claims. (Cl. 333—73)



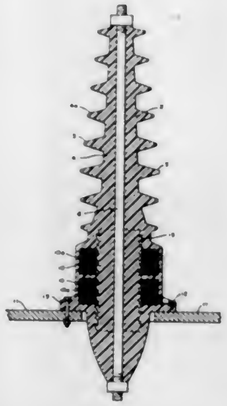
1. A tuner for a microwave transmission line comprising:
(a) an inner conductor,
(b) an outer conductor insulated from said inner conductor,
(c) first and second insulators attached to said inner conductor,
(d) first and second wires having a plurality of turns wound one each around each said first and second insulators, said first and second wires each having one end connected to said inner conductor with a length of the other end wound around said outer conductors, and
(e) means for separately varying the length of said wires wound around said outer conductor.

3,222,624
TUNABLE RESONANT RING UTILIZING STRIP TRANSMISSION LINE
Henry S. Keen, Uniondale, N.Y., assignor to the United States of America as represented by the Secretary of the Air Force
Filed Nov. 7, 1960, Ser. No. 67,866
4 Claims. (Cl. 333—82)

1. A tunable strip transmission line resonant circuit comprising a strip transmission line resonant circuit in the form of a strip transmission line ring, means physically spaced from said resonant circuit to couple energy into said resonant circuit to excite said resonant circuit into resonance, means to vary over a wide range the resonant frequency of said strip transmission line resonant circuit by acting upon the electric field thereof at the low frequency position and upon the magnetic field thereof at the high frequency position, said wide frequency range varying means consisting of a solid metallic element inserted within the inner periphery of said ring in a concentric fashion therewith, and rotatable about the axis thereof, and means physically spaced from said resonant circuit to couple out the energy from said resonant strip transmission line circuit.

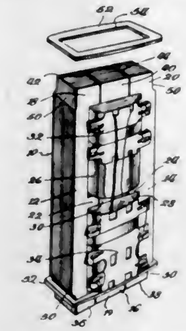


3,222,625
RESINOUS-TYPE TERMINAL-BUSHING CONSTRUCTION WITH ENCAPSULATED CURRENT TRANSFORMER
Marcel Ledocq, Marcinelle, Belgium, assignor to Ateliers de Constructions Electriques de Charleroi, Charleroi, Belgium, a corporation of Belgium
Filed Dec. 20, 1961, Ser. No. 160,870
1 Claim. (Cl. 336—174)



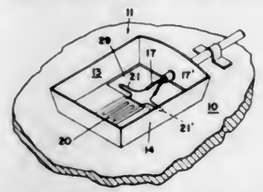
A resinous-type terminal bushing adaptable for insertion through an opening in a housing for enclosing electrical apparatus, such as transformers, circuit interrupters and the like, including, in combination, an axially-extending terminal stud, a thermoset resinous material for the entire body portion of the terminal bushing in which said axially-extending terminal stud is completely embedded, said resinous body portion including a circumferentially-extending outwardly-protruding integral molded flange portion adaptable for overlying the opening of the apparatus housing and having an abutting contacting face, at least one current transformer embedded in the resinous material of said body portion and disposed on the external bushing side of the plane of said contacting face, mounting-bolt means extending through said integral molded flange portion, and the current transformer terminals being supported on said molded flange portion.

3,222,626
LAMINATED ELECTROMAGNETIC CORE CONSTRUCTION
Albert E. Feinberg and Eugene Czernobil, Chicago, Ill., assignors to Advance Transformer Co., Chicago, Ill., a corporation of Illinois
Filed June 29, 1961, Ser. No. 120,656
6 Claims. (Cl. 336—210)



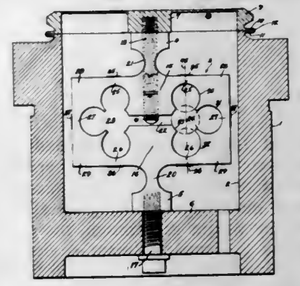
5. A transformer core construction comprising an assembly of individual electrical steel lamination parts arranged in stacks to form the operative parts of said core construction, said parts being bonded together by cementitious material therebetween, and removable clamp means comprising a pair of ring members adapted to be disposed on the ends of said assembly for maintaining the same in assembled condition, said ring members adapted to be tightly secured onto said ends of said assembly, in which said ring members are made of paper material.

3,222,627
ENCAPSULATED STRAIN GAGE ASSEMBLY
Samuel Tolotta, Yeadon, Pa., assignor to the United States of America as represented by the Secretary of the Navy
Filed May 21, 1964, Ser. No. 369,332
1 Claim. (Cl. 338—2)
(Granted under Title 35, U.S. Code (1952), sec. 266)



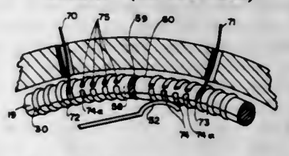
An assembly for measuring strain in metal equipment which comprises,
(a) a base section of thin sheet metal having one face in contact with the equipment and secured thereto by a weld connection of confined area relative to the area of the base section,
(b) a wire filament resistance secured to the other face of the base section and superimposed on the weld connection,
(c) electrical conductor means connected to the ends of the wire filament resistance and extending away from the weld connection,
(d) a cover section of thin sheet metal secured in tight fitting engagement with the base forming a sealed compartment therewith,
(e) packing material in the compartment including a layer thereof which is superimposed on the wire filament resistance and
(f) an aperture in a wall of the compartment for passage of the electrical conductor means in sealed relation therewith for connection to strain indicator means whereby the assembly effectively seals the wire filament resistance permitting measurements to be made on equipment used in high temperature steam environments.

3,222,628
FORCE MEASURING DEVICE
Hsia S. Pien, Newton, Mass., assignor to Baldwin-Lima-Hamilton Corporation, a corporation of Pennsylvania
Filed Dec. 31, 1962, Ser. No. 248,510
7 Claims. (Cl. 338—4)



1. A force measuring device comprising, a force responsive element in the form of a substantially inflexible substantially rectangular parallelepiped having substantially vertically extending sides and upper and lower substantially horizontally extending sides between which a vertical force may be applied along a given axis, said element having an opening formed therein with an axis extending transversely to said applied force axis, and said opening having a configuration and proportions in relation to the external configuration and proportions of said element producing relatively flexible wall portions in the horizontal sides of said element offset laterally from the applied force axis on each side thereof and relatively flexible wall portions in the vertical sides of said element, whereby when the element is subjected to an applied compression force the flexible horizontal wall portions and the flexible vertical wall portions are respectively subjected to strains of opposite signs, and strain responsive gages connected to said element adjacent said flexible wall portions so as to be responsive to said opposite strains.

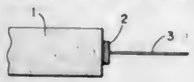
3,222,629
VARIABLE RESISTANCE BRIDGE
Wilfred McCann, Costa Mesa, Calif., assignor to Beckman Instruments, Inc., a corporation of California
Filed Feb. 23, 1961, Ser. No. 91,079
7 Claims. (Cl. 338—162)



1. A bridge for a single-turn variable resistance device including a resistance element formed of a length of helically coiled resistance wire having its axis disposed in a substantially closed loop with the ends of said coiled wire in closely spaced juxtaposition, a movable electrical wiper mounted to traverse a closed path around said resistance element thereby to successively engage adjacent turns of said resistance wire, electrically conductive members connected to said resistance wire at electrical contact points a predetermined distance from the ends thereof, said bridge comprising a plurality of turns of resistance wire

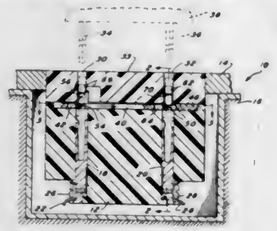
between each electrical contact and the respective end of said resistance wire, at least one of said turns being severed in a region out of the path of engagement between said resistance wire and said wiper, said severed turns forming a non-conductive coiled section having an arcuate length greater than the contact length of said wiper.

3,222,630
ALUMINUM-GERMANIUM CONTACT
Lee Van Gorman, Richardson, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed June 26, 1961, Ser. No. 119,594
3 Claims. (Cl. 338—322)



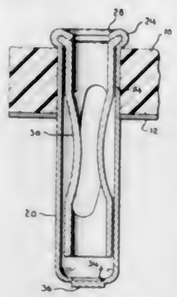
1. A method for producing semiconductor contacts having high electrical conductivity comprising coating a selected area of the surface of the semiconductor body with a contact material comprising an alloy containing 52% to 56% by weight germanium, the remainder aluminum, heating the semiconductor device and contact material to approximately 350° C., and pressing a gold lead wire against said contact material causing said gold lead wire to alloy with the germanium in said contact material.

3,222,631
ELECTRICAL SOCKET
Leonard A. Cohen, 224 Old Lancaster Road, Merion, Pa.
Filed Dec. 24, 1963, Ser. No. 333,105
4 Claims. (Cl. 339—40)



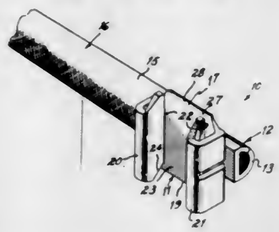
1. An electrical socket comprising a body portion, spaced entrance-ways in said body portion for receiving the prongs of an electrical plug, electrical contact means contiguous with said entrance-ways adapted to be connected to the prongs of an electrical plug received within said entrance-ways, a laterally slidable shutter disposed across said entrance-ways for blocking access to said electrical contact means in one position thereof and for exposing said electrical contact means in another position thereof, spring means for normally urging said shutter to a position across said entrance-ways blocking access to said electrical contact means, means for locking said shutter in said blocking position, said locking means including at least one notch cut in said shutter normally contiguous with each said entrance-way, and resilient springs housed within said body portion in seated engagement within each said notch for preventing the sliding of said shutter, each of said resilient springs including an integral portion protruding into said entrance-way and cammable by the prong of an electrical plug to unseat said resilient springs from their respective notches to thereby completely unlock said shutter means, and cam means responsive to the further insertion of the prongs for sliding said shutter to a position in said entrance-ways exposing said electrical contact means, said cam means for sliding said shutter in response to insertion of the prongs of an electrical plug into said entrance-ways to a position exposing said electrical contact means including a cam projecting from said shutter into said entrance-ways.

3,222,632
PIN AND SOCKET CONNECTOR ASSEMBLY ADAPTED FOR SOLDER CONNECTION
Glenwood Arthur Fuller, Hershey, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed June 8, 1964, Ser. No. 373,498
5 Claims. (Cl. 339—256)



5. A connector of the pin and socket type adapted for use with dip solder techniques including a housing member housing a resilient spring member and adapted to receive a component lead inserted therein, the said housing having disposed at one end an opening for said lead and at the other end a relieved portion adapted to preclude the entry of solder within said housing but sufficiently weakened to permit a component lead to be inserted therethrough under nominal insertion forces.

3,222,633
CONNECTOR CLIP
Sigmund J. Skony, Cincinnati, Ohio, assignor to Van Products, Inc., Cincinnati, Ohio, a corporation of Ohio
Filed Nov. 8, 1962, Ser. No. 236,244
3 Claims. (Cl. 339—258)



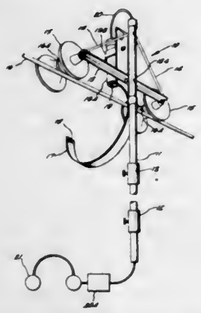
1. A female connector for making a plug-on electrical connection to a male terminal comprising,
- a receptacle including a flat web having its side edge portions terminated in C-shaped jaws which are adapted to grip a male terminal between said jaws and said web,
- a U-shaped shank forming an integral extension of said web,
- the bight portion of said U-shaped shank forming with edge portions of said jaws a flared entrance for introducing a spade terminal into said receptacle,
- lead wire-engaging ferrule means terminating said shank,
- said ferrule means being disposed centrally of and adjacent the surface of said web on the opposite side from said jaws and holding the lead wire in a direction generally parallel to the plane of said web and at right angles to the direction of introduction of the spade terminal.

3,222,634
UNDERWATER LOCATING DEVICE
Kenneth W. Foster, Houston, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed July 27, 1962, Ser. No. 212,826
2 Claims. (Cl. 340—3)



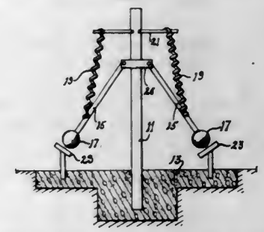
1. A method for locating an underwater object, said method comprising:
- generating a series of acoustical impulses at a point and transmitting said impulses to be reflected by said object;
- receiving said reflected impulses at a pair of stations located on diametrically opposite sides of and equal distance from said point;
- measuring the time required for said impulses to travel from said point of generation to said object and be reflected back to each of said stations;
- moving said point of generation and said stations in unison until the measured travel times are substantially equal for all orientations of said point and said stations;
- and then lowering the point at which said impulses are generated until it is in contact with the object.

3,222,635
ULTRASONIC VIBRATION DETECTOR
Alan B. Simpkins, Los Altos, and Robert H. Hamilton, Menlo Park, Calif., assignors, by mesne assignments, to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California
Filed Nov. 13, 1962, Ser. No. 236,956
12 Claims. (Cl. 340—15)



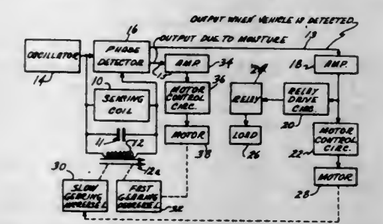
1. Apparatus for locating the source of ultrasonic vibrations from a system which generates them, the apparatus comprising an elongated pole, a transducer mounted on the pole for receiving the vibrations and converting them into an electric signal, and a reflector mounted on the pole and spaced from the transducer and shaped to fit around at least a portion of the system and reflect vibrations from the system to the transducer.

3,222,636
ANGULAR COMPOSITE SEISMOMETER
Benjamin S. Melton, 3921 Mayfair Lane, Alexandria, Va.
Filed Mar. 1, 1963, Ser. No. 262,274
13 Claims. (Cl. 340—17)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A sensing device for sensing and measuring movements of a body in all directions, said device comprising a central support member secured to, arising vertically from, and movable with the body whose movement is to be measured; said support member forming a central axis; three arms, each attached to said central support by means of a horizontally disposed hinge, said arms being disposed radially in symmetry about said central support at an inclination to the horizontal; inertial masses secured to the outer ends of each of said arms; an upper support member, rigidly secured to said central support and located a distance above said hinges, each of said arms being resiliently supported from said second support in a position of rest at an incline to the horizontal so that each inertial mass is capable of upward and outward movement and downward and inward movement responsive to stresses applied thereto by movement of said body; and a transducer for each mass for converting the velocity of movement of said mass into measurable voltages, the direction of movement being indicated by the vector sum of the movement of the three masses.

3,222,637
DETECTION APPARATUS
George W. Gray, Lambertville, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Sept. 12, 1962, Ser. No. 223,196
9 Claims. (Cl. 340—38)



1. A detection system responsive to an electrical effect which changes in opposite senses comprising,
- (a) means under the influence of said electrical effect having means providing an output corresponding to each of said opposite senses of changes in said effect,
- (b) compensating means coupled to said last named means for providing compensation which changes in one sense and in an opposite sense,

(c) means responsive to the output of said output means operatively coupled to said compensating means for operating said compensating means relatively rapidly to provide compensation in said one sense,

(d) means responsive to the output of said output means operatively coupled to said compensating means for operating said compensating means relatively slowly to provide compensation in said opposite sense, and

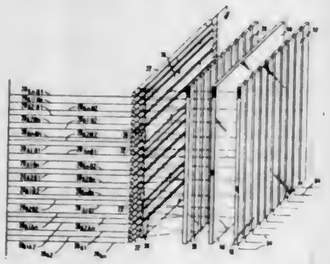
(e) means for indicating said changes in said effect responsive to at least one of said opposite changes in said effect.

3,222,638

SPECIMEN IDENTIFICATION APPARATUS UTILIZING OPTICAL AUTOCORRELATION FUNCTIONS

Glenmore L. Shelton, Jr., Carmel, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Dec. 4, 1961, Ser. No. 156,832
10 Claims. (Cl. 340—146.3)



1. Specimen identification apparatus comprising a plurality of input terminals adapted to be connected in parallel to a source of digital electrical signals corresponding to component elements of the autocorrelation function of a specimen to be identified, a plurality of light transmitting devices each coupled to a corresponding one of said input terminals, a plurality of masks each containing a digitized optical pattern indicative of a reference autocorrelation function, each of said transmitting devices being responsive to the presence of a digital signal on its corresponding input terminal to transmit light through said plurality of masks, the light transmitted by said transmitting devices forming a digitized optical pattern indicative of the component elements of the autocorrelation function of said specimen, and means responsive to the light passed by said masks to identify the mask passing the greatest amount of light, thereby identifying said specimen.

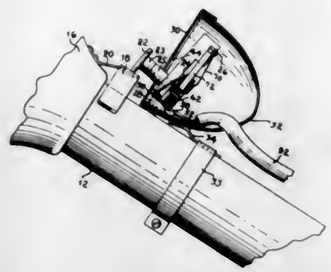
3,222,639

ALARM APPARATUS FOR VEHICLE OPERATOR

Bernard J. Kayser, Jr., Delphos, Ohio, assignor to Driv-A-Lert Corporation, Delphos, Ohio, a corporation of Ohio

Filed Aug. 31, 1961, Ser. No. 135,165
10 Claims. (Cl. 340—52)

8. In apparatus for maintaining alertness of an operator of steering mechanism of a motor vehicle wherein detector means detects operation of the steering mechanism, time delay means connected to said detector means is reset each time said detector means detects operation of said steering mechanism, and alarm means controlled by said time delay means causes an alarm if operation of the steering mechanism is not detected within a given interval of time, the improvement wherein the detector means detects movement of the steering mechanism only over a limited range of movement of said steering mechanism, and means are provided for disabling said alarm



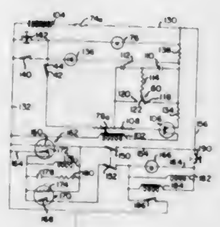
means during movement of said steering mechanism outside of said limited range of movement.

3,222,640

ALARM APPARATUS FOR VEHICLE OPERATOR

Donald O. Wurst, Delphos, Ohio, assignor to Driv-A-Lert Corporation, Delphos, Ohio, a corporation of Ohio

Filed Apr. 2, 1962, Ser. No. 184,053
6 Claims. (Cl. 340—53)



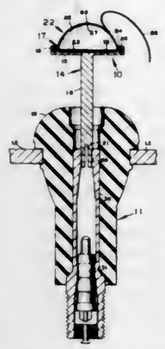
1. In an apparatus for maintaining alertness of an operator of steering mechanism of a motor vehicle, wherein detector means detects operation of the steering mechanism within a given interval of time and alarm means connected to the detector means causes an alarm if the steering mechanism is not operated within the given interval of time, the improvement wherein a switch support plate having an aperture therein is pivotally connected to a bracket adjacent said steering mechanism, wherein the operation of said alarm means is delayed by a timing circuit connected to an electrical energy source, said timing circuit including a timing switch mounted on said support plate, adjacent said steering mechanism, said detector means including a control plate, attached to said steering mechanism, said control plate having an arcuate surface, a rotatable shaft journalled for rotation in said aperture, a roller affixed to said shaft engaged with the arcuate surface of said control plate throughout a limited range of movement of said steering mechanism, and switch actuating means affixed to said shaft including an element having a plurality of circumferentially spaced radial projections engaging and actuating said timing switch as said shaft rotates, wherein switch means responsive to pivotal movement of said support plate is placed between said timing circuit and said energy source, said switch means including a pair of spaced spring contact members secured to said support plate, and wherein abutment means is connected to said bracket, said abutment means projecting through an aperture in said support plate adjacent one of said spring contact members, said abutment means engaging said one of said spring contact members causing it to move into engagement with the other of said spring contact members when said support plate is pivoted by engagement of said roller with said control plate.

3,222,641

TIRE INFLATION INDICATOR

Jerè K. Jacobus, 2917 Forrest Terrace, Fort Pierce, Fla.

Filed Nov. 3, 1961, Ser. No. 149,937
7 Claims. (Cl. 340—58)



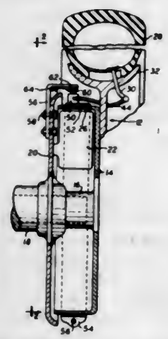
1. An inflation indicator for tubeless pneumatic tires comprising, in combination, a substantially constant volume hermetically sealed pressure chamber having an electrically conductive diaphragm movable between inner and outer positions, an electrically conductive elongated body member, said pressure chamber being fixed at one end of said body member with said diaphragm in electrical contact with a portion of said body member when said diaphragm is in its outer position, means electrically insulating said pressure chamber from said body member when said diaphragm is in its inner position, means for electrically and mechanically connecting the other end of said body member to the interior metal sleeve portion of a tire valve so that said one end of said body member projects outwardly of the inner end of the tire valve, and means for electrically connecting said diaphragm to the metal rim of the tire wheel, said pressure chamber being internally pressurized with gas to a degree corresponding to normal inflation for a given tire, whereby said diaphragm will move from its outer to its inner position when surrounding air pressure is brought up to the same value as that within said chamber, regardless of the surrounding air temperature.

3,222,642

LOW PRESSURE INDICATOR FOR VEHICLE TIRES

Carroll H. Berill, Pickwick Arms, 230 E. 51st St., New York, N.Y.

Filed Dec. 5, 1962, Ser. No. 242,554
10 Claims. (Cl. 340—58)



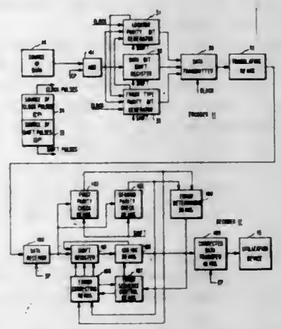
1. Apparatus for indicating reduction in air pressure in a vehicle tire including, in combination, a pressure-responsive device attached to a rotating part of a wheel on which is mounted the tire in which a reduction in pressure is to be determined, a conduit through which pressure in the tire is transmitted to the pressure-responsive device, a movable portion of the pressure-responsive device that shifts into a signal-producing position when pressure of the air in the conduit drops below a predetermined value, a detector secured to a portion of the vehicle at a location close to the path traveled by the pressure-responsive device as said device rotates with the wheel, the detector being actuated by the pressure-responsive device each time that the pressure responsive device passes the detector only when the movable portion of the pressure-responsive device is in signal-producing position, and an indicator on the vehicle operated by the detector for warning an operator of the vehicle of the drop in pressure of the tire, the movable portion of the pressure-responsive device being an electric switch, and said device including an element that radiates energy when the switch is in closed position, the detector being responsive to the energy radiated, and a lamp for radiating the energy, the detector being a light-responsive element.

3,222,643

ERROR DETECTING AND CORRECTING SYSTEMS

Jacob Fredrik Klinkhamer, Emmasingel, Eindhoven, Netherlands, assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed June 22, 1961, Ser. No. 118,927
11 Claims. (Cl. 340—146.1)



6. In combination with an information handling system having a source of binary coded multibit data signals and a device for utilizing said signals, an error detecting and correcting system interconnecting the data source and the utilization device and operable to detect, locate and correct a plurality of different types of related errors occurring during the translation of the data signals to the device, the error correcting system including an encoder, a decoder and signal translating means connected therebetween, the encoder comprising means for supplying to the signal translating means a code group signal consisting of a predetermined number of data bits, a predetermined number of locator parity bits, and a predetermined number of error type parity bits, the locator parity bits being generated from bit positions of the code group signal determined by a first m-sequence and the error type parity bits being generated from bit positions determined by a second m-sequence, the decoder comprising means for generating first and second check-sums from the code group signal as received over bit positions determined by the m-sequences, recirculating register means for receiving the code group signal, first and second m-sequence generator means for receiving the first and second check-sums respectively, means coupled to the recirculating register means and to the first and second m-sequence gen-

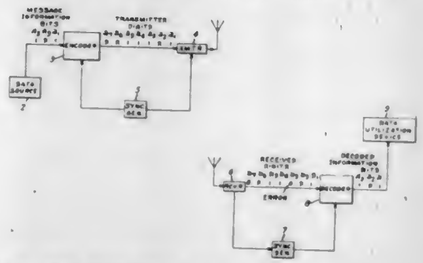
erator means for successively shifting the recirculating register means and the first and second m-sequence generator means in opposite directions, and means responsive to the first and second m-sequence generator means and coupled to the recirculating register means for correcting an identified type of related error at a selected step in the shifting of the code group signal, as determined by the first and second m-sequence generator means.

3,222,644

SIMPLIFIED ERROR-CONTROL DECODER

Coleman H. Burton and Michael E. Mitchell, Ithaca, N.Y., assignors to General Electric Company, a New York corporation

Filed July 26, 1962, Ser. No. 212,746
5 Claims. (Cl. 340—146.1)



1. In data processing apparatus that processes code words having n binary digit signals in n respective positions in the word, of which k signals represent information bits, a decoder comprising:

(a) A register adapted to receive the code word signals in such a manner that the bits of the code word signals are entered into positions of the register corresponding to their position in the code word;

(b) cyclic estimation logic circuits which operate as a function of the received bits in said register in a manner to provide the required number of estimate signals by independent value estimations of the correct value of the received bit in a specific position of the register;

(c) a decision logic circuit responsive to the estimate signals to provide decoded output bit signal in accordance with the majority of the estimate signals; and

(d) control circuitry to cyclically shift the bit signals in said register for k bit decoding operations, to initiate a bit decoding operation after each shift, and to terminate word decoding operations after k bit decoding operations.

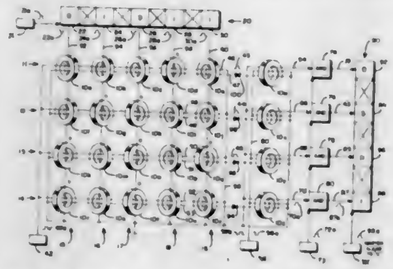
3,222,645

MAGNETIC PARALLEL COMPARISON MEANS FOR COMPARING A TEST WORD WITH A PLURALITY OF STORED WORDS

William W. Davis, Minneapolis, Minn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Oct. 17, 1962, Ser. No. 231,172
27 Claims. (Cl. 340—146.2)

23. Signal responsive apparatus for the parallel comparison of a multi-bit test word to a plurality of multi-bit stored words comprising: a plurality of bistable magnetic memory elements arranged in a matrix array of rows and columns with a memory element at the intersection of each row and column; an additional column of bistable magnetic negation elements having one negation element associated with each of said rows; an input register having a plurality of bistable stages for holding the binary information representative of the bits of the test word; a separate column conductor coupling each stage of said input register separately to the memory elements of each column in a first magnetic sense; separate pairs of a set conductor and an output conductor each serially coupling all the memory elements of each row in a first or second magnetic sense representative of the binary information stored in each memory element of said row, each of said memory element output conductors additionally coupled to the row associated negation element; an output register having a plurality of bistable stages for holding the binary information representative of the comparison of the test word to the plurality of stored words; a separate output conductor coupling each stage of said output register to a separate row associated negation element by way of an AND gate; a set line serially coupling all of the negation cores; first signal generating means coupling to all the set conductors of said rows of memory elements a set pulse setting all the memory elements in a first or second magnetic sense as determined by the magnetic coupling sense of said set conductors with said memory elements; second signal generating means coupling to said negation element set line a set pulse setting said negation cores into a set magnetic state; third signal generating means coupling to said input register a gate pulse coupling bi-



polar voltage levels representative of the bits of the test word stored in said input register to the associated column conductors, said voltage levels setting up magnetic fields in the areas of the memory elements such that if the magnetic state of the coupled memory element is in the same magnetic sense its magnetic state is not effected but if in the opposite magnetic sense, its magnetic state is switched generating thereby an output signal in the associated row output line, said memory element output signal switching the magnetic state of the coupled negation core to a clear magnetic state opposite to the set magnetic state achieved by said negation core set pulse; fourth signal generating means coupling a clear pulse to said negation element set line switching those negation elements into the clear state which had not been previously set into the clear state by said memory element output signal, the switching of said negation elements generating an output signal on their associated output line; fifth signal generating means coupling to said negation element AND gates a gating pulse coupling said negation element output signal to the associated output register stage setting said stage to store a "1" thus identifying a row of memory elements containing the stored word which is equal to the test word.

3,222,646

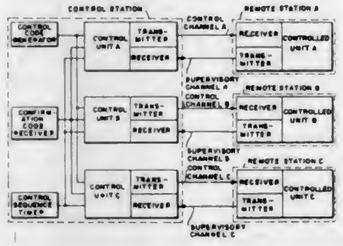
SUPERVISORY REMOTE CONTROL SYSTEM

Sigwald Morris Hammer, Independence, Kans., assignor to Sinclair Research, Inc., a corporation of Delaware

Filed Aug. 10, 1960, Ser. No. 48,729
11 Claims. (Cl. 340—163)

1. In a supervisory control system including a control unit, a controlled unit, a control communication channel, and a supervisory communication channel; the improvement which includes; a control code generator operable when actuated to generate a plural digit code, a control

code receiver located at said controlled unit, a confirmation code generator located at said controlled unit, a confirmation code receiver, a first code establishing device located at said control unit operably connected to said control code generator and actuatable to condition said control code generator to generate a predetermined plural digit code, independent actuating means located at said control unit for simultaneously actuating said control code generator and said first code establishing device thereby to initiate generation of said predetermined plural digit code, said control code generator being connected to said control communication channel to transmit a code generated by said control code generator on said control communication channel, said control code receiver also being connected to said control communication channel to receive a code generated by a said control code generator and transmitted on said control communication channel, a first code digit responsive device located at said controlled unit connected to said control code receiver to be actuated thereby upon receipt of the first digit of said predetermined plural digit code at said control code receiver, a second code digit responsive device located at said controlled unit, means associated with said



first code digit responsive device to be actuated thereby upon actuation thereof to connect said second code digit responsive device to said control code receiver to be actuated thereby upon receipt by said control code receiver of a subsequent digit of said predetermined plural digit code, means connected to said confirmation code generator and associated with said first and second code digit responsive devices to be actuated thereby upon actuation of both to condition said confirmation code generator to generate a confirmation code, means automatically actuated after the reception of said predetermined plural digit code to initiate operation of said confirmation code generator, said confirmation code generator and said confirmation code receiver being connected to said supervisory communication channel thereby communicating said confirmation code generator and confirmation code receiver whereby the code generated by said confirmation code generator is transmitted on said supervisory communication channel and received by said confirmation code receiver, and indicating means located at said control unit and connected to said control confirmation code receiver to be actuated thereby upon receipt by said confirmation code receiver of said confirmation code.

3,222,647

DATA PROCESSING EQUIPMENT

Christopher Strachey, London, England, assignor, by mesne assignments, to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Feb. 4, 1960, Ser. No. 6,752
Claims priority, application Great Britain, Feb. 16, 1959, 5,263/59
1 Claim. (Cl. 340—172.5)

A program-controlled data processing system, wherein a number of program interrupt signal conditions may each be assigned any of a number of different priorities, the number of assignable priorities being less than the number of interrupt conditions, including:

(1) storage means, for storing a number of programs of instructions, each of said programs having a priority assignable thereto;

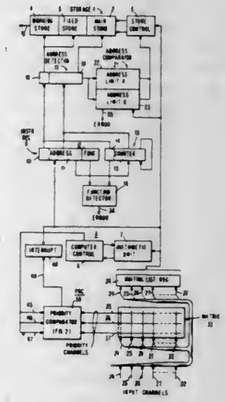
(2) address means, connected to said storage means, for accessing instructions in selected ones of said number of programs;

(3) control means, connected to said address means, operable to control the selections of ones of said programs;

(4) execution means, connected to aforesaid storage, address and control means, operable by said control means to execute instructions in the program currently selected by said control means, accessed by said address means from said storage means;

(5) a plurality of input channels, for supplying signals including a first number of interrupt signal conditions; and

(6) interrupt means, connected to said control means, said execution means and said input channels, for assigning priorities to the interrupt signal conditions on said input channels and responsive to the relative priorities of the currently selected program and the interrupt signal conditions for controlling the interruption of the currently selected program and the initiation of another program, comprising:



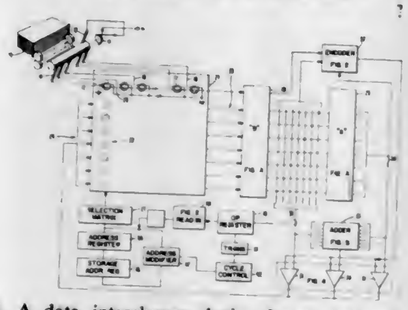
(a) a matrix, connected to said input channels, having a first number of inputs equal to said first number of interrupt signal conditions supplied by said input channels and having a second number of output priority channels each representing a different priority, said second number being less than aforesaid first number, connected to selected ones of said inputs for assigning, in accordance with said connections, to each of said input channels any of said priorities;

(b) a priority comparator, connected to said control means and to said matrix output priority channels, for comparing the relative priorities of the currently selected program and the interrupt signal conditions and generating, as a result of such comparison, a control signal when the priority assigned to an interrupt signal condition on an input channel is higher than the priority of the currently selected program; and

(c) interrupt controls and a waiting list register, connected to said control means, execution means, address means, priority comparator means and said input channels, operable by said control signal to interrupt the currently selected

program and initiate another program in accordance with signals supplied by said input channels.

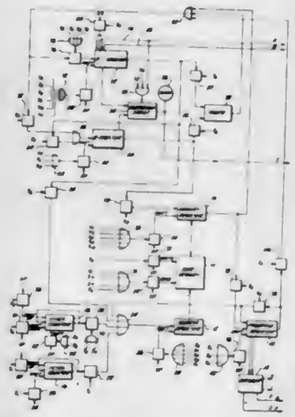
3,222,648
DATA INPUT DEVICE
Kenneth A. Bell and Donald S. MacLeod, Vestal, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Apr. 4, 1960, Ser. No. 19,758
10 Claims. (Cl. 340—172.5)



1. A data interchange device for a data processing machine and a data storage medium on which characters are formed by bits at selected areas which are successively available for processing, processing means individual to each character position of said medium, a storage array containing a plurality of addressable character positions, a plurality of bistable storage elements at each character position, means for connecting at least one bistable element of each addressable character position with the processing means individual to each character position of said medium at each successive area of said storage medium, area register means responsive to said selected areas for indicating the bit area of said medium then available wherein each character position in said storage contains a character coded by the available area of said medium and the coding of the data processing machine for that character position of the medium, means for reading each character from said storage in response to each successive area of said medium, means for sensing the individual characters to determine the presence of the digit contained in said area register, means for re-entering said character into the selected position of storage and means responsive to the presence of said digit for setting this digit in the group of bistable devices coded by the processing machine or the data medium opposite to the group in which said digit was originally contained.

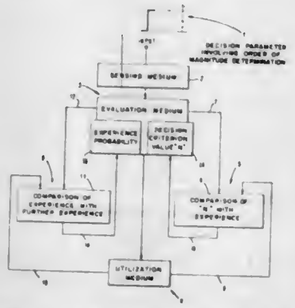
3,222,649
DIGITAL COMPUTER WITH INDIRECT ADDRESSING
Paul D. King, Pasadena, Robert S. Barton, Altadena, and Jack N. Merner, Azusa, Calif., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Feb. 13, 1961, Ser. No. 88,777
11 Claims. (Cl. 340—172.5)

1. In a computer in which a string of digitally coded program syllables are executed in sequence, the syllables being of a plurality of different types designated by a first group of digits in each program syllable, the combination comprising a program register for storing a program syllable while it is being executed by the computer, a main storage device for storing digitally coded words in addressable locations, a temporary storage device including first and second registers for storing an indefinite number of digitally coded words, decoding means coupled to the program register and responsive to said first group of digits in the program syllable for generating signals indicative of the type of syllable in the program register, means responsive to the signal from the decoding means when either of two syllable types is in the program register for transferring a word from the main memory to one of the registers in the temporary storage device, the transferring means including means coupled to the program register and responsive to a second group of digits in the program syllable for addressing the desired word in the main memory according to said second group of digits, an adder having two inputs coupled respectively to the



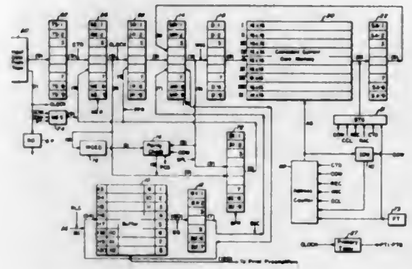
two registers of the temporary storage for adding the contents of the two registers, and means responsive to a first group of digits of the word in said one register and to the signal from the decoding means for adding the contents of the two registers in temporary storage in the adder and transferring the results back into said one register automatically when a predetermined value is present in said first group of digits and either one of said two program syllables is in the program register.

3,222,650
INTERPRETATION MACHINE
John P. Lazarus, San Jose, Calif., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 30, 1960, Ser. No. 79,900
27 Claims. (Cl. 340—172.5)



2. In an information processing machine wherein a decision is based on a comparison of an order of magnitude determination with a criterian value the improvement comprising decision augmentation means employing a decision probability based on experience and further means involving information feedback paths for interdependently altering said criterion value and said decision probability.

3,222,651
INFORMATION HANDLING APPARATUS
Edward S. Fabiszewski and Richard D. Pasciuto, Lexington, Mass., assignors to Honeywell Inc., a corporation of Delaware
Filed Aug. 2, 1961, Ser. No. 128,753
10 Claims. (Cl. 340—172.5)



1. Apparatus for use in the operation of a computing system to control the transfer of data from a multiple-channel source to an output data storage medium, said data arriving in data frame format, each frame consisting of a single binary digit per channel, comprising a first temporary storage register adapted to receive each of said arriving data frames, a second temporary storage register, means for synchronously gating each data frame from said first to said second register, memory means connected to said second register having a plurality of individually addressable locations each adapted to store a data frame, addressing means and output means associated with said memory means, means including said second register and said output means for recirculating the contents of an addressed memory location, means for disabling said output means to clear an addressed memory location of its contents, means for checking the parity of each data frame transferred out of said second register, binary accumulating means coupled to said second register for independently accumulating the contents of each channel during a predetermined data sequence, said last-recited means in the absence of data errors being adapted to accumulate to a predetermined final state from a predetermined initial state, means for transferring the accumulated contents of said binary accumulating means to said first register, means for transferring data frames stored in successively addressed memory locations to said binary accumulating means, means responsive to a single-channel parity error condition for correcting a data frame stored in said binary accumulating means with the corresponding binary accumulation contents of said first register, and means for storing the correct data frames in their proper memory locations.

3,222,652
SPECIAL-FUNCTION DATA PROCESSING
Fred E. Sakalay, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Aug. 7, 1961, Ser. No. 129,687
13 Claims. (Cl. 340—172.5)

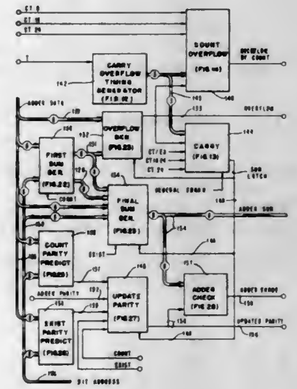
1. In a data processing system of the type having a main memory apparatus in which data designating manifestations are stored, a memory cycle control device comprising:

a function performing means selectively operable to perform different functions on data manifestations;

means for selectively propagating data from said memory to said function performing means;

function control means for designating different operations to be performed on said data manifestations by said function performing means, different ones of said operations requiring different amounts of time, at least one of said operations requiring a different amount of time when performed on different data manifestations;

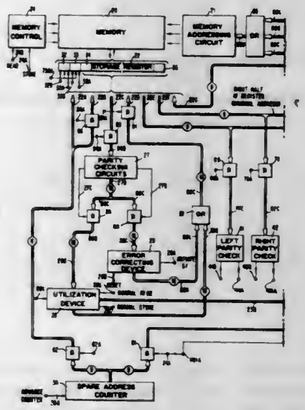
timing means responsive to said function control means for returning data to said memory apparatus at a time commensurate with the maximum time



required to perform operations indicated by said control means;

and means responsive to the result of said operations and controlling said timing means for foreshortening the time at which data is returned to said memory apparatus in response to completion of the operations being performed.

3,222,653
MEMORY SYSTEM FOR USING A MEMORY DESPITE THE PRESENCE OF DEFECTIVE BITS THEREIN
Rex Rice, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Sept. 18, 1961, Ser. No. 138,644
16 Claims. (Cl. 340—172.5)



1. A memory system which includes

a first multibit memory register which is specified by a first address and which includes one or more bit positions used as a tag field,

a second multibit memory register having a second address, the address of said second register being stored in said first register when said tag field is set to a first condition,

control means operative when said memory system reads said first memory register and responsive to said tag field to interpret the contents of said register as the address of said second register and to address and read out said second memory register,

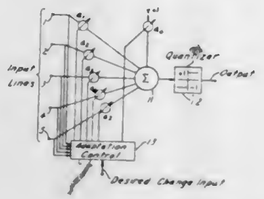
whereby when said first memory register is addressed, and said tag field is set to said first condition, said second register is automatically addressed and read out.

3,222,654

LOGIC CIRCUIT AND ELECTROLYTIC MEMORY ELEMENT THEREFOR

Bernard Widrow, 775 Esplanada Way, Stanford, Calif., and Marcian E. Hoff, Jr., 76 Stony Point Road, Rochester, N.Y.

Filed Sept. 8, 1961, Ser. No. 136,829
19 Claims. (Cl. 340—173)



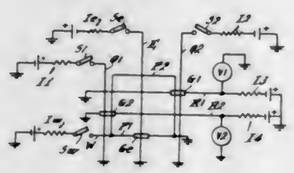
1. A memory element comprising a supporting material, a conductive film formed on said material, said film including lead portions and a substrate portion having its ends connected to the lead portion, means for receiving an electrolyte, and electrolyte in said receiving means, said supporting material cooperating with said electrolyte so that at least the substrate is immersed in the electrolyte, a source of plating material in said electrolyte, means for reversibly plating the material on said substrate, and means connected to said lead portions for sensing the resistance of said substrate.

3,222,655

SUPERCONDUCTIVE MEMORY

Albert E. Slade, % Arthur D. Little Inc., 15 Acorn Park, Cochituate, Mass.

Filed Aug. 11, 1961, Ser. No. 130,859
10 Claims. (Cl. 340—173.1)



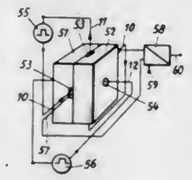
1. A persistent current memory cell comprising a first superconductive path, a second superconductive path forming with said first path a closed, wholly superconductive loop adapted to support a persistent current, control means for quenching the first path, an output gate in quenching relation to the second path, an interrogate conductor in inductive relation to said second path such that current through said interrogate conductor induces a current in said loop and causes said loop to apply to said output gate a magnetic field whose vector sum includes the field of said induced current and persistent current, thereby to quench said output gate depending on the persistent current condition of said loop.

3,222,656

MAGNETIC MEMORY ARRANGEMENT

Sven Arne Olsson, Ekholmen, Alvsjo, Sweden, assignor to Telefonaktiebolaget L M Ericsson, Stockholm, Sweden, a corporation of Sweden

Filed Aug. 25, 1960, Ser. No. 51,911
Claims priority, application Sweden, Sept. 16, 1959, 8,609/59
1 Claim. (Cl. 340—174)



A magnetic memory device comprising a member at least part of which is made of a magnetic material having a substantially rectangular hysteresis loop and having three substantially mutually perpendicular passages in said magnetic material, said passages intersecting within said member at the same point, a first conductor extending through a first one of said passages, a second conductor extending through a second passage, said first and second conductors being serially connected to a common pulse current supply source to have them coincidentally fed with current pulses representing binary information, a third conductor extending through a third passage and connected to a pulse current supply source for feeding a reading pulse to the device, and a fourth conductor extending through one of said first and second passages and connected to an indicating device for indicating the stored binary information.

3,222,657

MAGNETIC DEVICE

John W. Cook, Shady Side, Md., assignor, by mesne assignments, to Sprague Electric Company, a corporation of Massachusetts

Filed Sept. 14, 1960, Ser. No. 55,889
1 Claim. (Cl. 340—174)



A magnetic device comprising filaments one of which is helically wrapped about the other, one of said filaments being made of electrically conductive material, the other of said filaments being made of magnetic material and said filaments having separated portions deformed by external pressure linearly along the length of said filaments so that localized portions are extensively physically cold-worked by the application of pressure without the use of any external heat, said filaments merging at said separated portions of localized cold working, said magnetic filaments characterized by adjacent zones separated by said deformed portions so that magnetic cross talk between the adjacent zones is minimized and the magnetic linkage between the filaments is greater than that of undeformed helically wrapped filaments.

3,222,658

MATRIX SWITCHING SYSTEM

George D. Bruce, West Lafayette, Ind., and William R. Wohlfort, Hopewell Junction, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Aug. 27, 1962, Ser. No. 220,353
6 Claims. (Cl. 340—174)

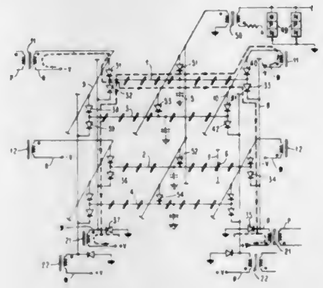
1. A magnetic core storage system comprising:

(a) a multiplicity of magnetic elements arranged in a matrix of rows and columns, each row defining a word and each column defining a bit position within the word;

(b) a plurality of word conductor means each relating a row of cores together as a word, said word conductor means having a finite inherent capacitance;

(c) column conductor means relating, within each of the several affected words, each magnetic element to a particular bit position for setting and for sensing;

(d) read word selection means, including read drive matrix switch-diode matrix mechanism for read driving and a matrix switch-diode matrix mechanism for read gating, connected to said plurality of word conductor means and arranged to provide for a selected word conductor means the read select current required for read operation;



(e) write word selection means, including write drive matrix switch-diode matrix mechanism for write driving and a write gate matrix switch-diode matrix mechanism for write gating, connected to said plurality of word conductor means and arranged to provide for a selected word conductor means the write select current required for the write operation;

(f) pump means connected to each of said word conductor means to discharge the inherent capacitance; and

(g) cycle control means arranged to provide a cycle of read-write-pump; whereby the charging of the capacitance during the read interval acts as a filter to extend gating from the read interval into the write interval, but the action of the pump prevents the capacitance from acting as a filter to extend gating from the write interval into the succeeding read interval.

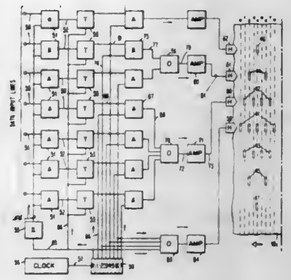
3,222,659

VARIABLE DENSITY DATA RECORDING UTILIZING NORMAL SKEW CHARACTERISTICS

Raymond A. Skov, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed June 30, 1961, Ser. No. 121,050
8 Claims. (Cl. 340—174.1)

1. In a data processing machine of the type utilizing a translating record and having a maximum potential skew, said maximum potential skew imparting different, successively-greater maximum potential linear skew for data bits recorded on each subsequent track closer to the outside edges of the record, there being no skew recognized in a reference track of said record, the method of



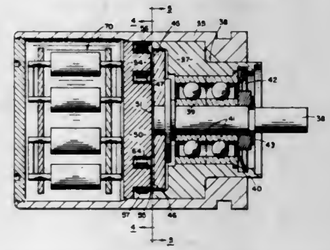
recording which comprises recording data manifestations in each of said tracks at a maximum density substantially inversely proportional to said maximum potential linear skews.

3,222,660

MAGNETIC POSITION ENCODER

William A. Farrand, Fullerton, Calif., assignor to North American Aviation, Inc.

Filed Sept. 4, 1962, Ser. No. 221,165
4 Claims. (Cl. 340—199)



1. An incremental angular resolver comprising

a magnetic rotor and a magnetic stator having mutually facing contiguous surfaces,

said rotor surface having an annular peripheral portion thereof formed with a plurality of substantially equally spaced and radially disposed teeth extending from said rotor surface toward said stator surface,

said stator surface having first and second pairs of poles extending toward said rotor teeth,

each of said poles having a plurality of radially disposed teeth extending toward said rotor teeth, with the same spacing as teeth of said rotor,

the teeth of each pole of a given pair having a 180° space-phase relation with the teeth of the other pole of said given pair,

the teeth of one pole pair having a 90° space-phase relation with the teeth of the other pole pair,

said stator surface having an inner pole contiguous with the inner portion of the contiguous stator surface to provide a constant reluctance magnetic gap therebetween,

said first and second pole pairs each having a pair of sensing windings, one winding on each of the poles of a pole pair, the sensing windings of a given pair of poles being connected in series opposition,

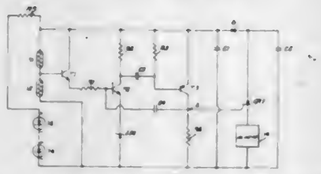
said inner pole of said stator having an exciting winding wound thereon,

means for providing an alternating current to said exciting winding,

and an output circuit means connected to said sensing

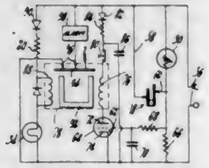
windings for providing an indication of the direction and magnitude of relative rotation of said rotor and stator, said circuit means including a direction circuit and two synchronous switching means, each switching means having a control terminal, an input terminal and an output terminal, said control terminal being connected to said exciting winding, and said input and output terminals being connected in series between said direction circuit and series opposed windings of a given pair of poles, for producing square wave signals from which said indication is derived.

3,222,661
FIRE DETECTOR ENERGIZED BY A PHOTO-GENERATIVE CELL
Alfred W. Vasel, 222 Linwood St., Abington, Mass., and Rudolph W. Kalns, 21 Madison St. S., Weymouth, Mass.
Filed July 30, 1962, Ser. No. 213,256
2 Claims. (Cl. 340—228)



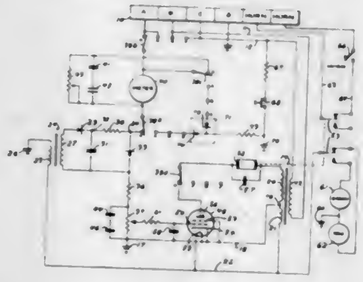
1. A self-energized fire detector, comprising a detector unit, an alarm element, circuit means actuated by said detector element to actuate said alarm unit when said detector is exposed to light radiation of a predetermined type, a first electrical energy storage means for providing an electrical charge to the circuit means and the detector unit, and a second electrical energy storage means for providing an electrical charge to the alarm unit, and photo-generative power supply means operable to charge both of said electrical energy storage means when exposed to either ambient light or fire radiation.

3,222,662
SIGNALLING APPARATUS INCORPORATING A DIFFERENTIAL RELAY
Philip Giuffrida, North Andover, Mass., assignor to Electronics Corporation of America, Cambridge, Mass., a corporation of Massachusetts
Filed Dec. 27, 1961, Ser. No. 162,359
4 Claims. (Cl. 340—237)



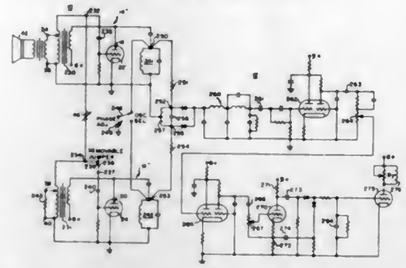
1. A signaling apparatus comprising a casing, having an entrance aperture and an exit aperture,
said casing defining a passageway between said entrance aperture and said exit aperture, allowing a substantially unrestricted flow of air through the casing,
a particle sensor including a light radiation sensor disposed for scanning the air flow through said passageway,
and a light radiation source having a beam directed generally perpendicular to the scanning direction of said radiation sensor and across the scanned area,
a heat sensor disposed adjacent said entrance aperture,
a gain producing element,
a two coil differential relay including contacts controlled by said relay connected in circuit with an alarm,
means connecting one coil of said differential relay in electric series circuit with said gain producing element and the other coil of said differential relay in electric series circuit with said radiation source,
first electric circuit means connecting said radiation sensor and said heat sensor in parallel, second electric circuit means connecting said first electric circuit means to said gain producing element to control the operation of said gain producing element,
said differential relay operating said relay control contacts to produce an alarm signal in response to operation of said gain producing element or failure of said radiation source.

3,222,663
GROUND FAULT DETECTING DEVICE
Gerald H. Dennis, 1706 Esplanade, Redondo Beach, Calif.
Filed Oct. 30, 1961, Ser. No. 148,671
4 Claims. (Cl. 340—255)



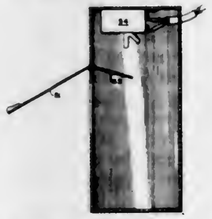
1. A device to detect a ground fault in a multi-phase ungrounded system having at least three phases, comprising:
(a) power supply means for said device connected across two phases to provide A.C. current from said system,
(b) means connected to said power supply means providing a D.C. voltage source and including voltage regulating means to provide a constant level D.C. supply for said system,
(c) said D.C. supply being grounded through a resistance element connected in series with said D.C. voltage source,
(d) means connected in parallel with said resistance element to by-pass A.C. current,
(e) means to measure D.C. current flowing in said system from said D.C. voltage source,
(f) means connected in parallel with said measuring means to by-pass A. C. current.
(g) means connected to said resistance element for sensing a change in D.C. voltage drop thereacross,
(h) a normally open alarm circuit,
(i) and relay means connected to said alarm circuit and said sensing means and responsive to said sensing means to close said alarm circuit upon a change in voltage drop across said resistance element,
(j) switch means for selectively disconnecting said D.C. voltage source from said system and connecting said measuring means between a selected one of said phases and ground,
(k) and other switch means connected to said first named switch means for closing said alarm circuit when said measuring means is indicating ground to phase voltage, thus insuring that the device is not at that time functioning to indicate ground to system resistance.

3,222,664
DETECTION APPARATUS
Joshua Premack, Minneapolis, Minn., assignor to Honeywell Inc., a corporation of Delaware
Filed Dec. 3, 1962, Ser. No. 241,806
7 Claims. (Cl. 340—258)



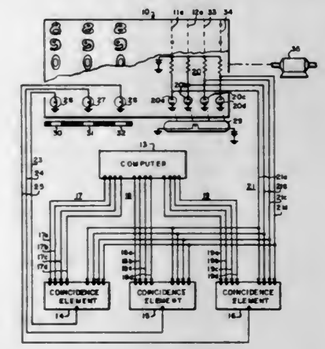
1. In an intruder detection system, a pair of oscillators which are set to oscillate at substantially identical frequencies; impedance means intercoupling said oscillators and effective to maintain said oscillators in frequency synchronism throughout the range of operation of the system, the oscillations of said oscillators being subject to a displacement in phase angle one from the other even though remaining in frequency synchronization; intruder sensing energy transmitting means coupled to one of said oscillators and responsive to the ingress of an intruder to vary the magnitude of said phase displacement; means connected between said oscillators for deriving signals which vary as a function of the change in phase angle resulting from the ingress of said intruder; and means responsive to said derived signals due to the ingress of an intruder for operating an alarm.

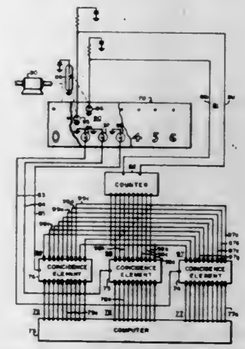
3,222,665
MAIL-CALL MAILBOX SIGNALLING SYSTEM
Charles H. Tracy, 108 Nursery St., Ashland, Oreg.
Filed Jan. 30, 1964, Ser. No. 341,193
1 Claim. (Cl. 340—281)



A mail box signalling system comprising in combination:
(a) a mail box having a front panel, a rear panel and a joining member, said front panel having a slot therein and a pivoted closure member normally closing said slot, said pivoted closure member having a unitary extension within said box,
(b) a switch mechanism mounted within the upper portion of said mail box, said switch mechanism comprising two contacts and a switch bar pivoted at its lower end, a toggle element pivotally mounted within said switch mechanism below and behind the pivot on said switch bar, a spring biassing means connecting said switch bar and said toggle element, said toggle element comprising two arms which are contacted by said extension member on said closure member so as to rotate said toggle member on opening and closing said closure member,
(c) an indicator comprising a dial having a hand pivoted near its lower edge thereof, said hand normally pointing to a first position and having a second position indicated on said dial with spring loaded retaining means to retain the hand in the second position, when it assumes this position, said dial having a bell connected thereto,
(d) an electrical conduit, including a source of power, connecting said mail call double lever switch and said mail call dial so that when the closure member on the mail slot is raised the circuit is completed and forces the hand on said dial into the second position and locks the same in this position.

3,222,666
STROBOSCOPIC READOUT OF DISPLAY TAPE
Andrew R. Hallden, Baldwin, N.Y., assignor to Hazeltine Research, Inc., Chicago, Ill., a corporation of Illinois
Continuation of application Ser. No. 791,651, Feb. 6, 1959. This application Apr. 6, 1961, Ser. No. 103,674
5 Claims. (Cl. 340—324)





1. A readout device comprising: circuit means for continuously supplying a plurality of input signals at the same time, each of said signals representative of a particular character; a tape having cleared portions carrying displayable characters represented by said input signals and other portions carrying code information associated with each character; a plurality of viewing positions, one for each character to be displayed, for simultaneously displaying all the characters represented by said input electrical signals supplied at the same time; means for repetitively moving said tape sequentially past all of said viewing positions so that each displayable character on the tape is sequentially moved past each viewing position; code detection means responsive to said code information for continuously developing electrical code sigtion; code detection means responsive to said code intion as said tape moves, said code detection means so

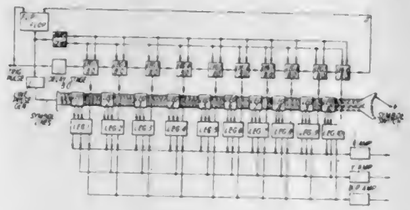
positioned that when a particular code on said tape passes said code detection means the character associated with said particular code passes a selected viewing position, while at the same time, other characters pass the other viewing positions; a plurality of circuit means, one associated with each of said viewing positions, and each jointly responsive to said code signals and the input electrical signal representative of the character to be viewed in the associated viewing position, for developing control signals whenever a particular code signal is representative to code information associated with the same character as the character represented by said input electrical signal; means responsive to said control signals for repetitively making visible, during every cycle of said tape, the particular characters on said tape represented by said input electrical signals; and means for compensating for the time difference between the time that characters on said tape pass viewing positions other than said selected one and the time the code information associated with these characters passes said code detection means.

3,222,667

CORE MATRIX FOR CONTROL OF CRT HAVING FORWARD AND REVERSE WOUND CORES

Alexander Woroncow, Havant, Jack S. Randall, Portsmouth, and Ralph Benjamin, Gosport, England, assignors to National Research Development Corporation, London, England, a British corporation

Filed Apr. 24, 1962, Ser. No. 189,914
3 Claims. (Cl. 340—324)



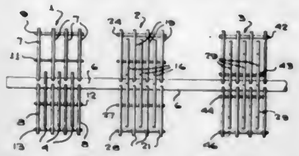
1. Apparatus for the generation and display of visual symbols on the screen of a cathode ray tube by a succession of straight line motions of a spot scanning said screen, comprising a set of magnetic cores energizable for the storage of energy for effecting horizontal component (X) deflections of the scanning spot, another set of magnetic cores energizable for the storage of energy for effecting vertical component (Y) deflections of said spot, and a third set of magnetic cores energizable for the storage of brightness control (B) pulses for rendering visible the straight line motions of said spot which contribute to the building up of the symbol outline, core energizing wires interwoven through said cores forwardly or reversely one or more times in accordance with the directions and magnitudes of X and Y deflections and the visibility thereof required to build up representation of a symbol, a pulse generator connectible to a selected wire to energize the cores looped by said selected wire to the magnitudes and polarities appropriate to successive scanning spot movements to trace out a symbol, a normally closed output winding on each core, switching diodes connected to each said output winding, and pulse generators operable in turn to switch the diodes to connect at the same time the outputs from corresponding cores of each set to produce deflection and brightening of the traces of the successive straight lines on the cathode ray tube screen and to disconnect said outputs and trigger operation of the pulse generator controlling the switching of the core outputs for writing a succeeding trace until the whole symbol outline has been thus built up.

3,222,668

CAPACITIVE CODER

Bernard Lippel, 39 Fairway Ave., West Long Branch, N.J.

Filed Aug. 16, 1961, Ser. No. 131,910
18 Claims. (Cl. 340—347)



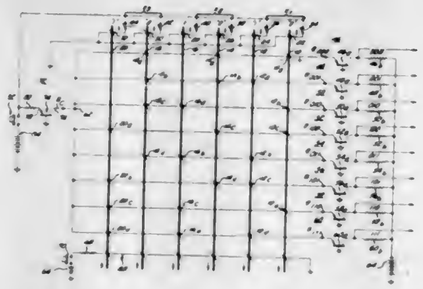
1. A capacitive transducer for an analog position-to-digital converter comprising a plurality of capacitor sections, each of said sections comprising a plurality of rotor and stator elements on interleaved parallel planes, an input shaft, all of said rotor elements being electrically directly connected to and supported on said shaft so that said rotor elements are all at the same potential, said rotor elements of the section employed to generate a first bit including a plurality of equally spaced, equal-size radial sectors, said stator elements of the section employed to generate the first bit including radially extending, equally spaced and equal size sectors at least substantially equal in number to the number of rotor sectors of the same section, said stator elements employed to produce the further bits including a plurality of radially extending, equally spaced and equal-size sectors, said last-mentioned sectors being divided into plural segments electrically insulated from one another.

3,222,669

DECODER

Edwin S. Lee III, Altadena, Calif., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed June 15, 1962, Ser. No. 202,787
16 Claims. (Cl. 340—347)



1. A decoder for converting a binary code of N bits into a one-out-of K code, comprising:

N pair of magnetic core elements, a pair of core elements being associated with each bit of the binary code and each core element of each core pair being associated with a different binary character to define a binary one and a binary zero core element for each bit in the binary code;

an input winding on each core element;

a plurality of separate output windings on each core element, the output windings on the binary one cores defining binary one output windings and the output windings on the binary zero cores defining binary zero output windings;

K output circuits each including a normally non-conductive threshold switching device and one output winding from each core pair connected in series between a common terminal and a source of biasing potential for its associated threshold device, the output windings comprising each output circuit being chosen to define the binary character of a different bit position in a binary coded word formed by the binary designation of the output windings in each output circuit, the output windings comprising each output circuit being selected to define a binary word in each output circuit which differs from the words formed in each other output circuit;

means for pulsing selected input windings to define a binary coded input word of N bits to be translated;

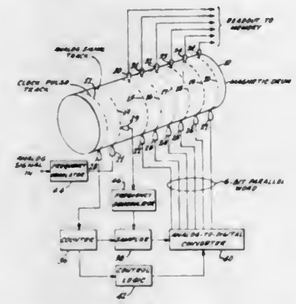
and means for applying a current pulse to the common terminal during the pulsing of the selected input windings whereby the current pulse is steered to one of the threshold devices for switching it to a conductive condition and thereby signal the one-out-of K conversion.

3,222,670

DATA PROCESSING

Abraham Harel, Framingham, Mass., assignor, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission

Filed Oct. 13, 1961, Ser. No. 144,952
7 Claims. (Cl. 340—347)



1. An analog-to-digital converter comprising, in combination, a cyclical recording medium which is operative at a speed adequate to record a given high frequency analog signal; means for recording said signal on said medium in not more than one cycle of the medium; and an analog-to-digital converter means which is operative at a speed substantially slower than that required to convert the higher frequency components of the signal to digital form for interlacing converting the entire recorded signal to digital data and recording the digital data on the medium, both during a period substantially greater than that required to record said signal.

3,222,671

RANGING-BLANKING CIRCUIT

Paul L. Di Matteo, Levittown, N.Y., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed Sept. 13, 1962, Ser. No. 224,595
4 Claims. (Cl. 343—7.3)

2. A ranging and blanking circuit for use with a target tracking system for blanking all video signals from targets beyond the range of a selected target, comprising in combination:

threshold circuit means,

input terminal means for feeding target video pulses through said threshold circuit means,

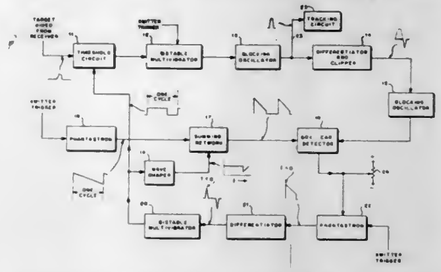
bistable multivibrator means connected to said threshold circuit means,

boxcar detector means,

blocking oscillator means connected between said threshold circuit means and said boxcar detector means providing said boxcar detector means with a discharge pulse for each video pulse passed through said threshold circuit means,

circuit means connected between said boxcar detector means and said bistable multivibrator means responsive to the output of said boxcar detector to trigger said bistable multivibrator means once per cycle immediately after arrival of the target video pulse at said threshold circuit means to provide a blanking pulse to said threshold circuit means,

whereby all other video pulses occuring during each cycle after said target video pulse occurs are prevented from passing through said threshold circuit means.

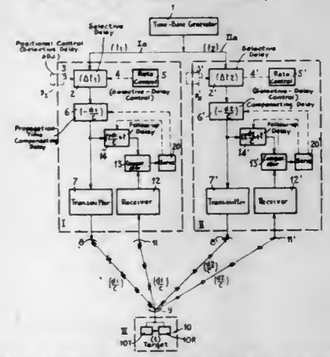


3,222,672

RADAR SYSTEM WITH CONTINUOUS SEQUENCING MEANS

Henri G. P. Forestier, Paris, France, assignor to Compagnie Francaise Thomson-Houston, Paris, France, a corporation of France

Filed June 26, 1963, Ser. No. 290,835
Claims priority, application France, July 3, 1962, 902,760, Patent 1,344,274
13 Claims. (Cl. 343—7.5)



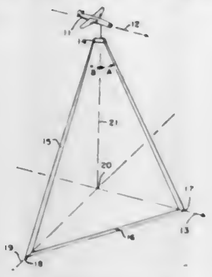
4. A radar system comprising a radar station having means for transmitting a train of recurrent radar signals towards a target and means for receiving response signals from the target, time-comparator means at the station having two inputs, one of said inputs being connected to said receiving means and having an output, a variable follow-up device connecting the other of said inputs to said transmitting means, and servo-means connected to the comparator output and connected to vary said follow-up device in a sense to reduce the comparator output signal for tracking the target and deriving an indication of station-to-target distance, and variable delay means interposed in the path of the transmitted signals at said station and connected for operation by said servo means whereby to vary the transmission timing of the recurrent signals in proportion to variations in said distance indication and whereby the signals are received at the target at generally uniform intervals substantially independent of variations in station-to-target distance.

3,222,673

ELECTRONIC STRIP CAMERA USING DOPPLER SHIFT FOR DETERMINING RELATIVE POSITION OF OBJECTS

Victor L. Friedrich, West Allenhurst, N.J., assignor to the United States of America as represented by the Secretary of the Army

Filed June 5, 1963, Ser. No. 286,148
2 Claims. (Cl. 343—8)
(Granted under Title 35, U.S. Code (1952), sec. 266)



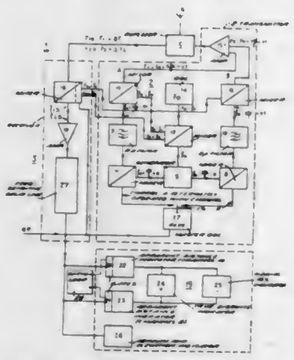
1. The method of determining the relative position of reflective objects' substantially fixed in a planar pattern comprising; radiating from a point source a thin, substantially flat, diverging, fan-shaped beam of continuous wave electromagnetic energy of a single frequency at a predetermined angle to said pattern to illuminate a thin strip of said pattern; moving said point source substantially parallel to said pattern and in a predetermined direction not normal or parallel to the longitudinal axis of said strip such that a substantial number of said illuminated objects each have different radial velocities with respect to said point source to cause a broad band of Doppler frequency shifts in the reflected energy from said objects; receiving said reflected energy; separating said reflected energy into a plurality of narrow frequency bands; and displaying side by side the amount of energy in each said narrow band.

3,222,674

RADIO DETECTION AND AUTOMATIC TRACKING EQUIPMENT

Jean Villepelet, Paris, France, assignor to Compagnie Francaise Thomson-Houston, Paris, France, a French body corporate

Filed Mar. 27, 1962, Ser. No. 182,812
Claims priority, application France, Apr. 11, 1961, 858,354
2 Claims. (Cl. 343—9)



1. A pulse radio detection and automatic tracking equipment comprising a transmitter for transmitting carrier wave pulses in a periodic succession, said pulses being frequency modulated in the positive sense throughout the duration of each pulse for alternate pulses and in the negative sense throughout the duration of each intervening pulse, a receiver for receiving echo pulses returned from distant objects and having two receiving channels, each channel including a mixer for combining received echo pulse with locally generated pulses to generate intermediate frequency echo pulses, means rendering said receiving channels alternately operative so that one channel receives echo pulses from alternate transmitted pulses and the other receiving channel receives echo pulses from the intervening transmitted pulses, and a frequency-sensitive delay line connected to the output of said receiving channels for transmitting said intermediate frequency echo pulses along said line at different velocities determined by the respective frequencies of the intermediate frequency echo pulses, whereby said intermediate frequency echo pulses are delivered at the output of said delay line in time spaced positions determined by the frequencies of said intermediate frequency echo pulses.

3,222,675

MEANS FOR POSITIONING A PLURALITY OF ELEMENTS IN ORBIT ABOUT A CELESTIAL BODY

Walter Schwartz, Northridge, Calif., assignor to TRW Inc., a corporation of Ohio

Filed Dec. 14, 1959, Ser. No. 859,533
10 Claims. (Cl. 343—18)



3. An element dispensing means comprising:
solid binder means capable of changing state directly to a gas when subjected to the sun's rays and low atmospheric pressure;
a plurality of elements of different material than said binder means contained within said binder means for release by said binder means when said binder means sublimes from its solid to its gaseous state; and
means for effecting controlled movement of said elements away from the remaining binder means and elements.

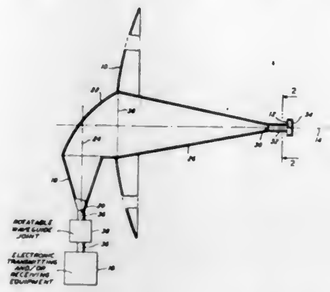
3,222,676

ROTATABLE PARABOLIC REFLECTOR WITH CLOSED WAVEGUIDE HORN FEED

David C. Hogg, Fair Haven, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Sept. 29, 1961, Ser. No. 141,773
4 Claims. (Cl. 343—763)

4. In an antenna system, means for interconnecting a feed point for a rotating reflector of electromagnetic waves with remotely located stationary electronic equipment comprising a first waveguide horn having an apex aperture, a rotatable transmission line joint interconnecting said stationary equipment with said apex aperture of said first horn, a second waveguide horn having an apex aperture located in the proximity of said feed point, and an ellipsoidal reflecting section disposed in the line of sight of both said apexes, the focuses of said ellipsoid coinciding with the apex of said first and said second horns, respectively, said interconnecting means being fastened to said reflector.

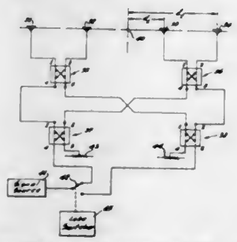


3,222,677

LOBE SWITCHING DIRECTIONAL ANTENNA WITH DIRECTIONAL COUPLERS FOR FEEDING AND PHASING SIGNAL ENERGY

Charles Fink, Silver Spring, Md., assignor to Litton Systems, Inc., a corporation of Maryland

Filed Jan. 4, 1960, Ser. No. 304
5 Claims. (Cl. 343—854)



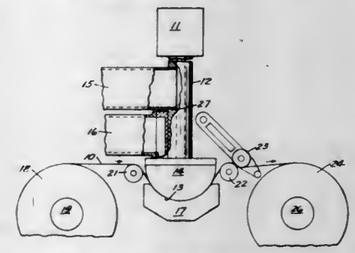
1. A directional antenna array of the lobe-switching type comprising: first, second, third, and fourth radiating elements arrayed in order along a common line; first, second, third and fourth directional couplers, each having first and second input arms and first and second output arms, and being responsive to signals applied to each of said input arms for producing output signals of equal amplitude in phase quadrature over a broad, continuous band of frequencies at each of said output arms, said output signals having a first relative phase when signals are applied to said first input arm and another relative phase when signals are applied to said second input arm, first, second, third and fourth means having equal electrical length for coupling said first and second radiating elements to said first and second output arms of said first directional coupler, and said third and fourth radiating elements to said first and second output arms of said second directional coupler; fifth and sixth means having equal electrical length for coupling said first input arms of each of said first and second directional couplers to said first and second output arms of said third directional coupler, respectively; seventh and eighth means having equal electrical length to said fifth and sixth means for coupling said second input arms of each of said first and second directional couplers to said first and second output arms of said fourth directional coupler, respectively; and means for alternately applying input signals to the first input arm of said third directional coupler and the second input arm of said fourth directional coupler.

3,222,678

GAS SEAL

Derrick A. Jones, Somerset Township, St. Croix County, Wis., assignor to Minnesota Mining & Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Filed Feb. 10, 1964, Ser. No. 343,862
13 Claims. (Cl. 346—1)



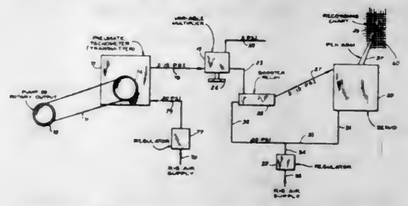
1. A process of treating one surface of a web in the presence of at least a partial vacuum which comprises
drawing at least a partial vacuum on an enclosed treating chamber having a relatively narrow elongate treatment aperture therein,
continuously passing said web across a smooth sealing lip which surrounds said aperture,
drawing at least a partial vacuum on the surface of said web which is to be treated through a second aperture adjacent to said sealing lip and separate from the treatment aperture thereby creating a seal between said treatment aperture and the atmosphere by means of said web, and
treating the portion of said web which crosses said treatment aperture and is exposed to said treating chamber.

3,222,679

APPARATUS FOR RECORDING THE SPEED OF A ROTARY SOURCE

Roy L. Van Winkle, Edmond, and William L. Lankford, Jr., and Irvin M. Carpenter, Oklahoma City, Okla., assignors to The Geolograph Company, Oklahoma City, Okla., a corporation of Oklahoma

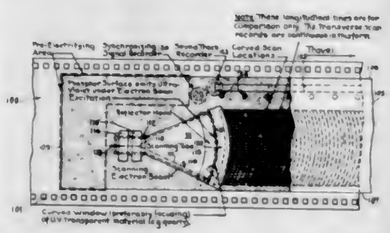
Original application Dec. 26, 1962, Ser. No. 247,084, now Patent No. 3,181,165, dated Apr. 27, 1965. Divided and this application Dec. 14, 1964, Ser. No. 418,077
1 Claim. (Cl. 346—33)



A pneumatic recording system for recording the rotary speed of a variable rotary source comprising a pneumatic transmitter having a rotatable input portion, means for transmitting the rotary movement of said rotary source to the rotatable input of said pneumatic transmitter, means within said pneumatic transmitter for providing a variable output pneumatic signal variable between the limits of a given range of pneumatic pressures in accordance with the rotary speed of said rotary source, means supplying a source of air under pressure to operate said transmitter, a pneumatic multiplier connected to said output signal from said transmitter, means supplying a source of air

under pressure to said pneumatic multiplier for operating the same, an output from said pneumatic multiplier providing air under pressure within a predetermined pressure range, means within said pneumatic multiplier for changing the ratio of output pressure to input pressure, a recording device having mounted therein a pen arm pivotal from a reference position, an input signal line to said recording device, means connecting said input signal line for said recording device to the output of said variable pneumatic multiplier, means within said recording device for deflecting said pen arm away from its reference position an amount commensurate with the value of the input pneumatic signal to said recording device, and means for supplying a source of air under pressure to said recording device for operating the same.

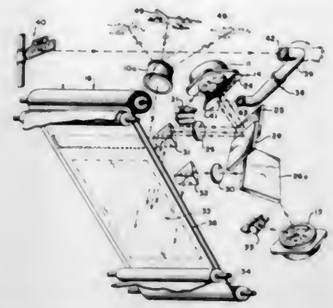
3,222,680
DEFLECTABLE BEAM SCANNING UNITS, AND THE LIKE
Thomas A. Banning, Jr., Chicago, Ill., and Emil L. Ranseen, deceased, late of Chicago, Ill., by Agnes J. Ranseen, executrix, Evanston, Ill.; said Agnes J. Ranseen assignor to said Banning
Original application May 4, 1954, Ser. No. 427,428, now Patent No. 2,976,354, dated Mar. 21, 1961. Divided and this application Mar. 9, 1961, Ser. No. 94,650
13 Claims. (Cl. 346—74)



1. A gas-tight envelope, a target within said envelope constituted to emit an ultra-violet beam when said target is excited by impact of an electron beam against said target, means to produce and emit an electron beam against said target within the envelope, said envelope comprising material transparent to said ultra-violet beam at a location in position to transmit said ultra-violet beam from the target to the exterior of the envelope, and means exterior to the envelope in the path of said ultra-violet beam, constituted to receive said beam and produce a force proportional to the strength of said beam, together with means to produce a record of the strength of the force which is proportional to the strength of said beam.

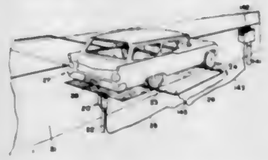
3,222,681
TIME AND SOUND RECORDING PHOTOGRAPHIC DEVICE
Irving Weiss, Elmont, N.Y., assignor of sixty-one percent to Herbert Aln, Rockville Centre, N.Y.
Filed Jan. 22, 1964, Ser. No. 339,396
7 Claims. (Cl. 346—107)

1. Apparatus for automatically photographing, sound and time recording a noise making moving object comprising a camera, a decibel recording means in connection with the camera, microphone means in connection with said decibel recording means, a time piece in connection with the camera, an optical system for said recording means and time piece, extending into the camera, said system comprising a plurality of lenses and prisms, a light system for said decibel unit and time piece, said light system being adapted to illuminate the decibel meter and the time piece, electrical circuit control means for said decibel unit and time piece, synchronous electrical



connections for the camera and decibel unit adapted to actuate the camera to take the necessary photograph while simultaneously recording the sound and time.

3,222,682
TRAFFIC SPEED VIOLATION RECORDERS, AND THE LIKE
Loyce B. Scott, Albuquerque, N. Mex., assignor of one-half to Fred. D. Huning, Jr., Albuquerque, N. Mex.
Filed Dec. 4, 1964, Ser. No. 416,025
10 Claims. (Cl. 346—107)



1. In a traffic speed violation recorder, the combination of vehicle rear end and front end viewing cameras, means to support both of said cameras in position to view the rear and the front portions, respectively, of a vehicle passing through a test zone of pre-determined length, first and second vehicle actuated means constituted to emit first and second signals, simultaneously with passage of a vehicle through the entering and departing points of said test zone, movable means constituted to move along a path from a starting position, means to cause such movement, means responsive to said first signal constituted to release said movable means for movement along said path under the urge of said movement causing means, means constituted to respond to receipt of the second signal and to emit an activating signal when the movement of said movable means is less than a predetermined amount corresponding to time lapse between the first and second signals for a pre-determined maximum speed; and each camera means including shutter actuating means and flash illumination producing means constituted to activate such shutter actuating means and said flash illumination producing means under control of said activating signal, at least a specified one of the flash illumination producing means being constituted for producing wave lengths outside of the visible range, and the camera corresponding to such specified flash illumination producing means including a picture recording element responsive to such wave lengths which are outside of the visible range.

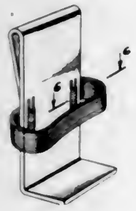
DESIGNS

DECEMBER 7, 1965

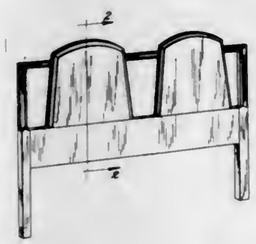
203,100
JACKET
Mary A. Burgeson, 2614 Evergreen St., North Sacramento, Calif.
Filed Nov. 27, 1964, Ser. No. 82,811
Term of patent 14 years
(Cl. D3—4)



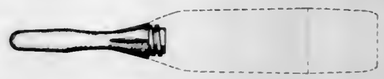
203,101
CARRIER FOR A PORTABLE RADIO OR THE LIKE
Chester L. Holder, Hacienda Heights, Calif., assignor of one-half to T. Wayne Mathias, Alhambra, Calif.
Filed July 13, 1964, Ser. No. 80,818
Term of patent 14 years
(Cl. D3—10)



203,102
HEADBOARD FOR A BED
Bert J. Klein and Andre Bus, Altavista, and John B. Thorn, Lynchburg, Va.
Filed Apr. 19, 1965, Ser. No. 84,848
Term of patent 14 years
(Cl. D5—4)



203,103
TOOTHBRUSH HEAD FOR AN AEROSOL DENTIFRICE DISPENSER
Daniel H. Gattone, 4409 Dermon Ave., Drexel Hill, Pa.
Filed Oct. 23, 1964, Ser. No. 82,300
Term of patent 14 years
(Cl. D9—2)



203,104
BUILDING
Louis C. Aspatore, New York, N.Y., assignor to The Hertz Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 27, 1964, Ser. No. 82,343
Term of patent 14 years
(Cl. D13—1)



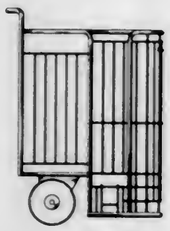
203,105
BUILDING
David E. Termohlen, 1972 Irvine Blvd., Tustin, Calif.
Filed Dec. 14, 1964, Ser. No. 83,028
Term of patent 14 years
(Cl. D13—1)



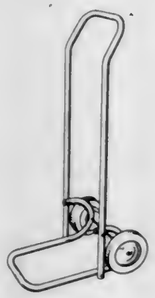
203,106
AUTOMOBILE
Friedrich Geiger, Boblingen, and Karl Wilfert, Gerlinger-Waldstadt, Germany, assignors to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed Mar. 2, 1964, Ser. No. 78,838
Claims priority, application Germany Sept. 4, 1963
Term of patent 14 years
(Cl. D14—3)



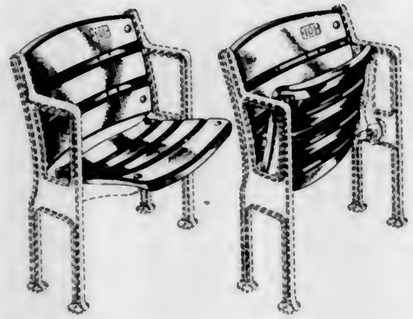
203,107
BASEBALL EQUIPMENT CARRY-ALL
Frank V. Hardy, 6502 Brittain St., Long Beach, Calif., and Jim R. Galceran, 3171 Yellowtail Drive, Los Alamitos, Calif.
Filed Feb. 16, 1965, Ser. No. 83,835
Term of patent 14 years
(Cl. D14—3)



203,108
HAND TRUCK
Melvin Cohen, 150 Dayton Ave., Passaic, N.J.
Filed Mar. 11, 1963, Ser. No. 73,912
Term of patent 14 years
(Cl. D14—3)



203,109
CHAIR
Chester J. Barecki and Bror W. Henrikson, Grand Rapids, Mich., assignors to American Seating Company, Grand Rapids, Mich., a corporation of New Jersey
Filed Nov. 12, 1964, Ser. No. 82,554
Term of patent 14 years
(Cl. D15—8)



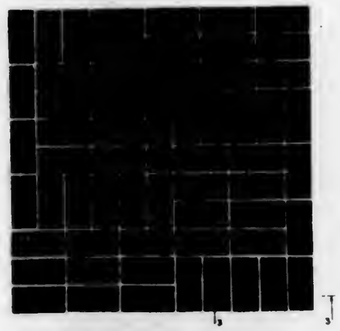
203,110
CENTRIFUGE
Thomas D. Sharples, Lansdale, Pa., assignor to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania
Filed July 8, 1965, Ser. No. 86,063
Term of patent 14 years
(Cl. D16—2)



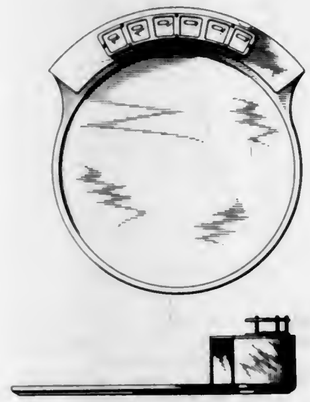
203,111
WALL TILE PANEL
David Lansky, Scarsdale, N.Y., assignor to Bentley Products, Inc., New York, N.Y., a corporation of New York
Filed Feb. 25, 1965, Ser. No. 83,971
Term of patent 14 years
(Cl. D18—2)



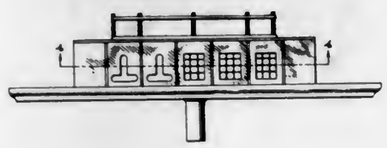
203,112
WALL TILE PANEL
David Lansky, Scarsdale, N.Y., assignor to Bentley Products Inc., New York, N.Y., a corporation of New York
Filed Feb. 25, 1965, Ser. No. 83,973
Term of patent 14 years
(Cl. D18—2)



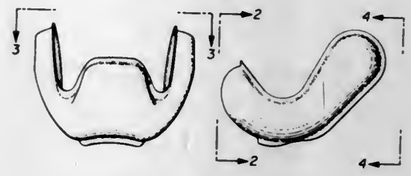
203,113
AUXILIARY DENTAL TRAY
Edward O. Shaner, 7424 Wisconsin Ave., Bethesda, Md.
Filed Sept. 3, 1964, Ser. No. 81,574
Term of patent 14 years
(Cl. D24—1)



203,114
AUXILIARY DENTAL TRAY
Edward O. Shaner, 7424 Wisconsin Ave., Bethesda, Md.
Filed Sept. 3, 1964, Ser. No. 81,575
Term of patent 14 years
(Cl. D24—1)



203,115
VOICE REFLECTOR
Carolyn H. MacFarlane, 2926 Avalon Ave., Berkeley, Calif.
Filed Nov. 2, 1964, Ser. No. 32,418
Term of patent 14 years
(Cl. D25—1)



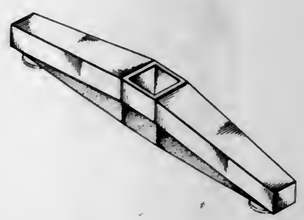
203,116
WEATHERPROOF ELECTRICAL OUTLET BOX COVER
Milton J. Weltzman, Bayside, and Melvin Gould, Laurelton, N.Y., assignors to Slater Electric Inc., Glen Cove, N.Y., a corporation of New York
Filed Apr. 20, 1964, Ser. No. 79,595
Term of patent 14 years
(Cl. D26—13)



203,117
THERMOCOUPLE PROBE
Alf Hundere, 2905 Bandera Road, San Antonio, Tex.
Filed June 1, 1964, Ser. No. 80,229
Term of patent 14 years
(Cl. D26—1)



203,118
FURNITURE FOOT OR THE LIKE
Gerald L. Timmerman, 18510 Olympic View Drive, Edmonds, Wash.
Filed Mar. 2, 1965, Ser. No. 84,052
Term of patent 14 years
(Cl. D33—1)



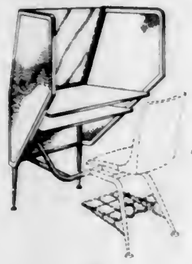
203,119
SUPPORT STAND FOR A BED SPREAD
Jonathan Ginat, New York, N.Y., assignor to Maurice Duchin Creations, Inc., New York, N.Y., a corporation of New York
Filed Oct. 16, 1964, Ser. No. 82,200
Term of patent 14 years
(Cl. D33—3)



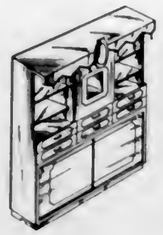
203,120
COSMETIC VANITY CABINET
Stanley Grant, 2928 Preston Lane, Merrick, N.Y.
Filed Mar. 25, 1965, Ser. No. 84,442
Term of patent 14 years
(Cl. D33—6)



203,121
STUDY CARREL
Chester J. Barecki, Grand Rapids, Mich., assignor to American Seating Company, Grand Rapids, Mich., a corporation of New Jersey
Filed Mar. 5, 1965, Ser. No. 84,106
Term of patent 14 years
(Cl. D33—11)



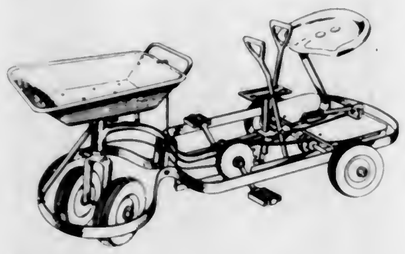
203,122
DISPLAY CABINET
Stanley Grant, 2928 Preston Lane, Merrick, N.Y.
Filed Mar. 25, 1965, Ser. No. 84,438
Term of patent 14 years
(Cl. D33—19)



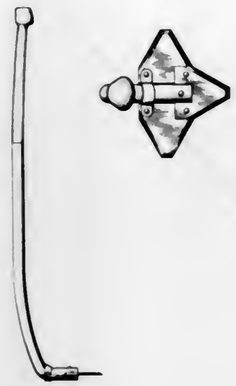
203,123
EXERCISE APPARATUS
Robert R. Spackman, Jr., and Marvin E. Johnson, Carbondale, Ill., assignors to Southern Illinois University Foundation, Carbondale, Ill., a corporation of Illinois
Filed June 22, 1964, Ser. No. 80,493
Term of patent 14 years
(Cl. D34—5)



203,124
CHILD'S WHEELED VEHICLE
Eugene E. Jackson, 1501 Overland Ave., Youngstown, Ohio
Filed Jan. 22, 1965, Ser. No. 83,531
Term of patent 7 years
(Cl. D34—15)



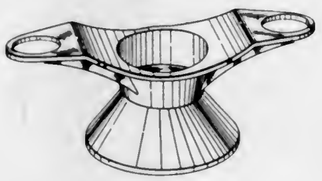
203,125
WEED CUTTER
Louis Gouveia, Rte. 1, Box 582, Grass Valley, Calif.
Filed May 24, 1965, Ser. No. 85,430
Term of patent 14 years
(Cl. D39—1)



203,126
CLOCK
Max E. Schlenker, Peru, Ill., assignor to General Time Corporation, New York, N.Y., a corporation of Delaware
Filed Apr. 27, 1965, Ser. No. 84,980
Term of patent 14 years
(Cl. D42—7)



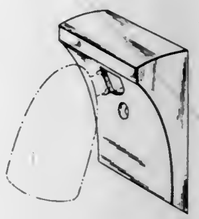
203,127
HOLDER FOR SALT AND PEPPER SHAKERS
Marvin T. Thurman, Cleveland, Ohio
Filed Jan. 18, 1965, Ser. No. 83,482
Term of patent 14 years
(Cl. D44—10)



203,128
DETACHABLE HANDLE FOR A COOKING VESSEL OR THE LIKE
James L. Hvale, Chicago, and Benjamin N. Yamada, Melrose Park, Ill., assignors to Club Aluminum Products Company, La Grange Park, Ill., a corporation of Illinois
Filed Dec. 2, 1964, Ser. No. 82,887
Term of patent 14 years
(Cl. D44—29)



203,129
SUPPORT FOR A LIGHTING FIXTURE
Jack D. Steinhorn, Bronx, N.Y., assignor to Swivelier Company, Inc., Nanuet, N.Y., a corporation of New York
Filed Sept. 3, 1964, Ser. No. 81,592
Term of patent 14 years
(Cl. D48—4)



203,130
NURSERY LAMP OR SIMILAR ARTICLE
Robert S. Zeidman, 620 Forest Ave., Mamaroneck, N.Y.
Filed Oct. 7, 1964, Ser. No. 82,071
Term of patent 14 years
(Cl. D48—20)



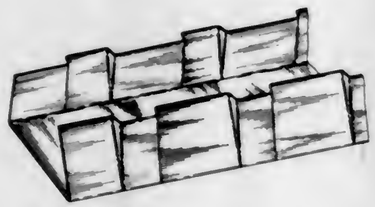
203,131
NURSERY LAMP OR SIMILAR ARTICLE
Robert S. Zeldman, 620 Forest Ave., Mamaroneck, N.Y.
Filed Oct. 7, 1964, Ser. No. 82,072
Term of patent 14 years
(Cl. D48—20)



203,132
COMBINED HANDLES AND LOCKSET FOR SLIDING DOORS
Frederick Gordon Mackay, Tarzana, Calif., assignor to Northrop Architectural Systems, Los Angeles, Calif., a corporation of California
Filed July 6, 1964, Ser. No. 80,722
Term of patent 14 years
(Cl. D50—5)



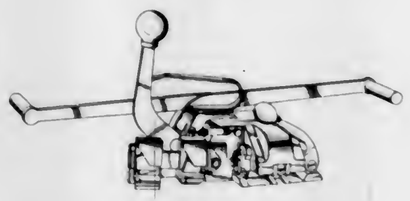
203,133
STUD TRACK
Michael C. Senek and John L. Leifer, Warren, Ohio, assignors to The Bostwick Steel Lath Company, Niles, Ohio, a corporation of Ohio
Filed Apr. 2, 1965, Ser. No. 84,585
Term of patent 14 years
(Cl. D54—1)



203,134
SOIL ENGINEER'S SURVEY TOOL
John Lowe III, 26 Grandview Blvd., Yonkers, N.Y.
Filed Dec. 16, 1964, Ser. No. 83,053
Term of patent 14 years
(Cl. D54—13)



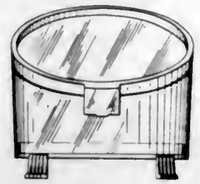
203,135
WIRE STRAPPING TOOL
Wilber C. Cranston, Niles, Ohio, assignor to C. Tennant, Sons & Co., of New York, Warren, Ohio
Filed Mar. 30, 1965, Ser. No. 84,513
Term of patent 14 years
(Cl. D54—13)



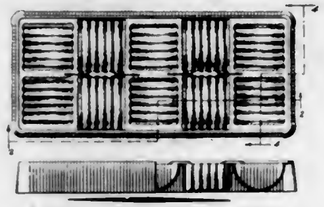
203,136
PAIR OF SUNGLASSES
Anthony Shindler, Brookline, Mass., assignor to American Optical Company, Southbridge, Mass., a voluntary association of Massachusetts
Filed June 14, 1965, Ser. No. 85,731
Term of patent 7 years
(Cl. D57—1)



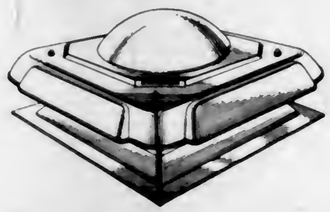
203,137
DISPLAY BOX
Samuel Braun, Rye, N.Y., assignor to B.C.N. Design Products, Inc., Amityville, N.Y., a corporation of New York
Filed Apr. 7, 1965, Ser. No. 84,656
Term of patent 14 years
(Cl. D58—12.7)



203,138
COMPARTMENTED PACKAGING TRAY
James Raymond Loney, Cote St. Luc, Quebec, Canada, assignor to Plastic Packaging Products Limited, Montreal, Quebec, Canada
Filed Nov. 27, 1964, Ser. No. 82,815
Term of patent 14 years
(Cl. D58—13)



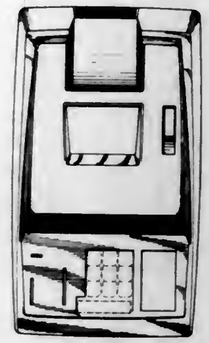
203,139
ROOF VENTILATOR
Louis J. Jenn, 4917 Laurel Circle, and James W. Schwier, 4631 Berkshire Lane, both of Indianapolis, Ind.
Filed Jan. 25, 1965, Ser. No. 83,565
Term of patent 14 years
(Cl. D62—3)



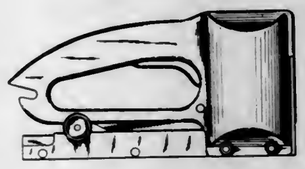
203,140
PORTABLE TYPEWRITER
John D. Cuccio, 19 Woods Grove, Westport, Conn.
Filed Feb. 24, 1965, Ser. No. 83,968
Term of patent 14 years
(Cl. D64—11)



203,141
HOUSING FOR A COMPUTING MACHINE
Robert K. Yagura, Seabrook, N.J., assignor to Monroe International Corporation, Orange, N.J., a corporation of Delaware
Filed Jan. 26, 1965, Ser. No. 83,587
Term of patent 14 years
(Cl. D64—11)



203,142
ELECTRIC TACKER
Norman R. Doherty, 32 Sunset Ave., Farmingdale, N.Y.
Filed Jan. 4, 1965, Ser. No. 83,262
Term of patent 14 years
(Cl. D54—14)



203,143
MEDICINE FEEDING SPOON
Dorothy Harris Lisczawka, 453 Franklin D. Roosevelt Drive, New York, N.Y.
Filed Nov. 25, 1964, Ser. No. 82,776
Term of patent 14 years
(Cl. D83—8)



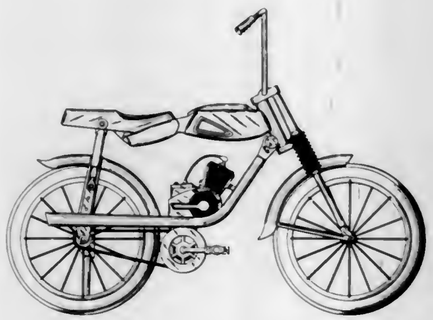
203,144
HAIR DRYER
Edward J. Petrick, Park Ridge, Ill., assignor to Bretford Manufacturing, Inc., Schiller Park, Ill., a corporation of Illinois
Filed May 26, 1964, Ser. No. 80,158
Term of patent 14 years
(Cl. D86—10)



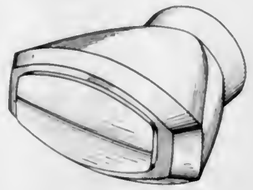
203,145
COSMETIC CASE
Richard H. Arbib, New York, N.Y., assignor to Bentley Products, Inc., New York, N.Y., a corporation of New York
Filed Apr. 21, 1965, Ser. No. 84,899
Term of patent 14 years
(Cl. D87—5)



203,146
BICYCLE
John W. Ryan, 688 Nimes Road, Bel Aire, Calif.
Filed Mar. 12, 1965, Ser. No. 84,224
Term of patent 14 years
(Cl. D90—8)



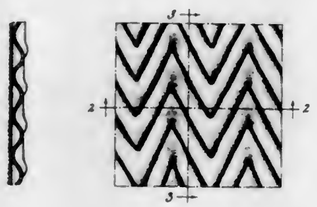
203,147
HANDLE FOR VALVES, FAUCETS AND SIMILAR ARTICLES
Jack N. Kaiser, Louisville, Ky., assignor to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware
Filed Sept. 29, 1964, Ser. No. 81,912
Term of patent 14 years
(Cl. D91—3)



203,148
HANDLE FOR VALVES, FAUCETS AND SIMILAR ARTICLES
Jack N. Kaiser, Louisville, Ky., assignor to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware
Filed Sept. 29, 1964, Ser. No. 81,913
Term of patent 14 years
(Cl. D91—3)



203,149
CARPET UNDERLAY
Carl R. Toothaker, Barrington, R.I., assignor to United States Rubber Company, New York, N.Y.
Filed Nov. 12, 1963, Ser. No. 77,357
Term of patent 14 years
(Cl. D92—4)



LIST OF REISSUE PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 7TH DAY OF DECEMBER, 1965

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

Agnew, Kenneth L. Recording and reproducing the shape of three-dimensional objects. Re. 25,930, 12–7–65, Cl. 156—58.
Beloit Iron Works: *See*—
Justus, Edgar J., and Daane. Re. 25,927.
Bradbury, Joseph, & Sons Ltd.: *See*—
Powell, Vernon. Re. 25,923.
Chausson, Andre, to Societe Anonyme des Usines Chausson. Electromagnetically-controlled compressing and pumping devices. Re. 25,934, 12–7–65, Cl. 103—53.
Daane, Robert A.: *See*—
Justus, Edgar J., and Daane. Re. 25,927.
Emerson Electric Co.: *See*—
Luenberger, Frederick O. Re. 25,929.
G.S. Equipment Co., The: *See*—
Neffenger, Carel H. Re. 25,932.
Galke, Ralph W., and R. A. Hathaway, to Zenith Radio Corp. Record changer mechanism. Re. 25,926, 12–7–65, Cl. 274—10.
Geyer, Robert L., and N. R. Sparks, to Pan American Petroleum Corp. Seismic well logging data display. Re. 25,928, 12–7–65, Cl. 340—18.
Gossen, P., & Co., G.m.b.H.: *See*—
Hautmann, Heinrich. Re. 25,925.
Halcon International, Inc.: *See*—
Huckins, Harold A., Jr. Re. 25,933.
Hathaway, Richard A.: *See*—
Galke, Ralph W., and Hathaway. Re. 25,926.
Hautmann, Heinrich, to P. Gossen & Co., G.m.b.H. Automatic diaphragm arrangement for cameras. Re. 25,925, Cl. 12–7–65, Cl. 95—64.
Huckins, Harold A., Jr., to Halcon International, Inc. Process for the production of ethylene oxide and nitrogen. Re. 25,933, 12–7–65, Cl. 23—220.
Infanseat Co.: *See*—
Throssel, Lew W. Re. 25,936.
Ito, Yoshikazu, to Toyo Rayon Kabushiki Kaisha. Method of producing nitroso compounds or oximes. Re. 25,937, 12–7–65, Cl. 204—162.
Justus, Edgar J., and R. A. Daane, to Beloit Iron Works. Drying drum and method. Re. 25,927, 12–7–65, Cl. 165—1.
Luenberger, Frederick O., to Emerson Electric Co. Axially adjustable drive mechanism. Re. 25,929, 12–7–65, Cl. 287—52.04.
Milliken Tetra Pak, a division of Clemson Industries, Inc.: *See*—
Mobley, George A. Re. 25,938.
Mobley, George A., to Milliken Tetra Pak, a division of Clemson Industries, Inc. Container. Re. 25,938, 12–7–65, Cl. 229—7.
Neffenger, Carel H., to The G.S. Equipment Co. Corrosion testing mechanism. Re. 25,932, 12–7–65, Cl. 23—253.
Opti-Holding A.G.: *See*—
Porepp, Hana. Re. 25,935.
Pan American Petroleum Corp.: *See*—
Geyer, Robert L., and Sparks. Re. 25,928.
Porepp, Hana, to Opti-Holding A.G. Method of making slide clasp fasteners. Re. 25,935, 12–7–65, Cl. 156—66.
Powell, Vernon, to Joseph Bradbury & Sons Ltd. Roll-on to free-wheel convertible vehicle lift. Re. 25,923, 12–7–65, Cl. 187—8.54.
Rubenstein, Jacob H. Metering apparatus. Re. 25,931, 12–7–65, Cl. 73—228.
Societe Anonyme des Usines Chausson: *See*—
Chausson, Andre. Re. 25,934.
Sparks, Neil R.: *See*—
Geyer, Robert L., and Sparks. Re. 25,928.
Statham Industries, Inc.: *See*—
Stedman, Cecil K. Re. 25,924.
Stedman, Cecil K., to Statham Industries, Inc. Pressure sensitive diaphragms with stress null zone oriented bridge patterns. Re. 25,924, 12–7–65, Cl. 338—2.
Throssel, Lew W., to Infanseat Co. Disposable seating structure for infants. Re. 25,936, 12–7–65, Cl. 297—443.
Toyo Rayon Kabushiki Kaisha: *See*—
Ito, Yoshikazu. Re. 25,937.
Zenith Radio Corp.: *See*—
Galke, Ralph W., and Hathaway. Re. 25,926.

LIST OF PLANT PATENTEES

Boerner, Eugene S., to Jackson & Perkins Co. Rose plant. 2,578, 12–7–65, Cl. 18.
Jackson & Perkins Co.: *See*—
Boerner, Eugene S. 2,578.
Lens, Louis. 2,579.
Lens, Louis, to Jackson & Perkins Co. Rose plant. 2,579, 12–7–65, Cl. 19.
Mansuino, Quinto. Rose plant. 2,577, 12–7–65, Cl. 11.

LIST OF DESIGN PATENTEES

American Optical Co.: *See*—
Shindler, Anthony. 203,136.
American Radiator & Standard Sanitary: *See*—
Kaiser, Jack N. 203,147.
Kaiser, Jack N. 203,148.
American Seating Co.: *See*—
Barecki, Chester J., and Henrickson. 203,109.
Barecki, Chester J. 203,121.
Arbib, Richard H., to Bentley Products, Inc. Cosmetic case. 203,145, 12–7–65, Cl. D87—5.
Aspatore, Louis C., to The Hertz Corp. Building. 203,104, 12–7–65, Cl. D13—1.
B.C.N. Design Products, Inc.: *See*—
Braun, Samuel. 203,137.
Barecki, Chester J., and B. W. Henrickson, to American Seating Co. Chair. 203,109, 12–7–65, Cl. D15—8.
Barecki, Chester J., to American Seating Co. Study carrel. 203,121, 12–7–65, Cl. D38—11.
Bentley Products, Inc.: *See*—
Arbib, Richard H. 203,145.
Lansky, David. 203,111.
Lansky, David. 203,112.
Bostwick Steel Lath Co., The: *See*—
Senek, Michael C., and Leifer. 203,133.
Braun, Samuel, to B.C.N. Design Products, Inc. Display box. 203,137, 12–7–65, Cl. D58—12.7.
Bretford Mfg., Inc.: *See*—
Petrick, Edward J. 203,144.
Burgeson, Mary A. Jacket. 203,100, 12–7–65, Cl. D3—6.
Bus, Andre: *See*—
Klein, Bert J., Bus, and Thorn. 208,102.
Club Aluminum Products Co.: *See*—
Hvale, James L., and Yamada. 203,128.
Cohen, Melvin. Hand truck. 203,108, 12–7–65, Cl. D14—3.
Cranston, Wilber C., to C. Tennant Sons & Co. Wire strapping tool. 203,135, 12–7–65, Cl. D54—13.
Cuccio, John D. Portable typewriter. 203,140, 12–7–65, Cl. D46—11.
Daimler-Benz Aktiengesellschaft: *See*—
Geiger, Friedrich. 203,106.
Duchin, Maurice, Creations, Inc.: *See*—
Ginat, Jonathan. 203,119.
Doherty, Norman R. Electric tacker. 203,142, 12–7–65, Cl. D54—14.
Galceran, Jim R.: *See*—
Hardy, Frank V., and Galceran.
Gattone, Daniel H. Toothbrush head for an aerosol dentrifrice dispenser. 203,103, 12–7–65, Cl. D9—2.
Geiger, Friedrich, to Daimler-Benz Aktiengesellschaft. Automobile. 203,106, 12–7–65, Cl. D14—3.
General Time Corp.: *See*—
Schlenker, Max E. 203,126.
Ginat, Jonathan, to Maurice Duchin Creations, Inc. Support stand for a bed spread. 203,119, 12–7–65, Cl. D33—3.
Gould, Melvin: *See*—
Weitzman, Milton J., and Gould. 203,116.
Gouveia, Louis. Weed cutter. 203,125, 12–7–65, Cl. D39—1.
Grant, Stanley. Cosmetic vanity cabinet. 203,120, 12–7–65, Cl. D33—6.
Grant, Stanley. Display cabinet. 203,122, 12–7–65, Cl. D33—19.

Hardy, Frank V., and J. R. Galceran. Baseball equipment carry-all. 203,107, 12–7–65, Cl. D14—3.
Henrikson, Bror W.: *See*—
Barecki, Chester J., and Henrikson. 203,109.
Hertz Corp., The: *See*—
Aspatore, Louis C. 203,104.
Holder, Chester L., ½ to W. T. Mathias. Carrier for a portable radio or the like. 203,101, 12–7–65, Cl. D3—10.
Hundere, Alf. Thermocouple probe. 203,117, 12–7–65, Cl. D26—1.
Hvale, James L., and B. N. Yamada, to Club Aluminum Products Co. Detachable handle for a cooking vessel or the like. 203,128, 12–7–65, Cl. D44—29.
Jackson, Eugene E. Child's wheeled vehicle. 203,124, 12–7–65, Cl. D34—15.
Jenn, Louis J., and J. W. Schwier. Roof ventilator. 203,139, 12–7–65, Cl. D62—3.
Johnson, Marvin E.: *See*—
Spackman, Robert R., Jr., and Johnson. 203,123.
Kaiser, Jack N., to American Radiator & Standard Sanitary. Handle for valves, faucets and similar articles. 203,147, 12–7–65, Cl. D91—3.
Kaiser, Jack N., to American Radiator & Standard Sanitary. Handle for valves, faucets and similar articles. 203,148, 12–7–65, Cl. D91—3.
Klein, Bert J., A. Bus, and J. B. Thorn. Headboard for a bed. 203,102, 12–7–65, Cl. D5—4.
Lansky, David, to Bentley Products, Inc. Wall tile panel. 203,111, 12–7–65, Cl. D18—2.
Lansky, David, to Bentley Products, Inc. Wall tile panel. 203,112, 12–7–65, Cl. D18—2.
Leifer, John L.: *See*—
Senek, Michael C., and Leifer. 203,133.
Liszawka, Dorothy H. Medicine feeding spoon. 203,143, 12–7–65, Cl. D83—8.
Loney, James R., to Plastic Packaging Products Ltd. Compartmented packaging tray. 203,138, 12–7–65, Cl. D58—13.
Lowe, John, III. Soil engineer's survey tool. 203,134, 12–7–65, Cl. D54—13.
MacFarlane, Carolyn H. Voice reflector. 203,115, 12–7–65, Cl. D25—1.
Mackay, Frederick G., to Northrop Architectural Systems. Combined handles and lockset for sliding doors. 203,132, 12–7–65, Cl. D50—5.
Mathias, Wayne T.: *See*—
Holder, Chester L. 203,101.
Monroe International Corp.: *See*—
Yagura, Robert K. 203,141.
Northrop Architectural Systems: *See*—
Mackay, Frederick G. 203,132.
Pennsalt Chemicals Corp.: *See*—
Sharples, Thomas D. 203,110.
Petrick, Edward J., to Bretford Mfg., Inc. Hair dryer. 203,144, 12–7–65, Cl. D86—10.
Plastic Packaging Products Ltd.: *See*—
Loney, James R. 203,138.
Ryan, John W. Bicycle. 203,146, 12–7–65, Cl. D90—8.
Schlenker, Max E., to General Time Corp. Clock. 203,126, 12–7–65, Cl. D42—7.
Schwier, James W.: *See*—
Jenn, Louis J., and Schwier. 203,139.
Senek, Michael C., and J. L. Leifer, to The Bostwick Steel Lath Co. Stud track. 203,133, 12–7–65, Cl. D54—1.
Shaner, Edward O. Auxiliary dental tray. 203,113, 12–7–65, Cl. D24—1.
Shaner, Edward O. Auxiliary dental tray. 203,114, 12–7–65, Cl. D24—1.
Sharples, Thomas D., to Pennsalt Chemicals Corp. Centrifuge. 203,110, 12–7–65, Cl. D16—2.
Shindler, Anthony, to American Optical Co. Pair of sunglasses. 203,136, 12–7–65, Cl. D57—1.
Slater Electric Inc.: *See*—
Weitzman, Milton J., and Gould. 203,116.
Southern Illinois University Foundation: *See*—
Spackman, Robert R., Jr., and Johnson. 203,123.
Spackman, Robert R., Jr., and M. E. Johnson, to Southern Illinois University Foundation. Exercise apparatus. 203,123, 12–7–65, Cl. D84—5.
Steinhorn, Jack D., to Swivelier Co., Inc. Support for a lighting fixture. 203,129, 12–7–65, Cl. D48—4.
Swivelier Co., Inc.: *See*—
Steinhorn, Jack D. 203,129.
Tennant, C., Sons & Co.: *See*—
Cranston, Wilbur C. 203,135.
Termohlen, David E. Building. 203,105, 12–7–65, Cl. D13—1.
Thorn, John B.: *See*—
Klein, Bert J., Bus, and Thorn. 203,102.
Thurman, Marvin T. Holder for salt and pepper shakers. 203,127, 12–7–65, Cl. D44—10.
Timmerman, Gerald L. Furniture foot or the like. 203,118, 12–7–65, Cl. D33—1.
Toothaker, Carl R., to United States Rubber Co. Carpet underlay. 203,149. 12–7–65, Cl. D92—4.
United States Rubber Co.: *See*—
Toothaker, Carl R . 203,149.
Weitzman, Milton J., and M. Gould, to Slater Electric Inc. Weatherproof electrical outlet box cover. 203,116, 12–7–65, Cl. D26—13.
Yagura, Robert K., to Monroe International Corp. Housing for a computing machine. 203,141, 12–7–65, Cl. D64—11.
Yamada, Benjamin N.: *See*—
Hvale, James L., and Yamada. 203,128.
Zeldman, Robert S. Nursery lamp or similar article. 203,130, 12–7–65, Cl. D48—20.
Zeldman, Robert S. Nursery lamp or similar article. 203,131, 12–7–65, Cl. D48—20.

LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 7TH DAY OF DECEMBER, 1965

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

AA Wire Products Co.: *See*—
Lucas, Joseph N. 3,221,458.
ACF Industries, Inc.: *See*—
Newman, Vernon D., and Barry. 3,222,039.
Pelinitz, Herman G. 3,221,898.
A.J. Industries, Inc.: *See*—
Raidel, John E. 3,222,082.
AMP Inc.: *See*—
Fuller, Glenwood A. 3,222,632.
Abelsma, Cornelis B., to James Lees and Sons Co. Pressure sensitive streak eliminator for tufting machines. 3,221,683, 12–7–65, Cl. 112—79.
Acosta, Tracy: *See*—
Cordray, Arthur C., and Acosta. 3,221,780.
Acres, Richard L., to W. F. Curlee Mfg. Co. Captive fastener. 3,221,794, 12–7–65, Cl. 151—69.
Adams, Albert C., and E. S. Bialog, to Republic Steel Corp. Bundling machine. 3,221,641, 12–7–65, Cl. 100—7.
Adams, Harold E., to Nash Engineering Co. Liquid ring and centrifugal series pumps for varying density fluids. 3,221,659, 12–7–65, Cl. 103—5.
Adler, Avram G.: *See*—
Hurewitz, Arthur. 3,221,979.
Adler, Clarence E., to Toledo-Scale Corp. Printer. 3,221,645, 12–7–65, Cl. 101—95.
Advance Food Service Equipment, Inc.: *See*—
Schwartz, Milton. 3,222,117.
Advance Products Corp.: *See*—
Kraklau, Henry, Jr. 3,221,841.
Advance Transformer Co.: *See*—
Feinberg, Albert E., and Czernobil. 3,222,626.
Aftandilian, Victor D., to Cabot Corp. Lewis base stabilization of polymerization catalyst in storage. 3,222,296, 12–7–65, Cl. 252—429.
Agasie, Frank R.: *See*—
Kosa, Tibor, and Agasie. 3,221,560.
Ain, Herbert: *See*—
Weiss, Irving. 3,222,681.
Air Devices, Inc.: *See*—
Sweeney, George J. 3,221,633.
Airtron, Inc.: *See*—
Nielsen, James W. 3,221,395.
Ajax Magnethermic Corp.: *See*—
Shearman, Wilbur E. 3,221,379.
Ajem Laboratories, Inc.: *See*—
Evans, Dewey M., and Koepke. 3,221,538.
Ajinomoto Co., Inc.: *See*—
Iizuka, Hiroshi, Katsuya, Shiio, Komagata, Otsuka, Yamada, and Ishii. 3,222,258.
Ajinomoto Kabushiki Kaisha: *See*—
Shiro, Toruo, Okumura, Tamagawa, Tsunoda, Takahashi, and Motozaki. 3,222,257.
Akin, Alfred A., Jr., to D. P. Bushnell. Mounting for telescopic sight. 3,222,022, 12–7–65, Cl. 248—205.
Akron Standard Mold Co., The: *See*—
Bailey, Harold G., and Hale. 3,221,364.
Akustische u. Kino-Gerate Gesellschaft m.b.H.: *See*—
Gorike, Rudolf. 3,222,463.
Albanes, Nicholas J., and M. P. Langendorf, to International Business Machines Corp. Multiple station selection system. 3,222,460, 12–7–65, Cl. 179—100.1.
Alcorn Combustion Co.: *See*—
Beggs, Harold L. 3,221,711.
Alexeff, Igor, and R. Neidigh, to United States of America, Atomic Energy Commission. Production of completely ionized plasma. 3,222,559, 12–7–65, Cl. 313—61.
Alfred, Marc, and A. Marcelin, to Commissariat a l'Energie Atomique. Apparatus for studying wear on materials in a hermetic enclosure. 3,221,534, 12–7–65, Cl. 73—7.
Allegretti, Pier L. Boats with two or more hulls. 3,221,697, 12–7–65, Cl. 114—66.5.
Allegrini, Aldo P., and T. A. Cecil, to Mineral & Chemicals Philipp Corp. Agglomeration of bauxite fines. 3,222,297, 12–7–65, Cl. 252—437.
Allgemeine Elektricitats: *See*—
Seulen, Gerhard, and Geisel. 3,221,536.
Allied Chemical Corp.: *See*—
Iacoviello, John G., and Rosenthal. 3,222,381.
Morris, Charles L., Jr., and Simon. 3,222,345.
Allis-Chalmers Mfg. Co.: *See*—
Nash, Ralph. 3,221,866.
Platner, John L. 3,222,223.
Alloy Surfaces Co., Inc.: *See*—
Samuel, George A., and Bell. 3,222,212.
Alpers, Frederick C., F. S. Atchison, and W. A. Yates, to United States of America, Navy. Electrometer and memory circuit for guided missile control system. 3,222,604, 12–7–65, Cl. 328—121.
Alpha Trace, Inc.: *See*—
Self, Leonard W. 3,221,824.
Altar, William, and C. W. Helstrom, to United States of America, Navy. Target location system. 3,221,693, 12–7–65, Cl. 114—23.
Alter, Henry W.: *See*—
Anderson, Cleve R., and Alter. 3,222,124.
Amalgamated Curacao Patents Co. N.V.: *See*—
Beer, Henri B. 3,222,265.
Ambrosino, Francesco, to International Standard Electric Corp. Subscribers' metering systems. 3,222,457, 12–7–65, Cl. 179—9.
American Cyanamid Co.: *See*—
Buell, Bennett G., and Long. 3,222,371.
Coleman, Denis. 3,222,118.
Lundberg, Lennart A. 3,222,421.
Nadolski, Francis J. 3,222,292.
Siegele, Frederick H. 3,222,376.
American Home Products Corp.: *See*—
McKay, Arthur F., and Baker. 3,222,247.
American Metalcore Systems, Inc.: *See*—
Henkels, William K. 3,221,467.
American Optical Co.: *See*—
Upton, Lee O. 3,222,152.
American Radiator & Standard Sanitary Corp.: *See*—
Miksch, Russell S., and Corridan. 3,222,498.
White, Douglas F. 3,221,662.
American-Saint Gobain Corp.: *See*—
Glynn, Theodore W. 3,221,460.
Insolio, Thomas A. 3,222,156.
American Technical Machinery Corp.: *See*—
Gelardi, Joseph T. 3,221,566.
American Tobacco Co., The: *See*—
Kelly, James G., and Stant. 3,222,110.
Ametek, Inc.: *See*—
Godshall, Albert L., and Moore. 3,221,486.
Amiet, Bernard, P. Langella, and C. Sentenac, to Yardney International Corp. Deferred-action battery. 3,222,225, 12–7–65, Cl. 136—90.
Amodei, Juan J., to Radio Corp. of America. Threshold circuit employing negative resistance diode and device having particular volt-ampere characteristic. 3,222,542, 12–7–65, Cl. 307—88.5.
Ampex Corp.: *See*—
Drapkin, Paul E. 3,222,459.
Lichowsky, Abraham. 3,222,587.
Andersen, Charles V., to Continental Capital Corp. ("Continental"), and Sierra Capital Co. ("Sierra"). Tape driving apparatus. 3,221,963, 12–7–65, Cl. 226—109.
Anderson Brass Co.: *See*—
Kass, Gerald H. 3,221,773.
Anderson, Charles M., to W. R. Stamler Corp. Material handling apparatus. 3,221,865, 12–7–65, Cl. 198—53.
Anderson, Cleve R., and H. W. Alter, to General Electric Co. Irradiated fuel reprocessing. 3,222,124, 12–7–65, Cl. 23—14.5.
Anderson, George C. Container with valve operated nozzle. 3,221,943, 12–7–65, Cl. 222—183.
Anderson, Gustaf A. Inflating device for flotation gear. 3,221,932, 12–7–65, Cl. 222—5.
Ankeney, James H.: *See*—
La Combe, Edward M., Ankeney, Thompson, and Walter. 3,222,328.
Annis, Martin, G. W. Clark, G. S. Greenberg, Jr., F. R. Paolini, and E. C. Williams, Jr. Apparatus for evaluating the condition of the heart muscle. 3,221,731, 12–7–65, Cl. 128—2.05.
Ansul Co.: *See*—
Sievert, James A. 3,221,995.
Anthony, Russel W., to National Broach & Machine Co. Broaching apparatus. 3,221,608, 12–7–65, Cl. 90—95.
Appell, Herbert R., and H. S. Bloch, to Universal Oil Products Co. Polymerization of isoprene. 3,222,846, 12–7–65, Cl. 260—94.2.
Archdale Belt Co., Inc.: *See*—
Lewis, John H. and J. A. 3,221,449.
Areskoug, Carl O., to Installationsmaterial, Aktiebolaget. Method of mass producing resistors. 3,221,397, 12–7–65, Cl. 29—155.63.
Argus Chemical Corp.: *See*—
Kauder, Otto S. 3,222,317.
Ari-Zonolite Co.: *See*—
Woodworth, Carroll L. 3,222,486.
Armour and Co.: *See*—
Cooperman, Murray C. 3,222,402.
Arnold, Howard H., J. H. Boatwright, and J. D. Schiller, to Western Electric Co., Inc. Monitoring system for controlling a component fabricating machine. 3,222,504, 12–7–65, Cl. 235—151.
Arnold, Lionel C., and H. G. Washburn, to Tee-Pak, Inc. Process of shirring synthetic sausage casings. 3,222,192, 12–7–65, Cl. 99—176.
Arnoldi, Walter E., D. G. De Roze, D. C. Jennings, and G. T. Peters, to United Aircraft Corp. Space adsorption system and method. 3,221,477, 12–7–65, Cl. 55—31.
Arntzen, John C., to Mississippi Valley Structural Steel Co. Articulated conduit boom assembly. 3,221,772, 12–7–65, Cl. 137—615.

Arocos Corp.: *See*—
Prestowitz, Clyde V. 3,222,594.

Aser, Gilbert A., J. W. Melville, and G. P. Taillie. Optical scanning system. 3,221,622, 12–7–65, Cl. 95—1.7.

Ashcraft, George W. Mixing machine. 3,222,038, 12–7–65, Cl. 259—105.

Ashland Oil & Refining Co.: *See*—
Hess, Frank R., and Guthrie. 3,222,136.
Powell, Kenneth E., Hinson, and Williams. 3,222,131.

Ashmead, Howard L., to F & M Scientific Corp. Apparatus for the preparation of fluid samples. 3,222,135, 12–7–65, Cl. 23—253.

Askowith, Burton J., to United States of America, Navy. Circuit with two photocells and chopping means having openings related to photocell spacing. 3,222,529, 12–7–65, Cl. 250—209.

Associated Electrical Industries Ltd.: *See*—
Mynall, Dennis J. 3,222,591.

Atchison, Fred S.: *See*—
Alpers, Frederick C., Atchison, and Yates. 3,222,604.

Ateliers de Constructions Electriques de Charleroi: *See*—
Ledocq, Marcel. 3,222,625.

Atkinson, Truman L. Bed rail. 3,221,350, 12–7–65, Cl. 5—331.

Atlantic Refining Co., The: *See*—
Woods, John P., Neitzel, and Prickett. 3,222,546.

Atlantic Research Corp.: *See*—
Markels, Michael, Jr., and Eichbaner. 3,222,231.

Attwood, Warren R. Structural connections. 3,221,847, 12–7–65, Cl. 189—36.

Aufenacker, Friedrich, to Stocko Metallwarenfabriken Hugo und Kurt Henkels. Clamp for shoes, especially sport and ski shoes. 3,221,384, 12–7–65, Cl. 24—146.

Austin, Glenn M.: *See*—
Selferth, Oscar E., and Austin. 3,221,692.

Australian Atomic Energy Commission: *See*—
Thackray, Malcolm. 3,222,525.

Avco Corp.: *See*—
Ressler, Erhard O. 3,222,618.

Averill, William D., and D. I. McDonald, to The Cincinnati Milling Machine Co. Cutting tool adapter. 3,221,404, 12–7–65, Cl. 29—568.

Ayers, George W.: *See*—
Krewer, William A., Klass, and Ayers. 3,222,275.

Ayres, Walter D., Jr., to B. H. Bunn Co. Mounting for tying machine. 3,221,642, 12–7–65, Cl. 100—27.

Aziende Colori Mazionali Acna S.p.A.: *See*—
Gaetani, Ermanno. 3,222,355.

Babcock & Wilcox Co., The: *See*—
Brister, Paul M., Carpenter, Friese, Harvey, and Leonard. 3,221,925.
Gallapoo, Isaac O. 3,221,710.
Wiener, Murray. 3,221,713.

Babcock Electronics Corp.: *See*—
Juptner, William F. 3,222,487.

Bachle, Carl F., to Continental Aviation and Engineering Corp. Piston. 3,221,722, 12–7–65, Cl. 123—41.35.

Bacon, Walter H. Clutch mechanism. 3,221,850, 12–7–65, Cl. 192—45.

Badalini, Cambi Idraulici, S.p.A.: *See*—
Badalini, Giovanni. 3,221,571.

Badalini, Giovanni, to Badalini, Cambi Idraulici, S.p.A. Power-recovery continuous hydraulic change speed gear, particularly suitable for vehicles. 3,221,571, 12–7–65, Cl. 74—472.

Badische Anilin- & Soda-Fabrik Aktiengesellschaft: *See*—
Lange, Guenter. 3,222,354.
Poschmann, Franz. 3,222,245.
Reicheneder, Franz, Dury, Stummeyer, and Fischer. 3,222,159.
Schmid, Hans, and Feldhoff. 3,222,491.
Suter, Hubert, Poehler, and Sperber. 3,222,400.
Weidinger, Hans, and Ellingsfeld. 3,222,372.

Bahnsen, Erwin B., to Georgia-Pacific Corp. Web dispenser having a gravity operated cutting blade. 3,221,586, 12–7–65, Cl. 83—224.

Bahnsen, Erwin B., to Steiner American Corp. Towel winding machine. 3,222,006, 12–7–65, Cl. 242—67.1.

Bahnsen, Erwin B., to Steiner American Corp. Towel dispenser. 3,222,112, 12–7–65, Cl. 312—38.

Bailey, Harold G., and A. Hale, to The Akron Standard Mold Co. Take-off mechanism. 3,221,364, 12–7–65, Cl. 18—2.

Bailey Meter Co.: *See*—
Dickey, Paul S. 3,221,714.
Oldenburg, Gerald F. 3,222,532.

Baker, Harold A.: *See*—
McKay, Arthur F., and Baker. 3,222,247.

Baker Oil Tools, Inc.: *See*—
Myers, William D. 3,221,815.

Baker Perkins Inc.: *See*—
Irving, Henry F. 3,221,879.

Baker, William R., and D. E. Kullgren, to Paragon Bridge & Steel Co. Apparatus for shipping vehicles. 3,221,669, 12–7–65, Cl. 105—368.

Bakos, Nikolaus, to Heinrich Nickel G.m.b.H. Air conditioner arrangement. 3,221,512, 12–7–65, Cl. 62—281.

Baldwin, Herman J., to The Cincinnati Milling Machine Co. Machine tool spindle cooling system. 3,221,606, 12–7–65, Cl. 90—11.

Baldwin-Lima-Hamilton Corp.: *See*—
Pien, Hsia S. 3,222,628.

Ballou, Edward V., and R. T. Barth, to Gulf Research & Development Co. Method and apparatus for determining surface neutralizability of solid materials. 3,222,133, 12–7–65, Cl. 23—230.

Ballou, Richard P., to General Motors Corp. Liquid reserve systems. 3,221,800, 12–7–65, Cl. 158—46.5.

Bals, Edward J., to Birfield Engineering Ltd. Spraying equipment. 3,221,993, 12–7–65, Cl. 239—77.

Banaszak, Stephen M., and E. A. Dvorak. Paint can protective attachment. 3,221,955, 12–7–65, Cl. 222—570.

Bankston, Lester T., to United States of America, Navy. Secondary fluid injection thrust vectoring methods and apparatus. 3,221,498, 12–7–65, Cl. 60—35.54.

Banning, Thomas A., Jr. Instruments for controlling operations, to ensure optimum operating conditions of such operations. 3,221,759, 12–7–65, Cl. 137—18.

Banning, Thomas A., Jr. Pre-pay or subscription radio or television operations. 3,222,452, 12–7–65, Cl. 178—5.2.

Banning, Thomas A., Jr., E. L. Ranseen, deceased; (by A. J. Ranseen, executrix); said Ranseen assor. to said Banning. Deflectable beam scanning units, and the like. 3,222,680, 12–7–65, Cl. 346—74.

Barkowitz, Harold: *See*—
Liebmann, Jack S., Memole, and Barkowitz. 3,221,421.

Barnes-Hind International, Inc.: *See*—
Brown, Frank E. 3,221,939.

Barnes, Walter V., to Shell Oil Co. Dry cleaning composition. 3,222,286, 12–7–65, Cl. 252—161.

Barrett, Gerald R., and A. F. Harris, to Monsanto Chemical Co. Process for polymerizing styrene. 3,222,341, 12–7–65, Cl. 260—93.5.

Barry, Charles E.: *See*—
Newman, Vernon D., and Barry. 3,222,039.

Barstrom, Knut A.: *See*—
Ingalls, James E., Doran, and Barstrom. 3,222,242.

Barth, Ralph T.: *See*—
Ballou, Edward V., and Barth. 3,222,133.

Barton, Robert S.: *See*—
King, Paul D., Barton, and Merner. 3,222,649.

Baskin, Herbert A., to W. R. Grace & Co. Process for preparing calcium cyanate. 3,222,126, 12–7–65, Cl. 23—75.

Bassist, Rudolph G. Hydraulic mechanical warp beam control for textile machines. 3,221,518, 12–7–65, Cl. 66—86.

Bassist, Rudolph G. Mechanism for controlling the rotation of a warp beam of a warp knitting machine. 3,221,519, 12–7–65, Cl. 66—86.

Bassist, Rudolph G. Double-needle-bed warp knitting machine. 3,221,520, 12–7–65, Cl. 66—87.

Batchelor, Clyde S., and W. R. Jensen, to Raybestos-Manhattan, Inc. Friction devices. 3,221,853, 12–7–65, Cl. 192—66.

Battaglia, Samuel C.: *See*—
Spinuzza, Russell A. 3,221,936.

Bauer, Robert F.: *See*—
Stratton, Hal, Bauer, Field, and Crooke. 3,221,506.

Baugh, Elbert R., and J. M. Lyons, to Kaiser Aluminum & Chemical Corp. Heat treatment and extrusion of aluminum alloy. 3,222,227, 12–7–65, Cl. 148—11.5.

Baum, Leon. Optical system for machines. 3,221,577, 12–7–65, Cl. 82—12.

Bausch & Lomb Inc.: *See*—
Betensky, Ellis I., and Rickless. 3,221,601.
Dvorin, Martin. 3,222,001.
Faas, Kenneth D., and Schrier. 3,221,378.
Ferris, John T. 3,221,593.
Mattern, John S., and Robert. 3,221,365.
Vargady, Leslie O. 3,221,594.

Bayer, Otto: *See*—
Von Brachel, Hanswilli, and Bayer. 3,222,387.

Bayshore Industries, Inc.: *See*—
Bloom, Harry. 3,222,063.

Bayston, Thomas E.: *See*—
Campanella, Samuel J., and Bayston. 3,222,507.

Bazata, Joseph F., and R. Goebeler, to The Bendix Corp. Crimping apparatus. 3,221,532, 12–7–65, Cl. 72—312.

Beachum, Curtis M. Apparatus for covering berry boxes and the like. 3,222,058, 12–7–65, Cl. 271—26.

Beals, George C., J. Kocherhans, and K. M. Ogilvie, to Kennecott Copper Corp. Reverberatory matte-smelting process. 3,222,162, 12–7–65, Cl. 75—73.

Beasley, Noel F., to Bennett Respiration Products, Inc. Pressure breathing therapy unit. 3,221,733, 12–7–65, Cl. 128—29.

Beasley, Noel F., to Bennett Respiration Products, Inc. Respiration apparatus. 3,221,734, 12–7–65, Cl. 128—29.

Beasley, Silas V., and G. K. Harding, Jr., to McGraw-Edison Co. Oven supplied with hot air through foraminous duct-shelves. 3,221,729, 12–7–65, Cl. 126—21.

Beatenbough, Charles M., and T. J. Griffin, Jr.; said Beatenbough assor. to Bell Telephone Laboratories, Inc., and said Griffin assor. to Western Electric Co. Inc. Audio system for instructing and operator in the performance of continuity testing. 3,222,597, 12–7–65, Cl. 324—73.

Becanne, Robert L. P., and C. J. H. M. P. Ferrand, to Office National Industriel de L'Azote. Apparatus for the continuous manufacture of chlorinated cyanuric acid. 3,222,138, 12–7–65, Cl. 23—285.

Becker, Fred: *See*—
Snyder, Phillip T., and Becker. 3,221,681.

Becker, Frederick L.: *See*—
Goodwin, Robert J., and Becker. 3,221,505.

Becker, Joseph, to Koppers Co., Inc. Heating of high chambered horizontal coke ovens. 3,222,260, 12–7–65, Cl. 202—12.

Becker, Karl V.: *See*—
MacKenzie, Fred T., Becker, and Peterson. 3,221,967.

Beckman Instruments, Inc.: *See*—
McCann, Wilfred. 3,222,629.

Beer, Henri B., to Amalgamated Curacao Patents Co. N.V. Electrolysis method and apparatus employing a novel diaphragm. 3,222,265, 12–7–65, Cl. 204—1.

Beersmans, Jules E.: *See*—
Lemmerling, Jose T., De Keyser, Schouwenaars, and Beersmans. 3,222,177.

Beggs, Harold L., to Alcorn Combustion Co. Ridge firing arrangement for process heaters. 3,221,711, 12–7–65, Cl. 122—240.

Behrmann, Ernest A. Door lock with automatic deadlock action. 3,222,097, 12–7–65, Cl. 292—61.

Belko, William R., Jr.: *See*—
Weiler, Barton L., and Belko. 3,221,388.

Belko, William R., Jr., and R. C. Vandermark, to Vitramon Inc. Method of making an electrical unit. 3,222,173, 12–7–65, Cl. 96—35.

Bell Aerospace Corp.: *See*—
Buchanan, J. D. 3,221,760.

Bell, Jerome V.: *See*—
Samuel, George A., and Bell. 3,222.212.

Bell, Kenneth A., and D. S. MacLeod, to International Business Machines Corp. Data input device. 3,222,648, 12–7–65, Cl. 340—172.5.

Bell Telephone Laboratories, Inc.: *See*—
Beatenbough, Charles M., and Griffin. 3,222,597.
Candy, Charles J. N. 3,222,545.
Hogg, David C. 3,222,676.
McGuigan, John H. 3,222,541.

Bell, Vincent G., and C. D. Cassel, to Safeguard Corp. Open throat bed and cylinder imprinting machine. 3,221,653, 12–7–65, Cl. 101—269.

Bellco Glass, Inc.: *See*—
Brett, Perry A. 3,221,878.

Belo, George, and A. V. Churchill, to Gulf Research & Development Co. Stabilization of thermally unstable liquid hydrocarbon fuels. 3,222,145, 12–7–65, Cl. 44—66.

Belohlav, Leo R., and J. R. Underhill, to Great Lakes Chemical Corp. Bromination process. 3,222,276, 12–7–65, Cl. 210—62.

Beloit Corp.: *See*—
Larson, Robert W. 3,221,908.

Belsky, Charles, to Ford Motor Co. Vehicle body corner pillar construction. 3,222,101, 12–7–65, Cl. 296—44.

Beltzer, Morton, C. E. Heath, Jr., and B. L. Tarmy, to Esso Research and Engineering Co. Metal coating process. 3,222,218, 12–7–65, Cl. 117—213.

Bendix Corp., The: *See*—
Bazata, Joseph F. and Goebeler. 3,221,532.
Campbell, David F. 3,222,588.
Johannsen, Vernon E. 3,221,704.

Benedict, Ray E.: *See*—
Weiler, Richard L., and Benedict. 3,221,881.

Benjamin, Ralph: *See*—
Woroncow, Alexander, Randall, and Benjamin. 3,222,667.

Bennett Respiration Products, Inc.: *See*—
Beasley, Noel F. 3,221,733.
Beasley, Noel F. 3,221,734.

Bennett, Willard H. Ion probe for measuring interplanetary medium. 3,222,562, 12–7–65, Cl. 313—231.

Benson, Homer E., to Con-Gas Service Corp. Process for the preparation of mixtures of hydrogen, carbon monoxide and methane. 3,222,147, 12–7–65, Cl. 48—197.

Bercik, Paul G., A. M. Henke, and L. D. Moore, to Gulf Research & Development Co. Process for hydrocracking of nitrogen containing hydrocarbon oils with countercurrent flow of the oil with hydrogen in the reactor. 3,222,272, 12–7–65, Cl. 208—111.

Berg, Elaine. Caps for nurses or the like. 3,221,345, 12–7–65, Cl. 2—198.

Berger, Frank M., and B. J. Ludwig. N-methyl 2,2-diphenyl-3-hydroxypropyl carbamate. 3,222,392, 12–7–65, Cl. 260—482.

Bergling, Charles G. B., and H. N. Levin, to Ingenjorafirma Hebe Aktiebolag. Chain conveyor. 3,221,867, 12–7–65, Cl. 198—183.

Berlil, Carroll H. Low pressure indicator for vehicle tires. 3,222,642, 12–7–65, Cl. 34—58.

Berke, Ralph L., to SCM Corp. Record feeding device with backspace mechanism for chadless perforated records. 3,221,987, 12–7–65, Cl. 234—129.

Berkenblit, Melvin, G. Cheroff, F. Hochberg, and A. Reisman, to International Business Machines Corp. Process for affixing ohmic contacts to photoconductor elements. 3,222,216, 12–7–65, Cl. 117—212.

Berkenbosch, Rinke: *See*—
Duck, Edward W., and Berkenbosch. 3,222,331.
Duck, Edward W., Berkenbosch, and van der Voort. 3,222,332.

Berkowitz, Edward B., W. H. Stadtmiller, and L. Berkowitz, to Esso Research and Engineering Co. Moderately cross-linked polymers as hydrocarbon oil additives. 3,222,282, 12–7–65, Cl. 252—51.5.

Berkowitz, Leonard: *See*—
Berkowitz, Edward B., Stadtmiller, and L. Berkowitz. 3,222,282.

Bernstein, Alfred M., to Grafex Corp. Photocopy device. 3,221,631, 12–7–65, Cl. 95—73.

Berohn, Adolph: *See*—
Curran, Daniel R., and Berohn. 3,222,622.

Bertollo, Norman J., to Interchemical Corp. Composition and method for making water vapor permeable coated fabric. 3,222,208, 12–7–65, Cl. 117—63.

Betensky, Ellis I., and N. Rickless, to Bausch & Lomb Inc. Four component symmetrical projection objective. 3,221,601, 12–7–65, Cl. 88—57.

Beuther, Harold, J. Dedinas, and A. M. Henke, to Gulf Research & Development Co. Preparation of ethylbenzene by dealkylation of higher alkyl benzenes. 3,222,411, 12–7–65, Cl. 260—672.

Bevilacqua, Edmund J., G. F. Moyer, and D. F. Muir, Jr., to E. F. Blanchard. Vacuum copy holder. 3,222,051, 12–7–65, Cl. 269—21.

Bialog, Edward, S.: *See*—
Adams, Albert C., and Bialog. 3,221,641.

Biber, Conrad H. Clinical thermometer. 3,221,555, 12–7–65, Cl. 73—362.

Bickford, John C. Device for aligning work. 3,221,411, 12–7–65, Cl. 33—171.

Bicking, John B.: *See*—
Schultz, Everett M., Bicking, and Wiebelhaus. 3,222,395.

Bierman, William A., to Controls Co. of America. Control device. 3,221,768, 12–7–65, Cl. 137—589.

Biermann, William A.: *See*—
McCarty, Lourdes V., Biermann, Duncan, and Teichert. 3,221,767.

Bilodeau, Eugene A. Cinching device. 3,221,383, 12–7–65, Cl. 24—129.

Bing, Herbert A., and R. A. Malerbi, to Polaroid Corp. Photographic range and viewfinder. 3,221,627, 12–7–65, Cl. 95—44.

Bird, Jack R., G. W. Meetham, and M. A. Wheeler, to Rolls-Royce Ltd. Nickel chromium base alloy products. 3,222,165, 12–7–65, Cl. 75—171.

Bird Machine Co.: *See*—
Keyworth, Arthur E., Jr. 3,221,357.

Birfield Engineering Ltd.: *See*—
Bals, Edward J. 3,221,993.

Birkebak, Richard C. Infrared detector utilizing an integrating sphere radiometer. 3,222,522, 12–7–65, Cl. 250—83.3.

Birmingham, Roy J., to General Electric Co. Water cooler and hot water accessory kit therefor. 3,221,806, 12–7–65, Cl. 165—64.

Bisulca, Anthony A., J. W. Cunningham, and A. A. Warenius. Clamping device. 3,222,054, 12–7–65, Cl. 269—93.

Blair, Ronald L. Undergarments. 3,221,747, 12–7–65, Cl. 128—479.

Blair, Ronald L. Undergarment. 3,221,750, 12–7–65, Cl. 128—540.

Blaisdell Pencil Co.: *See*—
Seeman, Robert W. 3,221,360.

Blanchard, Elmer F.: *See*—
Bevilacqua, Edmund J., Moyer, and Muir. 3,222,051.

Blattner, Ernest W.: *See*—
Koenig, Carl F., III, and Blattner. 3,221,491.

Bloch, Herman S.: *See*—
Appell, Herbert R., and Bloch. 3,222,346.

Bloch, Herman S., to Universal Oil Products Co. Purification process. 3,222,415, 12–7–65, Cl. 260—674.

Bloch, Walter F.: *See*—
Weiss, Robert M., Sinner, and Bloch. 3,222,184.

Block, Burton P.: *See*—
Popoff, Ivan C., Block, and Huber. 3,222,378.

Block, Burton P., and J. Simkin, to Pennsalt Chemicals Corp. Inorganic polymer. 3,222,298, 12–7–65, Cl. 260—2.

Blomquist, John A., ½ to New-Mark Builders, Inc. Electromagnetic reciprocating motor. 3,222,554, 12–7–65, Cl. 310—35.

Blonder, David: *See*—
Fasola, Henry, Jr. 3,222,474.

Bloom, David: *See*—
Couchman, Timothy. 3,221,366.

Bloom, Harry, to Bayshore Industries, Inc. Toy merry-go-round. 3,222,063, 12–7–65, Cl. 272—48.

Blumberg, Marvin E., and G. J. Gould, to Pennsalt Chemicals Corp. Process for rendering animal fat. 3,222,384, 12–7–65, Cl. 260—412.6.

Boan, Byron H., and A. E. Popodi, to United States of America, Navy. Self-balancing high speed transistorized switch driver and inverter. 3,222,547, 12–7–65, Cl. 307—88.5.

Boatwright, James H.: *See*—
Arnold, Howard H., Boatwright, and Schiller. 3,222,504.

Bobo, Melvin, to General Electric Co. Engine mounting. 3,222,017, 12–7–65, Cl. 248—5.

Boeing Co., The: *See*—
Chase, Laurence I., and Douglas. 3,222,605.

Boge G.m.b.H.: *See*—
Tuczek, Franz. 3,222,047.
Tuczek, Franz. 3,222,049.

Bohle, August. Glass cutter. 3,221,405, 12–7–65, Cl. 30—164.95.

Bohnsack, Rolf W.: *See*—
Ray, Kenneth M., and Bohnsack. 3,222,612.

Boley, Charles C., D. G. Burnell, and W. M. Kirby, to James Lees and Sons Co. Method and apparatus for lubricating the wires of a pile wire loom. 3,221,775, 12–7–65, Cl. 139—45.

Bolidens Gruvaktiebolag: *See*—
Noren, Anders B. 3,221,914.

Bollert, Volker, G. T. Fritz, H. Schnell, and H. G. Lotter, to Farbenfabriken Bayer Aktiengesellschaft. Method of foaming organo-plastic synthetic resins and products produced therefrom. 3,222,302, 12–7–65, Cl. 260—2.5.

Bolomey, Rene A., and C. E. Marks, to The Mearl Corp. Method of casting polymerizable resins containing lamellar particles. 3,222,439, 12–7–65, Cl. 264—108.

Bolton, Edmund A.: *See*—
Weller, Barton L., and Bolton. 3,221,387.

Bonetti, Giulio, to Istag A.G. Liquid level indicator. 3,221,552, 12–7–65, Cl. 73—330.

Bono, Luigi, to Necchi Societe per Azioni. Adjusting device for regulating a sewing machine mechanism. 3,221,573, 12–7–65, Cl. 74—522.

Booher, Robert K., to North American Aviation, Inc. Division apparatus. 3,222,505, 12–7–65, Cl. 235—167.

Boone, Jay D., to United States of America, Navy. Variable porosity fabric for aeronautical decelerator. 3,222,016, 12–7–65, Cl. 244—145.

Borcher, Charles A., and W. Frantz, to Martin-Marietta Corp. Fluid pressure operated accelerometer having signal output corresponding to rate and direction of acceleration. 3,221,562, 12–7–65, Cl. 73—515.

Borgstrom, Carl G. L., and P. E. L. Frode, to Urfabriken, AB. Spinning reels. 3,222,010, 12–7–65, Cl. 242—84.2.

Bostock, James H.: *See*—
Taylor, Frank H., and Bostock. 3,221,818.

Bowden, Malcolm K., and J. C. Buck, to Short Bros. & Harland Ltd. Parachute braking apparatus for aircraft. 3,222,014, 12–7–65, Cl. 244—113.

Bowes, Donald R., and O. T. Smith. Non-slip surgical package. 3,221,873, 12–7–65, Cl. 206—63.3.

Bowles, Renile E., and R. L. Craig, to Hoerner Boxes, Inc. Reinforced carton. 3,221,972, 12–7–65, Cl. 229—14.

Boyd, Thomas: *See*—
Dietrich, Heinz J., and Boyd. 3,222,424.
Dietrich, Heinz J., and Boyd. 3,222,425.
Dietrich, Heinz J., and Boyd. 3,222,426.

Boyd, Thomas, and H. J. Dietrich, to Monsanto Chemical Co. Polymerization process using alpha-methylbenzoin/monocarboxylic acid catalyst system. 3,222,427, 12–7–65, Cl. 260—880.

Boyd, Thomas, and H. J. Dietrich, to Monsanto Chemical Co. Polymerization process using acetoin/monocarboxylic acid catalyst system. 3,222,428, 12–7–65, Cl. 260—880.

Boyd, Thomas, and H. J. Dietrich, to Monsanto Chemical Co. Polymerization process using benzoin/monocarboxylic acid catalyst system. 3,222,429, 12–7–65, Cl. 260—880.

Boyer, Richard W.: *See*—
Dames, Carl W., Jr., and Boyer. 3,222,443.

Boyle, Francis K., S. T. Clark, and C. F. Swain, to Union Carbide Corp. Cleaning and coating formulation. 3,222,201, 12–7–65, Cl. 106—285.

Bozek, John S., to Continental Can Co., Inc. Multi-paneled metal can-end with scored and beaded tear strip. 3,221,923, 12–7–65, Cl. 220—54.

Braatz, Clarence W., to Durant Mfg. Co. Resetting mechanism. 3,221,989, 12–7–65, Cl. 235—144.

Bracci, Delphio J., and J. M. Davidson, to Western Electric Co., Inc. Safety mounting. 3,221,968, 12–7–65, Cl. 227—62.

Braden Steel Corp.: *See*—
Lewis, James C., Hockett, and Wainwright. 3,221,373.

Bradley, George S. Mattress depressor. 3,221,349, 12–7–65, Cl. 5—317.

Brandon, Skeavington H. Record keeping apparatus. 3,221,751, 12–7–65, Cl. 129—34.

Brandt, Richard W., Jr. Belt drive for shaking device. 3,221,567, 12–7–65, Cl. 74—87.

Branson Instruments, Inc.: *See*—
Branson, Norman G. 3,222,221.

Branson, Norman G., to Branson Instruments, Inc. Ultrasonic cleaning method and apparatus. 3,222,221, 12–7–65, Cl. 134—1.

Braus, Harry: *See*—
Lecher, Hans Z., and Braus. 3,222,318.

Braus, Harry, and F. D. Waas, to National Distillers and Chemical Corp. Optical brightening of polystyrene and polyolefins. 3,222,290, 12–7–65, Cl. 252—301.2.

Brayton, Alton M. Deck and lift structure for scaffolding and the like. 3,221,838, 12–7–65, Cl. 182—141.

Breeding, Garnett M. Gun barrel mounted flashlight mount and switch. 3,222,511, 12–7–65, Cl. 240—6.41.

Bremer, Robert D., and H. E. Van Scoyk, to General Motors Corp. Method of forming solid plate cooking unit. 3,221,396, 12–7–65, Cl. 29—155.5.

Brennom, Elmo F. Portable mixing and pouring device for flowable molding material. 3,221,944, 12–7–65, Cl. 222—190.

Brett, Perry A., to Bellco Glass, Inc. Parabiotic chamber apparatus for cell culture studies. 3,221,878, 12–7–65, Cl. 210—94.

Breuer, Peter J.: *See*—
Moroni, Rolf, Kisteneich, and Breuer. 3,221,359.

Briem, Maria: *See*—
Hoelle, Alfred, and Vollmar. 3,222,181.

Brister, Paul M., O. R. Carpenter, G. F. Friese, J. F. Harvey, and J. W. Leonard, Jr., to The Babcock & Wilcox Co. Pressure vessel construction. 3,221,925, 12–7–65, Cl. 220—73.

British Oxygen Co. Ltd., The: *See*—
Garrett, Michael E. 3,221,511.

Broadhead, Paul S.: *See*—
Franck, Jack V., and Broadhead. 3,222,526.

Brodoway, Nicolas, to E. I. du Pont de Nemours and Co. Polymers of 3-alkenyloxy-1,2-epithiopropane. 3,222,324, 12–7–65, Cl. 260—79.7.

Brodoway, Nicolas, to E. I. du Pont de Nemours and Co. Sulfur curable elastomeric polymers of epithiohydrocarbons. 3,222,325, 12–7–65, Cl. 260—79.7.

Brodoway, Nicolas, to E. I. du Pont de Nemours and Co. Polymers of alkylene thioethers. 3,222,326, 12–7–65, Cl. 260—79.7.

Broerman, Robert A.: *See*—
Noel, William J. 3,221,779.

Broerman, William E.: *See*—
Noel, William J. 3,221,779.

Bross, Warren C.: *See*—
Vander Sande, John L., Bross, and Trotter. 3,221,589.

Brown, Barry D., to United States of America, Navy. Integrator modulator. 3,222,552, 12–7–65, Cl. 307—106.

Brown, Charles R.: *See*—
Price, Wilson T., and Brown. 3,221,602.

Brown, Christopher K., and E. B. Burnett, to Ingersoll-Rand Co. Gear type impulse tool. 3,221,513, 12–7–65, Cl. 64—26.

Brown, Donald A.: *See*—
Downing, Lucien R., Jr., and Brown. 3,221,466.

Brown, Donald A., and L. R. Downing, Jr., to Donn Products Inc. Crossing beam. 3,221,846, 12–7–65, Cl. 189—36.

Brown, Frank E., to Barnes-Hind International, Inc. Disposable dispensers. 3,221,939, 12–7–65, Cl. 222—94.

Brown, Gerald F.: *See*—
Derrington, Bernard L., and Brown. 3,222,070.

Brown, Joseph P., to Monsanto Chemicals Ltd. Heptyloxyphenyl biguanide compounds. 3,222,398, 12–7–65, Cl. 260—565.

Brown, Richard E., and R. I. Meltzer, to Warner-Lambert Pharmaceutical Co. 1-acyl substituted quinolizines and process for their production. 3,222,367, 12–7–65, Cl. 260—289.

Brown, Richard E., and R. I. Meltzer, to Warner-Lambert Pharmaceutical Co. Methylsulfinylmethyl ketone derivatives of substituted quinolizines. 3,222,368, 12–7–65, Cl. 260—289.

Brown, Robert J., to United Shoe Machinery Corp. Machine for skin packaging. 3,221,473, 12–7–65, Cl. 53—373.

Browne, Charles M., to Libbey-Owens-Ford Glass Co. Method of producing multiple sheet glazing units. 3,222,153, 12–7–65, Cl. 65—43.

Brozowski, Vincent: *See*—
Klass, Donald L., and Brozowski. 3,221,849.

Bruce, George D., and W. R. Wohlfort, to International Business Machines Corp. Matrix switching system. 3,222,658, 12–7–65, Cl. 340—174.

Brumlow, James A., Jr.: *See*—
Woicik, Joseph F., and Brumlow. 3,222,413.

Brundige, Maurice M., D. N. Obenshain, J. H. Fredrickson, and H. F. Kohne, Jr., to West Virginia Pulp and Paper Co. Process of manufacturing and finishing coated paper, and resultant product. 3,222,209, 12–7–65, Cl. 117—64.

Brunnert, Otto: *See*—
Karmann, Richard, Hoffmann, and Brunnert. 3,222,462.

Buchanan, J. D., to Bell Aerospace Corp. Dry coil servo valve. 3,221,780, 12–7–65, Cl. 137—82.

Buchner, Norbert, to Fr. Hesser, Maschinenfabrik-Aktiengesellschaft. Method of manufacturing infusion bags. 3,222,235, 12–7–65, Cl. 156—73.

Buck, James C.: *See*—
Bowden, Malcolm K., and Buck. 3,222,014.

Buell, Bennett G., and R. S. Long, to American Cyanamid Co. Pyridotriazole brighteners. 3,222,371, 12–7–65, Cl. 260—294.8.

Bunn, B. H., Co.: *See*—
Ayres, Walter D., Jr. 3,221,642.

Burdett, Joseph W., to Shell Oil Co. Countercurrent flow centrifugal exchangers. 3,221,985, 12–7–65, Cl. 233—15.

Burdett, Joseph W., and K. E. Train, to Shell Oil Co. Centrifugal exchangers. 3,221,986, 12–7–65, Cl. 233—15.

Burg Marion, to E. I. du Pont de Nemours and Co. 4-(2-cyano-2-propylazo) anisole. 3,222,356, 12–7–65, Cl. 260—193.

Burnell, David G., to James Lees and Sons Co. High tension stop motion for tufting machines. 3,221,682, 12–7–65, Cl. 112—79.

Burnell, David G.: *See*—
Boley, Charles C., Burnell, and Kirby. 3,221,775.

Burnett, Elmer B.: *See*—
Brown, Christopher K., and Burnett. 3,221,515.

Burrell, Alfred A. Method of splicing a belt. 3,222,236, 12–7–65, Cl. 156—139.

Burroughs Corp.: *See*—
King, Paul D., Barton, and Merner. 3,222,649.
Lee, Edwin S., III. 3,222,669.
White, Howard P. 3,222,000.
Witherspoon, John M. 3,222,536.

Burton, Coleman H., and M. E. Mitchell, to General Electric Co. Simplified error-control decoder. 3,222,644, 12–7–65, Cl. 340—146.1.

Buschboom, Floyd E., to Vandale Corp. Silo unloader. 3,221,904, 12–7–65, Cl. 214—17.

Buschmann, Oskar H.: *See*—
Snoberger, Philip H., and Buschmann. 3,222,555.

Buser, Fritz, A.G., Maschinenfabrik: *See*—
Hardy, Charles D., Jr., and Jeronimus. 3,221,646.

Bushnell, David P.: *See*—
Akin, Alfred A., Jr. 3,222,022.

Butler, Frank D. Fluid pressure variable ratio reversible, combined hydrodynamical and multiply compounded planetary gearing driven transmission coupler, adaptable as forming a combined fluid torque convertor transmission coupler and rear traction-wheel-housing assembly, of and for an automotive vehicle. 3,221,575, 12–7–65, Cl. 74—730.

Butler, Vaughn H., to Scott & Williams, Inc. Knitting machine. 3,221,517, 12–7–65, Cl. 66—57.

Butter, George N., to Commercial Solvents Corp. Stabilized formaldehyde solutions. 3,222,403, 12–7–65, Cl. 260—606.

Buys, Adriaan, to Inland Steel Co. Methods of manufacturing threaded closures. 3,221,533, 12–7–65, Cl. 72—379.

Buys, Adriaan, to Inland Steel Co. Threaded closure. 3,221,920, 12–7–65, Cl. 220—39.

Buzzards Corp.: *See*—
Campbell, Walter G., Clark, and Converse. 3,221,556.

Byfield, Donald R.: *See*—
Reintjes, George P., and Byfield. 3,221,680.

CBS-Hytron, a Division of Columbia Broadcasting System, Inc.: *See*—
Giuffrida, Joseph. 3,222,172.

Cabot Corp.: *See*—
Aftandilian, Victor D. 3,222,296.
Dingus, George W. 3,221,949.
Jordon, Merrill E., and Cole. 3,222,202.

Cadolin, Inc.: *See*—
Zielinski, Edward A. 3,221,753.

California Research Corp.: *See*—
McClellan, Aubrey L. 3,222,271.

Callegari, Louis G. Snap-on can sealer. 3,221,918, 12–7–65, Cl. 220—24.

Calmon, Calvin: *See*—
Heit, Allyn H., and Calmon. 3,222,291.

Calza Bioch S.p.A.: *See*—
Giuliuzza, Pietro, and Schoen. 3,221,516.

Cameron Machine Co.: *See*—
Crowe, Thomas J. 3,222,004.

Camloc Fastener Corp.: *See*—
Vander Sande, John L., Bross, and Trotter. 3,221,589.

Campanella, Samuel J., and T. E. Bayston, to Melpar, Inc. Speech compression systems. 3,222,507, 12–7–65, Cl. 235—196.

Campbell, Dan N., to Monsanto Co. Inhibiting the polymerization of vinyl aromatic hydrocarbons. 3,222,263, 12–7–65, Cl. 202—57.

Campbell, David F., to The Bendix Corp. Series resistor-condenser starter for a transistorized oscillator. 3,222,588, 12–7–65, Cl. 320—1.

Campbell, Walter G., W. V. A. Clark, Jr., and C. B. Converse, Buzzards Corp. Bathythermograph system. 3,221,556, 12–7–65, Cl. 73—362.

Canadian Industries Ltd.: *See*—
Heppolette, Robert L. 3,222,420.
Murdock, James D. 3,222,418.

Canadian International Paper Co.: *See*—
Hoffmann, Wolfgang, Follows, and Taylor. 3,221,474.

Candy, Charles J. N., to Bell Telephone Laboratories, Inc. Semiconductor multistate circuits. 3,222,545, 12–7–65, Cl. 307—88.5.

Capel, Gilbert O., to Dor-Seal Ltd. Pane support and seal. 3,221,456, 12–7–65, Cl. 52—400.

Caps (Research) Ltd.: *See*—
Jeffree, John H., and Sutton. 3,221,595.

Car, Tony, A. O. Machnik, M. J. Milkovich, and A. Ivosic. Modular wall construction. 3,221,455, 12–7–65, Cl. 52—285.

Careddu, Orazio. Four strokes, four pistons, I.C. engine with toric cylinder. 3,221,716, 12–7–65, Cl. 123—11.

Carl, Paul R., to Socony Mobile Oil Co., Inc. Process for producing high energy jet fuels. 3,222,274, 12–7–65, Cl. 208—143.

Carletti, Ledo R. Exhaust manifold system for internal combustion engines. 3,221,492, 12–7–65, Cl. 60—13.

Carlsen, Carl E. Hand stamps. 3,221,647, 12–7–65, Cl. 101—125.

Carlson, Dennis R.: *See*—
Case, Everett N., Patinkin, and Carlson. 3,222,146.

Carpenter, Irvin M.: *See*—
Van Winkle, Roy L., Lankford, and Carpenter. 3,222,679.

Carpenter, Otis R.: *See*—
Brister, Paul M., Carpenter, Friese, Harvey, and Leonard. 3,221,925.

Carrier Corp.: *See*—
Hughes, Robert L., Hollingsworth, and Garside. 3,221,730.
Linthicum, Harley E. and W. A. 3,221,528.
Simmons, Walter H. 3,222,093.

Carter, Sidney T., and J. L. Fedler, to Geo. J. Meyer Mfg. Co. Grip-finger assembly for labeling machines. 3,222,240, 12–7–65, Cl. 156—482.

Cascade Corp.: *See*—
Weinert, Harry F. 3,221,840.

Case, Everett N., S. H. Patinkin, and D. R. Carlson, to Sinclair Research Inc. Glycerol esters in leaded gasoline. 3,222,146, 12–7–65, Cl. 44—69.

Casey, James H., to Minnesota Mining and Mfg. Co. Method and apparatus for applying easy-opening seal of adhesive tape. 3,221,468, 12–7–65, Cl. 53—14.

Cassel, Calvin D.: *See*—
Bell, Vincent G., and Cassel. 3,221,653.

Cavalier, Gerald C. Phonograph record pressing machines. 3,221,367, 12–7–65, Cl. 18—5.3.

Cavalito, Chester J., and A. P. Gray, to Neisler Laboratories, Inc. 4-phenalkyl-1-dialkyl-amino-alkyl-piperidines. 3,222,370, 12–7–65, Cl. 260—293.

Cecil, Tom A.: *See*—
Allegrini, Aldo P., and Cecil. 3,222,297.

Celanese Corp. of America: *See*—
Wyart, John W., Schrage, and Vona. 3,222,312.

Centrella, Cosmo: *See*—
Phillips, Robert, and Centrella. 3,221,343.

Cerulli, Francis J., to United States of America, Army. Set-reset indicator and variable digit counter and indicator. 3,222,503, 12–7–65, Cl. 235—92.

Chaikin, Saul W., to Stanford Research Institute. Process for inhibition of electrical-contact failure. 3,222,489, 12–7–65, Cl. 200—166.

Chamberlain, Louie L. Handling apparatus. 3,221,913, 12–7–65, Cl. 214—517.

Chandler Evans Inc.: *See*—
Schofield, John J., and Schierberl. 3,221,663.

Chang, Marguerite S.: *See*—
Matuszko, Anthony J., and Chang. 3,222,233.

Chang, Street, to High Voltage Engineering Corp. Temperature sensing device and method. 3,221,553, 12–7–65, Cl. 73—343.

Chang, William J. H., to The Yoder Co. Quick mass assembly of mill housings. 3,221,529, 12–7–65, Cl. 72—224.

Chappell, Robert E., to Diamond Power Specialty Corp. Retractable furnace slurry sprayer. 3,221,994, 12–7–65, Cl. 239—186.

Chase, George O., to Hoffmann-La Roche Inc. Process for preparing 5-cyano-4-lower alkyl. 3,222,374, 12–7–65, Cl. 260—307.

Chase, Laurence I., and F. C. Douglas, to The Boeing Co. Low pass, low level filter. 3,222,605, 12–7–65, Cl. 328—209.

Chase-Shawmut Co., The: *See*—
Hitchcock, Paul C. 3,222,482.

Chemical Design, Inc.: *See*—
Meyer, James R. 3,221,476.

Cheng, Tsung-Hsien, to International Business Machines Corp. Superconductive variable inductance logic circuit. 3,222,544, 12–7–65, Cl. 307—88.5.

Cheroff, George: *See*—
Berkenblit, Melvin, Cheroff, Hochberg, and Reisman. 3,222,216.

Chicago Bridge & Iron Co.: *See*—
Pugh, Charles D. 3,222,164.

Chinn, George I., to Kieley and Mueller Inc. Regulating valve. 3,221,762, 12–7–65, Cl. 137—116.5.

Chu, Ju C., to North American Aviation, Inc. Compositions, processes, and apparatus for the improvement of bi-propellant fuels. 3,221,494, 12–7–65, Cl. 60—35.4.

Chubb, Talbot A.: *See*—
Friedman, Herbert, and Chubb. 3,222,560.

Churchill, Arthur V.: *See*—
Belo, George, and Churchill. 3,222,145.

Ciba Corp.: *See*—
Eschenmoser, Albert, Schindler, and Schreiber. 3,222,253.
Schmidt, Paul, Eichenberger, and Wilhelm. 3,222,364.
Wettstein, Albert, and Schmidlin. 3,222,361.

Cincinnati Milling Machine Co., The: *See*—
Averill, William D., and McDonald. 3,221,404.
Baldwin, Herman J. 3,221,606.
Hemmerle, Joseph V., Jr. 3,221,605.
Pfister, Stanley A. 3,221,352.

Clapp, Daniel E., to King-Seeley Thermos Co. Thermal switch with calibration means. 3,222,480, 12–7–65, Cl. 200—122.

Clark, Charles W., Jr., to Sweden Freezer Mfg. Co. Freezing cylinder. 3,221,513, 12–7–65, Cl. 62—519.

Clark, Chester A. Undulating surface driving system. 3,221,702, 12–7–65, Cl. 115—.5.

Clark, George W.: *See*—
Annis, Martin, Clark, Greenberg, Paolini, and Williams. 3,221,731.

Clark, John R., G. David, Jr., and L. W. Fuller, to Midwestern Instruments, Inc. Starter for multiple electrode lamps. 3,222,570, 12–7–65, Cl. 315—124.

Clark, Salem T., to Union Carbide Corp. Rinsing formulation. 3,222,213, 12–7–65, Cl. 117—119.6.

Clark, Salem T.: *See*—
Boyle, Francis K., Clark, and Swain. 3,222,201.

Clark, Walter E., and T. A. Gens, to United States of America, Atomic Energy Commission. Dissolution of zirconium in titanium equipment. 3,222,289, 12–7–65, Cl. 252—182.

Clark, William V. A., Jr.: *See*—
Campbell, Walter G., Clark, and Converse. 3,221,556.

Clarke, Robert E. Combination wagon. 3,222,078, 12–7–65, Cl. 280—7.17.

Clauss, Richard J., R. W. Klein, and L. J. Pianowski, to The Udylite Corp. Particle separator device for plating baths. 3,222,268, 12–7–65, Cl. 204—238.

Cleveland Crane & Engineering Co., The: *See*—
Dehn, Roy F. 3,222,464.

Cleveland, Thomas H., to Mobay Chemical Co. Preparation of organic isocyanates. 3,222,386, 12–7–65, Cl. 260—453.

Clevite Corp.: *See*—
Curran, Daniel R., and Berohn. 3,222,622.

Cline, Nathan R. Self-tightening pen means. 3,221,361, 12–7–65, Cl. 15—563.

Closmann, Philip J., C. S. Matthews, and T. M. Doscher, to Shell Oil Co. Recovery of viscous petroleum materials. 3,221,813, 12–7–65, Cl. 166—11.

Clouth, Franz, Rheinische Gummiwarenfabrik Aktiengesellschaft: *See*—
Paasche, Fritz. 3,221,869.

Coffee-Mat Corp.: *See*—
Small, Sollie W., and Herman. 3,222,500.
Small, Sollie W., and Herman. 3,221,587.
Small, Sollie W., and Herman. 3,221,637.
Small, Sollie W., and Herman. 3,221,933.

Cohen Co., Ltd.: *See*—
Ohishi, Sakae. 3,221,535.

Cohen, Leonard A. Apparatus for producing linear acceleration of a mass. 3,221,419, 12–7–65, Cl. 35—12.

Cohen, Leonard A. Electrical socket. 3,222,631, 12–7–65, Cl. 339—40.

Cohen, Lester A., to Monsanto Chemical Co. Blend of a diene rubber-based graft copolymer, an emulsion-polymerized styrene-acrylonitrile type interpolymer, and a suspension-polymerized styrene-acrylonitrile type interpolymer. 3,222,422, 12–7–65, Cl. 260—876.

Cole, Harvey M.: *See*—
Jordon, Merrill E., and Cole. 3,222,202.

Coleman, Denis, to American Cyanamid Co. Elimination of cationic dyeability of acrylic fibers. 3,222,118, 12–7–65, Cl. 8—115.5.

Collins, Tappan, to National Steel Corp. Conveyance construction. 3,221,671, 12–7–65, Cl. 105—422.

Collo-Rheincollodium, Koln G.m.b.H. Werk Hersel: *See*—
Moroni, Rolf, Kisteneich, and Breuer. 3,221,359.

Columbia Broadcasting System, Inc.: *See*—
Giuffrida, Joseph. 3,222,172.
Commercial Solvents Corp.: *See*—
Butter, George N. 3,222,403.
Commissariat a l'Energie Atomique: *See*—
Alfred, Marc, and Marcelin. 3,221,534.
Compagnie Francaise Thomson-Houston: *See*—
Forestier, Henri G. P. 3,222,672.
Villepelet, Jean. 3,222,674.
Compagnie Generale de Radiologie: *See*—
Nagel, Jean. 3,222,518.
Complex, Inc.: *See*—
Nagelvoort, Adrian. 3,222,261.
Con-Gas Service Corp.: *See*—
Benson, Homer E. 3,222,147.
Conlin, Peter, and W. L. Schulx, to Hankscraft Co. Liquid conductor heater. 3,222,499, 12–7–65, Cl. 219—289.
Continental Aviation and Engineering Corp.: *See*—
Bachle, Carl F. 3,221,722.
Isley, Walter F. 3,221,718.
Continental Can Co., Inc.: *See*—
Bozek, John S. 3,221,923.
Continental Capital Corp. ("Continental"), and Sierra Capital Co. ("Sierra"): *See*—
Andersen, Charles V. 3,221,963.
Controls Co. of America: *See*—
Bierman, William A. 3,221,768.
McCarty, Lourdes V., Biermann, Duncan, and Teichert. 3,221,767.
Converse, Courtland B.: *See*—
Campbell, Walter G., Clark, and Converse. 3,221,556.
Cook, Cedric E. Clamps. 3,222,055, 12–7–65, Cl. 269—219.
Cook, George R., to Union Oil Co. of California. Emulsion hydraulic fluid, concentrate and method of preparing same. 3,222,284, 12–7–65, Cl. 252—75.
Cook, Harvey L., Jr.: *See*—
Whitesell, William A., and Cook. 3,222,453.
Cook, John W., to Sprague Electric Co. Magnetic device. 3,222,657, 12–7–65, Cl. 340—174.
Cookerly, Jack C., and G. R. Hall. Multiple use of wave shaping circuits for tone production. 3,222,447, 12–7–65, Cl. 84—1.19.
Cooperman, Murray C., to Armour and Co. Preparation of N-aliphatic trimethylene diamines. 3,222,402, 12–7–65, Cl 260—583.
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Copp, Roland H., to Sterilab, Inc. Air system for sterile areas. 3,221,632, 12–7–65, Cl. 98—33.
Corbett, Herbert O., to National Distillers and Chemical Corp. Apparatus for extruding thermoplastic film. 3,221,370, 12–7–65, Cl. 18—14.
Cordray, Arthur C., and T. Acosta. Cup transfer mechanism for fruit juicing machine. 3,221,780, 12–7–65, Cl. 141—83.
Cornelissen, Johannes, A. M. Kruithof, and H. W. J. H. Meyer, to North American Philips Co., Inc. Method of manufacturing reinforced cathode-ray tube for television display. 3,222,206, 12–7–65, Cl. 117—40.
Corning Fibre Box: *See*—
Gort, William J., and Tomassi. 3,221,915.
Corning Glass Works: *See*—
Shepard, Robert N. 3,222,150.
Correale, James V., Jr., to United States of America, Navy. Neck sleeve for connecting a helmet to a life vest. 3,221,339, 12–7–65, Cl. 2—2.1.
Corridan, Robert E.: *See*—
Miksch, Russell S., and Corridan. 3,222,498.
Couchman, Timothy, to D. Bloom. Molding apparatus. 3,221,366, 12–7–65, Cl. 18—5.
Counterman, William A.: *See*—
Mackey, Ernest A., and Counterman. 3,221,489.
Couret, Robert F., to The Laitram Corp. Apparatus for removing the edible meats from crustacea talls. 3,221,362, 12–7–65, Cl. 17—2.
Couret, Robert F., to The Laitram Corp. Process for removing the edible meats from crustacea talls. 3,221,363, 12–7–65, Cl. 17—45.
Couri, Joseph M. Apparatus and method for controlling and receiving and/or dispensing paper money. 3,222,057, 12–7–65, Cl. 271—3.
Cowell, John, to Industrial Tectonics, Inc. Textile spindle. 3,221,389, 12–7–65, Cl. 29—116.
Cowels, Clinton J., Jr. Apertured game board with selectively rotatable pegged playing pieces. 3,222,068, 12–7–65, Cl. 273—134.
Cowling, Robert E. Mowing apparatus with a mower head universally supported by an extensible boom. 3,221,482, 12–7–65, Cl. 56—25.4.
Craig, Robert L.: *See*—
Bowles, Renile E., and Craig. 3,221,972.
Cranskens, Georg, and U. Thurat, to Lumoprint Zindler K.G. Devices for the production of copies. 3,221,621, 12–7–65, Cl. 95—1.7.
Creamer, Robert W., to Numeric Systems of Texas, Inc. Automatic punch press. 3,221,901, 12–7–65, Cl. 214—1.5.
Creditors of Brass Copper Lighting Fixture Co.: *See*—
Fasola, Henry, Jr. 3,222,474.
Creighton, Peter J., M. Nadler, and H. N. Wells, to Esso Research and Engineering Co. Recovering ether diluent in liquid polydiolefin manufacture. 3,222,409, 12–7–65, Cl. 260—669.
Crooke, Robert C.: *See*—
Stratton, Hal, Bauer, Field, and Crooke. 3,221,506.
Cross, James W. Dental chair with consoles. 3,222,105, 12–7–65, Cl. 297—188.
Crossland, Edward J., M. P. Ragan, and J. E. Hawkins, to Seismograph Service Corp. Voting machine. 3,221,988, 12–7–65, Cl. 235—54.
Crowe, Thomas J., to Cameron Machine Co. Rewind machine. 3,222,004, 12–7–65, Cl. 242—56.9.
Crucible Steel Co. of America: *See*—
Stanley, James K., and Schaefer. 3,222,228.
Thompson, Vernon R., and Westgren. 3,222,166.
Cummings, William C., to Scanwell Laboratories, Inc. Multimode radio frequency structure exhibiting hybrid operation. 3,222,620, 12–7–65, Cl. 333—11.
Cumpston, Edward H., Jr. Material refining machine. 3,221,999, 12–7–65, Cl. 241—247.
Cunningham, James W.: *See*—
Bisulca, Anthony A., Cunningham, and Warenius. 3,222,054.
Cunningham, Walter F., to Superior-Tabbies, Inc. Insert-receiving index tabs. 3,221,430, 12–7–65, Cl. 40—23.
Curlee, W. F., Mfg. Co.: *See*—
Acres, Richard L. 3,221,794.
Curll, Allan R., Jr., to Philco Corp. Heat exchange apparatus. 3,222,580, 12–7–65, Cl. 317—234.
Curran, Daniel R., and A. Berohn, to Clevite Corp. Wave filter comprising piezoelectric wafer electroded to define a plurality of resonant regions independently operable without significant electromechanical interaction. 3,222,622, 12–7–65, Cl. 333—72.
Currie, Grover C. Package. 3,221,876, 12–7–65, Cl. 206—65.
Curtis, Frank W., to Lexsuco, Inc. Vapor barrier and adhesive applicators. 3,222,241, 12–7–65, Cl. 156—575.
Cutting Room Appliances Corp.: *See*—
Wendelken, Gerard J. 3,222,005.
Czernobil, Eugene: *See*—
Feinberg, Albert E., and Czernobil. 3,222,626.
D'Agostino, Nunzio L.: *See*—
Morcheles, Bernard, and D'Agostino. 3,221,892.
Dahlblom, Rolf A., and B. S. Lillsunde, to Telefonaktiebolaget L M Ericsson. Automatic telephone exchange. 3,222,458, 12–7–65, Cl. 179—18.
Dahm, Manfred, to Farbenfabriken Bayer Aktiengesellschaft. Preparation of a polyurethane foam containing elemental sulphur. 3,222,301, 12–7–65, Cl. 260—2.5.
D'Amato, Michael A. Automatic control for variable displacement pump. 3,221,660, 12–7–65, Cl. 103—38.
Dames, Carl W., Jr., and R. W. Boyer, to Polymer Processes, Inc. Method of molding lactams in a polysiloxane mold. 3,222,443, 12–7–65, Cl. 264—313.
Damgen, Wilhelm: *See*—
Rumberg, Alfred, Krauss, Rittershausen, Damgen, and Fruhling. 3,222,445.
Dana Corp.: *See*—
Phelps, Orville E. 3,221,856.
Dangauthier, Marcel, to La Publicite Francaise. System for cooling the engine of a motor vehicle and heating the air of the vehicle. 3,221,720, 12–7–65, Cl. 123—41.09.
Daniels, Gordon E. Earth Scraper. 3,221,423, 12–7–65, Cl. 37—126.
D'Aquin, Esler L. Process for softening the shell portions of crustaceans for edible purposes. 3,222,186, 12–7–65, Cl. 99—111.
D'Arrigo, Andrew A., to D'Arrigo Bros. Co. of California. Vegetable bunching machine. 3,221,640, 12–7–65, Cl. 100—5.
D'Arrigo Bros. Co. of California: *See*—
D'Arrigo, Andrew A. 3,221,640.
Davenport, Donald E., to United States of America, Atomic Energy Commission. Polycellular tubular grid structures and method of manufacture. 3,222,144, 12–7–65, Cl. 29—191.
David, Glee, Jr.: *See*—
Clark, John R., David, and Fuller. 3,222,570.
Davidson, Jason M.: *See*—
Bracci, Delphio J., and Davidson. 3,221,968.
Davies, Arthur: *See*—
Harper, Harold F., Lee, and Davies. 3,222,155.
Davies, Ben, and E. P. Weaver, to Harbison-Walker Refractories Co. Burned brick. 3,222,196, 12–7–65, Cl. 106—58.
Davis, Charles L., to The Pillsbury Co. Merchandising package. 3,222,190, 12–7–65, Cl. 99—172.
Davis, George B., Jr. Fluid dispenser. 3,221,945, 12–7–65, Cl. 222—193.
Davis, Herman E.: *See*—
Touey, George P., and Davis. 3,222,358.
Davis, John W., and K. J. Wells, to Girling Ltd. Hydraulically operated disc brakes. 3,221,844, 12–7–65, Cl. 188—152.
Davis, Ralph B., to University of Notre Dame. Phenyl-p-aminophenyl acetonitrile compounds and substituted derivatives thereof. 3,222,389, 12–7–65, Cl. 260—465.
Davis, William W., to Sperry Rand Corp. Magnetic parallel comparison means for comparing a test word with a plurality of stored words. 3,222,645, 12–7–65, Cl. 340—146.2.
Davy and United Engineering Co. Ltd.: *See*—
Swallow, Reginald D., and Stubbs. 3,221,530.
Daw, Nigel W.: *See*—
Land, Edwin H., and Daw. 3,221,600.
Deans, Howard, to Kleer-Vu Industries, Inc. Ultrasonic sealing system. 3,222,239, 12–7–65, Cl. 156—380.

Dedinas, Jonas: *See*—
Beuther, Harold, Dedinas, and Henke. 3,222,411.
Dedoes, Arnold A. Soil penetrating implement. 3,221,822, 12–7–65, Cl. 172—22.
De Fasselle, Robert J.: *See*—
Mellen, Edward J., Jr., Webb, De Fasselle, and Dudek. 3,222,435.
De Feo, Michael. Night light. 3,222,513, 12–7–65, Cl. 240—37.1.
Degaetano, Ben. Phonograph for toys. 3,222,073, 12–7–65, Cl. 274—9.
De Graaf, Paul A.: *See*—
Elbogen, James S., and De Graaf. 3,221,764.
Dehn, Roy F., to The Cleveland Crane & Engineering Co. Trolley conductor. 3,222,464, 12–7–65, Cl. 191—22.
De Jean, Milton V., and M. J. Lacy, to General Electric Co. Method for bonding parts of an electrical motor. 3,222,234, 12–7–65, Cl. 156—60.
De Kalb Commercial Body Corp.: *See*—
Modloff, Jay T., and Sayers. 3,221,911.
De Keyser, Ledewijk F.: *See*—
Lemmerling, José T., De Keyser, Schouwenaars, and Beersmans. 3,222,177.
De Koning, Jacob. Bar screen. 3,221,877, 12–7–65, Cl. 209—314.
Delacretaz, Richard, to Monsanto Co. Molecular weight regulation in polymerization of vinylidene monomera using a phosphite regulator. 3,222,335, 12–7–65, Cl. 260—85.5.
Deladerriere, André, to Revelis Bayard, Societe Anonyme. Microcontact device for oscillating systems. 3,221,488, 12–7–65, Cl. 58—28.
De Laval Turbine Inc.: *See*—
Koenig, Carl F., III, and Blattner. 3,221,491.
Del Giudice, Frank P., to Metal Hydrides Inc. Method for preparing high purity crystals of lithium borohydride. 3,222,120, 12–7–65, Cl. 23—14.
Delhase, Jose H. Combined switch and closure means. 3,222,473, 12–7–65, Cl. 200—61.62.
De Long, David A., to De Long Lures, Inc. Fish hook with weed guard. 3,221,437, 12–7–65, Cl. 43—43.4.
De Long Lures, Inc.: *See*—
De Long, David A. 3,221,437.
Delzanno, Giuseppe, to Fiat Societa per Azione. Multiple welding machine. 3,222,495, 12–7–65, Cl. 219—87.
Demarest, Phillip C., to Ohmega Laboratories. An electrical device comprising a glass capsule and a wire lead fused therein. 3,221,386, 12–7–65, Cl. 29—25.11.
Denhoff, Alice: *See*—
Smith, Walter H. B. 3,221,604.
Denis, Andre, and G. Ripart, to Sud-Aviation Societe Nationale de Constructions-Aeronautiques. Measuring the characteristics of a magnetic field at any given point by nuclear resonance. 3,222,593, 12–7–65, Cl. 324—.5.
Dennis, Gerald H. Ground fault detecting device. 3,222,663, 12–7–65, Cl. 340—255.
Demme, Fred P., to Pennsalt Chemicals Corp. N,N-dialkylhydroxylamines as shortstopping agents for emulsion polymerizations. 3,222,334, 12–7–65, Cl. 260—84.7.
De Pue, James M., Jr., and N. E. Oaks, to Varian Associates. High frequency electron discharge device with temperature compensation control means. 3,222,564, 12–7–65, Cl. 315—5.48.
De Reynold, Henry, to Ebauches S.A. Electronic multivibrator circuit using negative-resistance elements. 3,222,540, 12–7–65, Cl. 307—88.5.
De Roze, Donald G.: *See*—
Arnoldi, Walter E., De Roze, Jennings, and Peters. 3,221,477.
Derrington, Bernard L., and G. F. Brown. Indicator for stock market game. 3,222,070, 12–7–65, Cl. 273—148.
DeSanto, John, and E. A. Freeberg. Fluid container. 3,221,917, 12–7–65, Cl. 220—20.5.
De See, Peter G., to Halkey-Roberts Corp. Dispensing container closure. 3,221,952, 12–7–65, Cl. 222—525.
De Soto Chemical Coatings, Inc.: *See*—
Sekmakas, Kazys. 3,222,309.
Sekmakas, Kazys. 3,222,321.
Deutsche Edelstahlwerke Aktiengesellschaft: *See*—
Seulen, Gerhard, and Geisel. 3,221,536.
Devaux, Raymond H. P. Shot-gun cartridge and wad therefor. 3,221,658, 12–7–65, Cl. 102—95.
De Vries, Douwe, and F. Poorman, Jr., to Shell Oil Co. Marine conductor pipe assembly. 3,221,817, 12–7–65, Cl. 166—66.5.
De Waegh, Francois A.: *See*—
Maldague, Pierre E. J. M., and de Waegh. 3,222,254.
Dexter, Fred A. Circuit overload protector. 3,222,575, 12–7–65, Cl. 317—20.
De Young, Edwin L., and R. W. Watson, to Standard Oil Co. Oxidation inhibitors for lubricant oils. 3,222,281, 12–7–65, Cl. 252—49.6.
Diamond Power Specialty Corp.: *See*—
Chappell, Robert E. 3,221,994.
Dichter, Jakob. Apparatus for the manufacture of ampules. 3,222,157, 12–7–65, Cl. 65—280.
Dickey, Paul S., to Bailey Meter Co. Vapor generating and superheating operation. 3,221,714, 12–7–65, Cl. 122—479.
Dickinson, Roger W.: *See*—
Dickinson, Richard E., and R. W. 3,221,819.
Dickinson, Richard E. and R. W. Well screen. 3,221,819, 12–7–65, Cl. 166—233.
Dickow, Frederick P., to The Eastern Co. Expansion shell with converging planar surfaces in planes forming a dihedral. 3,221,590, 12–7–65, Cl. 85—76.
Dickson, John B., to Lehigh Valley Industries, Inc. Motor vehicle clearance and marker lamps with shock isolation. 3,222,512, 12–7–65, Cl. 240—8.2.
Dickson, Rufus F. High-speed roadway vacuum cleaner. 3,221,358, 12–7–65, Cl. 15—340.
Diehl: *See*—
Timm, Heinz. 3,222,571.
Dietrich, Heinz J.: *See*—
Boyd, Thomas, and Dietrich. 3,222,427.
Boyd, Thomas, and Dietrich. 3,222,428.
Boyd, Thomas, and Dietrich. 3,222,429.
Dietrich, Heinz, J., and T. Boyd, to Monsanto Chemical Co. Polymerization process using alpha-hydroxyacetophenone/monocarboxylic acid catalyst system. 3,222,424, 12–7–65, Cl. 260—880.
Dietrich, Heinz, J., and T. Boyd, to Monsanto Chemical Co. Polymerization process using hydroxyacetone/monocarboxylic acid catalyst system. 3,222,425, 12–7–65, Cl. 260—880.
Dietrich, Heinz, J., and T. Boyd, to Monsanto Chemical Co. Polymerization process using alpha-hydroxycyclohexanone/monocarboxylic acid catalyst system. 3,222,426, 12–7–65, Cl. 260—880.
Dietz, Robert E.: *See*—
Woods, William H., and Dietz. 3,222,475.
Di Matteo, Paul L., to United States of America, Navy. Ranging-blanking circuit. 3,222,671, 12–7–65, Cl. 343—7.3.
Dingus, George W., to Cabot Corp. Cell wheel rotary feeder. 3,221,949, 12–7–65, Cl. 222—362.
Display Corp.: *See*—
Nasgowitz, Donald D. 3,221,930.
Ditzler, John L., to Westinghouse Electric Corp. Oil supply systems for refrigerant compressors. 3,221,948, 12–7–65, Cl. 230—207.
Dixon Valve & Coupling Co.: *See*—
Marshall, Don J. 3,222,091.
Doblhoff, Raimund. Theatre installation. 3,221,450, 12–7–65, Cl. 52—10.
Doeh, Benjamin B.: *See*—
Sooryn, Vsevolod. 3,222,128.
Doel, Reginald G., and A. K. Jordan, to Timberland-Ellicott Ltd. Conductor stringing running board. 3,222,033, 12–7–65, Cl. 254—134.3.
Doherty, Donald W., to Queen Mfg. Co. Inc. Shelf structure. 3,221,678, 12–7–65, Cl. 108—152.
Dollinger, Francis A., to Mississippi Valley Structural Steel Co. Articulated boom structure with stabilizing structure. 3,221,771, 12–7–65, Cl. 137—615.
Dominik, Jack E.: *See*—
Riebel, Gilbert A. 3,221,929.
Dominion Engineering Works, Ltd.: *See*—
Simpson, Robert J. 3,218,839.
Don-Tal-Ez Chair Mfg. Co.: *See*—
Schneider, Berthold W. 3,222,032.
Donaldson, Charles R.: *See*—
Heines, Thomas S., Jr., and Donaldson. 3,222,336.
Donaldson, Donald J., to Kaiser Aluminum & Chemical Corp. Digesting apparatus. 3,222,141, 12–7–65, Cl. 23—290.5.
Donelson, Claris L.: *See*—
Stauffer, Fred S., and Donelson. 3,221,431.
Donn Products Inc.: *See*—
Brown, Donald A., and Downing. 3,221,846.
Downing, Lucien R., Jr., and Brown. 3,221,466.
Dor-Seal Ltd.: *See*—
Capel, Gilbert O. 3,221,456.
Doran, Richard S.: *See*—
Ingalls, James E., Doran, and Barstrom. 3,222,242.
Dorr-Oliver Inc.: *See*—
Scott, Charles H., and Raynor. 3,221,401.
Doscher, Todd M.: *See*—
Closmann, Philip J., Mattews, and Doscher. 3,221,813.
Douglas Aircraft Co., Inc.: *See*—
Weiland, Carl W. 3,221,831.
Douglas, Francis C.: *See*—
Chase, Laurence I., and Douglas. 3,222,605.
Dow Chemical Co., The: *See*—
Hoelzer, Russell L., and Lacy. 3,221,978.
Leavitt, Frederick C. 3,222,323.
Monroe, Roger F. 3,219,108.
Dowden, Dennis A., to Imperial Chemical Industries Ltd. Steam reforming of hydrocarbons. 3,222,132, 12–7–65, Cl. 23—212.
Downing, Lucien R., Jr.: *See*—
Brown, Donald A., and Downing. 3,221,846.
Downing, Lucien R., Jr., and D. A. Brown, to Donn Products, Inc. Dual purpose interlocking beam connectors. 3,221,466, 12–7–65, Cl. 52—726.
Dozier, James R.: *See*—
Shotto, Howard I., Jr., Watkins, Dozier, Faulk, and Goepfert. 3,221,816.
Drapkin, Paul E., to Ampex Corp. Wideband frequency modulation systems. 3,222,459, 12–7–65, Cl. 179—100.1.
Dreher, John A., to General Cigar Co., Inc. Web segment dispenser. 3,221,582, 12–7–65, Cl. 83—24.
Dresser Industries, Inc.: *See*—
Mellies, Norman J. 3,222,537.
Venghiattis, Alexis A. 3,221,655.
Wilson, John C. 3,221,548.
Dreyer, Allen F., to Universal Research. Block puzzle. 3,222,072, 12–7–65, Cl. 273—157.
Driv-A-Lert Corp.: *See*—
Kayser, Bernard J., Jr. 3,222,639.
Wurst, Donald O. 3,222,640.
Drummond, Warren W., to United States of America, Air Force. Method for producing conductive glass fiber yarn. 3,222,149, 12–7–65, Cl. 65—3.

Duck, Edward W., and R. Berkenbosch, to Shell Oil Co. Sulfur-vulcanizable interpolymers comprising at least one alpha-olefin and a polyvinylcycloalkane and a process for preparation. 3,222,331, 12–7–65, Cl. 260—80.5.

Duck, Edward W., R. Berkenbosch, and H. G. P. van der Voort, to Shell Oil Co. Process for the terpolymerization of monoolefins. 3,222,332, 12–7–65, Cl. 260—80.5.

Duck, Edward W., and P. M. Duinker, to Shell Oil Co. Polymerization process. 3,222,333, 12–7–65, Cl. 260—80.7.

Duck, Edward W., and J. A. Waterman, to Shell Oil Co. Polymerisation of conjugated diolefins with a cobalt or nickel compound-aluminum halide-tin hydrocarbylhydride catalyst. 3,222,348, 12–7–65, Cl. 260—94.3.

Du Pa Co., Inc.: *See*—
Thompson, Richard C., and Goodwin. 3,221,743.

Du Pont de Nemours, E. I., and Co.: *See*—
Brodoway, Nicolas. 3,222,324.
Brodoway, Nicolas. 3,222,325.
Brodoway, Nicolas. 3,222,326.
Burg, Marion. 3,222,356.
Haupt, Erich, and Koeppe. 3,221,624.
Kryniak, Henry R. 3,222,238.
MacDowell, John T. 3,222,299.
Monagle, John J., Jr. 3,222,352.
Nyce, Jack L., and Ro. 3,222,330.
Powell, Warren H. 3,222,405.
Weissman, Samuel I. 3,222,385.
Wolinski, Leon E. 3,222,314.

Dudek, John A.: *See*—
Mellen, Edward J., Jr., Webb, de Fasselle, and Dudek. 3,222,435.

Duinker, Philip M.: *See*—
Duck, Edward W., and Duinker. 3,222,333.

Duncan, Robert J.: *See*—
McCarty, Lourdes V., Biermann, Duncan, and Teichert. 3,221,767.

Dunn, Gordon H.: *See*—
Spurlin, William V., Scott, and Dunn. 3,221,827.

Düpüty, Andre: *See*—
Kaltenmark, Otto, and Düpüty. 3,221,783.

Durant Mfg. Co.: *See*—
Braatz, Clarence W. 3,221,989.

Duriron Co., Inc., The: *See*—
Luce, Walter A., and Jackson. 3,222,161.

Du Rocher, Gideon A., to Essex Wire Corp. Motor reversing circuit. 3,222,584, 12–7–65, Cl. 318—293.

Durr, Walter. Method of producing a photoconductive layer. 3,222,215, 12–7–65, Cl. 117—201.

Durrell, Louis F. Cow boy tournament game. 3,222,066, 12–7–65, Cl. 273—1.

Dury, Karl: *See*—
Reicheneder, Franz, Dury, Stummeyer, and Fischer. 3,222,159.

Dustin, Donald R., to International Business Machines Corp. First bit generator for binary tape systems. 3,222,603, 12–7–65, Cl. 328—59.

Dvirka, Miroslav, to Morse Bougler Inc. Automatic stoking grates. 3,221,679, 12–7–65, Cl. 110—36.

Dvorak, Edward A.: *See*—
Banaszak, Stephen M., and Dvorak. 3,221,955.

Dvorin, Martin, to Bausch & Lomb Inc. Rotor assembly. 3,222,001, 12–7–65, Cl. 242—18.

Dwork, Harold K. Ball construction. 3,222,065, 12–7–65, Cl. 272—67.

Dynamics Corp. of America: *See*—
Groth, Fred A., and Melaner. 3,221,472.
Jernt, Fred M. 3,221,654.
Zatsky, Norman C., and Willis. 3,221,565.

Easco Products, Inc.: *See*—
O'Connor, Thomas J. 3,222,494.

Eastern Co., The: *See*—
Dickow, Frederick P. 3,221,590.

Eastman Kodak Co.: *See*—
Coover, Harry W., Jr. 3,222,337.
Coover, Harry W., Jr., and Joyner. 3,222,344.
Greear, George R., and Tamblyn. 3,222,431.
Guillet, James E., and Towne. 3,222,327.
Nadeau, Gale F., and Pierce. 3,222,178.
Rasch, Arthur A. 3,222,175.

Eaton Mfg. Co.: *See*—
Jaeschke, Ralph L., and Wiltsey. 3,221,854.
Vandervoort, John R. 3,221,851.

Ebauches S.A.: *See*—
De Reynold, Henry. 3,222,540.

Eberly, Paul E., Jr.: *See*—
Mason, Ralph B., and Eberly. 3,222,412.

Eckert, John S. Support plate for packed tower. 3,222,040, 12–7–65, Cl. 261—94.

Eckert, John S. Support plate. 3,222,041, 12–7–65, Cl. 261—94.

Edgerton, Germeshausen & Grier, Inc.: *See*—
Reinhardt, Nicholas. 3,222,561.

Edwards, George E., to Imperial Chemical Industries Ltd. Multi-electrolytic cells. 3,222,270, 12–7–65, Cl. 204—269.

Eichbauer, Richard N.: *See*—
Markels, Michael, Jr., and Eichbauer. 3,222,231.

Eichenberger, Kurt: *See*—
Schmidt, Paul, Eichenberger, and Wilhelm. 3,222,364.

Eilingsfeld, Heinz: *See*—
Weldinger, Hans, and Eilingsfeld. 3,222,372.

Einfeld, Klaus, to Interatom, Internationale Atomreaktorbau G.m.b.H. Method and apparatus for measuring fissionable isotope concentration. 3,222,521, 12–7–65, Cl. 250—83.1.

Eitel-McCullough, Inc.: *See*—
Meacham, David D., Smith, and Talcott. 3,222,557.

Ekberg, Gustaf E., and T. D. Green. Method for manufacturing diapers and the like, and a diaper manufactured in accordance with this method. 3,221,738, 12–7–65, Cl. 128—287.

Elbogen, James S., and P. A. de Graaf, to Parker-Hannifin Corp. Excess flow controlled shut-off for pilot controlled regulator. 3,221,764, 12–7–65, Cl. 137—460.

Electrometre, S.A.: *See*—
Winiger, Edgar. 3,221,926.

Electro-Watt, Inc.: *See*—
Watt, Robert D. 3,221,667.

Electronic Associates Inc.: *See*—
Patmore, James R. 3,222,607.

Electronic Engineering Co. of California: *See*—
Huntress, Charles B., and Gabriellian. 3,222,465.
Huntress, Charles B., and Gabriellian. 3,222,490.

Electronic Sound Co.: *See*—
Kennedy, Bruce A. 3,222,577.

Electronic Specialty Co.: *See*—
Swearingen, Judson S. 3,221,510.
Swearingen, Judson S. 3,221,661.

Electronics Corp. of America. *See*—
Giuffrida, Philip. 3,222,662.
Giuffrida, Philip, and Pratt. 3,222,492.

Elektrochemische Werke Munschen A.G.: *See*—
Meyer, Heinz W. 3,222,294.

Elliott, Harold V., to General Motors Corp. Turn signal switch for a tiltable steering wheel. 3,222,472, 12–7–65, Cl. 200—61.27.

Eloranta, Vaito K., to Polaroid Corp. Photographic process for forming a photosensitive article with a processing solution spread thereon. 3,222,170, 12–7–65, Cl. 96—29.

Emblem, Harold G. Compositions for imparting water-repellent properties to fibrous materials. 3,222,200, 12–7–65, Cl. 106—271.

Emerson, Robert B.: *See*—
Osment, Harry E., and Emerson. 3,222,129.

Emmert, Dorothy G.: *See*—
Emmert, George W. and D. G. 3,221,996.

Emmert, George W. and D. G., said George assor., to said Dorothy. Irrigating device. 3,221,996, 12–7–65, Cl. 239—542.

Emery, William M. Bath tub over-flows. 3,221,347, 12–7–65, Cl. 4—206.

Engelhardt, Richard A., to Martin-Marietta Corp. System for detection of utilization of maximum available power. 3,222,535, 12–7–65, Cl. 307—66.

Enk, Eduard, F. Knorr, and H. Spes, to Wacker-Chemie G.m.b.H. Process for the recovery of methanol free and water free methylal. 3,222,262, 12–7–65, Cl. 202—39.5.

Entroputers, Inc.: *See*—
Osborne, Adam. 3,221,541.

Erickson, Arnel T. Rotating roller machine. 3,221,619, 12–7–65, Cl. 94—50.

Erickson, Henry, J. P. Gallagher, and H. G. Russell, to Sinclair Research, Inc. Catalyst demetallization. 3,222,293. 12–7–65, Cl. 252—413.

Ernault-Somua, H., Societe Anonyme: *See*—
Jean-Marie, Joseph, and Paintendre. 3,221,412.

Eschenmoser, Albert, R. Schindler, and J. Schreiber, to Ciba Corp. Anti-mitotic colchicines. 3,222,253, 12–7–65, Cl. 167—78.

Essex Wire Corp.: *See*—
Du Rocher, Gideon A. 3,222,584.
Webb, Lewis B. 3,221,612.
Webb, Lewis B. 3,222,011.

Esso Research and Engineering Co.: *See*—
Beltzer, Morton, Heath, and Tarmy. 3,222,218.
Berkowitz, Edward B., Stadtmiller, and Berkowitz. 3,222,282.
Creighton, Peter J., Nadler, and Wells. 3,222,409.
Mason, Ralph B., and Eberly. 3,222,412.
Miller, Alfred L., and Petro. 3,222,311.
Turbak, Albin F. 3,222,353.

Estern Anne G. and N. C. Articulated doll. 3,221,442, 12–7–65, Cl. 46—154.

Estern, Nell Co.: *See*—
Estern, Anne G., and Estern 3,221,442.

Ethyl Corp.: *See*—
Wall, Henry H., Jr. 3,222,259.

Euphonics Corp.: *See*—
Wood, John F., and Frisz. 3,222,461.

Evans, Arthur D., and J. S. Kilby, to Texas Instruments Inc. Low frequency amplifier employing field effect device. 3,222,610, 12–7–65, Cl. 330—38.

Evans, Dewey M., and F. W. Koepke, Jr., to Ajem Laboratories, Inc. Method and apparatus for leak testing castings. 3,221,539, 12–7–65, Cl. 73—45.2.

Evans, Harry D., and E. E. Young, to Shell Oil Co. Extraction process. 3,222,416, 12–7–65, Cl. 260—674.

Eversharp, Inc.: *See*—
Glaberson, Martin, and Kuhnl. 3,221,893.

Eyerly Aircraft Co.: *See*—
Eyerly, Russell B., and Johnson. 3,222,061.

Eyerly, Russell B., and E. M. Johnson, to Eyerly Aircraft Co. Portable amusement ride. 3,222,061, 12–7–65, Cl. 272—29.

F & M Scientific Corp.: *See*—
Ashmead, Howard L. 3,222,135.

FUU, Aktiengesellschaft: *See*—
Schoner, Stefan. 3,222,179.

Faas, Kenneth D., and I. Schrier, to Bausch & Lomb Inc. Lens blocking method and device. 3,221,378, 12–7–65, Cl. 22—58.

Fabiszewski, Edward S., and R. D. Pascinto, to Honeywell Inc. Information handling apparatus. 3,222,651, 12–7–65, Cl. 340—172.5.

Fainberg, Arnold H.: *See*—
Hauptschein, Murray, and Fainberg. 3,222,406.

Faisandier, Jacques. Hydraulic distributor valve and by-pass means. 3,221,770, 12–7–65, Cl. 137—596.13.

Falco, Vito A. Food product assembly device. 3,221,672, 12–7–65, Cl. 107—1.

Fanner Mfg. Co., The, a division of Textron, Inc.: *See*—
Schlein, Seymour N. 3,222,440.

Farbenfabriken Bayer Aktiengesellschaft: *See*—
Bollert, Volker, Fritz, Schnell, and Lotter. 3,222,302.
Dahm, Manfred. 3,222,301.
Loew, Gunther. 3,222,300.
Nischk, Gunther, Mennicken, and Wagner. 3,222,322.
Von Brachel, Hanswilli, and Jordan. 3,222,198.
Von Brachel, Hanswilli, and Bayer. 3,222,387.

Farber, Arnold S., to International Business Machines Corp. Monostable logic circuit. 3,222,549, 12–7–65, Cl. 307—88.5.

Farrand, William A., to North American Aviation, Inc. Magnetic position encoder. 3,222,660, 12–7–65, Cl. 340—199.

Farrar, Ralph C., and F. E. Naylor, to Phillips Petroleum Co. Process of producing cis-1,4 polybutadiene with a 3-component catalyst. 3,222,347, 12–7–65, Cl. 260—94.3.

Farrell, John W.: *See*—
Thompson, James, Farrell, and Lamont. 3,222,163.

Farrington Electronics Inc.: *See*—
Whitesell, William A., and Cook. 3,222,453.

Farris, Victor W. Safety valve. 3,221,765, 12–7–65, Cl. 137—492.

Farthouat, Jean-Marie, to Rousuel-UCLAF, S.A. Cyclic derivatives of aryiboronic acids and 1,2- and 1,3-diols and process for preparing same. 3,222,379, 12–7–65, Cl. 260—340.9.

Fasola, Henry, Jr., to D. Blonder, as assignee for creditors of Brass Copper Lighting Fixture Co. Switching device having magnetic detent action. 3,222,474, 12–7–65, Cl. 200—67.

Faulk, Bill L.: *See*—
Shotto, Howard I., Jr., Watkins, Dozier, Faulk, and Goepfert. 3,221,816.

Faust, John A., and M. Sahyun; said Faust assor. to said Sahyun, d.b.a. Sahyun Laboratories. Cyclopentyl-benzylamines. 3,222,399, 12–7–65, Cl. 260—570.5.

Federal-Mogul-Bower Bearings, Inc.: *See*—
Gould, James C., and Gallatin. 3,221,392.

Fedler, Julian L.: *See*—
Carter, Sidney T., and Fedler. 3,222,240.

Feinberg, Albert E., and E. Csernobil, to Advance Transformer Co. Method of making laminated electromagnetic cores and product resulting therefrom. 3,222,626, 12–7–65, Cl. 336—210.

Feldhoff, Heinrich: *See*—
Schmid, Hans, and Feldhoff. 3,222,491.

Feldman, Peter B., to Monsanto Chemicals Ltd. Food container made of synthetic resin and having its inner surface modified by treatment with an electric discharge. 3,222,188, 12–7–65, Cl. 99—171.

Fellmann, Robert P., and M. J. Kampf, to Rohm & Haas Co. Polymerization process using an organomagnesium compound as catalyst. 3,222,339, 12–7–65, Cl. 260—89.5.

Felts, James A. Device for vaporization of volatile anesthetic liquids. 3,221,737, 12–7–65, Cl. 128—188.

Ferrand, Claude J. H. M. P.: *See*—
Becanne, Robert L. P., and Ferrand. 3,222,138.

Ferrara, Rudolph A., to General Motors Corp. Retractable seat belt assembly. 3,222,107, 12–7–65, Cl. 297—388.

Ferrill, Richard M., Jr., to Hercules Powder Co. Halogenation of phthalocyanines. 3,222,377, 12–7–65, Cl. 260—314.5.

Ferris, John T., to Bausch & Lomb Inc. Borescope utilizing a stepped cone reflector. 3,221,593, 12–7–65, Cl. 88—14.

Ferro Mfg. Corp.: *See*—
Pickles, Joseph. 3,222,025.

Fesser, Erich, to Klockner-Humboldt-Deutz Aktiengesellschaft. Device for checking the contour, especially trochoidal contour surfaces, of work pieces. 3,221,413, 12–7–65, Cl. 33—174.

Fiat Societa per Azione: *See*—
Delzanno, Giuseppe. 3,222,495.

Field, Almeron J.: *See*—
Stratton, Hal, Bauer, Field, and Crooke. 3,221,506.

Fierce, William L.: *See*—
Welchman, Roger L., and Fierce. 3,222,123.

Fink, Charles, to Litton Systems, Inc. Lobe switching directional antenna with directional couplers for feeding and phasing signal energy. 3,222,677, 12–7–65, Cl. 343—854.

Fink, Walter, to Monsanto Co. Organosiloxane nitrates. 3,222,319, 12–7–65, Cl. 260—46.5.

Firmenich & Cie: *See*—
Winter, Max. 3,222,187.

Fischer, Adolf: *See*—
Reicheneder, Franz, Dury, Stummeyer, and Fischer. 3,222,159.

Fischler, Robert M.: *See*—
Fischler, Wanda B., and Mann. 3,221,428.

Fischler, Wanda B., and M. M. Mann, to R. M. Fischler and I. Mann. Transparent encasement for documents and the like. 3,221,428, 12–7–65, Cl. 40—2.2.

Fisher & Ludlow Ltd.: *See*—
Maxwell, Stewart A. 3,221,861.

Fisher, Robert E., to Up-Right, Inc. Scaffold with folding stairway. 3,221,837, 12–7–65, Cl. 182—115.

Fitzgibbon, George E., H. Packer, and C. Huetten, to P. R. Mallory & Co., Inc. Semiconductor rectifier cell unit and method of utilizing the same. 3,222,579, 12–7–65, Cl. 317—234.

Flanagan, Edward R.: *See*—
Sartorio, David R., and Flanagan. 3,222,601.

Flegel, George J., to Josam Mfg. Co. Interlocking grating and framing system for trench drains. 3,221,616, 12–7–65, Cl. 94—34.

Fletcher, Frederick O., and A. F. Taylor, to United Kingdom Atomic Energy Authority. Nuclear fuel element with improved end cap assembly. 3,222,256, 12–7–65, Cl. 176—79.

Flinn, Richard A., W. L. Kehl, B. K. Schmid, and M. M. Stewart, to Gulf Research & Development Co. Hydrogenation of mineral oils in the presence of a minor amount of a hydrogenating catalyst and a major amount of a specific type of activated alumina. 3,222,273, 12–7–65, Cl. 208—112.

Fluid Dynamics Inc.: *See*—
Olson, Delwyn L. 3,222,092.

Fluid Dynamics (Proprietary) Ltd.: *See*—
Turner, Lawrence A. 3,221,504.

Flynn, Edwin H., to Eli Lilly and Co. Arylaminoalkyl cephalosporins. 3,222,362, 12–7–65, Cl. 260—243.

Flynn, Edwin H., to Eli Lilly and Co. Carbocycloxyalkyl cephalosporins. 3,222,363, 12–7–65, Cl. 260—243.

Fockens, Foppe H.: *See*—
Van der Lely, Cornelis, Jonkers, and Fockens. 3,221,821.

Follows, John: *See*—
Hoffmann, Wolfgang, Follows, and Taylor. 3,221,474.

Fono, Andrew: *See*—
May, Ernest M., and Fono. 3,222,350.
May, Ernest M., and Fono. 3,222,351.

Fontenote, William J., and E. D. Lobb, to Texas Instruments Inc. Shunt motor control circuit. 3,222,586, 12–7–65, Cl. 318—308.

Foote James F.: *See*—
Wismer, Marco, Le Bras, Peffer, and Foote. 3,222,357.

Forbes, Ernest E., Jr. Ramjet propulsion system. 3,221,497, 12–7–65, Cl. 60—35.6.

Ford Motor Co.: *See*—
Belsky, Charles. 3,222,101.
Snabes, Casmir J. 3,222,077.

Forestier, Henri G. P., to Compagnie Francaise Thomson-Houston. Radar system with continuous sequencing means. 3,222,672, 12–7–65, Cl. 343—7.5.

Forkner, John H., to The Pillsbury Co. Method of manufacturing a food product. 3,221,675, 12–7–65, Cl. 107—54.

Fornes, Gaston G., to Institute of Textile Technology. Cancentering apparatus. 3,221,874, 12–7–65, Cl. 19—159.

Forrest, Joseph R.: *See*—
Rhodes, William D., and Forrest. 3,221,895.

Forsström, Bo G., to LKB-Produkter Aktiebolag. Sample collector. 3,221,781, 12–7–65, Cl. 141—130.

Forte Joseph: *See*—
Reuben, Alan L., Russo, and Forte. 3,221,429.

Foster, Kenneth W., to Shell Oil Co. Underwater locating device. 3,222,634, 12–7–65, Cl. 340—3.

Foster, Scott H.: *See*—
Tashlick, Irving, and Foster. 3,222,119.

Fox, Leonard J.: *See*—
Jubilee, Benjamin D., and Fox. 3,222,419.

Franck, Jack V., and P. S. Broadhead, to United States of America, Atomic Energy Commission. Photosensitive light beam location information device. 3,222,526, 12–7–65, Cl. 250—203.

Frank, Heinrich H.: *See*—
Small, Charles B., Messe, and Frank. 3,221,962.

Franklin, Le Roy H., and R. M. Trainer, to Overseas Finance and Trading Co. High voltage current limiting fuse. 3,222,479, 12–7–65, Cl. 200—120.

Frantz, S. G., Co., Inc.: *See*—
Frantz, Samuel G. 3,221,882.

Frantz, Samuel G., to S. G. Frantz, Co., Inc. Magnetic-restrictive separator. 3,221,882, 12–7–65, Cl. 210—223.

Frantz, William: *See*—
Borcher, Charles A., and Frantz. 3,221,562.

Frantz, William, to Martin-Marietta Corp. Error sensitive fluid operated actuator. 3,221,609, 12–7–65, Cl. 91—405.

Franz, Arvel O., and B. P. Lovinggood. Apparatus for preparation of solids in liquid dispersions. 3,222,036, 12–7–65, Cl. 259—44.

Freda, Francis. Controllably adjustable mounting means. 3,222,052, 12–7–65, Cl. 269—69.

Fredrickson, John H.: *See*—
Brundige, Maurice M., Obenshain, Fredrickson, and Kohne. 3,222,209.

Freeberg, Edgar A.: *See*—
DeSanto, John, and Freeberg. 3,221,917.

Fried, Josef, to Olin Mathieson Chemical Corp. Dioxasolylpenicillins. 3,222,360, 12–7–65, Cl. 260—239.1.

Friedman, Herbert, and T. A. Chubb. Radiation sensitive spark tube. 3,222,560, 12–7–65, Cl. 313—93.

Friedrich, Victor L., to United States of America, Army. Electronic strip camera using doppler shift for determining relative position of objects. 3,222,673, 12–7–65, Cl. 343—8.

Friese, George F.: *See*—
Brister, Paul M., Carpenter, Friese, Harvey, and Leonard. 3,221,925.

Frisz, John: *See*—
Wood, John F., and Frisz. 3,222,461.

Fritz, Gerhard T.: *See*—
Böllert, Volker, Fritz, Schnell, and Lotter. 3,222,302.

Fritz, Harry E., and F. M. Galloway, to H. K. Porter, Co., Inc. Kinkproof fire hose. 3,221,774, 12–7–65, Cl. 138—125.

Fritz, Karl. Annealing furnace. 3,222,042, 12–7–65, Cl. 263—3.

Frode Lund Aktiebolag: *See*—
Swallert, Sven A. 3,222,099.

Frode, Per E. L.: *See*—
Borgstrom, Carl G. L., and Frode. 3,222,010.

Fruhling, Rolf: *See*—
Rumberg, Alfred, Krauss, Rittershausen, Damgen, and Fruhling. 3,222,445.

Fujii, Kiyoshi, S. Imoto, J. Ukida, and M. Matsumoto, to Kurashiki Rayon Co., Ltd. Method of producing polyvinyl formate of high crystallinty. 3,222,338, 12-7-65, Cl. 260—89.1.

Fujii, Tatsuo. Camera diaphragms with square openings. 3,221,630, 12-7-65, Cl. 95—64.

Fuketa, Masahiko. Mechanism for operating the reflecting mirror of single lens reflex cameras. 3,221,626, 12-7-65, Cl. 95—42.

Fuller, Evander K., to Western Electric Co., Inc. Trigger circuit. 3,222,539, 12-7-65, Cl. 307—88.5.

Fuller, Glenwood A., to AMP Inc. Pin and socket connector assembly adapted for solder connection. 3,222,632, 12-7-65, Cl. 339—256.

Fuller, Lloyd W.: *See*—
Clark, John R., David, and Fuller. 3,222,570.

GTC Corp.: *See*—
Garwin, Edward L., and Heflinger. 3,222,449.

Gabrielian, Henry: *See*—
Huntress, Charles B., and Gabrielian. 3,222,465.
Huntress, Charles B., and Gabrielian. 3,222,490.

Gaetani, Ermanno, to Aziende Colori Mazionali Acna S.p.A. Disazo dyes. 3,222,355, 12-7-65, Cl. 260—186.

Gager, Charles H., and A. E. Ruvin, to United States of America, Army. Apparatus for double cancellation utilizing one delay line in a moving target indicating system. 3,222,602, 12-7-65, Cl. 325—476.

Gallagher, James P.: *See*—
Erickson, Henry, Gallagher, and Russell. 3,222,293.

Gallapoo, Isaac O., to The Babcock & Wilcox Co. Closed circuit heat exchange system. 3,221,710, 12-7-65, Cl. 122—1.

Gallatin, Victor: *See*—
Gould, James C., and Gallatin. 3,221,392.

Galloway, Frederick M.: *See*—
Fritz, Harry E., and Galloway. 3,221,774.

Gardiner, Paul C., to United States of America, Navy. Target angle discriminator for directionally sensitive wave energy receivers. 3,221,693, 12-7-65, Cl. 114—23.

Gardner, Elmer C. Mechanical couplings for multi-section floatable assembly. 3,221,696, 12-7-65, Cl. 114—43.5.

Gardner, Robert S., to United States of America, Navy. Time delay circuits for echo controlled steering gear. 3,221,694, 12-7-65, Cl. 114—23.

Garrett, Michael E., to The British Oxygen Co. Ltd. Cooling systems for gases. 3,221,511, 12-7-65, Cl. 62—172.

Garside, Wayne H.: *See*—
Hughes, Robert L., Hollingsworth, and Garside. 3,221,730.

Garwin, Edward L., and L. O. Heflinger, to GTC Corp. Magnetic shield arrangements. 3,222,449, 12-7-65, Cl. 174—35.

Garwin, Richard L., to International Business Machines Corp. Refrigeration method and apparatus. 3,221,509, 12-7-65, Cl. 62—6.

Gastel, Joseph P.: *See*—
Spinuzza, Russell A. 3,221,936.

Gaston, William R., and D. O. Richards, to Owens-Corning Fiberglas Corp. Thermal insulation. 3,222,243, 12-7-65, Cl. 161—113.

Gauld, William J.: *See*—
Roes, John B., Gauld, and Pedersen. 3,221,508.

Gauthier, Alfred, G.m.b.H.: *See*—
Rentschler, Waldemar T. 3,221,623.
Rentschler, Waldemar T. 3,221,629.

Gecsey, John: *See*—
Spaoff, Meyer, and Gecsey. 3,221,393.

Gehring, Robert W.: *See*—
Saunders, Hollis S., and Gehring. 3,222,219.

Gelkler, John A., and F. T. Pitts, to United States of America, Navy. Coaxial line tuner having two spaced adjustable shunt inductors. 3,222,623, 12-7-65, Cl. 333—73.

Geis, Heinz, to M. Grundig. Tabulating arrangement for business machines. 3,221,864, 12-7-65, Cl. 197—179.

Geisel, Herbert: *See*—
Seulen, Gerhard, and Geisel. 3,221,536.

Gelardi, Joseph T., to American Technical Machinery Corp. Power transmission mechanism. 3,221,566, 12-7-65, Cl. 74—68.

Gelling, Helmut, to Precisa AG, Rechenmaschinenfabrik. Printing device with zero suppressing means. 3,221,644, 12-7-65, Cl. 101—93.

General Aniline & Film Corp.: *See*—
Grosser, Frederick, Leibowitz, and Wood. 3,222,329.
Stefcik, Andrew, and Woodward. 3,221,480.

General Cigar Co., Inc.: *See*—
Dreher, John A. 3,221,582.

General Dynamics Corp.: *See*—
Malmberg, John H. 3,221,833.

General Electric Co.: *See*—
Anderson, Cleve R., and Alter. 3,222,124.
Birmingham, Roy J. 3,221,806.
Bobo, Melvin. 3,222,017.
Burton, Coleman H., and Mitchell. 3,222,644.
De Jean, Milton V., and Lacy. 3,222,234.
Golik, Edwin R. 3,222,455.
Gordon, Walter H., Jr. 3,222,497.
Gutzwiller, Frank W. 3,222,583.
Hueschen, Robert E. 3,222,558.
Illyn, Alexis V., Palmer, and Popoff. 3,222,283.
Kellogg, Harry L. 3,222,592.
Lord, Harold W. 3,222,573.
More, Philip J. 3,222,478.
Powell, Walter F., Jr. 3,222,572.
Prescott, Paul I., and Selin. 3,222,369.
Sisler, Robert R. 3,222,021.
Thompson, Paige W. 3,222,576.
Urbank, Joseph R. 3,222,115.

General Instrument Corp.: *See*—
Pitts, John J. 3,221,394.

General Motors Corp.: *See*—
Ballou, Richard P. 3,221,800.
Bremer, Robert D., and Van Scoyk. 3,221,396.
Elliott, Harold V. 3,222,472.
Ferrara, Rudolph A. 3,222,107.
Gleason, Richard J., Morris, and Ragsdale. 3,221,960.
Jacobs, James W. 3,221,525.
Jacobs, James W., and Long. 3,221,524.
Julian, Clarence L., and Young. 3,221,725.
Meyer, Barthold F. 3,222,467.
Roehrs, Guenter W. 3,221,527.
Shampton, John P. 3,221,842.
Shellhause, Ronald L. 3,221,502.
Stout, William D. 3,222,106.
Wentworth, Joseph T. 3,221,724.
Wernig, James H., and Hallenbeck. 3,222,103.
Widdoweon, Richard E. 3,221,763.
Williamson, Alexander. 3,221,723.

Gens, Theodore A.: *See*—
Clark, Walter E., and Gens. 3,222,289.

Geolograph Co., The: *See*—
Van Winkle, Roy L., Lankford, and Carpenter. 3,222,679.

George, Royston A.: *See*—
Manners, John H. R., and George. 3,222,538.

Georgia-Pacific Corp.: *See*—
Bahnsen, Erwin B. 3,221,586.

Gerlach, Klaus: *See*—
Sommer, Erwin, and Gerlach. 3,222,244.

Gerus, Michael. Lock for telescoping rods. 3,222,095, 12-7-65, Cl. 287—2.

Gesellschaft zur Forderung der Forschung an der Eldg Techn. Hochschule: *See*—
Greuter, Andre, and Korom. 3,221,487.

Gessner, Edward H. Hinged plastic box. 3,221,919, 12-7-65, Cl. 220—31.

Gevaert Photo-Producten N.V.: *See*—
Jacken, Jan. 3,222,176.
Rott, André, and Verelst. 3,222,174.
Sano, Karel M., and Van Landeghem. 3,221,620.
Vanheerentals, Jacques L. 3,222,167.

Gewirtz, Stanley, to Solid States Systems, Inc. Differential amplifier metering circuit with temperature compensation. 3,222,599, 12-7-65, Cl. 324—123.

Gewirtz, Stanley, to Solid State Systems, Inc. Asymmetrical differential amplifier measuring circuit including translators and thermal compensation means. 3,222,600, 12-7-65 Cl. 324—123.

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Giannini Scientific Corp.: *See*—
Winzeler, John W., and Tucker. 3,222,569.

Gilleeny, James F., to Hoke Inc. Valve with means for preventing accidental disassembly. 3,222,027, 12-7-65, Cl. 251—264.

Girling Ltd.: *See*—
Davis, John W., and Wells. 3,221,844.
Wilkins, Douglas B. 3,222,048.

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Giuffrida, Philip, to Electronics Corp. of America. Signalling apparatus incorporating a differential relay. 3,222,662, 12-7-65, Cl. 340—237.

Giuffrida, Philip, and J. Pratt, to Electronics Corp. of America. Manufacture of electronic components. 3,222,492, 12-7-65, Cl. 219—50.

Giuinzza, Pietro, and A. Schoen, to O.M.C.S.A. Officine Meccaniche Cigardi S.p.A. Circular knitting machine for the manufacture of stockings. 3,221,516, 12-7-65, Cl. 66—8.

Glaberson, Martin, and L. K. Kuhni, to Eversharp, Inc. Article display device. 3,221,893, 12-7-65, Cl. 211—59.

Glass, Arthur M., to Polaroid Corp. Collapsible fluid container. 3,221,942, 12-7-65, Cl. 222—107.

Glasser, Albert A. Padded brassiere. 3,221,748, 12-7-65, Cl. 128—480.

Gleason, Richard J., C. W. Morris, and L. B. Ragsdale, to General Motors Corp. Car top carrier. 3,221,960, 12-7-65, Cl. 224—42.1.

Glynn, Theodore W., to American-Saint Gobain Corp. Window construction and glass block for use therein. 3,221,460, 12-7-65, Cl. 52—616.

Goddard, Daniel R. Musical instrument. 3,221,443, 12-7-65, Cl. 46—174.

Godshall, Albert L., and A. E. Moore, to Ametek, Inc. Rake. 3,221,486, 12-7-65, Cl. 56—400.17.

Godtfredsen, Wagn O., to Lovens Kemiske Fabrik Ved A. Kongsted. 6-trifluoromethyl steroids and methods for their production. 3,222,383, 12-7-65, Cl. 260—397.4.

Goebeler, Robert: *See*—
Bazata, Joseph F., and Goebeler. 3,221,532.

Goepfert, Benjamin L.: *See*—
Shotto, Howard I., Jr., Watkins, Dozier, Faulk, and Goepfert. 3,221,816.

Goetz, George J., to Te Industries, Inc. Wire stripper. 3,221,576, 12-7-65, Cl. 81—9.5.

Gold, Bert J. Illuminated sign. 3,221,432, 12-7-65, Cl. 40—130.

Golik, Edwin R., to General Electric Co. Aural stereophonic balance indicator. 3,222,455, 12-7-65, Cl. 179—1.

Goodman, Abraham M. Elastic traction device and scale therefor. 3,221,735, 12-7-65, Cl. 128—75.

Goodman Mfg. Co.: *See*—
Ricker, Conrad J., and Reilly. 3,221,868.

Goodwin, Robert J., and F. L. Becker, to Gulf Research & Development Co. Grouting method. 3,221,505, 12-7-65, Cl. 61—36.

Goodwin, Walter H.: *See*—
Thompson, Richard C., and Goodwin. 3,221,743.

Gordon, Walter H., Jr., to General Electric Co. Electrically heated bedcover. 3,222,497, 12-7-65, Cl. 219—212.

Gorike, Rudolf, to Akustische u. Kino-Gerate Gesellschaft m.b.H. Sound transducer for dictating equipment. 3,222,463, 12-7-65, Cl. 179—115.5.

Gorman, James M., and V. H. Hannah, to Norris Grain Co. Method of preparing a dried egg product. 3,222,194, 12-7-65, Cl. 99—210.

Gorman, Lee V., to Texas Instruments Inc. Aluminum-germanium contact. 3,222,630, 12-7-65, Cl. 338—322.

Gormley, John B. Lifting and supporting device. 3,222,031, 12-7-65, Cl. 254—114.

Gormley, John B. Implement supporting device with a standard supported implement. 3,222,451, 12-7-65, Cl. 174—70.

Gort, William J., and J. J. Tomassi, Jr., to Corning Fibre Box. Impact-resistant glass-lined containers. 3,221,915, 12-7-65, Cl. 215—13.

Gosselin, R. A., & Co., Inc.: *See*—
Gosselin, Raymond A. 3,222,086.

Gosselin, Raymond A., to R. A. Gosselin & Co., Inc. Method and means for reproducing written subject matter including drug prescription data. 3,222,086, 12-7-65, Cl. 282—23.

Gould, Gerald J.: *See*—
Blumberg, Marvin E., and Gould. 3,222,384.

Gould, James C., and V. Gallatin, to Federal-Mogul-Bower Bearings, Inc. Method of making bearings. 3,221,392, 12-7-65, Cl. 29—149.5.

Grabmaier, Josef, to Siemens & Halske Aktiengesellschaft. Method for producing highly pure rod-shaped semiconductor crystals and apparatus. 3,222,217, 12-7-65, Cl. 117—213.

Grabowsky, Murray G.: *See*—
Litwhiler, Danny, and Grabowsky. 3,222,067.

Grace, W. R., & Co.: *See*—
Baskin, Herbert A. 3,222,126.
Ketley, Arthur D. 3,222,342.

Gracza, Rezsoe: *See*—
Rozsa, Tibor A., Gracza, Manning, and Harrel. 3,222,183.

Grafex Corp.: *See*—
Bernstein, Alfred M. 3,221,631.

Grall, John G., E. B. Nickles, R. J. Van De Hey, and J. D. West, to Manitowac Engineering Corp. Crane drive system. 3,221,896, 12-7-65, Cl. 212—38.

Granberg, Mauritz L., to Sperry Rand Corp. Transition time delay testing device. 3,222,595, 12-7-65, Cl. 324—57.

Grandperret, Rene, to Lentilles Ophtalmiques Rationnelles. Methods of producing optical and ophthalmic lenses from thermosetting resin materials. 3,222,432, 12-7-65, Cl. 264—1.

Gray, Allan P.: *See*—
Cavallito, Chester J., and Gray. 3,222,370.

Gray, George W., to Radio Corp. of America. Detection apparatus. 3,222,637, 12-7-65, Cl. 340—38.

Great Lakes Chemical Corp.: *See*—
Belohlav, Leo R., and Underhill. 3,222,276.

Greear, George R., and J. W. Tamblyn, to Eastman Kodak Co. Printable polyethylene containing oxidized thermally degraded polyethylene. 3,222,431, 12-7-65, Cl. 260—897.

Green, Joe T., to United States of America, Atomic Energy Commission. Leak valve. 3,222,026, 12-7-65, Cl. 251—5.

Green, Milton, and H. G. Rogers, to Polaroid Corp. Photographic products, compositions and processes employing azo dye developers. 3,222,169, 12-7-65, Cl. 96—29.

Green, Tord D.: *See*—
Ekberg, Gustaf E., and Green. 3,221,738.

Greenberg, Gilbert S., Jr.: *See*—
Annis, Martin, Clark, Greenberg, Paolini, and William. 3,221,731.

Greenberg, Nathan. Carpet binding machine. 3,221,685, 12-7-65, Cl. 112—138.

Greene, Franklin R. Methods of shoe manufacture using a radio frequency dielectric heater. 3,221,353, 12-7-65, Cl. 12—142.

Gregoire Engineering and Development Co.: *See*—
Gregoire, Resta S. 3,221,452.

Gregoire, Resta S., to Gregoire Engineering and Development Co. Frost barrier and vent. 3,221,452, 12-7-65, Cl. 52—95.

Greubel, Paul W., to Interchemical Corp. Planographic printing improvements. 3,221,650, 12-7-65, Cl. 101—149.2.

Greuter, Andre, and A. Korom, to Gesellschaft zur Forderung der Forschung an der Eldg Techn. Hochshule. Electric pocket or wrist-watch. 3,221,487, 12-7-65, Cl. 58—23.

Griffin, Thomas J., Jr.: *See*—
Beatenbough, Charles M., and Griffin. 3,222,597.

Grob & Co. Aktiengesellschaft: *See*—
Koch, Bernhard. 3,221,777.

Grommes, John. Golf ball cleaner. 3,221,355, 12-7-65, Cl. 15—160.

Gronlund, Ernst H. Boat support. 3,221,899, 12-7-65, Cl. 214—1.

Grosser, Frederick, M. R. Leibowitz, and A. S. Wood, to General Aniline & Film Corp. Terpolymers. 3,222,329, 12-7-65, Cl. 260—80.5.

Grossman, Stanley J. Differential inclined railway transit means. 3,221,507, 12-7-65, Cl. 61—67.

Groth, Fred A., and P. Meisner, to Dynamics Corp. of America. Packaging machine. 3,221,472, 12-7-65, Cl. 53—184.

Grove, Marvin H. Valve construction. 3,222,028, 12-7-65, Cl. 251—327.

Groves, Katherine B.: *See*—
Smith, Walter H. B. 3,221,604.

Grundig, Max: *See*—
Geis, Heinz. 3,221,864.

Grunfeld, Michael. Beam construction. 3,221,461, 12-7-65, Cl. 52—376.

Guerin, Pierre, S.A.: *See*—
Jagoueix, Robert. 3,221,407.

Guerth, Fritz A. Drive mechanism for tape recorders and/or reproducers. 3,222,008, 12-7-65, Cl. 242—55.14.

Guillet, James E., and E. B. Towne, to Eastman Kodak Co. Peroxide catalysts and polymerization processes employing the same. 3,222,327, 12-7-65, Cl. 260—80.

Gulf Research & Development Co.: *See*—
Ballou, Edward V., and Barth. 3,222,133.
Belo, George, and Churchill. 3,222,145.
Bercik, Paul G., Henke, and Moore. 3,222,272.
Beuther, Harold, Dedinas, and Henke. 3,222,411.
Flinn, Richard A., Kebl, Schmid, and Stewart. 3,222,273.
Goodwin, Robert J., and Becker. 3,221,505.
Swift, Harold E. 3,222,295.

Gunkel, Walter A., to Southwest Research Institute. Ultrasonic inspection system. 3,221,544, 12-7-65, Cl. 73—67.8.

Gurwitcz, David: *See*—
Heyman, Horace W., Hambleton, and Gurwitcz. 3,222,582.

Gustin, Daniel S., to Sylvania Electric Products Inc. Electric discharge device. 3,222,556, 12-7-65, Cl. 313—25.

Gustin, Giuliano. Control cam mechanism. 3,221,686, 12-7-65, Cl. 112—158.

Guthrie, James A.: *See*—
Hess, Frank R., and Guthrie. 3,222,136.

Guthrie, James E.: *See*—
Wyckoff, Kenneth K., and Guthrie. 3,222,251.

Guthrie, Magdelene: *See*—
Wyckoff, Kenneth K., and Guthrie. 3,222,251.

Gutierrez, Peter P. Wind operated toy. 3,221,440, 12-7-65, Cl. 46—58.

Gutshall, Charles E., to Illinois Tool Works Inc. Double flanged washer. 3,221,793, 12-7-65, Cl. 151—38.

Gutzwiller, Frank W., to General Electric Co. Control systems. 3,222,583, 12-7-65, Cl. 318—246.

H & H Plastics Mfg. Co.: *See*—
Hummel, Raymond J. 3,221,341.

Haake, Frederick L. Ramjet motor with multi-stage burning. 3,221,496, 12-7-65, Cl. 60—35.6.

Haeber, John A., to Shell Oil Co. Underwater blowout preventer. 3,222,075, 12-7-65, Cl. 277—9.

Haeber, John A., to Shell Oil Co. Wellhead connector with diagonally directed latches. 3,222,088, 12-7-65, Cl. 285—18.

Hale, Andrew: *See*—
Bailey, Harold G., and Hale. 3,221,364.

Halkey-Roberts Corp.: *See*—
De See, Peter G. 3,221,952.

Hall, Donivan L., R. F. Orr, and R. B. Williams, Jr., to Toledo Scale Corp. Weight and center of gravity computing apparatus. 3,221,543, 12-7-65, Cl. 73—65.

Hall, George R.: *See*—
Cookerly, Jack C., and Hall. 3,222,447.

Hall, Walter J., to Sawyers Research Development Corp. Detachable control means for slide projectors or the like. 3,221,598, 12-7-65, Cl. 88—28.

Halliden, Andrew R., to Hazeltine Research, Inc. Stroboscopic readout of display tape. 3,222,666, 12-7-65, Cl. 340—324.

Hallenbeck, Virgil R.: *See*—
Wernig, James H., and Hallenbeck. 3,222,103.

Halliburton Co.: *See*—
Hower, Wayne F. 3,221,814.

Halm Instrument Co., Inc.: *See*—
Lyon, Floyd A., and Konazewski. 3,222,056.

Halsey, Homer P., to Reserve Mining Co. Motor maintenance rack. 3,221,400, 12-7-65, Cl. 29—205.

Hambleton, James: *See*—
Heyman, Horace W., Hambleton, and Gurwitcz. 3,222,582.

Hamelink, William B., and C. E. Swanson, to Honeywell Inc. Burner control apparatus. 3,221,779, 12-7-65, Cl. 158—28.

Hamilton Cosco, Inc.: *See*—
Hamilton, Earl F., Moore, and Lay. 3,222,113.

Hamilton, Earl F., D. L. Moore, and R. B. Lay, to Hamilton Cosco, Inc. Article of furniture. 3,222,113, 12-7-65, Cl. 312—195.

Hamilton, Robert H.: *See*—
Simpkins, Alan B., and Hamilton. 3,222,635.

Hammer, Sigwald M., to Sinclair Research, Inc. Supervisory remote control system. 3,222,646, 12-7-65, Cl. 340—163.

Hammond, John E.: *See*—
Steiner, Robert H., Simpson, and Hammond. 3,222,191.

Hammond, John E., to National Distillers and Chemical Corp. Polyolefin packaging film. 3,222,210, 12-7-65, Cl. 117—68.

Hamory, Robert J. Molded blocks and load-bearing walls constructed thereof. 3,221,459, 12-7-65, Cl. 52—606.

Hampson, Horace N., to Shell Oil Co. Tertiary aminophenol catalytic polyurethane production. 3,222,303, 12-7-65, Cl. 260—2.5.

Hancock, James E., to Hancock Mfg. Co. Rake-type loader for scraper. 3,221,424, 12-7-65, Cl. 37—129.

Hancock Mfg. Co.: *See*—
Hancock, James E. 3,221,424.

Hanes Hosiery Mills Co.: *See*—
Nebel, Max B. 3,221,522.

Hankscraft Co.: *See*—
Conlin, Peter, and Schulz. 3,222,499.
Wengel, Sheldon M. 3,221,666.

Hannah, Verl H.: *See*—
Gorman, James M., and Hannah. 3,222,194.

Hanrahan, Francis P., to United States of America, Agriculture. Method of spray drying liquid food products. 3,222,193, 12–7–65, Cl. 99—203.

Hansen, Quinten A., to R. H. and R. N. Stearns. Spring-applied magnetically-released brake. 3,221,845, 12–7–65, Cl. 188—171.

Hansley, Virgil L., and F. K. Morgan, to National Distillers and Chemical Corp. Process for preparing sodium hydride. 3,222,288, 12–7–65, Cl. 252—182.

Harbison-Walker Refractories Co.: *See*—
Davies, Ben, and Weaver. 3,222,196.
Miller, Eldon D., Jr., and Scott. 3,221,559.

Hardesty, Thomas K. C., and A. J. Sondheimer, to United States of America, Navy. Electrical pull switch utilizing spring biased plunger. 3,222,485, 12–7–65, Cl. 200—161.

Harding, Francis, to St. Regis Paper Co. Plastic valve bag. 3,221,789, 12–7–65, Cl. 150—9.

Harding, George K., Jr.: *See*—
Beasley, Silas V., and Harding. 3,221,729.

Hardings Brothers, Inc.: *See*—
Parsons, Hubert J., and Peterson. 3,221,578.

Hardy, Charles D., Jr., and F. Jeronimus, to Fritz Buser, A.G., Maschinenfabrik. Screen printing apparatus. 3,221,646, 12–7–65, Cl. 101—115.

Harel, Abraham, to United States of America, Atomic Energy Commission. Data processing. 3,222,670, 12–7–65, Cl. 340—347.

Harmon, Major K., Jr., to The Frank F. Taylor Co. Walker stroller. 3,222,081, 12–7–65, Cl. 280—36.

Harper, Harold F., B. W. Lee, and A. Davies, to Pilkington Brothers Ltd. Method and apparatus for the production of bent toughened glass. 3,222,155, 12–7–65, Cl. 65—103.

Harrel, Chastain G.: *See*—
Rozsa, Tibor A., Gracza, Manning, and Harrel. 3,222,183.

Harriger, Keith A., to United States of America, Navy. Stable blocking oscillator for generation of asymmetric bidirectional current pulses. 3,22,616, 12–7–65, Cl. 331—113.

Harris, Alva F.: *See*—
Barrett, Gerald R., and Harris. 3,222,341.

Harris, Alva F., and F. Rodrigues, to Monsanto Co. Novel polymerization process using a catalyst system comprising an arylethylene oxide and oxygen. 3,222,430, 12–7–65, Cl. 260—880.

Harris, Alva F., to Monsanto Co. Process for preparing bead polymers in aqueous medium containing calcium phosphate and an amino polyacetic acid compound. 3,222,340, 12–7–65, Cl. 260—93.5.

Harryman, Paul D., and D. T. Oakes, to Monsanto Co. Method for improving the yield of an attapulgite clay. 3,222,278, 12–7–65, Cl. 252—8.5.

Harshaw Chemical Co., The: *See*—
Hay, John O. 3,222,148.

Hart, Paul A. H., and G. H. Plantinga, to North American Philips Co., Inc. Noise generator for microwaves comprising a gas discharge tube within a waveguide. 3,222,614, 12–7–65, Cl. 331—78.

Hartman Luggage Co.: *See*—
O'Neil, Harvey L. 3,221,848.

Hartmann Mfg. Co.: *See*—
Hartmann, Philip. 3,221,665.

Hartmann, Philip, to Hartmann Mfg. Co. Hydraulic pump or motor with hydraulic pressure-responsive vane. 3,221,665, 3,221,665, 12–7–65, Cl. 103—136.

Harvey Aluminum (Inc.): *See*—
Harvey, Leo M., and Hilton. 3,221,924.

Harvey, John F.: *See*—
Brister, Paul M., Carpenter, Friese, Harvey, and Leonard. 3,221,925.

Harvey, Leo M., and R. W. Hilton, to Harvey Aluminum (Inc.). Can opener. 3,221,924, 12–7–65, Cl. 220—54.

Hasbrouck, Augustus, to United Aircraft Corp. Injector head for rocket. 3,221,499, 12–7–65, Cl. 60—39.74.

Hastings Mfg. Co.: *See*—
Wilkinson, James W. 3,221,880.

Haupt, Erich, and H.-H. Koeppe, to E. I. du Pont de Nemours and Co. Light-measuring structure for cameras. 3,221,624, 12–7–65, Cl. 95—10.

Hauptschein, Murray, and A. H. Fainberg, to Pennsalt Chemicals Corp. Production of fluorocarbons by catalytic pyrolysis of fluoroform. 3,222,406, 12–7–65, Cl. 260—653.

Hauschild, Ulrich, to Kali Chemie Aktiengesellschaft. Process for the preparation of nordstrandite alumina. 3,222,130, 12–7–65, Cl. 23—143.

Hausfeld, Gerald E. Automatic window lock. 3,222,098, 12–7–65, Cl. 292—173.

Haveg Industries, Inc.: *See*—
Lux, John H. 3,221,954.

Haw, Sherwood G. Method of making a hot top. 3,221,382, 12–7–65, Cl. 22—193.

Hawkins, James E.: *See*—
Crossland, Edward J., Ragan, and Hawkins. 3,221,988.

Hawley Products Co.: *See*—
Noren, Mauritz F., and Scent. 3,221,834.

Hay, John O. to The Harshaw Chemical Co. Tetragonal zirconium oxide containing calcium oxide. 3,222,148, 12–7–65, Cl. 51—309.

Hayashi, Tetsuso, and M. Tanaka, to Koyo Seiko Co., Ltd. Automatic ornamental stitch sewing machine. 3,221,687, 12–7–65, Cl. 112—158.

Hazeltine Research, Inc.: *See*—
Hallden, Andrew R. 3,222,666.

Heath, Carl E., Jr.: *See*—
Beltzer, Morton, Heath, and Tarmy. 3,222,218.

Heath, Richard A. Fuel nozzle spray testing box. 3,221,546, 12–7–65, Cl. 73—119.

Hebenstreit, Lester V., and C. A. Heins, to Specialties Development Corp. Generation of gaseous mixtures for inflatable devices. 3,222,230, 12–7–65, Cl. 149—1.

Hedlund, Lee V., to Radio Corp. of America. Wide range variable frequency free-running multivibrator. 3,222,617, 12–7–65, Cl. 331—113.

Heesemann, Karl. Belt grinding machine. 3,221,448, 12–7–65, Cl. 51—141.

Heflinger, Lee O.: *See*—
Garwin, Edward L., and Heflinger. 3,222,449.

Heinberg, Paul J. Audio-visual teaching machine and method. 3,221,420, 12–7–65, Cl. 35—35.

Heines, Thomas S., Jr., and C. R. Donaldson, to National Distillers & Chemical Corp. Copolymers of ethylene and vinyl stearate. 3,222,336, 12–7–65, Cl. 260—87.3.

Heins, Charles A.: *See*—
Hebenstreit, Lester V., and Heins. 3,222,230.

Helt, Allyn H., and C. Calmon, to Pfaudler Permutit, Inc. Corrosion inhibition compositions. 3,222,291, 12–7–65, Cl. 252—389.

Heltzmann, Friedrich. Dressing and bandages. 3,221,736, 12–7–65, Cl. 128—156.

Hekimian, Norris C., to United States of America, Army. Frequency shift keying generator. 3,222,619, 12–7–65, Cl. 331—179.

Helle, Jens B., and C. R. G. Johansen. Fresh-air valve. 3,221,634, 12–7–65, Cl. 98—96.

Helstrom, Carl W.: *See*—
Altar, William, and Helstrom. 3,221,695.

Helus, Richard R., and F. J. Jansen, to Radio Corp. of America. Positive acting, multiposition detent switch. 3,222,466, 12–7–65, Cl. 200—16.

Hemmerle, Joseph V., Jr., to The Cincinnati Milling Machine Co. Thermal change compensation mechanism. 3,221,605, 12–7–65, Cl. 90—11.

Henderson, Homer I. Well drilling fluid and a method of using same. 3,221,825, 12–7–65, Cl. 175—72.

Henderson, Richard W., and E. Seltzer, to Thomas J. Lipton, Inc. Drying instant tea. 3,222,182, 12–7–65, Cl. 99—77.

Henke, Alfred M.: *See*—
Bercik, Paul G., Henke, and Moore. 3,222,272.

Henkels, William K., ½ to American Metalcore Systems, Inc. Structural member. 3,221,467, 12–7–65, Cl. 52—600.

Henry, Thomas R., to Western Electric Co., Inc. Apparatus for fabricating a piece part having a metallic bit secured thereto. 3,221,969, 12–7–65, Cl. 228—18.

Heppolette, Robert L., to Canadian Industries Ltd. Curable coating composition comprising copolymer containing grafted carboxyl groups and epoxy resin. 3,222,420, 12–7–65, Cl. 260—837.

Herbst, William: *See*—
Wurzburg, Otto B., and Herbst. 3,222,220.

Hercules Powder Co.: *See*—
Ferrill, Richard M., Jr. 3,222,377.
Schilling, William M. 3,222,437.

Herman, David: *See*—
Small, Sollie W., and Herman. 3,221,587.
Small, Sollie W., and Herman. 3,221,637.
Small, Sollie W., and Herman. 3,221,933.
Small, Sollie W., and Herman. 3,222,500.

Herman Pneumatic Machine Co.: *See*—
Johnston, Loyal L. 3,221,377.

Hesen, Joseph A., to J. B. Miller, Jr. Whiplash-preventing safety device. 3,222,084, 12–7–65, Cl. 280—150.

Hess, Frank R., and J. A. Guthrie, to Ashland Oil & Refining Co. Carbon black apparatus. 3,222,136, 12–7–65, Cl. 23—259.5.

Hesser, Fr., Maschinenfabrik-Aktiengesellschaft: *See*—
Buchner, Norbert: 3,222,235.

Hettinga, Siebolt. Child's noise producing placater. 3,221,444, 12–7–65, Cl. 46—175.

Hewitt, Delbert C.: *See*—
King, William L., and Hewitt. 3,221,610.

Hewlett-Packard Co.: *See*—
Simpkins, Alan B., and Hamilton. 3,222,635.

Heyman, Horace W., J. Hambleton, and D. Gurwitch, to Sevcon Engineering Ltd. Variable speed motor system utilizing controlled rectifiers. 3,222,582, 12–7–65, Cl. 318—139.

Hickey, Lawrence J., to National Starch and Chemical Corp. Stabilization of amylose. 3,222,199, 12–7–65, Cl. 106—213.

Hidding, Walter E. Disposable thermometer sheath. 3,221,871, 12–7–65, Cl. 206—16.5.

High Voltage Engineering Corp.: *See*—
Chang, Street. 3,221,553.
Norris, Neil J., Marker, and Post. 3,222,563.

Hilby, Gerald M.: *See*—
Ulrich, William D. 3,221,719.

Hildemann, Victor R., to Ted Hoyer & Co., Inc. Invalid lift. 3,222,029, 12–7–65, Cl. 254—8.

Hill, Charles C. Gas turbine power plant. 3,221,500, 12–7–65, Cl. 60—39.75.

Hill, Donald C.: *See*—
Robinson, Myron L., and Hill. 3,222,094.

Hill, Edward, Jr. Grease collection device for stoves. 3,221,635, 12–7–65, Cl. 98—115.

Hilton, Ralph W.: *See*—
Harvey, Leo M., and Hilton. 3,221,924.

Hinckley, Alfred A., to Metal Hydrides Inc. Method for inhibiting color formation in amines. 3,222,310, 12–7–65, Cl. 260—29.6.

Hinson, Fletcher A.: *See*—
Powell, Kenneth E., Hinson, and Williams. 3,222,131.

Hira, Gene. Filter apparatus. 3,221,885, 12–7–65, Cl. 210—298.

Hirsch, Abraham A. Effluent removal structure for settling tanks and reservoirs. 3,221,889, 12–7–65, Cl. 210—532.

Hitchcock, Paul C., to The Chase-Shawmut Co. Electric fuse terminals and method for manufacturing the same. 3,222,482, 12–7–65, Cl. 200—132.

Hitt, George F. Adjustable chuck assembly. 3,221,787, 12–7–65, Cl. 144—209.

Hochberg, Frederick: *See*—
Berkenblit, Melvin, Cheroff, Hochberg, and Reisman. 3,222,216.

Hockett, Robert M.: *See*—
Lewis, James C., Hockett, and Wainwright. 3,221,375.

Hoelle, Alfred, and H. Vollmar, to M. Briem. Method of producing hop extracts. 3,222,181, 12–7–65, Cl. 99—50.5.

Hoelzer, Russell L., and G. H. Lacy, to The Dow Chemical Co. Package. 3,221,978, 12–7–65, Cl. 229—53.

Hoerner Boxes, Inc.: *See*—
Bowles, Renlie E., and Craig. 3,221,972.
Kalbrener, Thomas S. 3,221,973.

Hoernes, Gerhard E., H. S. Long, and G. A. Maley, to International Business Machines Corp. Teaching machine. 3,221,418, 12–7–65, Cl. 35—9.

Hoff, Marcian E., Jr.: *See*—
Widrow, Bernard, and Hoff. 3,222,654.

Hoffman, Morris. Vacuum film holder. 3,221,596, 12–7–65, Cl. 88—24.

Hoffmann, Helmut: *See*—
Karmann, Richard, Hoffmann, and Brunnert. 3,222,462.

Hoffmann-La Roche Inc.: *See*—
Chase, George O. 3,222,374.
Reeder, Earl, and Sternbach. 3,222,359.

Hoffmann, Wolfgang, J. Follows, and R. Taylor, to Canadian International Paper Co. Automatic packaging machine. 3,221,474, 12–7–65, Cl. 53—182.

Hogan, Walter H., and A. H. Post, Jr., to Arthur D. Little, Inc. Liquid level gage for cryogenic fluids. 3,221,551, 12–7–65, Cl. 73—299.

Hogg, David C., to Bell Telephone Laboratories, Inc. Rotatable parabolic reflector with closed waveguide horn feed. 3,222,676, 12–7–65, Cl. 343—763.

Hoke Inc.: *See*—
Gilleeny, James F. 3,222,027.

Holberg, William L., to Socony Mobil Oil Co., Inc. Conduit windup reel. 3,222,002, 12–7–65, Cl. 242—54.

Holder, Charles B., to Texaco Inc. Method for separating hydrocarbons. 3,222,349, 12–7–65, Cl. 260—96.5.

Holeski, Donald E.: *See*—
Wong, Robert Y., Nusbaum, and Holeski. 3,221,547.

Hollingsworth, Albert A., to Woodward Iron Co. Pipe joint packing. 3,222,076, 12–7–65, Cl. 277—34.

Hollingsworth, John H.: *See*—
Hughes, Robert L., Hollingsworth, and Garside. 3,221,730.

Holly, Sandor, to International Business Machines Corp. Cylindrical lasers utilizing internal reflection techniques. 3,222,615, 12–7–65, Cl. 331—94.5.

Holmstrom, John G., to Pacific Car and Foundry Co. Automotive vehicle having means for making active or inactive at will both driving propeller shaft and planetary reduction final drive. 3,221,832, 12–7–65, Cl. 180—44.

Holstein & Kappert: *See*—
Keller, Richard. 3,221,857.

Honeywell Inc.: *See*—
Fabiszewski, Edward S., and Pasciuto. 3,222,651.
Hamelink, William B., and Swanson. 3,221,799.
Kuether, Frederick W. 3,221,554.
Morrison, Stanley R. 3,222,531.
Perkins, Corles M. 3,222,013.
Promack, Joshua. 3,222,664.
Wood, Brainerd. 3,222,501.

Hooker Chemical Corp.: *See*—
Maurer, James I., Palmer, and Shah. 3,222,226.

Horan, James E., to Standard Oil Co. Process for recovering ketal-esters of benzophenone dicarboxylic acid. 3,222,391, 12–7–65, Cl. 260—473.

Horan, James E., and R. E. Van Strien, to Standard Oil Co. Vinyl halide resin compositions plasticized with ketal-ester compounds. 3,222,313, 12–7–65, Cl. 260—31.8.

Horan, James E., and R. E. Van Strien, to Standard Oil Co. Ketal-ester compounds. 3,222,390, 12–7–65, Cl. 260—473.

Horn, Martin E. Tissue dispenser and disposal. 3,221,928, 12–7–65, Cl. 221—34.

Houser, Roy W., to Robertshaw Controls Co. Pneumatic thermostat and system controlled thereby. 3,221,991, 12–7–65, Cl. 236—87.

Houston Engineers, Inc.: *See*—
Webb, Derrel D. 3,221,826.

Hower, Wayne F., to Halliburton Co. Sand consolidation method. 3,221,814, 12–7–65, Cl. 166—33.

Hoyer, Ted, & Co., Inc.: *See*—
Hildemann, Victor R. 3,222,029.

Huber, Ludwig K.: *See*—
Popoff, Ivan C., Block, and Huber. 3,222,378.

Hudis, Michael I., to Rex Chainbelt Inc. Pavement laying and finishing apparatus. 3,221,618, 12–7–65, Cl. 94—45.

Hueschen, Robert E., to General Electric Co. Vanadium window for an atomic particle and radiation emitting device. 3,222,558, 12–7–65, Cl. 313—59.

Huetten, Clarence: *See*—
Fitzgibbon, George E., Packer, and Huetten. 3,222,579.

Hughes Aircraft Co.: *See*—
Losee, Ferril A. 3,222,454.

Hughes, Alvin W. Emulsifier. 3,221,788, 12–7–65, Cl. 146—182.

Hughes, Lawrence J., to Monsanto Co. Catalytic dehydrogenation of hydrocarbons. 3,222,417, 12–7–65, Cl. 260—683.3.

Hughes, Robert L., J. H. Hollingsworth, and W. H. Garside, to Carrier Corp. Draft diverter hoods. 3,221,780, 12–7–65, Cl. 126—307.

Hummel, Raymond J., to H & H Plastics Mfg. Co. Plastic bib construction. 3,221,341, 12–7–65, Cl. 2—49.

Humphrey, John F.: *See*—
Kopf, Rowland J., Humphrey, and Shoup. 3,221,966.

Huning, Fred D., Jr.: *See*—
Scott, Loyce B. 3,222,682.

Hunter, Ben E.: *See*—
Zoeller, Richard J., and Hunter. 3,221,975.

Hunter Douglas International (Quebec) Ltd.: *See*—
Hurkmans, Josefus C. 3,221,417.
Hurkmans, Josefus C. 3,221,802.

Huntress, Charles B., and H. Gabrielian, to Electronic Engineering Co. of California. Subminiature sealed thumbwheel switch with indicator and stop means. 3,222,465, 12–7–65, Cl. 200—11.

Huntress, Charles B., and H. Gabrielian, to Electronic Engineering Co. of California. Sealed thumbwheel switch with indicator and removable illuminating means. 3,222,490, 12–7–65, Cl. 200—167.

Hupp Corp.: *See*—
Smith, Horace L., Jr. 3,221,416.

Hurewitz, Arthur, to A. G. Adler and S. H. Landy. Transparent container. 3,221,979, 12–7–65, Cl. 229—57.

Hurkmans, Josefus C., to Hunter Douglas International (Quebec) Ltd. Locking device lift cords of a Venetian blind. 3,221,417, 12–7–65, Cl. 160—173.

Husted, Donald M., to Sperry Rand Corp. Synchronism for punched card reading system. 3,222,502, 12–7–65, Cl. 235—61.11.

Huttenwerk Oberhausen AG.: *See*—
Spetzler, Edgar. 3,222,045.

Huyck Corp.: *See*—
Lee, Charles A. 3,222,246.

Huyssen, Phillip H. Rodent repelling device. 3,221,438, 12–7–65, Cl. 43—124.

Hydro Kinetics, Inc.: *See*—
Raymond, Robert E. 3,221,564.

Hyman, Abraham, to United States of America, Army. Diagnostic audiometer. 3,222,456, 12–7–65, Cl. 179—1.

Iacoviello, John G., and R. Rosenthal, to Allied Chemical Corp. Stabilization of epoxy compounds. 3,222,381, 12–7–65, Cl. 260—348.

Iizuka, Hiroshi, N. Katsuya, I. Shiio, K. Komagata, S.-I. Otsuka, K. Yamada, and R. Ishii, to Ajinomoto Co., Inc. Method of preparing amino acids by fermentation. 3,222,258, 12–7–65, Cl. 195—29.

Illinois Tool Works Inc.: *See*—
Gutshall, Charles E. 3,221,793.
Poupitch, Ougljesa J. 3,221,790.
Poupitch, Ougljesa J. 3,221,792.
Stevenson, John, Jr. 3,221,470.
Swick, Edwin G. 3,221,572.
Wieber, George L. 3,221,588.

Illyn, Alexis V., G. G. Palmer, and V. L. Popoff, to General Electric Co. Lead barium niobate ceramic composition. 3,222,283, 12–7–65, Cl. 252—62.9.

Imoto, Saburo: *See*—
Fujii, Kiyoshi, Imoto, Ukida, and Matsumoto. 3,222,338.

Imperial Chemical Industries Ltd.: *See*—
Dowden, Dennis A. 3,222,132.
Edwards, George E. 3,222,270.
Smith, Harry. 3,222,408.

Ind-X Corp.: *See*—
Lee, James F. 3,222,524.

Inductotherm Linemelt Corp.: *See*—
Kolle, George F. 3,222,446.

Industrial Tectonics, Inc.: *See*—
Cowell, John. 3,221,889.

Industrie-Werke Karlsruhe Aktiengesellschaft: *See*—
Madlener, Paul, and Pecksen. 3,221,657.

Ingalls, James E., R. S. Doran, and K. A. Barstrom. Label dispenser. 3,222,242, 12–7–65, Cl. 156—584.

Ingenjorsfirma Hebe Aktiebolag: *See*—
Bergling, Charles G. B., and Levin. 3,221,867.

Ingersoll-Rand Co.: *See*—
Brown Christopher K., and Burnett. 3,221,515.

Ingram, Alvin R., to Koppers Co., Inc. Expandable polyethylene. 3,222,304, 12–7–65, Cl. 260—2.5.

Ingram, Alvin R., and H. W. Jurgeleit, to Koppers Co., Inc. Process for producing flat particles of polymers of vinyl aromatic monomers. 3,222,343, 12–7–65, Cl. 260—93.5.

Inland Steel Co.: *See*—
Buys, Adriaan. 3,221,533.
Buys, Adriaan. 3,221,920.

Insollo, Thomas A., to American-Saint Gobian Corp. Apparatus for drawing glass sheet with control device. 3,222,156, 12–7–65, Cl. 65—159.

Installationsmaterial, Aktiebolaget: *See*—
Areskoug, Carl O. 3,221,397.

Institute of Texile Technology: *See*—
Fornes, Gaston G. 3,221,374.

Interatom, Internationale Atomreaktorbau G.m.b.H.: *See*—
Einfeld, Klaus. 3,222,521.

Interchemical Corp.: *See*—
Bertollo, Norman J. 3,222,208.
Greubel, Paul W. 3,221,650.

International Business Machines Corp.: *See*—
Albanes, Nicholas J., and Langendorf. 3,222,460.
Bell, Kenneth A., and MacLeod. 3,222,648.
Berkenblit, Melvin, Cheroff, Hochberg, and Reisman. 3,222,216.
Bruce, George D., and Wohlfort. 3,222,658.
Cheng, Tsung-Hsien. 3,222,544.
Dustin, Donald R. 3,222,603.
Farber, Arnold S. 3,222,549.
Garwin, Richard L. 3,221,509.
Hoernes, Gerhard E., Long, and Maley. 3,221,418.
Holly, Sandor. 3,222,615.
Klinkhamer, Jacob F. 3,222,643.
Lazarus, John P. 3,222,650.
Low, Paul R., and Rice. 3,222,527.
Marshall, John H. 3,222,207.
Meade, Robert M. 3,222,506.
Rice, Rex. 3,222,653.
Sakalay, Fred E. 3,222,652.
Shelton, Glenmore L., Jr. 3,222,638.
Skov, Raymond A. 3,222,659.
Stauffer, Fred S., and Donelson. 3,221,431.
Strachey, Christopher. 3,222,647.
Thorpe, Robert A. 3,222,528.
International Resistance Co.: *See*—
Windebank, Robert W. 3,222,496.
International Standard Electric Corp.: *See*—
Amrosino, Francesco. 3,222,457.
International Telephone and Telegraph Corp.: *See*—
Tidd, Edwin B. 3,221,712.
Ionics, Inc.: *See*—
Tirrell, Charles E., and Parsi. 3,222,267.
Irving Air Chute of Great Britain Ltd.: *See*—
Seward, William H. 3,222,109.
Irving, Henry F., to Baker Perkins Inc. Centrifuging apparatus. 3,221,879, 12–7–65, Cl. 210—106.
Ishii, Ryosuke: *See*—
Iizuka, Hiroshi, Katsuya, Shiio, Komagata, Otsuka, Yamada, and Ishii. 3,222,258.
Isley, Walter F., to Continental Aviation and Engineering Corp. Piston construction. 3,221,718, 12–7–65, Cl. 123—32.
Istag A.G.: *See*—
Bonetti, Giulio. 3,221,552.
Itek Corp.: *See*—
Leighton, Thomas C. 3,221,625.
Wright, Malor. 3,221,755.
Ivie, James O. Wind direction and turbulence indicator. 3,221,570, 12–7–65, Cl. 74—126.
Ivosic, Ante: *See*—
Car, Tony, Machnik, Milkovich, and Ivosic. 3,221,455.
Izumi, Shinjiro. Bottle-feeding apparatus. 3,221,910, 12–7–65, Cl. 214—309.
Jackson, Glenn W.: *See*—
Luce, Walter A., and Jackson. 3,222,161.
Jackson, James R. Toy lifting device for child's vehicle. 3,222,034, 12–7–65, Cl. 254—139.1.
Jackson, Remington R.: *See*—
Remington, William F., and Jackson. 3,222,104.
Jacobs, James W., to General Motors Corp. Dry cleaning apparatus with solvent recovery. 3,221,525, 12–7–65, Cl. 68—18.
Jacobs, James W., and G. B. Long, to General Motors Corp. Domestic appliance using a filter. 3,221,524, 12–7–65, Cl. 68—12.
Jacobsen, John K., to Milton Roy Co. Analyzer for determining hydrogen content of gas. 3,221,537, 12–7–65, Cl. 73—23.
Jacobus, Jere K. Tire inflation indicator. 3,222,641, 12–7–65, Cl. 340—58.
Jaeken, Jan, to Gevaert Photo-Producten N.V. Photographic colour images from amino substituted phenols. 3,222,176, 12–7–65, Cl. 96—55.
Jaeschke, Ralph L., and H. E. Wiltsey, to Eaton Mfg. Co. Coupling device for clutch or brake use. 3,221,854, 12–7–65, Cl. 192—84.
Jagouelx, Robert, to Pierre Guerin, S.A. Cheese making apparatus. 3,221,407, 12–7–65, Cl. 31—49.
James, Paul L. Method of sewing elastic stitches. 3,221,689, 12–7–65, Cl. 112—262.
Jansen, Francis J.: *See*—
Helus, Richard R., and Jansen. 3,222,466.
Jean-Marie, Joseph, and P. Paintendre, to H. Ernault-Somua Societe Anonyme. Means for measuring railway wheels and axles. 3,221,412, 12–7–65, Cl. 33—174.
Jeffree, John H., and D. A. Sutton, to Caps (Research) Ltd. Lens focussing systems and means for moving lens means of an optical projection system. 3,221,595, 12–7–65, Cl. 88—24.
Jenkins, Homer T. Multipurpose hand tool arrangement. 3,221,485, 12–7–65, Cl. 56—400.06.
Jenkner, Herbert, and H. W. Schmidt, to Kali Chemie Aktiengesellschaft. Preparation of sodium borohydrides. 3,222,121, 12–7–65, Cl. 23—14.
Jennings, David C.: *See*—
Arnoldi, Walter E., De Rose, Jennings, and Peters. 3,221,477.
Jennings, Jo E., to Jennings Radio Mfg. Corp. Expansible vacuum envelope for electrical devices. 3,222,484, 12–7–65, Cl. 200—144.
Jennings Radio Mfg. Corp.: *See*—
Jennings, Jo E. 3,222,484.
Jensen, Warren R.: *See*—
Batchelor, Clyde S., and Jensen. 3,221,853.
Jernaes, Finn J. J. Rotating piston machine arrangement. 3,221,664, 12–7–65, Cl. 103—130.
Jernt, Fred M., to Dynamics Corp. of America. Plastic printing plate and method for manufacture. 3,221,654, 12–7–65, Cl. 101—401.1.
Jeronimus, Frederick: *See*—
Hardy, Charles D., Jr., and Jeronimus. 3,221,646.
Johannsen, Vernon E., to The Bendix Corp. Fluid flow apparatus. 3,221,704, 12–7–65, Cl. 116—117.
Joffe, Edward J., to Park Plastics Co. Inc. Harness in combination with a rigid hat. 3,221,340, 12–7–65, Cl. 2—3.
Johansen, Carl R. G.: *See*—
Helle, Jens B., and Johansen. 3,221,634.
Johansson, Bjorn O., to Aktiebolaget Separator. Apparatus for heat treatment of liquids. 3,221,807, 12–7–65, Cl. 165—88.
Johansson, Jonas W. D. Longitudinal stop means for lathes. 3,221,581, 12–7–65, Cl. 82—34.
Johnson, Ernest M.: *See*—
Eyerly, Russell B., and Johnson. 3,222,061.
Johnson, Glenn J. Circulating live-stock watering system. 3,221,706, 12–7–65, Cl. 119—73.
Johnson, Howard L.: *See*—
Ulrich, William D. 3,221,719.
Johnson & Johnson: *See*—
Lieberman, Emanuel R. 3,221,372.
Schirmer, Henry G. 3,221,356.
Johnson, Leonard W., K. E. Senser, and C. E. Pellino, to Sears, Roebuck and Co. Garment waistband. 3,221,346, 12–7–65, Cl. 2—236.
Johnson, Sidney, and C. H. Lewis, Jr., to Metal Hydrides Inc. Compacted aluminum-containing hydrides. 3,222,122, 12–7–65. Cl. 23—14.
Johnston, Loyal L., to Herman Pneumatic Machine Co. Mold forming method and apparatus. 3,221,377, 12–7–65, Cl. 22—17.
Jo-Nan Enterprises Inc.: *See*—
Lemeshnik, William. 3,221,422.
Jones, Derrick A., to Minnesota Mining and Mfg. Co. Gas seal. 3,222,678. 12–7–65, Cl. 346—1.
Jonkers, Cornelius O.: *See*—
Van der Lely, Cornelis, Jonkers, and Fockens. 3,221,821.
Joo, Louis A.: *See*—
Kramer, Walter E., and Joo. 3,222,307.
Joo, Louis A., to Union Oil Co. of California. Partially oxidized alkyd resins prepared from complex polybasic acids derived from petroleum fractions. 3,222,308, 12–7–65, Cl. 260—22.
Jordan, Albert K.: *See*—
Doel, Reginald G., and Jordan. 3,222,033.
Jordan, Heinz D.: *See*—
Von Brachel, Hanswilli, and Jordan. 3,222,198.
Jordan, Merrill E., and H. M. Cole, to Cabot Corp. Carbon black process. 3,222,202, 12–7–65, Cl. 106—307.
Josam Mfg. Co.: *See*—
Flegel, George J. 3,221,616.
Joslyn Mfg. and Supply Co.: *See*—
Yonkers, Edward H. 3,222,566.
Joyce, Ronald S., to Pittsburgh Activated Carbon Co. Removal of iron from water. 3,222,277, 12–7–65, Cl. 210—63.
Joyner, Frederick B.: *See*—
Coover, Harry W., Jr., and Joyner. 3,222,344.
Jubilee, Benjamin D., and L. J. Fox, to National Starch and Chemical Corp. Pressure sensitive adhesive compositions. 3,222,419, 12–7–65, Cl. 260—836.
Julian, Clarence L., and R. E. Young, to General Motors Corp. Distributor having centrifugal advance and retard. 3,221,725, 12–7–65, Cl. 123—146.5.
Juptner, William F., to Babcock Electronics Corp. Dual purpose electrical contact element. 3,222,487, 12–7–65, Cl. 200—166.
Jurgeleit, Hans W.: *See*—
Ingram, Alvin R., and Jurgeleit. 3,222,343.
Kabushiki Kaisha Hitachi Seisakusho: *See*—
Moriyama, Hiromi, Yamada, Nakanishi, and Kiriyama. 3,222,486.
Kaiser Aluminum & Chemical Corp.: *See*—
Baugh, Elbert R., and Lyons. 3,222,227.
Donaldson, Donald J. 3,222,141.
Osment, Harry E., and Emerson. 3,222,129.
Page, Harold A. 3,222,266.
Kaiser Jeep Corp.: *See*—
Sampietro, Achilles C., and Matthews. 3,221,574.
Kalbrener, Thomas S., to Hoerner Boxes, Inc. Spacer pad. 3,221,973, 12–7–65, Cl. 229—14.
Kalhammer, Fritz R., to Philco Corp. Ultra-sensitive phototransistor device comprising wafer having high resistivity center region with opposite conductivity, diffused, low-resistivity, and translucent outer layers. 3,222,530, 12–7–65, Cl. 250—211.
Kali Chemie Aktiengesellschaft: *See*—
Hauschild, Ulrich. 3,222,130.
Jenkner, Herbert, and Schmidt. 3,222,121.
Kalist, Ernest S. Metering and injection device. 3,221,948, 12–7–65, Cl. 222—334.
Kalns, Rudolph W.: *See*—
Vasel, Alfred W., and Kalns. 3,222,661.
Kaltenmark, Otto, and A. Düpüy, to Karl M. Reich, Maschinenfabrik. Circular saw with annular saw blade. 3,221,783, 12–7–65, Cl. 143—44.
Kalustyan, Berdj C., to Trodyne Corp. Method and apparatus for detecting variations in pressure. 3,221,703, 12–7–65, Cl. 116—70.
Kaman, Frank A., to Skil Corp. Rotary tool spindle. 3,222,096, 12–7–65, Cl. 287—53.
Kamborian, Jacob S. Cement extruding mechanism. 3,221,937, 12–7–65, Cl. 222—76.
Kampf, Mary J.: *See*—
Fellmann, Robert P., and Kampf. 3,222,339.

Kapff, Sixt F., to Standard Oil Co. Method and apparatus for determining the relative amount of a product distilling at a selected temperature. 3,221,542, 12–7–65, Cl. 73—53.
Kaplan, Irving, to Trig-A-Tape Corp. Self-destroying label. 3,221,427, 12–7–65, Cl. 40—2.
Karalus, Lew W. Recording tape. 3,222,205, 12–7–65, Cl. 117—27.
Karmann, Richard, H. Hoffmann, and O. Brunnert, to Siemens & Halske Aktiengesellschaft. Electroacoustic transducer. 3,222,462, 12–7–65, Cl. 179—110.
Karmazin, John. Method of manufacturing heat exchanger. 3,221,399, 12–7–65, Cl. 29—157.3.
Kass, Gerald H., to Anderson Brass Co. Fluid valve. 3,221,773, 12–7–65, Cl. 137—637.4.
Katsuya, Noboru: *See*—
Iizuka, Hiroshi, Katsuya, Shiio, Komagata, Otsuka, Yamada, and Ishii. 3,222,258.
Kauder, Otto S., to Argus Chemical Corp. Polyvinyl chloride stabilized with a combination of organo-tin compounds and aromatic nitrogen compounds. 3,222,317, 12–7–65, Cl. 260—45.75.
Kayser, Bernard J., Jr., to Driv-A-Lert Corp. Alarm apparatus for vehicle operator. 3,222,639, 12–7–65, Cl. 340—52.
Keck, Norman A. Elastic band powered rolling toy. 3,221,446, 12–7–65, Cl. 46—206.
Keen, Henry S., to United States of America, Air Force. Tunable resonant ring utilizing strip transmission line. 3,222,624, 12–7–65, Cl. 333—82.
Keenan, William H. Board with magnet means for holding accounting forms. 3,222,087, 12–7–65, Cl. 282—29.
Kehl, William L.: *See*—
Flinn, Richard A., Kehl, Schmid, and Stewart. 3,222,273.
Kelhin Hitachi Engineering Kabushiki Kaisha: *See*—
Moriyama, Hiromi, Yamada, Nakanishi, and Kiriyama. 3,222,486.
Keller, Richard, to Holstein & Kappert. Apparatus for orienting bottle caps and the like. 3,221,857, 12–7–65, Cl. 193—43.
Keller, Rogenald J. Boat hull construction. 3,221,351, 12–7–65, Cl. 9—6.
Kellogg, Harry L., to General Electric Co. Voltage stabilizing circuits. 3,222,592, 12–7–65, Cl. 323—89.
Kelly, James G., and V. C. Stant, to The American Tobacco Co. Cigarette transfer apparatus. 3,222,110, 12–7–65, Cl. 302—2.
Kennecott Copper Corp.: *See*—
Beals, George C., Kocherhans, and Ogilvie. 3,222,162.
Lagergren, Milton A. 3,221,558.
Kennedy, Bruce A., to Electronic Sound Co. Control system for pneumatic conveyors of the tube duct type. 3,222,577, 12–7–65, Cl. 317—148.5.
Kerr, Clarence E. Expansible shelf assembly. 3,221,677, 12–7–65, Cl. 108—102.
Ketley, Arthur D., to W. R. Grace & Co. Polymerization of styrene utilizing frozen boron trifluoride ether complex as the catalyst. 3,222,342, 12–7–65, Cl. 260—93.5.
Keystone Camera Co., Inc.: *See*—
Schmuck, Peter. 3,222,007.
Keyworth, Arthur E., Jr., to Bird Machine Co. Non-sweating doctor blade support. 3,221,357, 12–7–65, Cl. 15—256.51.
Kieley and Mueller Inc.: *See*—
Chinn, George I. 3,221,762.
Kienzle Apparate G.m.b.H.: *See*—
Pletzsch, Hans. 3,221,863.
Kiessling, Edward A., to United States of America, Health, Education and Welfare, and/or Army. Functional control valves for pneumatic prostheses. 3,221,769, 12–7–65, Cl. 137—596.
Kilbourn, Eugene L., to S. H. Leggitt Co. Mechanical device. 3,221 540, 12–7–65, Cl. 73—49.1.
Kilbourn, Eugene L., to S. H. Leggitt Co. Pulsator valve having stacked valving rings. 3,221,766, 12–7–65, Cl. 137—510.
Kilby, Jack S.: *See*—
Evans, Arthur D., and Kilby. 3,222,610.
Kimble, Robert C.: *See*—
Rai, Charanjit, Kramer, and Kimble. 3,222,285.
King, Paul D., R. S. Barton, and J. N. Merner, to Burroughs Corp. Digital computer with indirect addressing. 3,222,649. 12–7–65, Cl. 340—172.5.
King-Seeley Thermos Co.: *See*—
Clapp, Daniel E. 3,222,480.
King, William L., and D. C. Hewitt; said King assor. to said Hewitt. Clutch type piston locking means. 3,221,610, 12–7–65, Cl. 92—24.
Kinraide, William T. R. Load carrying and rescue sled. 3,222,080, 12–7–65, Cl. 280—18.
Kirby, William M.: *See*—
Boley, Charles C., Burnell, and Kirby. 3,221,775.
Kiriyama, Toshikatsu: *See*—
Moriyama, Hiromi, Yamada, Nakanishi, and Kiriyama. 3,222,486.
Kisteneich, Peter: *See*—
Moroni, Rolf, Kisteneich, and Breuer. 3,221,359.
Klaffky, George A. Inventory control system. 3,221,860, 12–7–65, Cl. 194—5.
Klaffky, George A. Remote price setting system. 3,221,934. 12–7–65, Cl. 222—26.
Klass, Donald L., and V. Brozowski, to Union Oil Co. of California. Electric-field-responsive fluid device. 3,221,849, 12–7–65, Cl. 192—21.5.
Klass, Donald L.: *See*—
Krewer, William A., Klass, and Ayers. 3,222,275.
Kleer-Vu Industries, Inc.: *See*—
Deans, Howard. 3,222,239.
Klein, Roy W.: *See*—
Clauss, Richard J., Klein, and Pianowski. 3,222,268.
Kleinig, Frank L. Muffler article and method of casting same. 3,221,836, 12–7–65, Cl. 181—61.
Klinkhamer, Jacob F., to International Business Machines Corp. Error detecting and correcting systems. 3,222,643, 12–7–65, Cl. 340—146.1.
Klockner-Humboldt-Deutz Aktiengesellschaft: *See*—
Fesser, Erich. 3,221,413.
Knapsack Aktiengesellschaft: *See*—
Rumberg, Alfred, Krauss, Rittershausen, Damgen, and Fruhling. 3,222,445.
Knoll, Fritz. Skinning knife. 3,221,406, 12–7–65, Cl. 30—272.
Knorr, Fritz: *See*—
Enk, Eduard, Knorr, and Spes. 3,222,262.
Knuth, Harvey G., to Lyon Metal Products, Inc. Adjustable storage rack. 3,221,894, 12–7–65, Cl. 211—134.
Koch, Bernhard, to Grob & Co. Aktiengesellschaft. Riderless weaving frame. 3,221,777, 12–7–65, Cl. 139—92.
Kocherhans, John: *See*—
Beals, George C., Kocherhans, and Ogilvie. 3,222,162.
Koenig, Carl F., III, and E. W. Blattner, to De Laval Turbine Inc. Turbine. 3,221,491, 12–7–65, Cl. 60—13.
Koepke, Frederick W., Jr.: *See*—
Evans, Dewey M. P., and Koepke. 3,221,539.
Koeppe, Hans-Hermann: *See*—
Haupt, Erich, and Koeppe. 3,221,624.
Kofink, Siegfried. Pumping system for oil burners. 3,221,798, 12–7–65, Cl. 158—28.
Kohler, Robert D., to Toledo Scale Corp. Auxiliary load circuitry for load responsive devices. 3,221,828, 12–7–65, Cl. 177—210.
Kohler, Robert D., to Toledo Scale Corp. Voltage balancing circuit. 3,221,829, 12–7–65, Cl. 177—210.
Kohne, Harry F., Jr.: *See*—
Brundige, Maurice M., Obenshain, Fredrickson, and Kohne. 3,222,209.
Kolle, George F., to Inductotherm Linemelt Corp. Bushing insulator for core type induction furnace. 3,222,446, 12–7–65, Cl. 13—29.
Komagata, Kazuo: *See*—
Iizuka, Hiroshi, Katsuya, Shiio, Komagata, Otsuka, Yamada, and Ishii. 3,222,258.
Konazewski, Clement R.: *See*—
Lyon, Floyd A., and Konazewski. 3,222,056.
Kopf, Rowland J., J. F. Humphrey, and T. E. Shoup, to Omark Industries, Inc. Powder actuated tool. 3,221,966, 12–7–65, Cl. 227—11.
Koppers Co., Inc.: *See*—
Becker, Joseph. 3,222,260.
Ingram, Alvin R. 3,222,304.
Ingram, Alvin R., and Jurgeleit. 3,222,343.
McGovern, Edward W. 3,221,615.
Obenchain, Richard F. 3,222,044.
Vesilind, Paul E. 3,221,369.
Koremura, Mitsunobu, and T. Shono, to Sankyo Co. Ltd. 1,9,10,11,12,12 - hexachlorotricyclo[7.2.1.0^{2,6}]dodeca - 3,6, 10-triene, process for preparing said compound as the active ingredient. 3,222,249, 12–7–65, Cl. 167—30.
Korom, Arpad: *See*—
Greuter, André, and Korom. 3,221,487.
Kosa, Tibor, and F. R. Agasie, to The Pillsbury Co. Flowability apparatus. 3,221,560, 12–7–65, Cl. 73—432.
Kowalski, Emil, to Landis & Gyr, A.G. Ionization chamber type dosimeter. 3,222,523, 12–7–65, Cl. 250—83.6.
Koyo Seiko Co., Ltd.: *See*—
Hayashi, Tetsuzo, and Tanaka. 3,221,687.
Krakian, Henry, Jr., to Advance Products Corp. Cam operated, axially movable brake. 3,221,841, 12–7–65, Cl. 188—72.
Kramer, Walter E., and L. A. Joo, to Union Oil Co. of California. Alkyd resins prepared from complex carboxylic acids derived from mineral lubricating oils. 3,222,307, 12–7–65, Cl. 260—22.
Kramer, Walter E.: *See*—
Rai, Charanjit, Kramer, and Kimble. 3,222,285.
Kraus, Heinz J. Preparation and method for the prevention, treatment, and control of mastitis in bovine udders. 3,222,252, 12–7–65, Cl. 167—53.2.
Krauss, Werner: *See*—
Rumberg, Alfred, Krauss, Rittershausen, and Fruhling. 3,222,445.
Kreuter, Kenneth G., to Robertshaw Controls Co. Pneumatic controller. 3,221,761, 12–7–65, Cl. 137—82.
Krewer, William A., D. L. Klass, and G. W. Ayers, to Union Oil Co. of California. Process for removing naphthenic acids from mineral oils. 3,222,275, 12–7–65, Cl. 208—180.
Kruithof, Anton M.: *See*—
Cornelissen, Johannes, Kruithof, and Meyer. 3,222,206.
Krysiak, Henry R., to E. I. du Pont de Nemours and Co. Process for bonding rubber to linear condensation polyester structures. 3,222,238, 12–7–65, Cl. 156—330.
Kuether, Frederick W., to Honeywell Inc. High temperature sensors. 3,221,554, 12–7–65, Cl. 73—359.
Kuhnl, Leopold K.: *See*—
Glaberson, Martin, and Kuhnl. 3,221,893.
Kullgren, Donald E.: *See*—
Baker, William R., and Kullgren. 3,221,669.
Kurashiki Rayon Co., Ltd.: *See*—
Fujii, Kiyoshi, Imoto, Ukida, and Matsumoto. 3,222,338.
Suzumura, Hideo, and Miyahara. 3,222,306.
Kuze, Yoshikazu. Radiator cooling fan clutch. 3,221,721, 12–7–65, Cl. 123—41.12.

Kwan, Lun F., to Rico Ltd. Molding apparatus for forming an artificial multicolored flower. 3,221,373, 12–7–65, Cl. 18—30.

LKB-Produkter Aktiebolag: *See*—
Forsstrom, Bo G. 3,221,781.

La Combe, Edward M., J. H. Ankeney, B. R. Thompson, and A. T. Walter, to Union Carbide Corp. Process for polymerixing vinyl monomers with a catalyst of peracetic acid and an alkyl mercaptan. 3,222,328, 12–7–65, Cl. 260—80.5.

Lacy, George H.: *See*—
Hoelzer, Russell L., and Lacy. 3,221,978.

Lacy, Michael J.: *See*—
De Jean, Milton V., and Lacy. 3,222,234.

Lagergren, Milton A., to Kennecott Copper Corp. Sampling method and apparatus. 3,221,558, 12–7–65, Cl. 73—421.

Lagos, Costas C., and L. W. Strock, to Sylvania Electric Products Inc. Method of preparing electroluminescent devices. 3,222,214, 12–7–65, Cl. 117—201.

Laitram Corp., The: *See*—
Couret, Robert F. 3,221,362.
Couret, Robert F. 3,221,363.

Lambert, Marc H. J., 50% to B. L. J. Liegeon. Hinged doors for wall-cupboards and the like. 3,221,803, 12–7–65, Cl. 160—206.

Lamex, Inc.: *See*—
McKelvy, William R. 3,222,237.

Lamont, John L.: *See*—
Thompson, James, Farrell, and Lamont. 3,222,163.

Lamort, E. & M., Fils: *See*—
Lamort, Pierre L. E. M. 3,221,886.

Lamort, Pierre L. E. M., to E. & M. Lamort, Fils. Backwash filter with filtrate deflector. 3,221,886, 12–7–65, Cl. 210—298.

Lancaster Glass Corp.: *See*—
Miles, John R. 3,222,516.

Land, Edwin H., to Polaroid Corp. Method for producing and viewing multicolored stereoscopic images. 3,221,599, 12–7–65, Cl. 88—29.

Land, Edwin H., and N. W. Daw, to Polaroid Corp. Method for forming and viewing color separation stereoscopic images. 3,221,600, 12–7–65, Cl. 88—29.

Land, Edwin H., to Polaroid Corp. Diffusion transfer process. 3,222,168, 12–7–65, Cl. 96—29.

Land, Edwin H., to Polaroid Corp. Reflex copying by diffusion transfer. 3,222,171, 12–7–65, Cl. 96—29.

Landis & Gyr, A.G.: *See*—
Kowalski, Emil. 3,222,523.

Landy, Samuel H.: *See*—
Hurewitz, Arthur. 3,221,979.

Lang, John L. Method of producing plastic articles. 3,222,444, 12–7–65, Cl. 264—317.

Lang, William. Prearranged hand playing card dealing apparatus. 3,222,071, 12–7–65, Cl. 273—149.

Lange, Guenter, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Water-soluble reactive azo dyes. 3,222,354, 12–7–65, Cl. 260—163.

Langella, Pierre: *See*—
Amiet, Bernard, Langella, and Sentenac. 3,222,225.

Langendorf, Matthew P.: *See*—
Albanes, Nicholas J., and Langendorf. 3,222,460.

Langton, Harold F. Pole vault and high jump standard. 3,222,064, 12–7–65, Cl. 272—59.

Lanham, William M., to Union Carbide Corp. Flame-resistant urethane foams and process for preparing same. 3,222,305, 12–7–65, Cl. 260—2.5.

Lanier, Robert L.: *See*—
Trickler, Calvin J., and Lanier. 3,221,983.

Lankford, William L., Jr.: *See*—
Van Winkle, Roy L., Lankford, and Carpenter. 3,222,679.

Lannen, Robert J., to Micro-Poise Engineering and Sales Co. Method of lining bearing in connecting rod and pivot pin connection. 3,221,402, 12–7–65, Cl. 29—439.

Lanthier, Raymond, to Shawinigan Chemicals Ltd. Epoxidation. 3,222,382, 12–7–65, Cl. 260—348.5.

Laporte Titanium Ltd.: *See*—
Wilson, Harry B. 3,222,127.

Larsen, Agnew E., M. Weinstock, and R. F. Le Vino, to United States of America, Army. Helicopter escape means. 3,222,015, 12–7–65, Cl. 244—141.

Larson, Robert W., to Beloit Corp. Material handling device. 3,221,908, 12–7–65, Cl. 214—147.

Larson, Wilbur E. Owl sewing kit. 3,221,956, 12–7–65, Cl. 223—106.

Larsson, Bertil I. T., to Sigrid Stenberg Aktiebolaget. Method and a machine for cutting and/or treating threads on rod-shaped workpieces. 3,221,607, 12–7–65, Cl. 90—11.42.

Laughlin, Robert G., to The Procter & Gamble Co. Detergent composition. 3,222,287, 12–7–65, Cl. 252—161.

Lawrence, Stanley L., and M. H. Peterson, to Massey-Ferguson Inc. Hay wafering apparatus. 3,221,674, 12–7–65, Cl. 107—14.

Laxo, Ed, deceased; (T. E. Laxo, executrix), to T. E. Laxo. Bumper stabilizer for a can body side seamer. 3,221,690, 12–7–65, Cl. 113—12.

Laxo, Ed, deceased; (T. E. Laxo, executrix), to T. E. Laxo. Can body notching and folding machine. 3,221,691, 12–7–65, Cl. 113—115.

Laxo, Thelma E.: *See*—
Laxo, Ed. 3,221,690.
Laxo, Ed. 3,221,691.

Lay, Ralph B.: *See*—
Hamilton, Earl F., Moore, and Lay. 3,222,113.

Lazarus, John P., to International Business Machines Corp. Interpretation machine. 3,222,650, 12–7–65, Cl. 340—172.5.

Leach, Harry S., and G. C. Marken, to Monsanto Co. Production of vinyl chloride. 3,222,407, 12–7–65, Cl. 260—656.

Leavitt, Frederick C., to The Dow Chemical Co. Carboxy ethylene keto polymers. 3,222,323, 12–7–65, Cl. 260—78.4.

Le Bras, Louis R.: *See*—
Wismer, Marco, Le Bras, Peffer, and Foote. 3,222,357.

Lecher, Hans Z., and H. Braus, to National Distillers and Chemical Corp. Polypropylene stabilized with dithiotriglycol dilaurate. 3,222,318, 12–7–65, Cl. 260—45.85.

Lodocq, Marcel, to Ateliers de Constructions Electriques de Charleroi. Resinous-type terminal-bushing construction with encapsulated current transformer. 3,222,625, 12–7–65, Cl. 336—174.

Lee, Bernard W.: *See*—
Harper, Harold F., Lee, and Davies. 3,222,155.

Lee, Charles A., to Huyck Corp. Backup wire for fourdrinier machine. 3,222,246, 12–7–65, Cl. 162—349.

Lee, Edwin S., III, to Burroughs Corp. Decoder. 3,222,669, 12–7–65, Cl. 340—347.

Lee, Henry G., B. L. Weller, and H. P. Tripp, to Vitramon, Inc. Encapsulating for electrical component and terminal means therewith. 3,222,450, 12–7–65, Cl. 174—52.

Lee, James F., 49% to Ind-X Corp. Radiographic examination apparatus comprising a plurality of collimated sources. 3,222,524, 12–7–65, Cl. 250—106.

Lee, Shih Y.: *See*—
Li, Yao T., and Lee. 3,221,557.

Leeds and Northrup Co.: *See*—
Rath, Harry B. 3,222,551.

Lees, James, and Sons Co.: *See*—
Abelsma, Cornelis B. 3,221,683.
Boley, Charles G., Burnell, and Kirby. 3,221,775.
Burnell, David G. 3,221,682.

Leggitt, S. H., Co.: *See*—
Kilbourn, Eugene L. 3,221,540.
Kilbourn, Eugene L. 3,221,766.

Lehigh Valley Industries, Inc.: *See*—
Dickson, John B. 3,222,512.

Leibowitz, Marvin R.: *See*—
Grosser, Frederick, Leibowitz, and Wood. 3,222,329.

Leighton, Thomas C., to Itek Corp. Panoramic camera and method. 3,221,625, 12–7–65, Cl. 95—12.5.

Lemeshnik, William, to Jo-Nan Enterprises Inc. Slipper. 3,221,422, 12–7–65, Cl. 36—9.

Lemmerling, José T., L. F. De Keyser, A. M. Schouwenaars, and J. E. Beersmans. Light sensitive multilayer element having a scratch-resistant layer containing a starch carboxylate. 3,222,177, 12–7–65, Cl. 96—67.

Lemon, Lucien W., and K. H. Palsson, to Pacific Car and Foundry Co. Metal floor rack for refrigerator cars. 3,221,670, 12–7–65, Cl. 105—376.

Lenfant, René A., to Office National d'Etudes et de Recherches Aerospatial. Capacitive pickup devices. 3,222,581, 12–7–65, Cl. 317—246.

Lennstrom, Karl V., to Reymersholms Gamla Industri Aktiebolag. Filter press. 3,221,883, 12–7–65, Cl. 210—228.

Lentilles Ophtalmiques Rationnelles: *See*—
Grandperret, Rene. 3,222,432.

Leonard, John W., Jr.: *See*—
Brister, Paul M., Carpenter, Friese, Harvey, and Leonard. 3,221,925.

Le Veen, Harry H. Container for collecting and storing blood having anticoagulant means therein. 3,221,741, 12–7–65, Cl. 128—272.

Levenberg, Nat. Kitchen cabinets. 3,222,116, 12–7–65, Cl. 312—245.

Levin, Herman N.: *See*—
Bergling, Charles G. B., and Levin. 3,221,867.

Le Vino, Robert F.: *See*—
Larsen, Agnew E., Weinstock, and Le Vino. 3,222,015.

Lewin, Seymour Z.: *See*—
Yonkers, Edward H., and Lewin. 3,221,938.

Lewis, Charles H., Jr.: *See*—
Johnson, Sidney, and Lewis. 3,222,122.

Lewis, James C., R. M. Hockett, and R. H. Wainwright, to Braden Steel Corp. Sealing means. 3,221,375, 12–7–65, Cl. 20—69.

Lewis, John A.: *See*—
Lewis, John H. and J. A. 3,221,449.

Lewis, John H. and J. A., to Archdale Belt Co., Inc. Sandpaper cot. 3,221,449, 12–7–65, Cl. 51—373.

Lewis, Karl R. Firearm crane and trigger construction. 3,221,433, 12–7–65, Cl. 42—62.

Lexsuco, Inc.: *See*—
Curtis, Frank W. 3,222,241.

Li, Yao T., and S. Y. Lee. Pressure transaducer. 3,221,557, 12–7–65, Cl. 73—406.

Libbey-Owens-Ford Glass Co.: *See*—
Browne, Charles M. 3,222,153.

Lichowsky, Abraham, to Ampex Corp. Alternating current converting circuit. 3,222,587, 12–7–65, Cl. 318—380.

Lieberman, Emanuel R., to Johnson & Johnson. Apparatus for extruding collagen fibrils. 3,221,372, 12–7–65, Cl. 18—14.

Liebmann, Jack S., R. Memole, and H. Barkowitz. Decorative cover for women's shoes. 3,221,421, 12–7–65, Cl. 36—2.5.

Liegeon, Bernard L. J.: *See*—
Lambert, Marc H. J. 3,221,803.

Lietaert, Harold E. Wall system. 3,221,453, 12–7–65, Cl. 52—209.

Lillsunde, Bernhard: *See*—
Dahlblom, Rolf A., and Lillsunde. 3,222,458.

Lilly, Eli, and Co.: *See*—
Flynn, Edwin H. 3,222,362.
Flynn, Edwin H. 3,222,363.
Perleman, Melvin. 3,222,388.
Sullivan, Hugh R., Jr. 3,222,365.

Lindaco Aktiebolag: *See*—
Svantesson, Ake W. 3,222,060.

Lindblad, Frederick W. Circular saw. 3,221,728, 12–7–65, Cl. 125—15.

Lindell, Sigurd I., to S & C Electric Co. Tubular circuit interrupter with mechanical release of arc drawing terminal within the tube. 3,222,477, 12–7–65, Cl. 200—114.

Lindzy, Leo K. Personnel or game carrier. 3,222,100, 12–7–65, Cl. 296—20.

Link-Belt Co.: *See*—
Spurlin, William V., Scott, and Dunn. 3,221,827.

Linthicum, William A.: *See*—
Linthicum, Harley E. and W. A. 3,221,528.

Linthicum, Harley E. and W. A., to Carrier Corp. Tube expansion tool. 3,221,528, 12–7–65, Cl. 72—122.

Lippel, Bernard. Capacitive coder. 3,222,668, 12–7–65, Cl. 340—347.

Lipton, Thomas J., Inc.: *See*—
Henderson, Richard W., and Seltzer. 3,222,182.

Lister, R. A., & Co.: *See*—
Murray, Patrick A. M. 3,221,415.

Little, Arthur D., Inc.: *See*—
Hogan, Walter H., and Post. 3,221,551.

Litton Systems, Inc.: *See*—
Fink, Charles. 3,222,677.

Litwhiler, Danny, and M. G. Grabowsky. Baseball batting cage. 3,222,067, 12–7–65, Cl. 273—26.

Lobb, Earl D., to Texas Instruments Inc. Shunt motor control with current limiter. 3,222,585, 12–7–65, Cl. 318—308.

Lobb, Earl D.: *See*—
Fontenote, William J., and Lobb. 3,222,586.

Lochhead, John L., to United States of America, Army. Cartridge feeding mechanism for fixed-barrel, slide-operated guns. 3,221,603, 12–7–65, Cl. 89—33.

Locke Steel Chain Co., The: *See*—
Onulak, James W. 3,221,490.

Lockheed Aircraft Corp.: *See*—
Sibert, Merle E., and Tsukamoto. 3,222,197.

Lockshin, Louis L. Flux disc. 3,221,970, 12–7–65, Cl. 228—56.

Loeffler, Donald E., to Shell Oil Co. Lubricant compositions. 3,222,279, 12–7–65, Cl. 252—28.

Loew, Gunther, ½ to Farbenfabriken Bayer Aktiengesellschaft and ½ to Mobay Chemical Co. Polyurethane plastics from a polyalkylene ether bearing solely terminal hydroxyl groups. 3,222,300, 12–7–65, Cl. 260—2.5.

Loewy Engineering Co. Ltd., The: *See*—
Salter, Frank S. 3,221,531.

Long, George B.: *See*—
Jacobs, James W., and Long. 3,221,524.

Long, Harvey S.: *See*—
Hoernes, Gerhard E., Long, and Maley. 3,221,418.

Long, Robert S.: *See*—
Buell, Bennett G., and Long. 3,222,371.

Lord, Harold W., to General Electric Co. Fluorescent lamp dimming circuit. 3,222,573, 12–7–65, Cl. 315—194.

Lord Mfg. Co.: *See*—
Thomas, David G. 3,222,111.

Lorenz, Jerome L., to Ranco Inc. Electrically powered bistable thermal relay switch. 3,222,481, 12–7–65, Cl. 200—122.

Losee, Ferril A., to Hughes Aircraft Co. Digital comparison circuits. 3,222,454, 12–7–65, Cl. 178—88.

Lott, James G. Tube collapsing device having a roller. 3,221,941, 12–7–65, Cl. 222—102.

Lotter, Hans G.: *See*—
Böllert, Volker, Fritz, Schnell, and Lotter. 3,222,302.

Love, Leslie G. Apparatus for positioning building board. 3,221,900, 12–7–65, Cl. 214—1.

Lovens Kemiske Fabrik Ved A. Kongsted: *See*—
Godtfredsen, Wagn O. 3,222,383.

Lovinggood, Burton P.: *See*—
Franz, Arvel O., and Lovinggood. 3,222,036.

Low, Paul R., and R. Rice, to International Business Machines Corp. Photosensitive ring circuit. 3,222,527, 12–7–65, Cl. 250—209.

Lowry, John C., to National Distillers and Chemical Corp. Dispensing holders for stacks of bags. 3,221,927, 12–7–65, Cl. 221—26.

Lucas, James W. Vehicle cover. 3,222,102, 12–7–65, Cl. 296—136.

Lucas, Joseph N., to AA Wire Products Co. Shear transfer tie. 3,221,458, 12–7–65, Cl. 52—438.

Luce, Walter A., and G. W. Jackson, to The Duriron Co., Inc. Vacuum treated high silicon cast iron and process for making same. 3,222,161, 12–7–65, Cl. 75—49.

Lucerne Products, Inc.: *See*—
Matthews, Benjamin H. 3,222,488.

Lukes, George E., and G. P. Willsey, Jr., to Stauffer Chemical Co. Method of controlling microorganisms by means of organic thiocyanates. 3,222,248, 12–7–65, Cl. 167—30.

Lumoprint Zindler K.G.: *See*—
Cranskens, Georg, and Thurat. 3,221,621.

Lundberg, Lennart A., to American Cyanamid Co. Polyester resinous compositionss. 3,222,421, 12–7–65, Cl. 260—872.

Lunde, Thomas T. Hatch covers. 3,221,700, 12–7–65, Cl. 114—201.

Luts, Hans G., and W. Menzel. Apparatus for the preparation of soft ice or milk ice. 3,222,035, 12–7–65, Cl. 259—25.

Lux, John H., to Haveg Industries, Inc., a wholly owned subsidiary of Hercules Powder Co. Blow molded foamed plastic container. 3,221,954, 12–7–65, Cl. 222—566.

Lykken, William H., to The Microcyclomat Co. Pulverizer and classifier. 3,221,998, 12–7–65, Cl. 241—56.

Lyon, Floyd A., and C. R. Konazewski, to Halm Instrument Co., Inc. Alignment means for conveyor. 3,222,056, 12–7–65, Cl. 271—2.

Lyon Metal Products, Inc.: *See*—
Knuth, Harvey G. 3,221,894.

Lyons, John M.: *See*—
Baugh, Elbert R., and Lyons. 3,222,227.

Ludwig, Bernard J.: *See*—
Berger, Frank M., and Ludwig. 3,222,392.

M & D Store Fixtures, Inc.: *See*—
Sedo, Gerald H. 3,221,676.

Macchini, Mario. Universal joint yokes. 3,222,143, 12–7–65, Cl. 29—183.

MacDowell, John T., to E. I. du Pont de Nemours and Co. Process of reclaiming linear terephthalate polyesters. 3,222,299, 12–7–65, Cl. 260—2.3.

Machnik, Alfred O.: *See*—
Car, Tony, Machnik, Milkovich, and Ivosic. 3,221,455.

Mack, Josephine E.: *See*—
Snyder, Edward C. 3,222,510.

MacKay, James E. Windmill generator. 3,222,533, 12–7–65, Cl. 290—55.

MacKenzie, Fred T., K. V. Becker, and H. G. Peterson, to United Shoe Machinery Corp. Heel attaching machines. 3,221,967, 12–7–65, Cl. 227—28.

Mackey, Ernest A., and W. A. Counterman, to United States of America, Navy. Electronic digital computer elapsed processing time meter. 3,221,489, 12–7–65, Cl. 58—145.

MacLeod, Donald S.: *See*—
Bell, Kenneth A., and MacLeod. 3,222,648.

Madlener, Paul, and O. Pecksen, to Industrie-Werke Karlsruhe Aktiengesellschaft. Mine igniters. 3,221,657, 12–7–65, Cl. 102—70.

Magne, Frank C.: *See*—
Skau, Evald L., Mod, and Magne. 3,222,203.

Magnuson, John E., to Pacific Car and Foundry Co. Material-handling vehicle. 3,221,909, 12–7–65, Cl. 214—147.

Mahan, Warren M.: *See*—
Melcher, Norwood B., and Mahan. 3,221,906.

Mahle Komm-Ges.: *See*—
Maier, Rudolf. 3,221,611.

Mahn, Herbert, to Josef Schneider & Co. Depth-of-field indicator for varifocal objective. 3,221,628, 12–7–65, Cl. 95—45.

Maier, Rudolf, to Mahle Komm-Ges. Multipart piston for internal combustion engine. 3,221,611, 12–7–65, Cl. 92—220.

Makay, Nicholas, Jr. Method of casting propellant within a rocket motor casing. 3,222,433, 12–7–65, Cl. 264—3.

Maldague, Pierre E. J. M., and F. A. de Waegh, to Societe anglobelge Vulcain, Societe anonyme. Method of controlling the reactivity of a nuclear reactor. 3,222,254, 12–7–65, Cl. 176—22.

Maldague, Pierre E. J. M., to Societe anglo-belge Vulcain, societe anonyme. Method of purifying primary fluid of nuclear reactor circuit. 3,222,255, 12–7–65, Cl. 176—37.

Malerbi, Robert A.: *See*—
Bing, Herbert A., and Malerbi. 3,221,627.

Maley, Gerald A.: *See*—
Hoernes, Gerhard E., Long, and Maley. 3,221,418.

Mallory, P. R., & Co., Inc.: *See*—
Fitzgibbon, George E., Packer, and Huetten. 3,222,579.

Malmberg, John H., to General Dynamics Corp. Geophysical borehole apparatus. 3,221,833, 12–7–65, Cl. 181—.5.

Malven, John H. Perspective drawing instrument. 3,221,410, 12–7–65, Cl. 33—77.

Manitowac Engineering Corp.: *See*—
Grall, John G., Nickles, Van De Hey, and West. 3,221,896.

Mann, Irving: *See*—
Fischler, Wanda B., and Mann. 3,221,428.

Mann, Marilyn M.: *See*—
Fischler, Wanda B., and Mann. 3,221,428.

Manners, John H. R., and R. A. George, to Westinghouse Brake and Signal Co. Ltd. Surge preventing circuits. 3,222,538 12–7–65, Cl. 307—88.5.

Manning, David T., and H. A. Stansbury, Jr., to Union Carbide Corp. Nitrosochloride derivatives of bicyclo[2.2.1]-2-heptene. 3,222,380, 12–7–65, Cl. 260—346.3.

Manning, William T.: *See*—
Rozsa, Tibor A., Gracsa, Manning, and Harrell. 3,222,183.

Marcelin, André: *See*—
Alfred, Marc, and Marcelin. 3,221,534.

Marforio, Nerino, to Virginio Rimoldi & C., S.p.A. Overlock sewing machine. 3,221,688, 12–7–65, Cl. 112—162.

Marino, Nicholas A., to Sears, Roebuck and Co. Girdle. 3,221,749, 12–7–65, Cl. 128—528.

Markels, Michael, Jr., and R. N. Eichbauer, to Atlantic Research Corp. Process for producing finely divided rounded particles. 3,222,231, 12–7–65, Cl. 149—2.

Marken, Glenn C.: *See*—
Leach, Harry S., and Marken. 3,222,407.

Marker, Hannes. Adjustable spring-loaded positioning device in safety-ski bindings. 3,222,079, 12–7–65, Cl. 280—11.35.

Marker, Roy C.: *See*—
Norris, Neil J., Marker, and Post. 3,222,563.

Marks, Charles E.: *See*—
Bolomey, Rene A., and Marks. 3,222,439.

Marley, Daniel B. Spraying apparatus for washing cattle. 3,221,708, 12–7–65, Cl. 119—158.

Marshall, Don J., to Dixon Valve & Coupling Co. Pressure responsive fluid tight hose coupling. 3,222,091, 12–7–65, Cl. 285—95.

Marshall, John H., to International Business Machines Corp. Process of producing metallic deposits. 3,222,207, 12–7–65, Cl. 117—47.

Martin, George F.: *See*—
Parr, Norman L., and Martin. 3,222,438.
Martin-Marietta Corp.: *See*—
Borcher, Charles A., and Frantz. 3,221,562.
Engelhardt, Richard A. 3,222,535.
Frantz, William. 3,221,609.
Sartorio, David R., and Flanagan. 3,222,601.
Martinek, Thomas W., to Union Oil Co. of California. Apparatus for surface reactions. 3,222,137, 12–7–65, Cl. 23—285.
Marx, John W., to Phillips Petrolem Co. Sweep efficiency in miscible fluid floods. 3,221,810, 12–7–65, Cl. 166—10.
Maschinenfabrik Koppern & Co. Kommanditgesellschaft: *See*—
Schnier, Heinrich. 3,221,368.
Mason, Ralph B., and P. E. Eberly, Jr., to Esso Research and Engineering Co. Carbonaceous adsorbents. 3,222,412, 12–7–65, Cl. 260—674.
Massey-Ferugson Inc.: *See*—
Lawrence, Stanley L., and Peterson. 3,221,674.
Masters, Albert M. Board mounting means. 3,222,018, 12–7–65, Cl. 248—28.
Matheson, Chester R. Load-lifting apparatus. 3,221,897, 12–7–65, Cl. 212—71.
Matsumoto, Masakazu: *See*—
Fujii, Kiyoshi, Imoto, Ukida, and Matsumoto. 3,222,338.
Mattern, John S., and R. R. Robert, to Bausch & Lomb Inc. Apparatus for forming optical elements. 3,221,365, 12–7–65, Cl. 18—5.
Matthews, Benjamin H., to Lucerne Products, Inc. Electrical switch with camming bridging contact. 3,222,488, 12–7–65, Cl. 200—166.
Matthews, Charles S.: *See*—
Closmann, Philip J., Matthews, and Doscher. 3,221,813.
Matthews, Kenneth G.: *See*—
Sampietro, Achilles C., and Matthews. 3,221,574.
Mattson, Charles A., M. R. Olsen, F. O. Ottosen, deceased (by H. Ottosen, executrix), to Sunbeam Corp. Combination lawn edger and trimmer. 3,221,481, 12–7–65, Cl. 56—25.4.
Matuszko, Anthony J., and M. S. Chang, to United States of America, Navy. Methylamine nitroform oxidizer in nitrocellulose aluminum and metriol trinitrate propellants. 3,222,233, 12–7–65, Cl. 149—92.
Maurer, James I., R. E. Palmer, and V. D. Shah, to Hooker Chemical Corp. Method of and solution for improving conversion coated metallic surfaces. 3,222,226, 12–7–65, Cl. 148—6.16.
Maxwell, Stewart A., to Fisher & Ludlow Ltd. Coin freed vending machines. 3,221,861, 12–7–65, Cl. 194—13.
May, Ernest M., and A. Fono, to Otto B. May Inc. Azo quinolinol dye composition. 3,222,350, 12–7–65, Cl. 260—153.
May, Ernest M., and A. Fono, to Otto B. May Inc. Monoazo 8-quinolinol dyestuffs. 3,222,351, 12–7–65, Cl. 260—155.
May, Otto B., Inc.: *See*—
May, Ernest M., and Fono. 3,222,350.
May, Ernest M., and Fono. 3,222,351.
Mayer, Oscar, & Co., Inc.: *See*—
Selferth, Oscar E., and Austin. 3,221,692.
Mayne, Robert A. and R. D. Method of manufacturing a turbine type blower wheel. 3,221,398, 12–7–65, Cl. 29—156.8.
Mayne, Ruth D.: *See*—
Mayne, Robert A. and R. D. 3,221,398.
Mayne, William P., D. J. Russell, and L. Sykes, to United States of America, Navy. Circuit and technique for dividing pulse signals over a wide dynamic range of inputs. 3,222,508, 12–7–65, Cl. 235—196.
Maytag Co., The: *See*—
Mellinger, John C. 3,221,417.
McAbee, Kenneth E. Apparatus for dispensing deionized water. 3,221,859, 12–7–65, Cl. 194—3.
McCall, Walter F.: *See*—
Moore, Harry O. 3,221,434.
McCann, Wilfred, to Beckman Instruments, Inc. Variable resistance bridge. 3,222,629, 12–7–65, Cl. 338—162.
McCarty, Lourdes V., W. A. Biermann, R. J. Duncan, and A. L. Teichert, to Controls Co. of America. Metering valve with viscosity compensating adjustment. 3,221,767, 12–7–65, Cl. 137—577.
McClellan, Aubrey L., to California Research Corp. Process for rejuvenating catalysts. 3,222,271, 12–7–65, Cl. 208—110.
McDonald David I.: *See*—
Averill, William D., and McDonald. 3,221,404.
McGovern, Edward W., to Koppers Co., Inc. Bituminous pavement rejuvenator. 3,221,615, 12–7–65, Cl. 94—23.
McGraw-Edison Co.: *See*—
Beasley, Silas V., and Harding. 3,221,729.
Walker, Richard K. 3,222,074.
McGuigan, John H., to Bell Telephone Laboratories, Inc. Bistable transmission gate. 3,222,541, 12–7–65, Cl. 307—88.5.
McKay, Arthur F., and H. A. Baker, to Monsanto Canada Ltd., and American Home Products Corp. Thionocarbamate-dimethyl formamide mixture as a bacteriostat. 3,222,247, 12–7–65, Cl. 167—30.
McKee Door Co.: *See*—
McKee, John F. 3,221,465.
McKee, John F., to McKee Door Co. Sectional overhead door. 3,221,465, 12–7–65, Cl. 52—656.
McKelvy, William R., to Lamex, Inc. Method of manufacturing reinforced plastic sheet. 3,222,237, 12–7–65, Cl. 156—177.
McNaney, Joseph T. Infrared responsive recorder with layered material. 3,222,519, 12–7–65, Cl. 250—65.
McNaney, Joseph T. Infrared radiation image converter. 3,222,520, 12–7–65, Cl. 250—83.3.
McWilliams, Joseph E. Lift truck arrangement for system of handling bagged mail. 3,221,912, 12–7–65, Cl. 214—514.
Meacham, David D., W. D. Smith, and R. C. Talcott, to Eitel-McCullough, Inc. Tube having a heat conducting mount. 3,222,557, 12–7–65, Cl. 313—44.
Meade, Robert M., to International Business Machines Corp. 3,222,506, 12–7–65, Cl. 235—169.
Mearl Corp., The: *See*—
Bolomey, Rene A., and Marks. 3,222,439.
Meese, John W.: *See*—
Small, Charles B., Meese, and Frank. 3,221,962.
Meetham, Geoffrey W.: *See*—
Bird, Jack R., Meetham, and Wheeler. 3,222,165.
Meisner, Paul: *See*—
Groth, Fred A., and Meisner. 3,221,472.
Melcher, Norwood B., and W. M. Mahan, to United States of America, Interior. Sealing system for blast furnace bells for high pressure top operation. 3,221,906, 12–7–65, Cl. 214—36.
Mellen, Edward J., Jr., J. M. Webb, R. J. de Fasselle, and J. A. Dudek. Injection molding of ceramic cores. 3,222,-435, 12–7–65, Cl. 264—28.
Mellies, Norman J., to Dresser Industries, Inc. System for producing relatively high direct current voltage pulses from low voltage D.C. source. 3,222,537, 12–7–65, Cl. 307—88.5.
Mellinger, John C., to The Maytag Co. Moisture sensor control device for a laundry drier. 3,221,417, 12–7–65, Cl. 34—45.
Melpar, Inc.: *See*—
Campanella, Samuel J., and Bayston. 3,222,507.
Melton, Benjamin S. Angular composite seismometer. 3,222,636, 12–7–65, Cl. 340—17.
Meltzer, Robert I.: *See*—
Brown, Richard E., and Meltzer. 3,222,367.
Brown, Richard E., and Meltzer. 3,222,368.
Melville, John W.: *See*—
Aser, Gilbert A., Melville, and Taillie. 3,221,622.
Memole, Ralph: *See*—
Liebmann, Jack S., Memole, and Barkowitz. 3,221,421.
Mennicken, Gerhard: *See*—
Nischk, Gunter, Mennicken, and Wagner. 3,222,322.
Menzel, Waldemar: *See*—
Lutz, Hans G., and Menzel. 3,222,035.
Merck & Co., Inc.: *See*—
Schultz, Everett M., Bicking, and Wiebelhaus. 3,222,395.
Mercur, Dave. System for validating mail by postal certification. 3,221,980, 12–7–65, Cl. 229—71.
Merner, Jack N.: *See*—
King, Paul D., Barton, and Merner. 3,222,649.
Mestre, Luis. Impression cylinder combination for a press. 3,221,652, 12–7–65, Cl. 101—232.
Mestre, Luis. Stapling means and gaging and stapling combination. 3,221,964, 12–7–65, Cl. 227—5.
Mestre, Luis. Stapler mechanical operating mechanism for collators. 3,221,965, 12–7–65, Cl. 227—7.
Metal Hydrides Inc.: *See*—
Del Giudice, Frank P. 3,222,120.
Hinckley, Alfred A. 3,222,310.
Johnson, Sidney, and Lewis. 3,222,122.
Metallgesellschaft Aktiengesellschaft: *See*—
Wiemer, Jean. 3,221,475.
Meyer, Barthold F., to General Motors Corp. Cam centered electric switch with moisture-proof sealing means. 3,222,-467, 12–7–65, Cl. 200—16.
Meyer, Earl A., and J. B. Spencer, to United States of America, Army. Device for measuring the velocity of a projectile using spaced frangible switches. 3,222,596, 12–7–65, Cl. 324—70.
Meyer, Geo. J., Mfg. Co.: *See*—
Carter, Sidney T. S., and Fedler. 3,222,240.
Meyer, Heinz, W., to Elektrochemische Werke Munchen A.G. Catalyst for bulk and solution polymerization. 3,222,294, 12–7–65, Cl. 252—428.
Meyer, Hendrik W. J. H.: *See*—
Cornelissen, Johannes, Kruithof, and Meyer. 3,222,206.
Meyer, James R., to Chemical Design, Inc. Adsorption-desorption method. 3,221,476, 12–7–65, Cl. 55—28.
Meyer, Wilhelm. Exhaust gas system for internal combustion engines. 3,221,493, 12–7–65, Cl. 60—30.
Micael, Angelo. Snap fastener attachment for sewing machines. 3,221,684, 12–7–65, Cl. 112—114.
Michaels, Louis J.: *See*—
Thiel, Charles J., and Michaels. 3,221,409.
Thiel, Charles J., and Michaels. 3,222,037.
Microcyclomat Co., The: *See*—
Lykken, William H. 3,221,998.
Micro-Poise Engineering and Sales Co.: *See*—
Lannen, Robert J. 3,221,402.
Midland-Ross Corp.: *See*—
Nesbitt, John D. 3,221,796.
Storm, Arthur W., and Rinker. 3,221,905.
Midwestern Instruments, Inc.: *See*—
Clark, John R., David, and Fuller. 3,222,570.
Mielke, Donald G., to M. Mielke. Coin refunding mechanism for coin controlled apparatus. 3,221,858, 12–7–65, Cl. 194—2.
Mielke, Margaret: *See*—
Mielke, Donald G. 3,221,858.
Miksch, Russell S., and R. E. Corridan, to American Radiator & Standard Sanitary Corp. Vapor generator. 3,222,498, 12–7–65, Cl. 219—271.
Mikus, Julius A. Fishing lure. 3,221,486, 12–7–65, Cl. 43—42.17.

Miles, John R., to Lancaster Glass Corp. Lenticulated lens for traffic light. 3,222,516, 12–7–65, Cl. 240—106.1.
Milkovich, Michael J.: *See*—
Car, Tony, Machnik, Milkovich, and Ivosic. 3,221,455.
Miller, Alfred L., and A. J. Petro, to Esso Research and Engineering Co. Increasing viscosity of butyl rubber latices by the addition of metal salts. 3,222,311, 12–7–65, Cl. 260—29.7.
Miller, Alvin E. Tetrahelical structure. 3,221,464, 12–7–65, Cl. 52—655.
Miller, Eldon D., Jr., and R. K. Scott, to Harbison-Walker Refractories Co. Immersion sampler. 3,221,559, 12–7–65, Cl. 73—425.4.
Miller, John B., Jr.: *See*—
Hesen, Joseph A. 3,222,084.
Miller, Ronald A., and J. R. Potrafka. Measurement of expired tidal air volume. 3,221,732, 12–7–65, Cl. 128—2.08.
Miller, Wellington E., to Penberthy Lumber Co. Self-locking hinge. 3,221,805, 12–7–65, Cl. 160—229.
Millward, Arthur W., to The National Acme Co. Stock stop. 3,221,580, 12–7–65, Cl. 82—34.
Michner, Edwin L.: *See*—
Updegrove, Louis B., Mincher, and Steiner. 3,222,211.
Mineral & Chemicals Philipp Corp.: *See*—
Allegrini, Aldo P., and Cecil. 3,222,297.
Minnesota Mining and Mfg. Co.: *See*—
Casey, James H. 3,221,468.
Jones, Derrick A. 3,222,678.
Weber, Victor, and Tomlinson. 3,222,204.
Mishcon, Sam, to The Singer Co. Sinker arrangement for knitting machines. 3,221,521, 12–7–65, Cl. 66—107.
Mississippi Valley Structural Steel Co.: *See*—
Arntzen, John C. 3,221,772.
Dollinger, Francis A. 3,221,771.
Mitchell, Michael E.: *See*—
Burton, Coleman H., and Mitchell. 3,222,644.
Miyahara, Hisao: *See*—
Suzumura, Hideo, and Miyahara. 3,222,306.
Mobay Chemical Co.: *See*—
Cleveland, Thomas H. 3,222,386.
Loew, Gunther. 3,222,300.
Mod, Robert R.: *See*—
Skau, Evald L., Mod, and Magne. 3,222,203.
Modloff, Jay T., and B. J. Sayers, to De Kalb Commercial Body Corp. Truss and materials handling trailer. 3,221,-911, 12–7–65, Cl. 214—505.
Molins Organisation Ltd., The: *See*—
Southcott, Frederick. 3,222,059.
Monagle, John J., Jr., to E. I. du Pont de Nemours, and Co. Monoazo fiber reactive dyes. 3,222,352, 12–7–65, Cl. 260—157.
Monsanto Canada Ltd., and American Home Products Corp.: *See*—
McKay, Arthur F., and Baker. 3,222,247.
Monsanto Chemical Co.: *See*—
Barrett, Gerald R., and Harris. 3,222,341.
Boyd, Thomas, and Dietrich. 3,222,427.
Boyd, Thomas, and Dietrich. 3,222,428.
Boyd, Thomas, and Dietrich. 3,222,429.
Cohen, Lester A. 3,222,422.
Dietrich, Heinz J., and Boyd. 3,222,424.
Dietrich, Heinz J., and Boyd. 3,222,425.
Dietrich, Heinz J., and Boyd. 3,222,426.
Monsanto Chemicals Ltd.: *See*—
Brown, Joseph P. 3,222,398.
Feldman, Peter B. 3,222,188.
Roebuck, David S. P. 3,222,423.
Monsanto Co.: *See*—
Campbell, Dan N. 3,222,263.
Delacretaz, Richard. 3,222,335.
Fink, Walter. 3,222,319.
Harris, Alva F. 3,222,340.
Harris, Alva F., and Rodrigues. 3,222,430.
Harryman, Paul D., and Oakes. 3,222,278.
Hughes, Lawrence J. 3,222,417.
Leach, Harry S., and Marken. 3,222,407.
Perry, Eli. 3,222,816.
Tashlick, Irving, and Foster. 3,222,119.
Moore, Albert E.: *See*—
Godshall, Albert L., and Moore. 3,221,486.
Moore, Donald L.: *See*—
Hamilton, Earl F., Moore, and Lay. 3,222,118.
Moore, Harry O., 50% to W. F. McCall. Fishing rig. 3,221,-434, 12–7–65, Cl. 43—42.2.
Moore, Leslie D.: *See*—
Bercik, Paul G., Henke, and Moore. 3,222,272.
More, Philip J., to General Electric Co. Fused connector for kitchen range backsplasher panel. 3,222,478, 12–7–65, Cl. 200—115.5.
Morgan, Fred K.: *See*—
Hansley, Virgil L., and Morgan. 3,222,288.
Moriyama, Hiromi, H. Yamada, T. Nakanishi, and T. Kiriyama, to Kabushiki Kaisha Hitachi Seisakusho, and Keihin Hitachi Engineering Kabushiki Kaisha. Gas-filled enclosed electric switchgear with copper contacts. 3,222,486, 12–7–65, Cl. 200—166.
Moroni, Rolf, P. Kisteneich, and P. J. Breuer, to Collo-Rheincollodium, Koln GmbH Werk Hersel. Applicator cover for container. 3,221,359, 12–7–65, Cl. 15—517.
Morris, Charles L., Jr., and P. W. Simon, to Allied Chemical Corp. Process for reducing the intrinsic viscosities of chlorinated polymers of C_2 to C_3 olefins. 3,222,345, 12–7–65, Cl. 260—93.7.
Morris, Clyde W.: *See*—
Gleason, Richard J., Morris, and Ragsdale. 3,221,960.
Morris, Marion H., to Sperry-Sun Well Surveying Co. Mercury time delay switch. 3,222,469, 12–7–65, Cl. 200—33.
Morrison, Stanley R., to Honeywell Inc. Solid state junction photopotentiometer. 3,222,531, 12–7–65, Cl. 250—211.
Morcheles, Bernard, and N. L. D'Agostino, to Stacor Corp. Holder for sheet like material. 3,221,892, 12–7–65, Cl. 211—48.
Morse Bougler Inc.: *See*—
Dvirka, Miroslav. 3,221,679.
Morse, Lynn H., to Omco, Inc. Method and apparatus for sealing a pipe line. 3,221,758, 12–7–65, Cl. 137—15.
Moser, Robert V., and J. P. Van Sweringen, to Rockwell-Standard Corp. Lint arrester. 3,221,479, 12–7–65, Cl. 55—296.
Moss, Norman S., to Wilmat-Breeden Ltd. Vehicle window regulators. 3,222,050, 12–7–65, Cl. 268—126.
Motorola, Inc.: *See*—
Swartwout, Charles J. and D. K. 3,221,561.
Motozaki, Shinichi: *See*—
Shiro, Teruo, Okumura, Tamagawa, Tsunoda, Takahashi, and Motozaki. 3,222,257.
Moy, Robert G., and M. Silverberg, to Radio Corp. of America. Ultrasonic delay line circulating memory system. 3,222,-543, 12–7–65, Cl. 307—88.5.
Moyer, George F.: *See*—
Bevilacqua, Edmund J., Moyer, and Muir. 3,222,051.
Muir, Douglas F., Jr.: *See*—
Becilacqua, Edmund J., Moyer, and Muir. 3,222,051.
Muller, Jacques. Apparatus for removing a surface layer from a body of liquid. 3,221,884, 12–7–65, Cl. 210—242.
Muller, Jacques, to Rellumit Inter, S.a.r.L. Cleaning device for fluid filter. 3,221,888, 12–7–65, Cl. 210—333.
Munck, Sverre. Arrangement by gantry crane. 3,221,668, 12–7–65, Cl. 105—29.
Murdock, James D., to Canadian Industries Ltd. Curable coating composition comprising carboxyl containing copolymer a second copolymer and amine/aldehyde condensate or epoxy resin. 3,222,418, 12–7–65, Cl. 260—834.
Murayama, Katsuhiko, to Nippon Kogaku K.K. Mechanism for indicating the leveling direction in a surveying instrument. 3,221,414, 12–7–65, Cl. 83—14.
Murphy, John J., to Union Carbide Corp. Process and apparatus for the production of oriented plastic net. 3,222,-440, 12–7–65, Cl. 264—167.
Murray, John H., to Packaging Frontiers, Inc. Method and apparatus for forming tetrahedron shaped packages. 3,221,469, 12–7–65, Cl. 53—28.
Murray, Patrick A. M., to R. A. Lister & Co. Ltd. Method for crop drying. 3,221,415, 12–7–65, Cl. 34—80.
Myers, Noel W., to A. E. Staley Mfg. Co. Method of and apparatus for continuous degumming of vegetable oil and lecithin manufacture. 3,221,801, 12–7–65, Cl. 159—44.
Myers, William D., to Baker Oil Tools, Inc. Subsurface tubular string perforator. 3,221,815, 12–7–65, Cl. 166—55.8.
Myers, William D., to Baker Oil Tools, Inc. Subsurface actuating device and formation tester valve apparatus. 3,221,820, 12–7–65, Cl. 166—237.
Mynall, Dennis J., to Associated Electrical Industries Ltd. Apparatus for producing signals indicative of relative position. 3,222,591, 12–7–65, Cl. 323—61.
Nagel, Jean, to Compagnie Generale de Radiologie. Movable X-ray table with means to take X-ray pictures of successive portions of the object and means to alternatively insert photographic means and image amplifier means. 3,222,518, 12–7–65, Cl. 250—58.
Nagelvoort, Adrian, to Complex, Inc. Coking process. 3,222,-261, 12–7–65, Cl. 202—17.
Nadeau, Gale F., and G. W. Pierce, to Eastman Kodak Co. Composite film element. 3,222,178, 12–7–65, Cl. 96—69.
Nadella S.A.: *See*—
Pitner, Alfred. 3,221,390.
Pitner, Alfred. 3,221,874.
Nadler, Murray: *See*—
Creighton, Peter J., Nadler, and Wells. 3,222,409.
Nadolski, Francis J., to American Cyanamid Co. Composition for the detection of moisture in polar organic liquids. 3,222,292, 12–7–65, Cl. 252—408.
Nakahara, Kazunori. Rotary kiln and method of freeing same of a fire ring therein. 3,222,222, 12–7–65, Cl. 134—22.
Nakanishi, Tsunemoto: *See*—
Moriyama, Hiromi, Yamada, Nakanishi, and Kiriyama. 3,222,486.
Nanninga, Robert N. Automobile breaker point assembly. 3,222,468, 12–7–65, Cl. 200—30.
Nasgowitz, Donald D., to Display Corp. Battery storage and dispensing unit. 3,221,930, 12–7–65, Cl. 221—92.
Nash Engineering Co.: *See*—
Adams, Harold E. 3,221,659.
Nash, Ralph, to Allis-Chalmers Mfg. Co. Combination conveyor system. 3,221,866, 12–7–65, Cl. 198—177.
National Acme Co., The: *See*—
Millward, Arthur W. 3,221,580.
National Broach & Machine Co.: *See*—
Anthony, Russel W. 3,221,608.
National Distillers and Chemical Corp.: *See*—
Braus, Harry, and Waas. 3,222,290.
Corbett, Herbert O. 3,221,370.
Hammond, John E. 3,222,210.
Hansley, Virgil L., and Morgan. 3,222,288.
Heines, Thomas S., Jr., and Donaldson. 3,222,336.
Lecher, Hans Z., and Braus. 3,222,318.
Lowry, John C. 3,221,927.
Rowland, Stanley P., and Pritchett. 3,222,394.
Steiner, Robert H., Simpson, and Hammond. 3,222,191.
Sucietto, Richard R. 3,222,180.
Updegrove, Louis B., Mincher, and Steiner. 3,222,211.
National Research Development Corp.: *See*—
Parr, Norman L., and Martin. 3,222,438.
Woroncow, Alexander, Randall, and Benjamin. 3,222,667.

National Starch and Chemical Corp.: *See*—
Hickey, Lawrence J. 3,222,199.
Jubilee, Benjamin D., and Fox. 3,222,419.
Wurzburg, Otto B., and Herbst. 3,222,220.

National Steel Corp.: *See*—
Collins, Tappan. 3,221,671.

Naylor, Floyd E.: *See*—
Farrar, Ralph C. and Naylor. 3,222,347.

Nebel, Max B., to Hanes Hosiery Mills Co. Circular knit stockings. 3,221,522, 12–7–65, Cl. 66—185.

Necchi Societe per Azioni: *See*—
Bono, Luigi. 3,221,573.

Neidigh, Rodger: *See*—
Alexeff, Igor, and Neidigh. 3,222,559.

Neisler Laboratories, Inc.: *See*—
Cavallito, Chester J., and Gray. 3,222,370.

Neitzel, Edwin B.: *See*—
Woods, John P., Neitzel, and Prickett. 3,222,546.

Nesbitt, John D., to Midland-Ross Corp. Self-stabilizing combustion apparatus. 3,221,796, 12–7–65, Cl. 158—1.5.

Nesh, Florence. Method of determining the chloride ion concentration in water. 3,222,264, 12–7–65, Cl. 204—1.

New Era Multi Park Holding Ltd.: *See*—
O'Sullivan, Eugene. 3,221,907.

Newlin, Harry O., to The Frederick Post Co. Single revolution clutch mechanism. 3,221,853, 12–7–65, Cl. 192—84.

New-Mark Builders, Inc.: *See*—
Blomquist, John A. 3,222,554.

Newman, Everett H., ½ to M. J. Smothers. Tools for mounting fuel pumps on engines. 3,222,024, 12–7–65, Cl. 248—316.

Newman, Jacob. Adjustable finger rings. 3,221,514, 12–7–65, Cl. 63—15.7.

Newman, Vernon D., and C. E. Barry, to ACF Industries, Inc. Carburetor. 3,222,039, 12–7–65, Cl. 261—69.

Newton, Robert P., Jr. Method and apparatus for mixing gases. 3,221,757, 12–7–65, Cl. 137—9.

New York Blower Co., The: *See*—
Trickler, Calvin J., and Lanier. 3,221,983.

Nichols, Earl F.: *See*—
Shell, Haskiel R., Pace, and Nichols. 3,222,142.

Nichols, William A., and R. E. Simpson. Saw feeding device. 3,221,583, 12–7–65, Cl. 83—163.

Nickel, Heinrich, G.m.b.H.: *See*—
Bakos, Nikolaus. 3,221,512.

Nickles, Edward B.: *See*—
Grall, John G., Nickles, Van De Hey, and West. 3,221,896.

Nielsen, James W., to Airtron, Inc. Method of making a microwave element. 3,221,395, 12–7–65, Cl. 29—155.5.

Nippon Electric Co., Ltd.: *See*—
Yoshida, Tetsuo. 3,222,621.

Nippon Kogaku K. K.: *See*—
Murayama, Katsuhiko. 3,221,414.
Ohishi, Sakae. 3,221,535.

Nischk, Gunther, G. Mennicken, and K. Wagner, to Farbenfabriken Bayer Aktiengesellschaft. Polyurethane coating compositions. 3,222,322, 12–7–65, Cl. 260—75.

Noble, John W. Surgical connecting device. 3,221,746, 12–7–65, Cl. 128—334.

Noel, William J., ⅓ each to R. A. and W. E. Broerman. Device for forming eyes in wire. 3,221,779, 12–7–65, Cl. 140—104.

Noren, Anders B., to Bolidens Gruvaktiebolag. Arrangement for emptying pit casks. 3,221,914, 12–7–65, Cl. 214—623.

Noren, Mauritz F., and R. H. Scent, to Hawley Products Co. Acoustic diaphragm. 3,221,834, 12–7–65, Cl. 181—32.

Norris Grain Co.: *See*—
Gorman, James M., and Hannah. 3,222,194.

Norris, Neil J., R. C. Marker, and R. F. Post, to High Voltage Engineering Corp. Linear accelerator waveguide structures adapted to reduce the phenomenon of pulses shortening. 3,222,563, 12–7–65, Cl. 315—5.39.

North American Aviation, Inc.: *See*—
Booher, Robert K. 3,222,505.
Chu, Ju C. 3,221,494.
Farrand, William A. 3,222,660.

North American Philips Co., Inc.: *See*—
Cornelissen, Johannes, Kruitof, and Meyer. 3,222,206.
Hart, Paul A. H., and Plantinga. 3,222,614.

Norton, Charles W., Jr., to United States of America, Army. Distributed amplifier. 3,222,611, 12–7–65, Cl. 330—54.

Norton, Orlo C., to Van Products Co. Gas drier. 3,221,478, 12–7–65, Cl. 55—281.

Novick, Abraham, to F. L. Smithe Machine Co., Inc. Machine for cutting portions from blanks of sheet material. 3,221,584, 12–7–65, Cl. 83—170.

Noyes, Lois A. Cleaning wand. 3,221,354, 12–7–65, Cl. 15—118.

Numeric Systems of Texas, Inc.: *See*—
Creamer, Robert W. 3,221,901.

Nusbaum, William J.: *See*—
Wong, Robert Y., Nusbaum, and Holeski. 3,221,547.

Nutter, Orville C., to Pekay Machine & Engineering Co. Inc. System for cooling foundry sands in process. 3,221,381, 12–7–65, Cl. 22—89.

Nyce, Jack L., and R. S. Ro, to E. I. du Pont de Nemours and Co. Copolymers of ethylene-CH_2=CH—CH_2—R-halogen-2-norbornenes. 3,222,330, 12–7–65, Cl. 260—80.5.

O.M.C.S.A. Officine Meccaniche Cigardi S.p.A.: *See*—
Giuiuzza, Pietro, and Schoen. 3,221,516.

Oakes, David T.: *See*—
Harryman, Paul D., and Oakes. 3,222,278.

Oaks, Norman E., to Varian Associates. High frequency electron discharge device with temperature compensated gap control means. 3,222,565, 12–7–65, Cl. 315—5.48.

Oaks, Norman E.: *See*—
De Pue, James M., Jr., and Oaks. 3,222,564.

Obenchain, Richard F., to Koppers Co., Inc. Apparatus for delivering a fluid into a furnace. 3,222,044, 12–7–65, Cl. 266—41.

Obenshain, David N.: *See*—
Brundige, Maurice M., Obenshain, Fredrickson, and Kohne. 3,222,209.

O'Connor, Thomas J., to Easco Products, Inc. Quick-change electrodes system for spark-cutting apparatus. 3,222,494, 12–7–65, Cl. 219—69.

O'Donnell, William R., to Valve Corp. of America. Aerosol dispenser. 3,221,950, 12–7–65, Cl. 222—394.

Office National d'Etudes et de Recherches Aerospatial: *See*—
Lenfant, Rene A. 3,222,581.

Office National Industriel de L'Azote: *See*—
Becanne, Robert L. P., and Ferrand. 3,222,138.

Officine Meccaniche Agardi S.p.A.-O.M.C.S.A.: *See*—
Tagliasacchi, Ercole. 3,221,651.

Ogilvie, Kendal M.: *See*—
Beals, George C., Kocherhans, and Ogilvie. 3,222,162.

Ohishi, Sakae, to Cohen Co., Ltd., and Nippon Rogaku K.K. Mechanism for selectively applying loads of different magnitudes in high temperature micro-hardness testing apparatus. 3,221,535, 12–7–65, Cl. 73—15.4.

Ohmega Laboratories: *See*—
Demarest, Philip C. 3,221,386.

Okumura, Shinji: *See*—
Shiro, Teruo, Okumura, Tamagawa, Tsunoda, Takahashi, and Motozaki. 3,222,257.

Oldenburg, Gerald F., to Bailey Meter Co. Interrupter control including a pulse which inhibits error signal to mitigate overshoot. 3,222,532, 12–7–65, Cl. 290—40.

Olin Mathieson Chemical Corp.: *See*—
Fried, Josef. 3,222,360.
Yale, Harry L. 3,222,250.

Olsen, Marvin R.: *See*—
Mattson, Charles A., Olsen, and Ottosen. 3,221,481.

Olson, Delwyn L., to Fluid Dynamics Inc. Cable anchor. 3,222,092, 12–7–65, Cl. 285—114.

Olsson, Sven A., to Telefonaktiebolaget L. M. Ericsson. Magnetic memory arrangement. 3,222,656, 12–7–65, Cl. 340—174.

Omark Industries, Inc.: *See*—
Kopf, Rowland J., Humphrey, and Shoup. 3,221,966.

Omco, Inc.: *See*—
Morse, Lynn H. 3,221,758.

O'Neil, Harvey L., to Hartman Luggage Co. Garment-carrying bag hook assemblages. 3,221,848, 12–7–65, Cl. 190—43.

Onulak, Eugene W., to The Locke Steel Chain Co. Chain link making machine. 3,221,490, 12–7–65, Cl. 59—13.

Orange Products, Inc.: *See*—
Schaper, Leonard W. 3,221,439.

Orowan, Egon. Receptacle for enterostomy appliance. 3,221,742, 12–7–65, Cl. 128—283.

Orr, John B., to Sheffield Plastics, Inc. Room light control. 3,222,515, 12–7–65, Cl. 240—106.

Orr, Robert F.: *See*—
Hall, Donivan L., Orr, and Williams. 3,221,543.

Osborne, Adam, to Entroputers, Inc. Method of and apparatus for accurately and instantaneously determining the ratio of the constituents of a vapor-liquid-solid mixture or a mixture of any two of the components thereof. 3,221,541, 12–7–65, Cl. 73—53.

Osment, Harry E., and R. B. Emerson, to Kaiser Aluminum & Chemical Corp. Method for producing active alumina nodules. 3,222,129, 12–7–65, Cl. 23—141.

O'Sullivan, Eugene, to New Era Multi Park Holding Ltd. Chocking device for vehicle wheels. 3,221,907, 12–7–65, Cl. 214—42.

Otis Engineering Corp.: *See*—
Taylor, Frank H., and Bostock. 3,221,818.

Otsuka, Shin-Ichiro: *See*—
Iizuka, Hiroshi, Katsuya, Shiio, Komagata, Otsuka, Yamada, and Ishii. 3,222,258.

Otteman, Lloyd G., to Shell Oil Co. Secondary release mechanism for fluid actuated couplings. 3,222,089, 12–7–65, Cl. 285—18.

Ottosen, Frederick O.: *See*—
Mattson, Charles A., Olsen, and Ottosen. 3,221,481.

Ottosen, Harriet: *See*—
Mattson, Charles A., Olsen, and Ottosen. 3,221,481.

Overly Mfg. Co.: *See*—
Smeltzer, Donald C. 3,221,376.

Overseas Finance and Trading Co.: *See*—
Franklin, Le Roy H., and Trainer. 3,222,479.

Owens-Corning Fiberglas Corp.: *See*—
Gaston, William R., and Richards. 3,222,243.
Schreffler, Robert Z. 3,222,151.

Owens-Illinois Glass Co.: *See*—
Richards, Keith C. 3,222,568.

Oxy-Dry Sprayer Corp.: *See*—
Yonkers, Edward H., and Lewin. 3,221,938.

Paasche, Fritz, to Franz Clouth Rheinische Gummiwarenfabrik Aktiengesellschaft. Conveyor belt. 3,221,869, 12–7–65, Cl. 198—193.

Pace, Norman A.: *See*—
Shell, Haskiel R., Pace, and Nichols. 3,222,142.

Pacific Car and Foundry Co.: *See*—
Holmstrom, John G. 3,221,832.
Lemon, Lucien W., and Palsson. 3,221,670.
Magnuson, John E. 3,221,909.

Packaging Frontiers, Inc.: *See*—
Murray, John H. 3,221,469.

Packer, Herbert: *See*—
Fitzgibbon, George E., Packer, and Huetten. 3,222,579.

Pagay, Roger. Arrangement for conveying containers and the like articles. 3,221,870, 12–7–65, Cl. 198—219.

Page, Harold A., to Kaiser Aluminum & Chemical Corp. Method of enameling anodized aluminum. 3,222,266, 12–7–65, Cl. 204—38.

Pahl, John G. Pole top switch with multi-position control arm. 3,222,470, 12–7–65, Cl. 200—48.

Paintendre, Pierre: *See*—
Jean-Marie, Joseph, and Paintendre. 3,221,412.

Palmer, Gerald G.: *See*—
Illyn, Alexis V., Palmer, and Popoff. 3,222,283.

Palmer, Richard E.: *See*—
Maurer, James I., Palmer, and Shah. 3,222,226.

Palsson, Kristjan H.: *See*—
Lemon, Lucien W., and Palsson. 3,221,670.

Paolini, Frank R.: *See*—
Annis, Martin, Clark, Greenberg, Paolini, and William. 3,221,731.

Paper Converting Machine Co., Inc.: *See*—
Sanders, Charles J. 3,221,613.

Paquette, Elmer G., to United States of America, Air Force. Package comprising radar chaff. 3,221,875, 12–7–65, Cl. 206—65.

Paragon Bridge & Steel Co.: *See*—
Baker, William R., and Kullgren. 3,221,669.

Park Plastics Co. Inc.: *See*—
Joffe, Edward J. 3,221,340.

Parker, Herbert E., R. A. Sullivan, and R. R. Whipple, to Western Electric Co., Inc. Method of casting electrical component mounting boards. 3,222,442, 12–7–65, Cl. 264—277.

Parker-Hannifin Corp.: *See*—
Elbogen, James S., and de Graaf. 3,221,764.

Parr, Norman L., and G. F. Martin, to National Research Development Corp. Heat resisting material and method for producing it. 3,222,438, 12–7–65, Cl. 264—66.

Parsi, Edgardo J.: *See*—
Tirrell, Charles E., and Parsi. 3,222,267.

Parsons, Hubert J., and A. A. Peterson, to Hardings Bros., Inc. Automatic two-slide mechanism. 3,221,578, 12–7–65, Cl. 82—21.

Pasciuto, Richard D.: *See*—
Pasciuto, Edward S., and Pasciuto. 3,222,651.

Passavant Werke: *See*—
Schade, Harald J. G. 3,221,887.

Patinkin, Seymour H.: *See*—
Case, Everett N., Patinkin, and Carlson. 3,222,146.

Patmore, James R., to Electronic Associates Inc. Transistor amplifier circuit. 3,222,607, 12–7–65, Cl. 330—9.

Payne, James K. Overall garment. 3,221,342, 12–7–65, Cl. 2—83.

Pearlstein, Fred, to United States of America, Army. Stabilized electroless copper solution. 3,222,195, 12–7–65, Cl. 106—1.

Pearson, Laurence B. Automatic livestock head gate. 3,221,707, 12–7–65, Cl. 119—98.

Pecksen, Otto: *See*—
Madlener, Paul, and Pecksen. 3,221,657.

Pedersen, Erik S.: *See*—
Roes, John B., Gauld, and Pedersen. 3,221,508.

Peffer, John R.: *See*—
Wismer, Marco, Le Bras, Peffer, and Foote. 3,222,357.

Pekay Machine & Engineering Co. Inc.: *See*—
Nutter, Orville C. 3,221,381.

Pellino, Charles E.: *See*—
Johnson, Leonard W., Senser, and Pellino. 3,221,346.

Pellnitz, Herman G., to ACF Industries, Inc. Railway car. 3 221,898. 12–7–65, Cl. 213—8.

Penberthy Lumber Co.: *See*—
Miller, Wellington E. 3,221,805.

Penn, Carl B., to Pyles Industries, Inc. Sealant gun. 3,221,947, 12–7–65, Cl. 222—327.

Pennsalt Chemicals Corp.: *See*—
Block, Burton P., and Simkin. 3,222,298.
Blumberg, Marvin E., and Gould. 3,222,384.
Demme, Fred P. 3,222,334.
Popoff, Ivan C., Block, and Huber. 3,222,378.
Hauptschein, Murray, and Fainberg. 3,222,406.

Pepper, James M.: *See*—
Pitel, Paul J., and Pepper. 3,221,727.

Perelman, Melvin, to Eli Lilly and Co. Diaryl-acetonitriles and 2 2,3-triarylpropionitriles. 3,222,388, 12–7–65, Cl. 260—465.

Perkins, Corles M., to Honeywell, Inc. Automatic pilots for aircraft. 3,222,013, 12–7–65, Cl. 244—77.

Perrozzi, Joseph R., to The Pillsbury Co. Convenience food package and process. 3,222,189, 12–7–65, Cl. 99—172.

Perry, Eli, to Monsanto Co. Stabilization of polyaldehydes with thiobenzanilide. 3,222,316, 12–7–65, Cl. 260—45.9.

Pertien, Johannes. Building-element, particularly a paving-element. 3,221,614, 12–7–65, Cl. 94—13.

Peter, Joseph F. Lampshades and lampbases. 3,222,517, 12–7–65, Cl. 240—108.

Peters, George T.: *See*—
Arnoldi, Walter E., De Rose, Jennings, and Peters. 3,221,477.

Peterson, Anders A.: *See*—
Parsons, Hubert J., and Peterson. 3,221,578.

Peterson, Fred D., to Peterson Products of San Mateo, Inc. Dispensing head for foam system. 3,222,134, 12–7–65, Cl. 23—252.

Peterson, Harold G.: *See*—
MacKenzie, Fred T., Becker, and Peterson. 3,221,967.

Peterson, Herbert T., to Weyerhaeuser Co. Dilution zone density detector. 3,221,538, 12–7–65, Cl. 73—32.

Peterson, Merle H.: *See*—
Lawrence, Stanley L., and Peterson. 3,221,674.

Peterson Products of San Mateo, Inc.: *See*—
Peterson, Fred D. 3,222,134.

Petro, Anthony J.: *See*—
Miller, Alfred L., and Petro. 3,222,311.

Pfaudler Permutit, Inc.: *See*—
Helt, Allyn H., and Calmon. 3,222,291.

Pfister, Stanley A., to The Cincinnati Milling Machine Co. Drilling machine feed mechanism. 3,221,852, 12–7–65, Cl. 10—139.

Pflueger Corp.: *See*—
Sarah, Thomas F. 3,222,009.

Phelps Dodge Copper Products Corp.: *See*—
Saunders, Hollis S., and Gehring. 3,222,219.

Phelps, Orville E., to Dana Corp. Friction clutch. 3,221,856, 12–7–65, Cl. 192—89.

Philco Corp.: *See*—
Curll, Allan R., Jr. 3,222,580.
Kalhammer, Fritz R. 3,222,530.
Steup, John E. 3,222,606.

Phillips Petroleum Co.: *See*—
Farrar, Ralph C., and Naylor. 3,222,347.
Marx, John W. 3,221,810.

Phillips, Robert, and C. Centrella, to Redi-Knot Tie Clip Corp. Necktie clip. 3,221,343, 12–7–65, Cl. 2—153.

Pianowski, Lean J.: *See*—
Clauss, Richard J., Klein, and Pianowski. 3,222,268.

Piasecki, Frank N., to Piasecki Aircraft Corp. Slip stream deflector assembly for aircraft. 3,222,012, 12–7–65, Cl. 244—51.

Pickles, Joseph, to Ferro Mfg. Corp. Bucket seat adjuster. 3,222,025, 12–7–65, Cl. 248—397.

Pien, Hsia S., to Baldwin-Lima-Hamilton Corp. Force measuring device. 3,222,628, 12–7–65, Cl. 338—4.

Pierce, George W.: *See*—
Nadeau, Gale F., and Pierce. 3,222,178.

Pietzsch, Hans, to Kienzle Apparate G.m.b.H. Printing arrangement for business machine. 3,221,863, 12–7–65, Cl. 197—18.

Pilkington Brothers Ltd.: *See*—
Harper, Harold F., Lee, and Davies. 3,222,155.
Pilkington, Lionel A. B. 3,222,154.

Pilkington, Lionel A. B., to Pilkington Brothers Ltd. Manufacture of flat glass. 3,222,154, 12–7–65, Cl. 65—91.

Pillsbury Co., The: *See*—
Davis, Charles L. 3,222,190.
Forkner, John H. 3,221,675.
Kosa, Tibor, and Agasie. 3,221,560.
Perrozzi, Joseph R. 3,222,189.
Rozsa, Tibor A., Gracza, Manning, and Harrel. 3,222,183.
Weiss, Robert M., Sinner, and Bloch. 3,222,184.
Yueh, Mao H. 3,222,185.
Zoeller, Richard J., and Hunter. 3,221,975.

Piasecki Aircraft Corp.: *See*—
Piasecki, Frank N. 3,222,012.

Pitel, Paul J., and J. M. Pepper. Abrasive wheel dressing device. 3,221,727, 12–7–65, Cl. 125—11.

Pitner, Alfred, ½ to Nadella S.A. Method and apparatus for forming cages for roller bearings. 3,221,390, 12–7–65, Cl. 29—148.4.

Pitner, Alfred, to Nadella Societe Anonyme. Presentation or packing of roller, needle and ball bearings and the like. 3,221,874, 12–7–65, Cl. 206—65.

Pitts, Fred T.: *See*—
Geikler, John A., and Pitts. 3,222,623.

Pitts, John J., to General Instrument Corp. Method and apparatus for use in the manufacture of transistors. 3,221,394, 12–7–65, Cl. 29—155.5.

Pittsburgh Activated Carbon Co.: *See*—
Joyce, Ronald S. 3,222,277.

Pittsburgh Plate Glass Co.: *See*—
Talaty, Erach R. 3,222,397.
Wismer, Marco, Le Bras, Peffer, and Foote. 3,222,357.

Plantinga, Gerrit H.: *See*—
Hart, Paul A. H., and Plantinga. 3,222,614.

Platner, John L., to Allis-Chalmers Mfg. Co. System for fuel cells. 3,222,223, 12–7–65, Cl. 136—86.

Poehler, Guenter: *See*—
Suter, Hubert, Poehler, and Sperber. 3,222,400.

Polaroid Corp.: *See*—
Bing, Herbert A., and Malerbi. 3,221,627.
Eloranta, Vaito K. 3 222,170.
Glass, Arthur M. 3,221,942.
Green, Milton, and Rogers. 3,222,169.
Land, Edwin H. 3,221,599.
Land, Edwin H., and Daw. 3,221,600.
Land, Edwin H. 3,222,168.
Land, Edwin H. 3,222,171.

Pollard, James A.: *See*—
Willard, Frank H., and Pollard. 3,222,550.

Pollard, Patrick J., to R. L. Sherman. Electroencephalograph wave analyzer. 3,222,598, 12–7–65, Cl. 324—77.

Pollert, Carl F. Carton closure-carrier. 3,221,977, 12–7–65, Cl. 229—52.

Polymer Processes, Inc.: *See*—
Dames, Carl W., Jr., and Boyer. 3,222,448.

Pomeroy, Braman. Fastener for window structures and the like having removable mullion units. 3,221,462, 12–7–65, Cl. 52—682.

Poole, Lloyd C. Electrical control system for welding apparatus. 3,222,589, 12–7–65, Cl. 321—7.

Poorman, Frank, Jr.: *See*—
De Vries, Douwe, and Poorman. 3,221,817.

Popodi, Alfred E.: *See*—
Boan, Byron H., and Popodi. 3,222,547.

Popoff, Ivan C., B. P. Block, and L. K. Huber, to Pennsalt Chemicals Corp. Phthalimidomethyl phosphorus compounds. 3,222,378, 12–7–65, Cl. 260—326.

Popoff, Vladimir L.: *See*—
Illyn, Alexis V., Palmer, and Popoff. 3,222,283.
Porsche, Dr. Ing. H.c.F., K.G., Firma: *See*—
Stotz, Erich, and Sommerer. 3,222,083.
Porter, H. K., Co., Inc.: *See*—
Fritz, Harry E., and Galloway. 3,221,774.
Porter-Lancastrian Ltd.: *See*—
Porter, Thomas. 3,221,931.
Porter, Thomas, to Porter-Lancastrian Ltd. Pressurized system and method for the delivery of beverages from bulk. 3,221,931, 12–7–65, Cl. 222—1.
Poschmann, Franz, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Polyvinylsulfonates with alum as precipitants in the protein sizing of paper. 3,222,245, 12–7–65, Cl. 162—168.
Post, Arthur H., Jr.: *See*—
Hogan, Walter H., and Post. 3,221,551.
Post, Frederick, Co., The: *See*—
Newlin, Harry O. 3,221,855.
Post, Richard F.: *See*—
Norris, Neil J., Marker, and Post. 3,222,563.
Poster Products, Inc.: *See*—
Weiss, Franz. 3,221,648.
Weiss, Franz. 3,221,649.
Potrafka, John R.: *See*—
Miller, Ronald A., and Potrafka. 3,221,732.
Poupitch, Ouglijesa J., to Illinois Tool Works Inc. Nut lock. 3,221,790, 12–7–65, Cl. 151—7.
Poupitch, Ouglijesa J., to Illinois Tool Works Inc. Lockwasher and fastener assembly. 3,221,792, 12–7–65, Cl. 151—38.
Powell, Kenneth E., F. A. Hinson, and D. C. Williams, to Ashland Oil & Refining Co. Preparation of carbon black. 3,222,131, 12–7–65, Cl. 23—209.4.
Powell, Walter F., Jr., to General Electric Co. Apparatus for operating electric discharge devices. 3,222,572, 12–7–65, Cl. 315—151.
Powell, Warren H., to E. I. du Pont de Nemours and Co. Production of per (chlorofluoro) benzenes. 3,222,405, 12–7–65, 260—650.
Powers, Walter H., and J. J. Vlasak, to Walker Mfg. Co. Clamped connection. 3,222,090, 12–7–65, Cl. 285—27.
Power Jets (Research & Development) Ltd.: *See*—
Spalding, Dudley B. 3,221,981.
Prats, Michael, to Shell Oil Co. Mobile in-situ heating of formations. 3,221,811, 12–7–65, Cl. 166—11.
Prats, Michael, to Shell Oil Co. Use of antioxidants in underground combustion control. 3,221,812, 12–7–65, Cl. 166—11.
Pratt, John: *See*—
Giuffrida, Philip, and Pratt. 3,222,492.
Precisa AG, Rechenmaschinenfabrik: *See*—
Gelling, Helmut. 3,221,644.
Premack, Joshua, to Honeywell Inc. Detection apparatus. 3,222,664, 12–7–65, Cl. 340—258.
Prescott, Paul I., and T. G. Selin, to General Electric Co. Phenylsiloxanediol amine complexes and process for their production. 3,222,369, 12–7–65, Cl. 260—290.
Pressed Steel Tank Co.: *See*—
Pyle, John W., Jr. 3,221,808.
Prestowitz, Clyde V., to Arocos Corp. Eddy current testing method of distinguishing similar welding electrodes having dissimilar coatings. 3,222,594, 12–7–65, Cl. 324—40.
Pribyl, Robert, to Vereinigte Osterreichische Eisen- und Stahlwerke Aktiengesellschaft. Process of hardening alloy steels. 3,222,229, 12–7–65, Cl. 148—143.
Price, Wilson T., and C. R. Brown, to United States of America, Navy. Liquid spring mounting means for a launching tube. 3,221,602, 12–7–65, Cl. 89—1.7.
Prickett, Tom, Jr.: *See*—
Woods, John P., Neitzel, and Prickett. 3,222,546.
Pritchett, Ervin G.: *See*—
Rowland, Stalney P., and Pritchett. 3,222,394.
Procter & Gamble Co., The: *See*—
Laughlin, Robert G. 3,222,287.
Production Metal Products Co., Inc.: *See*—
Rhodes, William D., and Forrest. 3,221,895.
Promotional Advertising Associates, Inc.: *See*—
Reuben, Alan L., Russo, and Forte. 3,221,429.
Publicite Francaise, La: *See*—
Dangauthier, Marcel. 3,221,720.
Puetz, Jordan F.: *See*—
Whiting, Harold E., and Puetz. 3,222,476.
Pugh, Charles D., to Chicago Bridge & Iron Co. Brazing alloy and process using the same. 3,222,164, 12–7–65, Cl. 75—170.
Purzycki, Alfred Z., to Teletype Corp. Reel accelerator and brake mechanism. 3,222,008, 12–7–65, Cl. 242—75.43.
Pyle, John W., Jr., to Pressed Steel Tank Co. Heat exchanger head. 3,221,808, 12–7–65, Cl. 165—158.
Pyles Industries, Inc.: *See*—
Penn, Carl B. 3,221,947.
Queen Mfg. Co., Inc.: *See*—
Doherty, Donald W. 3,221,678.
Quigg, Charles H. Method and apparatus for heating and planing roads. 3,221,617, 12–7–65, Cl. 94—42.
R S Electronics Corp.: *See*—
Van Geen, John. 3,221,903.
Racaj Montemayor. Pencil sharpener. 3,221,709, 12–7–65, Cl. 120—93.
Radio Corp. of America: *See*—
Amodei, Juan J. 3,222,542.
Gray, George W. 3,222,637.
Hedlund, Lee V. 3,222,617.
Helus, Richard R., and Jansen. 3,222,466.
Moy, Robert G., and Silverberg. 3,222,543.
Ragan, Marshall P.: *See*—
Crossland, Edward J., Ragan, and Hawkins. 3,221,988.
Ragsdale, La Verne B.: *See*—
Gleason, Richard J., Morris, and Ragsdale. 3,221,960.
Rai, Charanjit, W. E. Kramer, and R. C. Kimble, to Union Oil Co. of California. Non-corrosive detergent compositions. 3,222,285, 12–7–65, Cl. 252—137.
Rai, Charanjit, to Union Oil Co. of California. Derivatives of ferrocene. 3,222,373, 12–7–65, Cl. 260—299.
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Raidel, John E., to A. J. Industries, Inc. Tandem suspensions. 3,222,082, 12–7–65, Cl. 280—104.5.
Ramus, Yves. Process for manufacturing a humic fertilizer. 3,222,160, 12–7–65, Cl. 71—23.
Ranco Inc.: *See*—
Snoberger, Philip H., and Buschmann. 3,222,555.
Lorenz, Jerome L. 3,222,481.
Randall, Frank E.: *See*—
Smith, Lester L., and Randall. 3,221,636.
Randall, Jack S.: *See*—
Woroncow, Alexander, Randall, and Benjamin. 3,222,667.
Ranseen, Agnes J.: *See*—
Banning, Thomas A., and Ranseen. 3,222,680.
Ranseen, Emil L.: *See*—
Banning, Thomas A., Jr., and Ranseen. 3,222,680.
Rasch, Arthur A., to Eastman Kodak Co. Process for forming metallic nonsilver images. 3,222,175, 12–7–65, Cl. 96—36.
Rath, Harry B., to Leeds and Northrup Co. System for cyclically producing control impulses of predetermined length and frequency. 3,222,551, 12–7–65, Cl. 307—97.
Rawson, Philip N.: *See*—
Shurtleff, Wood B., and Rawson. 3,221,935.
Shurtleff, Wood B. and Rawson. 3,221,953.
Ray, Kenneth M., and R. W. Bohnsack, to United States of America, Navy. Bandwidth switching circuit. 3,222,612, 12–7–65, Cl. 330—126.
Raybestos-Manhattan, Inc.: *See*—
Batchelor, Clyde S., and Jensen. 3,221,853.
Raymond, Robert E., to Hydro Kinetics, Inc. Piston shoe construction for axial piston pump. 3,221,564, 12–7–65, Cl. 74—569.
Raynor, Russell C.: *See*—
Scott, Charles H., and Raynor. 3,221,401.
Rea, Herman K. Apparatus for holding nursing bottles. 3,222,020, 12–7–65, Cl. 248—106.
Redi-Knot Tie Clip Corp.: *See*—
Phillips, Robert, and Centrella. 3,221,343.
Reeder, Earl, and L. H. Sternbach, to Hoffmann-La Roche Inc. Process for preparing benzodiazepine compounds. 3,222,359, 12–7–65, Cl. 260—239.
Reich, Karl M.: Maschinenfabrik: *See*—
Kaltenmark, Otto, and Düpüy. 3,221,783.
Reicheneder, Franz, K. Dury, H. Stummeyer, and A. Fischer, to Badische Anilin-& Soda-Fabrik Aktiengesellschaft. Method of destroying undesirable plant growth. 3,222,159, 12–7–65, Cl. 71—2.5.
Reighart, June H. Ladle addition feeding mechanism with independently controlled feeder conveyor. 3,221,380, 12–7–65 Cl. 22—82.
Reilly, Donald C.: *See*—
Ricker, Conrad J., and Reilly. 3,221,868.
Reinhardt, Nicholas, to Edgerton, Germeshausen & Grier, Inc. Gaseous reservoir. 3,222,561, 12–7–65, Cl. 313—180.
Reintjes, Geo P., Co., Inc.: *See*—
Reintjes, George P., and Byfield. 3,221,680.
Reintjes, George P., and D. R. Byfield to Geo P. Reintjes Co., Inc. Dryer furnace wall tile. 3,221,680, 12–7–65, Cl. 110—72.
Reisman, Arnold: *See*—
Berkenblit, Melvin, Cheroff, Hochberg, and Reisman. 3,222,216.
Reller, Virgil S. Cold water quicklime slaker. 3,222,139, 12–7–65, Cl. 23—287.
Rellumit Inter, S.a.r.L.: *See*—
Muller, Jacques. 3,221,888.
Remington, William F., and R. R. Jackson. Child's convertible car and table seat. 3,222,104, 12–7–65, Cl. 297—134.
Renshaw, John P. Positive displacement energy converting device. 3,221,717, 12–7–65, Cl. 123—13.
Rentschler Waldemar T., to Alfred Gauthier, G.m.b.H. Photogranhic camera having automatic exposure setting means. 3,221,623, 12–7–65, Cl. 95—10.
Rentschler, Waldemar T., to Alfred Ganthier, G.m.b.H. Intralens shutter. 3,221,629, 12–7–65, Cl. 95—63.
Reny, Richard E. Packaging tray. 3,221,971, 12–7–65, Cl. 229—2.5.
Republic Steel Corp.: *See*—
Adams, Albert C., and Bialog. 3,221,641.
Reserve Mining Co.: *See*—
Halsey, Homer P. 3,221,400.
Ressler, Erhard O., to Avco Corp. Stabilized direct current to alternating current analog converter. 3,222,618, 12–7–65, Cl. 331—113.
Retzler, William: *See*—
Zellweger, Conrad, and Retzler. 3,221,782.
Reuben, Alan L., A. M. Russo, and J. Forte, to Promotional Advertising Associates, Inc. Display apparatus. 3,221,429, 12–7–65, Cl. 40—10.
Reusser, Peter U. Electrostatic generator. 3,222,553, 12–7–65, Cl. 310—6.
Revells Bayard, Societe Anonyme: *See*—
Deladerriere, André. 3,221,488.

Rex Chainbelt Inc.: *See*—
Hudis, Michael I. 3,221,618.
Rexall Drug and Chemical Co.: *See*—
Williams, Robert E. 3,222,396.
Reymersholms Gamla Industri Aktiebolag: *See*—
Lennstrom, Karl V. 3,221,883.
Rhodes, William D., and J. R. Forrest, to Production Metal Products Co., Inc. Wire display rack. 3,221,895, 12–7–65, Cl. 211—148.
Rice, Rex, to International Business Machines Corp. Memory system for using a memory despite the presence of defective bits therein. 3,222,653, 12–7–65, Cl. 340—172.5.
Rice, Rex: *See*—
Low, Paul R., and Rice. 3,222,527.
Richards, David O.: *See*—
Gaston, William R., and Richards. 3,222,243.
Richards, Keith C., to Owens-Illinois Glass Co. Control of plasma. 3,222 568, 12–7–65, Cl. 315—111.
Richardson Merrell, Inc.: *See*—
Wyckoff, Kenneth K., and Guthrie. 3,222,251.
Ricker, Conrad J., and D. C. Reilly, to Goodman Mfg. Co. Troughing roller assembly. 3,221,868, 12–7–65, Cl. 198—192.
Rickless, Nathan: *See*—
Betensky, Ellis I., and Rickless. 3,221,601.
Rico Ltd.: *See*—
Kwan Lun F. 3,221,373.
Ridge Tool Co., The: *See*—
Small, Charles B., Meese, and Frank. 3,221,962.
Riebel, Felix. Device for grinding and resharpening gear-cutting hobs. 3,221,447, 12–7–65, Cl. 51—98.
Riebel, Gilbert A., to J. E. Dominik. Paper towel dispenser. 3,221,929, 12–7–65, Cl. 221—63.
Riker, Charles O., to Stapling Machines Co. Mechanism for bending and clinching ends of intermittent binding wires on wirebound containers. 3,221,778, 12–7–65, Cl. 140—93.
Riley, John K. Dispenser for pressurized reservoir of the aerosol variety. 3,221,946, 12–7–65, Cl. 222—309.
Rimmey, Robert R., to Sperry Rand Corp. Bale length control device. 3,221,639, 12–7–65, Cl. 100—4.
Rimoldi, Virginio, & C., S.p.A.: *See*—
Marforio, Nerino. 3,221,688.
Rinker, Franklin G.: *See*—
Storm, Arthur W., and Rinker. 3,221,905.
Ripart, Guy: *See*—
Denis, André, and Ripart. 3,222,593.
Ripley Co., Inc.: *See*—
Steinkamp, Robert A. 3,222,471.
Ritz, Hans. High-voltage instrument transformer. 3,222,590, 12–7–65, Cl. 323—48.
Riva, William. Pull toy. 3,221,445, 12–7–65, Cl. 46—204.
Ro, Rolland S-Y: *See*—
Nyce, Jack L., and Ro. 3,222,330.
Robert, Renald R.: *See*—
Mattern, John S., and Robert. 3,221,865.
Robertshaw Controls Co.: *See*—
Houser, Roy W. 3,221,991.
Kreuter, Kenneth G. 3,221,761.
Tyler, Hugh J. 3,222,483.
Robinson, Myron L., and D. C. Hill. Plastic pipe to metal pipe coupling. 3,222,094, 12–7–65, Cl. 285—256.
Robson, Frederick W., and W. A. Wahl, to Toledo Scale Corp. Dishwashing machines. 3,221,754, 12–7–65, Cl. 134—68.
Rockwell-Standard Corp.: *See*—
Moser, Robert V., and Van Sweringen. 3,221,479.
Rodnick, Jack: *See*—
Rudnick, Jack. 3,221,804.
Rodrigues, Fernao: *See*—
Harris, Alva F., and Rodrigues. 3,222,430.
Roebuck, David S. P., to Monsanto Chemicals Ltd. Method of increasing grafting efficiency in graft copolymerization. 3,222,423, 12–7–65, Cl. 260—877.
Roehrs, Guenter W., to General Motors Corp. Hollow ball studs. 3,221,527, 12–7–65, Cl. 72—80.
Roes, John B., W. J. Gauld, and E. S. Pedersen, to United States of America, Navy. Flexible cold side for thermoelectric module. 3,221,508, 12–7–65, Cl. 62—3.
Rogers, Howard G.: *See*—
Green, Milton, and Rogers. 3,222,169.
Rogers, John W., and A. J. Viscosi, to United States of America, Army. Electrical component holder. 3,222,448, 12–7–65, Cl. 174—35.
Rohm & Haas Co.: *See*—
Fellmann, Robert P., and Kampf. 3,222,339.
Rolls-Royce Ltd.: *See*—
Bird, Jack R., Meetham, and Wheeler. 3,222,165.
Roloff, August F. and M. S. Support for archery equipment. 3,221,957, 12–7–65, Cl. 224—1.
Roloff, Mina S.: *See*—
Roloff, August F. and M. S. 3,221,957.
Romoli, Mario. Rotary internal combustion engine. 3,221,715, 12–7–65, Cl. 123—8.
Ronning, Jacob A. Rotary lawn tool with gathering means. 3,221,483, 12–7–65, Cl. 56—27.
Ronson Corp.: *See*—
Zellweger, Conrad, and Retzler. 3,221,782.
Rosán, Engineering Corp.: *See*—
Rosán, José. 3,221,791.
Rosán, José, to Rosán Engineering Corp. Nut-type fastener incorporating frusto-conical lock and method of fabricating same. 3,221,791, 12–7–65, Cl. 151—21.
Rosenthal, Rudolph: *See*—
Iacoviello, John G., and Rosenthal. 3,222,381.
Rosenthal, Sol R. Injection device. 3,221,739, 12–7–65, Cl. 128—253.
Rosenthal, Sol R. Injection device. 3,221,740, 12–7–65, Cl. 128—253.
Ross, Milburn M. Well pumping apparatus. 3,221,568, 12–7–65, Cl. 74—108.
Ross, Milburn M. Well pump means. 3,221,569, 12–7–65, Cl. 74—108.
Rott, André, and J. L. Vereist, to Gevaert Photo-Producten N.V. Process and material for the manufacture of etched printing plates. 3,222,174, 12–7–65, Cl. 96—36.
Roussel-UCLAF, S.A.: *See*—
Farthouat, Jean-Marie. 3,222,379.
Rowland, Stanley P., and E. G. Pritchett, to National Distillers and Chemical Corp. Hydrogenated difunctional acids. 3,222,394, 12–7–65, Cl. 260—515.
Roy, Milton, Co.: *See*—
Jacobsen, John K. 3,221,537.
Rozsa, Tibor A., R. Gracza, W. T. Manning, and C. G. Harrel, to The Pillsbury Co. Sorghum genus flour fractionation process. 3,222,183, 12–7–65, Cl. 99—93.
Rudnick, Jack, to J. Rodnick. Folding door structure and assembly. 3,221,804, 12–7–65, Cl. 160—206.
Rudolph, Rome R., and C. J. Strutz, Jr., to Carl Struts & Co., Inc. Method and apparatus for decorating bottles. 3,221,643, 12–7–65, Cl. 101—38.
Ruizzo, Constantino. Roulette game spinner. 3,222,069, 12–7–65, Cl. 273—142.
Rumberg, Alfred, W. Krauss, G. Rittershausen, W. Damgen, and R. Fruhling, to Knapsack Aktiengesellschaft. Cover with removable parts for electric furnaces. 3,222,445, 12–7–65, Cl. 13—9.
Rupright, Bert A., deceased (H. Rupright, widow), 50% to L. Wendrow. Awning assembly. 3,221,756, 12–7–65, Cl. 135—5.
Rupright, Helen: *See*—
Rupright, Bert A. 3,221,756.
Russell, Duane J.: *See*—
Mayne, William P., Russell, and Sykes. 3,222,508.
Russell, Howard G.: *See*—
Erickson, Henry, Gallagher, and Russell. 3,222,293.
Russo, Anthony M.: *See*—
Reuben, Alan L., Russo, and Forte. 3,221,429.
Ruvin, Abraham E.: *See*—
Gager, Charles H., and Ruvin. 3,222,602.
Rysgaard, John R. Design of an all plastic cryogenic storage chamber. 3,221,916, 12–7–65, Cl. 220—9.
S & C Electric Co.: *See*—
Lindell, Sigurd I. 3,222,477.
SCM Corp.: *See*—
Berke, Ralph L. 3,221,987.
Safeguard Corp.: *See*—
Bell, Vincent G., and Cassel. 3,221,653.
Sahyun Laboratories: *See*—
Faust, John A., and Sahyun. 3,222,399.
Sahyun, Melville: *See*—
Faust, John A., and Sahyun. 3,222,399.
St. Regis Paper Co.: *See*—
Harding, Francis. 3,221,789.
Sahyun Laboratories: *See*—
Faust, John A., and Sahyun. 3,222,399.
St. Amant, John R. Fishing lure. 3,221,435, 12–7–65, Cl. 43—42.06.
Sakalay, Fred E., to International Business Machines Corp. Special-function data processing. 3,222,652, 12–7–65, Cl. 340—172.5.
Salter, Frank S., to The Loewy Engineering Co. Ltd. Presses for the hot working of metal billets. 3,221,631, 12–7–35, Cl. 72—263.
Sampietro, Achilles C., and K. G. Matthews, to Kaiser Jeep Corp. Transfer case. 3,221,574, 12–7–65, Cl. 74—665.
Samuel, George A., and J. V. Bell, to Alloy Surfaces Co., Inc. Process for chromizing. 3,222,212, 12–7–65, Cl. 117—107.2.
Sanchez Pablo, Vicente. Chair construction with flexible seat and back. 3,222,108, 12–7–65, Cl. 297—441.
Sanders, Charles J., to Paper Converting Machine Co., Inc. Strip bag producing mechanism. 3,221,613, 12–7–65, Cl. 93—8.
Sanford, Richard J., to United States of America, Navy. RF protection circuit. 3,222,548, 12–7–65, Cl. 307—88.5.
Sankyo Co. Ltd.: *See*—
Koremura, Mitsunobu, and Shono. 3,222,249.
Sano, Karel M., and F. J. Van Landeghem, to Gevaert Photo-Producten N.V. Photographic film marking device. 3,221,620, 12–7–65, Cl. 95—1.1.
Sanoff, Meyer, and J. Gecsey, to Victory Engineering Corp. Method of making bead type thermistors. 3,221,393, 12–7–65, Cl. 29—155.5.
Sarah, Thomas F., to Pflueger Corp. Spinning reel. 3,222,009, 12–7–65, Cl. 242—84.21.
Sartorio, David R., and E. R. Flanagan, to Martin-Marietta Corp. Antenna beam scanner. 3,222,601, 12–7–65, Cl. 325—130.
Saunders, Hollis S., and R. W. Gehring, to Phelps Dodge Copper Products Corp. Ceramic-coated electrically-conductive wire and method of making same. 3,222,219, 12–7–65, Cl. 117—218.
Saviskas, Julius V. Tip-up signal for fishing rods. 3,221,705, 12–7–65, Cl. 116—132.
Sawyers Research Development Corp.: *See*—
Hall, Walter J. 3,221,598.
Sayers, Billy J.: *See*—
Modloff, Jay T., and Sayers. 3,221,911.
Scanwell Laboratories, Inc.: *See*—
Cummings, William C. 3,222,620.
Scent, Richard H.: *See*—
Noren, Mauritz F., and Scent. 3,221,834.
Schade, Harald J. G., to Passavant Werke. Machines for filtering large quantities of water and other liquids. 3,221,887, 12–7–65, Cl. 210—327.

Schaefer, William H., Jr.: *See*—
Stanley, James K., and Schaefer. 3,222,228.
Schaeffer, William D., to Union Oil Co. of California. Clathration process. 3,222,414, 12–7–65, Cl. 260—674.
Schaper, Leonard W., to Orange Products, Inc. Connector for toy rod construction elements. 3,221,439, 12–7–65, Cl. 46—29.
Schatz, Franz: *See*—
Wagner-Jauregg, Theodor, Schatz, and Jahn. 3,222,366.
Schepler, Herman C. Satellite finder. 3,221,591, 12–7–65, Cl. 88—1.
Schierberl, Francis P.: *See*—
Schofield, John J., and Schierberl. 3,221,663.
Schiller, Jacob D.: *See*—
Arnold, Howard H., Boatwright, and Schiller. 3,222,504.
Schilling, William M., to Hercules Powder Co. Process for simultaneously molding and expanding stereoregular polypropylene to form a hinge. 3,222,437, 12–7–65, Cl. 264—54.
Schindler, Richard: *See*—
Eschenmoser, Albert, Schindler, and Schreiber. 3,222,-253.
Schirmer, Henry G., to Johnson & Johnson. Disposable cleaning swab. 3,221,356, 12–7–65, Cl. 15—210.
Schlein, Seymour N., to The Fanner Mfg. Co., a division of Textron, Inc. Method for making a plastic bellows elbow with spigot and socket ends. 3,222,440, 12–7–65, Cl. 264—230.
Schmerling, Louis, to Universal Oil Products Co. Process for the production of nuclearly alkylated aromatic amines. 3,222,401, 12–7–65, Cl. 260—578.
Schmid, Bruce K.: *See*—
Flinn, Richard A., Kehl, Schmid, and Stewart. 3,222,-273.
Schmid, Hans, and H. Feldhoff, to Badische Anilin-& Soda-Fabrik Aktiengesellschaft. Apparatus for continuous drying of powdery or granular materials in a high-frequency field. 3,222,491, 12–7–65, Cl. 219—10.65.
Schmidlin, Julius: *See*—
Wettstein, Albert, and Schmidlin. 3,222,361.
Schmidt, Hans W.: *See*—
Jenkner, Herbert, and Schmidt. 3,222,121.
Schmidt, Paul, K. Etchenberger, and M. Wilhelm, to Ciba Corp. Hydrazino-benzothiadiazine dioxides. 3,222,364, 12–7–65, Cl. 260—243.
Schmuck, Peter, to Keystone Camera Co., Inc. Apparatus for operating cameras in which component strips of a film are exposed in succession. 3,222,007, 12–7–65, Cl. 242—71.
Schneider, Berthold W., to Don-Tal-Ez Chair Mfg. Co. Foldable lift device. 3,222,032, 12–7–65, Cl. 254—124.
Schneider, Joseph, & Co.: *See*—
Mahn, Herbert. 3,221,628.
Schnell, Hermann: *See*—
Böllert, Volker, Fritz, Schnell, and Lotter. 3,222,302.
Schnier, Heinrich, to Maschinenfabrik Koppern & Co. Kommanditgesellschaft. Hot briquetting roller press. 3,221,-368, 12–7–65, Cl. 18—9.
Schoch, Hans. Reinforcement grid for concrete. 3,221,463, 12–7–65, Cl. 52—645.
Schoen, Arduino: *See*—
Giuiuzza, Pietro, and Schoen. 3,221,516.
Schofield, John J., and F. P. Schierberl, to Chandler Evans Inc. Wash flow bearing system. 3,221,663, 12–7–65, Cl. 103—126.
Scholle Container Corp.: *See*—
Scholle, William R. 3,221,974.
Scholle, William R., to Scholle Container Corp. Container. 3,221,974, 12–7–65, Cl. 229—39.
Schoner, Stefan, to FUU, Aktiengesellschaft. Feed additive containing rennet and calcium chloride. 3,222,179, 12–7–65, Cl. 99—2.
Schouwenaars, Adam M.: *See*—
Lemmerling, Jose T., De Keyser, Schouwenaars, and Beersmans. 3,222,177.
Schrage, Albert: *See*—
Wyart, John W., Schrage, and Vona. 3,222,312.
Schreffler, Robert Z., to Owens-Corning Fiberglas Corp. Flake glass breakout detector and method of controlling glass breakout. 3,222,151, 12–7–65, Cl. 65—29.
Schreiber, Jakob: *See*—
Eschenmoser, Albert, Schindler, and Schreiber. 3,222,-253.
Schrier, Israel: *See*—
Faas, Kenneth D., and Schrier. 3,221,378.
Schultz, Everett M., J. B. Bicking, and V. D. Wiebelhaus, to Merck & Co., Inc. Malemic acid derivatives. 3,222,395, 12–7–65, Cl. 260—518.
Schulz, William L.: *See*—
Conlin, Peter, and Schulz. 3,222,499.
Schulze, Wallace W., to United States of America, Atomic Energy Commission. Dissolution of nuclear aluminum-base fuel. 3,222,125, 12–7–65, Cl. 23—14.5.
Schwartz, Milton, to Advance Food Service Equipment, Inc. Storage rack. 3,222,117, 12–7–65, Cl. 312—264.
Schwartz, Walter, to TRW Inc. Means for positioning a plurality of elements in orbit about a celestial body. 3,222,675, 12–7–65, Cl. 343—18.
Schweitzer, Earl O. Jar mounting device. 3,222,023, 12–7–65, Cl. 248—225.
Schwoyer, William L., to Trojan Powder Co. Aqueous explosive slurries containing sulfur compounds having a low coefficient of expansion. 3,222,232, 12–7–65, Cl. 149—43.
Scivally, Herschell R., and F. Thorne-Thomsen, to Universal Oil Products Co. Means and apparatus for catalytically oxidizing an exhaust gas stream. 3,222,140, 12–7–65, Cl. 23—288.
Scott, Charles H., and R. C. Raynor, to Dorr-Oliver Inc. Strip tensioner. 3,221,401, 12–7–65, Cl. 29—208.
Scott, Charles H. Electrical element and switching means. 3,222,534, 12–7–65, Cl. 307—10.
Scott, J Denny: *See*—
Spurlin, William V., Scott, and Dunn. 3,221,827.
Scott, Loyce B., ½ to F. D. Huning, Jr. Traffic speed violation recorders, and the like. 3,222,682, 12–7–65, Cl. 346—107.
Scott, Robert K.: *See*—
Miller, Eldon D., Jr., and Scott. 3,221,559.
Scott & Williams, Inc.: *See*—
Butler, Vaughn H. 3,221,517.
Scullin, Joseph V. Dental model holder. 3,221,408, 12–7–65, Cl. 32—32.
Seamone, Woodrow, and L. A. Wenrich, to United States of America, Navy. Power matched hydraulic servo-system. 3,221,501, 12–7–65, Cl. 60—52.
Sears, Roebuck and Co.: *See*—
Johnson, Leonard W., Senser, and Pellino. 3,221,346.
Marino, Nicholas A. 3,221,749.
Sease, Will S., to The Welsbach Corp. Mantle and support. 3,221,523, 12–7–65, Cl. 67—101.
Sedlacsik, John: *See*—
Sedlacsik, John, Jr. and John Sedlacsik. 3,221,992.
Sedo, Gerald H., to M & D Store Fixtures, Inc. Expandible wardrobe shelf with adjustable captive brackets. 3,221,-676, 12–7–65, Cl. 108—28.
Sedlacsik, John, Jr. and John Sedlacsik. Coating material motive agent atomizer head. 3,221,992, 12–7–65, Cl. 239—15.
Seed, Aniese E., to Toledo Scale Corp. Adjustable dashpot. 3,221,843, 12–7–65, Cl. 188—87.
Seeman, Robert W., to Blaisdell Pencil Co. Marking device construction. 3,221,360, 12–7–65, Cl. 15—537.
Segna, Andriano: *See*—
Segna, Faustina and A. 3,222,062.
Segna, Faustina and A. Passenger-driven carrousel. 3,222,-062, 12–7–65, Cl. 272—33.
Seibt, Eduard: *See*—
Ulmer, Wolfgang, and Seibt. 3,222,609.
Seiferth, Oscar E., and G. M. Austin, to Oscar Mayer & Co., Inc. Method of forming a package. 3,221,692, 12–7–65, Cl. 113—120.
Seismograph Service Corp.: *See*—
Crossland, Edward J., Ragan, and Hawkins. 3,221,988.
Sekmakas, Kazys, to De Soto Chemical Coatings, Inc. Interpolymers of aldehyde modified amides and fatty acid esters of epoxidized polydiolefins. 3,222,309, 12–7–65, Cl. 260—23.7.
Sekmakas, Kazys, to De Soto Chemical Coatings, Inc. Modified acrylamide interpolymers containing interpolymerized unsaturated epoxy resins. 3,222,321, 12–7–65, Cl. 260—72.
Selas Corp. of America: *See*—
Wall, Fraser M. 3,221,797.
Self, Leonard W., to Alpha Trace, Inc. Tool for laying a pipeline laterally of a well bore. 3,221,824, 12–7–65, Cl. 175—19.
Selin, Terry G.: *See*—
Prescott, Paul I., and Selin. 3,222,369.
Seltzer, Edward: *See*—
Henderson, Richard W., and Seltzer. 3,222,182.
Senser, Karl E.: *See*—
Johnson, Leonard W., Senser, and Pellino. 3,221,346.
Sentenac, Christian: *See*—
Amiet, Bernard, Langella, and Sentenac. 3,222,225.
Separator, Aktiebolaget: *See*—
Johansson, Bjorn O. 3,221,807.
Service Distributors, Inc.: *See*—
Taylor, Christopher G. 3,221,862.
Senlen, Gerhard, and H. Geisel, to Deutsche Edelstahlwerke Aktiengesellschaft, and Allgemeine Elektricitats. Method for determining the required hardening conditions for cylindrical workpieces. 3,221,536, 12–7–65, Cl. 73—15.4.
Sevcon Engineering Ltd.: *See*—
Heyman, Horace W., Hambleton, and Gurwitcz. 3,222,582.
Severdia, Anton M. Toolmaker's clamp. 3,222,053, 12–7–65, Cl. 269—91.
Seward, William H., to Irving Air Chute of Great Britain Ltd. Seats. 3,222,109, 12–7–65, Cl. 297—452.
Shah, Vinod D.: *See*—
Maurer, James I., Palmer, and Shah. 3,222,226.
Shampton, John P., to General Motors Corp. Brake adjuster. 3,221,842, 12–7–65, Cl. 188—79.5.
Shapiro, William J. Toy glider and blank. 3,221,441, 12–7–65, Cl. 46—79.
Shawinigan Chemicals Ltd.: *See*—
Lanthier, Raymond. 3,222,382.
Shearman, Wilbur E., to Ajax Magnethermic Corp. Furnaces. 3,221,379, 12–7–65, Cl. 22—69.
Shearer, Newton H., Jr.: *See*—
Coover, Harry W., Jr., and Shearer. 3,221,745.
Sheffield Plastics, Inc.: *See*—
Orr, John B. 3,222,515.
Shell, Haskiel R., N. A. Pace, and E. F. Nichols, to United States of America, Interior. Synthesis of large crystals of fluorphlogopite mica. 3,222,142, 12–7–65, Cl. 23—302.
Shell Oil Co.: *See*—
Barnes, Walter V. 3,222,286.
Burdett, Joseph W. 3,221,985.
Burdett, Joseph W., and Train. 3,221,986.
Closmann, Philip J., Matthews, and Doscher. 3,221,813.
De Vries, Douwe, and Poorman. 3,221,817.
Duck, Edward W., and Berkenbosch. 3,222,331.
Duck, Edward W., Berkenbosch, and Van der Voort. 3,222,332.

Shell Oil Co.: *See*—Continued
Duck, Edward W., and Duinker. 3,222,333.
Duck, Edward W., and Waterman. 3,222,348.
Evans, Harry D., and Young. 3,222,416.
Foster, Kenneth W. 3,222,634.
Haeber, John A. 3,222,075.
Haeber, John A. 3,222,088.
Hampson, Horace N. 3,222,303.
Loeffler, Donald E. 3,222,279.
Otteman, Lloyd G. 3,222,089.
Prats, Michael. 3,221,811.
Prats, Michael. 3,221,812.
Shotto, Howard I., Jr., Watkins, Dozier, Faulk, and Goepfert. 3,221,816.
Stratton, Hal, Bauer, Field, and Crooke. 3,221,506.
Van den Brink, Marinus J., and Van Schooten. 3,222,404.
Williams, Keith R., and Short. 3,222,224.
Wolcik, Joseph F., and Brumlow. 3,222,413.
Shelihause, Ronald L., to General Motors Corp. Flow control master cylinder. 3,221,502, 12–7–65, Cl. 60—54.6.
Shelly Brothers, Inc.: *See*—
Shelly, Jacob M. 3,221,673.
Shelly, Jacob M., to Shelly Brothers, Inc. Stick inserting mechanism. 3,221,673, 12–7–65, Cl. 107—8.
Shelton, Glenmore L., Jr., to International Business Machines Corp. Specimen identification apparatus utilizing optical autocorrelation functions. 3,222,638, 12–7–65, Cl. 340—146.3.
Shepard, Robert N., to Corning Glass Works. Method of making glass-to-metal seals. 3,222,150, 12–7–65, Cl. 65—18.
Sherman, Ralph L.: *See*—
Pollard, Patrick J. 3,222,598.
Shiio, Isamu: *See*—
Lizuka, Hiroshi, Katsuya, Shiio, Komagata, Otsuka, Yamada, and Ishii. 3,222,258.
Shiro, Teruo, S. Okumura, Y. Tamagawa, T. Tsunoda, M. Takabashi, and S. Motozaki, to Ajinomoto Kabushiki Kaisha. Process for producing nucleosides by microorganisms. 3,222,257, 12–7–65, Cl. 195—28.
Shono, Toshio: *See*—
Koremura, Mitsunobu, and Shono. 3,222,249.
Short Brothers & Harland Ltd.: *See*—
Bowden, Malcolm K., and Buck. 3,222,014.
Short, Richard T.: *See*—
Williams, Keith R., and Short. 3,222,224.
Shotto, Howard I., Jr., B. J. Watkins, J. R. Dozier, B. L. Faulk, and B. L. Goepfert, to Shell Oil Co. Underwater oil gathering installation. 3,221,816, 12–7–65, Cl. 166—66.5.
Shoup, Thomas E.: *See*—
Kopf, Rowland J., Humphrey, and Shoup. 3,221,966.
Shurtleff, Wood B., and P. N. Rawson. Liquid container and valve therefor. 3,221,935, 12–7–65, Cl. 222—52.
Shurtleff, Wood B., and P. N. Rawson. Valve for liquid container. 3,221,953, 12–7–65, Cl. 222—538.
Sibert, Merle E., and J. Tsukamoto, to Lockheed Aircraft Corp. Inorganic surface coatings. 3,222,197, 12–7–65, Cl. 106—84.
Siegel, Jerome L. Sofa bed. 3,221,348, 12–7–65, Cl. 5—28.
Siegele, Frederick H., to American Cyanamid Co. Di-imidazolines. 3,222,376, 12–7–65, Cl. 260—309.6.
Siegfried Aktiengesellschaft: *See*—
Wagner-Jauregg, Theodor, Schatz, and Jahn. 3,222,366.
Siemens & Halske Aktiengesellschaft: *See*—
Grabmaier, Josef. 3,222,217.
Karmann, Richard, Hoffmann, and Brunnert. 3,222,462.
Ulmer, Wolfgang, and Seibt. 3,222,609.
Sievert, James A., to Ansul Co. Self-closing nozzle. 3,221,-995, 12–7–65, Cl. 239—452.
Silverberg, Morton: *See*—
Moy, Robert G., and Silverberg. 3,222,543.
Silverman, Milton J. Devices for holding cargo. 3,221,921, 12–7–65, Cl. 220—46.
Silvestri Art Mfg. Co.: *See*—
Silvestri, George, Jr. 3,222,574.
Silvestri, George, Jr., to Silvestri Art Mfg. Co. Multichannel illumination system for controlling the intensity of illumination in each channel in response to selected frequency band of an input control signs. 3,222,574, 12–7–65, Cl. 315—200.
Simkin, Joseph: *See*—
Block, Burton P., and Simkin. 3,222,298.
Simmons, Walter H., to Carrier Corp. Fastening apparatus. 3,222,093, 12–7–65, Cl. 285—162.
Simon, Paul W.: *See*—
Morris, Charles L., Jr., and Simon. 3,222,345.
Simonton, Robert D., to Union Carbide Corp. Apparatus and method for producing closures in battery containers. 3,221,-403, 12–7–65, Cl. 29—511.
Simpkins, Alan B., and R. H. Hamilton, to Hewlett-Packard Co. Ultrasonic vibration detector. 3,222,635, 12–7–65, Cl. 340—15.
Simpson, Ralph E.: *See*—
Nichols, William A., and Simpson. 3,221,583.
Simpson, Robert J., to Dominion Engineering Works, Ltd. Lubricating system. 3,221,839, 12–7–65, Cl. 184—6.
Simpson, Theodore B.: *See*—
Steiner, Robert H., Simpson, and Hammond. 3,222,191.
Sinclair Research Inc.: *See*—
Case, Everett N., Patinkin, and Carlson. 3,222,146.
Erickson, Henry, Gallagher, and Russell. 3,222,293.
Hammer, Sigwald M. 3,222,646.
Singer Co., The: *See*—
Mishcon, Sam. 3,221,521.
Singer, Sidney L. Process for making sand cores. 3,222,315, 12–7–65, Cl. 260—39.
Sinner, Joseph M.: *See*—
Weiss, Robert M., Sinner, and Bloch. 3,222,184.
Smith, Jonathan: *See*—
Troglione, Vincent R., and Smith. 3,222,043.
Sisler, Robert R., to General Electric Co. Self-leveling support structure. 3,222,021, 12–7–65, Cl. 248—188.3.
Skau, Evald L., R. R. Mod, and F. C. Magne, to United States of America, Agriculture. N-acyl derivatives of cyclic imines. 3,222,203, 12–7–65, Cl. 106—316.
Skil Corp.: *See*—
Kaman, Frank A. 3,222,096.
Skollerud, Arve. Morticing jig. 3,221,784, 12–7–65, Cl. 144—144.5.
Skony, Sigmund J., to Van Products, Inc. Connector clip. 3,222,633, 12–7–65, Cl. 339—258.
Skov, Raymond A., to International Business Machines Corp. Variable density data recording utilizing normal skew characteristics. 3,222,659, 12–7–65, Cl. 340—174.1.
Slade, Albert E. Superconductive memory. 3,222,655, 12–7–65, Cl. 340—173.1.
Small, Charles B., J. W. Meese, and H. H. Frank, to The Ridge Tool Co. Apparatus for cutting pipe. 3,221,962, 12–7–65, Cl. 225—103.
Small, Sollie W., and D. Herman, to Coffee-Mat Corp. Liquid dispensing device. 3,221,933, 12–7–65, Cl. 222—21.
Small, Sollie W., and D. Herman, to Coffee-Mat Corp. Water storing and heating apparatus in devices for brewing and dispensing beverages. 3,222,500, 12–7–65, Cl. 219—328.
Small, Sollie W., and D. Herman, to Coffee-Mat Corp. Apparatus for forming and dispensing filter elements in devices for brewing and dispensing beverages. 3,221,587, 12–7–65, Cl. 83—271.
Small, Sollie W., and D. Herman, to Coffee-Mat Corp. Apparatus for brewing and dispensing beverages. 3,221,637, 12–7–65, Cl. 99—289.
Smeltzer, Donald C., to Overly Mfg. Co. Sound restricting door seal. 3,221,376, 12–7–65, Cl. 20—69.
Smit, Gerard C. Electric coffee mill. 3,221,997, 12–7–65, Cl. 241—48.
Smith, Clarence J. Container end seam. 3,221,922, 12–7–65, Cl. 220—48.
Smith, Harry, to Imperial Chemical Industries Ltd. Preparation of ethylene dichloride. 3,222,408, 12–7–65, Cl. 260—659.
Smith, Horace L., Jr., to Hupp Corp. Heat treating method and apparatus for sheet or web material. 3,221,416, 12–7–65, Cl. 34—41.
Smith, John E., and R. A. Starry, to United States of America, Navy. Store release mechanism. 3,221,701, 12–7–65, Cl. 114—235.
Smith, Lester L., and F. E. Randall, said Randall assor. to said Smith. Louvered ventilator. 3,221,636, 12–7–65, Cl. 98—121.
Smith, Oliver T.: *See*—
Bowes, Donald R., and Smith. 3,221,873.
Smith, Richard E., to Sylvania Electric Products Inc. Projection lamp. 3,222,567, 12–7–65, Cl. 315—71.
Smith, Walter H. B., deceased, by K. B. Groves, executrix; A. Denhoff, substitute executrix of said K. B. Groves, deceased. Bolt action firearm with charger. 3,221,604, 12–7–65, Cl. 89—187.
Smith, William D.: *See*—
Meacham, David D., Smith, and Talcott. 3,222,557.
Smithe, F. L., Machine Co., Inc.: *See*—
Novick, Abraham. 3,221,584.
Smothers, M. J.: *See*—
Newman, Everett H. 3,222,024.
Snabes, Casmir J., to Ford Motor Co. Cartridge-type seal assembly. 3,222,077, 12–7–65, Cl. 277—40.
Snoberger, Philip H., and O. H. Buschmann, said Snoberger assor. to Ranco Inc. Motor protection means for hermetically sealed motor-compressor units. 3,222,555, 12–7–65, Cl. 310—68.
Snow, Theodore R. Device for holding hair curler rollers. 3,221,891, 12–7–65, Cl. 211—13.
Snyder, Edward C., 40% to J. E. Mack. Projecting colored light. 3,222,510, 12–7–65, Cl. 240—3.1.
Snyder, Phillip T., and F. Becker. Planter for potted plants. 3,221,681, 12–7–65, Cl. 111—3.
Societe Anglo-Belge Vulcain, Societe Anonyme: *See*—
Maldague, Pierre E. J. M. 3,222,255.
Maldague, Pierre E. J. M., and de Waegh. 3,222,254.
Socony Mobil Oil Co., Inc.: *See*—
Carl, Paul R. 3,222,274.
Holberg, William L. 3,222,002.
Traver, Alfred E. 3,221,545.
Walton, Dean K. 3,221,809.
Solid State Systems, Inc.: *See*—
Gewirtz, Stanley. 3,222,599.
Gewirtz, Stanley. 3,222,600.
Sommer, Erwin, and K. Gerlach, to Vereinigte Glanzstoff-Fabriken A.G. Process for producing water-laid sheets from polyamide fibers pretreated with a tannin. 3,222,244, 12–7–65, Cl. 162—157.
Sommer, Erwin: *See*—
Wiloth, Fritz, and Sommer. 3,222,375.
Sommerer, Karl: *See*—
Stotz, Erich, and Sommerer. 3,222,083.
Sondheimer, Allen J.: *See*—
Hardesty, Thomas K. C., and Sondheimer. 3,222,485.
Sooryn, Vsevolod, to B. B. Doeh. Process for producing silver nitrate. 3,222,128, 12–7–65, Cl. 23—102.
Soules, Jack A. Optical attenuator. 3,221,592, 12–7–65, Cl. 88—1.
Southwest Research Institute: *See*—
Gunkel, Walter A. 3,221,544.
Souza, Augustine A. Measuring dispenser. 3,221,951, 12–7–65, Cl. 222—456.

Southcott, Frederick, to The Mollins Organisation Ltd. Suction apparatus. 3,222,059, 12–7–65, Cl. 271—28.

Southwick, Earl W. Knapsacks. 3,221,959, 12–7–65, Cl. 224—5.

Sowa, Frank J. Organotin compositions. 3,222,158, 12–7–65, Cl. 71—2.3.

Spalding, Dudley B., to Power Jets (Research & Development) Ltd. Pressure exchangers. 3,221,981, 12–7–65, Cl. 230—69.

Specialties Development Corp.: *See*—
Hebenstreit, Lester V., and Heins. 3,222,230.

Spencer, James B.: *See*—
Meyer, Earl A., and Spencer. 3,222,596.

Sperry Rand Corp.: *See*—
Davis, William W. 3,222,645.
Granberg, Mauritz L. 3,222,595.
Husted, Donald M. 3,222,502.
Rimmey, Robert R. 3,221,639.
Wing, Willis G. 3,221,563.

Sperry-Sun Well Surveying Co.: *See*—
Morris, Marion H. 3,222,469.

Spes, Hellmuth: *See*—
Enk, Eduard, Knorr, and Spes. 3,222,262.

Spetzler, Edgar, to Huttenwerk Oberhausen A.G. Method and apparatus for waste heat economy in rotary converter plants. 3,222,045, 12–7–65, Cl. 266—35.

Spinuzza, Russell A; ⅛ to S. C. Battaglia and ⅛ to J. P. Gastel. Draught beer controlling and dispensing system. 3,221,936, 12–7–65, Cl. 222—54.

Sprague Electric Co.: *See*—
Cook, John W. 3,222,657.

Spurlin, William V., J. D. Scott, and G. H. Dunn, to Link-Belt Co. Gravimetric two-feeder system. 3,221,827, 12–7–65, Cl. 177—210.

Square D Co.: *See*—
Whiting, Harold E., and Puetz. 3,222,476.
Woods, William H., and Dietz. 3,222,475.

Staar, Marcel J. H., to Usines Gustave Staar, S.A. Tape severing means for dictating machines. 3,221,585, 12–7–65, Cl. 83—221.

Stackhouse, Wells F. Meter padlock. 3,221,526, 12–7–65, Cl. 70—437.

Stacor Corp.: *See*—
Morcheles, Bernard, and D'Agostino. 3,221,892.

Stadtmiller, William H.: *See*—
Berkowitz, Edward B., Stadtmiller, and L. Berkowitz. 3,222,282.

Staley, A. E., Mfg. Co.: *See*—
Myers, Noel W. 3,221,801.
Myers, Noel W. 3,221,901.

Stamler, W. R., Corp.: *See*—
Anderson, Charles M. 3,221,865.

Standard Oil Co.: *See*—
De Young, Edwin L., and Watson. 3,222,281.
Horan, James E. 3,222 391.
Horan, James E., and Van Strien. 3,222,313.
Horan, James E., and Van Strien. 3,222,390.
Kapff, Sixt F. 3,221,542.

Stanford Research Institute: *See*—
Chaikin, Saul W. 3,222,489.

Stanley, James K., and W. H. Schaefer, Jr., to Crucible Steel Co. of America. Method of boronizing steel. 3,222,228, 12–7–65, Cl. 148—16.

Stanley, Robert K., to Technisevice Corp. Strand treatment. 3,221,385, 12–7–65, Cl. 28—72.

Stansbury, Harry A., Jr.: *See*—
Manning, David T., and Stansbury. 3,222,380.

Stant, Vernon C.: *See*—
Kelly, James G., and Stant. 3,222,110.

Stanton, Robert E. Apparatus for producing hypochlorite solutions and introducing same into confined bodies of water. 3,222,269, 12–7–65, Cl. 204—270.

Stapling Machines Co.: *See*—
Riker, Charles O. 3,221,778.

Starry, Raymond A.: *See*—
Smith, John E., and Starry. 3,221,701.

Stauffer Chemical Co.: *See*—
Lukes, George R., and Willsey. 3,222,248.

Stauffer, Fred S., and C. L. Donelson, to International Business Machines Corp. Strip drive and positioning mechanism. 3,221,431, 12–7–65, Cl. 40—106.1.

Stearns, R. H.: *See*—
Hansen, Quinten A. 3,221,845.

Stearns, R. N.: *See*—
Hansen, Quinten A. 3,221,845.

Steckert, Jay A. Hand hold for cartons and the like. 3,221,976, 12–7–65, Cl. 229—52.

Stedman, Cresswell E., deceased (by E. K. Stedman, administratrix), to U.S. Perlite Corp. Method of producing an acoustical tile. 3,222,434, 12–7–65, Cl. 264—25.

Stedman, Elizabeth K.: *See*—
Stedman, Cresswell E. 3,222,434.

Stefcik, Andrew, and F. E. Woodward, to General Aniline & Film Corp. Coated foraminous fibrous gas filter. 3,221,480, 12–7–65, Cl. 55—524.

Steiner American Corp.: *See*—
Bahnsen, Erwin B. 3,222,006.
Bahnsen, Erwin B. 3,222,112.

Steiner, Robert H.: *See*—
Updegrove, Louis B., Mincher, and Steiner. 3,222,211.

Steiner, Robert H., T. B. Simpson, and J. E. Hammond, to National Distillers and Chemical Corp. Novel packaging film and processes therefor. 3,222,191, 12–7–65, Cl. 99—174.

Steinkamp, Robert A., to Ripley Co., Inc. Multiple electrical connector with longitudinal spaced contacts carried by insulating key. 3,222,471, 12–7–65, Cl. 200—51.07.

Stenberg, Sigfgrid, Aktiebolaget: *See*—
Larsson, Bertil I. T. 3,221,607.

Stentz, Blair E., to United Service Equipment Co., Inc. Thermal barrier partition for a hot and cold food service cart. 3,222,114, 12–7–65, Cl. 312—214.

Sterilab, Inc.: *See*—
Copp, Roland H. 3,221,632.

Sternbach, Leo H.: *See*—
Reeder, Earl, and Sternbach. 3,222,359.

Steup, John E., to Philco Corp. Detector for AM, CW, or SSB signals providing inherent AGC signal. 3,222,606, 12–7–65, Cl. 329—1.

Stevens, Alexander M. Extruding dies. 3,221,371, 12–7–65, Cl. 18—14.

Stevenson, John, Jr., to Illinois Tool Works Inc. Stripping means for a container pack forming machine. 3,221,470, 12–7–65, Cl. 53—48.

Stewart, Meredith M.: *See*—
Flinn, Richard A., Kehl, Schmid, and Stewart. 3,222,273.

Stocko Metallwarenfabriken Hugo und Kurt Henkels: *See*—
Aufenacker, Friedrich. 3,221,384.

Stolz, Owen M. Building wall structure. 3,221,451, 12–7–65, Cl. 52—80.

Storm, Arthur W., and F. G. Rinker, to Midland-Ross Corp. Shaft furnace stockline feeder. 3,221,905, 12–7–65, Cl. 214—18.

Stotz, Erich, and K. Sommerer, to Porsche, Dr. Ing. H.c.F., K.G., Firma. Wheel suspension for vehicles. 3,222,083, 12–7–65, Cl. 280—124.

Stout, William D., to General Motors Corp. Vehicle seat. 3,222,106, 12–7–65, Cl. 297—332.

Strachey, Christopher, to International Business Machines Corp. Data processing equipment. 3,222,647, 12–7–65, Cl. 340—172.5.

Strahm, Allen D. Smoking pipe trap and filter chamber. 3,221,752, 12–7–65, Cl. 131—184.

Straight, Edward R., to Vogt Mfg. Corp. Safety belt. 3,221,958, 12–7–65, Cl. 224—1.

Stratton, Hal, R. F. Bauer, A. J. Field, and R. C. Crooke, to Shell Oil Co. Support structures. 3,221,506, 12–7–65, Cl. 61—46.5.

Strock, Lester W.: *See*—
Lagos, Costas C., and Strock. 3,222,214.

Strutz, Carl J., Jr.: *See*—
Rudolph, Rome R., and Strutz. 3,221,643.

Strutz, Carl & Co., Inc.: *See*—
Rudolph, Rome R., and Strutz. 3,221,643.

Stryker Corp.: *See*—
Stryker, Homer H. 3,221,744.

Stryker, Homer H., to Stryker Corp. Surgical knife. 3,221,744, 12–7–65, Cl. 128—305.

Stubbs, Dennis: *See*—
Swallow, Reginald D., and Stubbs. 3,221,530.

Stummeyer, Herbert: *See*—
Reicheneder, Franz, Dury, Stummeyer, and Fischer. 3,222,159.

Sucietto, Richard R., to National Distillers and Chemical Corp. Whiskey stabilization. 3,222,180, 12–7–65, Cl. 99—48.

Sud-Aviation Societe Nationale de Constructions-Aeronautiques: *See*—
Denis, Andre, and Ripart. 3,222,593.

Sullivan, Hugh R., Jr., to Eli Lilly and Co. 4-halophenyl-2-alkyl-1(2)-phthalazinones. 3,222,365, 12–7–65, Cl. 260—250.

Sullivan, Richard A.: *See*—
Parker, Herbert E., Sullivan, and Whipple. 3,222,442.

Sunbeam Corp.: *See*—
Mattson, Charles A., Olsen, and Ottosen. 3,221,481.
Wickenberg, Chester H. 3,221,638.

Sunbeam Equipment Corp.: *See*—
Troglione, Vincent R., and Smith. 3,222,043.

Superior-Tabbies, Inc.: *See*—
Cunningham, Walter F. 3,221,430.

Suter, Hubert, G. Poehler, and H. Sperber, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Process for the production of N-secondary-alkyl-arylamines. 3,222,400, 12–7–65, Cl. 260—577.

Sutten, Adrian P., to United States of America, Army. Apparatus for high-velocity recovery. 3,221,656, 12–7–65, Cl. 102—34.1.

Sutton, Dennis A.: *See*—
Jeffree, John H., and Sutton. 3,221,595.

Suzumura, Hideo, and H. Miyahara, to Kurashiki Rayon Co., Ltd. Water-resistant polyvinyl alcohol adhesives. 3,222,306, 12–7–65, Cl. 260—17.4.

Svantesson, Ake W., to Lindaco Aktiebolag. Jogging machine. 3,222,060, 12–7–65, Cl. 271—89.

Swain, Charles F.: *See*—
Boyle, Francis K., Clark, and Swain. 3,222,201.

Swallert, Sven A., to Frode Lund Aktiebolag. Transport vehicles or lorries provided with a platform and fixed collapsible containers for fluid. 3,222,099, 12–7–65, Cl. 296—10.

Swallow, Reginald D., and D. Stubbs, to Davy and United Engineering Co. Ltd. Rolling mills horizontal-roll change. 3,221,530, 12–7–65, Cl. 72—239.

Swanson, Carl E.: *See*—
Hamelink, William B., and Swanson. 3,221,799.

Swanson, William M., to Universal Oil Products Co. Dealkylation of unsaturated sulfur-containing alkylaromatic hydrocarbons. 3,222,410, 12–7–65, Cl. 260—672.

Swartwout, Charles J. and D. K., to Motorola, Inc. Instrument deviation indicator. 3,221,561, 12–7–65, Cl. 73—432.

Swartwout, Denton K.: *See*—
Swartwout, Charles J. and D. K. 3,221,561.

Swearingen, Judson S., to Electronic Specialty Co. Method and apparatus for the removal of fixed gas from absorption refrigeration processes. 3,221,510, 12–7–65, Cl. 62—85.

Swearingen, Judson S., to Electronic Specialty Co. Low-suction head pumps. 3,221,661, 12–7–65, Cl. 103—87.

Sweden Freezer Mfg. Co.: *See*—
Clark, Charles W., Jr. 3,221,513.

Sweeney, George J., to Air Devices, Inc. Wall diffuser. 3,221,633, 12–7–65, Cl. 98—40.

Swick, Edwin G., to Illinois Tool Works Inc. Cable fastener assembly. 3,221,572, 12–7–65, Cl. 74—501.

Swift, Harold E., to Gulf Research & Development Co. Catalyst preparation and composition. 3,222,295, 12–7–65, Cl. 252—429.

Sykes, Langthorne: *See*—
Mayne, William P., Russell, and Sykes. 3,222,508.

Sylvania Electric Products Inc.: *See*—
Gustin, Daniel S. 3,222,556.
Lagos, Costas C., and Strock. 3,222,214.
Smith, Richard E. 3,222,567.

Szawlowski, Theodore H.: *See*—
Wolfram, George, and Szawlowski. 3,222,280.

TRW Inc.: *See*—
Schwartz, Walter. 3,222,675.

Tagliasacchi, Ercole, to Officine Meccaniche Agardi S.p.A. O.M.C.S.A. Multi-units sheet-fed printing machine drive. 3,221,651, 12–7–65, Cl. 101—183.

Taillie, Gordon P.: *See*—
Aser, Gilbert A., Melville, and Taillie. 3,221,622.

Takahashi, Masahiro: *See*—
Shiro, Teruo, Okumura, Tamagawa, Tsunoda, Takahashi, and Motozaki. 3,222,257.

Talaty, Erach R., to Pittsburgh Plate Glass Co. Fumaryl dichloride by the catalyzed reaction of fumaric acid and phosgene. 3,222,397, 12–7–65, Cl. 260—544.

Talcott, Ruth C.: *See*—
Meacham, David D., Smith, and Talcott. 3,222,557.

Tamagawa, Yoshio: *See*—
Shiro, Teruo, Okumura, Tamagawa, Tsunoda, Takahashi, and Motozaki. 3,222,257.

Tamblyn, John W.: *See*—
Greear, George R., and Tamblyn. 3,222,431.

Tanaka, Minoru: *See*—
Hayashi, Tetsuzo, and Tanaka. 3,221,687.

Tarmy, Barry L.: *See*—
Beltzer, Morton, Heath, and Tarmy. 3,222,218.

Tashlick, Irving, and S. H. Foster, to Monsanto Co. Process for treating cellulosic textile materials with bis(beta-methoxyethyl)sulfone. 3,222,119, 12–7–65, Cl. 8—116.

Taylor, Alan F.: *See*—
Fletcher, Frederick O., and Taylor. 3,222,256.

Taylor, Christopher G., to Service Distributors, Inc. Coin metering apparatus for multiple machine installations. 3,221,862, 12–7–65, Cl. 194—84.

Taylor, Frank F., Co., The: *See*—
Harmon, Major K., Jr. 3,222,081.

Taylor, Frank H., and J. H. Bostock, to Otis Engineering Corp. Fluid pressure actuated well packer. 3,221,818, 12–7–65, Cl. 166—187.

Taylor, Richard: *See*—
Hoffmann, Wolfgang, Follows, and Taylor. 3,221,474.

Te Industries, Inc.: *See*—
Goetz, George J. 3,221,576.

Technisevice Corp.: *See*—
Stanley, Robert K. 3,221,385.

Tee-Pak, Inc.: *See*—
Arnold, Lionel C., and Washburn. 3,222,192.

Teichert, Allen L.: *See*—
McCarty, Lourdes V., Biermann, Duncan, and Teichert. 3,221,767.

Telefonaktiebolaget L M Ericsson: *See*—
Dahlblom, Rolf A., and Lillsunde. 3,222,458.
Olsson, Sven A. 3,222,656.

Teletype Corp.: *See*—
Purzycki, Alfred Z. 3,222,008.

Texaco Inc.: *See*—
Holder, Charles B. 3,222,349.

Texas Instruments Inc.: *See*—
Evans, Arthur D., and Kilby. 3,222,610.
Fontenote, William J., and Lobb. 3,222,586.
Gorman, Lee V. 3,222,630.
Lobb, Earl D. 3,222,585.

Thackray, Malcolm, to Australian Atomic Energy Commission. Radiometric detection of non-radioactive materials. 3,222,525, 12–7–65, Cl. 250—106.

Thedford, Russell E. Illuminated fence. 3,222,509, 12–7–65, Cl. 240—2.

Thiel, Charles J., and L. J. Michaels. Amalgam dispenser. 3,221,409, 12–7–65, Cl. 32—60.

Thiel, Charles J., and L. J. Michaels. Amalgam agitator and dispenser. 3,222,037, 12–7–65, Cl. 259—72.

Thiele, Alfred A. Silicon controlled rectifier actuated liquid gas filler. 3,222,578, 12–7–65, Cl. 317—148.5.

Thomas, Albert G. Torque control device. 3,221,852, 12–7–65, Cl. 192—56.

Thomas, David G., to Lord Mfg. Co. Railroad journal wedge. 3,222,111, 12–7–65, Cl. 308—54.

Thomas, Tom. Valve control. 3,221,425, 12–7–65, Cl. 37—143.

Thompson, Bruce R.: *See*—
La Combe, Edward M., Ankeney, Thompson, and Walter. 3,222,328.

Thompson, James, J. W. Farrell, and J. L. Lamont, to Union Carbide Corp. Deformable chromium sheet. 3,222,163, 12–7–65, Cl. 75—126.

Thompson, Paige W., to General Electric Co. Electric ignition devices. 3,222,576, 12–7–65, Cl. 317—97.

Thompson, Richard C., and W. H. Goodwin, to Du Pa Co., Inc. System and apparatus for positioning and securing surgical implements. 3,221,743, 12–7–65, Cl. 128—303.

Thompson, Vernon R., and R. C. Westgren, to Crucible Steel Co. of America. Tungsten-base alloy. 3,222,166, 12–7–65, Cl. 75—176.

Thorne-Thomsen, Fletcher: *See*—
Scivally, Herschell R., and Thorne-Thomsen. 3,222,140.

Thorner, Robert H. Spiral spring construction for speed governors. 3,222,046, 12–7–65, Cl. 267—1.

Thornton, Stuart R. Flashlight holder. 3,222,514, 12–7–65, Cl. 240—52.5.

Thorpe, Robert A., to International Business Machines Corp. Multi-state photoconductive logic circuits. 3,222,528, 12–7–65, Cl. 250—209.

Thorpe, William J., to Unistrut Corp. Floor structure elevating device. 3,222,030, 12–7–65, Cl. 254—100.

Thurat, Uwe: *See*—
Cranskens, Georg, and Thurat. 3,221,621.

Tidd, Edwin B., to International Telephone and Telegraph Corp. Boiler blow down tank. 3,221,712, 12–7–65, Cl. 122—379.

Timberland-Ellicott Ltd.: *See*—
Doel, Reginald G., and Jordan. 3,222,033.

Timm, Heinz, to Diehl. Arrangement for controlling the brightness of direct current operated illuminating and signalling lamps in air vehicles and the like. 3,222,571, 12–7–65, Cl. 315—130.

Tirrell, Charles E., and E. J. Parsi, to Ionics, Inc. Process and apparatus for electrolyzing salt solutions. 3,222,267, 12–7–65, Cl. 204—98.

Togni, Giulio. Pre-fabricated utility building assembly. 3,221,454, 12–7–65, Cl. 52—220.

Toledo-Scale Corp.: *See*—
Adler, Clarence E. 3,221,645.
Hall, Donivan L., Orr, and Williams. 3,221,543.
Kohler, Robert D. 3,221 828.
Kohler, Robert D. 3,221,829.
Robson, Frederick W., and Wahl. 3,221,754.
Seed, Aniese E. 3,221,843.

Tolotta, Samuel, to United States of America, Navy. Encapsulated strain gage assembly. 3,222,627, 12–7–65, Cl. 338—2.

Tomassi, Joseph J., Jr.: *See*—
Gort, William J., and Tomassi. 3,221,915.

Tomlinson, John D.: *See*—
Weber, Victor and Tomlinson. 3,222,204.

Tonti, Armando: *See*—
Tonti, Emilio, E., S., and A. 3,221,823.

Tonti, Elio: *See*—
Tonti, Emilio, E., S., and A. 3,221,823.

Tonti, Emilio, E., S., and A. Depth drilling machine mounted on a four-wheeled truck. 3,221,823, 12–7–65, Cl. 173—25.

Tonti, Silvio: *See*—
Tonti, Emilio, E., S., and A. 3,221,823.

Touey, George P., and H. E. Davis. Cyanoethylated hydroxyalkylsucrose and its preparation. 3,222,358, 12–7–65, Cl. 260—209.

Towne, Edmund B.: *See*—
Gulliet James E., and Towne. 3,222,327.

Tracy, Charles H. Mail-call mailbox signalling system. 3,222,665, 12–7–65, Cl. 340—281.

Train, Kenneth E.: *See*—
Burdett, Joseph W., and Train. 3,221,986.

Trainer, Richard M.: *See*—
Franklin, Le Roy H., and Trainer. 3,222,479.

Traver, Alfred E., to Socony Mobil Oil Co., Inc. Analyzer for internal combustion engines. 3,221,545, 12–7–65, Cl. 73—116.

Trickler, Calvin J., and R. L. Lanier, to The New York Blower Co. Centrifugal fan. 3,221,983, 12–7–65, Cl. 230—127.

Trig-A-Tape Corp.: *See*—
Kaplan, Irving. 3,221,427.

Tripp, Harlan P.: *See*—
Lee Henry G., Weller, and Tripp. 3,222,450.

Trodyne Corp.: *See*—
Kalustyan, Berdj C. 3,221,703.

Troglione, Vincent R., and J. Smith, to Sunbeam Equipment Corp. Furnace transfer mechanism. 3,222,043, 12–7–65, Cl. 263—6.

Trojan Powder Co.: *See*—
Schwoyer, William L. 3,222,232.

Trotter, Walter: *See*—
Vander Sande, John L., Bross, and Trotter. 3,221,589.

Tsuda, Masao. Automatic control mechanism for ram type turret lathe. 3,221,579, 12–7–65, Cl. 82—21.

Tsukamoto, James: *See*—
Sibert, Merle E., and Tsukamoto. 3,222,197.

Tsunoda, Toshinao: *See*—
Shira, Teruo, Okumura, Tamagawa, Tsunoda, Takahashi, and Motozaki. 3,222,257.

Tucker, James F.: *See*—
Winzeler, John W., and Tucker. 3,222,569.

Tuczek, Franz, to Boge G.m.b.H. Sealing arrangement for piston of suspension unit for motor vehicles. 3,222,047, 12–7–65, Cl. 267—64.

Tuczek, Franz to Boge G.m.b.H. Hydropneumatic suspension unit. 3,222,049, 12–7–65, Cl. 267—64.

Turbak, Albin F., to Esso Research and Engineering Co. Nitro substituted thiazole azo phenol compounds. 3,222,353, 12–7–65, Cl. 260—158.

Turner, James J. Hydrofoil control system. 3,221,698, 12–7–65, Cl. 114—66.5.

Turner, Lawrence A., to Fluid Dynamics (Proprietary) Ltd. Method and apparatus for the automatic regulation of obturating devices. 3,221,504, 12–7–65, Cl. 61—22.

Tweet, John H., to United Aircraft Corp. Thrust cut-off and thrust reversal system. 3,221,495, 12-7-65, Cl. 60—35.6.

Tyler, Hugh J., to Robertshaw Controls Co. Thermostat device with oven temperature safety means. 3,222,483, 12-7-65, Cl. 200—140.

Udylite Corp., The: *See*—
Clauss, Richard J., Klein, and Planowski. 3,222,268.

Ukida, Junji: *See*—
Fujii, Kiyoshi, Imoto, Ukida, and Matsumoto. 3,222,338.

Ulmer, Wolfgang, and E. Seibt, to Siemens & Halske Aktiengesellschaft. Wide-band automatic gain-controlled amplifier. 3,222,609, 12-7-65, Cl. 330—29.

Ulrich, William D., to G. M. Hilby, and H. L. Johnson. Automotive assembly. 3,221,719, 12-7-65, Cl. 123—41.01.

Underhill, James R.: *See*—
Belohlav, Leo R., and Underhill. 3,222,276.

Union Carbide Corp.: *See*—
Boyle, Francis K., Clark, and Swain. 3,222,201.
Clark, Salem T. 3,222,213.
La Combe, Edward M., Ankeney, Thompson, and Walter. 3,222,328.
Lanham, William M. 3,222,305.
Manning, David T., and Stansbury. 3,222,880.
Murphy, John J. 3,222,440.
Simonton, Robert D. 3,221,403.
Thompson, James, Farrell, and Lamont. 3,222,163.
Wolf, Clarence J. 3,222,320.

Union Oil Co. of California: *See*—
Cook, George R. 3,222,284.
Joo, Louis A. 3,222,308.
Klass, Donald L., and Brozowski. 3,221,849.
Kramer, Walter E., and Joo. 3,222,307.
Krewer, William A., Klass, and Ayers. 3,222,275.
Martinek, Thomas W. 3,222,137.
Rai, Charanjit. 3,222,373.
Rai, Charanjit, Kramer, and Kimble. 3,222,285.
Rai, Charanjit. 3,222,393.
Schaeffer, William D. 3,222,414.
Weichman, Roger L., and Fierce. 3,222,123.
Wolfram, George D. P., and Szawlowski. 3,222,280.

Updegrove, Louis B., E. L. Mincher, and R. H. Steiner, to National Distillers and Chemical Corp. Novel packaging films and processes therefor. 3,222,211, 12-7-65, Cl. 117—72.

Unistrut Corp.: *See*—
Thorpe, William J. 3,222,030.

United Aircraft Corp.: *See*—
Arnoldi, Walter E., De Rose, Jennings, and Peters. 3,221,477.
Hasbrouck, Augustus. 3,221,499.
Tweet, John H. 3,221,495.

United Kingdom Atomic Energy Authority: *See*—
Fletcher, Frederick O., and Taylor. 3,222,256.

United Service Equipment Co., Inc.: *See*—
Stents, Blair E. 3,222,114.

United Shoe Machinery Corp.: *See*—
Brown, Robert J. 3,221,473.
MacKenzie, Fred T., Becker, and Peterson. 3,221,967.

United States of America
Agriculture: *See*—
Hanrahan, Francis P. 3,222,193.
Skau, Evald L., Mod, and Magne. 3,222,203.
Air Force: *See*—
Drummond, Warren W. 3,222,149.
Keen, Henry S. 3,222,624.
Paquette, Elmer G. 3,221,875.
Army: *See*—
Cerulli, Francis J. 3,222,503.
Chick, Donald R. 3,222,608.
Friedrich, Victor L. 3,222,673.
Gager, Charles H., and Ruvin. 3,222,602.
Hekimian, Norris C. 3,222,619.
Hyman, Abraham. 3,222,456.
Larsen, Agnew E., Weinstock, and Le Vino. 3,222,015.
Lochhead, John L. 3,221,603.
Meyer, Earl A., and Spencer. 3,222,596.
Norton, Charles W., Jr. 3,222,611.
Pearlstein, Fred. 3,222,195.
Rogers, John W., and Viscosi. 3,222,448.
Sutten, Adrian P. 3,221,656.
Warren, Raymond W. 3,221,990.
Atomic Energy Commission: *See*—
Alexeff, Igor, and Neidigh. 3,222,559.
Clark, Walter E., and Gens. 3,222,289.
Davenport, Donald E. 3,222,144.
Franck, Jack V., and Broadhead. 3,222,526.
Green, Joe T. 3,222,026.
Harel, Abraham. 3,222,670.
Schulze, Wallace W. 3,222,125.
Yampolsky, Jack S. 3,221,982.
Health, Education and Welfare: *See*—
Kiessling, Edward A. 3,221,769.
Interior: *See*—
Melcher, Norwood B., and Mahan. 3,221,906.
Shell, Haskiel R., Pace, and Nichols. 3,222,142.
National Aeronautics and Space Administration: *See*—
Wetmore, Joseph W. 3,221,549.
Wong, Robert Y., Nusbaum, and Holeski. 3,221,547.
Navy: *See*—
Alpers, Frederick C., Atchison, and Yates. 3,222,604.
Altar, William, and Helstrom. 3,221,695.
Askowith, Burton J. 3,222,529.
Bankston, Lester T. 3,221,498.
Boan, Byron H., and Popodi. 3,222,547.
Boone, Jay D. 3,222,016.
Brown, Barry D. 3,222,552.

United States of America
Navy: *See*—Continued
Correale, James V., Jr. 3,221,339.
Di Matteo, Paul L. 3,222,671.
Gardiner, Paul C. 3,221,693.
Gardner, Robert S. 3,221,694.
Gelkler, John A., and Pitts. 3,222,623.
Geyger, William A. 3,222,613.
Hardesty, Thomas K. C., and Sondheimer. 3,222,485.
Harriger, Keith A. 3,222,616.
Mackey, Ernest A., and Counterman. 3,221,489.
Matuszko, Anthony J., and Chang. 3,222,233.
Mayne, William P., Russell, and Sykes. 3,222,508.
Price, Wilson T., and Brown. 3,221,602.
Ray, Kenneth M., and Bohnsack. 3,222,612.
Roes, John B., Gauld, and Pedersen. 3,221,508.
Sanford, Richard J. 3,222,548.
Seamone, Woodrow, and Wenrich. 3,221,501.
Smith, John E., and Starry. 3,221,701.
Tolotta, Samuel. 3,222,627.
Wadsworth, Arthur J. 3,222,493.
Universal Oil Products Co.: *See*—
Appell, Herbert R., and Bloch. 3,222,346.
Bloch, Herman S. 3,222,415.
Schmerling, Louis. 3,222,401.
Scivally, Herschell R., and Thorne-Thomsen. 3,222,140.
Swanson, William M. 3,222,410.
Universal Research: *See*—
Dreyer, Allen F. 3,222,072.
University of Notre Dame: *See*—
Davis, Ralph B. 3,222,389.
Up-Right, Inc.: *See*—
Fisher, Robert E. 3,221,837.
Upton, Lee O., to American Optical Co. Solder sealing glass members. 3,222,152, 12-7-65, Cl. 65—32.
Urbank, Joseph R., to General Electric Co. Slidable cooking top. 3,222,115, 12-7-65, Cl. 312—223.
Urfabriken, AB: *See*—
Borgstrom, Carl G. L., and Frode. 3,222,010.
Usines Gustave Staar, S.A.: *See*—
Staar, Marcel J. H. 3,221,585.
U.S. Perlite Corp.: *See*—
Stedman, Cresswell E. 3,222,434.
Valo, Bruno. Arrangement of cutters in barking machines of drum type. 3,221,785, 12-7-65, Cl. 144—208.
Valve Corp. of America: *See*—
O'Donnell, William R. 3,221,950.
Van De Hey, Roche J.: *See*—
Grall, John G., Nickles, Van De Hey, and West. 3,221,896.
Van den Brink, Marinus J., and J. Van Schooten, to Shell Oil Co. Sulfur-containing phenols. 3,222,404, 12-7-65, Cl. 260—609.
Van der Lely, C., N.V.: *See*—
Van der Lely, Cornelis, Jonkers, and Fockens. 3,221,821.
Van der Lely, Cornelis. 3,221,484.
Van der Lely, Cornelis, to C. van der Lely, N.V. Crop-working implements. 3,221,484, 12-7-65, Cl. 56—370.
Van der Lely, Cornelis, C. O. Jonkers, and F. H. Fockens, to C. van der Lely, N.V. Lifting mechanisms for tractor-propelled implements. 3,221,821, 12-7-65, Cl. 172—7.
Vander Sande, John L., W. C. Bross, and W. Trotter, to Camloc Fastener Corp. Interthreaded fastening assembly. 3,221,589, 12-7-65, Cl. 85—61.
Vandermark, Roger C.: *See*—
Belko, William R., Jr., and Vandermark. 3,222,173.
Van der Voort, Henricus G. P.: *See*—
Duck, Edward W., Berkenbosch, and Van der Voort. 3,222,332.
Vandervoort, John R., to Eaton Mfg. Co. Synchronized positive clutches. 3,221,851, 12-7-65, Cl. 192—53.
Van Geen, John, to R S Electronics Corp. Apparatus for gathering an accumulation of various objects. 3,221,903, 12-7-65, Cl. 214—17.
Vanheerentals, Jacques L., to Gevaert Photo-Producten N.V. Process for determining exposure and developing times. 3,222,167, 12-7-65, Cl. 96—27.
Van Products Co.: *See*—
Norton, Orlo C. 3,221,478.
Van Products, Inc.: *See*—
Skony, Sigmund J. 3,222,633.
Van Landeghem, Frederik J.: *See*—
Sano, Karel M., and Van Landeghem. 3,221,620.
Van Schooten, Jan: *See*—
Van den Brink, Marinus J., and Van Schooten. 3,222,404.
Van Scoyk, Howard E.: *See*—
Bremer, Robert D., and Van Scoyk. 3,221,396.
Van Strien, Richard E.: *See*—
Horan, James E., and Van Strien. 3,222,313.
Horan, James E., and Van Strien. 3,222,390.
Van Sweringen, James P.: *See*—
Moser, Robert V., and Van Sweringen. 3,221,479.
Vandale Corp.: *See*—
Buschbom, Floyd E. 3,221,904.
Van Winkle, Roy L., W. L. Lankford, Jr., and I. M. Carpenter, The Geolograph Co. Apparatus for recording the speed of a rotary source. 3,222,679, 12-7-65, Cl. 346—33.
Vargady, Leslie O., to Bausch & Lomb Inc. Optical read-out system having a bi-prism with integral screen. 3,221,594, 12-7-65, Cl. 88—24.
Varian Associates: *See*—
De Pue, James M., Jr., and Oaks. 3,222,564.
Oaks, Norman E. 3,222,565.
Vasel, Alfred W., and R. W. Kalns. Fire detector energized by a photo-generative cell. 3,222,661, 12-7-65, Cl. 340—228.

Venghiattis, Alexis A., to Dresser Industries, Inc. Selective shaped charge gun. 3,221,655, 12-7-65, Cl. 102—20.

Vereinigte Glanzstoff-Fabriken AG.: *See*—
Sommer, Erwin, and Gerlach. 3,222,244.
Willoth, Fritz, and Sommer. 3,222,375.

Vereinigte Österreichische Eisen-und Stahlwerke Aktiengesellschaft: *See*—
Pribyl, Robrt. 3,222,229.

Vereist, Johan L.: *See*—
Rott, André, and Vereist. 3,222,174.

Vesilind, Paul E., to Koppers Co., Inc. Extrusion machine. 3,221,369, 12-7-65, Cl. 18—12.

Vevoda, Ernest. Monolithic wall slab and method of constructing same. 3,221,457, 12-7-65, Cl. 52—438.

Victory Engineering Corp.: *See*—
Sapoff, Meyer, and Gecsey. 3,221,893.

Vidach, John B. Rudder assembly for watercraft. 3,221,699, 12-7-65, Cl. 114—162.

Villepelet, Jean, to Compagnie Francaise Thomson-Houston. Radio detection and automatic tracking equipment. 3,222,674, 12-7-65, Cl. 343—9.

Viscosi, Armand J.: *See*—
Rogers, John W., and Viscosi. 3,222,448.

Vitramon Inc.: *See*—
Belko, William R., Jr., and Vandermark. 3,222,173.

Vitramon, Inc.: *See*—
Lee, Henry, Weller, and Tripp. 3,222,450.
Weller, Barton L., and Belko. 3,221,388.

Vlasak, Joseph J.: *See*—
Powers, Walter H., and Vlasak. 3,222,090.

Vogt, Clifford C. Roll tape copy machine. 3,221,597, 12-7-65, Cl. 88—24.

Vogt Mfg. Corp.: *See*—
Straight, Edward R. 3,221,958.

Vollmar, Heinrich: *See*—
Hoelle, Alfred, and Vollmar. 3,222,181.

Von Brachel, Hanswilli, and H. D. Jordan, to Farbenfabriken Bayer Aktiengesellschaft. Viscose spinning solution for the manufacture of shaped articles from regenerated cellulose. 3,222,198, 12-7-65, Cl. 106—165.

Von Brachel, Hanswilli, and O. Bayer, to Farbenfabriken Bayer Aktiengesellschaft. 1,3,4-trimethylcyclohex-3-enecarboxylic acid-(1)-beta-isocyanatoethyl ester. 3,222,387, 12-7-65, Cl. 260—453.

Waas, Fred D.: *See*—
Braus, Harry, and Waas. 3,222,290.

Wacker-Chemie G.m.b.H.: *See*—
Enk, Eduard, Knorr, and Spes. 3,222,262.

Wadsworth, Arthur J., to United States of America, Navy. Apparatus and method for positioning and holding bars during welding thereof into zigzag series-connected relationship. 3,222,493, 12-7-65, Cl. 219—58.

Wagner, Kuno: *See*—
Nischk, Gunther, Mennicken, and Wagner. 3,222,322.

Wagner, Theodor. Heddle-support devices for weaving looms. 3,221,776, 12-7-65, Cl. 139—92.

Wagner-Jauregg, Theodor, F. Schatz, and U. Jahn, to Siegfried Aktiengesellschaft. 1,2-malonyl-1,2-dihydrocinnoline derivatives and process for preparation thereof. 3,222,366, 12-7-65, Cl. 260—250.

Wahl, William A.: *See*—
Robson, Frederick W., and Wahl. 3,221,754.

Wainwright, Rex H.: *See*—
Lewis, James C., Hockett, and Wainwright. 3,221,375.

Walker Mfg. Co.: *See*—
Powers, Walter H., and Vlasak. 3,222,090.

Walker, Raleigh W., Jr. Target trap. 3,221,726, 12-7-65, Cl. 124—7.

Walker, Richard K., to McGraw-Edison Co. Dictating machine. 3,222,074, 12-7-65, Cl. 274—11.

Wall, Fraser M., to Selas Corp. of America. Industrial burner. 3,221,797, 12-7-65, Cl. 158—11.

Wall, Henry H., Jr., to Ethyl Corp. Flare stack with a liquid seal. 3,222,259, 12-7-65, Cl. 196—46.

Walsh, Jack. Cross-country snow vehicle. 3,221,830, 12-7-65, Cl. 180—5.

Walter, Andrew T.: *See*—
La Combe, Edward M., Ankeney, Thompson, and Walter. 3,222,328.

Walton, Dean K., to Socony Mobil Oil Co., Inc. Method of heating a subterranean reservoir containing hydrocarbon material. 3,221,809, 12-7-65, Cl. 166—2.

Warenius, Andrew A.: *See*—
Bisulca, Anthony A., Cunningham, and Warenius. 3,222,054.

Warner-Lambert Pharmaceutical Co.: *See*—
Brown, Richard E., and Meltzer. 3,222,367.
Brown, Richard E., and Meltzer. 3,222,368.

Warren, Raymond W., to United States of America, Army. Pure fluid shift register. 3,221,990, 12-7-65, Cl. 235—201.

Washburn, Harry G.: *See*—
Arnold, Lionel C., and Washburn. 3,222,192.

Wassell, George W., to Wassell Organization, Inc. File tray. 3,221,890, 12-7-65, Cl. 211—10.

Wassell Organization, Inc.: *See*—
Wassell, George W. 3,221,890.

Waterman, Jacques A.: *See*—
Duck, Edward W., and Waterman. 3,222,348.

Watkins, Bruce J.: *See*—
Shotto, Howard I., Jr., Watkins, Dozier, Whittier, Faulk, and Goepfert. 3,221,816.

Watson, Cornelius B., Jr. Tube squeezer with automatically operating closure member. 3,221,940, 12-7-65, Cl. 222—96.

Watson, Roger W.: *See*—
De Young, Edwin L., and Watson. 3,222,281.

Watt, Robert D., to Electro-Watt, Inc. Rope tow. 3,221,667, 12-7-65, Cl. 104—173.

Weaver, Ernest P.: *See*—
Davies, Ben, and Weaver. 3,222,196.

Webb, Derrel D., to Houston Engineers, Inc. Fluid pressure one-way jar. 3,221,826, 12-7-65, Cl. 175—297.

Webb, John M.: *See*—
Mellen, Edward J., Jr., Webb, de Fasselle, and Dudek. 3,222,435.

Webb, Lewis B., to Essex Wire Corp. Method of making reels. 3,221,612, 12-7-65, Cl. 93—1.

Webb, Lewis B., to Essex Wire Corp. Flat paperboard blank assembly readily shaped to reel form. 3,222,011, 12-7-65, Cl. 242—118.8.

Weber, Victor, and J. D. Tomlinson, to Minnesota Mining and Mfg. Co. Process of making beaded coatings and films from glass beads treated with oleophobic sizing agent. 3,222,204, 12-7-65, Cl. 117—27.

Weichman, Roger L., and W. L. Fierce, to Union Oil Co. of California. Process for preparing cyanogen halides and carbonyl halides. 3,222,123, 12-7-65, Cl. 23—14.

Weidinger, Hans, and H. Ellingsfeld, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Production of 1,3,4-oxadiazoles. 3,222,372, 12-7-65, Cl. 260—296.

Weiland, Carl W., to Douglas Aircraft Co., Inc. Winged surface effect vehicles. 3,221,831, 12-7-65, Cl. 180—7.

Weiler, Richard L., and R. E. Benedict. Glass fiber sewage tank. 3,221,881, 12-7-65, Cl. 210—136.

Weinert, Harry F., to Cascade Corp. Load-lifting structure with latch mechanism. 3,221,840, 12-7-65, Cl. 187—9.

Weinstock, Manuel: *See*—
Larsen, Agnew E., Weinstock, and Le Vino. 3,222,015.

Weisberg, Sydney R. Support stand. 3,222,019, 12-7-65, Cl. 248—97.

Weiss, Franz, to Poster Products, Inc. Stencil printing process. 3,221,648, 12-7-65, Cl. 101—129.

Weiss, Franz, to Poster Products, Inc. Screen printing apparatus. 3,221,649, 12-7-65, Cl. 101—126.

Weiss, Irving, 61% to H. Ain. Time and sound recording photographic device. 3,222,681, 12-7-65, Cl. 346—107.

Weiss, Robert M., J. M. Sinner, and W. F. Bloch, to The Pillsbury Co. Culinary mix utilizing liquid oil shortening and process for preparing same. 3,222,184, 12-7-65, Cl. 99—94.

Weissman, Samuel I., to E. I. du Pont de Nemours and Co. Tetracyanoethylenide salts. 3,222,385, 12-7-65, Cl. 260—429.

Weller, Barton L., and E. A. Bolton, to Vitramon Inc. Terminal lead connection and method of making the same. 3,221,387, 12-7-65, Cl. 29—25.42.

Weller, Barton L., and W. R. Belko, Jr., to Vitramon, Inc. Method of making a stacked capacitor. 3,221,388, 12-7-65, Cl. 29—25.42.

Weller, Barton L.: *See*—
Lee, Henry, Weller, and Tripp. 3,222,450.

Wells, Kenneth J.: *See*—
Davis, John W., and Wells. 3,221,844.

Welsbach Corp., The: *See*—
Sease, Will S. 3,221,523.

Wendelken, Gerard J., to Cutting Room Appliances Corp. Edge alignment device for cloth laying machines. 3,222,006, 12-7-65, Cl. 242—57.1.

Wendrow, Louis: *See*—
Rupright, Bert A. 3,221,756.

Wengel, Sheldon M., to Hankscraft Co. Display apparatus. 3,221,666, 12-7-65, Cl. 104—173.

Wenger, Harry J. Adjustable suspended acoustical panel assembly. 3,221,835, 12-7-65, Cl. 181—33.

Wenrich, Loran A.: *See*—
Seamone, Woodrow, and Wenrich. 3,221,501.

Wentworth, Joseph T., to General Motors Corp. Vapor recovery system. 3,221,724, 12-7-65, Cl. 123—136.

Wernig, James H., and V. R. Hallenbeck, to General Motors Corp. Convertible boot retaining means. 3,222,103, 12-7-65, Cl. 296—136.

West, John D.: *See*—
Grall, John G., Nickles, Van De Hey, and West. 3,221,896.

Western Electric Co., Inc.: *See*—
Beatenbough, Charles M., and Griffin. 3,222,597.
Arnold, Howard H., Boatwright, and Schiller. 3,222,504.
Bracci, Delphio J., and Davidson. 3,221,968.
Fuller, Evander K. 3,222,539.
Henry, Thomas R. 3,221,969.
Parker, Herbert E., Sullivan, and Whipple. 3,222,442.
Wolever, Donald L. 3,221,471.

Westgren, Robert C.: *See*—
Thompson, Vernon R., and Westgren. 3,222,166.

Westinghouse Brake and Signal Co. Ltd.: *See*—
Manners, John H. R., and George. 3,222,538.

Westinghouse Electric Corp.: *See*—
Ditzler, John L. 3,221,984.

West Virginia Pulp and Paper Co.: *See*—
Brundige, Maurice M., Obenshain, Fredrickson, and Kohne. 3,222,209.

Wetmore, Joseph W., to United States of America, National Aeronautics and Space Administration. Aircraft instrument. 3,221,549, 12-7-65, Cl. 73—178.

Wettstein, Albert, and J. Schmidlin, to Ciba Corp. 18-ethylenedioxy-17-isopregnenes and derivatives thereof. 3,222,361, 12-7-65, Cl. 260—239.55.

Weyerhaeuser Co.: *See*—
Peterson, Herbert T. 3,221,538.

Wheeler, Marcus A.: *See*—
Bird, Jack R., Meetham, and Wheeler. 3,222,165.

Whipple, Melvin M. Veneer lathe. 3,221,786, 12–7–65, Cl. 144—209.

White, Douglas F., to American Radiator & Standard Sanitary Corp. Method and apparatus for controlling flow in centrifugal machines. 3,221,662, 12–7–65, Cl. 103—103.

White, Howard P., to Burroughs Corp. Coil winding apparatus. 3,222,000, 12–7–65, Cl. 242—9.

Whited, Harry H. Tire changing mechanism. 3,221,795, 12–7–65, Cl. 157—1.2.

Whitesell, William A., and H. L. Cook, Jr., to Farrington Electronics Inc. Optical scanning system. 3,222,453, 12–7–65, Cl. 178—7.6.

Whiting, Harold E., and J. F. Puetz, to Square D Co. Electromagnetic switch. 3,222,476, 12–7–65, Cl. 200—104.

Whitson, John W. Perforating apparatus. 3,221,961, 12–7–65, Cl. 225—93.

Wickenberg, Chester H., to Sunbeam Corp. Rotisserie. 3,221,638, 12–7–65, Cl. 99—340.

Widdowson, Richard E., to General Motors Corp. Pilot operated flow control valve. 3,221,763, 12–7–65, Cl. 137—220.

Widrow, Bernard, and M. E. Hoff, Jr. Logic circuit and electrolytic memory element therefor. 3,222,654, 12–7–65, Cl. 340—173.

Wiebelhaus, Virgil D.: *See*—
Schultz, Everett M., Bickling, and Wiebelhaus. 3,222,395.

Wieber, George L., to Illinois Tool Works, Inc. Drill screw and an assembly including the same. 3,221,588, 12–7–65, Cl. 85—47.

Wiemer, Jean, to Metallgesellschaft Aktiengellschaft. Wet electrostatic precipitator. 3,221,475, 12–7–65, Cl. 55—10.

Wiener, Murray, to The Babcock & Wilcox Co. Forced flow vapor generator. 3,221,713, 12–7–65, Cl. 122—406.

Wilkins, Douglas B., to Girling Ltd. Hydro-pneumatic suspension units for vehicles. 3,222,048, 12–7–65, Cl. 267—64.

Wilkinson, James W., to Hastings Mfg. Co. Oil filter with relief valve. 3,221,880, 12–7–65, Cl. 210—310.

Willard, Frank H., and J. A. Pollard. Pulse width stabilized transistor multivibrator. 3,222,550, 12–7–65, Cl. 307—88.5.

William, Edwin C., Jr.: *See*—
Annis, Martin, Clark, Greenberg, Paolini, and William. 3,221,731.

Williams, Keith R., and R. T. Short, to Shell Oil Co. Electrodes for fuel cells. 3,222,224, 12–7–65, Cl. 136—86.

Williams, Robert E., to Rexall Drug and Chemical Co. Process for the preparation of 4-halobutane-1-sulfonyl halides. 3,222,396, 12–7–65, Cl. 260—543.

Williams, Roger B., Jr.: *See*—
Hall, Donivan L., Orr, and Williams. 3,221,543.

Williamson, Alexander, to General Motors Corp. Cylinder heads for internal combustion engines. 3,221,723, 12–7–65, Cl. 123—41.77.

Willis, Alan E.: *See*—
Zatsky, Norman C., and Willis. 3,221,565.

Willsey, George P., Jr.: *See*—
Lukes, George E., and Willsey. 3,222,248.

Wilmat-Breeden Ltd.: *See*—
Moss, Norman S. 3,222,050.

Wiloth, Fritz, and E. Sommer, to Vereinigte Glanzstoff-Fabriken A.G. Triamino-triazoles and their production. 3,222,375, 12–7–65, Cl. 260—308.

Wilson, Allen B. Method of producing relatively-calm water area. 3,221,503, 12–7–65, Cl. 61—6.

Wilson, Harry B., to Laporte Titanium Ltd. Manufacture of aluminum chloride. 3,222,127, 12–7–65, Cl. 23—93.

Wilson, John C., to Dresser Industries, Inc. Combination logging system and method. 3,221,548, 12–7–65, Cl. 73—152.

Wiltsey, Howard E.: *See*—
Jaeschke, Ralph L., and Wiltsey. 3,221,854.

Windebank, Robert W., to International Resistance Co. Apparatus for working materials by means of an electron beam. 3,222,496, 12–7–65, Cl. 219—121.

Wing, Willis G., to Sperry Rand Corp. Suspension apparatus. 3,221,563, 12–7–65, Cl. 73—516.

Winiger, Edgar, to Electrometre, S.A. Medium consumption metering and invoicing mechanism. 3,221,926, 12–7–65, Cl. 221—2.

Winter, Max, to Firmenich & Cie. Flavoring composition. 3,222,187, 12–7–65, Cl. 99—140.

Winzeler, John W., and J. F. Tucker, to Giannini Scientific Corp. Apparatus and method for generating high-intensity light. 3,222,569, 12–7–65, Cl. 315—111.

Wismer, Marco, L. R. LeBras, J. R. Peffer, and J. F. Foote, to Pittsburgh Plate Glass Co. Method for preparing polyester polyol sucrose rigid foams. 3,222,357, 12–7–65, Cl. 260—209.

Witherspoon, John M., to Burroughs Corp. Time-controlled logical circuit. 3,222,536, 12–7–65, Cl. 307—88.

Wohlfort, William R.: *See*—
Bruce, George D., and Wohlfort. 3,222,658.

Wolcik, Joseph F., and J. A. Brumlow, Jr., to Shell Oil Co. Emulsion control in hydrocarbon purification. 3,222,413, 12–7–65, Cl. 260—677.

Wolever, Donald L., to Western Electric Co. Inc. Apparatus for orienting and packaging elongated parts. 3,221,471, 12–7–65, Cl. 53—78.

Wolf, Clarence J., to Union Carbide Corp. Equilibration of organosiloxane polymers. 3,222,320, 12–7–65, Cl. 260—46.5.

Wolfram, George, and T. H. Szawlowski, to Union Oil Co. of California. Lubricants having improved cohesiveness and adhesiveness. 3,222,280, 12–7–65, Cl. 252—32.7.

Wolinski, Leon E., to E. I. du Pont de Nemours, and Co. Polyethylene resin containing a solid polyethylene glycol. 3,222,314, 12–7–65, Cl. 260—33.2.

Wong, Robert Y., W. J. Nusbaum, and D. E. Holeski, to United States of America, National Aeronautics and Space Administration. Apparatus for absorbing and measuring power. 3,221,547, 12–7–65, Cl. 73—134.

Wood, Andrew S.: *See*—
Grosser, Frederick, Leibowitz, and Wood. 3,222,329.

Wood, Brainerd, to Honeywell Inc. Sprocket hole checking system. 3,222,501, 12–7–65, Cl. 235—61.7.

Wood, Harry G. Package assembly and cushion. 3,221,872, 12–7–65, Cl. 206—46.

Wood, John F., and J. Frisz, to Euphonics Corp. Magnetic head construction. 3,222,461, 12–7–65, Cl. 179—100.2.

Woods, John P., E. B. Neitzel, and T. Prickett, Jr., to The Atlantic Refining Co. Phase splitter. 3,222,546, 12–7–65, Cl. 307—88.5.

Woods, William H., and R. E. Dietz, to Square D Co. Operating mechanism for multipole electrical circuit breaker. 3,222,475, 12–7–65, Cl. 200—88.

Woodward, Fred E.: *See*—
Stefcik, Andrew, and Woodward. 3,221,480.

Woodward Iron Co.: *See*—
Hollingsworth, Albert A. 3,222,076.

Woodworth, Carroll L., to Arl-Zonolite Co. Method of casting cementitious shingles on a sloping roof. 3,222,436, 12–7–65, Cl. 264—34.

Woroncow, Alexander, J. S. Randall, and R. Benjamin, to National Research Development Corp. Core matrix for control of CRT having forward and reverse wound cores. 3,222,667, 12–7–65, Cl. 340—324.

Wright, Malor, to Itek Corp. Data processing apparatus. 3,221,755, 12–7–65, Cl. 134—122.

Wurst, Donald O., to Driv-A-Lert Corp. Alarm apparatus for vehicle operator. 3,222,640, 12–7–65, Cl. 340—53.

Wurzburg, Otto B., and W. Herbst, to National Starch and Chemical Corp. Water dispersible high amylose starch. 3,222,220, 12–7–65, Cl. 127—32.

Wyart, John W., A. Schrage, and J. A. Vona, to Celanese Corp. of America. Lactone modified epoxide resins. 3,222,312, 12–7–65, Cl. 260—30.4.

Wyckoff, Kenneth K., and J. E. Guthrie, deceased (by M. Guthrie, legal representative); said Wyckoff assor. to Richardson-Merrell, Inc. Method of eliminating helminths with cadmium compounds. 3,222,251, 12–7–65, Cl. 167—53.

Yale, Harry L., to Olin Mathieson Chemical Corp. Inhalation anesthetic. 3,222,250, 12–7–65, Cl. 167—52.

Yamada, Hiroshi: *See*—
Moriyama, Hiromi, Yamada, Nakanishi, and Kiriyama. 3,222,486.

Yamada, Kazuhiko: *See*—
Lizuka, Hiroshi, Katsuya, Shiio, Komagata, Otsuka, Yamada, and Ishii. 3,222,258.

Yampolsky, Jack S., to United States of America, Atomic Energy Commission. Turbocirculator. 3,221,982, 12–7–65, Cl. 230—116.

Yardney International Corp.: *See*—
Amlet, Bernard, Langella, and Sentenac. 3,222,225.

Yashima, Masamichi, to Yazaki Meter Co., Ltd. Flow meter for propane or the like gas with a safety device combined therewith. 3,221,550, 12–7–65, Cl. 73—199.

Yazaki Meter Co., Ltd.: *See*—
Yashima, Masamichi. 3,221,550.

Yoder Co., The: *See*—
Chang, William J. H. 3,221,529.

Yonkers, Edward H., and S. Z. Lewin, to Oxy-Dry Sprayer Corp. Powder spraying apparatus. 3,221,938, 12–7–65, Cl. 222—76.

Yonkers, Edward H., to Joslyn Mfg. and Supply Co. Valve type lightning arrester. 3,222,566, 12–7–65, Cl. 315—36.

Yoshida, Tetsuo, to Nippon Electric Co., Ltd. Coupling device. 3,222,621, 12–7–65, Cl. 333—26.

Young, Eldred E.: *See*—
Evans, Harry D., and Young. 3,222,416.

Young, Mamie D. Book covers. 3,222,085, 12–7–65, Cl. 281—34.

Young, Reuben F. Stacking machines for paper units. 3,221,902, 12–7–65, Cl. 214—6.

Young, Robert E.: *See*—
Julian, Clarence L., and Young. 3,221,725.

Yueh, Mao H., to The Pillsbury Co. Food mixes with lower alkyl derivatives of guar gum incorporated therein. 3,222,185, 12–7–65, Cl. 99—94.

Zatsky, Norman C., and A. E. Willis, to Dynamics Corp. of America. Adjustable threadless positioning devices. 3,221,565, 12–7–65, Cl. 74—5.4.

Zeidler, Harold O. Spring padded ironing devices. 3,221,426, 12–7–65, Cl. 38—66.

Zellweger, Conrad, and W. Retzler, to Ronson Corp. Filler valve construction. 3,221,782, 12–7–65, Cl. 141—286.

Zielinski, Edward A., to Cadolin, Inc. Hair styling roller with rotating hair clamps. 3,221,753, 12–7–65, Cl. 132—40.

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CLASSIFICATION OF PATENTS

ISSUED DECEMBER 7, 1965

NOTE.—First number, class: second number, subclass: third number, patent number

2– 2.1	3,221,339	29–183	3,222,143	56–370	3,221,484	73–432	3,221,561	96– 69	3,222,178	114– 23	3,221,695
3	3,221,340	191	3,222,144	400.06:	3,221,485	515	3,221,562	98– 33	3,221,632	43.5	3,221,696
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83	3,221,342	208	3,221,401	58– 23	3,221,487	74– 5.4	3,221,565	96	3,221,634		3,221,698
153	3,221,343	439	3,221,402	28	3,221,488	68	3,221,566	115	3,221,635	162	3,221,699
161	3,221,344	511	3,221,403	145	3,221,489	87	3,221,567	121	3,221,636	201	3,221,700
198	3,221,345	568	3,221,404	59– 13	3,221,490	106	3,221,568	99– 2	3,222,179	235	3,221,701
236	3,221,346	30–164.95:	3,221,405	60– 13	3,221,491	108	3,221,569	48	3,222,180	115– .5	3,221,702
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5– 28	3,221,348	31– 49	3,221,407	30	3,221,493	472	3,221,571	77	3,222,182	117	3,221,704
317	3,221,349	32– 32	3,221,408	35.4	3,221,494	501	3,221,572	93	3,222,183	132	3,221,705
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8–115.5	3,222,118	33– 77	3,221,410	35.6	3,221,495	569	3,221,564		3,222,185		3,222,205
116	3,222,119	171	3,221,411		3,221,496	665	3,221,574	111	3,222,186	40	3,222,206
9– 6	3,221,351	174	3,221,412		3,221,497	730	3,221,575	140	3,222,187	47	3,222,207
10–139	3,221,352		3,221,413	39.74:	3,221,499	75– 49	3,222,161	171	3,222,188	63	3,222,208
12–142	3,221,353	214	3,221,414	39.75:	3,221,500	73	3,222,162	172	3,222,189	64	3,222,209
13– 9	3,222,445	34– 30	3,221,415	52	3,221,501	126	3,222,163		3,222,190	68	3,222,210
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15–118	3,221,354	45	3,221,417	61– 6	3,221,503	171	3,222,165	176	3,222,192	107.2	3,222,212
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210	3,221,356	12	3,221,419	36	3,221,505	81– 9.5	3,221,576	210	3,222,194	201	3,222,214
256.51:	3,221,357	35	3,221,420	46.5	3,221,506	82– 12	3,221,577	289	3,221,637		3,222,215
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537	3,221,360	37–126	3,221,423	6	3,221,509	34	3,221,580	5	3,221,640		3,222,218
563	3,221,361	129	3,221,424	85	3,221,510		3,221,581	7	3,221,641	218	3,222,219
17– 2	3,221,362	143	3,221,425	172	3,221,511	83– 24	3,221,582	27	3,221,642	119– 73	3,221,706
45	3,221,363	38– 66	3,221,426	281	3,221,512	163	3,221,583	101– 38	3,221,643	98	3,221,707
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	3,221,366	10	3,221,429	64– 26	3,221,515	224	3,221,586	115	3,221,646	122– 1	3,221,710
5.3	3,221,367	23	3,221,430	65– 3	3,222,149	271	3,221,587	125	3,221,647	240	3,221,711
9	3,221,368	106.1	3,221,431	18	3,222,150	84– 1.19:	3,222,447	126	3,221,649	379	3,221,712
12	3,221,369	130	3,221,432	29	3,222,151	85– 47	3,221,588	129	3,221,648	406	3,221,713
14	3,221,370	42– 62	3,221,433	32	3,222,152	61	3,221,589	149.2	3,221,650	479	3,221,714
	3,221,371	43– 42.02:	3,221,434	43	3,222,153	76	3,221,590	183	3,221,651	123– 8	3,221,715
	3,221,372	42.06:	3,221,435	91	3,222,154	88– 1	3,221,591	232	3,221,652	11	3,221,716
30	3,221,373	42.17:	3,221,436	103	3,222,155		3,221,592	269	3,221,653	13	3,221,717
19–159	3,221,374	43.4	3,221,437	159	3,222,156	14	3,221,593	401.1	3,221,654	32	3,221,718
20– 69	3,221,375	124	3,221,438	280	3,222,157	24	3,221,594	102– 20	3,221,655	41.01:	3,221,719
	3,221,376	44– 66	3,222,145	66– 8	3,221,516		3,221,595	34.1	3,221,656	41.09:	3,221,720
22– 17	3,221,377	69	3,222,146	57	3,221,517		3,221,596	70	3,221,657	41.12:	3,221,721
58	3,221,378	46– 29	3,221,439	86	3,221,518		3,221,597	95	3,221,658	41.35:	3,221,722
69	3,221,379	58	3,221,440		3,221,519	28	3,221,598	103– 5	3,221,659	41.77:	3,221,723
82	3,221,380	79	3,221,441	87	3,221,520	29	3,221,599	38	3,221,660	136	3,221,724
89	3,221,381	154	3,221,442	107	3,221,521		3,221,600	53	Re.25,934	146.5	3,221,725
193	3,221,382	174	3,221,443	185	3,221,522	57	3,221,601	87	3,221,661	124– 7	3,221,726
23– 14	3,222,120	175	3,221,444	67–101	3,221,523	89– 1.7	3,221,602	103	3,221,662	125– 11	3,221,727
	3,222:121	204	3,221,445	68– 12	3,221,524	33	3,221,603	126	3,221,663	15	3,221,728
	3,222,122	206	3,221,446	18	3,221,525	187	3,221,604	130	3,221,664	126– 21	3,221,729
	3,222,123	48–197	3,222,147	70–437	3,221,526	90– 11	3,221,605	136	3,221,665	307	3,221,730
14.5	3,222,124	51– 98	3,221,447	71– 2.3	3,222,158		3,221,606	104–173	3,221,666	127– 32	3,222,220
	3,222,125	141	3,221,448	2.5	3,222,159	11.42:	3,221,607		3,221,667	128– 2.05:	3,221,731
75	3,222,126	309	3,222,148	23	3,222,160	95	3,221,608	105– 29	3,221,668	2.08:	3,221,732
93	3,222,127	373	3,221,449	72– 80	3,221,527	91–405	3,221,609	368	3,221,669	29	3,221,733
102	3,222,128	52– 10	3,221,450	122	3,221,528	92– 24	3,221,610	375	3,221,670		3,221,734
141	3,222,129	80	3,221,451	224	3,221,529	220	3,221,611	422	3,221,671	75	3,221,735
143	3,222,130	95	3,221,452	239	3,221,530	93– 1	3,221,612	106– 1	3,222,195	156	3,221,736
209.4	3,222,131	209	3,221,453	263	3,221,531	8	3,221,613	58	3,222,196	188	3,221,737
212	3,222,132	220	3,221,454	312	3,221,532	94– 13	3,221,614	84	3,222,197	253	3,221,739
220	Re.25,933	285	3,221,455	379	3,221,533	23	3,221,615	165	3,222,198		3,221,740
230	3,222,133	376	3,221,461	73– 7	3,221,534	34	3,221,616	213	3,222,199	272	3,221,741
252	3,222,134	400	3,221,456	15.4	3,221,535	42	3,221,617	271	3,222,200	283	3,221,742
253	Re.25,932	438	3,221,457		3,221,536	45	3,221,618	285	3,222,201	287	3,221,738
	3,222,135		3,221,458	23	3,221,537	50	3,221,619	307	3,222,202	303	3,221,743
259.5	3,222,136	606	3,221,459	32	3,221,538	95– 1.1	3,221,620	316	3,222,203	305	3,221,744
285	3,222,137	616	3,221,460	45.2	3,221,539	1.7	3,221,621	107– 1	3,221,672	334	3,221,745
	3,222,138	632	3,221,462	49.1	3,221,540		3,221,622	8	3,221,673		3,221,746
287	3,222,139	645	3,221,463	53	3,221,541	10	3,221,623	14	3,221,674	479	3,221,747
288	3,222,140	655	3,221,464		3,221,542		3,221,624	54	3,221,675	480	3,221,748
290.5	3,222,141	656	3,221,465	65	3,221,543	12.5	3,221,625	108– 28	3,221,676	528	3,221,749
302	3,222,142	690	3,221,467	67.8	3,221,544	42	3,221,626	102	3,221,677	540	3,221,750
24–129	3,221,383	726	3,221,466	116	3,221,545	44	3,221,627	152	3,221,678	129– 34	3,221,751
146	3,221,384	53– 14	3,221,468	119	3,221,546	45	3,221,628	110– 36	3,221,679	131–184	3,221,752
28– 72	3,221,385	28	3,221,469	134	3,221,547	63	3,221,629	72	3,221,680	132– 40	3,221,753
29– 25.11:	3,221,386	48	3,221,470	152	3,221,548	64	Re.25,925	111– 3	3,221,681	134– 1	3,222,221
25.42:	3,221,387	78	3,221,471	178	3,221,549		3,221,630	112– 79	3,221,682	22	3,222,222
	3,221,388	182	3,221,474	199	3,221,550	73	3,221,631		3,221,683	68	3,221,754
116	3,221,389	184	3,221,472	228	Re.25,931	96– 27	3,222,167	114	3,221,684	122	3,221,755
148.4	3,221,390	373	3,221,473	299	3,221,551	29	3,222,168	138	3,221,685	135– 5	3,221,756
149.5	3,221,391	55– 10	3,221,475	330	3,221,552		3,222,169	158	3,221,686	136– 86	3,222,223
	3,221,392	28	3,221,476	343	3,221,553		3,222,170		3,221,687		3,222,224
155.5	3,221,393	31	3,221,477	359	3,221,554		3,222,171	162	3,221,688	90	3,222,225
	3,221,394	281	3,221,478	362	3,221,555	35	3,222,172	262	3,221,689	137– 9	3,221,757
	3,221,395	296	3,221,479		3,221,556		3,222,173	113– 12	3,221,690	15	3,221,758
	3,221,396	524	3,221,480	406	3,221,557	36	3,222,174	115	3,221,691	18	3,221,759
155.63:	3,221,397	56– 25.4	3,221,481	421	3,221,558		3,222,175	120	3,221,692	82	3,221,760
156.8	3,221,398		3,221,482	425.4	3,221,559	55	3,222,176	114– 23	3,221,693		3,221,761
157.3	3,221,399	27	3,221,483	432	3,221,560	67	3,222,177		3,221,694	116.5	3,221,762

137–220 : 3.221,763	176– 79 : 3.222,256	206– 46 : 3.221,872
460 : 3.221,764	177–210 : 3.221,827	63.3 : 3.221,873
492 : 3.221,765	3.221,828	65 : 3.221,874
510 : 3.221,766	3.221,829	3.221,875
577 : 3.221,767	178– 5.2 : 3.222,452	3.221,876
589 : 3.221,768	7.6 : 3.222,453	208–110 : 3.222,271
596 : 3.221,769	88 : 3.222,454	111 : 3.222,272
596.13: 3.221,770	179– 1 : 3.222,455	112 : 3.222,273
615 : 3.221,771	3.222,456	143 : 3.222,274
3.221,772	9 : 3.222,457	180 : 3.222,275
637.4 : 3.221,773	18 : 3.222,458	209–314 : 3.221,877
138–125 : 3.221,774	100.1 : 3.222,459	210– 62 : 3.222,276
139– 45 : 3.221,775	3.222,460	63 : 3.222,277
92 : 3.221,776	100.2 : 3.222,461	94 : 3.221,878
3.221,777	110 : 3.222,462	106 : 3.221,879
140– 93 : 3.221,778	115.5 : 3.222,463	130 : 3.221,880
104 : 3.221,779	180– 5 : 3.221,830	136 : 3.221,881
141– 83 : 3.221,780	7 : 3.221,831	223 : 3.221,882
130 : 3.221,781	44 : 3.221,832	228 : 3.221,883
286 : 3.221,782	181– .5 : 3.221,833	242 : 3.221,884
143– 44 : 3.221,783	32 : 3.221,834	298 : 3.221,885
144–144.5 : 3.221,784	33 : 3.221,835	3.221,886
208 : 3.221,785	61 : 3.221,836	327 : 3.221,887
209 : 3.221,786	182–115 : 3.221,837	333 : 3.221,888
3.221,787	141 : 3.221,838	532 : 3.221,889
146–182 : 3.221,788	184– 6 : 3.221,839	211– 10 : 3.221,890
148– 6.16: 3.222,226	187– 8.54: RE.25,923	13 : 3.221,891
11.5 : 3.222,227	9 : 3.221,840	48 : 3.221,892
16 : 3.222,228	188– 72 : 3.221,841	59 : 3.221,893
143 : 3.222,229	79.5 : 3.221,842	134 : 3.221,894
149– 1 : 3.222,230	87 : 3.221,843	148 : 3.221,895
2 : 3.222,231	152 : 3.221,844	212– 38 : 3.221,896
43 : 3.222,232	171 : 3.221,845	71 : 3.221,897
92 : 3.222,233	189– 36 : 3.221,846	213– 8 : 3.221,898
150– 9 : 3.221,789	3.221,847	214– 1 : 3.221,899
151– 7 : 3.221,790	190– 43 : 3.221,848	3.221,900
21 : 3.221,791	191– 22 : 3.222,464	1.5 : 3.221,901
38 : 3.221,792	192– 21.5 : 3.221,849	6 : 3.221,902
3.221,793	45 : 3.221,850	17 : 3.221,903
69 : 3.221,794	53 : 3.221,851	3.221,904
156– 58 : RE.25,930	56 : 3.221,852	18 : 3.221,905
60 : 3.222,234	66 : 3.221,853	36 : 3.221,906
66 : RE.25,935	84 : 3.221,854	42 : 3.221,907
73 : 3.222,235	3.221,855	147 : 3.221,908
139 : 3.222,236	89 : 3.221,856	3.221,909
177 : 3.222,237	193– 43 : 3.221,857	309 : 3.221,910
330 : 3.222,238	194– 2 : 3.221,858	505 : 3.221,911
380 : 3.222,239	3 : 3.221,859	514 : 3.221,912
482 : 3.222,240	5 : 3.221,860	517 : 3.221,913
575 : 3.222,241	13 : 3.221,861	623 : 3.221,914
584 : 3.222,242	84 : 3.221,862	215– 13 : 3.221,915
157– 1.2 : 3.221,795	195– 28 : 3.222,257	219– 10.65: 3.222,491
158– 1.5 : 3.221,796	29 : 3.222,258	50 : 3.222,492
11 : 3.221,797	196– 46 : 3.222,259	58 : 3.222,493
28 : 3.221,798	197– 18 : 3.221,863	69 : 3.222,494
3.221,799	179 : 3.221,864	87 : 3.222,495
46.5 : 3.221,800	198– 53 : 3.221,865	121 : 3.222,496
159– 44 : 3.221,801	177 : 3.221,866	212 : 3.222,497
160–173 : 3.221,802	183 : 3.221,867	271 : 3.222,498
206 : 3.221,803	192 : 3.221,868	289 : 3.222,499
3.221,804	193 : 3.221,869	328 : 3.222,500
229 : 3.221,805	219 : 3.221,870	220– 9 : 3.221,916
161–113 : 3.222,243	200– 11 : 3.222,465	20.5 : 3.221,917
162–157 : 3.222,244	16 : 3.222,466	24 : 3.221,918
168 : 3.222,245	3.222,467	31 : 3.221,919
349 : 3.222,246	30 : 3.222,468	39 : 3.221,920
165– 1 : RE.25,927	33 : 3.222,469	46 : 3.221,921
64 : 3.221,806	48 : 3.222,470	48 : 3.221,922
88 : 3.221,807	51.07: 3.222,471	54 : 3.221,923
158 : 3.221,808	61.27: 3.222,472	3.221,924
166– 2 : 3.221,809	61.62: 3.222,473	73 : 3.221,925
10 : 3.221,810	67 : 3.222,474	221– 2 : 3.221,926
11 : 3.221,811	88 : 3.222,475	26 : 3.221,927
3.221,812	104 : 3.222,476	34 : 3.221,928
3.221,813	114 : 3.222,477	63 : 3.221,929
33 : 3.221,814	115.5 : 3.222,478	92 : 3.221,930
55.3 : 3.221,815	120 : 3.222,479	222– 1 : 3.221,931
66.5 : 3.221,816	122 : 3.222,480	5 : 3.221,932
3.221,817	3.222,481	21 : 3.221,933
187 : 3.221,818	132 : 3.222,482	26 : 3.221,934
233 : 3.221,819	140 : 3.222,483	52 : 3.221,935
237 : 3.221,820	144 : 3.222,484	54 : 3.221,936
167– 30 : 3.222,247	161 : 3.222,485	76 : 3.221,937
3.222,248	166 : 3.222,486	3.221,938
3.222,249	3.222,487	94 : 3.221,939
52 : 3.222,250	3.222,488	96 : 3.221,940
53 : 3.222,251	3.222,489	102 : 3.221,941
53.2 : 3.222,252	167 : 3.222,490	107 : 3.221,942
78 : 3.222,253	202– 12 : 3.222,260	183 : 3.221,943
172– 7 : 3.221,821	17 : 3.222,261	190 : 3.221,944
22 : 3.221,822	39.5 : 3.222,262	193 : 3.221,945
173– 25 : 3.221,823	57 : 3.222,263	309 : 3.221,946
174– 35 : 3.222,448	204– 1 : 3.222,264	327 : 3.221,947
3.222,449	3.222,265	334 : 3.221,948
52 : 3.222,450	38 : 3.222,266	362 : 3.221,949
70 : 3.222,451	98 : 3.222,267	394 : 3.221,950
175– 19 : 3.221,824	162 : RE.25,937	456 : 3.221,951
72 : 3.221,825	238 : 3.222,268	525 : 3.221,952
297 : 3.221,826	269 : 3.222,270	538 : 3.221,953
176– 22 : 3.222,254	270 : 3.222,269	566 : 3.221,954
37 : 3.222,255	206– 16.5 : 3.221,871	570 : 3.221,955

223–106 : 3.221,956	250–211 : 3.222,531	260–250 : 3.222,365
224– 1 : 3.221,957	251– 5 : 3.222,026	3.222,366
3.221,958	264 : 3.222,027	289 : 3.222,367
8 : 3.221,959	327 : 3.222,028	3.222,368
42.1 : 3.221,960	252– 8.5 : 3.222,278	290 : 3.222,369
225– 93 : 3.221,961	28 : 3.222,279	293 : 3.222,370
103 : 3.221,962	32.7 : 3.222,280	294.8 : 3.222,371
226–109 : 3.221,963	49.6 : 3.222,281	296 : 3.222,372
227– 5 : 3.221,964	51.5 : 3.222,282	299 : 3.222,373
7 : 3.221,965	62.9 : 3.222,283	307 : 3.222,374
11 : 3.221,966	75 : 3.222,284	308 : 3.222,375
28 : 3.221,967	137 : 3.222,285	309.6 : 3.222,376
62 : 3.221,968	161 : 3.222,286	314.5 : 3.222,377
228– 18 : 3.221,969	3.222,287	326 : 3.222,378
56 : 3.221,970	182 : 3.222,288	340.9 : 3.222,379
229– 2.5 : 3.221,971	3.222,289	346.3 : 3.222,380
7 : RE.25,938	301.2 : 3.222,290	348 : 3.222,381
14 : 3.221,972	389 : 3.222,291	348.5 : 3.222,382
3.221,973	408 : 3.222,292	397.4 : 3.222,383
39 : 3.221,974	413 : 3.222,293	412.6 : 3.222,384
51 : 3.221,975	428 : 3.222,294	429 : 3.222,385
52 : 3.221,976	429 : 3.222,295	453 : 3.222,386
3.221,977	3.222,296	3.222,387
53 : 3.221,978	437 : 3.222,297	465 : 3.222,388
57 : 3.221,979	254– 8 : 3.222,029	3.222,389
71 : 3.221,980	100 : 3.222,030	473 : 3.222,390
230– 69 : 3.221,981	114 : 3.222,031	3.222,391
116 : 3.221,982	124 : 3.222,032	482 : 3.222,392
127 : 3.221,983	134.3 : 3.222,033	505 : 3.222,393
207 : 3.221,984	139.1 : 3.222,034	515 : 3.222,394
233– 15 : 3.221,985	259– 25 : 3.222,035	518 : 3.222,395
3.221,986	44 : 3.222,036	543 : 3.222,396
234–129 : 3.221,987	72 : 3.222,037	544 : 3.222,397
235– 54 : 3.221,988	105 : 3.222,038	565 : 3.222,398
61.11: 3.222,502	260– 2 : 3.222,298	570.5 : 3.222,399
61.7 : 3.222,501	2.3 : 3.222,299	577 : 3.222,400
92 : 3.222,503	2.5 : 3.222,300	578 : 3.222,401
144 : 3.221,989	3.222,301	583 : 3.222,402
151.13: 3.222,504	3.222,302	606 : 3.222,403
167 : 3.222,505	3.222,303	609 : 3.222,404
169 : 3.222,506	3.222,304	650 : 3.222,405
196 : 3.222,507	3.222,305	653 : 3.222,406
3.222,508	17.4 : 3.222,306	656 : 3.222,407
201 : 3.221,990	22 : 3.222,307	659 : 3.222,408
236– 87 : 3.221,991	3.222,308	669 : 3.222,409
239– 15 : 3.221,992	23.7 : 3.222,309	672 : 3.222,410
77 : 3.221,993	29.6 : 3.222,310	3.222,411
186 : 3.221,994	29.7 : 3.222,311	674 : 3.222,412
452 : 3.221,995	30.4 : 3.222,312	3.222,414
542 : 3.221,996	31.8 : 3.222,313	3.222,415
240– 2 : 3.222,509	33.2 : 3.222,314	3.222,416
3.1 : 3.222,510	39 : 3.222,315	677 : 3.222,413
6.41: 3.222,511	45.75: 3.222,317	683.3 : 3.222,417
8.2 : 3.222,512	45.85: 3.222,318	834 : 3.222,418
37.1 : 3.222,513	45.9 : 3.222,316	836 : 3.222,419
52.5 : 3.222,514	46.5 : 3.222,319	837 : 3.222,420
106 : 3.222,515	3.222,320	872 : 3.222,421
106.1 : 3.222,516	72 : 3.222,321	876 : 3.222,422
108 : 3.222,517	75 : 3.222,322	877 : 3.222,423
241– 48 : 3.221,997	78.4 : 3.222,323	880 : 3.222,424
56 : 3.221,998	79.7 : 3.222,324	3.222,425
247 : 3.221,999	3.222,325	3.222,426
242– 9 : 3.222,000	3.222,326	3.222,427
18 : 3.222,001	80 : 3.222,327	3.222,428
54 : 3.222,002	80.5 : 3.222,328	3.222,429
55.14: 3.222,003	3.222,329	3.222,430
56.9 : 3.222,004	3.222,330	897 : 3.222,431
57.1 : 3.222,005	3.222,331	261– 69 : 3.222,039
67.1 : 3.222,006	3.222,332	94 : 3.222,040
71 : 3.222,007	80.7 : 3.222,333	3.222,041
75.43: 3.222,008	84.7 : 3.222,334	263– 3 : 3.222,042
84.2 : 3.222,010	85.5 : 3.222,335	6 : 3.222,043
84.21: 3.222,009	87.3 : 3.222,336	264– 1 : 3.222,432
118.8 : 3.222,011	88.2 : 3.222,337	3 : 3.222,433
244– 51 : 3.222,012	89.1 : 3.222,338	25 : 3.222,434
77 : 3.222,013	89.5 : 3.222,339	28 : 3.222,435
113 : 3.222,014	93.5 : 3.222,340	34 : 3.222,436
141 : 3.222,015	3.222,341	54 : 3.222,437
145 : 3.222,016	3.222,342	66 : 3.222,438
248– 5 : 3.222,017	3.222,343	108 : 3.222,439
28 : 3.222,018	93.7 : 3.222,344	167 : 3.222,440
97 : 3.222,019	3.222,345	230 : 3.222,441
106 : 3.222,020	94.2 : 3.222,346	277 : 3.222,442
188.3 : 3.222,021	94.3 : 3.222,347	313 : 3.222,443
205 : 3.222,022	3.222,348	317 : 3.222,444
225 : 3.222,023	96.5 : 3.222,349	266– 35 : 3.222,045
316 : 3.222,024	155 : 3.222,350	41 : 3.222,044
397 : 3.222,025	3.222,351	267– 1 : 3.222,046
250– 58 : 3.222,518	157 : 3.222,352	64 : 3.222,047
65 : 3.222,519	158 : 3.222,353	3.222,048
71.5 : 3.222,520	163 : 3.222,354	3.222,049
83.1 : 3.222,521	186 : 3.222,355	268–126 : 3.222,050
83.3 : 3.222,522	193 : 3.222,356	269– 21 : 3.222,051
83.6 : 3.222,523	209 : 3.222,357	69 : 3.222,052
106 : 3.222,524	3.222,358	91 : 3.222,053
3.222,525	239 : 3.222,359	93 : 3.222,054
203 : 3.222,526	239.1 : 3.222,360	219 : 3.222,055
209 : 3.222,527	239.55: 3.222,361	271– 2 : 3.222,056
3.222,528	243 : 3.222,362	3 : 3.222,057
3.222,529	3.222,363	26 : 3.222,058
211 : 3.222,530	3.222,364	28 : 3.222,059

271– 89 : 3.222,060	287– 2 : 3.222,095	307– 88.5 : 3.222,550
272– 29 : 3.222,061	52.04: RE.25,929	97 : 3.222,551
33 : 3.222,062	53 : 3.222,096	106 : 3.222,552
48 : 3.222,063	290– 40 : 3.222,532	308– 54 : 3.222,111
59 : 3.222,064	55 : 3.222,533	310– 6 : 3.222,553
67 : 3.222,065	292– 61 : 3.222,097	35 : 3.222,554
273– 1 : 3.222,066	173 : 3.222,098	68 : 3.222,555
26 : 3.222,067	296– 10 : 3.222,099	312– 38 : 3.222,112
134 : 3.222,068	20 : 3.222,100	195 : 3.222,113
142 : 3.222,069	28 : 3.222,101	214 : 3.222,114
148 : 3.222,070	136 : 3.222,102	223 : 3.222,115
149 : 3.222,071	3.222,103	245 : 3.222,116
157 : 3.222,072	297–134 : 3.222,104	264 : 3.222,117
274– 9 : 3.222,073	188 : 3.222,105	313– 25 : 3.222,556
10 : RE.25,926	332 : 3.222,106	44 : 3.222,557
11 : 3.222,074	388 : 3.222,107	59 : 3.222,558
277– 9 : 3.222,075	441 : 3.222,108	61 : 3.222,559
34 : 3.222,076	443 : RE.25,936	93 : 3.222,560
40 : 3.222,077	452 : 3.222,109	180 : 3.222,561
280– 7.17: 3.222,078	302– 2 : 3.222,110	231 : 3.222,562
11.35: 3.222,079	307– 10 : 3.222,534	315– 5.39: 3.222,563
18 : 3.222,080	66 : 3.222,535	5.48: 3.222,564
36 : 3.222,081	88 : 3.222,536	3.222,565
104.5 : 3.222,082	88.5 : 3.222,537	36 : 3.222,566
124 : 3.222,083	3.222,538	71 : 3.222,567
150 : 3.222,084	3.222,539	111 : 3.222,568
281– 34 : 3.222,085	3.222,540	3.222,569
282– 23 : 3.222,086	3.222,541	124 : 3.222,570
29 : 3.222,087	3.222,542	130 : 3.222,571
285– 18 : 3.222,088	3.222,543	151 : 3.222,572
3.222,089	3.222,544	194 : 3.222,573
27 : 3.222,090	3.222,545	200 : 3.222,574
95 : 3.222,091	3.222,546	317– 20 : 3.222,575
114 : 3.222,092	3.222,547	97 : 3.222,576
162 : 3.222,093	3.222,548	148.5 : 3.222,577
256 : 3.222,094	3.222,549	3.222,578

317–234 : 3.222,579	331– 94.5 : 3.222,615	340–172.5 : 3.222,648
3.222,580	113 : 3.222,616	3.222,649
246 : 3.222,581	3.222,617	3.222,650
318–139 : 3.222,582	3.222,618	3.222,651
246 : 3.222,583	179 : 3.222,619	3.222,652
293 : 3.222,584	333– 11 : 3.222,620	3.222,653
308 : 3.222,585	26 : 3.222,621	173 : 3.222,654
3.222,586	72 : 3.222,622	173.1 : 3.222,655
380 : 3.222,587	73 : 3.222,623	174 : 3.222,656
320– 1 : 3.222,588	82 : 3.222,624	3.222,657
321– 7 : 3.222,589	336–174 : 3.222,625	3.222,658
323– 48 : 3.222,590	210 : 3.222,626	174.1 : 3.222,659
61 : 3.222,591	338– 2 : RE.25,924	199 : 3.222,660
89 : 3.222,592	3.222,627	228 : 3.222,661
324– .5 : 3.222,593	4 : 3.222,628	237 : 3.222,662
40 : 3.222,594	162 : 3.222,629	255 : 3.222,663
57 : 3.222,595	322 : 3.222,630	258 : 3.222,664
70 : 3.222,596	339– 40 : 3.222,631	281 : 3.222,665
73 : 3.222,597	256 : 3.222,632	324 : 3.222,666
77 : 3.222,598	258 : 3.222,633	3.222,667
123 : 3.222,599	340– 3 : 3.222,634	347 : 3.222,668
3.222,600	15 : 3.222,635	3.222,669
325–130 : 3.222,601	17 : 3.222,636	3.222,670
476 : 3.222,602	18 : RE.25,928	343– 7.3 : 3.222,671
328– 59 : 3.222,603	38 : 3.222,637	7.5 : 3.222,672
121 : 3.222,604	52 : 3.222,639	8 : 3.222,673
209 : 3.222,605	53 : 3.222,640	9 : 3.222,674
329– 1 : 3.222,606	58 : 3.222,641	18 : 3.222,675
330– 9 : 3.222,607	3.222,642	763 : 3.222,676
14 : 3.222,608	146.1 : 3.222,643	854 : 3.222,677
29 : 3.222,609	3.222,644	346– 1 : 3.222,678
38 : 3.222,610	146.2 : 3.222,645	33 : 3.222,679
54 : 3.222,611	146.3 : 3.222,638	74 : 3.222,680
126 : 3.222,612	163 : 3.222,646	107 : 3.222,681
331– 52 : 3.222,613	172.5 : 3.222,647	3.222,682
78 : 3.222,614		

CLASSIFICATION OF DESIGNS

D 3– 4 : 203,100	D15– 8 : 203,109	D33– 1 : 203,118
10 : 203,101	D16– 2 : 203,110	3 : 203,119
D 5– 4 : 203,102	D18– 2 : 203,111	6 : 203,120
D 9– 2 : 203,103	203,112	11 : 203,121
D13– 1 : 203,104	D24– 1 : 203,113	19 : 203,122
203,105	203,114	D34– 5 : 203,123
D14– 3 : 203,106	D25– 1 : 203,115	15 : 203,124
203,107	D26– 1 : 203,117	D39– 1 : 203,125
203,108	13 : 203,116	

D42– 7 : 203,126	D54– 13 : 203,134	D64– 11 : 203,141
D44– 10 : 203,127	203,135	D83– 8 : 203,143
29 : 203,128	14 : 203,142	D86– 10 : 203,144
D48– 4 : 203,129	D57– 1 : 203,136	D87– 5 : 203,145
20 : 203,130	D58– 12.7 : 203,137	D90– 8 : 203,146
203,131	13 : 203,138	D91– 3 : 203,147
D50– 5 : 203,132	D62– 3 : 203,139	203,148
D54– 1 : 203,133	D64– 11 : 203,140	D92– 4 : 203,149

CLASSIFICATION OF PLANTS

P. – 11 : 2,577	P. – 18 : 2,578	P. – 19 : 2,579

GEOGRAPHICAL INDEX OF RESIDENCE OF INVENTORS

(U.S. States, Territories and Armed Forces, the Commonwealth of Puerto Rico, and the Canal Zone)

Alabama	1	Louisiana	17	Pennsylvania	37
Alaska	53	Maine	18	Puerto Rico	51
Arizona	2	Maryland	19	Rhode Island	38
Arkansas	3	Massachusetts	20	South Carolina	39
California	4	Michigan	21	South Dakota	40
Canal Zone	57	Minnesota	22	Tennessee	41
Colorado	5	Mississippi	23	Texas	42
Connecticut	6	Missouri	24	U.S. Army	55
Delaware	7	Montana	25	U.S. Air Force	54
District of Columbia	8	Nebraska	26	U.S. Navy	56
Florida	9	Nevada	27	U.S. Samoa	59
Georgia	10	New Hampshire	28	Utah	43
Guam	58	New Jersey	29	Vermont	44
Hawaii	50	New Mexico	30	Virgin Islands	52
Idaho	11	New York	31	Virginia	45
Illinois	12	North Carolina	32	Washington	46
Indiana	13	North Dakota	33	West Virginia	47
Iowa	14	Ohio	34	Wisconsin	48
Kansas	15	Oklahoma	35	Wyoming	49
Kentucky	16	Oregon	36		

(First number in listing denotes location according to above key. Refer to patent number in body of the Official Gazette to obtain details as to inventor name, location, etc.)

PATENTS

1 : 3,221,497
3,221,677
3,221,819
3,222,076
3,222,164
2 : 3,221,410
3,221,561
3,221,996
3,222,436
3,222,489
3 : 3,221,751
4 : RE.25,929
3,221,354
3,221,358
3,221,411
3,221,427
3,221,431
3,221,440
3,221,457
3,221,461
3,221,496
3,221,498
3,221,506
3,221,508
3,221,510
3,221,553
3,221,567
3,221,575
3,221,583
3,221,591
3,221,602
3,221,625
3,221,635
3,221,640
3,221,661
3,221,675
3,221,676
3,221,681
3,221,690
3,221,691
3,221,700
3,221,708
3,221,717
3,221,719
3,221,727
3,221,730
3,221,733
3,221,734
3,221,743
3,221,748
3,221,760
3,221,764
3,221,787
3,221,791

4 : 3,221,805
3,221,816
3,221,830
3,221,831
3,221,833
3,221,837
3,221,859
3,221,862
3,221,872
3,221,900
3,221,903
3,221,913
3,221,921
3,221,924
3,221,932
3,221,939
3,221,951
3,221,963
3,221,974
3,221,982
3,221,991
3,222,003
3,222,016
3,222,022
3,222,028
3,222,052
3,222,053
3,222,072
3,222,084
3,222,087
3,222,094
3,222,097
3,222,102
3,222,104
3,222,105
3,222,124
3,222,133
3,222,134
3,222,140
3,222,144
3,222,197
3,222,227
3,222,252
3,222,261
3,222,271
3,222,279
3,222,396
3,222,399
3,222,413
3,222,414
3,222,416
3,222,447
3,222,449
3,222,454

4 : 3,222,459
3,222,465
3,222,466
3,222,468
3,222,469
3,222,470
3,222,474
3,222,479
3,222,484
3,222,487
3,222,490
3,222,493
3,222,498
3,222,505
3,222,508
3,222,514
3,222,519
3,222,520
3,222,524
3,222,526
3,222,527
3,222,550
3,222,557
3,222,563
3,222,564
3,222,565
3,222,569
3,222,575
3,222,587
3,222,604
3,222,606
3,222,629
3,222,635
3,222,649
3,222,650
3,222,654
3,222,660
3,222,663
3,222,669
3,222,675
5 : 3,222,269
6 : RE.25,933
3,221,387
3,221,388
3,221,391
3,221,401
3,221,428
3,221,433
3,221,477
3,221,495
3,221,499
3,221,659
3,221,663
3,221,850

6 : 3,221,853
3,221,890
3,221,927
3,221,940
3,221,950
3,222,118
3,222,173
3,222,205
3,222,221
3,222,242
3,222,376
3,222,421
3,222,424
3,222,425
3,222,426
3,222,471
3,222,513
3,222,553
3,222,555
7 : 3,222,135
3,222,238
3,222,324
3,222,325
3,222,326
3,222,330
3,222,352
3,222,405
3,222,594
8 : 3,221,467
3,222,233
3,222,507
9 : 3,221,421
3,221,503
3,221,521
3,221,537
3,221,562
3,221,609
3,221,694
3,221,758
3,221,789
3,222,026
3,222,067
3,222,529
3,222,641
10 : 3,221,682
3,222,034
3,222,036
3,222,237
12 : RE.25,926
3,221,344
3,221,345
3,221,346
3,221,349
3,221,371

12 : 3,221,381
3,221,430
3,221,438
3,221,446
3,221,465
3,221,470
3,221,472
3,221,473
3,221,481
3,221,485
3,221,542
3,221,572
3,221,576
3,221,586
3,221,588
3,221,598
3,221,636
3,221,638
3,221,642
3,221,648
3,221,649
3,221,654
3,221,672
3,221,678
3,221,689
3,221,699
3,221,712
3,221,728
3,221,729
3,221,737
3,221,739
3,221,740
3,221,747
3,221,749
3,221,750
3,221,753
3,221,759
3,221,771
3,221,772
3,221,784
3,221,788
3,221,790
3,221,792
3,221,793
3,221,801
3,221,806
3,221,834
3,221,849
3,221,855
3,221,858
3,221,866
3,221,868
3,221,871
3,221,894

12 : 3,221,895
3,221,902
3,221,911
3,221,912
3,221,917
3,221,922
3,221,923
3,221,929
3,221,938
3,221,943
3,221,944
3,221,987
3,222,006
3,222,008
3,222,019
3,222,057
3,222,096
3,222,112
3,222,115
3,222,123
3,222,137
3,222,143
3,222,146
3,222,192
3,222,275
3,222,280
3,222,284
3,222,285
3,222,293
3,222,307
3,222,308
3,222,309
3,222,313
3,222,321
3,222,336
3,222,370
3,222,373
3,222,390
3,222,391
3,222,393
3,222,401
3,222,402
3,222,410
3,222,415
3,222,434
3,222,452
3,222,477
3,222,478
3,222,516
3,222,554
3,222,566
3,222,572
3,222,574
3,222,576

12 : 3,222,626
3,222,680
13 : 3,221,458
3,221,490
3,221,616
3,221,671
3,221,725
3,221,761
3,221,977
3,221,983
3,222,113
3,222,190
3,222,219
3,222,234
3,222,276
3,222,362
3,222,363
3,222,365
3,222,388
3,222,389
3,222,403
3,222,472
3,222,579
3,222,592
3,222,658
14 : RE.25,936
3,221,417
3,221,420
3,221,444
3,221,660
3,221,704
3,222,032
3,222,475
15 : 3,221,361
3,221,568
3,221,569
3,222,194
3,222,646
16 : 3,221,409
3,221,779
3,221,865
3,222,021
3,222,037
3,222,567
17 : 3,221,362
3,221,363
3,221,817
3,221,889
3,222,089
3,222,129
3,222,141
3,222,186
3,222,203
3,222,259
3,222,412
19 : 3,221,501
3,221,617
3,221,656
3,221,702
3,221,945
3,221,954
3,222,051
3,222,078
3,222,091
3,222,193
3,222,209
3,222,342
3,222,460
3,222,485
3,222,535
3,222,548
3,222,601
3,222,613
3,222,616
3,222,619
3,222,623
3,222,657
3,222,677
20 : 3,221,357
3,221,394
3,221,469
3,221,526
3,221,551
3,221,555
3,221,556
3,221,557
3,221,599
3,221,600
3,221,603
3,221,627
3,221,705
3,221,731
3,221,742
3,221,755
3,221,937
3,221,942
3,221,967
3,221,968
3,222,017
3,222,080
3,222,086

20 : 3,222,119
3,222,120
3,222,122
3,222,152
3,222,168
3,222,169
3,222,170
3,222,171
3,222,172
3,222,202
3,222,214
3,222,240
3,222,296
3,222,310
3,222,323
3,222,335
3,222,340
3,222,341
3,222,397
3,222,422
3,222,430
3,222,442
3,222,448
3,222,482
3,222,492
3,222,501
3,222,515
3,222,534
3,222,561
3,222,578
3,222,628
3,222,651
3,222,655
3,222,661
3,222,662
3,222,670
21 : 3,221,341
3,221,350
3,221,355
3,221,392
3,221,399
3,221,402
3,221,435
3,221,436
3,221,453
3,221,455
3,221,500
3,221,527
3,221,539
3,221,540
3,221,574
3,221,577
3,221,608
3,221,632
3,221,669
3,221,674
3,221,718
3,221,722
3,221,724
3,221,744
3,221,756
3,221,766
3,221,773
3,221,800
3,221,822
3,221,828
3,221,829
3,221,838
3,221,841
3,221,847
3,221,851
3,221,879
3,221,880
3,221,885
3,221,899
3,221,941
3,221,947
3,221,948
3,221,960
3,221,976
3,222,025
3,222,030
3,222,046
3,222,058
3,222,077
3,222,095
3,222,098
3,222,100
3,222,101
3,222,103
3,222,106
3,222,107
3,222,226
3,222,268
3,222,455
3,222,494
3,222,584
3,222,589
3,222,598
22 : 3,221,351
3,221,400

22 : 3,221,468
3,221,483
3,221,554
3,221,560
3,221,619
3,221,799
3,221,835
3,221,904
3,221,906
3,221,916
3,221,973
3,222,013
3,222,139
3,222,183
3,222,184
3,222,185
3,222,189
3,222,204
3,222,522
3,222,531
3,222,595
3,222,645
3,222,664
24 : 3,221,680
3,221,898
3,222,038
3,222,039
3,222,070
3,222,082
3,222,320
3,222,385
3,222,427
3,222,428
3,222,429
26 : 3,221,707
28 : 3,222,556
29 : 3,221,340
3,221,347
3,221,372
3,221,386
3,221,393
3,221,395
3,221,439
3,221,489
3,221,587
3,221,589
3,221,637
3,221,646
3,221,650
3,221,662
3,221,684
3,221,703
3,221,765
3,221,778
3,221,873
3,221,882
3,221,892
3,221,933
3,221,952
3,221,957
3,221,992
3,222,002
3,222,004
3,222,005
3,222,020
3,222,027
3,222,064
3,222,065
3,222,068
3,222,074
3,222,092
3,222,158
3,222,182
3,222,199
3,222,208
3,222,220
3,222,230
3,222,250
3,222,274
3,222,291
3,222,292
3,222,297
3,222,311
3,222,312
3,222,318
3,222,329
3,222,345
3,222,350
3,222,351
3,222,353
3,222,356
3,222,359
3,222,360
3,222,367
3,222,368
3,222,371
3,222,374
3,222,392
3,222,409
3,222,419
3,222,500

29 : 3,222,503
3,222,541
3,222,543
3,222,545
3,222,552
3,222,607
3,222,611
3,222,617
3,222,637
3,222,668
3,222,673
3,222,676
30 : 3,222,453
3,222,682
31 : RE.25,931
3,221,343
3,221,348
3,221,353
3,221,365
3,221,367
3,221,370
3,221,378
3,221,389
3,221,418
3,221,422
3,221,425
3,221,426
3,221,432
3,221,441
3,221,442
3,221,445
3,221,462
3,221,476
3,221,494
3,221,509
3,221,518
3,221,519
3,221,520
3,221,532
3,221,545
3,221,563
3,221,565
3,221,566
3,221,578
3,221,584
3,221,590
3,221,593
3,221,594
3,221,596
3,221,601
3,221,604
3,221,622
3,221,631
3,221,633
3,221,641
3,221,647
3,221,652
3,221,679
3,221,693
3,221,732
3,221,741
3,221,754
3,221,762
3,221,769
3,221,804
3,221,860
3,221,881
3,221,891
3,221,893
3,221,915
3,221,918
3,221,934
3,221,936
3,221,958
3,221,961
3,221,964
3,221,965
3,221,971
3,221,999
3,222,001
3,222,031
3,222,054
3,222,056
3,222,063
3,222,071
3,222,073
3,222,093
3,222,116
3,222,117
3,222,150
3,222,163
3,222,175
3,222,178
3,222,191
3,222,201
3,222,207
3,222,210
3,222,211
3,222,213
3,222,216
3,222,218

31 : 3,222,248
3,222,264
3,222,282
3,222,283
3,222,314
3,222,317
3,222,349
3,222,369
3,222,377
3,222,439
3,222,440
3,222,451
3,222,456
3,222,506
3,222,510
3,222,512
3,222,517
3,222,528
3,222,544
3,222,549
3,222,573
3,222,583
3,222,588
3,222,599
3,222,600
3,222,602
3,222,603
3,222,612
3,222,615
3,222,624
3,222,638
3,222,642
3,222,644
3,222,648
3,222,652
3,222,653
3,222,659
3,222,666
3,222,671
3,222,681
32 : 3,221,434
3,221,449
3,221,612
3,221,775
3,221,876
3,222,011
3,222,299
3,222,497
3,222,504
3,222,539
3,222,562
3,222,597
34 : RE.25,932
3,221,352
3,221,364
3,221,380
3,221,382
3,221,396
3,221,398
3,221,403
3,221,404
3,221,408
3,221,437
3,221,443
3,221,451
3,221,464
3,221,466
3,221,479
3,221,502
3,221,524
3,221,525
3,221,528
3,221,529
3,221,543
3,221,547
3,221,564
3,221,580
3,221,605
3,221,606
3,221,645
3,221,710
3,221,713
3,221,714
3,221,746
3,221,763
3,221,780
3,221,795
3,221,796
3,221,842
3,221,843
3,221,846
3,221,856
3,221,905
3,221,925
3,221,962
3,221,966
3,221,969
3,221,978
3,221,994
3,221,998
3,222,009

34 : 3,222,023
3,222,040
3,222,041
3,222,055
3,222,081
3,222,148
3,222,153
3,222,161
3,222,180
3,222,241
3,222,251
3,222,287
3,222,288
3,222,290
3,222,394
3,222,435
3,222,441
3,222,464
3,222,481
3,222,488
3,222,532
3,222,568
3,222,618
3,222,622
3,222,633
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35 : RE.25,928
3,221,375
3,221,471
3,221,507
3,221,752
3,221,810
3,221,814
3,221,988
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3,222,509
3,222,570
3,222,679
36 : 3,221,610
3,221,786
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3,222,061
3,222,665
37 : 3,221,360
3,221,369
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3,221,505
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3,221,523
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3,221,615
3,221,639
3,221,643
3,221,653
3,221,673
3,221,685
3,221,695
3,221,701
3,221,711
3,221,774
3,221,797
3,221,808
3,221,827
3,221,878
3,221,919
3,221,975
3,221,979
3,221,980
3,222,000
3,222,012
3,222,015
3,222,018
3,222,043
3,222,044
3,222,111
3,222,145
3,222,147
3,222,149
3,222,156
3,222,166
3,222,195
3,222,196
3,222,228
3,222,232
3,222,239
3,222,260
3,222,267

37	3,222,272	37	3,222,627	42	3,221,482	42	3,222,136	45	3,221,698	48	3,221,665
	3,222,273		3,222,631		3,221,544		3,222,263		3,221,852		3,221,666
	3,222,277		3,222,632		3,221,548		3,222,278		3,221,984		3,221,692
	3,222,295	38	3,222,099		3,221,655		3,222,316		3,221,990		3,221,767
	3,222,298	39	Re.25,938		3,221,696		3,222,407		3,222,110		3,221,768
	3,222,304		3,221,356		3,221,794		3,222,417		3,222,560		3,221,845
	3,222,315		3,221,597		3,221,809		3,222,502		3,222,620		3,221,854
	3,222,339		3,221,726		3,221,811		3,222,511		3,222,636		3,221,875
	3,222,343		3,221,757		3,221,812		3,222,537	46	Re.25,924		3,221,896
	3,222,346		3,222,243		3,221,813		3,222,546		3,221,342		3,221,908
	3,222,357	41	3,221,423		3,221,815		3,222,547		3,221,513		3,221,930
	3,222,378		3,221,460		3,221,818		3,222,585		3,221,538		3,221,955
	3,222,381		3,221,517		3,221,820		3,222,586		3,221,667		3,221,956
	3,222,384		3,221,745		3,221,824		3,222,608		3,221,670		3,221,972
	3,222,395		3,221,848		3,221,825		3,222,610		3,221,832		3,221,989
	3,222,406		3,222,114		3,221,826		3,222,630		3,221,909		3,221,995
	3,222,411		3,222,126		3,221,901		3,222,634		3,221,928		3,222,029
	3,222,437		3,222,142		3,221,935	43	3,221,558		3,222,125		3,222,090
	3,222,443		3,222,246		3,221,946		3,221,570		3,222,231		3,222,223
	3,222,444		3,222,289		3,221,949		3,221,959		3,222,266		3,222,281
	3,222,446		3,222,327		3,221,953		3,222,151		3,222,605		3,222,476
	3,222,480		3,222,337		3,221,985		3,222,162	47	3,222,305		3,222,499
	3,222,483		3,222,344		3,221,986	44	3,221,383		3,222,328		3,222,558
	3,222,530		3,222,358		3,222,066	45	3,221,374		3,222,380		3,222,596
	3,222,536		3,222,431		3,222,075		3,221,416		3,222,386		3,222,678
	3,222,542		3,222,559		3,222,085		3,221,549	48	Re.25,927	49	3,221,706
	3,222,551	42	3,221,339		3,222,088		3,221,592		3,221,613	51	3,221,459
	3,222,580		3,221,424		3,222,131		3,221,683		3,221,618		3,222,461

Design Patents

4	203,100	6	203,140	19	203,113	31	203,111	31	203,131	34	203,134
	203,101	12	203,123		203,114		203,112		203,137		203,135
	203,105		203,126	20	203,136		203,116		203,142	37	203,103
	203,107		203,128	21	203,109		203,119		203,143		203,110
	203,115		203,144		203,121		203,120		203,145	38	203,149
	203,125	13	203,139	29	203,108		203,122	34	203,124	42	203,117
	203,132	16	203,147		203,141		203,129		203,127	45	203,102
	203,146		203,148	31	203,104		203,130		203,133	46	203,118

Plant Patents

31	2,578										

U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

December 7, 1965 Volume 821 Number 1

TRADEMARKS

NOTICES

Copyright Fees

President Johnson has signed Public Law 89–297, which amends the copyright law by providing for an increase in certain copyright fees, effective November 26, 1965. The new fee schedule is as follows:

Item	New fees
All registrations (except renewals)	$6.00
All renewals	4.00
Additional certificates	2.00
Other certifications	3.00
Assignments, etc. (containing not more than 6 pages and not more than 1 title)	5.00
Each additional page or title	.50
Notice of use (containing not more than 5 titles)	3.00
Each additional title	.50
Notice of intention to use (containing not more than 5 titles)	3.00
Each additional title	.50
Searches (hourly fee)	5.00

The registration fee for commercial prints and labels remains unchanged at $6.00. Also, the fee for the additional pages and titles in connection with the recordation of documents and notices of use has remained $0.50. In the case of the recordation of notices of intention to use, the copyright law previously prescribed no fee.

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 22406(a) (COCA-COLA in script), The Coca-Cola Company, Nutrient or tonic beverages; **Reg. No. 47,189(a)**, same, Tonic beverages and syrups for the manufacture of such beverages; **Reg. No. 238,145(a)** (COCA-COLA), same, Beverages and syrups for the manufacture of such beverages; **Reg. No. 238,146(a)** (COCA-COLA in script), same, **filed** Sept. 23, 1965, D.C., W.D. Wash. (Seattle), Doc. 6554, *The Coca-Cola Company* v. *Washington Concessions.*

CONDITION OF TRADEMARK APPLICATIONS AS OF OCTOBER 31, 1965

Total number of applications awaiting action [excluding renewals and Sec. 12 (c)]	17,985
Date of oldest new application	Mar. 17, 1965
Date of oldest amended application	Mar. 1, 1965

C. M. WENDT, Director, Trademark Examining Operation

TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application	
	New	Amended
(I) L. J. BETTENDORF (Acting), Classes 2, 4, 5, 8, 11, 12, 13, 14, 15, 16, 17, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 39, 41, 42, 43, 44	3-17-65	3-1-65
(II) H. E. KASCHUB, Classes 1, 3, 6, 7, 9, 10, 18, 22, 27, 38, 40, 45, 46, 47, 48, 49, 50, 51, 52; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, 107; Collective Membership Marks, Class 200; Certification Marks, Classes A and B	4-12-65	4-2-65
Renewals (All Classes)	10-5-65	.....
Sec. 12 (c) Publications (All Classes)	10-13-65	.....

Applications filed during the month of October 1965—2,989

Registrations Issued—430—No. 799,671 to No. 800,100
Renewals Issued— 60

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, $12.00 per annum, foreign mailing $4.00 additional; single copies, 25 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 20 cents each. Address orders to the Commissioner of Patents, Washington, D.C., 20231.

Reg. No. 22,406(b); **Reg. No. 47,189(b)**; **Reg. No. 238,145(b)**; **Reg. No. 238,146(b)**; **Reg. No. 415,755** (COKE), The Coca-Cola Company, Non-alcoholic maltless beverages and the syrups for making such beverages, **filed** Sept. 16, 1965, D.C. N. Mex. (Albuquerque), Doc. 6354, *The Coca-Cola Company* v. *Lomas Bowl (Starlite Room)*. **Same**, Doc. 6355, *The Coca-Cola Company* v. *Casa Luna Pizzeria #1, and formerly doing business as Casa Luna Pizzeria #2*.

Reg. No. 47,189. (See Reg. No. 22,406.)

Reg. No. 232,551 (SYLRAY in script), Henry J. Tully, Knitted underwear in one, two, and three piece garments for ladies, misses, children, and men; **Reg. No. 506,261** (SILVER RAY in script), S. & S. Undergarment Company, Ladies' undergarments—specifically, panties; **Reg. No. 588,426** (SYLRAY), Sylray Underwear Co., Knitted underwear, in one, two, and three piece garments for ladies, misses, children and men, **filed** Sept. 22, 1965, D.C., S.D.N.Y., Doc. 65/2864, *Sylray Underwear Co.* v. *S. & S. Undergarment Co.*

Reg. No. 238,145. (See Reg. No. 22,406.)

Reg. No. 238,146. (See Reg. No. 22,406.)

Reg. No. 378,438 (BUTTERBALL), Ada Walker, Live and dressed poultry, sandwiches, eggs, and fresh vegetables; **Reg. No. 573,136**, same, Leo Peters, Ice cream, frozen custard, sherbet, and cheese, **filed** Oct. 15, 1964, D.C., N.D. Iowa (Fort Dodge), Doc. 64–C–2023–C, *Swift & Company et al.* v. *Central Cooperative Turkey Producers*. Final consent judgment terminating case; injunction issued Sept. 27, 1965.

Reg. No. 415,755. (See Reg. No. 22,406.)

Reg. No. 506,261. (See Reg. No. 232,551.)

Reg. No. 552,636 (AUTOMATIC), The Yale & Towne Manufacturing Company, Electric and manually operated load transporting and lifting trucks, **filed** Sept. 20, 1965, D.C., S.D.N.Y., Doc. 65/2831, *Yale & Towne, Inc.* v. *Atlas Deco Corp.*

Reg. No. 554,811 (DACRON), E. I. du Pont de Nemours and Company, Synthetic polyester fibers for generalized use in the industrial arts; **Reg. No. 555,085**, same, Yarns of synthetic fibers, **filed** Sept. 16, 1964, D.C., S.D.N.Y., Doc. 64/2842, *E. I. du Pont de Nemours & Co.* v. *Grand Textile Corp. et ano.* Cause dismissed Sept. 20, 1965.

Reg. No. 555,085. (See Reg. No. 554,811.)

Reg. No. 573,136. (See Reg. No. 378,438.)

Reg. No. 577,125 (SINGER), The Singer Manufacturing Company, Renting of sewing machines to the public and for engineering and consulting services to the needle-trade industries, etc., management engineering, etc., service, maintenance, and repair of home appliances, etc., fashion services, etc., and teaching of hand and machine sewing in classrooms maintained and with equipment owned and through the use of text material especially prepared by Singer Sewing Machine Company; **Reg. No. 786,974**, same, The Singer Company, Dust bags for vacuum cleaners and oil dispensing cans, steel wool pads, floor and furniture wax and polish, grinding wheels, and emery cord, belt hooks, cabinet and furniture hardware, etc., **filed** Aug. 2, 1965, D.C., S.D.N.Y., Doc. 65/2367, *The Singer Co.* v. *Cross Country Sales Co., Inc. et ano.* Consent judgment; defendants enjoined Oct. 13, 1965.

Reg. No. 588,426. (See Reg. No. 232,551.)

Reg. No. 588,580 (HEBREW NATIONAL AND DESIGN), Hebrew National Kosher Sausage Company, Inc., Corned beef, tongue, salami, bologna, frankfurters, pastrami, **filed** May 27, 1964, D.C., E.D.N.Y. (Brooklyn), Doc. 64C–552, *Hebrew National Kosher Foods, Inc.* v. *Judea National Kosher Prov. Co., Inc.* Consent judgment for injunction Oct. 1, 1965.

Reg. No. 604,932 (FASHION WAVE), Helene Curtis Industries, Inc., Cold hair waving solutions, **filed** Sept. 23, 1965, D.C., N.D. Ill. (Chicago), Doc. 65c1593, *Helene Curtis Industries, Inc.* v. *Hart Beauty Supply Co.* **Same, filed** Oct. 7, 1965, D.C., S.D.N.Y., Doc. 65/3012, *Sybil Ives, Inc.* v. *Helene Curtis Industries, Inc.*

Reg. No. 623,244 (TEMPO in script), Helene Curtis Industries, Inc., Cold hair waving solutions for use in professional beauty parlors; **Reg. No. 662,383** (TEMPO), Nethercutt Laboratories, Powder base; **Reg. No. 701,509**, same, Hair fixative, **filed** Sept. 22, 1965, D.C., S.D.N.Y., Doc. 65/2863, *The Odell Co., Inc.* v. *Helene Curtis Industries, Inc.*

Reg. No. 645,211 (SAFEWAY), Safeway Stores, Incorporated, Meats and poultry—namely, fresh, cured, and cooked meat and luncheon meats and fresh and frozen fowl; **Reg. No. 721,716**, same, Retail grocery services, **filed** Feb. 23, 1965, D.C., N. Mex. (Albuquerque), Doc. 6043, *Safeway Stores, Inc.* v. *Gene's Save-Way*. Judgment enjoining defendant Oct. 12, 1965.

Reg. No. 645,435 (CASUAL CORNER), Casual Corner, Inc., Women's apparel—namely, dresses, shorts, slacks, sport jackets, coats, suits, etc., **filed** Nov. 13, 1964, D.C., S.D.N.Y., Doc. 64/3454, *Casual Corner Associates, Inc.* v. *Lianro, Inc. et ano.* Stipulation and consent order restraining defendants; after Feb. 15, 1966, injunction may issue upon any violation Sept. 22, 1965.

Reg. No. 646,161 (TAFREDDA), The Barbizon Corporation, Woven fabrics made of cotton, rayon, nylon and other synthetic fibers, and combinations thereof, sold in the piece, **filed** Oct. 15, 1965, D.C., S.D.N.Y., Doc. 65/3082, *The Jaunty Fabric Corp.* v. *J. W. May's, Inc. et ano.*

Reg. No. 662,383. (See Reg. No. 623,244.)

Reg. No. 701,509. (See Reg. No. 623,244.)

Reg. No. 720,474 (CREDIT UNION ETC. AND DESIGN), Credit Union National Association, Inc., doing business as Cuna Insurance Services Department, Cuna Bonding Service, and Credit Union National Association, Insurance services, including research, promotion, information and advisory services, etc., **filed** Sept. 29, 1965, D.C., E.D. Mich. (Detroit), Doc. 27501, *Cuna International, Inc.* v. *D.S.R. Employees Federal Credit Union.*

Reg. No. 721,716. (See Reg. No. 645,211.)

Reg. No. 727,689 (FEDTRO AND DESIGN), Fedtro, Inc., Various items of electrical equipment and supplies, such as battery chargers, mixers, speakers, etc., **filed** Sept. 17, 1965, D.C., S.D.N.Y., Doc. 65/2794, *Fedtro, Inc.* v. *S. Hiller & Co.*

Reg. No. 734,840 (TENSOR), Tensor Electric Development Company, Inc., Lamps, A.C.-D.C. voltage supplies, A.C. generators, etc.; **Des. 196,262**, E. K. Sovatsky, PORTABLE INCANDESCENT LAMP, **filed** Dec. 3, 1964, D.C., S.D. Calif. (Los Angeles), Doc. 64–1682–WM, *Tensor Corporation* v. *Sears Roebuck & Co. et al.* Plaintiff's dismissal and order thereon dismissing action as to defendant Sears Roebuck & Co. without prejudice. Stipulation for entry of consent judgment—consent judgment in favor of plaintiff and against defendant Richard's Mfg. Co.; said defendant enjoined July 14, 1965.

Reg. No. 736,165 (SUPER X), The Kroger Co., Retail drug store service; **Reg. No. 749,689** (SUPER X DRUGS AND DESIGN), same, Medical preparations for internal and external use, **filed** Sept. 28, 1965, D.C., S.D.N.Y., Doc. 65/2910, *The Kroger Co.* v. *Superex Drugs, Inc.*

Reg. No. 749,689. (See Reg. No. 736,165.)

Reg. No. 752,571 (PRINCESS), David and David, Inc., Women's wigs, **filed** June 3, 1965, D.C., S.D.N.Y., Doc. 65/1693, *David and David, Inc.* v. *Henry C. Pollack, Inc. et ano.* Stipulation and order of discontinuance Oct. 5, 1965.

Reg. No. 760,448 (PAMS), Pams Advertising Agency, **filed** Sept. 28, 1965, D.C., N.D. Ga. (Atlanta), Doc. 9700, *Pams, Inc.* v. *Pam or Pam Art.*

Reg. No. 775,150 (INSTANT PRINTING), Christopher J. Bravos, doing business as Globe Copy Company, Reproducing multiple copies of printed matter for others, **filed** May 28, 1965, D.C., N.D. Ill. (Chicago), Doc. 65c850, *Globe Copy Company* v. *Instant Printing, Inc. et al.* Trademark held infringed; defendants enjoined Sept. 16, 1965.

Reg. No. 786,974. (See Reg. No. 577,125.)

Reg. No. 789,317 (DURAVALS), Drug Guild Co-operative, Inc., Vitamin and mineral preparation in capsule form, **filed** July 15, 1965, D.C., E.D. Pa. (Philadelphia), Doc. 38510, *Drug Guild Co-operative, Inc.* v. *E. J. Korvette, Inc.* Cause dismissed Sept. 24, 1965.

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.**]**

SN 154,043. Maryon Hosiery Mill, Inc., Carrollton, Ga. Filed Sept. 27, 1962.

MARYON

Class 39—Clothing

For Ladies' Hosiery.
First use Nov. 15, 1937.

Class 40—Fancy Goods, Furnishings, and Notions

For Headbands.
First use Apr. 14, 1962.

SN 154,326. American Manufacturing Company, Inc., Brooklyn, N.Y. Filed Oct. 2, 1962.



The lining and black areas on the drawing are not intended to represent any particular colors, but are for shading purposes only. Owner of Reg. Nos. 109,054 and 683,106.

Class 7—Cordage

For Non-Metallic Strapping and Tying Materials and Accessories—Namely, Plastic Strapping, Buckles, and Seals.
First use at least as early as June 18, 1962.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Strapping Dispensers; Tools for Applying Said Materials and Accessories—Namely, Strap-Tensioning Tools and Equipment and Crimping Tools for Fastening Said Seals.
First use at least as early as June 1962.

SN 188,495. Werner and Mertz, G.m.b.H., Mainz, Germany. Filed Mar. 11, 1964.



Owner of German Reg. No. 766,781, dated Sept. 8, 1962; and U.S. Reg. No. 590,440.

Class 4—Abrasives and Polishing Materials

For Steel Wool, Abrasives for the Treatment of Metal, Floor Polish, Floor Wax, Leather Polish and Polishing Materials.

Class 5—Adhesives

For Adhesive Lacquers, Dispersion Adhesives and Molten Adhesives for Industrial Use.

Class 6—Chemicals and Chemical Compositions

For Insecticides, Weed Killers, Sterilizers, Disinfectants, Anti-Corrosion Agents, Leather Preserving, Dressing and Tanning Agents, Dyes, Essential Oils, Starch and Bleach.

Class 15—Oils and Greases

For Lubricating Oil and Grease.

Class 16—Protective and Decorative Coatings

For Paint, Varnish, Lacquer, Wood Stain, and Pigments.

Class 29—Brooms, Brushes, and Dusters

For Synthetic Sponges, Paint Brushes, Brushes, Brooms, and Dusters.

Class 51—Cosmetics and Toilet Preparations

For Perfume, Skin Creams and Skin Powder.

Class 52—Detergents and Soaps

For Stain Removers, Laundry Soap and Washing Powder.

SN 200,708. John L. Doré Co., Houston, Tex. Filed Aug. 27, 1964.

FLUOROGREEN

Owner of Reg. Nos. 599,508, 703,726, and others.

Class 1—Raw or Partly Prepared Materials

For Plastic Sheets, Tubes, Rods, Cylinders and Tape.
First use Feb. 6, 1952.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Plastic and Plastic Lined Pipe, Fittings, Valves and Parts Therefor, Dip and Sparger Tubes and Pipes, Bellows, Expansion Joints, and Thermometer Wells.
First use in or about September 1960.

Class 35—Belting, Hose, Machinery Packing, and Non-metallic Tires

For V- and Rod Packing, O-Rings, Gaskets, Compressor Piston and Wear Rings, and Piston Cups.
First use in or about September 1958.

SN 200,712. The Flexible Tubing Corporation, Guilford, Conn. Filed Aug. 27, 1964.

KENYON

Class 5—Adhesives

For Waterproof Tape.
First use June 1946.

Class 26—Measuring and Scientific Appliances

For Marine Instruments—Namely, Compasses and Speedometers.
First use Sept. 1, 1939.

SN 204,352. Carl Freudenberg Kommanditgesellschaft, Weinheim/Bergstrasse, Germany. Filed Oct. 20, 1964.

CEEVAL

Priority claimed under Sec. 44(d) on German application filed July 14, 1964; Reg. No. 793,569, dated Aug. 28, 1964.

Class 1—Raw or Partly Prepared Materials

For Leather and Artificial Leather.

Class 21—Electrical Apparatus, Machines, and Supplies

For Insulating Material for Electric Wire.

Class 29—Brooms, Brushes, and Dusters

For Wiping Cloths.

Class 37—Paper and Stationery

For Writing Paper, Printing Paper, and Paper for Maps.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Interlining Materials for Garments, Non-Woven Fabrics, i.e. Fleeces, the Fibers of Which Have Been Bonded Together at Their Crossing Points.

SN 204,353. Carl Freudenberg Kommanditgesellschaft, Weinheim/Bergstrasse, Germany. Filed Oct. 20, 1964.

CEEFAL

Priority claimed under Sec. 44(d) on German application filed July 14, 1964; Reg. No. 793,568, dated Aug. 28, 1964.

Class 1—Raw or Partly Prepared Materials

For Leather and Artificial Leather.

Class 21—Electrical Apparatus, Machines, and Supplies

For Insulating Material for Electric Wire.

Class 29—Brooms, Brushes, and Dusters

For Wiping Cloths.

Class 37—Paper and Stationery

For Writing Paper, Printing Paper, and Paper for Maps.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Interlining Materials for Garments, Non-Woven Fabrics, i.e. Fleeces, the Fibers of Which Have Been Bonded Together at Their Crossing Points.

SN 205,984. Action Products, Inc., Odessa, Mo. Filed Nov. 12, 1964.



Class 21—Electrical Apparatus, Machines, and Supplies

For Electric Lamps—Namely, Pole Lamps, Table Lamps, Tree Lamps, Ceiling Lamps, and Swage Lights.

Class 32—Furniture and Upholstery

For Tables, Utility Poles, Towel Poles, Stools, Chairs, Desks, and Shelves.

First use Apr. 1, 1963.

SN 206,955. Nova-Werke, Ferber & Wran, Zurich, Switzerland. Filed Nov. 25, 1964.

NOVIX

Priority claimed under Sec. 44(d) on Swiss Reg. No. 205,080, dated May 28, 1964.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Pistons for Internal Combustion Engines and Compressors, Expander Springs for Piston Rings, Sealing Ledges for Rotary Piston Engines, Cylinder Liners, Hose Clamps, Compressed Air Starters for Internal Combustion Engines, Compressors, Accessories for Pneumatic Plants.

Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires

For Piston Rings.

SN 206,956. Nova-Werke, Ferber & Wran, Zurich, Switzerland. Filed Nov. 25, 1964.

NOVA

Priority claimed under Sec. 44(d) on Swiss Reg. No. 205,079, dated May 28, 1964.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Pistons for Internal Combustion Engines and Compressors, Expander Springs for Piston Rings, Sealing Ledges for Rotary Piston Engines, Cylinder Liners, Hose Clamps, Compressed Air Starters for Internal Combustion Engines, Compressors, Accessories for Pneumatic Plants.

Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires

For Piston Rings.

SN 206,957. Nova-Werke, Ferber & Wran, Zurich, Switzerland. Filed Nov. 25, 1964.

NOVAFLEX

Priority claimed under Sec. 44(d) on Swiss Reg. No. 205,081, dated May 28, 1964.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Pistons for Internal Combustion Engines and Compressors, Expander Springs for Piston Rings, Sealing Ledges for Rotary Piston Engines, Cylinder Liners, Hose Clamps, Compressed Air Starters for Internal Combustion Engines, Compressors, Accessories for Pneumatic Plants.

Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires

For Piston Rings.

SN 207,142. Motorola, Inc., Franklin Park, Ill. Filed Nov. 30, 1964.

MOTOROLA

Owner of Reg. Nos. 275,837, 745,106, and others.

Class 19—Vehicles

For Vehicular Ignition Systems for the Engines of Automotive Vehicles.

First use January 1963.

Class 21—Electrical Apparatus, Machines, and Supplies

For Television Transmitting Apparatus; Apparatus for Telecommunications Systems; Wireless Paging Apparatus; Equipment for Computer-Programmed Control Systems; Integrated Circuits; Electric Welding Machines for Small Articles Such as Semiconductor Products; Electric Insulators; and Electric Motor Heat-Protective Units.

First use 1930.

Class 26—Measuring and Scientific Appliances

For Electrical Measuring, Recording and Control Apparatus, Electrical Testing Equipment and Assembly Equipment for Semiconductor Products and for Integrated Circuits.

First use 1930.

Class 32—Furniture and Upholstery

For Furniture Styled Cabinets for Radio Receivers, Television Receivers, Phonographs and the Like.

First use 1933.

SN 208,836. Nederlandsche Fotografische Industries N.V., Soest, Netherlands. Filed Dec. 24, 1964.

DALCO

Owner of Dutch Reg. No. 152,377, dated June 15, 1964.

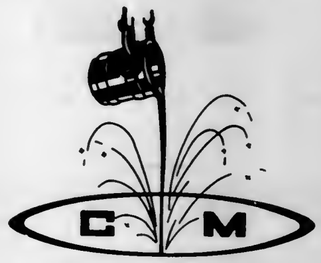
Class 6—Chemicals and Chemical Compositions

For Chemicals: Developers, Fixers, and Stabilizers for Processing Photographic Papers, Films and Photocopy Films.

Class 26—Measuring and Scientific Appliances

For Machines and Apparatus for Making (Exposing and Processing) Photographic Papers, Films and Photocopy Paper; and Light Sensitive Photographic Papers and Films.

SN 219,858. Coast Metals, Inc., Little Ferry, N.J. Filed May 27, 1965.



Owner of Reg. Nos. 414,788 and 587,340.

Class 14—Metals and Metal Castings and Forgings

For Wear-Resistant Castings and Metal Powders.

Class 34—Heating, Lighting, and Ventilating Apparatus

For Hard Facing Welding Rods.

First use on or about Jan. 2, 1962.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 192,910. Fleming-Joffe, Ltd., New York, N.Y. Filed May 7, 1964.

CROCODILE TEARS

The word "Crocodile" is disclaimed apart from the mark as shown.

For Crocodile Leather for Use in Handbags, Shoes, and the Like.

First use Dec. 15, 1962.

SN 195,319. George L. Patmor and Clyde Jackson (joint owners), Danville, Ky. Filed June 10, 1964.



For purposes of registration, applicants disclaim all matter shown, except the words "Ken-Bred" and the background disc. Common law trademark rights in the disclaimed portion of the drawings are expressly reserved. The drawing is lined for yellow.

For Seeds—Namely, Seed Corn.

First use February 1960.

SN 199,323. G. E. Smith, Inc., Pittsburgh, Pa. Filed Aug. 5, 1964.

SLAGRIP

For Perlite Additives for Molten Metals, Particularly While the Metal Is in the Ladle, for the Purpose of Removing Impurities.

First use August 1963.

SN 202,588. The Georgia Marble Company, Tate, Ga. Filed Sept. 24, 1964.

FIRSTDOWN



For Ground Dolomitic Limestone for Use as Athletic Field Markers.
First use May 18, 1964.

SN 209,330. Barracudaverken Aktiebolag, Djursholm, Sweden. Filed Jan. 5, 1965.



Owner of Swedish Reg. No. 107,974, dated Nov. 15, 1963.
For Gutta Percha, India Rubber, Balata, Asbestos, Mica, Thermoplastic Resins, Plastics, and Synthetic Resins in Film, Foil, and Sheet Shape for Further Treatment.

SN 217,110. The Griess-Pfleger Tanning Co., Waukegan, Ill. Filed Apr. 22, 1965.

WITE GARD

The term "Wite" is disclaimed apart from the mark shown.
For Bulk Leather.
First use Jan. 22, 1965.

SN 219,973. The Dow Chemical Company, Midland, Mich. Filed May 28, 1965.

DOWRY

Owner of Reg. Nos. 140,588, 596,151, and 596,563.
For Latex.
First use May 6, 1965.

Class 2 — Receptades

SN 182,624. Eleanor V. Kingsley, d.b.a. Jackson Co., Pomona, Calif. Filed Dec. 9, 1963.

WASTEASE

For Frames for Waste Containers.
First use Nov. 5, 1963.

SN 196,550. Olin Mathieson Chemical Corporation, New York, N.Y. Filed June 26, 1964.

MR. SPEC-T

For Display Containers for Pharmaceuticals.
First use Mar. 14, 1958.

SN 208,868. Maschinenfabrik Augsburg-Nurnberg, A.G. Munich, Germany. Filed Nov. 2, 1964.

M·A·N

Owner of German Reg. No. 297,302, dated Sept. 13, 1922.
For Tanks, Silos, and Municipal Gas Storage Tanks.

SN 212,295. Eastern Corrugated Container Corporation, Clifton, N.J. Filed Feb. 18, 1965.

SUPER - STACK



For Corrugated Boxes.
First use Mar. 5, 1963.

SN 214,069. Bagcraft Corporation of America, Chicago, Ill. Filed Mar. 15, 1965.

DUBL-FRESH

Owner of Reg. Nos. 611,614 and 775,159.
For Bags for Prepared Food Products.
First use in early 1959.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

SN 224,328. Henry Pollak, Inc., New York, N.Y. Filed July 27, 1965.

WIK-A-SHAM

For Handbags.
First use June 10, 1965.

Class 4 — Abrasives and Polishing Materials

SN 203,235. Abco, Inc., McKeesport, Pa. Filed Oct. 5, 1964.

SURFEX

For Cleaning and Polishing Composition for Aluminum Surfaces.
First use on or about Aug. 2, 1964.

SN 215,813. William Zagone, d.b.a. Zay-Gon Co., Portland, Oreg. Filed Apr. 5, 1965.

BUMPS 'N GRINDS

For Abrasive for Polishing and Removing Bumps From Finished Surfaces.
First use Mar. 25, 1965.

SN 216,925. Bay State Abrasive Products Company, Westboro, Mass. Filed Apr. 20, 1965.

COPPERDYNE

For Abrasive Wheels.
First use on or about June 22, 1964.

SN 217,128. The Metal Removal Company, Chicago, Ill. Filed Apr. 22, 1965.

FLEXTEX

For Abrasive Grinding Wheels.
First use prior to Oct. 1, 1953.

SN 217,129. The Metal Removal Company, Chicago, Ill. Filed Apr. 22, 1965.

SAFTEX

For Abrasive Grinding Wheels.
First use prior to Apr. 1, 1957.

Class 5 — Adhesives

SN 195,512. Canadian Technical Tape Ltd., Montreal, Canada. Filed June 12, 1964.



The word "Brand" is disclaimed apart from the mark as shown.
For Pressure-Sensitive Tape Used for Office Purposes.
First use February 1962; in commerce February 1962.

Class 6 — Chemicals and Chemical Compositions

SN 158,825. Hydroponic Chemical Company, Inc., Copley, Ohio. Filed Dec. 10, 1962.

ONeX

Owner of Reg. Nos. 642,189 and 652,255.
For Herbicides, Insecticides, and Animal Repellents.
First use January 1957.

SN 197,875. Chek Chemical Company, Inc., Brentwood, Md. Filed July 15, 1964.

CHEK FP

The letters "FP" are disclaimed.
For Fire-Retardant Preparation for Rugs.
First use Mar. 20, 1964.

SN 198,087. Frank Edward Scott, d.b.a. Scott Chemical Company, San Antonio, Tex. Filed July 17, 1964.

MR. PINE

The word "Pine" is disclaimed apart from the mark as shown.
For Household Disinfectant.
First use Dec. 1, 1960.

SN 200,613. Vitro Corporation of America, New York, N.Y. Filed Aug. 25, 1964.

Vitro

Owner of Reg. No. 184,300.
For Salts of Lanthanum, Praseodymium, Neodymium, Promethium, Samarium, Europium, Gadolinium, Terbium, Dysprosium, Holmium, Erbium, Thulium, Ytterbium, Lutetium, Scandium, Yttrium, Vanadium, Uranium, and Thorium.
First use Dec. 3, 1959.

SN 202,480. Hurricane Sales, Inc., Tulsa, Okla. Filed Sept. 23, 1964.

STOP-OX

For Corrosion Inhibitors for Cooling Systems.
First use Feb. 1, 1961.

SN 203,440. Taconic Natural Oils Co. Inc., New York, N.Y. Filed Oct. 6, 1964.

GERANONE

For Fragrance and/or Perfume Raw Material—Namely, a Compound Consisting of Essential Oils, Aromatic Chemicals, Flower Absolutes, Resins, Balsams and Animal Abstracts for Use in the Soap and Cosmetic Industries.
First use Feb. 4, 1957.

SN 203,502. Charlotte F. Hecht, d.b.a. Transene Company, Danvers, Mass. Filed Oct. 7, 1964.

DIFFUSOL

For Chemical Diffusant for Use in Silicon Semiconductor Devices, Varactor and Zener Diodes, Transistors, Rectifiers and Solar Cells for Making Contacts and Junctions in Silicon.
First use Sept. 25, 1964.

SN 203,868. General Aniline & Film Corporation, New York, N.Y. Filed Oct. 13, 1964.

GANTRUST

For Rust Inhibitor Chemical.
First use Sept. 24, 1964.

SN 205,468. Stull Chemical Company, San Antonio, Tex. Filed Nov. 3, 1964.

INSTEMUL

For Emulsifiable Concentrates of Pesticides.
First use Mar. 28, 1963.

SN 208,385. Plymouth Cordage Company, Plymouth, Mass. Dec. 17, 1964.

CHLORTAN

For Fungicidal Dust for Treating Cotton Seeds and Seed Beans, and as a Soil Fungicide at Planting Time.
First use on or about Mar. 15, 1961.

SN 210,250. Ames Company, Inc., Elkhart, Ind. Filed Jan. 21, 1965.

PEROXYSTIX

For Reagent Strips for Qualitative Tests for Hydrogen Peroxide.
First use on or before Jan. 6, 1965.

SN 216,260. Buckman Laboratories, Inc., Memphis, Tenn. Filed Apr. 12, 1965.

BUTROL

Owner of Reg. No. 546,036.
For Bactericidal Composition Used as a Preservative To Control Microorganisms in Water Emulsion Paints.
First use May 7, 1952.

SN 217,479. Miles Laboratories, Inc., Elkhart, Ind. Filed Apr. 27, 1965.

DASOL A

For Anionic Polymeric Aldehyde for Use in Crosslinking or Insolubilizing Polyhydroxy and/or Nitrogenous Materials.
First use on or before Feb. 17, 1965.

SN 217,480. Miles Laboratories, Inc., Elkhart, Ind. Filed Apr. 27, 1965.

DASOL C

For Cationic Polymeric Aldehyde for Use in Crosslinking or Insolubilizing Polyhydroxy and/or Nitrogenous Materials.
First use on or before Feb. 24, 1965.

SN 217,567. Signal Oil and Gas Company, Los Angeles, Calif. Filed Apr. 28, 1965.

espesol

Owner of Reg. Nos. 608,943 and 773,448.
For Solvent Derived From Petroleum Used Principally for Paints, Insecticides, Printer's Ink, Rubber Products, and Dry Cleaning.
First use Mar. 12, 1965.

SN 217,906. Madison Chemical Corporation, Maywood, Ill. Filed May 3, 1965.

THRAX

For Chemical Preparation Adapted for Use as an Organic Sewage Digester and Liquefier.
First use Mar. 24, 1965.

SN 218,845. Dehydag Deutsche Hydrierwerke G.m.b.H., Dusseldorf, Germany. Filed May 14, 1965.

DEHYTON

Owner of German Reg. No. 724,835, dated Feb. 27, 1959.
For Chemical Specialties for Use in the Manufacture of Cosmetics.

SN 219,237. National Lead Company, New York, N.Y. Filed May 19, 1965.

RA

For Comminuted Titanium Dioxide.
First use July 1943.

SN 219,238. National Lead Company, New York, N.Y. Filed May 19, 1965.

RA-NC

For Comminuted Titanium Dioxide.
First use December 1946.

SN 219,239. National Lead Company, New York, N.Y. Filed May 19, 1965.

RA-10

For Comminuted Titanium Dioxide.
First use July 1943.

SN 219,240. National Lead Company, New York, N.Y. Filed May 19, 1965.

RA-40

For Comminuted Titanium Dioxide.
First use November 1960.

SN 219,241. National Lead Company, New York, N.Y. Filed May 19, 1965.

RA-41

For Comminuted Titanium Dioxide.
First use January 1964.

SN 219,242. National Lead Company, New York, N.Y. Filed May 19, 1965.

RA-42

For Comminuted Titanium Dioxide.
First use February 1964.

SN 219,243. National Lead Company, New York, N.Y. Filed May 19, 1965.

RA-45

For Comminuted Titanium Dioxide.
First use February 1962.

SN 219,244. National Lead Company, New York, N.Y. Filed May 19, 1965.

RA-46

For Comminuted Titanium Dioxide.
First use December 1961.

SN 219,245. National Lead Company, New York, N.Y. Filed May 19, 1965.

RA-47

For Comminuted Titanium Dioxide.
First use March 1964.

SN 219,246. National Lead Company, New York, N.Y. Filed May 19, 1965.

RA-50

For Comminuted Titanium Dioxide.
First use February 1950.

SN 219,247. National Lead Company, New York, N.Y. Filed May 19, 1965.

RA-51

For Comminuted Titanium Dioxide.
First use February 1963.

SN 219,251. National Lead Company, New York, N.Y. Filed May 19, 1965.

TG

For Comminuted Titanium Dioxide.
First use February 1947.

SN 219,335. Geigy Chemical Corporation, Ardsley, N.Y. Filed May 20, 1965.

CRAWL-TOX

Owner of Reg. No. 793,155.
For Insecticide.
First use Apr. 21, 1965.

SN 219,391. J. Bibby & Sons Limited, Liverpool, England. Filed May 21, 1965.

COMERGINATE

Owner of British Reg. No. 862,238, dated Mar. 31, 1964.
For Oleochemical Intermediates.

SN 219,393. J. Bibby & Sons Limited, Liverpool, England. Filed May 21, 1965.

DIMERGINATE

Owner of British Reg. No. 642,240, dated Mar. 31, 1964.
For Oleochemical Intermediates.

SN 219,395. J. Bibby & Sons Limited, Liverpool, England. Filed May 21, 1965.

MERGINAMIDE

Owner of British Reg. No. 862,242, dated Mar. 31, 1964.
For Oleochemical Intermediates.

SN 219,396. J. Bibby & Sons Limited, Liverpool, England. Filed May 21, 1965.

ADMERGINATE

Owner of British Reg. No. 862,237, dated Mar. 31, 1964.
For Oleochemical Intermediates.

SN 219,441. J. Bibby & Sons Limited, Liverpool, England. Filed May 21, 1965.

ISOMERGINATE

Owner of British Reg. No. 862,241, dated Mar. 31, 1964.
For Oleochemical Intermediates.

SN 219,474. Sternco Industries, Inc., Allendale, N.J. Filed May 21, 1965.

CLEAREX

For Preparations Designed To Clear Cloudy and Polluted Aquarium Water and To Destroy Algae.
First use May 6, 1964.

SN 219,499. Alcolac Chemical Corporation, Baltimore, Md. Filed May 24, 1965.

ALACSTAT

For Antistatic Agent for Use in and on Synthetic Fibers and Polyolefinic Plastics.
First use Feb. 18, 1965.

SN 219,543. Fermco Laboratories, Inc., Chicago, Ill. Filed May 24, 1965.

S.F.G.

For Composition for the Quantitative Determination of Glucose.
First use Mar. 11, 1965.

SN 219,779. Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany. Filed May 26, 1965.

QUELETOX

Owner of German Reg. No. 793,402, dated July 31, 1964.
For Toxic Preparation for the Control of Pest Birds.

SN 219,824. Specialty Research & Sales, Inc., Midland, Tex. Filed May 26, 1965.

SURFSEAL

For Surfactant and Sealant for Use in Drilling Fluids.
First use Jan. 16, 1965.

SN 219,892. Madison Chemical Corporation, Maywood, Ill. Filed May 27, 1965.

DEO-DREX

For Chemical Malador Counteractant Used To Neutralize Odors From Sewage, Musty Storage Areas and the Like, Without Affecting Anaerobic or Aerobic Bacteria, B.O.D. or Septic Systems.
First use Mar. 27, 1965.

SN 219,898. Monsanto Company, St. Louis, Mo. Filed May 27, 1965.

SANTOCOOL

For Liquid Functional Fluid Sold for Use as a Dielectric Coolant for Electronic Equipment, a Force or Power Transmission Fluid, a Heat Exchange Medium or a Lubricant.
First use Dec. 19, 1957.

SN 219,974. Eastman Kodak Company, Rochester, N.Y. Filed May 28, 1965.

KTFR

Owner of Reg. Nos. 626,739, 751,505, and 778,933.
For Photographic Resist.
First use Mar. 4, 1964.

SN 227,033. Ilford, Limited, Ilford, Essex, England. Filed Sept. 2, 1965.



Owner of British Reg. No. 873,239, dated Dec. 16, 1964.
For Chemical Products for Use in Photography.

Class 10 — Fertilizers

SN 222,304. Southern Nitrogen Company, Inc., Savannah, Ga. Filed June 29, 1965.

SONICO

For Fertilizer.
First use Apr. 2, 1965.

Class 11 — Inks and Inking Materials

SN 214,242. Cal/Ink Chemical Co., San Francisco, Calif. Filed Mar. 16, 1965.



For Colorants for Inks.
First use Feb. 3, 1965.

SN 214,830. Bowers Printing Ink Company, Chicago, Ill. Filed Mar. 24, 1965.

CRYSTAL-LITE

For Printing Inks.
First use Aug. 22, 1964.

Class 12 — Construction Materials

SN 208,869. Maschinenfabrik Augsburg-Nurnberg, A.G., Munich, Germany. Filed Nov. 2, 1964.

M·A·N

Owner of German Reg. No. 297,302, dated Sept. 13, 1922.
For Fixed and Movable Bridges, Ship Building (Launching) Slips, Telephone (Telegraph) Poles, Roof Constructions, Dome Constructions, Towers, Shed Constructions, Floating Dry Docks, Concrete Shelters, Steel-Framed Structures, Dam Constructions, Steel Beams, Steel Rods, Steel Strips, Steel Sheets and Sections for Buildings and Bridges, Prefabricated Steel Workshop Buildings, Water Control Gates, Dam Outlet Control Gates, Spillway Gates, River and Sea Lock Gates, and Inclined Plane and Vertical Ship Lifts for Canals.

SN 221,123. U.S. Rubber Reclaiming Co., Inc., Cheektowaga, N.Y. Filed June 14, 1965.

SAF-PLA-E

Owner of Reg. No. 593,726.
For Premixed Surfacing Material Containing Asphalt and Rubber and Applicable to Concrete or Bituminous Bases for Playgrounds, Walks, Runways, Tennis Courts, and the Like.
First use May 4, 1965.

SN 222,006. Crown Aluminum Industries Corporation, Pittsburgh, Pa. Filed June 25, 1965.

CENTURA

For Aluminum Siding.
First use June 15, 1965.

SN 222,007. Crown Aluminum Industries Corporation, Pittsburgh, Pa. Filed June 25, 1965.

VENUS

For Aluminum Siding.
First use June 15, 1965.

SN 222,041. Lyons Distributing, Inc., Dallas, Tex. Filed June 25, 1965.

PAVECRETE

Owner of Reg. No. 782,667.
For Dry Mortar or Cement-Mix Compound.
First use June 3, 1965.

SN 222,311. Tapco Products Company, Inc., Detroit, Mich. Filed June 29, 1965.



For Artificial Building Stone.
First use on or about Jan. 30, 1965.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

SN 208,976. Titanium Metals Corporation of America, New York, N.Y. Filed Dec. 28, 1964.

CODEWELD

For Titanium and Titanium Alloy Tubing.
First use Aug. 31, 1964.

SN 212,500. Harold S. Chambers, d.b.a. Camper's Jiffy Port-A-Bath Company, Grand Rapids, Mich. Filed Feb. 23, 1965.

CAMPER'S JIFFY PORT-A-BATH

For Unit for Taking a Bath.
First use Jan. 5, 1965.

SN 213,103. S. W. Farber, Inc., New York, N.Y. Filed Mar. 2, 1965.

FARBERWARE

Owner of Reg. Nos. 103,751, 629,771, and others.
For Household Hollow Wares Made of Metal—Namely, Colanders and Casserole Sets.
First use 1940.

SN 215,568. Electrical Fittings Corporation, East Farmingdale, N.Y. Filed Apr. 2, 1965.

ALLWAY

For Non-Insulated Beam Clamp.
First use during September 1961.

SN 215,631. H. T. McGill, Inc., Houston, Tex. Filed Apr. 2, 1965.

FOG-TROL

For Mechanical Device Which Atomizes Water, Kerosene, Commercially Available Insecticides, and Solvents.
First use Aug. 7, 1964.

SN 216,940. Development Engineering and Manufacturing Corporation, St. Louis, Mo. Filed Apr. 20, 1965.

UNI-A-COUPLE

For Valves.
First use Mar. 26, 1965.

SN 216,941. Development Engineering and Manufacturing Corporation, St. Louis, Mo. Filed Apr. 20, 1965.

UNI-A-LOCK

For Valves Including Those Used in Refrigeration, Air Conditioning, Plumbing and Heating.
First use Mar. 26, 1965.

SN 216,942. Development Engineering and Manufacturing Corporation, St. Louis, Mo. Filed Apr. 20, 1965.

UNI-A-VALVE

For Valves—Namely, Refrigeration, Air Conditioning, Plumbing and Heating Valves, Including Seals, Couplings, Quick-Disconnect, Regulators, Check, Expansion, Shut-Off, Angle, Line, Globe, Gate, Adjustable Locking and Rotating and Locking Valves, Diaphragm Packless Valves, Sight Glass Indicators, Flanged Unions, Relief Valves, Liquid Indicators, Refrigerant Driers, Refrigerant Strainers, Compressor Valves, Receiver Valves, Pad Valves, Metering Valves, Pneumatic, Hydraulic, Gas, Solenoid, Control, Cam, Hand, Foot and Chemical Valves, Cylinder, Diaphragm, Cock, Plug, Sleeve, Ball, Bleeder and Butterfly Valves, Magnetic, Float, Tank, Manual, High Pressure, Instrument, Dampening and Mixing Valves, Ammonia, Throatling, Explosive, Vacuum and Servo Valves.
First use Mar. 26, 1965.

SN 219,162. Henry Pratt Company, Chicago, Ill. Filed May 17, 1965.

SPACEMATE

For Rubber Seat Butterfly Valves.
First use Mar. 24, 1965.

SN 221,331. Adelphia Button Company, Inc., Philadelphia, Pa. Filed June 17, 1965.

PEARL MAID

For Switch Plates.
First use May 20, 1965.

SN 222,771. The Skinner Irrigation Company, Troy, Ohio. Filed July 6, 1965.



Owner of Reg. Nos. 533,306 and 629,379.
For Sprayers, Sprinklers, and Spray Irrigation Piping and Nozzle Systems for Lawn, Garden, and General Use, and Parts Therefor.
First use Feb. 15, 1965; Jan. 1, 1910, as to "Skinner."

SN 222,808. American Tack Co., Inc., New York, N.Y. Filed July 7, 1965.

DECOROOM

For Switch Plates and Door Knob Covers.
First use October 1963 on switch plates.

SN 222,874. Ruggles-Klingemann Mfg. Co., Boston, Mass. Filed July 7, 1965.

R-K

For Valves and Regulating Devices Including Stop and Check Valves, Balanced Valves, Float Valves, Relief Valves, Pressure Modifying Valves and Regulators for Controlling the Same, Exhaust Heads, and Electrically Operated Valves.
First use on or about January 1911.

Class 14 — Metals and Metal Castings and Forgings

SN 223,208. Allvac Metals Company, Monroe, N.C. Filed July 13, 1965.

NICKELVAC

For Metal Alloys.
First use January 1961.

SN 223,274. Aluminum Development Corporation, Pelham Manor, N.Y. Filed July 14, 1965.

MIRAL

For High Purity Aluminum Metal.
First use May 10, 1958.

SN 223,308. Hamilton Watch Company, Lancaster, Pa. Filed July 14, 1965.

ZIRCOFLASH

For Zirconium Foils.
First use Dec. 23, 1963.

Class 15 — Oils and Greases

SN 217,797. Specialty Products Company, Jersey City, N.J. Filed Apr. 30, 1965.

KANTSTIK

For Mold Release Agents for the Plastics Molding Industry.
First use February 1956.

SN 219,956. Bluegate Candle Company, Montara, Calif. Filed May 28, 1965.

ESSENCE OF HAWAII

Owner of Reg. No. 738,423.
For Scented Wax Candles.
First use in or about January 1962.

SN 219,957. Bluegate Candle Company, Montara, Calif. Filed May 28, 1965.

ESSENCE OF SPRING

Owner of Reg. No. 738,423.
For Scented Wax Candles.
First use in or about January 1961.

SN 219,958. Bluegate Candle Company, Montara, Calif. Filed May 28, 1965.

ESSENCE OF AUTUMN

Owner of Reg. No. 738,423.
For Scented Wax Candles.
First use in or about July 1963.

SN 220,274. The Connecticut Hard Rubber Company, New Haven, Conn. Filed June 3, 1965.

CHR

For Mold Release Reagents and Anti-Stick Agents for Fluorocarbon Strip.
First use April 1962.

Class 16 — Protective and Decorative Coatings

SN 207,557. Bocour Artist Colors, Inc., New York, N.Y. Filed Dec. 7, 1964.

MAGNA

For Artists' Colors.
First use 1949.

Class 17 — Tobacco Products

SN 201,521. Compania Insular Tabacalera, S.A., Las Palmas, Canary Islands. Filed Sept. 9, 1964.

MONTECRUZ

For Cigars.
First use Aug. 13, 1964; in commerce Aug. 13, 1964.

SN 206,582. Universal Cigar Corporation, New York, N.Y. Filed Nov. 19, 1964.

LA PRIMADONNA

Owner of Reg. No. 543,255.
For Cigars.
First use Nov. 5, 1964.

SN 218,944. American Snuff Company, Memphis, Tenn. Filed May 17, 1965.

RAINBOW

For Snuff.
First use Apr. 16, 1965.

Class 18 — Medicines and Pharmaceutical Preparations

SN 187,528. Smith Kline & French Laboratories, Philadelphia, Pa. Filed Feb. 26, 1964.

MICRAFORM

For Sulfathiasole Incorporated in a Preparation for the Temporary Relief of Nasal Congestion.
First use June 3, 1942.

SN 188,467. Richardson-Merrell Inc., New York, N.Y. Filed Mar. 11, 1964.

CheriMed

For Cough Syrup.
First use Jan. 9, 1964.

SN 204,629. American Home Products Corporation, New York, N.Y. Filed Oct. 23, 1964.

FRANKLIN

"O. M. Franklin" identifies a living individual whose consent is of record. Owner of Reg. No. 546,836.
For Line of Medicinal and Pharmaceutical Preparations for Veterinary Use.
First use Jan. 1, 1951.

SN 206,327. Johann A. Wüfing, Dusseldorf, Germany. Filed Nov. 16, 1964.

COMPLAMEX

Owner of U.S. Reg. No. 693,418.
For Medicinal Preparation for the Treatment of Vascular Disorders.
First use Aug. 6, 1964; in commerce Aug. 6, 1964.

SN 208,439. Bristol-Myers Company, New York, N.Y. Filed Dec. 18, 1964.

CYCLOXIN

For Antibiotic.
First use Sept. 2, 1964.

SN 216,717. Medicone Company, New York, N.Y. Filed Apr. 16, 1965.

MEDICONET

Owner of Reg. No. 393,085.
For Pre-Moistened, Medicated, Antiseptic Rectal Cleansing Cloth, Also Used as a Medicated Wet Dressing.
First use Apr. 9, 1965.

SN 217,373. Merck & Co., Inc., Rahway, N.J. Filed Apr. 26, 1965.

FIBRO-AHF

For Blood Clotting Agent for Intravenous Injection.
First use Feb. 25, 1965.

SN 219,005. Key Pharmacal Company, Memphis, Tenn. Filed May 17, 1965.

TEMLO

For Analgesic in Tablet, Drop, or Liquid Form.
First use Nov. 2, 1964.

Class 19 — Vehicles

SN 205,003. Re-Trac Manufacturing Corporation, Minneapolis, Minn. Filed Oct. 28, 1964.

Re-Trac

For Rear View Mirrors for Vehicles.
First use Sept. 11, 1964.

Class 21 — Electrical Apparatus, Machines, and Supplies

SN 209,653. Anaconda Wire and Cable Company, New York, N.Y. Filed Jan. 11, 1965.

ELECTROCOTE

For Telephone Drop Wire.
First use Dec. 28, 1964.

SN 213,630. Viva Battery Co., Inc., Birmingham, Ala. Filed Mar. 8, 1965.

VIVA

For Batteries.
First use Dec. 14, 1964.

SN 213,743. Allied Radio Corporation, Chicago, Ill. Filed Mar. 10, 1965.

SUPERBA

For AM-FM Stereo Tuner.
First use Jan. 22, 1965.

SN 214,144. Micon Electronics, Inc., Garden City, N.Y. Filed Mar. 15, 1965.

EMLOCK

For Electrical Connectors.
First use Mar. 2, 1965.

SN 214,300. Westinghouse Electric Corporation, Pittsburgh, Pa. Filed Mar. 16, 1965.

DACA

For Electric Governors.
First use on or about Oct. 31, 1960.

SN 214,306. Yardney Electric Corporation, New York, N.Y. Filed Mar. 16, 1965.

ZYNOXEL

For Electrochemical Cells and Batteries, Accessories, and Parts Thereof.
First use Feb. 5, 1965.

SN 214,566. Ira R. Seltzer, d.b.a. Pasadena Specialty Co., Los Angeles, Calif. Filed Mar. 19, 1965.

MYSTIC-LITE

For Night Lights.
First use Feb. 10, 1965.

SN 214,691. John I. Paulding, Inc., New Bedford, Mass. Filed Mar. 22, 1965.



For Electrical Wiring Devices, Fixtures and Accessories—Namely, Single Pole Switches, Double Pole Switches, Three-Way Switches, Entrance Switches, Radio and Battery Switches, One-Piece Combination Switch Outlet and Wall Plates, Toggle Switches, Push-Button Switches, Lock Switches, Push Switches, Pull Switches, Heat Resistance Switches, Convenience Outlets, Tandem Slot Outlets, Three-Wire Grounded Outlets, Weatherproof Outlets, Weatherproof Sockets, Weatherproof Receptacles, Rubber Cord Sets, Current Taps, Porcelain Sockets, Bakelite Sockets, Brass Shell Sockets, Porcelain Receptacles, Bakelite Receptacles, Rosettes, Switch Plates, Outlet Plates, Porcelain Wall Fixtures, Porcelain Wall Brackets, and Porcelain Ceiling Fixtures.
First use May 1926.

SN 218,919. Wilbur J. Strohm, Jr., d.b.a. Wescal Wire Works, Los Angeles, Calif. Filed May 14, 1965.

WESCAL

Owner of Reg. No. 707,342.
For Electric Lamp and Lighting Fixture Parts, Chandelier Chain and Curb Chain.
First use Aug. 26, 1958.

SN 218,920. Wilbur J. Strohm, Jr., d.b.a. Wescal Wire Works, Los Angeles, Calif. Filed May 14, 1965.



For Electric Lamp and Lighting Fixture Parts, Chandelier Chain and Curb Chain.
First use July 1, 1964.

Class 22 — Games, Toys, and Sporting Goods

SN 190,320. American Russkit Company, Los Angeles, Calif. Filed Apr. 6, 1964.

RUSSKIT

For Model Car Bodies; Scale Metal and Plastic Parts for Construction of Scale Racing Cars; Wheels, Tires, Axles, Bearings, and Electrical Controllers for Scale Racing Cars; Decals for Model Racing Cars; Plastic Coating for Model Racing Car Bodies; Kits for Building Scale Racing Dragsters.
First use September 1962.

SN 201,863. Alex D. Palmer, d.b.a. Tek Method Company, Chicago, Ill. Filed Sept. 14, 1964.

JUMBLE-FITS

For Flat Die-Cut Picture Puzzles.
First use on or before Sept. 4, 1964.

SN 202,720. Transogram Company, Inc., New York, N.Y. Filed Sept. 25, 1964.

TRIK-TRAK

For Guided, Wheeled, Powered Toy Vehicles and Road or Track Members for Such Vehicles.
First use Aug. 20, 1964.

SN 203,664. Deutsche Angelgerate Manufaktur (DAM) Hellmuth Kuntze Gesellschaft mit beschrankter Haftung & Co. Kommanditgesellschaft, Berlin, Germany, assignee of Hellmuth Kuntze, d.b.a. Deutsch Angelgeraete Manufaktur (Dam) Hellmuth Kuntze, Berlin, Germany. Filed Oct. 9, 1964.

MIMICRY

Owner of German Reg. No. 761,142, dated Apr. 28, 1961.
For Fishing Lines.

SN 204,735. Aldens Shoppers World, Inc., Chicago, Ill. Filed Oct. 26, 1964.



For General Line of Inexpensive Play and Educational Toys, Dolls and Apparatus Sold as Units for Playing Board, Card and Similar Type Games.
First use Mar. 6, 1956.

SN 204,738. Aldens Shoppers World, Inc., Chicago, Ill. Filed Oct. 26, 1964.

SHOPPERS WORLD

Owner of Reg. Nos. 730,023 and 738,674.
For General Line of Inexpensive Play and Educational Toys, Dolls, and Apparatus Sold as Units for Playing Board, Card, and Similar Type Games.
First use Mar. 6, 1956.

SN 216,170. Rae Levine, New York, N.Y. Filed Apr. 9, 1965.

HUNT-4-PRIZES

Owner of Reg. No. 792,620.
For Printed Contest Cards for Promotional Use by Others To Encourage, Facilitate, and Stimulate the Sale of Their Goods.
First use Feb. 1, 1965.

SN 216,803. Corning Glass Works, Corning, N.Y. Filed Apr. 19, 1965.

PYREX

Owner of Reg. Nos. 87,861, 427,246, and others.
For Toys Consisting of Toy Culinary Vessels and Utensils.
First use Apr. 5, 1965.

SN 216,846. Mattel, Inc., Hawthorne, Calif. Filed Apr. 19, 1965.

ZERO M

Owner of Reg. No. 796,328.
For Equipment Sold as a Unit for Playing Espionage Games.
First use Jan. 22, 1965.

SN 217,361. Lisk Fly Manufacturing Co., Greensboro, N.C. Filed Apr. 26, 1965.

LITTLE SKUNK

For Artificial Fishing Lures.
First use Aug. 26, 1955.

SN 217,362. Lisk Fly Manufacturing Co., Greensboro, N.C. Filed Apr. 26, 1965.

POLE KAT

For Artificial Fishing Lures.
First use Aug. 26, 1955.

SN 217,363. Lisk Fly Manufacturing Co., Greensboro, N.C. Filed Apr. 26, 1965.

LISK WAMPUS KAT

Applicant disclaims the word "Lisk" separate and apart from the words "Wampus Kat."
For Artificial Fishing Lures.
First use Apr. 1, 1965.

SN 217,962. H. Wenzel Tent & Duck Co., St. Louis, Mo. Filed May 3, 1965.

VANTAGE

For Sporting Equipment—Namely, Camp Tents and Sleeping Bags.
First use Feb. 27, 1965.

SN 217,967. Stowe-Woodward, Inc., Newton Upper Falls, Mass. Filed May 8, 1965.

EXECUTIVE 300

For Bowling Balls.
First use January 1964.

SN 218,015. M & W Industries, Inc., New York, N.Y. Filed May 4, 1965.

MONSTER-NIKS

For Dolls.
First use on or about Feb. 25, 1965.

SN 223,502. Amway Corporation, Ada, Mich. Filed July 16, 1965.

AMWAY

Owner of Reg. Nos. 707,656, 777,704, and others.
For Plastic Toys.
First use on or about June 4, 1965.

SN 223,503. Amway Corporation, Ada, Mich. Filed July 16, 1965.



Owner of Reg. Nos. 707,656, 777,704, and others.
For Plastic Toys.
First use on or about June 4, 1965.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

SN 193,811. Pneumo Dynamics Corporation, Cleveland, Ohio. Filed May 19, 1964.

BLANCHARD

Owner of Reg. No. 509,274.
For Vertical Spindle Surface Grinding Machines.
First use May 29, 1917.

SN 206,393. Walker Manufacturing Company, Racine, Wis. Filed Nov. 17, 1964.



The drawing is lined to indicate the color purple.
For Exhaust System Parts Including Mufflers, Tail Pipes, Exhaust Pipes, Tail Pipe Spouts, Exhaust Elbows, Extensions, Deflectors, Clamps, Brackets, Hangers, Bushings, Grommets, and Insulators; Cold Chisels, Wrenches, and Sump Pumps.
First use Mar. 31, 1962, on mufflers.

SN 206,895. Standard Engineering Co. Inc., Fort Dodge, Iowa. Filed Nov. 24, 1964.



For Crop Cutting and Shredding Device.
First use April 1963.

SN 208,871. Maschinenfabrik Augsburg-Nurnberg, A.G., Munich, Germany. Filed Nov. 2, 1964.

M·A·N

Owner of German Reg. No. 297,302, dated Sept. 13, 1922.
For Turntables, Capstans, Car Dumpers, Traveling Cranes, Rotary Cranes, Bridge Cranes, Cable Grabs, Motor Grabs, Conveying Systems, Belt Conveyors, Screw Conveyors, Bucket Elevators, Elevators, Wagon Lifters, Hoist Frames, Ship's Elevators (Slipways), Pumps, Steam Engines, Steam Turbines, Gas Engines, Compressors, Diesel Engines, Printing Machines, Hydraulic Presses, Hydraulic Accumulators, Transmissions, Motor Plows, Railway Traverse Tables and Starting Air Tanks for Internal Combustion Engines.

SN 213,593. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed Mar. 8, 1965.

SCOTCHCAST

Owner of Reg. Nos. 573,559, 629,012, and others.
For Pressure Gun for Injecting Resin and Parts Thereof and Accessories for Use Therewith.
First use at least as early as Nov. 5, 1964.

SN 213,629. Vaco Products Company, Chicago, Ill. Filed Mar. 8, 1965.

VACO IRON MAN

Owner of Reg. Nos. 667,691 and 748,735.
For Screw Drivers.
First use Feb. 15, 1965.

SN 213,631. Wall Trading Corporation, New York, N.Y. Filed Mar. 8, 1965.



For Housewares, Kitchen Novelties, and Gadgets.
First use Jan. 5, 1965.

SN 213,914. The Union Fork and Hoe Company, Columbus, Ohio. Filed Mar. 11, 1965.

FULLFLEX

For Hand-Operated Lawn and Garden Tools—Namely, Shovels, Rakes, Forks, Hoes, Hooks, and Cultivators.
First use Feb. 23, 1965.

SN 216,607. National Jet Sales Corporation, Cumberland, Md. Filed Apr. 15, 1965.

GOOGOLTH

For Mechanical Movement for Reducing Motion Without Backlash.
First use Nov. 24, 1964.

SN 216,870. Presin Co., Inc., Bridgeport, Conn. Filed Apr. 19, 1965.

MODUPRINT

For Counting and Printing Apparatus.
First use Aug. 25, 1964.

SN 217,001. Blum-Mor, Inc., Richmond Heights, Mo. Filed Apr. 21, 1965.

BLUM-MOR

For Garden Tool—Namely, an Applicator for Applying Liquid Fertilizer to the Soil.
First use Mar. 1, 1965.

SN 217,181. Fleco Corporation, Jacksonville, Fla. Filed Apr. 23, 1965.

FLECO

Owner of Reg. No. 437,498.
For Land Clearing Equipment in the Nature of Attachment for Tractors and Bulldozers and Cab Guards for Tractors.
First use Apr. 30, 1947.

SN 217,403. Rotek Incorporated, Ravenna, Ohio. Filed Apr. 26, 1965.

ROTEK

For Slewing Rings and Multi-Load Bearings.
First use Nov. 15, 1962.

SN 217,573. Donald C. Stine, d.b.a. Marsan Company, Michigan City, Ind. Filed Apr. 28, 1965.

MICHILLANA

For Mills for Shelling, Grinding and/or Mixing Grains for Feeding Livestock and Poultry or for Mixing Granular Material.
First use Jan. 19, 1961.

SN 217,712. Cie des Machines Pneumatiques Rotatives, Gennevilliers (Seine), France. Filed Apr. 30, 1965.

ISOGYR

Owner of French Reg. No. 451,702, dated June 28, 1955 (Seine); Natl. Inst. No. 58,916.
For Rotary Compressors.

SN 219,517. Baker Oil Tools, Inc., Commerce, Calif. Filed May 24, 1965.

LOK-SET

For Oil, Gas, Water, and Sulphur Well Tools and Equipment, Including Well Packers and Parts Thereof.
First use Apr. 21, 1964.

SN 219,556. Gamlen Chemical Company, South San Francisco, Calif. Filed May 24, 1965.

GAMAJET

For Tank Cleaning Machines.
First use Mar. 16, 1965.

SN 219,796. Island Equipment Corp., Hialeah, Fla. Filed May 26, 1965.

Crown-O-Matic

For Conveyor Pulleys.
First use Mar. 1, 1965.

SN 219,797. Jenkins Metal Shops, Incorporated, Gastonia, N.C. Filed May 26, 1965.

CARD-A-VAC

For Pneumatic Systems for the Control and Collection of Fibres and Foreign Matter on Textile Machines.
First use May 7, 1965.

SN 220,189. Automatic Switch Co., Florham Park, N.J. Filed June 2, 1965.

ASCO

Owner of Reg. Nos. 236,629, 500,608, and 683,189.
For Filters, Lubricators, Air Regulators, and Combinations Thereof for Use With Compressed Air Equipment.
First use 1938 on filters.

SN 222,574. Goodman Manufacturing Company, Chicago, Ill. Filed July 2, 1965.

PRESSOMATIC

For Belt Conveyors and Parts Thereof.
First use February 1965.

SN 222,628. Zavody Presneho Strojirenstvi, Narodni Podnik, Gottwaldov, Czechoslovaknia. Filed July 2, 1965.

Svit

Owner of Czechoslovakian Reg. No. 150,118, dated Mar. 29, 1950.
For Knitting Machines, Sewing Machines, Packaging Machines, Machines and Apparatus for the Manufacture of Shoes, Machines and Apparatus for Production and Treatment of Leather and Rubber and of Goods From Said Material, and Tanning Machines and Apparatus.

SN 222,838. Finish Engineering Company, Inc., Erie, Pa. Filed July 7, 1965.

FIN-E-CO

For Automatic Painting and Coating Machines, Masks, Mask Washers, Roller Coaters, Paint Wiping Machines, and Plating Machines.
First use October 1953.

SN 222,853. Maremont Corporation, Chicago, Ill. Filed July 7, 1965.

BLENDMASTER

For Textile Machinery—Namely, Bale Openers.
First use June 16, 1965.

SN 222,886. Jervis B. Webb Company, Detroit, Mich. Filed July 7, 1965.

WEBBALLOY

Owner of Reg. Nos. 571,119, 627,318, and others.
For Conveyor Track.
First use May 25, 1965.

Class 24 — Laundry Appliances and Machines

SN 223,504. Amway Corporation, Ada, Mich. Filed July 16, 1965.

AMWAY

Owner of Reg. Nos. 707,656, 777,704, and others.
For Laundry Appliances—Namely, Ironing Board Covers.
First use on or about Nov. 10, 1964.

SN 223,505. Amway Corporation, Ada, Mich. Filed July 16, 1965.

Amway

Owner of Reg. Nos. 707,656, 777,704, and others.
For Laundry Appliances—Namely, Ironing Board Covers.
First use on or about Nov. 10, 1964.

Class 26—Measuring and Scientific Appliances

SN 183,132. Universal Business Machines, Inc., Columbia, S.C. Filed Dec. 16, 1963.

SCANTRONIC

For Sorting Machines Having Data-Reading Devices for Scanning a Succession of Articles Supplied Thereto and for Sorting and Distributing the Articles According to Data Carried by Each Article.
First use Feb. 20, 1963.

SN 188,049. W. & T. Avery Limited, Birmingham, England. Filed Feb. 28, 1964.

AVERY

Owner of British Reg. Nos. 640,121, dated Sept. 15, 1945; B837,471, dated July 28, 1962; and U.S. Reg. No. 205,217.
For Apparatus Employing Applied Stresses or Strains for Testing Materials, Apparatus for Controlling the Operation of Weighing Machines or of Apparatus Employing Applied Stress or Strains for Testing Materials, and Apparatus for Recording and Processing Data Produced by the Operation of Weighing Machines or of Apparatus Employing Applied Stress or Strains for Testing Materials.

SN 201,480. Signaltron Corporation, East Elmhurst, N.Y., by change of name from Solari Inc., East Elmhurst, N.Y. Filed Sept. 8, 1964.

SIGNALTRON

For Electromechanical Instruments—Namely, Automatic Calendars Showing Date, Day and Time, Direct Reading Clocks, Master and Talking Clocks, Counting and Measuring Devices—Namely, Gasoline and Oil Pumps, Date Indicators, Telecommunication Indicator Boards, Scoreboards for Sport and Industry, Timetable Boards for Transportation Industry—Namely, Bus, Rail, and Airport Terminals, Stock Quotation Boards, Paging Boards, Flight Production Boards, and Statistical Boards.
First use Sept. 1, 1964.

SN 201,481. Signaltron Corporation, East Elmhurst, N.Y., by change of name from Solari Inc., East Elmhurst, N.Y. Filed Sept. 8, 1964.

signaTronic

For Electromechanical Instruments—Namely, Automatic Calendars Showing Date, Day and Time, Direct Reading Clocks, Master and Talking Clocks, Counting and Measuring Devices—Namely, Gasoline and Oil Pumps, Date Indicators, Telecommunication Indicator Boards, Scoreboards for Sport and Industry, Timetable Boards for Transportation Industry—Namely, Bus, Rail, and Airport Terminals, Stock Quotation Boards, Paging Boards, Flight Production Boards, and Statistical Boards.
First use Sept. 1, 1964.

SN 202,630. Rodell Manufacturing Company, San Francisco, Calif. Filed Sept. 24, 1964.
Filed Sept. 24, 1964.

RODELL 7

For Fertility Calculators.
First use June 1964.

SN 203,303. Lab-Line Instruments, Inc., Melrose Park, Ill. Filed Oct. 5, 1964.

BIOTRONETTE

For Plant Growth Chamber.
First use Aug. 20, 1964.

SN 206,836. Edon Industrial Products, Royal Oak, Mich. Filed Nov. 24, 1964.

MEM-O-BANK

For Memory Devices, Intelligence Storage Banks, and Memory Control Systems.
First use Jan. 28, 1959.

SN 206,838. Edon Industrial Products, Royal Oak, Mich. Filed Nov. 24, 1964.

MEM-O-CHAIN

For Memory Devices, Intelligence Storing Chains, and Memory Control Systems.
First use Feb. 14, 1957.

SN 207,405. Magna Corporation, Anaheim, Calif. Filed Dec. 3, 1964.

CORRATER

For Corrosion Rate Meter for Monitoring the Corrosivity of Aqueous and Other Conductive Liquids.
First use July 17, 1964.

SN 209,076. Formaglas, Inc., Chelsea, Mass. Filed Dec. 30, 1964.

FLAS

For Ophthalmic Lenses and Blanks Therefor.
First use Dec. 15, 1964.

SN 209,698. Industria Macchine Elettroniche Ime S.p.A., Rome, Italy. Filed Jan. 11, 1965.

IME

Owner of Italian Reg. No. 166,308, dated Apr. 2, 1964.
For Computing Machines and Accounting Machines.

SN 214,421. The Buehler Corporation, Indianapolis, Ind. Filed Mar. 18, 1965.

HYDRA METER

No exclusive claim to the word "Meter" is made except in the combination shown in this mark.
For Fuel Metering and Fuel Injecting Systems for Diesel Engines and Parts Therefor.
First use as early as Jan. 28, 1965.

SN 215,455. Spiratone, Inc., Flushing, N.Y. Filed Mar. 31, 1965.

TTL

For Photographic Accessories—Namely, Exposure Meters.
First use Nov. 6, 1964.

SN 215,873. Institute for the Study of Cycles, Inc., Morristown, N.J. Filed Apr. 6, 1965.

PSYC LINE

For Biorhythm Computer.
First use Jan. 29, 1965.

SN 216,173. Lowinger Imports Corp., Miami Beach, Fla. Filed Apr. 9, 1965.



Applicant disclaims all of the wording with the exception of "Leonardo" apart from the mark as shown.
For Sunglasses and Optical Frames.
First use Jan. 1, 1963.

SN 216,246. BRK Electronics, Inc., Skokie, Ill. Filed Apr. 12, 1965.

BRK

For Automatic Electronic Combustion Gas Fire and Smoke Detectors.
First use Jan. 8, 1965.

SN 216,647. Honeywell Inc., Minneapolis, Minn. Filed Apr. 15, 1965.

VERSA-GUARD

For Temperature Responsive Control Devices for Shutting Down a Processing Operation If a Predetermined Critical Temperature Is Attained.
First use at least as early as May 1964.

SN 216,978. Scott Testers, Inc., Providence, R.I. Filed Apr. 20, 1965.

SERIGRAPH

Owner of Reg. No. 191,942.
For Machines for Testing Tensile, Elongation, Yield Point, Hysteresis and Fatigue of Cord, Fabric, Paper, Rubber, Thread, Yarn, Wire, and Similar Materials.
First use Sept. 1, 1921.

SN 217,146. The Slope Indicator Company, Seattle, Wash. Filed Apr. 22, 1965.

TORVANE

For Apparatus for Testing Soil Specimens for the Determination of Shear Strength.
First use Jan. 19, 1965.

SN 219,006. Alfred J. Kuechenmeister, d.b.a. The Cantron Co., Manistee, Mich. Filed May 17, 1965.

COFFEE BUTLER

The word "Coffee" is disclaimed apart from the mark.
For Measuring Dispensers for Powdered Materials—Namely, Coffee.
First use on or about Mar. 17, 1965.

SN 219,331. Fairchild Camera and Instrument Corporation, Syosset, N.Y. Filed May 20, 1965.

DAV-A-MATIC

Owner of Reg. No. 764,717.
For Offset Duplicating Machines.
First use Apr. 15, 1958.

SN 222,125. Cooke Engineering Company, Alexandria, Va. Filed June 28, 1965.

MICRODILUTER

For Titration Apparatus.
First use June 18, 1965.

SN 222,291. Photographic Research Organization, Inc., New York, N.Y. Filed June 29, 1965.

PROMATIC

Owner of Reg. No. 710,242.
For Movie Projectors.
First use September 1962.

SN 223,328. The Mosler Safe Co., Hamilton, Ohio. Filed July 14, 1965.

ROTRIEVER

For Equipment for Retrieving Aperture Cards, Card Documents or the Like.
First use Apr. 27, 1964.

SN 223,513. Barry-Wehmiller Machinery Company, St. Louis, Mo. Filed July 16, 1965.

Opti-Scan

For Empty Bottle Inspection Systems and Apparatus and Components and Parts Thereof.
First use Feb. 28, 1964.

SN 225,170. Logetronics Inc., Alexandria, Va. Filed Aug. 6, 1965.

LOGEFLO

Owner of Reg. No. 761,948.
For Processing Equipment for Photographic Films.
First use June 21, 1965.

SN 226,440. General Aniline & Film Corporation, New York, N.Y. Filed Aug. 25, 1965.

ANSCOCOPY

Owner of Reg. Nos. 41,689, 765,872, and others.
For Light Sensitive Photographic Film.
First use Apr. 2, 1965.

SN 226,581. Siemens & Halske Aktiengesellschaft, Munich, Germany. Filed Aug. 26, 1965.

OSCILLOFIL

Owner of German Reg. No. 707,112, dated May 24, 1957.
For Light-Beam Oscillographs and Parts Thereof.

SN 226,681. Sea & Ski Corporation, Millbrae, Calif. Filed Aug. 27, 1965.

BOY CATCHERS

For Sunglasses.
First use Aug. 4, 1965.

SN 227,034. Ilford, Limited, Ilford, Essex, England. Filed Sept. 2, 1965.



Owner of British Reg. No. 873,239, dated Dec. 16, 1964.
For Films, Plates, and Papers, All Being Sensitized and All Being for Photographic Purposes.

SN 227,439. The Patent Button Company, Waterbury, Conn. Filed Sept. 8, 1965.

PATWIN

For Electromagnetic Data Indicators.
First use on or before Aug. 19, 1965.

SN 227,572. Eastman Kodak Company, Rochester, N.Y. Filed Sept. 10, 1965.

STARMATIC

Owner of Reg. No. 696,408.
For Film Readers.
First use Aug. 24, 1965.

SN 227,850. Lourdes Instrument Corporation, Brooklyn, N.Y. Filed Sept. 15, 1965.

BETA-FUGE

For Centrifuges.
First use Jan. 2, 1962.

SN 227,851. Lourdes Instrument Corporation, Brooklyn, N.Y. Filed Sept. 15, 1965.

CLINI-FUGE

For Centrifuges.
First use Jan. 2, 1965.

SN 227,852. Lourdes Instrument Corporation, Brooklyn, N.Y. Filed Sept. 15, 1965.

VACU-FUGE

For Centrifuges.
First use Jan. 2, 1962.

SN 227,881. Sperry Rand Corporation, Wilmington, Del. Filed Sept. 15, 1965.

ELECTROFLEX

For Weighing Scales.
First use July 22, 1965.

SN 228,036. Hyran, Inc., Los Angeles, Calif. Filed Sept. 17, 1965.

HYROTUBE

Owner of Reg. No. 636,797.
For Machine for Use in Processing All Types of Photographic Film.
First use June 18, 1965.

Class 27 — Horological Instruments

SN 223,126. I.D. Watch Case Co., Inc., Jamaica, N.Y. Filed July 12, 1965.



For Watch Cases.
First use December 1936.

SN 223,127. I.D. Watch Case Co., Inc., Jamaica, N.Y. Filed July 12, 1965.



For Watch Cases.
First use December 1936.

Class 28 — Jewelry and Precious-Metal Ware

SN 217,388. Philips Mfg. Co., Brooklyn, N.Y. Filed Apr. 26, 1965.

LEAURENT

For Religious Jewelry Including Crosses and Crucifixes of Sterling Silver, 10 Carat Gold, 14 Carat Gold and Gold Filled.
First use Mar. 1, 1965.

SN 223,377. Bar-Tan Manufacturing Co., Providence, R.I. Filed July 15, 1965.



For Jewelry.
First use on or about June 24, 1965.

Class 31 — Filters and Refrigerators

SN 189,639. Water Refining Company, Inc., Middletown, Ohio. Filed Mar. 25, 1964.

Refined Water

No claim is made to exclusive rights on the word "Water" apart from the mark as shown. Owner of Reg. No. 731,545.
For Water Treatment Equipment—Namely, Water Conditioners, Softeners, Filters, Chemical Feeders, and Aerators, and Parts Therefor.
First use Mar. 13, 1964, as to "Refined Water."

SN 219,686. Crystal Research Laboratories, Inc., Hartford, Conn. Filed May 25, 1965.

CRYSTALAB

Owner of Reg. No. 418,297.
For Hand Size, Portable, and Stationary Water Softeners of the Ion-Exchange Type.
First use Dec. 27, 1949.

SN 227,620. Standard Motor Products, Inc., Long Island City, N.Y. Filed Sept. 10, 1965.



Owner of Reg. Nos. 328,031, 589,875, and others.
For Automotive Gasoline Filters.
First use 1949; March 1927 as to "Hygrade."

Class 32 — Furniture and Upholstery

SN 202,427. F. Soennecken, Bonn (Rhine), Germany. Filed Sept. 25, 1964.



Owner of German Reg. No. 79,509, dated Dec. 14, 1904.
For Office Furniture—Namely, File Stands, Office Chairs, Shelving for Letter Files, Typewriter Desks and Typewriter Tables, Writing Desks, Chairs and Book-Rests.
First use Jan. 11, 1926; in commerce 1960.

SN 204,996. New York Feather Co., Inc., Brooklyn, N.Y. Filed Oct. 28, 1964.

SATELLITE

For Bed Pillows.
First use June 1964.

SN 205,975. The United States Bedding Company, St. Paul, Minn. Filed Nov. 10, 1964.

HEART OF THE BEDROOM

Applicant disclaims the word "Bedroom" when used separate and apart from the mark as shown.
For Sleep Products—Namely, Bed Springs, Mattresses, and Sofa Beds.
First use May 1962.

SN 220,478. Directional Industries, Incorporated, New York, N.Y. Filed June 7, 1965.

PROJECT 99

For Home, Office and Institutional Furniture—Namely, Beds, Benches, Bookcases, Breakfronts, Buffets, Cabinets, Chairs, Chests, Desks, Dressers, Head Boards, Couches, Love Seats, Sofas, Stands, Stools, Tables, Wardrobes, and Framed Mirrors.
First use on or about Apr. 1, 1965.

SN 220,479. Directional Industries, Incorporated, New York, N.Y. Filed June 7, 1965.

AMERICAN RENAISSANCE

For Home, Office and Institutional Furniture—Namely, Beds, Benches, Bookcases, Breakfronts, Buffets, Cabinets, Chairs, Chests, Desks, Dressers, Head Boards, Couches, Love Seats, Sofas, Stands, Stools, Tables, Wardrobes, and Framed Mirrors.
First use on or before May 20, 1965.

SN 220,832. Broyhill Furniture Factories, Lenoir, N.C. Filed June 10, 1965.

ENDURA

For Bedroom, Dining Room, and Living Room Furniture.
First use Apr. 12, 1965.

SN 220,843. The Englander Company, Inc., New York, N.Y. Filed June 10, 1965.

BODI-GARD

Owner of Reg. No. 385,684.
For Mattresses and Springs.
First use on or about May 5, 1965.

SN 220,862. Lusterock International, Inc., Houston, Tex. Filed June 10, 1965.

LUSTEROCK

For Table, Vanity, and Drainboard Tops.
First use at least as early as May 4, 1964.

SN 220,948. The Lane Company, Inc., Altavista, Va. Filed June 11, 1965.

RHYTHM

For Occasional Tables, and Bedroom and Dining Room Furniture.
First use October 1961.

SN 221,115. The Taylor Chair Company, Bedford, Ohio. Filed June 14, 1965.

STRUCTIL

For Chairs.
First use Sept. 1, 1961.

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 207,054. The Jet-Vac Corporation, Waltham, Mass. Filed Nov. 27, 1964.

JET-VAC

For Ejectors, Condensers, and Associated Vacuum Equipment.
First use in or about December 1952.

SN 217,182. Fleco Corporation, Jacksonville, Fla. Filed Apr. 23, 1965.

FLECO

Owner of Reg. No. 437,498.
For Portable Brush Burners.
First use Mar. 9, 1962.

SN 217,228. Washington Incinerator Sales and Service, Inc., Washington, D.C. Filed Apr. 23, 1965.

INCIN-O-MOBILE

For Incinerators.
First use Sept. 17, 1963.

SN 217,337. Highside Chemicals Incorporated, Clifton, N.J. Filed Apr. 26, 1965.

SOLDERCOL

For Liquid Soldering Flux.
First use Feb. 2, 1965.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 201,851. Master Processing Corporation, Lynwood, Calif. Filed Sept. 14, 1964.

EMPEX

For Rubber Hose, Thermal Insulated Flexible Pipe and Thermal Insulated and Uninsulated Industrial Hose With, and Without Fittings, and Fittings Therefor.
First use in or about May 1963.

SN 203,507. The Kelly-Springfield Tire Company, Cumberland, Md. Filed Oct. 7, 1964.

SIGMA

The drawing is lined for the color red.
For Tires.
First use June 30, 1964.

SN 210,095. Co-Ma-Co Industries, Inc., Phoenix, Ariz. Filed Jan. 18, 1965.



The drawing is lined for yellow.
For Pick-Up Tire for Agricultural Machinery.
First use Dec. 18, 1964.

SN 216,498. The Goodyear Tire & Rubber Company, Akron, Ohio. Filed Apr. 14, 1965.

POWER-PLY

For Tires.
First use Feb. 22, 1965.

SN 216,501. The Goodyear Tire & Rubber Company, Akron, Ohio. Filed Apr. 14, 1965.

TUFLENE

For Tires.
First use Feb. 22, 1965.

SN 216,502. The Goodyear Tire & Rubber Company, Akron, Ohio. Filed Apr. 14, 1965.

TUF-MILER

For Tires.
First use Feb. 22, 1965.

SN 216,682. The B. F. Goodrich Company, Akron, Ohio. Filed Apr. 16, 1965.

SLIPTOP

For Conveyor Belting.
First use Sept. 10, 1954.

SN 216,683. The B. F. Goodrich Company, Akron, Ohio. Filed Apr. 16, 1965.

MAXEGRAIN

Owner of Reg. No. 530,372.
For Conveyor Belting.
First use Mar. 25, 1949.

SN 216,684. The B. F. Goodrich Company, Akron, Ohio. Filed Apr. 16, 1965.

SANIBLACK

Owner of Reg. No. 147,774.
For Conveyor Belting.
First use Mar. 25, 1949.

SN 216,685. The B. F. Goodrich Company, Akron, Ohio. Filed Apr. 16, 1965.

DRIVESALL

For Conveyor Belting.
First use Oct. 16, 1953.

SN 216,686. The B. F. Goodrich Company, Akron, Ohio. Filed Apr. 16, 1965.

CARIPACK

For Conveyor Belting.
First use May 15, 1955.

SN 216,687. The B. F. Goodrich Company, Akron, Ohio. Filed Apr. 16, 1965.

FLEXIGRAIN

For Conveyor Belting.
First use June 2, 1952.

SN 216,688. The B. F. Goodrich Company, Akron, Ohio. Filed Apr. 16, 1965.

GREEN PACK

For Conveyor Belting.
First use July 1, 1958.

SN 216,689. The B. F. Goodrich Company, Akron, Ohio. Filed Apr. 16, 1965.

WHITE PACK

For Conveyor Belting.
First use Jan. 1, 1964.

Class 37 — Paper and Stationery

SN 214,525. Lakeside Central Company, Chicago, Ill. Filed Mar. 19, 1965.

NEETRASE

Owner of Reg. No. 767,195.
For Typewriter Paper.
First use Mar. 16, 1965.

Class 38 — Prints and Publications

SN 187,622. Sokagakkai Religious Corporation, Shinjuku-ku, Tokyo, Japan. Filed Feb. 27, 1964.

潮

The mark when translated into English means "tide."
Owner of Japanese Reg. No. 589,183, dated June 14, 1962.
For Monthly Magazine.

SN 198,822. The George S. Bond Co., Indianapolis, Ind. Filed July 30, 1964.

PRICE-FAX

For Eyeglass Frame Pricing Manual and Replacement and Supplemental Sheets Therefor.
First use July 27, 1964.

SN 201,082. Bel-Aire Corporation, Kenosha, Wis. Filed Sept. 2, 1964.

CAMPUS DATELINE

For Calendar.
First use Dec. 1, 1963.

SN 208,218. Eurosyndicat Investment Research Bureau, S.A., Brussels, Belgium. Filed Oct. 16, 1964.



Owner of Belgian Reg. No. 96,653, dated July 20, 1962.
For Economic and Financial Survey Reports, Letters, Pamphlets, and Documents.

SN 209,214. Western Farm Publications, Inc., San Francisco, Calif. Filed Dec. 31, 1964.

PRODUCE MARKETING

For Magazine.
First use January 1958.

SN 210,154. Publicaciones Juventud, Fort Lauderdale, Fla. Filed Jan. 18, 1965.



For Books.
First use Apr. 17, 1964.

SN 210,466. James Patrick Croal, Ottawa, Ontario, Canada Filed Jan. 22, 1965.



Priority claimed under Sec. 44(d) on Canadian application filed Dec. 30, 1964; Reg. No. 140,801, dated June 11, 1965.
For Cartoons, Drawings, Graphic Reproductions in Black and White and in Colours, Illustrations, Paintings, Pictures, Prints, Publications, Linoleum (Lino) Cuts, Rubber-Cuts, Wood-Cuts, Leather-Cuts, Metal-Cuts, Plastic-Cuts, Stone-Cuts, Synthetic-Material Cuts, and All Other Kinds of Cuts Used in the Reproduction of Art.
First use Dec. 21, 1964; in commerce Dec. 21, 1964; on or before July 22, 1948, as to the mark "Laorc"; Nov. 10, 1964, as to the design mark.

SN 210,818. The State Historical Society of Colorado, Denver, Colo. Filed Jan. 27, 1965.

THE COLORADO MAGAZINE

For Magazine.
First use November 1923.

SN 216,081. The International Federation of Aquarium Societies, Inc., St. Louis, Mo. Filed Apr. 8, 1965.



For Pamphlets.
First use July 1, 1964.

SN 216,665. Henry Wheeler Chase, Greenwich, Conn. Filed Apr. 16, 1965.



The words "Supply" and "Demand" are disclaimed apart from the mark as shown. Owner of Reg. No. 367,066.
For Weekly, Monthly, and/or Quarterly Commentaries and Economic Graphs, Publications on Investment Management, Industrial, Economic, and Investment Advisory or Other Activities.
First use July 29, 1936.

SN 216,904. Hayes Walker III, Shawnee Mission, Kans. Filed Apr. 19, 1965.



BANNER

Applicant disclaims ownership of the word "Charolais" apart from the mark as a whole. The drawing is lined for the colors red and blue.
For Magazine Dealing With Information Concerning the Charolais Breed of Cattle.
First use Mar. 24, 1965.

SN 218,461. Russell S. Miller Labels, Inc., Los Angeles, Calif. Filed May 10, 1965.

TABLET-TALKER

For Advertising Display Pads.
First use Mar. 2, 1965.

SN 218,647. Kennedy Sinclaire, Inc., Montclair, N.J. Filed May 12, 1965.

LET'S TALK TRUSTS

For Booklets Prepared Periodically for Distribution by Others.
First use April 1965.

SN 219,570. The Hearst Corporation, New York, N.Y. Filed May 24, 1965.

MIRROR OF YOUR MIND

For Newspaper Column or Feature.
First use Mar. 4, 1946.

SN 220,393. Alfred Mainzer, Inc., Long Island City, N.Y. Filed June 4, 1965.



For Greeting Cards.
First use 1938.

SN 220,682. The New American Library of World Literature, Inc., New York, N.Y. Filed June 8, 1965.



Owner of Reg. Nos. 527,265, 527,266, and 781,017.
For Books.
First use May 31, 1965.

SN 220,961. Publishers Newspaper Syndicate, Chicago, Ill. Filed June 11, 1965.

SISTER SUZIE

For Cartoon Strip.
First use Feb. 1, 1965.

Class 39 — Clothing

SN 171,672. The H. D. Lee Company, Incorporated, Kansas City, Mo. Filed June 24, 1963.

TRIMS

Owner of Reg. No. 728,577.
For Slacks for Men and Women.
First use Oct. 11, 1960.

SN 182,989. Welders Engineering Research Company, Charlotte, N.C. Filed Dec. 13, 1963.

WERCO

For Helmets, Gloves, Capes, Coats, Overalls, Aprons, and Shoe Protectors for Use by Welders.
First use Apr. 1, 1961.

SN 190,918. Rubin Grais & Sons, Chicago, Ill. Filed Apr. 13, 1964.



Applicant disclaims the use of the word "Exclusively" apart from the mark as shown. The English equivalent of the Italian words "Pace Uccello" is "peace dove."
For Men's and Boys' Jackets and Coats.
First use on or about Sept. 30, 1963.

SN 197,621. Stedman Manufacturing Company, Asheboro, N.C. Filed July 10, 1964.

LADY HUNTINGTON

Owner of Reg. No. 716,547.
For Women's Hosiery.
First use Mar. 26, 1964.

SN 199,895. Fabrics by Joyce, Inc., New York, N.Y. Filed Aug. 14, 1964.



For Triacetate and Polyester Fabrics Made Up Into Finished Apparel—Namely, Dresses.
First use July 27, 1964.

SN 201,400. Elaine of Hollywood Brassiere Co., Los Angeles, Calif. Filed Sept. 8, 1964.

FOR THAT CERTAIN *Lift*

For Brassieres.
First use on or about Sept. 1, 1943.

SN 201,469. Republic Novelty Co. Inc., New York, N.Y. Filed Sept. 8, 1964.

Skirtmodes

For Women's and Children's Blouses.
First use July 7, 1964.

SN 201,874. Roderick St. John's, Inc., Indianapolis, Ind. Filed Sept. 14, 1964.



For Ladies', Men's, and Children's Wearing Apparel—Namely, Shirts, Jackets, Sweaters, Blouses, Suits, Ties, Overcoats, Topcoats, Shoes, and Shorts.
First use Oct. 31, 1958.

SN 204,148. Eagle Shoe Mfg. Company, Inc., Everett, Mass. Filed Oct. 16, 1964.

ANDROSCOGGIN

For Men's and Boys' Shoes.
First use Feb. 28, 1964.

SN 204,736. Aldens Shoppers World, Inc., Chicago, Ill. Filed Oct. 26, 1964.



For Clothing for Men, Women, Boys, Girls, and Infants—Namely, Socks, Underwear, Shirts, Pants, Skirts, Blouses, Coats, and Jackets.
First use Mar. 6, 1956.

SN 206,226. Burma-Bibas, Inc., New York, N.Y. Filed Nov. 16, 1964.

PRINCE IGOR

"Prince Igor" is a legendary character and also the name of an opera. Owner of Reg. Nos. 694,609 and 705,056.
For Certain Ladies' Garments—Namely, Knitted Dresses and Separates, Blouses, Skirts, Jackets, Sweaters, Slacks, and Suits.
First use November 1963.

SN 208,144. Tissages de Soieries Reunis (T.S.R.), Lyon, France. Filed Dec. 14, 1964.

BIOBAS

Priority claimed under Sec. 44(d) on French Reg. No. 34,376, dated June 23, 1964 (Lyon); Natl. Inst. No. 229,072.
For Stockings and Socks.

SN 210,762. Harold Franks Co., Inc., New York, N.Y. Filed Jan. 27, 1965.

FRANZOTTI

For Ladies' Dresses.
First use Jan. 15, 1965.

SN 211,794. Chadbourn Gotham, Inc., Charlotte, N.C. Filed Feb. 11, 1965.

MODEL•SKIN

Owner of Reg. No. 776,654.
For Ladies' Hosiery.
First use Dec. 8, 1964.

SN 214,479. Stratford Neckwear Co., Inc., New York, N.Y. Filed Mar. 18, 1965.

"St. Andrew's" by STRATFORD

For Necktles.
First use Dec. 30, 1964.

SN 214,489. Wembley, Inc., New Orleans, La. Filed Mar. 18, 1965.

POLYSILK

For Neckwear Made in Whole or Substantial Part of Silk.
First use Feb. 1, 1965.

SN 214,867. Grey-Wood Knitwear Industries, Inc., New York, N.Y. Filed Mar. 24, 1965.

PIQUANTE

For Women's Apparel—Namely, Sweaters, Skirts, Suits, Dresses, and Slacks.
First use Mar. 8, 1965.

SN 216,045. Braunford Corporation, New York, N.Y. Filed Apr. 8, 1965.

BENCHWARMER

For Men's, Women's, and Children's Woolen Outerwear—Namely, Parkas.
First use Dec. 12, 1963.

SN 216,270. Coronia Sportswear Inc., New York, N.Y. Filed Apr. 12, 1965.

CORONIA CASUALS

No claim is made to the word "Casuals" apart from the mark as shown.
For Sportswear—Namely, Sweaters, Skirts, and Suits for Women, Misses, Girls, and Children.
First use Mar. 4, 1965.

SN 216,342. Anne M. Reiniger, Darien, Conn. Filed Apr. 12, 1965.

gaetana

For Women's Dresses, Formal and Informal for Street, at Home, and Evening Wear, Tunics, Blouses, Jackets, Skirts, Slacks, Robes, and Gowns.
First use May 1, 1964.

SN 216,362. Treville Inc., Clifton, N.J. Filed Apr. 12, 1965.

SÉLECTE

For Rubber Gloves of a Household Type.
First use Oct. 1, 1962.

SN 216,826. Holland-Racine Shoes, Inc., Holland, Mich. Filed Apr. 19, 1965.



The word "Cushion" is disclaimed apart from the mark as shown. The lining on the drawing is a part of the mark and does not indicate color.
For Shoes and Inner Soles for Shoes.
First use on or about Nov. 10, 1964.

SN 216,888. Sweatshop Industries, Inc., Denver, Colo. Filed Apr. 19, 1965.

SPOOFER

For Sweat Shirts, T-Shirts, Bowling Shirts, and Night Shirts.
First use Feb. 26, 1965.

SN 217,045. M & E Marine Supply Co., Camden, N.J. Filed Apr. 21, 1965.

'NYLASTIC'

For Exposure or Wet Suits.
First use on or about Mar. 10, 1965.

SN 218,411. Exquisite Form Industries, Inc., New York, N.Y. Filed May 10, 1965.

THE MAYBE BRA

The word "Bra" is disclaimed apart from the mark as shown.
For Brassieres.
First use May 5, 1965.

SN 218,769. Hughes & Hatcher, Inc., Detroit, Mich. Filed May 13, 1965.

JOHN MILFORD

The name "John Milford" is fanciful.
For Clothing—Namely, Men's Suit Coats, Sport Coats, and Outer Coats.
First use Jan. 10, 1965.

SN 220,496. Hanes Corporation, Winston-Salem, N.C. Filed June 7, 1965.

LEGLITE

For Hosiery.
First use May 13, 1965.

SN 220,498. Hanes Corporation, Winston-Salem, N.C. Filed June 7, 1965.

CHROMA

For Hosiery.
First use May 13, 1965.

SN 220,511. International Shoe Company, d.b.a. The Florsheim Shoe Company, Chicago, Ill. Filed June 7, 1965.

THAYER MCNEIL

Owner of Reg. Nos. 700,231 and 751,328.
For Shoes.
First use 1881.

SN 220,678. Melville Shoe Corporation, New York, N.Y. Filed June 8, 1965.

THOM MCAN PENNYWHISTLE

The name "Thom McAn" is fanciful. Owner of Reg. Nos. 170,095, 268,176, and others.
For Shoes.
First use June 7, 1965.

Class 40—Fancy Goods, Furnishings, and Notions

SN 223,299. Fashion Tress, Inc., Miami Beach, Fla. Filed July 14, 1965.

EMPRESS

For Wigs.
First use Mar. 2, 1965.

SN 223,300. Fashion Tress, Inc., Miami Beach, Fla. Filed July 14, 1965.

PARISIENNE

For Wigs and Wiglets.
First use Oct. 3, 1963.

SN 223,301. Fashion Tress, Inc., Miami Beach, Fla. Filed July 14, 1965.

UNIQUE

For Wigs.
First use Jan. 6, 1964.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 176,199. Samuel Kaplan & Sons, Inc., New York, N.Y. Filed Sept. 3, 1963.

FIBER LOC

For Bonded or Laminated Cloth Used in Making Dresses, Coats, Jackets, Raincoats, and the Like.
First use Aug. 12, 1963.

SN 191,940. Rubin Levine & Co., Inc., New York, N.Y. Filed Apr. 24, 1964.

CHEVACREPE

For Fabric in the Piece Made Wholly or Partially of Acetate Fibers for Making Dresses.
First use Apr. 2, 1964.

SN 208,341. Cottonwood Mills, Inc., Chicago, Ill. Filed Dec. 17, 1964.

cottonwood

For Rugs and Carpets—Namely, All Floor Coverings of Tufted Material Including Bath Room Floor Coverings and Automobile and Trailer Carpeting.
First use Jan. 18, 1954.

SN 217,700. Beacon Manufacturing Company, Swannanoa, N.C. Filed Apr. 30, 1965.

STITCH BONDED

For Blankets and Blanketing.
First use Apr. 21, 1965.

SN 221,020. Collins & Aikman Corporation, New York, N.Y. Filed June 14, 1965.

BEAUTY SPOT

For Rugs.
First use Mar. 12, 1965.
Subj. to Intf. with SN 228,137.

SN 221,353. Deering Milliken, Inc., New York, N.Y. Filed June 17, 1965.

PROFIT

For Textile Fabrics Made of Wool, Cotton, and Synthetic Fibers, and Combinations Thereof.
First use Mar. 27, 1965.

SN 221,357. Deering Milliken, Inc., New York, N.Y. Filed June 17, 1965.

SCRABBLE

For Textile Fabrics Made of Wool, Cotton, and Synthetic Fibers, and Combinations Thereof.
First use July 16, 1964.

SN 228,137. Crown Rubber Company, Fremont, Ohio. Filed Sept. 20, 1965.

BEAUTY-SPOT

For Rugs Consisting of Nylon Pile Facing and Vinyl Backing.
First use Oct. 9, 1964.
Subj. to Intf. with SN 221,020.

Class 44—Dental, Medical, and Surgical Appliances

SN 184,073. Jacuzzi Research, Inc., Berkeley, Calif. Filed Jan. 6, 1964.

Jacuzzi
WHIRLPOOL BATH

For Whirlpool Bath Equipment and Associated Items—Namely, Carrying Cases, Filter Pads, and Bath Essence.
First use Oct. 1, 1957.

SN 205,561. The American White Cross Laboratories, Inc., New Rochelle, N.Y. Filed Nov. 5, 1964.

WHITE

CROSS

Owner of Reg. Nos. 540,747, 588,925, and others.
For Facial Cotton, First Aid Kits, Surgical Gauze, Absorbent Cotton, Cotton Balls, Prepared Cut Bandages, Gauze Pads, Adhesive Tape, Plastic Adhesive Bandages, Foot Plasters, Absorbent Cotton Sticks and Foot Pads, Corn Plasters, Bunion Plasters, and Anti-Friction Pads.
First use May 1, 1963; January 1912 in a different form.

SN 206,773. James C. Tanner, Jr., d.b.a. Atlanta Research Institute, Atlanta, Ga. Filed Nov. 23, 1964.

MESHGRAFT

For Dermatomes.
First use on or about Nov. 10, 1964.

SN 213,240. Parke, Davis & Company, Detroit, Mich. Filed Mar. 3, 1965.

PHARMACOIL

For Cotton in Coil Form for Use in Packaging Drugs and Like Uses.
First use on or before Dec. 12, 1964.

SN 227,649. Computer Instruments Corporation, Hempstead, N.Y. Filed Sept. 13, 1965.

TONAIR

For Tonometers for Measuring Intraocular Pressure.
First use Aug. 3, 1965.

Class 45—Soft Drinks and Carbonated Waters

SN 207,362. Beverages International Inc., Evanston, Ill. Filed Dec. 3, 1964.

Hires
ROOT BEER

Portions of the drawing are lined for the color orange, but no claim is made as to color. The words "Root Beer" are disclaimed apart from the mark as shown. Owner of Reg. Nos. 24,058, 736,122, and others.
For Soft Drinks.
First use May 20, 1964.

Class 46—Foods and Ingredients of Foods

SN 132,493. J. R. Short Milling Company, d.b.a. Mount Vernon Milling Company, Chicago, Ill. Filed Nov. 21, 1961.

SUNLITE

Owner of Reg. Nos. 591,377 and 634,646.
For White and Yellow Degerminated Corn Products—Namely, White and Yellow Table Grits, White and Yellow Granulated Corn Meal, White and Yellow Corn Meal, White and Yellow Corn Cones, and White and Yellow Corn Flour, These Being Listed in the Order of Size All for Human Consumption.
First use Jan. 7, 1955.

SN 168,174. Eversweet Foods, Inc., Lyons, Ill. Filed May 6, 1963.

EVER SWEET

Owner of Reg. No. 583,581.
For Chocolate Flavor Syrup.
First use Oct. 8, 1962.

SN 185,920. Mark Morris Associates, Inc., Topeka, Kans. Filed Feb. 3, 1964.

H/D

Owner of Reg. Nos. 536,011, 675,053, and others.
For Dietary Animal Food for Pets and Other Domesticated Animals—Namely, Dogs.
First use Jan. 8, 1964.

SN 185,948. A. O. Smith Harvestore Products, Inc., Arlington Heights, Ill. Filed Feb. 3, 1964.

HALAGE

For 35%–50% Moisture Grasses and Legumes for Feed for Livestock.
First use Oct. 7, 1963.

SN 188,431. East India Comestibles Company, West Barrington, R.I. Filed Mar. 11, 1964.

ANNAPURNA

For Packaged Food Product—Namely, Ingredients for a Curry Dinner Comprising Rice, Curry Sauce, and Condiments for Said Dinner—Namely, Nuts and Chutney.
First use Mar. 2, 1964.

SN 191,056. King Meat Packing Co., Inc., Vernon, Calif. Filed Apr. 14, 1964.

BANQUET KING

For Packaged Fresh or Frozen Meat.
First use December 1963.

SN 191,810. Tobin Packing Co., Inc., Rochester, N.Y. Filed Apr. 22, 1964.



For Pork Food Products—Namely, Fresh Pork, Cured and Smoked Pork, Sausage, and Canned Meats.
First use Oct. 5, 1931.

SN 192,478. Freeborn Farm, Inc., Monroe, Conn. Filed May 1, 1964.

FREEBORN FARM

For Food Products—Namely, Frozen Candies (Mint Bavarian) and Hot Cheese Puffs.
First use Dec. 24, 1963.

SN 194,876. Theodora L. Gaston, d.b.a. Gigi's Specials, Santa Monica, Calif. Filed June 4, 1964.

Almond'oro

No claim is made to the word "Almond" apart from the mark as shown.
For Candy.
First use on or about Jan. 1, 1961.

SN 195,439. Orchard Hill Farms Candy Company, Chicago, Ill. Filed June 11, 1964.

Janet Denning

"Janet Denning" is not the name of any particular individual.
For Candy.
First use June 1, 1964.

SN 198,812. Armour and Company, Chicago, Ill. Filed July 30, 1964.

ARMOUR GOLDEN STAR

Owner of Reg. Nos. 539,557, 790,066, and others.
For Cooked Ham.
First use on or prior to Sept. 3, 1963; on or prior to Jan. 1, 1870, as to the word "Armour"; on or prior to Jan. 1, 1940, as to the design of a gold star.

SN 200,862. Joe Patti's Seafood Company, d.b.a. Captain Joe Patti, Pensacola, Fla. Filed Aug. 28, 1964.



For Frozen Fish and Shell Fish.
First use June 30, 1964.

SN 200,863. Joe Patti's Seafood Company, d.b.a. Captain Joe Patti, Pensacola, Fla. Filed Aug. 28, 1964.

SPANISH MAIN

For Frozen Fish and Shell Fish.
First use June 30, 1964.

SN 201,416. Green Giant Company, Le Sueur, Minn. Filed Sept. 8, 1964.

LE SUEUR

The English translation of "Le Sueur" is believed to be "sweat." Owner of Reg. Nos. 162,556, 726,700, and others.
For Frozen Peas.
First use May 26, 1964.

SN 202,067. Daniel J. Daly, d.b.a. D and D, Minneapolis, Minn. Filed Sept. 17, 1964.

DARBY

For Feed Oats for Horses.
First use Mar. 16, 1964.

SN 202,146. General Nutrition Corporation, Pittsburgh, Pa. Filed Sept. 18, 1964.

Diet-tru

For Line of Dietetic Food Products in the Nature of Sugar and Salt Substitutes, Low Calorie Salad Dressings, Dietetic Milk Chocolates, Artificially Sweetened Canned Fruits for Salads, Canned Fruit Cocktail, Apricots, Peaches, and Pears.
First use Sept. 1, 1964.

SN 202,958. Rocket Citrus Products, Inc., St. Louis, Mo. Filed Sept. 29, 1964.



For Frozen Concentrates for Making Low Calorie, Fruit-Flavored Food Beverages, Sold by Applicant to the Dairy Industry.
First use Aug. 12, 1964.

SN 203,503. International Refining and Packaging Corp., Bayonne, N.J. Filed Oct. 7, 1964.

SWIRL

For Vegetable Shortening.
First use Jan. 20, 1964.

SN 203,920. American Heritage Industries, d.b.a. Goodman Food Packers, Waterloo, Iowa. Filed Oct. 14, 1964.



Goodman

For Fruit Preserves, Syrup and Fruit Preserve Sundae Toppings, Jellies, Honey, and Fruit Syrups for Food Use.
First use July 1, 1964.

SN 206,726. Holly Farms Poultry Industries, Inc., Wilkesboro, N.C. Filed Nov. 23, 1964.

HOLLY PAK

Applicant disclaims the word "Pak" separate and apart from the mark as shown. Owner of Reg. No. 626,645.
For Packaged Chilled Poultry—Namely, Wings, Jumbo Pack Wings, Thighs, Drumsticks, Legs, Breast With Ribs, Whole Birds Cut Up, Whole Birds Bagged, Split Broilers, Hearts and Gizzards, Backs and Necks, Jumbo Pack Legs, Jumbo Pack Breast With Ribs, etc.
First use Mar. 15, 1964.

SN 208,178. The East Asiatic Company, Inc., Los Angeles, Calif. Filed Dec. 15, 1964.

GOLDEN TASTE

Owner of Reg. No. 735,753.
For Canned Frozen Mushrooms.
First use Aug. 12, 1964.

SN 208,407. Sternco Industries, Inc., Allendale, N.J. Filed Dec. 17, 1964.

VITA FLAKES

The word "Flakes" is disclaimed apart from the mark as shown.
For Food for Aquarium Fish.
First use June 10, 1957.

SN 208,742. Holly Farms Poultry Industries, Inc., Wilkesboro, N.C. Filed Dec. 23, 1964.

HOLLYS

Owner of Reg. No. 626,645.
For Dressed and Frozen Poultry and Packaged Chilled Poultry—Namely, Whole Chickens, Chicken Parts Such as: Wings, Jumbo Pack Wings, Thighs, Drumsticks, Legs, Breast With Ribs, Whole Birds Cut Up, Split Broilers, Hearts and Gizzards, Backs and Necks.
First use on or about Dec. 1, 1951.

SN 209,065. Comet Rice Mills, Inc., Houston, Tex. Filed Dec. 30, 1964.

WONDER

Owner of Reg. No. 539,907.
For Rice.
First use November 1942.

SN 209,353. Kentucky Fried Chicken Corporation, Shelbyville, Ky. Filed Jan. 5, 1965.

KENTUCKY PLANTATION

For Barbecue Sauce and Table Syrup.
First use on or about October 1960.

SN 209,485. Campbell Soup Company, Camden, N.J. Filed Jan. 7, 1965.

Campbell's

Owner of Reg. Nos. 48,461, 698,271, and others.
For Canned Ready-To-Serve Soups.
First use December 1947.

SN 209,715. Ocean Delight Food Products Inc., Hicksville, N.Y. Filed Jan. 11, 1965.

MAINES' Delight

The word "Maines'" is disclaimed apart from the mark as shown.
For Canned Sardines.
First use June 1, 1962.

SN 210,047. The Red Barn System, Inc., Fort Lauderdale, Fla. Filed Jan. 15, 1965.

Dignifried Chicken



The word "Chicken" is disclaimed apart from the mark as shown.
For Chicken Dinners Comprising Individual Servings of Fried Chicken and Potatoes Dispensed in Carry-Out Containers by Drive-In Restaurants.
First use July 1, 1963.

SN 210,892. Morton Salt Company, Chicago, Ill. Filed Jan. 28, 1965.



Owner of Reg. Nos. 103,357 and 511,639.
For Salt, Pepper, Sugar, Honey, Table Syrup, Jams, Jellies, and Meatless Condiment Sauces and Dressings.
First use at least as early as Jan. 1, 1957; Nov. 6, 1914, in a different form.

SN 210,953. Holland House Brands, Inc., Woodside, N.Y. Filed Jan. 29, 1965.

HOLLAND HOUSE

Owner of Reg. Nos. 633,738, 655,591, and others.
For Frozen Hors d'Oeuvres—Namely, Frozen Cheese Hors d'Oeuvres.
First use Jan. 20, 1965.

SN 214,226. Acme Markets, Inc., Philadelphia, Pa. Filed Mar. 16, 1965.



For Candy.
First use Jan. 14, 1964.

SN 215,001. William R. Piper Coffee Co., Kansas City, Mo. Filed Mar. 25, 1965.

PIPER

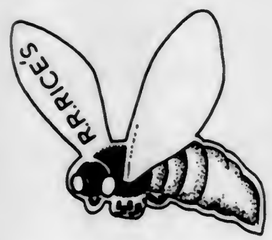
For Coffee.
First use during August 1953.

SN 215,292. Trenton Foods, Inc., Kansas City, Mo. Filed Mar. 29, 1965.



The words "Pressure Process" are disclaimed apart from the mark as shown. Owner of Reg. No. 785,695.
For Canned Foods—Namely, Beef Stew, Chicken Stew, Chicken With Rice and Vegetables, Barbecue Sauce and Ground Beef (Sloppy Joe), Macaroni With Meat Sauce, Macaroni and Cheese, Spaghetti and Meat Sauce, Spanish Rice With Smoked Ham, Corned Beef Hash, Chili Without Beans, Chili With Beans, Cheese Sauce, and Sauce With Meat.
First use Jan. 31, 1964.

SN 215,443. Robert R. Rice, d.b.a. R. R. Rice's, Miami, Fla. Filed Mar. 31, 1965.



For Honey.
First use Oct. 15, 1939.

SN 216,387. The Chocolate House, Inc., Milwaukee, Wis. Filed Apr. 13, 1965.

DINOSAUR EGG

The word "Egg" is disclaimed apart from the mark as shown.
For Candy.
First use Mar. 18, 1965.

SN 217,097. The Curtiss Candy Company, Chicago, Ill. Filed Apr. 22, 1965.

PIRATE'S CHEW

The word "Chew" is disclaimed apart from the mark as shown.
For Candy and Chewing Gum.
First use Jan. 8, 1963.

SN 217,887. Good Humor Corporation, Englewood Cliffs, N.J. Filed May 3, 1965.

POGO-STIX

For Frozen Confections on a Stick.
First use Mar. 5, 1965.

SN 218,382. Broughton's Farm Dairy, Inc., Marietta, Ohio. Filed May 10, 1965.

SOKREEM

For Imitation Sour Cream With a Vegetable Fat Base.
First use Feb. 16, 1965.

Class 48—Malt Beverages and Liquors

SN 213,639. Mt. Carbon Manufacturing and Supply Co., d.b.a. Mount Carbon Brewery, Pottsville, Pa. Filed Mar. 8, 1965.



The representation of the human being in the drawing, who is holding the stein, is not that of any particular living human being.
For Beer.
First use 1941.

Class 50—Merchandise Not Otherwise Classified

SN 201,540. National Merchandising Corporation, Green Bay, Wis. Filed Sept. 9, 1964.

MONEY SCULPTURING

The word "Money" is disclaimed apart from the mark as shown.
For Display Cases Which Contain Paper Money Folded Into Various Forms.
First use on or about July 1, 1964.

SN 221,191. J. Allen Locke, d.b.a. The Locke Hosiery Mills, Philadelphia, Pa. Filed June 15, 1965.

LITHODOWN

The words "Dampening Cover" and the representation of the roller are disclaimed apart from the mark as shown.
For Dampening Cover for Lithograph Rollers.
First use Mar. 5, 1965.

SN 224,581. Cataphote Corporation, Jackson, Miss. Filed July 30, 1965.

CATADOTS

For Disc-Like Structures Having Retroreflective Characteristics for Traffic Control Installations.
First use July 1965.

Class 51—Cosmetics and Toilet Preparations

SN 147,994. Sea & Ski Corporation, Millbrae, Calif., assignee of Botany Industries, Inc., d.b.a. Renauld of France, Reno, Nev. Filed June 29, 1962.

DUASOL

For Sunscreen Ingredient Incorporated in a Tanning Lotion.
First use Apr. 30, 1962.

SN 175,221. Storfer Imports, Inc., New York, N.Y. Filed Aug. 16, 1963.

Tout Paris de GUIMET

The English translation of "Tout Paris de Guimet" is "all Paris by Guimet."
For Dusting Powder, Perfume, Toilet Water, and Cologne.
First use Aug. 7, 1963.

SN 186,737. He-Man Products, Inc., Waban, Mass., assignee of Bernard E. Mendelsohn, Dorchester, Mass. Filed Feb. 14, 1964.

STAINLESS

For Shaving Cream.
First use Nov. 30, 1963.

SN 191,424. Maybelline Co., Chicago, Ill. Filed Apr. 17, 1964.

ULTRA BROW

The word "Brow" is disclaimed apart from the mark as shown.
For Eyebrow Make-Up Kits Comprising a Plastic Box Containing a Tray Filled With Brush-On Eyebrow Color and a Brush for Applying the Color to the Eyebrows.
First use Apr. 10, 1964.

SN 195,248. Colgate-Palmolive Company, New York, N.Y., assignee of Produits Nina, Inc., New York, N.Y. Filed June 9, 1964.

RESPOND

Owner of Reg. No. 442,125.
For Cosmetic Skin Lotion.
First use in the year 1959.

SN 200,099. Fibah Corporation, d.b.a. Perfumeria Fibah, Hato Rey, Puerto Rico, assignee of Maurice Habif, d.b.a. Perfumeria Fibah, Hato Rey, Puerto Rico. Filed Aug. 18, 1964.

M.H.

For Perfume, Skin Lotion, and Toilet Water.
First use 1948.

SN 202,929. Fibah Corporation, d.b.a. Perfumeria Fibah, Hato Rey, Puerto Rico, assignee of Maurice Habif, d.b.a. Perfumeria Fibah, Hato Rey, Puerto Rico. Filed Dec. 15, 1964.

APOLO

For Cologne.
First use April 1964.

SN 202,930. Fibah Corporation, d.b.a. Perfumeria Fibah, Hato Rey, Puerto Rico, assignee of Maurice Habif, d.b.a. Perfumeria Fibah, Hato Rey, Puerto Rico. Filed Dec. 15, 1964.

Olé

The English translation of "Olé" is "well done."
For Cologne.
First use September 1963.

SN 202,934. Hudson National, Inc., d.b.a. Hudson Toiletries, New York, N.Y., by change of name from Hudson Vitamin Products, Inc., New York, N.Y. Filed Sept. 29, 1964.

LADY HUDSON
Secrecy

The name "Lady Hudson" is not the name of any known living individual.
For Concentrated Cologne.
First use Sept. 19, 1964.

SN 214,906. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Mar. 24, 1965.

CHANSON D'OR

The English translation of the mark "Chanson d'Or" is "golden song."
For Cologne.
First use Sept. 7, 1963.

Class 52 — Detergents and Soaps

SN 163,096. Lenox, Incorporated, Trenton, N.J. Filed Feb. 20, 1963.

LENOX CHINA

Applicant disclaims the right to the exclusive use of the word "China" apart from the mark as shown. Owner of Reg. Nos. 692,619, 769,524, and others.
For Detergent Composition for Washing Dishes and Other Tableware.
First use on or about Jan. 25, 1963; 1894 as to "Lenox."

SN 183,041. The Dow Chemical Company, Midland, Mich. Filed Dec. 16, 1963.

DOWCLENE

Owner of Reg. Nos. 285,606, 722,373, and others.
For Industrial Detergents and Cleaners.
First use Aug. 15, 1938.

SN 200,961. New South Manufacturing Company, Atlanta, Ga. Filed Aug. 31, 1964.

White Lightning

For Concrete Cleaner.
First use on or about Jan. 10, 1964.

SN 202,498. Peck's Products Company, St. Louis, Mo. Filed Sept. 23, 1964.

GREASE-OFF

Owner of Reg. No. 147,762.
For Industrial Cleaner and Degreaser, and Solvent Cleaner for Automobile and Machine Parts.
First use May 14, 1920.

SN 208,677. The Diversey Corporation, Chicago, Ill. Filed Dec. 22, 1964.

PERFON

Owner of Reg. Nos. 410,883 and 507,708.
For Acidic Stain and Polish Remover and General Maintenance Cleaner.
First use Oct. 10, 1955.

SN 216,043. The Betco Corporation, d.b.a. "Betco Corp.," Toledo, Ohio. Filed Apr. 8, 1965.

YALE

For All Purpose Liquid Detergent.
First use Dec. 1, 1959.

SN 216,714. Mac's Super Gloss Co., Inc., Los Angeles, Calif. Filed Apr. 16, 1965.

MAC'S SPARKLE

Owner of Reg. Nos. 648,046, 749,906, and others.
For Concentrated Glass Cleaner.
First use Mar. 3, 1965.

SN 217,355. Lazarus Laboratories, Inc., Long Island City, N.Y. Filed Apr. 26, 1965.

DYNEMATE

For Powdered Alkaline Dairy Pipeline Cleaner.
First use Mar. 22, 1965.

SERVICE MARKS

Class 100 — Miscellaneous

SN 172,744. Jack Hoover, Indianapolis, Ind. Filed July 10, 1963.

Peddlers Inn

No claim is made to the term "Inn" apart from the mark as shown.
For Restaurant Services.
First use Feb. 10, 1963.

SN 173,928. Paul Warren Landrum, Sr., Chattanooga, Tenn. Filed July 29, 1963.

GRAPHOSYNTHESIS

For Handwriting Analysis and Reports Submitted in Connection Therewith.
First use Oct. 7, 1962.

SN 197,873. Sidney N. Bremer, d.b.a. Napoleon Hill Academy, Columbia, S.C. Filed July 15, 1964.

SUCCESS QUOTIENT

For Services Performed in Evaluating a Client's Potential for a Successful and Rewarding Career in the Business World.
First use Mar. 30, 1964.

SN 204,097. Rixson Inc., Franklin Park, Ill. Filed Oct. 15, 1964.

For Services—Namely, Research and Development, and Designing.
First use Sept. 23, 1964.

SN 209,676. Detroit Testing Laboratory Inc., Detroit, Mich. Filed Jan. 11, 1965.

Owner of Reg. No. 611,898.
For Technical Analysis, Advice, and Direction in Phyical, Chemical, Biological, Electrical, Functional, Environmental, Technological, Radiological, Metrological, and Economical Categories.
First use January 1962.

SN 210,008. Franklin GNO Corporation, West Palm Beach, Fla. Filed Jan. 15, 1965.

FRANKLIN GNO CORPORATION

The Greek letters included in the mark are the letters "GNO."
For Scientific and Engineering Analysis and Development Services for Others, Primarily in the Field of Atomic Energy Applications and Nuclear Methods of Measurement and Control.
First use Sept. 15, 1964.

Class 101 — Advertising and Business

SN 182,805. W. H. Long Marketing, Inc., Greensboro, N.C. Filed Dec. 11, 1963.

APT

For Employment Services—Namely, Compiling Registers of Qualified Advertising Personnel and Furnishing Specialized Lists to Prospective Employers.
First use Sept. 9, 1963.

SN 183,938. Trust-A-Check, Inc., Baltimore, Md. Filed Jan. 2, 1964.



For Electronic Data Processing of Payrolls for Others.
First use Dec. 9, 1963.

SN 197,613. The Outlet Company, Providence, R.I. Filed July 10, 1964.

BIG O

For Retail Department Store Services.
First use May 1, 1960.

SN 211,724. The Grand Union Company, East Paterson, N.J. Filed Feb. 10, 1965.

Grandway

Owner of Reg. Nos. 741,053, 741,054, and 775,955.
For Department Store Services and Supermarket Services.
First use on or about June 19, 1956.

SN 217,183. Fleet Tractor Stores, Inc., St. Cloud, Minn. Filed Apr. 23, 1965.



For Retail, Farm and Automotive Equipment Store Services.
First use Feb. 25, 1965.

Class 102 — Insurance and Financial

SN 204,188. National Trust Life Insurance Company, Memphis, Tenn. Filed Oct. 16, 1964.



The mark consists of the letters "NTL."
For Underwriting Life Insurance.
First use Aug. 24, 1964.

SN 216,549. Wilmington Trust Company, Wilmington, Del. Filed Mar. 19, 1965.



For Banking Services.
First use February 1962.

SN 217,023. The Dreyfus Fund, Incorporated, New York, N.Y. Filed Apr. 21, 1965.



Owner of Reg. Nos. 638,192, 676,125, and 712,289.
For Financial Services—Namely, Investing the Funds of Others.
First use Mar. 30, 1958.

Class 103 — Construction and Repair

SN 156,958. Dresser Industries, Inc., d.b.a. Dresser Guiberson Division, Dallas, Tex. Filed Nov. 9, 1962.

RATIOMETRIC

For Designing, Installing, and Servicing of Gas Lift Valves and Systems.
First use Oct. 19, 1962.

SN 163,351. Fox & Jacobs Construction Co., Inc., Dallas, Tex. Filed Feb. 25, 1963.

accent

For Construction of Residential Homes.
First use Aug. 15, 1958.

SN 187,575. Johnson Auto Wash and Wax Systems, Inc., Grand Rapids, Mich., assignee of General Auto Wash Systems, Inc., Grand Rapids, Mich. Filed Feb. 27, 1964.

RAINBOW

Owner of Reg. No. 772,235.
For Washing Motor Vehicles.
First use June 1962.

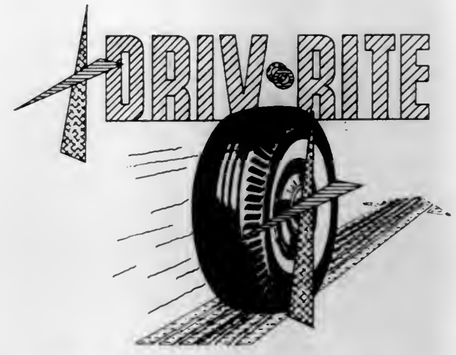
Class 105 — Transportation and Storage

SN 203,131. Vacations International, Inc., Chicago, Ill. Filed Oct. 1, 1964.

VI VACATIONS INTERNATIONAL

Applicant waives exclusive right to use of the specific words "Vacations" and "International" apart from the mark as a whole.
For Travel Services Comprising Arranging Tourists' Itineraries, Conducting Tours, Making Transportation Reservations, and Other Services to Travelers.
First use April 1962.

SN 207,017. Driv-Rite, Inc., Tulsa, Okla. Filed Nov. 27, 1964.



The drawing is lined for the colors blue, brown, and yellow.
For Automobile Leasing and Rental Services.
First use November 1960.

SN 209,665. Colossus Travel Agency, Inc., Hartford, Conn. Filed Jan. 11, 1965.



For Travel Booking Agency Service.
First use May 11, 1964.

Class 107 — Education and Entertainment

SN 197,663. John O. Brown, d.b.a. Mid Continent Company, Downs, Kans. Filed July 13, 1964.

flippers

For Musical Entertainment Services Rendered by a Band.
First use August 1962.

SN 200,445. Jack Keller, d.b.a. Gospel Echoes Quartet, New Boston, Ohio. Filed Aug. 24, 1964.

GOSPEL ECHOES QUARTET

For Entertainment Services—Namely, Gospel Singing Rendered by a Quartet.
First use Feb. 25, 1964.

SN 200,985. Patricia Stevens, Incorporated, Chicago, Ill. Filed Aug. 31, 1964.



For Services Comprising Teaching, Instructing, Training and Advising With Respect to Professional Modeling, Figure Control, Voice, Diction, Finishing and Self Improvement Skills, Secretarial and Stenographic Skills, Business, Stewardess Careers, Fashion Merchandising, and Styling.
First use December 1961.

SN 207,127. International Dinner Theatres, Ltd., Richmond, Va. Filed Nov. 30, 1964.

BARN DINNER THEATRE

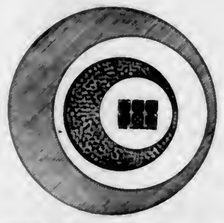
No claim is made to the word "Theatre" apart from the mark as shown.
For Combination Restaurant Services and Theatre.
First use Nov. 27, 1963.

SN 207,607. Johnny and the Hurricanes, Inc., Maumee, Ohio. Filed Dec. 7, 1964.

JOHNNY AND THE HURRICANES

For Entertainment Services—Namely, Providing Dance and Background Music.
First use February 1959.

SN 218,409. EMC Corporation, St. Paul, Minn. Filed May 10, 1965.



Applicant disclaims the descriptive reel and disc design apart from the mark as shown. The drawing is lined for the colors brown and orange.
For Production of Educational, Industrial, and Commercial Recordings (Tape and Disc), Filmstrips and Motion Pictures (Live and Animated), Scripts, Manuals, Texts, and Translations for Clients in the Field of Education and Industry.
First use Mar. 3, 1964.

COLLECTIVE MEMBERSHIP MARKS

Class 200

SN 197,898. National Spiritual Assembly of the Baha'is of the United States, Wilmette, Ill. Filed July 15, 1964.



For Indicating Membership.
First use no later than 1939.

TRADEMARK REGISTRATIONS ISSUED

PRINCIPAL REGISTER

Class 1—Raw or Partly Prepared Materials

799,671. FLUORORIDE. Liquid Nitrogen Processing Corporation. SN 185,222. Pub. 9–21–65. Filed 1–23–64.

799,672. SUZE. Goldsmith Leather Co., Inc. SN 198,272. Pub. 9–21–65. Filed 7–21–64.

799,673. BIOREX. Dubuque Packing Company. SN 201,827. Pub. 9–21–65. Filed 9–14–64.

799,674. OROFORM. Rohm & Haas Company. SN 211,933. Pub. 9–21–65. Filed 2–12–65.

799,675. EXTANE. Extron Corporation. MULTIPLE CLASS (Classes 1 and 13). SN 215,147. Pub. 9–21–65. Filed 3–29–65.

799,676. LUXOR VISTA. The Ohio Leather Company. SN 216,000. Pub. 9–21–65. Filed 4–7–65.

799,677. KITTY PAUSE. Vermiculite-Northwest, Inc. SN 216,900. Pub. 9–21–65. Filed 4–19–65.

Class 2—Receptacles

799,678. UTP AND DESIGN. United Tool & Plastics, Inc. MULTIPLE CLASS (Classes 2 and 21). SN 211,324. Pub. 9–21–65. Filed 2–3–65.

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

799,679. MAINSTAY. Atlantic Products Corporation. SN 215,165. Pub. 9–21–65. Filed 3–29–65.

Class 4—Abrasives and Polishing Materials

799,680. JANITA AND DESIGN. Janita Systems, Inc. MULTIPLE CLASS (Classes 4, 6, 16, and 52). SN 203,057. Pub. 9–21–65. Filed 10–1–64.

799,681. BRILLONS. Purex Corporation, Ltd. SN 211,745. Pub. 9–21–65. Filed 2–10–65.

Class 5—Adhesives

799,682. MARGUARD. The B. F. Goodrich Company. SN 212,768. Pub. 9–21–65. Filed 2–25–65.

Class 6—Chemicals and Chemical Compositions

799,680. (See Class 4 for this trademark.)

799,683. LETTER A IN CENTER OR RETORTS PLACED IN SHAPE OF A HEART. Ace Scientific Supply Co., Inc. MULTIPLE CLASS (Classes 6 and 26). SN 149,157. Pub. 9–21–65. Filed 7–17–62.

799,684. IO-CHEM. Nalco Chemical Company. SN 184,303. Pub. 9–21–65. Filed 1–9–64.

799,685. SAFEGARD. Adolph Kiefer & Company. SN 186,625. Pub. 9–21–65. Filed 2–13–64.

799,686. KLOROZONE. Arkansas Co., Inc. SN 186,995. Pub. 9–21–65. Filed 2–19–64.

799,687. GUARDSAN. Guard Chemical Co., Inc. SN 187,279. Pub. 9–21–65. Filed 2–24–64.

799,688. SUPERINSE. V. Mueller & Company. SN 187,784. Pub. 9–21–65. Filed 3–2–64.

799,689. WESTGLAS. Western Fibrous Glass Products Company, SN 197,636. Pub. 9–21–65. Filed 7–10–64.

799,690. MYVACLOR. Eastman Kodak Company. SN 198,468. Pub. 9–21–65. Filed 7–24–64.

799,691. SPERITONE. General Aniline & Film Corporation. SN 198,515. Pub. 9–21–65. Filed 7–24–64.

799,692. SYLVAN DELL BRAND. Gould's 'Dell' Products. SN 200,435. Pub. 9–21–65. Filed 8–24–64.

799,693. K-N. Thompson-Hayward Chemical Company. SN 207,753. Pub. 9–21–65. Filed 12–8–64.

799,694. VICTOR CREAM. Stauffer Chemical Company. SN 212,149. Pub. 9–21–65. Filed 2–16–65.

799,695. RAINBOW BRITE. Victor Bedi. SN 212,181. Pub. 9–21–65. Filed 2–17–65.

799,696. LAN-PRO. Lancaster Products, Inc. SN 213,224. Pub. 9–21–65. Filed 3–3–65.

799,697. AJAX. Colgate-Palmolive Company. SN 213,413. Pub. 9–21–65. Filed 3–5–65.

Class 8—Smokers' Articles, Not Including Tobacco Products

799,698. KAYWOODIE REGENT. S. M. Frank & Co., Inc. SN 202,438. Pub. 9–21–65. Filed 9–23–64.

799,699. YELLO-BOLE TWEED. S. M. Frank & Co., Inc. SN 202,439. Pub. 9–21–65. Filed 9–23–64.

Class 9—Explosives, Firearms, Equipments, and Projectiles

799,700. UNIDYNAMICS. Universal Match Corporation. SN 174,300. Pub. 9–21–65. Filed 8–2–63.

799,701. GYRO-JET. MB Associates. SN 181,443. Pub. 9–21–65. Filed 10–7–63.

799,702. SEQUOIA BRAND ETC. AND DESIGN. Coast Manufacturing & Supply Company. SN 188,723. Pub. 9–21–65. Filed 3–16–64.

799,703. PLUS 10. Canadian Industries Limited. SN 190,870. Pub. 9–21–65. Filed 4–13–64.

799,704. VISALL. National Automotive Parts Association. SN 196,975. Pub. 9–21–65. Filed 7–2–64.

Class 12—Construction Materials

799,705. ARMOR GARD AND DESIGN. Armorgard Corporation. SN 180,277. Pub. 9–21–65. Filed 11–1–63.

799,706. PERM-NENT. Asphalt Corporation of America. SN 196,494. Pub. 9–21–65. Filed 6–26–64.

799,707. PERM-NENT AND DESIGN. Asphalt Corporation of America. SN 196,495. Pub. 9–21–65. Filed 6–26–64.

799,708. KOCH-TRED AND DESIGN. H. Koch & Sons, Inc. SN 196,532. Pub. 9–21–65. Filed 6–26–64.

799,709. FLEX-O-LOK. AA Wire Products Company. SN 198,993. Pub. 9–21–65. Filed 8–3–64.

799,710. V AND DESIGN. Valley Dolomite Corporation. SN 201,899. Pub. 9–21–65. Filed 9–14–64.

799,711. MILDOOR AND DESIGN. Miller Industries, Inc. SN 209,367. Pub. 9–21–65. Filed 1–5–65.

799,712. PERMAGLAS. Bernard M. Guthrie, d.b.a. Bituminized Products Company. SN 210,122. Pub. 9–21–65. Filed 1–18–65.

799,713. MINERALON. Mineralite Limited. SN 210,220. Pub. 9–21–65. Filed 1–19–65.

799,714. STUK-UPS. Miracle Adhesives Corporation. SN 213,788. Pub. 9–21–65. Filed 3–10–65.

799,715. X-STRUDSTUD. Lorin B. Robinson. SN 213,801. Pub. 9–21–65. Filed 3–10–65.

799,716. C–17. Pocono Fabricators Inc. SN 214,553. Pub. 9–21–65. Filed 3–19–65.

799,717. G–8. Pocono Fabricators Inc. SN 214,554. Pub. 9–21–65. Filed 3–19–65.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

799,675. (See Class 1 for this trademark.)

799,718. GRAVEL GUARD. A. A. Doerr Mercantile Company. SN 199,661. Pub. 9–21–65. Filed 8–11–64.

799,719. AMSTEEL. Amsteel Fence Co., Inc. SN 200,228. Pub. 9–21–65. Filed 8–20–64.

799,720. CP ETC. AND DESIGN. Essex Wire Corporation. SN 202,428. Pub. 9–21–65. Filed 9–23–64.

799,721. BP AND DESIGN. Bergen Pipesupport Corp. SN 209,061. Pub. 9–21–65. Filed 12–30–64.

799,722. AGRINAUT. Agricultural Aviation Engineering Company. SN 211,971. Pub. 9–21–65. Filed 2–15–65.

799,723. AGRINAUT AND DESIGN. Agricultural Aviation Engineering Company. SN 211,972. Pub. 9–21–65. Filed 2–15–65.

799,724. CORD. Manganese Steel Forge Company. SN 212,553. Pub. 9–21–65. Filed 2–23–65.

799,725. CHAINWEVE. Manganese Steel Forge Company. SN 212,555. Pub. 9–21–65. Filed 2–23–65.

799,726. DUO-CHEK. Mission Valve and Pump Company. SN 212,558. Pub. 9–21–65. Filed 2–23–65.

799,727. IMPERIAL AND DESIGN. First Manufacturing Corporation. SN 212,763. Pub. 9–21–65. Filed 2–25–65.

799,728. BMC. Briggs Manufacturing Company. SN 214,832. Pub. 9–21–65. Filed 3–24–65.

799,729. MINI-SHRINK. General Zipper Corp. SN 214,863. Pub. 9–21–65. Filed 3–24–65.

799,730. MINI-SLIP. General Zipper Corp. SN 214,864. Pub. 9–21–65. Filed 3–24–65.

799,731. CONSOLETTE. Elkay Manufacturing Company. SN 214,967. Pub. 9–21–65. Filed 3–25–65.

Class 14 — Metals and Metal Castings and Forgings

799,732. HOEGANAES. Hoeganaes Sponge Iron Corporation. SN 215,417. Pub. 9–21–65. Filed 3–31–65.

799,733. INTALCO. Intalco Aluminum Corporation. SN 217,897. Pub. 9–21–65. Filed 5–3–65.

Class 15 — Oils and Greases

799,734. SPRAY LINE. Crown Industrial Products Company. SN 207,574. Pub. 9–21–65. Filed 12–7–64.

799,735. TL–120. Liquid Nitrogen Processing Corporation. SN 212,425. Pub. 9–21–65. Filed 2–19–65.

799,736. LUBETRAN. The Standard Oil Company. SN 214,927. Pub. 9–21–65. Filed 3–24–65.

799,737. EVEN-GLOW. Pride Service, Inc. SN 215,115. Pub. 9–21–65. Filed 3–26–65.

799,738. GASATANE. Pat Griffin, d.b.a. Pat Griffin Co. SN 215,211. Pub. 9–21–65. Filed 3–29–65.

Class 16 — Protective and Decorative Coatings

799,680. (See Class 4 for this trademark.)

Class 17 — Tobacco Products

799,739. F2. Bayuk Cigars Incorporated. SN 188,417. Pub. 9–21–65. Filed 3–11–64.

799,740. MURATTI AND DESIGN. The United Kingdom Tobacco Company, Limited, d.b.a. Muratti Sons & Co. SN 199,419. Pub. 9–21–65. Filed 8–6–64.

Class 18 — Medicines and Pharmaceutical Preparations

799,741. AZULFIDINE EN-TABS. Pharmacia Laboratories, Inc. SN 187,514. Pub. 9–21–65. Filed 2–26–64.

799,742. EASY-WAY. Moorman Manufacturing Company. SN 200,856. Pub. 9–21–65. Filed 8–28–64.

799,743. SIMMONS. Standard Laboratories, Inc. SN 203,438. Pub. 9–21–65. Filed 10–6–64.

799,744. ZINA-RAY. Devine's Remedies, Inc. SN 206,705. Pub. 9–21–65. Filed 11–23–64.

799,745. SUL-LITE. Philips Roxane, Inc. SN 206,875. Pub. 9–21–65. Filed 11–24–64.

799,746. REDUL. Farbenfabriken Bayer Aktiengesellschaft. SN 207,954. Pub. 9–21–65. Filed 12–11–64.

799,747. VITALENE. Big Kernel Pet Foods, Inc. SN 209,578. Pub. 9–21–65. Filed 1–8–65.

799,748. NUMORFONA. Endo Laboratories Inc. SN 210,662. Pub. 9–21–65. Filed 1–26–65.

799,749. THYROFAC. American Cyanamid Company. SN 212,941. Pub. 9–21–65. Filed 3–1–65.

799,750. HAKRITON. Lemmon Pharmacal Company. SN 213,146. Pub. 9–21–65. Filed 3–2–65.

799,751. GOLDEN AND DESIGN. Michael Alan Posen, d.b.a. Golden Pharmaceutical Co. SN 213,242. Pub. 9–21–65. Filed 3–3–65.

799,752. AMCREST AND DESIGN. Aimcee Wholesale Corporation. SN 213,507. Pub. 9–21–65. Filed 3–8–65.

799,753. MEPROSULE. Carter Products, Inc. SN 216,663. Pub. 9–21–65. Filed 4–16–65.

799,754. DEMESO. Merck & Co., Inc. SN 217,477. Pub. 9–21–65. Filed 4–27–65.

Class 19 — Vehicles

799,755. AVCOLD/UNI-REEF. Avco Corporation. SN 193,257. Pub. 9–21–65. Filed 5–12–64.

799,756. LANDSURFER. Micro Dynamics. SN 194,903. Pub. 9–21–65. Filed 6–4–64.

799,757. THE LUX CRAFT. D. B. Snider, Inc. SN 196,313. Pub. 9–21–65. Filed 6–23–64.

799,758. SEAFLIGHT. Seaflight S.p.A. SN 196,814. Pub. 9–21–65. Filed 6–30–64.

799,759. VISALL. National Automotive Parts Association. SN 196,976. Pub. 9–21–65. Filed 7–2–64.

799,760. BLUE LABEL AND DESIGN. Laber Spring & Electric Car Corp. SN 201,208. Pub. 9–21–65. Filed 9–3–64.

799,761. HURET. Huret et ses Fils, Societe Anonyme Francaise. SN 201,943. Pub. 9–21–65. Filed 9–15–64.

799,762. EP. Evans Products Company. SN 209,502. Pub. 9–21–65. Filed 1–7–65.

799,763. MISCELLANEOUS DESIGN. North American Aviation, Inc. SN 211,665. Pub. 9–21–65. Filed 2–9–65.

799,764. KH AND DESIGN. Kelsey-Hayes Company. SN 211,818. Pub. 9–21–65. Filed 2–11–65.

Class 20 — Linoleum and Oiled Cloth

799,765. NUANCE. Kentile Floors Inc. SN 213,879. Pub. 9–21–65. Filed 3–11–65.

799,766. FLEURELLE. Kentile Floors Inc. SN 213,880. Pub. 9–21–65. Filed 3–11–65.

Class 21 — Electrical Apparatus, Machines, and Supplies

799,678. (See Class 2 for this trademark.)

799,767. SINTRONIC. Arthur A. Singer. SN 173,709. Pub. 9–21–65. Filed 7–24–63.

799,768. MISCELLANEOUS DESIGN. Warnecke Electron Tubes, Inc. SN 194,262. Pub. 9–21–65. Filed 5–25–64.

799,769. TK AND DESIGN. Ferro Corporation. SN 195,984. Pub. 9–21–65. Filed 6–18–64.

799,770. ZENITH. Zenith Radio Corporation. SN 196,219. Pub. 9–21–65. Filed 6–22–64.

799,771. TEL-A-GROUP. Zenith Radio Corporation. SN 196,220. Pub. 9–21–65. Filed 6–22–64.

799,772. OK. O.K. Tire and Rubber Co. SN 199,095. Pub. 9–21–65. Filed 8–3–64.

799,773. GENREED. General Reed Company. SN 206,360. Pub. 9–21–65. Filed 11–17–64.

799,774. ASTROLUX. Karl Heitz, d.b.a. K. Heitz Import Co. SN 206,620. Pub. 9–21–65. Filed 11–20–64.

799,775. VEMALINE AND DESIGN. Vemaline Products Company. SN 207,682. Pub. 9–21–65. Filed 12–7–64.

799,776. AWAC. Copperweld Steel Company. SN 207,943. Pub. 9–21–65. Filed 12–11–64.

799,777. SPARTAN. Thomas Industries Inc. SN 208,143. Pub. 9–21–65. Filed 12–14–64.

Class 22 — Games, Toys, and Sporting Goods

799,778. BASEBALL STRATEGY. The Avalon Hill Company. SN 153,366. Pub. 9–21–65. Filed 9–18–62.

799,779. FOOTBALL STRATEGY. The Avalon Hill Company. SN 153,367. Pub. 9–21–65. Filed 9–18–62.

799,780. SCOOT-KIT. Globe Skate Corporation, assignee of Globe-Union Inc. SN 178,912. Pub. 6–15–65. Filed 10–14–63.

799,781. ISOMETER. W. J. Volt Rubber Corp. SN 187,055. Pub. 9–21–65. Filed 2–19–64.

799,782. "SQUIGGLE." Stuart, Inc., assignee of Gerard E. Copelli, d.b.a. Jay Cee Novelty Co. SN 200,549. Pub. 9–21–65. Filed 8–25–64.

799,783. HILLHOPPER. Shirley Stairs, d.b.a. Hillhopper Originals. SN 209,115. Pub. 9–21–65. Filed 12–30–64.

799,784. LINOPRINTER. Mattel, Inc. SN 211,373. Pub. 9–21–65. Filed 2–4–65.

799,785. ZIT. Czela North, d.b.a. Czela. SN 211,420. Pub. 9–21–65. Filed 2–5–65.

799,786. C.C.M. Canada Cycle and Motor Company Limited. SN 211,625. Pub. 9–21–65. Filed 2–9–65.

799,787. PILLOW PETS. R. Dakin & Company. SN 211,633. Pub. 9–21–65. Filed 2–9–65.

799,788. MULTI-PISTOL 09. De Luxe Reading Corporation. SN 211,880. Pub. 9–21–65. Filed 2–12–65.

799,789. CUSHION CONTROL. A. G. Spalding & Bros. Inc. SN 211,937. Pub. 9–21–65. Filed 2–12–65.

799,790. COOKIE TOPPER'S. De Luxe Reading Corporation. SN 212,198. Pub. 9–21–65. Filed 2–17–65.

799,791. WASP. The Ohio Art Company. SN 212,235. Pub. 9–21–65. Filed 2–17–65.

799,792. SUSY. The Ohio Art Company. SN 212,236. Pub. 9–21–65. Filed 2–17–65.

799,793. HI-REV. Mattel, Inc. SN 212,339. Pub. 9–21–65. Filed 2–18–65.

799,794. THINGMAKER. Mattel, Inc. SN 212,340. Pub. 9–21–65. Filed 2–18–65.

799,795. PLAYNTS. Rainbow Crafts, Inc. SN 212,584. Pub. 9–21–65. Filed 2–23–65.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

799,796. DESIGN OF 2-DIMENSIONAL THREE POINTED STAR. Daimler-Benz Aktiengesellschaft. SN 23,986. Pub. 9–21–65. Filed 2–7–57.

799,797. BERG. Berg Equipment Corporation. SN 199,652. Pub. 9–21–65. Filed 8–11–64.

799,798. SOABAR. Soabar Company. SN 199,765. Pub. 9–21–65. Filed 8–12–64.

799,799. AMMCO. American Marine and Machinery Co., Inc. SN 199,784. Pub. 9–21–65. Filed 8–13–64.

799,800. CYCLONIAN AND DESIGN. Bayonne Barrel & Drum Co. SN 199,872. Pub. 9–21–65. Filed 8–14–64.

799,801. CARTONETTA. Hofliger & Karg. SN 200,133. Pub. 9–21–65. Filed 8–17–64.

799,802. HYDRAMITE. Tangyes Limited. SN 200,214. Pub. 9–21–65. Filed 8–19–64.

799,803. CARINTIC. Carinthia-Elektrogeräte Gesellschaft m.b.H. SN 202,355. Pub. 9–21–65. Filed 9–22–64.

799,804. SHREDBASKIT. Michael Lith Sales Corp. SN 203,108. Pub. 9–21–65. Filed 10–1–64.

799,805. SHREDBASKET. Michael Lith Sales Corp. SN 203,109. Pub. 9–21–65. Filed 10–1–64.

799,806. SUPERCHOKE. Apparatus Controls. SN 203,855. Pub. 9–21–65. Filed 10–13–64.

799,807. LINDGREN. Lindgren & Sons Machine Co., Inc. SN 204,173. Pub. 9–21–65. Filed 10–16–64.

799,808. SNIP-N-TIE. Royal Industries, Inc. SN 204,293. Pub. 9–21–65. Filed 10–19–64.

799,809. D-H HYDRAMEC. Dean Hill Corporation. SN 206,240. Pub. 9–21–65. Filed 11–16–64.

799,810. POS-ADJUST. Merkle Metal Products Corp. SN 209,619. Pub. 9–21–65. Filed 1–8–65.

799,811. RHINO. Norco Sales Company. SN 209,713. Pub. 9–21–65. Filed 1–11–65.

799,812. TIMBER TIGER (JR). Frick Company. SN 209,848. Pub. 9–21–65. Filed 1–13–65.

799,813. ROTOLIN. Rotolin Bearings Limited. SN 210,988. Pub. 9–21–65. Filed 1–29–65.

799,814. VIBROTOR. Martin Engineering Company. SN 211,907. Pub. 9–21–65. Filed 2–12–65.

799,815. "TANGMASTER." Karl A. Nelse, Inc. SN 214,004. Pub. 9–21–65. Filed 3–12–65.

799,816. TUF-LOC. Plas-Steel Products, Inc. SN 215,002. Pub. 9–21–65. Filed 3–25–65.

799,817. COLORITE. Uarco Incorporated. SN 215,028. Pub. 9–21–65. Filed 3–25–65.

799,818. GUARDIAN. Uarco Incorporated. SN 215,029. Pub. 9–21–65. Filed 3–25–65.

799,819. GUARDIAN RECORDER. Uarco Incorporated. SN 215,030. Pub. 9–21–65. Filed 3–25–65.

799,820. SPARTAN. Conco Engineering Works, Inc. SN 215,389. Pub. 9–21–65. Filed 3–31–65.

799,821. G AND DESIGN. Gainesville Machine Company, Inc. SN 215,402. Pub. 9–21–65. Filed 3–31–65.

799,822. ARTAG ETC. AND DESIGN. Artag Plastics Corporation. SN 216,127. Pub. 9–21–65. Filed 4–9–65.

Class 26 — Measuring and Scientific Appliances

799,683. (See Class 6 for this trademark.)

799,823. DESIGN OF THREE POINTED STAR IN CIRCLE. Daimler-Benz Aktiengesellschaft. SN 45,035. Pub. 9–21–65. Filed 1–31–58.

799,824. TOMORROW'S RESEARCH TODAY. Polan Industries Incorporated. SN 146,413. Pub. 9–21–65. Filed 6–7–62.

799,825. SANITARY. Sanitary Scale Company. SN 172,106. Pub. 9–21–65. Filed 6–28–63.

799,826. LOG FILE AND DESIGN. Dakota Microfilm Service, Inc. SN 174,648. Pub. 9–21–65. Filed 8–8–63.

799,827. RD INSTRUMENTS AND DESIGN. The Hickok Electrical Instrument Company. SN 183,324. Pub. 9–21–65. Filed 12–20–63.

799,828. MIC-O-FLOAT. Instruments, Inc. SN 186,947. Pub. 9–21–65. Filed 2–18–64.

799,829. PNEUMO-CENTRIC. Pneumo Precision Products, Inc. SN 195,323. Pub. 9–21–65. Filed 6–10–64.

799,830. THERMAL ARC. Thermal Dynamics Corporation. SN 198,597. Pub. 9–21–65. Filed 7–27–64.

799,831. COMP/SET. The Bunker-Ramo Corporation. SN 199,017. Pub. 9–21–65. Filed 8–3–64.

799,832. FOTO-FAX. Foto-Fax Company, Inc. SN 201,024. Pub. 9–21–65. Filed 9–1–64.

799,833. VU-POINT. Rheem Electronics Corporation. SN 201,305. Pub. 9–21–65. Filed 9–4–64.

799,834. THYRODEX. Picker X-Ray Corporation. SN 204,007. Pub. 9–21–65. Filed 10–14–64.

799,835. DIAMONITE. United States Ceramic Tile Company. SN 204,327. Pub. 9–21–65. Filed 10–19–64.

799,836. IMPRO. Impro Corporation. SN 207,496. Pub. 9–21–65. Filed 12–4–64.

799,837. IMPRO AND DESIGN. Impro Corporation. SN 207,497. Pub. 9–21–65. Filed 12–4–64.

799,838. SINELINE. Westcott Heath Jr., d.b.a. Westcott Electronics. SN 208,018. Pub. 9–21–65. Filed 12–11–64.

799,839. PARK AVENUE. Park Industries, Inc. SN 210,039. Pub. 9–21–65. Filed 1–15–65.

799,840. CLIMET. Climet Instruments, Inc. SN 210,742. Pub. 9–21–65. Filed 1–27–65.

799,841. CLIMET AND DESIGN. Climet Instruments, Inc. SN 210,743. Pub. 9–21–65. Filed 1–27–65.

799,842. DIGISYN. Wayne-George Corporation. SN 211,603. Pub. 9–21–65. Filed 2–8–65.

799,843. W/G. Wayne-George Corporation. SN 211,604. Pub. 9–21–65. Filed 2–8–65.

799,844. AGFATRON. Agfa Aktiengesellschaft. SN 211,790. Pub. 9–21–65. Filed 2–11–65.

799,845. UNION CARBIDE AND DESIGN. Union Carbide Corporation. SN 212,466. Pub. 9–21–65. Filed 2–19–65.

799,846. CDC. Control Data Corporation. SN 213,532. Pub. 9–21–65. Filed 3–8–65.

799,847. FLOTRAC AND DESIGN. Barton Instrument Corporation. SN 214,320. Pub. 9–21–65. Filed 3–17–65.

799,848. DEKACON. Harris Lee Cooperman, d.b.a. HLC Engineering Company. SN 214,331. Pub. 9–21–65. Filed 3–17–65.

799,849. ACCURAY. Industrial Nucleonics Corporation. SN 214,340. Pub. 9–21–65. Filed 3–17–65.

799,850. MICROCHAIN. Fairchild Camera and Instrument Corporation. SN 214,433. Pub. 9–21–65. Filed 3–18–65.

799,851. AUTORANGE. Toledo Scale Corporation. SN 214,585. Pub. 9–21–65. Filed 3–19–65.

799,852. MEMOR. General Aniline & Film Corporation. SN 215,865. Pub. 9–21–65. Filed 4–6–65.

799,853. SPEED-X 'R.' General Aniline & Film Corporation. SN 215,866. Pub. 9–21–65. Filed 4–6–65.

799,854. ANSCOPAN. General Aniline & Film Corporation. SN 215,962. Pub. 9–21–65. Filed 4–7–65.

Class 27 — Horological Instruments

799,855. DISCOTHEQUE. Benrus Watch Company, Inc. SN 205,993. Pub. 9–21–65. Filed 11–12–64.

799,856. DAYTIMER AND DESIGN. Syracuse Ornamental Co., Inc. SN 211,319. Pub. 9–21–65. Filed 2–3–65.

Class 28 — Jewelry and Precious-Metal Ware

799,857. SK SERGE KIRCHHOFER AND DESIGN. Wilhelm Anger, d.b.a. Serge Kirchhofer. SN 206,121. Pub. 9–21–65. Filed 11–13–64.

799,858. LC. Sarah Coventry, Inc. SN 215,709. Pub. 9–21–65. Filed 4–5–65.

799,859. BURT CASSELL. Burt Cassell, Inc. SN 218,067. Pub. 9–21–65. Filed 5–5–65.

799,860. PERMA CLAD. Davinci Creations, Inc. SN 218,623. Pub. 9–21–65. Filed 5–12–65.

Class 29 — Brooms, Brushes, and Dusters

799,861. SKILCRAFT QUALITY BLIND-MADE PRODUCTS AND DESIGN. National Industries for the Blind. SN 202,193. Pub. 9–21–65. Filed 9–3–64.

Class 30 — Crockery, Earthenware, and Porcelain

799,862. SPARTAN. United States Ceramic Tile Company. SN 203,446. Pub. 9–21–65. Filed 10–6–64.

Class 31 — Filters and Refrigerators

799,863. KLEEN-KOOL. The Whipper-Clipper Co., Inc. SN 169,092. Pub. 9–21–65. Filed 5–16–63.

799,864. SENTRY. Worthington Corporation. SN 183,193. Pub. 9–21–65. Filed 12–17–63.

799,865. AUTO-JET. Central Hadley Corporation, assignee of United States Filter Corporation. SN 193,307. Pub. 9–21–65. Filed 5–12–64.

799,866. CHROMEDIA. W. & R. Balston, Limited. SN 211,492. Pub. 9–21–65. Filed 2–8–65.

Class 32 — Furniture and Upholstery

799,867. SPACIO AND DESIGN. Aktiebolaget Erland Ottosson. SN 179,984. Pub. 9–21–65. Filed 10–29–63.

799,868. KITCHENEZE CABINETS AND DESIGN. E & E Manufacturing Company. SN 186,240. Pub. 9–21–65. Filed 2–7–64.

799,869. WEDGE-A-GATE. Port-A-Crib, Inc. SN 199,888. Pub. 9–21–65. Filed 8–6–64.

799,870. KIDDY-UP. George Coriell. SN 203,580. Pub. 9–21–65. Filed 10–8–64.

799,871. COOL STOOL. Buddy Schoellkopf Products, Inc. SN 205,616. Pub. 9–21–65. Filed 11–5–64.

799,872. VENTURE. K.C.K. Holding Company, d.b.a. King C Industries, Inc. SN 207,809. Pub. 9–21–65. Filed 12–9–64.

799,873. GLAMOURFOAM. The E. B. Malone Corporation. SN 209,522. Pub. 9–21–65. Filed 1–7–65.

799,874. MANAGEMENT COLLECTION. Drexel Enterprises, Inc. SN 212,201. Pub. 9–21–65. Filed 2–17–65.

799,875. CONGRESSIONAL COLLECTION. Drexel Enterprises, Inc. SN 212,202. Pub. 9–21–65. Filed 2–17–65.

799,876. FIRST EDITION. The Lane Company, Inc. SN 213,025. Pub. 9–21–65. Filed 3–1–65.

799,877. LAZY SHU-SAN. Glenda R. Srago, d.b.a. Glenn Industries. SN 213,189. Pub. 9–21–65. Filed 3–1–65.

799,878. SUP-R-POSTURE. Restonic Corporation. SN 213,603. Pub. 9–21–65. Filed 3–8–65.

Class 34 — Heating, Lighting, and Ventilating Apparatus

799,879. SANIVENT. Aktiebolaget Svenska Fläktfabrieken. SN 181,292. Pub. 9–21–65. Filed 11–18–63.

799,880. WIDE-RANGE. Maxon Premix Burner Company, Inc. SN 184,083. Pub. 9–21–65. Filed 1–6–64.

799,881. CARBOCOAT. General Motors Corporation. SN 187,190. Pub. 9–21–65. Filed 2–21–64.

799,882. OUR OWN. Embassy Industries, Inc. SN 187,657. Pub. 9–21–65. Filed 2–28–64.

799,883. INDUSTRIAL AIR AND DESIGN. The Harvey P. Bertram Company. SN 189,856. Pub. 9–21–65. Filed 3–30–64.

799,884. MASTER FAN. H. K. Porter Company, Inc., assignee of Master Fan Corp. SN 193,563. Pub. 9–21–65. Filed 5–15–64.

799,885. WELDSTAR. Weldstar Company. SN 194,937. Pub. 9–21–65. Filed 6–4–64.

799,886. SKYLENS. United Lighting and Ceiling Co. SN 201,767. Pub. 9–21–65. Filed 9–11–64.

799,887. UJI AND DESIGN. Universal Jet Industries, Inc. SN 209,822. Pub. 9–21–65. Filed 1–12–65.

799,888. ABBEY ETNA AND DESIGN. Abbey Etna Machine Company. SN 210,397. Pub. 9–21–65. Filed 1–22–65.

799,889. SILENT-FIN. K & D Industries, Inc. SN 210,791. Pub. 9–21–65. Filed 1–27–65.

799,890. 2–23. Eutectic Welding Alloys Corporation. SN 210,866. Pub. 9–21–65. Filed 1–28–65.

799,891. NESTEMP. International Telephone and Telegraph Corporation. SN 211,530. Pub. 9–21–65. Filed 2–8–65.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

799,892. DOCAL 110. Douglas Oil Company of California. SN 207,277. Pub. 9–21–65. Filed 12–2–64.

Class 36 — Musical Instruments and Supplies

799,893. LOREN RECORDS AND DESIGN. Loren Phelps, d.b.a. Loren Phelps Enterprises. SN 204,283. Pub. 9–21–65. Filed 10–19–64.

799,894. $ MONEY $. Robert E. Money. SN 208,692. Pub. 9–21–65. Filed 12–22–64.

Class 37 — Paper and Stationery

799,895. CLEARWEAVE. Weyerhaeuser Company. SN 197,005. Pub. 9–21–65. Filed 7–2–64.

799,896. KILMORY. Weyerhaeuser Company. SN 197,008. Pub. 9–21–65. Filed 7–2–64.

799,897. LOUVAIN. Weyerhaeuser Company. SN 197,009. Pub. 9–21–65. Filed 7–2–64.

799,898. ANDORRA. Weyerhaeuser Company. SN 197,012. Pub. 9–21–65. Filed 7–2–64.

799,899. CAROUSEL. Weyerhaeuser Company. SN 197,014. Pub. 9–21–65. Filed 7–2–64.

799,900. DEVON. Weyerhaeuser Company. SN 197,015. Pub. 9–21–65. Filed 7–2–64.

799,901. WEYERWHITE. Weyerhaeuser Company. SN 197,016. Pub. 9–21–65. Filed 7–2–64.

799,902. LOGAN. The Mead Corporation. SN 198,570. Pub. 9–21–65. Filed 7–27–64.

799,903. SHIELD (DESIGN). Nationwide Papers Incorporated. SN 205,324. Pub. 9–21–65. Filed 11–2–64.

799,904. GRAYS HARBOR PAPERS. Hammermill Paper Company. SN 207,042. Pub. 9–21–65. Filed 11–27–64.

799,905. WIT 'N' WISDOM. J. Ford & Co. Limited. SN 207,483. Pub. 9–21–65. Filed 12–4–64.

Class 38 — Prints and Publications

799,906. SHIELD (DESIGN). Eucharistic Crusade, Inc. SN 206,022. Pub. 9–21–65. Filed 11–12–64.

799,907. SIMPLE SYMBOLS AND DESIGN. James Selwyn Stanley. SN 207,246. Pub. 9–21–65. Filed 12–1–64.

799,908. TARZAN. Edgar Rice Burroughs, Inc. SN 210,265. Pub. 9–21–65. Filed 1–21–65.

799,909. MISCELLANEOUS DESIGN. Canadian Corporation for the 1967 World Exhibition. SN 212,926. Pub. 9–21–65. Filed 3–2–65.

799,910. A HARPER & ROW DISSECTOGRAPH AND DESIGN. Harper & Row Publishers, Incorporated. SN 214,870. Pub. 9–21–65. Filed 3–24–65.

799,911. SCHOLASTIC. Scholastic Magazines, Inc. SN 215,275. Pub. 9–21–65. Filed 3–29–65.

799,912. LOCATOME. John B. Rothrock. SN 215,898. Pub. 9–21–65. Filed 4–6–65.

799,913. LC AND DESIGN. Lyons & Carnahan. SN 216,316. Pub. 9–21–65. Filed 4–12–65.

Class 39 — Clothing

799,914. FLEX-WEIGHTS ETC. AND DESIGN. French, Shriner & Urner Manufacturing Co. SN 177,245. Pub. 9–21–65. Filed 9–18–63.

799,915. EVE. Erwin Harvith. SN 196,377. Pub. 9–21–65. Filed 6–24–64.

799,916. RAMBLER. Boss Manufacturing Company. SN 198,326. Pub. 9–21–65. Filed 7–22–64.

799,917. JAYVEES. E. T. Wright & Co., Inc. SN 200,129. Pub. 9–21–65. Filed 8–18–64.

799,918. VIMENET AND DESIGN. Bill & Caldwell, Inc. SN 203,252. Pub. 9–21–65. Filed 10–5–64.

799,919. BLACK BEAUTY AND DESIGN. Tex-Sun Glove Company. SN 206,776. Pub. 9–21–65. Filed 11–23–64.

799,920. BLACK KNIGHT AND DESIGN. Tex-Sun Glove Company. SN 206,777. Pub. 9–21–65. Filed 11–23–64

799,921. PATRICK DE BARENTZEN. Patrick de Barentzen. SN 209,059. Pub. 9–21–65. Filed 12–30–64.

799,922. RAWLINGS. The Rawlings Corporation. SN 209,535. Pub. 9–21–65. Filed 1–7–65.

799,923. APPALOOSA. Karman Incorporated. SN 209,608. Pub. 9–21–65. Filed 1–8–65.

799,924. STEP-UPS. Ettelbrick Shoe Company. SN 211,517. Pub. 9–21–65. Filed 2–8–65.

799,925. DOUBLE T. International Latex Corporation. SN 211,732. Pub. 9–21–65. Filed 2–10–65.

799,926. THE LIMBERS. Vanity Fair Mills, Inc. SN 211,773. Pub. 9–21–65. Filed 2–10–65.

799,927. SMALL FAIR. Vanity Fair Mills, Inc. SN 211,776. Pub. 9–21–65. Filed 2–10–65.

799,928. SALLY SCHRANK. M. C. Schrank Company. SN 212,251. Pub. 9–21–65. Filed 2–17–65.

799,929. LIVING. International Latex Corporation. SN 212,414. Pub. 9–21–65. Filed 2–19–65.

799,930. SPRINGMAID AND DESIGN. The Springs Cotton Mills. MULTIPLE CLASS (Classes 39 and 42). SN 212,843. Pub. 9–21–65. Filed 2–26–65.

799,931. DIHEDRAL AND DESIGN. E. D. Bullard Company. SN 214,423. Pub. 9–21–65. Filed 3–18–65.

799,932. SPLASH SHIRT. Cowman-Campbell Paint Co., Inc. SN 214,958. Pub. 9–21–65. Filed 3–25–65.

799,933. VECTRA. National Plastic Products Company, Inc., d.b.a. The Vectra Company. SN 216,099. Pub. 9–21–65. Filed 4–8–65.

799,934. MASTER NED. Robert A. Clair Company, Inc. SN 216,267. Pub. 9–21–65. Filed 4–12–65.

799,935. LINE RUSHER. J. C. Penney Company. SN 216,334. Pub. 9–21–65. Filed 4–12–65.

799,936. PENN-PREST. J. C. Penney Company. SN 216,335. Pub. 9–21–65. Filed 4–12–65.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

799,930. (See Class 39 for this trademark.)

799,937. GRIP-TITE. Bell Industries, Inc. SN 172,146. Pub. 9–21–65. Filed 7–1–63.

799,938. TM TREND MILLS AND DESIGN. Trend Mills, Inc. SN 211,758. Pub. 9–21–65. Filed 2–10–65.

Class 43 — Thread and Yarn

799,939. LOOP 'D' LOOP AND DESIGN. Melrose Yarn Co., Inc. SN 202,609. Pub. 9–21–65. Filed 9–24–64.

Class 44 — Dental, Medical, and Surgical Appliances

799,940. ROWLAX. Rowlax Laboratories Co. SN 190,833. Pub. 9–21–65. Filed 4–10–64.

799,941. K MART AND DESIGN. S. S. Kresge Company. SN 190,977. Pub. 9–21–65. Filed 4–13–64.

799,942. JOHNSON'S. Johnson & Johnson. SN 201,602. Pub. 9–21–65. Filed 9–10–64.

Class 45 — Soft Drinks and Carbonated Waters

799,943. BELMEADE. Brown County Manufacturing Company. SN 191,906. Pub. 9–21–65. Filed 4–24–64.

799,944. FRECKLE FACE STRAWBERRY. The Pillsbury Company. SN 196,301. Pub. 9–21–65. Filed 6–23–64.

799,945. LOUD-MOUTH LIME. The Pillsbury Company. SN 196,302. Pub. 9–21–65. Filed 6–23–64.

799,946. CARTOON FIGURE (DESIGN). Franksville, Inc. SN 197,279. Pub. 9–21–65. Filed 7–7–64.

Class 46 — Foods and Ingredients of Foods

799,947. PRIMEATIZE. Primeatize, Inc. SN 137,557. Pub. 9–21–65. Filed 2–8–62.

799,948. BBFC AND DESIGN. B.B. Foods Corporation. SN 177,624. Pub. 9–21–65. Filed 9–24–63.

799,949. KURO-MAME TAKA-RANI. Nishimoto Trading Co., Ltd., of Hawaii, d.b.a. Nishimoto Trading Co., Ltd. SN 179,918. Pub. 9–21–65. Filed 10–28–63.

799,950. DAISY AND DESIGN. Kenneth D. Cheesman, d.b.a. Seaboard Citrus. SN 180,370. Pub. 9–21–65. Filed 11–4–63.

799,951. OLD WORLD AND DESIGN. National Biscuit Company. SN 186,881. Pub. 9–21–65. Filed 2–17–64.

799,952. CIRCLE, CROSS AND PANEL (DESIGN). Laiterie des Fermiers Reunis. SN 187,497. Pub. 9–21–65. Filed 2–26–64.

799,953. GPC AND DESIGN. Grain Processing Corporation. SN 188,439. Pub. 9–21–65. Filed 3–11–64.

799,954. DESIGN OF TURKEY. Bill and Marve's Turkey Farm Hatchery, d.b.a. Bill and Marve's Turkey Farms. SN 191,492. Pub. 9–21–65. Filed 4–20–64.

799,955. MISCELLANEOUS DESIGN. Cornnuts Inc. SN 194,579. Pub. 9–21–65. Filed 6–1–64.

799,956. CARNIVAL. Harder, Inc. SN 197,884. Pub. 9–21–65. Filed 7–15–64.

799,957. ROYAL PRINCE AND DESIGN. Princeville Canning Company. SN 198,212. Pub. 9–21–65. Filed 7–20–64.

799,958. MR. PEANUT AND DESIGN. Standard Brands Incorporated. SN 198,442. Pub. 9–21–65. Filed 7–23–64.

799,959. KEYSTONE (DESIGN). H. J. Heinz Company. SN 198,736. Pub. 9–21–65. Filed 7–29–64.

799,960. BROADWAY AND DESIGN. Broadway Confections. SN 199,015. Pub. 9–21–65. Filed 8–3–64.

799,961. CRESCA AND DESIGN. Cresca Company, Inc. SN 199,722. Pub. 9–21–65. Filed 8–12–64.

799,962. MOOLA KOOLA AND DESIGN. The Borden Company. SN 200,147. Pub. 9–21–65. Filed 8–19–64.

799,963. JAR LID (DESIGN). International Milling Company Inc., d.b.a. Kretschmer Wheat Germ Products Division of International Milling Company, Inc. SN 200,441. Pub. 9–21–65. Filed 8–24–64.

799,964. PROTOMEAL. Dr. William Abel, d.b.a. HI-Protein Food Products Co. SN 200,887. Pub. 9–21–65. Filed 8–31–64.

799,965. JOLLY ROB. Clover Club Foods Company. SN 201,187. Pub. 9–21–65. Filed 9–3–64.

799,966. ORCAS. San Juan Islands Cannery. SN 204,412. Pub. 9–21–65. Filed 10–20–64.

799,967. HANKY PANKY. William S. Schneider, Arthur P. Corella, and Vincent Wayne Rodgers (joint owners), d.b.a. Hanky Panky Co. SN 204,926. Pub. 9–21–65. Filed 10–27–64.

799,968. WHAT'S COOKIN' AND DESIGN. Cook Produce, Inc. SN 206,518. Pub. 9–21–65. Filed 11–19–64.

799,969. COCK O' THE WALK BOUNCE AND DESIGN. Tri-Valley Growers. SN 207,759. Pub. 9–21–65. Filed 12–8–64.

799,970. JAY-R. Jay-R Co. SN 208,268. Pub. 9–21–65. Filed 12–16–64.

799,971. MOUNTAIN MAIDS. Bobby Chiong, d.b.a. K & C Co. SN 208,340. Pub. 9–21–65. Filed 12–17–64.

799,972. CCG AND DESIGN. California Canners and Growers, d.b.a. California Canners & Growers. SN 208,539. Pub. 9–21–65. Filed 12–21–64.

799,973. WRIGLEY'S P.K AND DESIGN. Wm. Wrigley Jr. Company. SN 209,471. Pub. 9–21–65. Filed 1–6–65.

799,974. A & P AND DESIGN. The Great Atlantic & Pacific Tea Company, Inc. SN 210,010. Pub. 9–21–65. Filed 1–15–65.

799,975. TIMES SQUARE AND DESIGN. Ben F. Adamek, d.b.a. Empire Packing Company. SN 212,477. Pub. 9–21–65. Filed 2–23–65.

799,976. SHAKE-MATE. General Foods Corporation. SN 212,527. Pub. 9–21–65. Filed 2–23–65.

799,977. KETTLE HOUSE AND DESIGN. Kettle Products Corporation. SN 212,546. Pub. 9–21–65. Filed 2–23–65.

799,978. DELPHIA. S and W Fine Foods, Inc. SN 212,592. Pub. 9–21–65. Filed 2–23–65.

799,979. PICTURE PERFECT. Scot Lad Foods, Inc. SN 212,703. Pub. 9–21–65. Filed 2–24–65.

799,980. SCOT PRIDE. Scot Lad Foods, Inc. SN 212,704. Pub. 9–21–65. Filed 2–24–65.

799,981. STOCK-GRO. Simmons Milk Products, Inc. SN 212,907. Pub. 9–21–65. Filed 2–26–65.

799,982. DECO-WRITER. The Pillsbury Company. SN 213,467. Pub. 9–21–65. Filed 3–5–65.

799,983. ROYAL COACH AND DESIGN. Daddato Bros. SN 216,274. Pub. 9–21–65. Filed 4–12–65.

Class 47 — Wines

799,984. T-BIRD. E. & J. Gallo Winery. SN 211,642. Pub. 9–21–65. Filed 2–9–65.

799,985. MARDI GRAS. Puerto Rico Distillers, Inc. SN 211,840. Pub. 9–21–65. Filed 2–11–65.

Class 48 — Malt Beverages and Liquors

799,986. COLT AND DESIGN. The National Brewing Company. SN 188,135. Pub. 9–21–65. Filed 3–6–64.

Class 49 — Distilled Alcoholic Liquors

799,987. CANADIAN HEIRLOOM. The Fleischmann Distilling Corporation. SN 205,808. Pub. 9–21–65. Filed 11–9–64.

799,988. ADMIRAL. Schenley Distillers, Inc. SN 212,593. Pub. 9–21–65. Filed 2–23–65.

Class 50 — Merchandise Not Otherwise Classified

799,989. RESILOFLEX AND DESIGN. General Plastics Corporation. SN 183,051. Pub. 12–15–64. Filed 12–16–63.

799,990. FRAME-PAK. Jo-Han Models, Inc. SN 200,191. Pub. 9–21–65. Filed 8–19–64.

799,991. CLEARFLOAT. Clearfloat, Inc. SN 202,916. Pub. 9–21–65. Filed 9–29–64.

799,992. MISCELLANEOUS DESIGN. W. G. Grant & Company Limited. SN 204,380. Pub. 9–21–65. Filed 10–20–64.

799,993. VALIANT. Midwest Hanger Co. SN 219,803. Pub. 9–21–65. Filed 5–26–65.

Class 51 — Cosmetics and Toilet Preparations

799,994. COROLYS. L'Oreal. SN 197,894. Pub. 9–21–65. Filed 7–15–64.

799,995. BI-OXYNE. Produits d'Hygiene Buccale. SN 201,868. Pub. 9–21–65. Filed 9–14–64.

799,996. VIDAL. A. Vidal S.A.S. SN 212,615. Pub. 9–21–65. Filed 2–23–65.

799,997. FUN LOVING. Clairol Incorporated. SN 212,741. Pub. 9–21–65. Filed 2–25–65.

799,998. LOVING CUP. Clairol Incorporated. SN 212,742. Pub. 9–21–65. Filed 2–25–65.

799,999. LOVING FEEL. Clairol Incorporated. SN 212,743. Pub. 9–21–65. Filed 2–25–65.

800,000. LOVING. Clairol Incorporated. SN 212,745. Pub. 9–21–65. Filed 2–25–65.

Class 52 — Detergents and Soaps

799,680. (See Class 4 for this trademark.)

800,001. SPEEDET. Puritan Chemical Company. SN 192,619. Pub. 9–21–65. Filed 5–4–64.

800,002. GREEN MAGIC. Melrose Chemicals, Inc. SN 194,897. Pub. 9–21–65. Filed 6–4–64.

800,003. RECON. Fischer-Lang & Company, Inc. SN 212,301. Pub. 9–21–65. Filed 2–18–65.

800,004. NAZE. Emcor, Inc. SN 212,399. Pub. 9–21–65. Filed 2–19–65.

800,005. LOGOSTAT. Bee Chemical Company. SN 213,199. Pub. 9–21–65. Filed 3–3–65.

Service Marks

Class 100 — Miscellaneous

800,006. FANCIFUL FIGURE (DESIGN). Robert D. Rodwell & Associates, Inc. SN 166,121. Pub. 9–21–65. Filed 4–4–63.

800,007. TABLES EXTRAORDINAIRE. National Assistance League. SN 178,953. Pub. 9–7–65. Filed 10–14–63.

800,008. HORNE'S ETC. AND DESIGN. Horne's Enterprises, Inc. SN 186,535. Pub. 9–21–65. Filed 2–12–64.

800,009. AMERICAR. Americar, Inc. SN 191,478. Pub. 9–21–65. Filed 4–20–64.

800,010. CST ENGINEERING CO. AND DESIGN. Conlengco, Inc. SN 194,364. Pub. 9–21–65. Filed 5–27–64.

800,011. CAMELOT. Camelot Motor Lodge and Inn Corporation. SN 209,583. Pub. 9–21–65. Filed 1–8–65.

800,012. SULFINING. Howe-Baker Engineers, Inc. SN 209,933. Pub. 9–21–65. Filed 1–14–65.

800,013. THE DOG HOUSE. The Dog House, Inc. SN 210,421. Pub. 9–21–65. Filed 1–22–65.

800,014. METACOMET. Metacomet Incorporated. SN 210,581. Pub. 9–21–65. Filed 1–25–65.

800,015. NTRL AND DESIGN. National Testing and Research Laboratory, Inc. SN 211,559. Pub. 9–21–65. Filed 2–8–65.

Class 101 — Advertising and Business

800,016. STUDIO 5. Carl J. Moline, d.b.a. Studio 5 Advertising. SN 144,518. Pub. 9–21–65. Filed 5–14–62.

800,017. HOBBYMASTERS. Hobbymaster, Inc. SN 155,154. Pub. 9–21–65. Filed 10–15–62.

800,018. RESERVE OFFICE FORCE. Reserve Office Force Company. SN 170,677. Pub. 9–21–65. Filed 6–10–63.

800,019. MISCELLANEOUS DESIGN. James H. Wittaker, Jr., d.b.a. Whittaker Realty. SN 189,749. Pub. 9–21–65. Filed 3–26–64.

800,020. MATRIMONICS. National Social Foundation, Inc. SN 193,489. Pub. 9–21–65. Filed 5–14–64.

800,021. MODUCOLOR. Robinsons, Inc. SN 193,702. Pub. 9–21–65. Filed 5–18–64.

800,022. NNPS. A. C. Nielsen Company. SN 195,886. Pub. 9–21–65. Filed 6–17–64.

800,023. EMPEROR. Mark Century Corporation. SN 199,378. Pub. 9–21–65. Filed 8–6–64.

800,024. THE DIG-DEEP AGENCY. The Fensholt Advertising Agency, Incorporated. SN 200,089. Pub. 9–21–65. Filed 8–18–64.

800,025. FANCIFUL T (DESIGN). Patrick A. Toensmeier, d.b.a. Patrick A. Toensmeier and Associates. SN 201,065. Pub. 9–21–65. Filed 9–1–64.

800,026. BDA. Business Development Associates. SN 208,811. Pub. 9–21–65. Filed 12–24–64.

800,027. TELS-CAR. International Minerals & Chemical Corporation. SN 209,012. Pub. 9–21–65. Filed 12–29–64.

Class 102 — Insurance and Financial

800,028. EARLY AMERICAN LIFE INSURANCE COMPANY. Early American Life Insurance Company. SN 183,893. Pub. 9–21–65. Filed 1–2–64.

800,029. CHURCH MUTUAL AND DESIGN. Church Mutual Insurance Company. SN 193,748. Pub. 9–21–65. Filed 5–19–64.

800,030. SEELECT-A-CAR. The Eastern National Bank of Long Island. SN 207,581. Pub. 9–21–65. Filed 12–7–64.

800,031. AMERICARE. American Republic Insurance Company. SN 210,249. Pub. 9–21–65. Filed 1–21–65.

800,032. CT. The County Trust Co. SN 210,654. Pub. 9–21–65. Filed 1–26–65.

Class 103 — Construction and Repair

800,033. SHIP AND HATCH COVER (DESIGN). MacGregor-Comarain. SN 102,034. Pub. 9–21–65. Filed 8–4–60.

800,034. MIRACLE WATER AND DESIGN. Water Refining Company, Inc. SN 183,143. Pub. 9–21–65. Filed 12–16–63.

Class 104 — Communication

800,035. W-RIT MILWAUKEE AND DESIGN. WRIT, Inc. SN 207,691. Pub. 9–21–65. Filed 12–4–64.

Class 105 — Transportation and Storage

800,036. ALL STAR HOLIDAYS. Strauss-Simmons, Inc. SN 207,344. Pub. 9–21–65. Filed 12–2–64.

800,037. ALLEGHENY. Allegheny Airlines, Inc. SN 220,726. Pub. 9–21–65. Filed 6–9–65.

Class 106 — Material Treatment

800,038. ARCOTE. American Optical Company. SN 183,490. Pub. 9–21–65. Filed 12–24–63.

800,039. ULTRACOTE. American Optical Company. SN 183,491. Pub. 9–21–65. Filed 12–24–63.

Class 107 — Education and Entertainment

800,040. REPRESENTATION OF A FAIRY (DESIGN). Cinderella Career and Finishing Schools, Inc., assignee of Cinderella Finishing School and Career College. SN 198,938. Pub. 9–21–65. Filed 7–31–64.

800,041. AAI AND DESIGN. The African-American Institute. SN 199,341. Pub. 9–21–65. Filed 8–6–64.

800,042. JOHNNY MAESTRO AND THE CRESTS. John P. Mastrangelo. SN 204,984. Pub. 9–21–65. Filed 10–28–64.

800,043. MISCELLANEOUS DESIGN. Postgraduate Courses for Latin American Physicians, Inc. SN 209,628. Pub. 9–21–65. Filed 1–8–65.

Collective Membership Marks

Class 200

800,044. "WESTERN RED" AND DESIGN. Western Red and Northern White Cedar Association. SN 198,106. Pub. 9–21–65. Filed 7–17–64.

800,045. COGITO ERGO SUM AND DESIGN. Kappa Epsilon Fraternity. SN 210,569. Pub. 9–21–65. Filed 1–25–65.

Certification Mark

Class A — Goods

800,046. PROVEN POAC PRODUCER AWARD AND DESIGN. Pony of the Americas Club, Inc. SN 195,149. Pub. 9–21–65. Filed 6–8–64.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

Class 1 — Raw or Partly Prepared Materials

800,047. Weyerhaeuser Company, Tacoma, Wash. SN 189,643. Filed P.R. 3–25–64; Am. S.R. 9–29–65.

COLOR FLAME

For Fireplace Logs Made of Sawdust, or the Like, Chemically Treated To Burn With a Multicolored Flame.
First use June 1, 1956.

Class 2 — Receptacles

800,048. P.I.D. Manufacturing Co., Hendersonville, N.C. SN 187,319. Filed P.R. 2–24–64; Am. S.R. 10–1–65.

HAIL!
MAIL

For Indicator for Post Boxes.
First use Dec. 30, 1963.

Class 6 — Chemicals and Chemical Compositions

800,049. Imperial Type Metal Company, Philadelphia, Pa. SN 187,286. Filed P.R. 2–24–64; Am. S.R. 10–5–65.

PROTECT-O-PLATE

For Solution Used in Preparation of a Photoengraving Plate for Etching by Coating Said Plate With Said Solution.
First use Jan. 10, 1964.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

800,050. George L. Strebler, d.b.a. Sports Industries, St. Louis, Mo. SN 179,959. Filed P.R. 10–28–63; Am. S.R. 10–15–65.



For Shot Gun Shell Cartridge Trimmers.
First use Oct. 7, 1963.

Class 14 — Metals and Metal Castings and Forgings

800,051. Bliss & Laughlin Industries Incorporated, Oak Brook, Ill. SN 221,785. Filed 6–23–65.

STRAIN TEMPERED

For Cold-Worked Steels.
First use Aug. 15, 1944.

Class 15 — Oils and Greases

800,052. Norwood Industries, Inc., Norwood, Mass. SN 189,605. Filed P.R. 3–25–64; Am. S.R. 10–14–65.

NORWOOD

For Lubricating Oils and Transmission Fluids.
First use Mar. 5, 1964.

Class 18 — Medicines and Pharmaceutical Preparations

800,053. Airtone Chemical Company, Baltimore, Md. SN 155,474. Filed P.R. 10–19–62; Am. S.R. 10–14–65.

VAPOR WICK
by AIRTONE

For Vaporizing Fluid Products for Instant Symptomatic Relief of Colds, Coughs, Hay Fever and Sinus.
First use Aug. 20, 1962.

Class 22 — Games, Toys, and Sporting Goods

800,054. James Hardin Peterson Brown, Lakeland, Fla. SN 190,921. Filed P.R. 4–13–64; Am. S.R. 9–22–65.



For Cylinder for Pleasure and Exercise Whereby the Operator Displays Ability, Skill and Balance by Rotating the Cylinder Clockwise or Counterclockwise on Land or Water.
First use Apr. 8, 1964.

800,055. Sole Manufacturing Co., Inc., Maple Glen, Pa. SN 207,330. Filed P.R. 12–2–64; Am. S.R. 10–15–65.

SKI-TOTER

For Hand Carrier for Sporting Equipment—Namely, Skis and Ski-Poles.
First use Sept. 28, 1964.

800,056. Sole Manufacturing Co., Inc., Maple Glen, Pa. SN 207,331. Filed P.R. 12–2–64; Am. S.R. 10–15–65.



For Hand Carrier for Sporting Equipment—Namely, Skis and Ski-Poles.
First use Sept. 28, 1964.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

800,057. H-P Tool Mfg. Corp., d.b.a. HP Tool Manufacturing Corp., H-P Tool Manufacturing Corporation, and H.P. Tool Manufacturing Corp., Philadelphia, Pa. SN 175,492. Filed P.R. 8–21–63; Am. S.R. 6–25–65.

"THE BLISTER PAK WITH THE CUSHION BACK"

For Packaged Hand Tools—Namely, Chisels, Star Drills, and Punches.
First use July 25, 1963.

Class 26 — Measuring and Scientific Appliances

800,058. Dennison Manufacturing Company, Framingham, Mass. SN 213,657. Filed P.R. 3–9–65; Am. S.R. 9–21–65.

DENNISON

For Electrostatic Copying Machines and Supplies Therefor—Namely, Copying Paper and Image Development Material.
First use Dec. 13, 1963.

Class 32 — Furniture and Upholstery

800,059. Baumritter Corporation, New York, N.Y. SN 166,363. Filed P.R. 4–9–63; Am. S.R. 10–8–65.

COLONIAL CLASSICS

For Upholstered Furniture.
First use about December 1958.

Class 36 — Musical Instruments and Supplies

800,060. Magnasync Corporation, North Hollywood, Calif. SN 166,819. Filed P.R. 4–16–63; Am. S.R. 2–19–65.

ReKard

For Apparatus Adapted for Recording and Reproducing External Stimulus, Such for Example as Audible Sound.
First use Apr. 23, 1962.

Class 38 — Prints and Publications

800,061. Catholic Book Publishing Company, Inc., New York, N.Y. SN 171,615. Filed P.R. 6–24–63; Am. S.R. 9–21–65.

CONTINUOUS

For Catholic Religious Missal.
First use Aug. 18, 1957.

800,062. Andrew F. Schott, Green Lake, Wis. SN 191,887. Filed P.R. 4–23–64; Am. S.R. 10–5–65.

MAINTENANCE

For Card File of Mathematical Problems.
First use Aug. 20, 1963.

800,063. Keller Publishing Corporation, New York, N.Y. SN 195,677. Filed P.R. 6–15–64; Am. S.R. 9–30–65.

WORLD INDUSTRIAL REPORTER

For Spanish Language Magazine.
First use Jan. 9, 1964.

800,064. Tompkins Label Service, Philadelphia, Pa. SN 200,044. Filed P.R. 8–17–64; Am. S.R. 9–23–65.

No-Tox

For Insert Labels for Use With Food-Related Products.
First use Aug. 4, 1964.

800,065. Benwill Publishing Corporation, Brookline, Mass. SN 200,063. Filed P.R. 8–18–64; Am. S.R. 10–5–65.

CIRCUITS MANUFACTURING

For Magazine.
First use Aug. 14, 1964.

800,066. United Newspapers Magazine Corporation, New York, N.Y. SN 200,684. Filed P.R. 8–26–64; Am. S.R. 9–29–65.

BONANZA, U.S.A.

For Syndicated Newspaper Magazine Section.
First use Apr. 26, 1964.

800,067. Evangelical Missions Information Service Inc., Washington, D.C. SN 206,931. Filed P.R. 11–25–64; Am. S.R. 9–28–65.

EVANGELICAL MISSIONS QUARTERLY

For Religious Magazine.
First use Sept. 21, 1964.

800,068. Implement & Tractor Publications, Inc., Kansas City, Mo. SN 214,651. Filed P.R. 3–22–65; Am. S.R. 9–29–65.

LAWN/GARDEN/OUTDOOR LIVING

For Newspaper Published Periodically.
First use March 1962.

800,069. Farm Journal, Inc., Philadelphia, Pa. SN 216,583. Filed P.R. 4–15–65; Am. S.R. 10–5–65.

A GOOD LIFE AS WELL AS A GOOD LIVING

For Feature in Magazine.
First use Oct. 25, 1947.

Class 39 — Clothing

800,070. Sheffield Hosiery Mills, Inc., Miami, Fla. SN 144,647. Filed P.R. 5–15–62; Am. S.R. 9–24–65.

Pre-Stress

For Hosiery.
First use Apr. 20, 1962.

Class 43 — Thread and Yarn

800,071. Reynolds Yarns, Inc., Plainview, N.Y. SN 216,619. Filed 4–15–65.

REYNOLDS MALIBU

For Yarn and Balls of Yarn.
First use Jan. 12, 1964.

Class 44 — Dental, Medical, and Surgical Appliances

800,072. Sierra Engineering Co., Sierra Madre, Calif. SN 183,929. Filed P.R. 1–2–64; Am. S.R. 10–11–65.

HIP-KIT

For Self-Contained Breathing Unit Including Face Plate, Regulator, Reducing Valve, and Air Cylinder.
First use Sept. 20, 1963.

Class 46 — Foods and Ingredients of Foods

800,073. Duane E. Wickersham, d.b.a. Wick's Pies, Winchester, Ind. SN 170,008. Filed P.R. 5–29–63; Am. S.R. 5–28–65.

WICK'S

For Cream Pies.
First use Apr. 1, 1963.

800,074. Eskimo Pie Corporation, Richmond, Va. SN 176,295. Filed P.R. 9–4–63; Am. S.R. 8–26–65.



For Frozen Desserts—Namely, Ice Cream.
First use Oct. 6, 1962.

800,075. General Mills, Inc., Minneapolis, Minn. SN 176,518. Filed P.R. 9–9–63; Am. S.R. 10–11–65.

PRO-TEEN

For Vitamin Mineral Skim Milk.
First use Sept. 4, 1963.

800,076. George Lueders & Co., New York, N.Y. SN 203,101. Filed P.R. 10–1–64; Am. S.R. 10–12–65.

EVER-FRESH

For Citrus Flavors in Powdered Form for Sale to Manufacturers of Beverage, Dessert and Cake Mixes.
First use Sept. 8, 1964.

Class 47 — Wines

800,077. S.A.R.L. J. Calvet et Cie., Bordeaux (Gironde), France. SN 196,721. Filed P.R. 6–29–64; Am. S.R. 6–30–65.

LAVERGNE

For Wines.
First use in the year 1924.

Class 49 — Distilled Alcoholic Liquors

800,078. Blanchard Importing & Distributing Co., Inc., Boston, Mass. SN 129,456. Filed P.R. 10–9–61; Am. S.R. 11–1–62.

Rubinoff

For Vodka.
First use December 1954.

800,079. The American Distilling Company, d.b.a. Clarke's Distilling Co., New York, N.Y. SN 211,014. Filed P.R. 2–1–65; Am. S.R. 9–30–65.

SINGAPORE

For Gin.
First use Apr. 17, 1964.

Class 50 — Merchandise Not Otherwise Classified

800,080. Western Process, Inc., Palo Alto, Calif. SN 124,866. Filed P.R. 7–27–61; Am. S.R. 7–21–65.



The drawing is lined for red and yellow.
For Traffic Warning Devices and Parts Thereof—Namely, Flag Staffs, Flags, Signs, Lights, Carrying Cases, Guardrail Clamps, Stanchions, Clamps, and Safety Vests.
First use July 1, 1955.

Class 51 — Cosmetics and Toilet Preparations

800,081. Pierre Bohme, d.b.a. Simone Cochard Beauty Preparations, New York, N.Y. SN 181,132. Filed P.R. 1–7–64; Am. S.R. 10–12–65.

Hamilton

For Nail Polish, Lipsticks, Hair Tints, and Eye Make-Up.
First use Sept. 10, 1963.

800,082. Roger & Gallet S.A., Paris, France, assignee of Roger & Gallet, Ltd., New York, N.Y. SN 198,645. Filed P.R. 7–28–64; Am. S.R. 10–15–65.

FOAM TONIQUE

The English meaning of the French word "Tonique" is "tonic."
For Aftershave Lotion.
First use May 1964.

800,083. Merle Norman Cosmetics, Inc., Los Angeles, Calif. SN 204,588. Filed P.R. 10–22–64; Am. S.R. 10–14–65.

COMES LOVE

For Nail Enamel.
First use Aug. 31, 1964.

800,084. Merle Norman Cosmetics, Inc., Los Angeles, Calif. SN 204,589. Filed P.R. 10–22–64; Am. S.R. 10–14–65.

DEAR JOHN

For Nail Enamel.
First use Aug. 31, 1964.

800,085. Merle Norman Cosmetics, Inc., Los Angeles, Calif. SN 204,590. Filed P.R. 10–22–64; Am. S.R. 10–14–65.

TOUCH OF MINX

For Nail Enamel.
First use Aug. 31, 1964.

800,086. Merle Norman Cosmetics, Inc., Los Angeles, Calif. SN 204,591. Filed P.R. 10–22–64; Am. S.R. 10–14–65.

SLOW WINK

For Nail Enamel.
First use Aug. 31, 1964.

800,087. Merle Norman Cosmetics, Inc., Los Angeles, Calif. SN 204,592. Filed P.R. 10–22–64; Am. S.R. 10–14–65.

SECRET AFFAIR

For Nail Enamel.
First use Aug. 31, 1964.

800,088. Merle Norman Cosmetics, Inc., Los Angeles, Calif. SN 204,593. Filed P.R. 10–22–64; Am. S.R. 10–14–65.

LOVE LYRIC

For Nail Enamel.
First use Aug. 31, 1964.

800,089. Merle Norman Cosmetics, Inc., Los Angeles, Calif. SN 204,594. Filed P.R. 10–22–64; Am. S.R. 10–14–65.

MAN BAIT

For Nail Enamel.
First use Aug. 31, 1964.

800,090. Merle Norman Cosmetics, Inc., Los Angeles, Calif. SN 204,595. Filed P.R. 10–22–64; Am. S.R. 10–14–65.

TWO-TIMER

For Nail Enamel.
First use Aug. 31, 1964.

800,091. Merle Norman Cosmetics, Inc., Los Angeles, Calif. SN 204,596. Filed P.R. 10–22–64; Am. S.R. 10–14–65.

CUTE TRICK

For Nail Enamel.
First use Aug. 31, 1964.

800,092. Merle Norman Cosmetics, Inc., Los Angeles, Calif. SN 204,597. Filed P.R. 10–22–64; Am. S.R. 10–14–65.

JUST WHISTLE

For Nail Enamel.
First use Aug. 31, 1964.

Class 52 — Detergents and Soaps

800,093. Mur/Mark, Inc., d.b.a. Joseph Chase Laboratories Ltd., Los Angeles, Calif. SN 138,635. Filed P.R. 2–26–62; Am. S.R. 10–13–65.

DERMA-CLEAR

For Toilet Soap.
First use November 1961.

800,094. Pinehurst Handmade Soap & Candle Company, Pinehurst, N.C., by change of name from The Handmade Soap & Candle Company, Southern Pines, N.C. SN 197,572. Filed P.R. 7–3–64; Am. S.R. 10–8–65.

Slice n' Scrub

For Handmade Toilet Soap.
First use June 29, 1964.

800,095. Pinehurst Handmade Soap & Candle Company, Pinehurst, N.C., by change of name from The Handmade Soap & Candle Company, Southern Pines, N.C. SN 197,574. Filed P.R. 7–10–64; Am. S.R. 10–8–65.

OLD FASHIONED

For Handmade Toilet Soap.
First use June 29, 1964.

800,096. Purex Corporation, Ltd., Lakewood, Calif. SN 200,865. Filed P.R. 8–28–64; Am. S.R. 10–15–65.

BARGAIN BAG

For Deodorant Soap.
First use July 21, 1964.

Service Marks

Class 100 — Miscellaneous

800,097. Interstate Motor Lodges, Inc., Camilla, Ga. SN 209,512. Filed P.R. 1–7–65; Am. S.R. 10–5–65.



The drawing is lined for red and blue.
For Providing Accommodations and Lodgings to the General Public.
First use Jan. 30, 1961.

800,098. Babson Bros. Co., Oak Brook, Ill. SN 210,257. Filed P.R. 1–21–65; Am. S.R. 10–7–65.

PICTURE WINDOW PARLOR

For Providing Plans and Specifications for the Construction of Milking Parlors.
First use Oct. 2, 1964.

Class 101 — Advertising and Business

800,099. Parish Tithing, Inc., Detroit, Mich. SN 205,092. Filed P.R. 10–29–64; Am. S.R. 10–1–65.



For Advice and Consultation Services in the Field of Fund Raising for Religious Organizations.
First use Sept. 8, 1964.

Class 102 — Insurance and Financial

800,100. Society for Savings, Hartford, Conn. SN 181,074. Filed P.R. 11–13–63; Am. S.R. 10–6–65.

DAILY DIVIDENDS

For General Banking Services.
First use June 4, 1962.

TRADEMARK REGISTRATIONS RENEWED

44,750. SPHINX BOND. Cl. 37. 7–25–05.
44,958. REPRESENTATION OF SPHINX (DESIGN). Cl. 5. 8–1–05.
46,786. REX. Cl. 23. 10–10–05.
46,993. HOWARD. Cl. 36. 10–17–05.
47,066. E-Z-BAKE. Cl. 46. 10–24–05.
47,072. HAMILTON. Cl. 36. 10–24–05.
47,375. "THE RECOLLECTION OF QUALITY REMAINS LONG AFTER THE PRICE IS FORGOTTEN." Cl. 23. 10–31–05.
48,763. DESIGN OF DIAMOND FIGURES ON BACK OF PLAYING CARD. Cl. 22. 1–9–06.
48,874. RAMBLER. Cl. 22. 1–16–06.
48,877. ALADDIN. Cl. 22. 1–16–06.
48,885. APOLLO. Cl. 22. 1–16–06.
48,891. BICYCLE. Cl. 22. 1–16–06.
49,103. SQUEEZERS. Cl. 22. 1–23–06.
49,107. "BEE." Cl. 22. 1–23–06.
49,420. CONGRESS. Cl. 22. 2–6–06.
49,531. MAPLESOTA. Cl. 46. 2–6–06.
50,079. REPRESENTATION OF BICYCLE (DESIGN). Cl. 22. 3–6–06.
50,463. CONDULET. Cl. 21. 3–20–06.
50,534. SABONETE DE REUTER AND DESIGN. Cl. 52. 3–20–06.
50,535. JABON DE REUTER AND DESIGN. Cl. 52. 3–20–06.
203,754. NOTASTANE. Cl. 15. 9–22–25.
203,755. NEVASTANE. Cl. 15. 9–22–25.
203,756. VETO-STANE. Cl. 15. 9–22–25.
203,815. ELDORADO. Cl. 1. 9–29–25.
204,032. FINKCO. Cl. 46. 10–6–25.
204,491. PHOTOPHORE. Cl. 44. 10–20–25.
204,645. MAUD MULLER. Cl. 46. 10–20–25.
204,861. LINENE. Cl. 39. 10–27–25.
204,957. FLIT. Cl. 52. 10–27–25.
205,099. BRUNSWICK. Cl. 36. 11–3–25.
206,315. FRANKO. Cl. 35. 11–24–25.
206,433. COMMANDER. Cl. 46. 12–1–25.
206,500. BATTERY CAPACITESTER. Cl. 26. 12–1–25.
206,765. GIANT. Cl. 6. 12–8–25.
206,835. SR AND DESIGN. Cl. 39. 12–8–25.
207,293. SUPERBA. Cl. 16. 12–29–25.
207,505. RED SEAL AND DESIGN. Cl. 6. 1–5–26.
207,851. "BESTYLE" AND DESIGN. Cl. 39. 1–12–26.
207,961. STORMWELT. Cl. 39. 1–12–26.
208,116. VELVETEX. Cl. 6. 1–19–26.
210,913. GRENADOL. Cl. 51. 3–30–26.
210,914. "CORALYS." Cl. 51. 3–30–26.
210,915. "MOUSSAROME." Cl. 51. 3–30–26.
210,919. VIOLETTONE. Cl. 51. 3–30–26.
210,920. VIOLETTOL. Cl. 51. 3–30–26.
211,017. CARNATION. Cl. 46. 3–30–26.
415,319. POWERMASTER. Cl. 34. 8–7–45.
415,644. OMNIS ORBIS WARNER AND DESIGN. Cl. 18. 8–14–45.
416,216. WADSWORTH. Cl. 2. 9–4–45.
416,223. ROBOTROL. Cl. 26. 9–4–45.
416,237. ZELL'S EXCELS AND DESIGN. Cl. 10. 9–4–45.
416,407. DINOGRAPHIC. Cl. 26. 9–11–45.
416,475. WADSWORTH. Cl. 28. 9–18–45.
416,945. WADSWORTH. Cl. 28. 10–9–45.
416,959. DENTATUS. Cl. 44. 10–9–45.
416,984. NO. 484. Cl. 14. 10–9–45.
416,985. NO. 610. Cl. 14. 10–9–45.
416,986. NO. 883. Cl. 14. 10–9–45.
416,987. VEGA. Cl. 14. 10–9–45.
417,489. VELO-A. Cl. 15. 10–30–45.

Erratum

In the OFFICIAL GAZETTE of October 26, 1965, at page TM 200 under the heading "Trademark Registrations Renewed," "414,434" should read as *414,138*.

TRADEMARK REGISTRATIONS CANCELED

Section 8

The following registrations issued Oct. 20, 1959

686,782. JEWEL-TONE. Cl. 1.
686,788. FOR SAFETY'S SAKE ETC. AND DESIGN. Cl. 1.
686,791. Z-FLO. Cl. 1.
686,792. DEMPSTER DUMPSTER DOR-TO-DOR. Cl. 2.
686,793. UNI-DRUM. Cl. 2.
686,801. PEPLANTONIC. Cl. 10.
686,802. VAPENE. Cl. 11.
686,803. CORAGLO. Cl. 11.
686,820. KOL-BAN. Cl. 18.
686,822. HISTABAR. Cl. 18.
686,824. LOMU. Cl. 18.
686,825. GONULIN. Cl. 18
686,828. KAMYNA. Cl. 18.
686,830. DUPHASMA. Cl. 18.
686,835. VITA-PHAIM. Cl. 18.
686,836. HYSSEN-AC. Cl. 18.
686,854. CHESLER AND DESIGN. Cl. 25.
686,861. RITOLOY. Cl. 26.
686,868. THERMO-FAX. Cl. 26.
686,870. ENVOY. Cl. 26.
686,871. REMOSET. Cl. 26.
686,873. PHOTO-TRONIC. Cl. 26.
868,879. POWER-PILOT. Cl. 26.
686,883. VIP AND DESIGN. Cl. 26.
686,889. TARA DEB. Cl. 28.
686,903. ROTOTONE. Cl. 36.
686,904. ROTOTONE AND DESIGN. Cl. 36.
686,910. WONDER BOARD. Cl. 37.
686,914. AUTO-SEAL AND DESIGN. Cl. 37.
686,916. THE BRAIN. Cl. 38.
686,917. THE IMPERIAL LINE ETC. AND DESIGN. Cl. 38.
686,918. A KEEPSAKE CARD BY STANLEY AND DESIGN. Cl. 38.
686,919. NATIONAL ARTCRAFTS AND DESIGN. Cl. 38.
686,920. NATIONAL ARTISTS AND DESIGN. Cl. 38.
686,921. CHIRPS AND DESIGN. Cl. 38.
686,924. CINCHBACKS. Cl. 39.
686,937. VARUNA. Cl. 39.
686,940. LA PAZ. Cl. 39.
686,944. HOLTITES. Cl. 39.
686,946. NAUTICS. Cl. 39.
686,949. FOOTNOTES. Cl. 39.
686,952. CUPRASHEER. Cl. 42.
686,954. VELATTO. Cl. 42.
686,956. VI-C. Cl. 45.
686,969. GOLDEN DEW. Cl. 46.
686,981. ALLPACKT. Cl. 46.
686,983. STA-MATIC. Cl. 46.
686,990. CRYST-L-FRESH. Cl. 52.
686,922. DICLENE. Cl. 52.
686,995. MCA AND DESIGN. Cl. 100.
686,999. THE GOLDEN POINT AND DESIGN. Cl. 101.
687,004. NCSI. Cl. 102.
687,006. FLUFF'N PUFF. Cl. 103.
687,013. THIS YOU CAN BELIEVE. Cl. 107.
687,009. FANCIFUL FIGURE WITH GLOBE HEAD. Cl. 103.
687,014. SLIMNASTICS. Cl. 107.
687,017. UNI-FRAME. Cl. 21.
687,018. FORESIGHT IN FLUORESCENT. Cl. 21.
687,019. FRIESCH. Cl. 21.

TRADEMARK REGISTRATIONS—NEW CERTIFICATES

New Certificates issued under sections 7(c), 7(f), 7(g) of the Trademark Act of 1946 for the unexpired term of the original registrations.

55,527. THE LAWRENCE PAINTS ETC. AND DESIGN. Cl. 16. W. W. Lawrence & Company, 8–14–06. New Cert. Sec. 7(c) to John Lucas & Company, Incorporated, Philadelphia, Pa.

61,758. PELLITOL. Cl. 6. Pitman-Myers Company. 4–2–07. New Cert. Sec. 7(c) to The Dow Chemical Company, Midland, Mich.

193,192. LAW-RE-LAC. Cl. 16. W. W. Lawrence & Company, 12–23–24. New Cert. Sec. 7(c) to John Lucas & Company, Incorporated, Philadelphia, Pa.

224,821. LAWRENCE UNIVERSAL ENAMEL ETC. AND DESIGN. Cl. 16. W. W. Lawrence & Company, 3–8–27. New Cert. Sec. 7(c) to John Lucas & Company, Incorporated, Philadelphia, Pa.

227,044. M & R. Cl. 46. Moores & Ross, Inc., 4–26–27. New Cert. Sec. 7(c) to Abbot Laboratories, North Chicago, Ill.

227,046. SIMILAC. Cl. 46. Moores & Ross, Inc. 4–26–27. New Cert. Sec. 7(c) to Abbot Laboratories, North Chicago, Ill.

342,302. VIROGEN. Cl. 18. Pitman-Moore Company, 1–12–37. New Cert. Sec. 7(c) to The Dow Chemical Company, Midland, Mich.

343,885. XANIOPHEN. Cl. 18. Pitman-Moore Company, 3–9–37. New Cert. Sec. 7(c) to The Dow Chemical Company, Midland, Mich.

363,624. MILAC AND DESIGN. Cl. 46. M & R Dietetic Laboratories, Inc., 1–3–39. New Cert. Sec. 7(c) to Abbott Laboratories, North Chicago, Ill.

432,084. COLAC. Cl. 46. M & R Dietetic Laboratories, Inc., 8–19–47. New Cert. Sec. 7(c) to Abbott Laboratories, North Chicago, Ill.

438,294. BARRETT'S BAKERLINE AND DESIGN. Cl. 46. Barrett's Food Company Proprietary Limited, 4–13–48. New Cert. Sec. 7(c) to Mauri Brothers & Thomson (Aust.) Pty., Limited, Canberra, Australia.

528,895. SAFE-T-LINE. Cl. 16. W. W. Lawrence & Company, 8–8–50. New Cert. Sec. 7(c) to John Lucas & Company, Incorporated, Philadelphia, Pa.

533,942. MAGMOID. Cl. 18. Allied Laboratories, Inc. doing business as Pitman-Moore Co., 11–28–50. New Cert. Sec. 7(c) to The Dow Chemical Company, Midland, Mich.

538,059. RUTOL. Cl. 18. Allied Laboratories, Inc., doing business as Pitman-Moore Co., 2–20–51. New Cert. Sec. 7(c) to The Dow Chemical Company, Midland, Mich.

538,135. MILAC AND DESIGN. Cl. 46. M & R Dietetic Laboratories, Inc., doing business as The Ten-B-Low Company, 2–20–51. New Cert. Sec. 7(c) to Abbott Laboratories, North Chicago, Ill.

544,280. VERMIPLEX. Cl. 18. Allied Laboratories, Inc., doing business as Pitman-Moore Co., 6–26–51. New Cert. Sec. 7(c) to The Dow Chemical Company, Midland, Mich.

547,551. TENIATOL. Cl. 18. Allied Laboratories, Inc., 9–4–51. New Cert. Sec. 7(c) to The Dow Chemical Company, Midland, Mich.

550,024. OXIPHEN. Cl. 18. Allied Laboratories, Inc., 10–23–51. New Cert. Sec. 7(c) to The Dow Chemical Company, Midland, Mich.

557,337. SIMILAC LIQUID ETC. AND DESIGN. Cl. 46. M & R Dietetic Laboratories, Inc., 4–8–52. New Cert. Sec. 7(c) to Abbott Laboratories, North Chicago, Ill.

561,978. ROSSMOOR. Cl. 46. M & R Dietetic Laboratories, Inc., 7–22–52. New Cert. Sec. 7(c) to Abbott Laboratories, North Chicago, Ill.

563,446. SWIVAX. Cl. 18. Allied Laboratories, Inc., 8–26–52. New Cert. Sec. 7(c) to The Dow Chemical Company, Midland, Mich.

564,445. POLYCIN. Cl. 18. Allied Laboratories, Inc., 9–2–52. New Cert. Sec. 7(c) to The Dow Chemical Company, Midland, Mich.

565,316. INFAGEN. Cl. 18. Allied Laboratories, Inc., 10–14–52. New Cert. Sec. 7(c) to The Dow Chemical Company, Midland, Mich.

565,318. RUMENE. Cl. 18. Allied Laboratories, Inc., 10–14–52. New Cert. Sec. 7(c) to The Dow Chemical Company, Midland, Mich.

565,319. RUMIDE. Cl. 18. Allied Laboratories, Inc., 10–14–52. New Cert. Sec. 7(c) to The Dow Chemical Company, Midland, Mich.

565,320. SULJEX. Cl. 18. Allied Laboratories, Inc., 10–14–52. New Cert. Sec. 7(c) to The Dow Chemical Company, Midland, Mich.

569,186. PREAM. Cl. 46. M & R Dietetic Laboratories, Inc., doing business as Ten-B-Low Company, 1–13–53. New Cert. Sec. 7(c) to Abbott Laboratories, North Chicago, Ill.

569,916. PHENSAL. Cl. 18. Allied Laboratories, Inc., 3–3–53. New Cert. Sec. 7(c) to The Dow Chemical Company, Midland, Mich.

570,166. VITAMYCIN. Cl. 18. Allied Laboratories, Inc., 3–10–53. New Cert. Sec. 7(c) to The Dow Chemical Company, Midland, Mich.

573,982. SULOPTIC. Cl. 18. Allied Laboratories, Inc., 5–5–53. New Cert. Sec. 7(c) to The Dow Chemical Company, Midland, Mich.

580,045. THAVERINE. Cl. 18. Allied Laboratories, Inc. 9–15–53. New Cert. Sec. 7(c) to The Dow Chemical Company, Midland, Mich.

585,812. VERALBA. Cl. 18. Allied Laboratories, Inc. 2–16–54. New Cert. Sec. 7(c) to The Dow Chemical Company, Midland, Mich.

592,372. VIROVAX. Cl. 18. Allied Laboratories, Inc., 7–13–54. New Cert. Sec. 7(c) to The Dow Chemical Company, Midland, Mich.

593,218. PEMZOLES. Cl. 18. Allied Laboratories, Inc., 8–3–54. New Cert. Sec. 7(c) to The Dow Chemical Company, Midland, Mich.

593,547. NEOCHOLAN. Cl. 18. Allied Laboratories, Inc., also doing business as Pitman-Moore Co., 8–10–54. New Cert. Sec. 7(c) to The Dow Chemical Company, Midland, Mich.

593,787. NOVAHISTINE. Cl. 18. Allied Laboratories, Inc., 8–17–54. New Cert. Sec. 7(c) to The Dow Chemical Company, Midland, Mich.

594,924. INSTA-SOL. Cl. 46. M & R Dietetic Laboratories, Inc., 9–17–54. New Cert. Sec. 7(c) to Abbott Laboratories, North Chicago, Ill.

651,127. INTROMYCIN. Cl. 18. Allied Laboratories, Inc., doing business as Pitman-Moore Company, 9–3–57. New Cert. Sec. 7(c) to The Dow Chemical Company, Midland, Mich.

654,866. PAR-T-KREME. Cl. 46. M & R Dietetic Laboratories, Inc., 11–19–57. New Cert. Sec. 7(c) to Abbott Laboratories, North Chicago, Ill.

659,235. NEO-POLYCIN. Cl. 18. Allied Laboratories, Inc., doing business as Pitman-Moore Company, 3–11–58. New Cert. Sec. 7(c) to The Dow Chemical Company, Midland, Mich.

668,273. LANCER. Cl. 19. Liberty Coach Company, Inc., 10–14–58. New Cert. Sec. 7(c) to Lancer Mobile Homes, Inc., Riverside, Calif.

681,889. VEGETEX. Cl. 46. Food Products Corporation, 7–14–59. New Cert. Sec. 7(c) to Breddo-Food Products Corporation, Inc., Kansas City, Kans.

694,817. PROTALBA. Cl. 18. Allied Laboratories, Inc., doing business as Pitman-Moore Company, 3–22–60. New Cert. Sec. 7(c) to The Dow Chemical Company, Midland, Mich.

694,818. WHIPCIDE. Cl. 18. Allied Laboratories, Inc., doing business as Pitman-Moore Company. 3–22–60. New Cert. Sec. 7(c) to The Dow Chemical Company, Midland, Mich.

727,907. TRA-BLEN. Cl. 18. L & M Laboratories, Inc., 2–27–62. New Cert. Sec. 7(c) to Abbott Laboratories, North Chicago, Ill.

728,194. NEW-BLEN. Cl. 18. L & M Laboratories, Inc., 3–6–62. New Cert. Sec. 7(c) to Abbott Laboratories, North Chicago, Ill.

728,619. WITH. Cl. 46. M & R Dietetic Laboratories, Inc., 3–13–62. New Cert. Sec. 7(c) to Abbott Laboratories, North Chicago, Ill.

730,887. NUTS-A- POPPIN AND DESIGN. Cl. 46. William C. Terry, doing business as Poppin Products, 5–1–62. New Cert. Sec. 7(c) to Laura Lee Candles, Inc., Miami, Fla.

734,460. BRON-BLEN. Cl. 18. L & M Laboratories, Inc., 7–17–62. New Cert. Sec. 7(c) to Abbott Laboratories, North Chicago, Ill.

734,461. NT-BLEN. Cl. 18. L & M Laboratories, Inc., 7–17–62. New Cert. Sec. 7(c) to Abbott Laboratories, North Chicago, Ill.

741,525. POX-BLEN. Cl. 18. L & M Laboratories, Inc., 12–4–62. New Cert. Sec. 7(c) to Abbott Laboratories, North Chicago, Ill.

746,138. NB-BLEN. Cl. 18. L & M Laboratories, Inc., 3–5–63. New Cert. Sec. 7(c) to Abbott Laboratories, North Chicago, Ill.

REGISTRATIONS PUBLISHED UNDER SEC. 12(c)

The following marks registered under the act of 1905, or the act of 1881, are published under the provisions of section 12(c) of the Trademark Act of 1946. These registrations are not subject to opposition but are subject to cancellation under section 14 of the act of 1946.

Class 6—Chemicals and Chemical Compositions

416,236. Sept. 4, 1945. John C. Stalford & Sons, Inc., Baltimore, Md. Pub. by registrant.

STA-ALL

For Liquid Air Purifier and Deodorant.

417,057. Oct. 16, 1945. Croda Limited, Goole, England. Pub. by registrant.

HARTOLAN

For Composition of Solid Alcohols and Sterols Prepared From Wool Grease and Used as an Emulsifying Agent, as a Plastifier for Rubber and Artificial Rubber, as a Thickener for Oils and Greases and as an Ingredient To Be Used in Pharmaceutical Cosmetic and Toilet Preparations.

Class 10 — Fertilizers

45,884. Aug. 29, 1905. The Baugh Chemical Co. of Baltimore County, Md., Baltimore, Md. Pub. by The Baugh Chemical Company, Baltimore, Md.



For Chemically Prepared Fertilizer.

Class 12 — Construction Materials

199,407. June 9, 1925. Latrobe Electric Steel Company, Latrobe, Pa. Pub. by Latrobe Steel Company, Latrobe, Pa.

HY-GLO

For Structural Steel Bars.

Class 15 — Oils and Greases

204,742. Oct. 27, 1925. Wm. C. Robinson & Son Co., Baltimore, Md. Pub. by registrant.

AUTOLINE

For Lubricating Grease.

Class 18 — Medicines and Pharmaceutical Preparations

157,369. Aug. 1, 1922. Parke, Davis & Company, Detroit, Mich. Pub. by registrant.

NEO-SILVOL

For Germicides and Antiseptics.

172,229. Aug. 28, 1923. Parke, Davis & Company, Detroit, Mich. Pub. by registrant.

CHOLELITH

For Preparation for Treatment of Cholelithiasis and Allied Conditions.

222,658. Jan. 4, 1927. Parke, Davis & Company, Detroit, Mich. Pub. by registrant.

LAVACOL

For Rubbing Alcohol Compound.

226,510. Apr. 12, 1927. Parke, Davis & Company, Detroit, Mich. Pub. by registrant.

PAROIDIN

For Extract of Parathyroid Gland.

416,684. Sept. 25, 1945. H. W. Carter & Co. Limited, Bristol, England. Pub. by Beecham Group Limited, d.b.a. Beecham Food & Drink Division, Brentford, England.

RIBENA

For Black Currant Syrup Prepared for Medicinal Purposes, Etc.

416,736. Sept. 25, 1945. Galen Co., Berkeley, Calif. Pub. by White Laboratories, Inc., Kenilworth, N.J.

Galen

For Elixirs, Tonics, Adsorbates, Etc.

Class 19 — Vehicles

202,735. Sept. 1, 1925. The Tiley Pratt Co., Essex, Conn. Pub. by The Torrington Company, Torrington, Conn.

T

For Steel Spokes.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

51,247. Apr. 10, 1906. North American Metaline Co., Long Island City, N.Y. Pub. by Charles C. Spadone, Norwalk, Conn.

METALINE

For Metal Bearings, Brushings, and Journals.

Class 26 — Measuring and Scientific Appliances

415,985. Aug. 21, 1945. Senco Inc., Baltimore, Md. Pub. by registrant.

SENCO

For Weighted Reeled Tape for Measuring the Depth of Oil.

Class 27 — Horological Instruments

416,531. Sept. 18, 1945. Rene Brandt, Fabrique d'Horlogerie Ogival, La Chaux-de-Fonds, Switzerland. Pub. by Ogival, S.A., La Chaux-de-Fonds, Switzerland.

Ogival

For Watches and Parts of the Watch.

Class 29 — Brooms, Brushes, and Dusters

47,736. Nov. 14, 1905. The Southwestern Broom Mfg. Co., Evansville, Ind. Pub. by D. W. Swindle, d.b.a. D. W. Swindle & Sons Company, Nashville, Tenn.



For Brooms and Whisk Brushes.

47,841. Nov. 21, 1905. The Southwestern Broom Mfg. Co., Evansville, Ind. Pub. by D. W. Swindle, d.b.a. D. W. Swindle & Sons Company, and The Southwestern Broom Mfg. Co., Nashville, Tenn.



For Brooms and Whisk Brushes.

Class 37 — Paper and Stationery

420,399. Apr. 9, 1946. Scripto Manufacturing Company, Atlanta, Ga. Pub. by Scripto, Inc., Atlanta, Ga.

Scriptips

For Mechanical Pencils and Leads Therefor.

Class 38 — Prints and Publications

414,584. June 19, 1945. Hotel and Restaurant Employees' International Alliance and Bartenders' International League of America, Cincinnati, Ohio. Pub. by Hotel and Restaurant Employees and Bartenders International Union, Cincinnati, Ohio.



For Advertising Cards, Booklets of the Constitution and By-Laws, Pamphlets, Etc.

Class 39 — Clothing

59,231. Jan. 1, 1907. Rice, Stix Dry Goods Company, St. Louis, Mo. Pub. by Dwight S. Williams Co. Inc., New York, N.Y.

MONARCH

For Underwear.

92,829. July 29, 1913. Rice-Stix Dry Goods Company, St. Louis, Mo. Pub. by Dwight S. Williams Co. Inc., New York, N.Y.

MONARCH

For One-Piece Undergarments Made of Woven Fabrics.

203,837. Sept. 29, 1925. Jacobs Brothers, Baltimore, Md. Pub. by Jacobs Brothers, Inc., Baltimore, Md.

Florence Nightingale

For Aprons, Dresses, and Uniforms for Women, Children, and Misses.

365,306. Mar. 7, 1939. A. S. Beck Shoe Corporation, New York, N.Y. Pub. by registrant.

A.S.BECK Summertime FASHIONS

For Men's and Women's Shoes and Slippers Made of Leather and/or Fabric or Mixtures of These Materials.

388,893. July 15, 1941. Interwoven Stocking Company, New Brunswick, N.J. Pub. by Powerhouse, Inc., New Brunswick, N.J.

ESSEX
S-X

For Hosiery.

Class 46 — Foods and Ingredients of Foods

417,598. Nov. 6, 1945. E. I. du Pont de Nemours and Company, Wilmington, Del. Pub. by registrant.

TWO-SIXTY-TWO

For Animal Feed Compound for Ruminants Containing Urea.

417,941. Nov. 20, 1945. The Morrison Milling Co., Denton, Tex. Pub. by registrant.

PEACEMAKER

For Wheat Flour.

Class 51 — Cosmetics and Toilet Preparations

364,487. Jan. 31, 1939. Savolite, Inc., New York, N.Y. Pub. by registrant.

SAVOLITE

For Preparation for Treating and Beautifying the Hair.

INDEX OF REGISTRANTS

DECEMBER 7, 1965

(Registered ; Renewed ; Canceled ; Amended, Disclaimed, Corrected, etc. ; New Certificates ; 12c Publications.)

AA Wire Products Co., Chicago, Ill. 799,709, pub. 9–21–65. Cl. 12.

Abbey Etna Machine Co., Perrysburg, Ohio. 799,888, pub. 9–21–65. Cl. 34.

Abbott Laboratories: *See*—
L & M Laboratories, Inc.
M & R Dietetic Laboratories, Inc.
Morres & Ross, Inc.

Abel, Dr. William, d.b.a. Hi-Protein Food Products Co., Bettendorf, Iowa. 799,964, pub. 9–21–65. Cl. 46.

Ace Scientific Supply Co., Inc., Linden, N.J. 799,683, pub. 9–21–65. Multiple Class (Classes 6 and 26).

Adamek, Ben F., d.b.a. Empire Packing Co., El Centro, Calif. 799,975, pub. 9–21–65. Cl. 46.

Agfa Aktiengesellschaft, Leverkusen-Bayerwerk, Germany. 799,844, pub. 9–21–65. Cl. 26.

Agricultural Aviation Engineering Co., Santa Clara, Calif. 799,722–3, pub. 9–21–65. Cl. 13.

African-American Institute, The, New York, N.Y. 800,041, pub. 9–21–65. Cl. 107.

Almcee Wholesale Corp., New York, N.Y. 799,752, pub. 9–21–65. Cl. 18.

Airtone Chemical Co., Baltimore, Md. 800,053. Cl. 18.

Aktiebolaget Dentatus, Hagersten, Sweden. 416,959, ren. 12–7–65. Cl. 44.

Aktiebolaget Erland Ottosson, Malmo, Sweden. 799,867, pub. 9–21–65. Cl. 32.

Aktiebolaget Svenska Flartfabriken, Nacka, Sweden. 799,879, pub. 9–21–65. Cl. 34.

Allegheny Airlines, Inc., Washington, D.C. 800,037, pub. 9–21–65. Cl. 105.

Allied Laboratories, Inc., d.b.a. Pitman-Moore Co., to The Dow Chemical Co., Midland, Mich. 694,817–18, new cert. Cl. 18.

Allied Laboratories, Inc., d.b.a. Pitman-Moore Co., to The Dow Chemical Co., Midland, Mich. 650,235, new cert. Cl. 18.

Allied Laboratories, Inc., d.b.a. Pitman-Moore Co., to The Dow Chemical Co., Midland, Mich. 651,127, new cert. Cl. 18.

Allied Laboratories, Inc., to The Dow Chemical Co., Midland, Mich. 593,787, new cert. Cl. 18.

Allied Laboratories, Inc., also d.b.a. Pitman-Moore Co., to The Dow Chemical Co., Midland, Mich. 593,547, new cert. Cl. 18.

Allied Laboratories, Inc., to The Dow Chemical Co., Midland, Mich. 593,218, new cert. Cl. 18.

Allied Laboratories, Inc., to The Dow Chemical Co., Midland, Mich. 592,372, new cert. Cl. 18.

Allied Laboratories, Inc., to The Dow Chemical Co., Midland, Mich. 585,812, new cert. Cl. 18.

Allied Laboratories, Inc., to The Dow Chemical Co., Midland, Mich. 580,045, new cert. Cl. 18.

Allied Laboratories, Inc., to The Dow Chemical Co., Midland, Mich. 573,982, new cert. Cl. 18.

Allied Laboratories, Inc., to The Dow Chemical Co., Midland, Mich. 570,166, new cert. Cl. 18.

Allied Laboratories, Inc., to The Dow Chemical Co., Midland, Mich. 569 916, new cert. Cl. 18.

Allied Laboratories, Inc., to The Dow Chemical Co., Midland, Mich. 565,318–20, new cert. Cl. 18.

Allied Laboratories, Inc., to The Dow Chemical Co., Midland, Mich. 565,316, new cert. Cl. 18.

Allied Laboratories, Inc., to The Dow Chemical Co., Midland, Mich. 564,445, new cert. Cl. 18.

Allied Laboratories, Inc., to The Dow Chemical Co., Midland, Mich 563,446, new cert. Cl. 18.

Allied Laboratories, Inc., to The Dow Chemical Co., Midland, Mich 550 024, new cert. Cl. 18.

Allied Laboratories, Inc., to The Dow Chemical Co., Midland, Mich. 547,551, new cert. Cl. 18.

Allied Laboratories, Inc., d.b.a. Pitman-Moore Co., to The Dow Chemical Co., Midland, Mich. 544,280, new cert. Cl. 18.

Allied Laboratories, Inc., d.b.a. Pitman-Moore Co., to The Dow Chemical Co., Midland, Mich. 538,059, new cert. Cl. 18.

Allied Laboratories, Inc., d.b.a. Pitman-Moore Co., to The Dow Chemical Co., Midland, Mich. 533,942, new cert. Cl. 18.

All State Garment Corp., New York, N.Y. 686,937, canc. Cl. 39.

American Agricultural Chemical Co., The, to American Agricultural Chemical Co., New York, N.Y. 416,237, ren. 12–7–65. Cl. 10.

American Cyanamid Co., Wayne, N.J. 799,749, pub. 9–21–65. Cl. 18.

American Distilling Co., The, d.b.a. Clarke's Distilling Co., New York N.Y. 800,079. Cl. 49.

American Marine and Machinery Co., Inc., Nashville, Tenn. 799,799, pub. 9–21–65. Cl. 23.

American Optical Co., Southbridge, Mass. 800,038–9, pub. 9–21–65. Cl. 106.

American Republic Insurance Co., Des Moines, Iowa. 800,031, pub. 9–21–65. Cl. 102.

American Research Laboratories: *See*—
Anthes, Jacob.

Americar, Inc., Daytona Beach, Fla. 800,009, pub. 9–21–65. Cl. 100.

Amsteel Fence Co., Inc., Indianapolis, Ind. 799,719, pub. 9–21–65. Cl. 13.

Anger, Wilhelm, d.b.a. Serge Kirchhofer, Traum, Austria. 799,857, pub. 9–21–65. Cl. 28.

Anthes, Jacob, d.b.a. American Research Laboratories, Fort Atkinson, Wis. 686,873, canc. Cl. 26.

Apparatus Controls, San Carlos, Calif. 799,806, pub. 9–21–65. Cl. 23.

Arabol M'f'g. Co., The, to The Borden Co., New York, N.Y. 44,958, ren. 12–7–65. Cl. 5.

Archer Corp., The, Fargo, N. Dak. 686,835, canc. Cl. 18.

Archer-Daniels-Midland Co.: *See*—
Mapleton Milling Co.

Arena, A., & Co., to A. Arena and Co., Ltd., Los Angeles, Calif. 211,017, ren. 12–7–65. Cl. 46.

Arkansas Co., Inc., Newark, N.J. 799,686, pub. 9–21–65. Cl. 6.

Armorgard Corp., Pittsburgh, Pa. 799,705, pub. 9–21–65. Cl. 12.

Artag Plastics Corp., Chicago, Ill. 799,822, pub. 9–21–65. Cl. 23.

Asphalt Corp. of America, Danville, Ill. 799,706-7, pub. 9–21–65. Cl. 12.

Atkins, E. C., & Co., Indianapolis, Ind., to Borg-Warner Corp., Chicago, Ill. 46,786, ren. 12–7–65. Cl. 23.

Atlantic Products Corp., Trenton, N.J. 799,679, pub. 9–21–65. Cl. 3.

Atlas Supply Co.: *See*—
Heyer Products Co., Inc.

Archer-Daniels-Midland Co.: *See*—
Commander Mill Co.

Arena, A., and Co., Ltd.: *See*—
Arena, A., & Co.

Avalon Hill Co., The, Baltimore, Md. 799,778-9, pub. 9–21–65. Cl. 22.

Avco Corp., Nashville, Tenn. 799,755, pub. 9–21–65. Cl. 19.

B. B. Foods Corp., Akron, Ohio. 799,948, pub. 9–21–65. Cl. 46.

Babbitt, B. T., New York, N.Y., to B. T. Babbitt, Inc., Albany, N.Y. 206,765, ren. 12–7–65. Cl. 6.

B. T. Babbitt, Inc.: *See*—
Babbitt, B. T.
Tomson, P. C., & Co., Inc.

Babson Bros. Co., Oak Brook, Ill. 800,098. Cl. 100.

Baldwin Co., The, to D. H. Baldwin Co., Cincinnati, Ohio. 46,993, ren. 12–7–65. Cl. 36.

Baldwin, D. H., Co.: *See*—
Baldwin Co., The.
Hamilton Organ Co.

Balston, W. & R., Ltd., Maidstone, Kent, England. 799,866, pub. 9–21–65. Cl. 31.

Barbour, Perley E.: *See*—
Barbour Welting Co.

Barbour Welting Co., Inc.: *See*—
Barbour Welting Co.

Barbour Welting Co., assor. to Perley E. Barbour of Quincy, Massachusetts, Quincy, Mass., to Barbour Welting Co., Inc., Brockton, Mass. 207,961, ren. 12–7–65. Cl. 39.

Barclay & Barclay, New York, N.Y., to Lanman & Kemp-Barclay & Co., Inc., Palisades Park, N.J. 50,534–5, ren. 12–7–65. Cl. 52.

Barrett's Food Co. Proprietary Ltd., to Mauri Brothers & Thomson (Aust.) Pty., Ltd., Canberra, Australia. 438,294, new certificate. Cl. 46.

Barton Instrument Corp., Monterey Park, Calif. 799,847, pub. 9–21–65. Cl. 26.

Battle Creek Equipment Co.: *See*—
Sanitarium and Hospital Equipment Co.

Baugh Chemical Co., The: *See*—
Baugh Chemical Co. of Baltimore County, Md., The.

Baugh Chemical Co. of Baltimore County, Md., The, by The Baugh Chemical Co., Baltimore, Md. 45,884, 12(c) pub. 12–7–65. Cl. 10.

Baumritter Corp., New York, N.Y. 800,059. Cl. 32.

Bayonne Barrel & Drum Co., Newark, N.J. 799,800, pub. 9–21–65. Cl. 23.

Bayuk Cigars Inc., Philadelphia, Pa. 799,739, pub. 9–21–65. Cl. 17.

Beannit Mills, Inc., New York, N.Y. 686,952, canc. Cl. 42.

Bee Chemical Co., Lansing, Ill. 800,005, pub. 9–21–65. Cl. 52.

Beecham Group Ltd.: *See*—
Carter, H. W., & Co. Ltd.

Beck, A. S., Shoe Corp., by A. S. Beck Shoe Corp., New York, N.Y. 365,306, 12(c) pub. 12–7–65. Cl. 39.

Bedi, Victor, Springfield, Vt. 799,695, pub. 9–21–65. Cl. 6.

Bell Industries, Inc., New York, N.Y. 799,937, pub. 9–21–65. Cl. 42.

Benger Laboratories Ltd., Cheshire, England. 686,824, canc. Cl. 18.

Benrus Watch Co., Inc., New York, N.Y. 799,855, pub. 9–21–65. Cl. 27.
Benwill Publishing Corp., Brookline, Mass. 800,065. Cl. 38.
Berg Equipment Corp., Marshfield, Wis. 799,797, pub. 9–21–65. Cl. 23.
Bergen Pipesupport Corp., Wood-Ridge, N.J. 799,721, pub. 9–21–65. Cl. 13.
Berjon Co.: *See*—
Mentholatum Co., The.
Bertram, Harvey P., Co., The, Cincinnati, Ohio. 799,883, pub. 9–21–65. Cl. 34.
Big Kernel Pet Foods, Inc., Chicago, Ill. 799,747, pub. 9–21–65. Cl. 18.
Bill & Caldwell, Inc., New York, N.Y. 799,918, pub. 9–21–65. Cl. 39.
Bill and Marve's Turkey Farms: *See*—
Bill and Marve's Turkey Farm Hatchery.
Bill and Marve's Turkey Farm Hatchery, d.b.a. Bill and Marve's Turkey Farms, Zeeland, Mich. 799,954, pub. 9–21–65. Cl. 46.
Binney & Smith Co., to Columbian Carbon Co., New York, N.Y. 208,116, ren. 12–7–65. Cl. 6.
Binney & Smith Co., to Columbian Carbon Co., New York, N.Y. 207,293, ren. 12–7–65. Cl. 16.
Bituminized Products Co.: *See*—
Guthrie, Bernard M.
Blanchard Importing & Distributing Co., Inc., Boston, Mass. 800,078. Cl. 49.
Bliss & Laughlin Industries Inc., Oak Brook, Ill. 800,051. Cl. 14.
Bohme, Pierre, d.b.a. Simone Cochard Beauty Preparations, New York, N.Y. 800,081. Cl. 51.
Borden Co., The, New York, N.Y. 799,962, pub. 9–21–65. Cl. 46.
Borden Co., The: *See*—
Arabol M'f'g Co., The.
Borg-Warner Corp.: *See*—
Atkins, E. C., & Co.
Boss Mfg. Co., Kewanee, Ill. 799,916, pub. 9–21–65. Cl. 39.
Brandt, René, Fabrique d'Horlogerie Ogival, by Ogival, S.A., La Chaux-de-Fonds, Switzerland. 416,531, 12(c) pub. 12–7–65. Cl. 27.
Briggs Mfg. Co., Warren, Mich. 799,728, pub. 9–21–65. Cl. 13.
Bristol Laboratories Inc., Syracuse, N.Y. 686,828, canc. Cl. 18.
Brown County Mfg. Co., Brownwood, Tex. 799,943, pub. 9–21–65. Cl. 45.
Brown, James H. P., Lakeland, Fla. 800,054. Cl. 22.
Brunswick-Balke-Collender Co., The, Wilmington, Del., and Chicago, Ill., to Coral Records, Inc., New York, N.Y. 205,099, ren. 12–7–65. Cl. 36.
Bullard, E. D., Co., Sausalito, Calif. 799,931, pub. 9–21–65. Cl. 39.
Bunker-Ramo Corp., The, Canoga Park, Calif. 799,831, pub. 9–21–65. Cl. 26.
Burroughs, Edgar Rice, Inc., Tarzana, Calif. 799,908, pub. 9–21–65. Cl. 38.
Business Development Associates, Boston, Mass. 800,026, pub. 9–21–65. Cl. 101.
Butler, Edward A., Summit, N.J. 686,921, canc. Cl. 38.
Camelot Motor Lodge and Inn Corp., Palm Beach, Fla. 800,011, pub. 9–21–65. Cl. 100.
Canada Cycle and Motor Co. Ltd., Toronto, Ontario, Canada. 799,786, pub. 9–21–65. Cl. 22.
Canadian Corp. for The 1967 World Exhibition, Montreal, Quebec, Canada. 799,909, pub. 9–21–65. Cl. 38.
Canadian Industries Ltd., Montreal, Quebec, Canada. 799,703, pub. 9–21–65. Cl. 9.
Canright Corp., Glendale, Calif. 686,836, canc. Cl. 18.
Carinthia-Elektrogerate Gesellschaft m.b.H., Klagenfurt, Carinthia, Austria. 799,803, pub. 9–21–65. Cl. 23.
Carpenter Steel Co., The, Reading, Pa. 416,984–7, ren. 12–7–65. Cl. 14.
Carter, H. W., & Co. Ltd., Bristol, by Beecham Group Ltd., d.b.a. Beecham Food & Drink Division, Brentford, England. 416,684, 12(c) pub. 12–7–65. Cl. 18.
Carter Products, Inc., New York, N.Y. 799,753, pub. 9–21–65. Cl. 18.
Cassell, Burt, Inc., Providence, R.I. 799,859, pub. 9–21–65. Cl. 28.
Catholic Book Publishing Co., Inc., New York, N.Y. 800,061. Cl. 38.
Central Hadley Corp., Pomona, from United States Filter Corp., Whittier, Calif. 799,865, pub. 9–21–65. Cl. 31.
Champion Envelope Mfg. Co., Inc., New York, N.Y. 686,914, canc. Cl. 37.
Chase, Joseph, Laboratories Ltd.: *See*—
Mur/Mark, Inc.
Cheesman, Kenneth D., d.b.a. Seaboard Citrus, Seattle, Wash. 799,950, pub. 9–21–65. Cl. 46.
Chemical Paper Co., Holyoke, Mass., to Saxon Paper Corp., New York, N.Y. 44,750, ren. 12–7–65. Cl. 37.
Chesler, J., & Sons, Inc., Brooklyn, N.Y. 686,854, canc. Cl. 25.
Chiong, Bobby, d.b.a. K & C Co., Los Angeles, Calif. 799,971, pub. 9–21–65. Cl. 46.
Church Mutual Insurance Co., Merrill, Wis. 800,029, pub. 9–21–65. Cl. 102.
Cinderella Career and Finishing Schools, Inc., from Cinderella Finishing School and Career College, Washington, D.C. 800,040, pub. 9–21–65. Cl. 107.
Cinderella Finishing School and Career College: *See*—
Cinderella Career and Finishing Schools, Inc.
Clair, Robert A., Co., Inc., New York, N.Y. 799,934, pub. 9–21–65. Cl. 39.
Clearfloat, Inc., Attleboro, Mass. 799,991, pub. 9–21–65. Cl. 50.
Climet Instruments, Inc., Sunnyvale, Calif. 799,840–1, pub. 9–21–65. Cl. 26.
Coast Mfg. & Supply Co., Livermore, Calif. 799,702, pub. 9–21–65. Cl. 9.
Colgate-Palmolive Co., New York, N.Y. 799,697, pub. 9–21–65. Cl. 6.
Columbian Carbon Co.: *See*—
Binney & Smith Co.
Commander Mill Co., to Archer-Daniels-Midland Co., Minneapolis, Minn. 206,433, ren. 12–7–65. Cl. 46.
Conco Engineering Works, Inc., Mendota, Ill. 799,820, pub. 9–21–65. Cl. 23.
Conlengco, Inc., Los Angeles, Calif. 800,010, pub. 9–21–65. Cl. 100.
Control Data Corp., Minneapolis, Minn. 799,846, pub. 9–21–65. Cl. 26.
Cook Produce, Inc., Glendale, Ariz. 799,968, pub. 9–21–65. Cl. 46.
Cooperman, Harris L., d.b.a. HLC Engineering Co., Glenside, Pa. 799,848, pub. 9–21–65. Cl. 26.
Copelli, Gerard E.: *See*—
Stuart, Inc.
Copperweld Steel Co., Glassport, Pa. 799,776, pub. 9–21–65. Cl. 21.
Coral Records, Inc.: *See*—
Brunswick-Balke-Collender Co., The.
Corlell, George, Dublin, Ohio. 799,870, pub. 9–21–65. Cl. 32.
Cork Insulation & Asbestos Co. Ltd.: *See*—
Standard Cork Insulation Co. Ltd.
Cornnuts Inc., Oakland, Calif. 799,955, pub. 9–21–65. Cl. 46.
County Trust Co., The, White Plains, N.Y. 800,032, pub. 9–21–65. Cl. 102.
Coventry, Sarah, Inc., Newark, N.Y. 799,858, pub. 9–21–65. Cl. 28.
Cowman-Campbell Paint Co., Inc., Seattle, Wash. 799,932, pub. 9–21–65. Cl. 39.
Cresca Co., Inc., New York, N.Y. 799,961, pub. 9–21–65. Cl. 46.
Croda Ltd., Goole, England. 417,057, 12(c) pub. 12–7–65. Cl. 6.
Crouse-Hinds Co., Syracuse, N.Y. 50,463, ren. 12–7–65. Cl. 21.
Crown Industrial Products Co., Hebron, Ill. 799,734, pub. 9–21–65. Cl. 15.
Czela: *See*—
North, Czela.
Daimler-Benz Aktiengesellschaft, Stuttgart, Germany. 799,796, pub. 9–21–65. Cl. 23.
Daimler-Benz Aktiengesellschaft, Stuttgart-Untertuerkheim, Germany. 799,823, pub. 9–21–65. Cl. 26.
Dakin, R., & Co., San Francisco, Calif. 799,787, pub. 9–21–65. Cl. 22.
Dakota Microfilm Service, Inc., Denver, Colo. 799,826, pub. 9–21–65. Cl. 26.
Daddato Bros., Fresno, Calif. 799,983, pub. 9–21–65. Cl. 46.
Davinci Creations, Inc., Providence, R.I. 799,860, pub. 9–21–65. Cl. 28.
Day-Brite Lighting, Inc., St. Louis, Mo. 687,017, canc. Cl. 21.
Dean Hill Corp., Indianapolis, Ind. 799,809, pub. 9–21–65. Cl. 23.
De Barentzen, Patrick, Rome, Italy. 799,921, pub. 9–21–65. Cl. 39.
De Luxe Reading Corp., Elizabeth, N.J. 799,788, pub. 9–21–65. Cl. 22.
De Luxe Reading Corp., Elizabeth, N.J. 799,790, pub. 9–21–65. Cl. 22.
Dempster Brothers, Inc., Knoxville, Tenn. 686,792, canc. Cl. 2.
Dennison Mfg. Co., Framingham, Mass. 800,058. Cl. 26.
Devine's Remedies, Inc., Chicago, Ill. 799,744, pub. 9–21–65. Cl. 18.
Di-Noc Mfg. Co., The, Cleveland, Ohio, to Minnesota Mining and Mfg. Co., St. Paul, Minn. 416,407, ren. 12–7–65. Cl. 26.
Dispatch Printing Co., The, Columbus, Ohio. 687,014, canc. Cl. 107.
Doerr, A. A., Mercantile Co., Larned, Kans. 799,718, pub. 9–21–65. Cl. 13.
Dog House, Inc., The, Youngstown, Ohio. 800,013, pub. 9–21–65. Cl. 100.
Dolly Fruit Products Corp., Brooklyn, N.Y. 686,956, canc. Cl. 45.
Douglas Oil Co. of California, Los Angeles, Calif. 799,892, pub. 9–21–65. Cl. 35.
Double Woven Corp. of America, Dunmore, Pa. 686,954, canc. Cl. 42.
Dow Chemical Co., The: *See*—
Pitman-Myers Co.
Pitman-Moore Co.
Dow Chemical Co.: *See*—
Allied Laboratories, Inc.
Drexel Enterprises, Inc., Drexel, N.C. 799,874–5, pub. 9–21–65. Cl. 32.
Dubuque Packing Co., Dubuque, Iowa. 799,673, pub. 9–21–65. Cl. 1.
Du Pont de Nemours, E. I., and Co., Wilmington, Del. 417,598, 12(c) pub. 12–7–65. Cl. 46.
E & E Mfg. Co., Cedar Hill, Tex. 799,868, pub. 9–21–65. Cl. 32.
Early American Life Insurance Co., Evansville, Ind. 800,028, pub. 9–21–65. Cl. 102.
Eastern National Bank of Long Island, The, Smithtown, N.Y. 800,030, pub. 9–21–65. Cl. 102.

Eastman Kodak Co., Rochester, N.Y. 799,690, pub. 9–21–65. Cl. 6.
Electro Lighting Corp., Chicago, Ill. 687,018, canc. Cl. 21.
Elgin National Watch Co.: *See*—
Wadsworth Watch Case Co., The.
Elkay Mfg. Co., Broadview, Ill. 799,731, pub. 9–21–65. Cl. 13.
Embassy Industries, Inc., Brooklyn, N.Y. 799,882, pub. 9–21–65. Cl. 34.
Emcor, Inc., Des Plaines, Ill. 800,004, pub. 9–21–65. Cl. 52.
Empire Packing Co.: *See*—
Adamek, Ben F.
Endo Laboratories, Inc., Garden City, N.Y. 799,748, pub. 9–21–65. Cl. 18.
Eskimo Pie Corp., Richmond, Va. 800,074. Cl. 46.
Essex Wire Corp., Fort Wayne, Ind. 799,720, pub. 9–21–65. Cl. 13.
Ettelbrick Shoe Co., Greenup, Ill. 799,924, pub. 9–21–65. Cl. 39.
Eucharistic Crusade, Inc., New York, N.Y. 799,906, pub. 9–21–65. Cl. 38.
Eutectic Welding Alloys Corp., Flushing, N.Y. 799,890, pub. 9–21–65. Cl. 34.
Evans, Geo T., & Son, to General Grain, Inc., Indianapolis, Ind. 47,066, ren. 12–7–65. Cl. 46.
Evangelical Missions Information Service Inc., Washington, D.C. 800,067. Cl. 38.
Evans Products Co., Plymouth, Mich. 799,762, pub. 9–21–65. Cl. 19.
Extron Corp., Knoxville, Tenn. 799,675, pub. 9–21–65. Multiple Class (Classes 1 and 13).
Fairchild Camera and Instrument Corp., Syosset, N.Y. 799,850, pub. 9–21–65. Cl. 26.
Farbenfabriken Bayer Aktiengesellschaft, Leverkusen-Bayerwerk, Germany. 799,746, pub. 9–21–65. Cl. 18.
Farbenfabriken Bayer Aktiengesellschaft, Leverkusen-Bayerwerk, Germany. 686,825, canc. Cl. 18.
Farm Journal, Inc., Philadelphia, Pa. 800,069. Cl. 38.
Feilman Tri-Vac Footwear, Inc., Livingston, N.J. 686,946, canc. Cl. 39.
Fensholt Advertising Agency, Inc., The, Chicago, Ill. 800,024, pub. 9–21–65. Cl. 101.
Ferro Corp., Cleveland, Ohio. 799,769, pub. 9–21–65. Cl. 21.
Fink, A., & Sons, Newark, N.J., to Hygrade Food Products Corp., Detroit, Mich. 204,032, ren. 12–7–65. Cl. 46.
Fischer-Lang & Co., Inc., Frederick, Md. 800,003, pub. 9–21–65. Cl. 52.
Firmenich, Inc.: *See*—
Naef, M., & Cie.
First Mfg. Corp., Bronx, N.Y. 799,727, pub. 9–21–65. Cl. 13.
Fleischmann Distilling Corp., The, New York, N.Y. 799,987, pub. 9–21–65. Cl. 49.
Fluff 'n Puff Pillow Service of America, Inc., Minneapolis, Minn. 687,006, canc. Cl. 103.
Foto-Fax Co., Inc., Dearborn, Mich. 799,832, pub. 9–21–65. Cl. 26.
Ford, J., & Co. Ltd., Montreal, Quebec, Canada. 799,905, pub. 9–21–65. Cl. 37.
Frank, S. M., & Co., Inc., New York, N.Y. 799,698–9, pub. 9–21–65. Cl. 8.
Franklin Cotton Mill Co., Cincinnati, Ohio. 206,315, ren. 12–7–65. Cl. 35.
Franksville, Inc., Chicago, Ill. 799,946, pub. 9–21–65. Cl. 45.
French, Shriner & Urner Mfg. Co., Boston, Mass. 799,914, pub. 9–21–65. Cl. 39.
Frick Co., Waynesboro, Pa. 799,812, pub. 9–21–65. Cl. 23.
Fuller Co.: *See*—
Inflico, Inc.
Gainesville Machine Co., Gainesville, Ga. 799,821, pub. 9–21–65. Cl. 23.
Galen Co., Berkeley, Calif., by White Laboratories, Inc., Kenilworth, N.J. 416,736, 12(c) pub. 12–7–65. Cl. 18.
Gallo, E. & J., Winery, Modesto, Calif. 799,984, pub. 9–21–65. Cl. 47.
General Aniline & Film Corp., New York, N.Y. 799,691, pub. 9–21–65. Cl. 6.
General Aniline & Film Corp., New York, N.Y. 799,852–4, pub. 9–21–65. Cl. 26.
General Foods Corp., White Plains, N.Y. 799,976, pub. 9–21–65. Cl. 46.
General Grain, Inc.: *See*—
Evans, Geo. T., & Son.
General Motors Corp., Detroit, Mich. 799,881, pub. 9–21–65. Cl. 34.
General Mills, Inc., Minneapolis, Minn. 800,075. Cl. 46.
General Plastics Corp., Los Angeles, Calif. 799,989, pub. 12–15–64. Cl. 50.
General Reed Co., Metuchen, N.J. 799,773, pub. 9–21–65. Cl. 21.
General Zipper Corp., Long Island City, N.Y. 799,729–30, pub. 9–21–65. Cl. 13.
Goodrich, B. F., Co., The, Akron, Ohio. 799,682, pub. 9–21–65. Cl. 5.
Golden Hamburger Drive-In Corp., The, Chicago, Ill. 686,999, canc. Cl. 101.
Goldberg, S., & Co., Inc., Hackensack, N.J. 207,851, ren. 12–7–65. Cl. 39.
Goldsmith Leather Co., Inc., Newark, N.J. 799,672, pub. 9–21–65. Cl. 1.
Gould's 'Dell' Products, Williamsport, Pa. 799,692, pub. 9–21–65. Cl. 6.
Glenn Industries: *See*—
Srago, Glenda R.
Globe Auto Paint Shops, Inc., Cleveland, Ohio. 687,009, canc. Cl. 103.
Globe-Union Inc.: *See*—
Globe Skate Corp.
Globe Skate Corp., from Globe-Union Inc., Menomonee Falls, Wis. 799,780, pub. 6–15–65. Cl. 22.
Grain Processing Corp., Muscatine, Iowa. 799,953, pub. 9–21–65. Cl. 46.
Grant, W. G., & Co. Ltd., Dundee, Scotland. 799,992, pub. 9–21–65. Cl. 50.
Great Atlantic & Pacific Tea Co., Inc., The, New York, N.Y. 799,974, pub. 9–21–65. Cl. 46.
Griffin, Pat, Co.: *See*—
Griffin, Pat.
Griffin, Pat, d.b.a. Pat Griffin Co., Fort Collins, Colo. 799,738, pub. 9–21–65. Cl. 15.
Guard Chemical Co., Inc., Ossining, N.Y. 799,687, pub. 9–21–65. Cl. 6.
Guthrie, Bernard M., d.b.a. Bituminized Products Co., Corvallis, Oreg. 799,712, pub. 9–21–65. Cl. 12.
HLC Engineering Co.: *See*—
Cooperman, Harris L.
HP Tool Mfg. Corp.: *See*—
H-P Tool Mfg. Corp.
H-P Tool Mfg. Corp., Philadelphia, Pa. 800,057. Cl. 23.
Hamilton Organ Co., Chicago Heights, Ill., to D. H. Baldwin Co., Cincinnati, Ohio. 47,072, ren. 12–7–65. Cl. 36.
Hammermill Paper Co., Erie, Pa. 799,904, pub. 9–21–65. Cl. 37.
Handmade Soap & Candle Co., The: *See*—
Pinehurst Handmade Soap & Candle Co.
Hanky Panky Co.: *See*—
Schneider, William S., Arthur P. Corella, and Vincent Wayne Rodgers.
Harder, Inc., Madison, Wis. 799,956, pub. 9–21–65. Cl. 46.
Harper & Row Publishers, Inc., New York, N.Y. 799,910, pub. 9–21–65. Cl. 38.
Harvith, Erwin, Detroit, Mich. 799,915, pub. 9–21–65. Cl. 39.
Heath, Westcott, Jr., d.b.a. Westcott Electronics, Clifton, N.J. 799,838, pub. 9–21–65. Cl. 26.
Heinz, H. J., Co., Pittsburgh, Pa. 799,959, pub. 9–21–65. Cl. 46.
Heitz, K., Import Co.: *See*—
Heitz, Karl.
Heitz, Karl, d.b.a. K. Heitz Import Co., New York, N.Y. 799,774, pub. 9–21–65. Cl. 21.
Heyer Products Co., Inc., Montclair, to Atlas Supply Co., Sprinfield, N.J. 206,500, ren. 12–7–65. Cl. 26.
Hickok Electrical Instrument Co., The, Cleveland, Ohio. 799,827, pub. 9–21–65. Cl. 26.
Hillhopper Originals: *See*—
Stairs, Shirley.
Hi-Protein Food Products Co.: *See*—
Abel, Dr. William.
Hobbymaster, Inc., San Francisco, Calif. 800,017, pub. 9–21–65. Cl. 101.
Hoeganaes Sponge Iron Corp., New York, N.Y. 799,732, pub. 9–21–65. Cl. 14.
Hofliger & Karg, Waiblingen, near Stuttgart, Germany. 799,801, pub. 9–21–65. Cl. 23.
Holt Hosiery Mills, Inc., Burlington, N.C. 686,944, canc. Cl. 39.
Horne's Enterprises, Inc., Bayard, Fla. 800,008, pub. 9–21–65. Cl. 100.
Hotel and Restaurant Employees and Bartenders International Union: *See*—
Hotel and Restaurant Employees' International Alliance and Bartenders' International League of America.
Hotel and Restaurant Employees' International Alliance and Bartenders' International League of America, by Hotel and Restaurant Employees and Bartenders International Union, Cincinnati, Ohio. 414,584, 12(c) pub. 12–7–65. Cl. 38.
Howe-Baker Engineers, Inc., Tyler, Tex. 800,012, pub. 9–21–65. Cl. 100.
Humble Oil & Refining Co.: *See*—
Standard Oil Co. (New Jersey).
Huret et ses Fils, Societe Anonyme Francaise, Nanterre (Seine), France. 799,761, pub. 9–21–65. Cl. 19.
Hygrade Food Products Corp.: *See*—
Fink, A., & Sons.
Impro Corp., Pasadena, Calif. 799,836–7, pub. 9–21–65. Cl. 26.
Industrial Nucleonics Corp., Columbus, Ohio. 799,849, pub. 9–21–65. Cl. 26.
Inflico, Inc., Chicago, Ill., to Fuller Co., Catasauqua, Pa. 416,223, ren. 12–7–65. Cl. 26.
Instruments, Inc., Tulsa, Okla. 799,828, pub. 9–21–65. Cl. 26.
International Latex Corp., Dover, Del. 799,925, pub. 9–21–65. Cl. 39.
International Latex Corp., Dover, Del. 799,929, pub. 9–21–65. Cl. 39.
International Minerals & Chemical Corp., Skokie, Ill. 800,027, pub. 9–21–65. Cl. 101.
International Milling Co. Inc., d.b.a. Kretschmer Wheat Germ Products Division of International Milling Co., Inc., Minneapolis, Minn. 799,963, pub. 9–21–65. Cl. 46.
International Minerals & Chemical Corp., Skokie, Ill. 686,791, canc. Cl. 1.
International Telephone and Telegraph Corp., New York, N.Y. 799,891, pub. 9–21–65. Cl. 34.
Interstate Motor Lodges, Inc., Camilla, Ga. 800,097. Cl. 100.
Interwoven Stocking Co., to Powerhouse, Inc., New Brunswick, N.J. 388,893, 12(c) pub. 12–7–65. Cl. 39.
Jacobs Brothers, Inc.: *See*—
Jacobs Brothers.

Jacobs Brothers, by Jacobs Brothers, Inc., Baltimore, Md. 203,837, pub. 12(c) 12–7–65. Cl. 39.
Janita Systems, Inc., Atlanta, Ga. 799,680, pub. 9–21–65. Multiple Class (Classes 4, 6, 16 and 52).
Jay Cee Novelty Co.: *See*—
Stuart, Inc.
Jay-R Co., Bartonville, Ill. 799,970, pub. 9–21–65. Cl. 46.
Jo-Han Models, Inc., Detroit, Mich. 799,990, pub. 9–21–65. Cl. 50.
Johnson & Johnson, New Brunswick, N.J. 799,942, pub. 9–21–65. Cl. 44.
K & C Co.: *See*—
Chlong, Bobby.
K.C.K. Holding Co., d.b.a. King C Industries, Inc., Los Angeles, Calif. 799,872, pub. 9–21–65. Cl. 32.
K & D Industries, Inc., Frazer, Pa. 799,889, pub. 9–21–65. Cl. 34.
Kappa Epsilon Fraternity, Scottsdale, Ariz. 800,045, pub. 9–21–65. Cl. 200.
Karman Inc., Denver, Colo. 799,923, pub. 9–21–65. Cl. 39.
Keller Publishing Corp., New York, N.Y. 800,063. Cl. 38.
Kelsey-Hayes Co., Romulus, Mich. 799,764, pub. 9–21–65. Cl. 19.
Kentile Floors Inc., Brooklyn, N. Y. 799,765–6, pub. 9–21–65. Cl. 20.
Kettle Products Corp., Livonia, Mich. 799,977, pub. 9–21–65. Cl. 46.
Keystone Lubricating Co., Philadelphia, Pa., to Keystone Lubricating Co., Calumet City, Ill. 203,754–6, ren. 12–7–65. Cl. 15.
Keystone Lubricating Co., Philadelphia, Pa., to Keystone Lubricating Co., Calumet City, Ill. 417,489, ren. 12–7–65. Cl. 15.
Kiefer, Adolph, & Co., Northfield, Ill. 799,685, pub. 9–21–65. Cl. 6.
King C Industries, Inc.: *See*—
K.C.K. Holding Co.
Koch, H., & Sons, Inc., Corte Madera, Calif. 799,708, pub. 9–21–65. Cl. 12.
Kresge, S. S., Co., Detroit, Mich. 799,941, pub. 9–21–65. Cl. 44.
Kretschmer Wheat Germ Products Division of International Milling Co., Inc.: *See*—
International Milling Co. Inc.
L & M Laboratories, Inc., to Abbott Laboratories, North Chicago, Ill. 746,138, new certificate. Cl. 18.
L & M Laboratories, Inc., to Abbott Laboratories, North Chicago, Ill. 741,525, new certificate. Cl. 18.
L & M Laboratories, Inc., to Abbott Laboratories, North Chicago, Ill. 734,460–1, new certificate. Cl. 18.
L & M Laboratories, Inc., to Abbott Laboratories, North Chicago, Ill. 728,194, new certificate. Cl. 18.
L & M Laboratories, Inc., to Abbott Laboratories, North Chicago, Ill. 727,907, new certificate. Cl. 18.
Laber Spring & Electric Car Corp., Oakland, Calif. 799,760, pub. 9–21–65. Cl. 19.
Laiterie des Fermiers Reunis, Paris, France. 799,952, pub. 9–21–65. Cl. 46.
Lane Co., Inc., The, Altavista, Va. 799,876, pub. 9–21–65. Cl. 32.
Lancaster Products, Inc., Lancaster, Pa. 799,696, pub. 9–21–65. Cl. 6.
Lanman & Kemp-Barclay & Co., Inc.: *See*—
Barclay & Barclay.
La Paz Shirts Inc., Los Angeles, Calif. 686,940, canc. Cl. 39.
Latrobe Electric Steel Co., by Latrobe Steel Co., Latrobe, Pa. 199,407, 12(c) pub. 12–7–65. Cl. 12.
La Verne Co-Operative Citrus Assn., La Verne, Calif. 204,645, ren. 12–7–65. Cl. 46.
Latrobe Steel Co.: *See*—
Latrobe Electric Steel Co.
Lawrence, W. W., & Co., to John Lucas & Co., Inc., Philadelphia, Pa. 55,527, new certificate. Cl. 16.
Lawrence, W. W., & Co., to John Lucas & Co., Inc., Philadelphia, Pa. 528,895, new certificate. Cl. 16.
Lawrence, W. W., & Co., to John Lucas & Co., Inc., Philadelphia, Pa. 224,821, new certificate. Cl. 16.
Lawrence, W. W., & Co., to John Lucas & Co., Inc., Philadelphia, Pa. 193,192, new certificate. Cl. 16.
Lee, Gibson, Inc.: *See*—
Reversible Collar Co.
Lemmon Pharmacal Co., Sellersville, Pa. 799,750, pub. 9–21–65. Cl. 18.
Liberty Coach Co., Inc., to Lancer Mobile Homes, Inc., Riverside, Calif. 668 273, new certificate. Cl. 19.
Lindgren & Sons Machine Co., Inc., Fitchburg, Mass. 799,807, pub. 9–21–65. Cl. 23.
Lith, Michael, Sales Corp., New York, N.Y. 799,804–5, pub. 9–21–65. Cl. 23.
Liquid Nitrogen Processing Corp., Malvern, Pa. 799,671, pub. 9–21–65. Cl. 1.
Liquid Nitrogen Processing Corp., Malvern, Pa. 799,735, pub. 9–21–65. Cl. 15.
L'Oreal, Paris, France. 799,994, pub. 9–21–65. Cl. 51.
Lueders, George, & Co., New York, N.Y. 800,076. Cl. 46.
Lyons & Carnahan, Chicago, Ill. 799,913, pub. 9–21–65. Cl. 38.
MB Associates, San Ramon, Calif. 799,701, pub. 9–21–65. Cl. 9.
M & R Dietetic Laboratories, Inc., to Abbott Laboratories, North Chicago, Ill. 728,619, new cert. Cl. 46.
M & R Dietetic Laboratories, Inc., to Abbott Laboratories, North Chicago, Ill. 594,924, new cert. Cl. 46.
M & R Dietetic Laboratories, Inc., d.b.a. Ten-B-Low Co., to Abbott Laboratories, North Chicago, Ill. 569,186, new cert. Cl. 46.
M & R Dietetic Laboratories, Inc., to Abbott Laboratories, North Chicago, Ill. 561,978, new cert. Cl. 46.
M & R Dietetic Laboratories, Inc., to Abbott Laboratories, North Chicago, Ill. 557,337, new cert. Cl. 46.
M & R Dietetic Laboratories, Inc., d.b.a. The Ten-B-Low Co., to Abbott Laboratories, North Chicago, Ill. 538,135, new cert. Cl. 46.
M & R Dietetic Laboratories, Inc., to Abbott Laboratories, North Chicago, Ill. 432,084, new cert. Cl. 46.
M & R Dietetic Laboratories, Inc., to Abbott Laboratories, North Chicago, Ill. 363,624, new cert. Cl. 46.
MacGregor-Comarain, Paris, France. 800,033, pub. 9–21–65. Cl. 103.
Magnasync Corp., North Hollywood, Calif. 800,060. Cl. 36.
Malone, E. B., Corp., The, Hialeah, Fla. 799,873, pub. 9–21–65. Cl. 32.
Mancuso, Louis G., Dallas, Tex. 687,019, canc. Cl. 21.
Manganese Steel Forge Co., Philadelphia, Pa. 799,724–5, pub. 9–21–65. Cl. 13.
Mapleton Milling Co., to Archer-Daniels-Midland Co., Minneapolis, Minn. 49,531, ren. 12–7–65. Cl. 46.
Marginator Co., Burbank, Calif. 686,879, canc. Cl. 26.
Mark Century Corp., New York, N.Y. 800,023, pub. 9–21–65. Cl. 101.
Martin Engineering Co., Neponset, Ill. 799,814, pub. 9–21–65. Cl. 23.
Master Fan Corp.: *See*—
Porter, H. K., Co., Inc.
Mastrangelo, John P., Valley Stream, N.Y. 800,042, pub. 9–21–65. Cl. 107.
Mattel, Inc., Hawthorne, Calif. 799,784, pub. 9–21–65. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 799,793, pub. 9–21–65. Cl. 22.
Mayer Co., Inc., The, New York, N.Y. 686,949, canc. Cl. 39.
Maxon Premix Burner Co., Inc., Muncie, Ind. 799,880, pub. 9–21–65. Cl. 34.
Mead Corp., The, Dayton, Ohio. 799,902, pub. 9–21–65. Cl. 37.
Megowen-Educator Food Co., Lowell, Mass. 686,981, canc. Cl. 46.
Medco Co., Inc., Metairie, La. 686,822, canc. Cl. 18.
Melrose Chemicals, Inc., South Fulton, Tenn. 800,002, pub. 9–21–65. Cl. 52.
Metacomet Inc., Hawthorne, N.J. 800,014, pub. 9–21–65. Cl. 100.
Melrose Yarn Co., Inc., Brooklyn, N.Y. 799,939, pub. 9–21–65. Cl. 43.
Mentholatum Co., The, Buffalo, N.Y., from Berjon Co., Memphis, Tenn. 686,820, canc. Cl. 18.
Merck & Co., Inc., Rahway, N.J. 799,754, pub. 9–21–65. Cl. 18.
Merkle Metal Products Corp., Chicago, Ill. 799,810, pub. 9–21–65. Cl. 23.
Micro Dynamics, Dana Point, Calif. 799,756, pub. 9–21–65. Cl. 19.
Midwest Hanger Co., Liberty, Mo. 799,993, pub. 9–21–65. Cl. 50.
Middlesex Products Corp.: *See*—
Reversible Collar Co.
Miller Industries, Inc., Miami, Fla. 799,711, pub. 9–21–65. Cl. 12.
Mineralite Ltd., Croydon, England. 799,713, pub. 9–21–65. Cl. 12.
Minnesota Mining and Mfg. Co., St. Paul, Minn. 686,868, canc. Cl. 26.
Minnesota Mining and Mfg. Co.: *See*—
Di-Noc Mfg. Co., The.
Miracle Adhesives Corp., Bellmore, N.Y. 799,714, pub. 9–21–65. Cl. 12.
Mission Valve and Pump Co., Houston, Tex. 799,726, pub. 9–21–65. Cl. 13.
Moores & Ross, Inc., to Abbott Laboratories, North Chicago, Ill. 227,046, new cert. Cl. 46.
Moores & Ross, Inc., to Abbott Laboratories, North Chicago, Ill. 227,044, new cert. Cl. 46.
Moorman Mfg. Co., Quincy, Ill. 799,742, pub. 9–21–65. Cl. 18.
Moline, Carl J., d.b.a. Studio 5 Advertising, Muskegon Heights, Mich. 800,016, pub. 9–21–65. Cl. 101.
Money, Robert E., Columbus, Ga. 799,894, pub. 9–21–65. Cl. 36.
Morrison Milling Co., The, Denton, Tex., 417,941, 12(c) pub. 12–7–65. Cl. 46.
Mueller, V., & Co., Chicago, Ill. 799,688, pub. 9–21–65. Cl. 6.
Mundet Cork Corp., North Bergen, N.J. 686,788, canc. Cl. 1.
Mur/Mark, Inc., d.b.a. Joseph Chase Laboratories Ltd., Los Angeles, Calif. 800,093. Cl. 52.
Muratti Sons & Co.: *See*—
United Kingdom Tobacco Co., Ltd., The.
Music Corp. of America, Beverly Hills, Calif. 686,995, canc. Cl. 100.
N.V. Philips-Roxane Pharmaceutisch-Chemische Industrie "Duphar," Amsterdam, Netherlands. 686,830, canc. Cl. 18.
Naef, M., & Cie., Geneva, Switzerland, to Firmenich, Inc., New York, N.Y. 210,919–20, ren. 12–7–65. Cl. 51.
Naef, M., & Cie., Geneva, Switzerland, to Firmenich, Inc., New York, N.Y. 210,913, ren. 12–7–65. Cl. 51.
Naef, M., & Cie., Geneva, Switzerland, to Firmenich, Inc., New York, N.Y. 210,914–15, ren. 12–7–65. Cl. 51.
Nelco Chemical Co., Chicago, Ill. 799,684, pub. 9–21–65. Cl. 6.
National Assistance League, Hollywood, Calif. 800,007, pub. 9–7–65. Cl. 100.
National Artcrafts, Inc., Detroit, Mich. 686,919–20, canc. Cl. 38.
National Automotive Parts Assn., Chicago, Ill. 799,759, pub. 9–21–65. Cl. 19.

National Automotive Parts Assn., Chicago, Ill. 799,704, pub. 9–21–65. Cl. 9.
National Biscuit Co., New York, N.Y. 799,951, pub. 9–21–65. Cl. 46.
National Brewing Co., The, Baltimore, Md. 799,986, pub. 9–21–65. Cl. 48.
National Creditors Service, Inc., Tyler, Tex. 687,004, canc. Cl. 102.
National Industries for The Blind, New York, N.Y. 799,861, pub. 9–21–65. Cl. 29.
National Plastic Products Co., Inc., d.b.a. The Vectra Co., Odenton, Md. 799,933, pub. 9–21–65. Cl. 39.
National Social Foundation, Inc., Boulder, Colo. 800,020, pub. 9–21–65. Cl. 101.
National Testing and Research Laboratory, Inc., Detroit, Mich. 800,015, pub. 9–21–65. Cl. 100.
Nationwide Papers Inc., Chicago, Ill. 799,903, pub. 9–21–65. Cl. 37.
Nelse, Karl A., Inc., Woodside, N.Y. 799,815, pub. 9–21–65. Cl. 23.
New York Consolidated Card Co., The, New York, N.Y., to The United States Playing Card Co., Cincinnati, Ohio. 48,763, ren. 12–7–65. Cl. 22.
New York Consolidated Card Co., The, New York, N.Y., to The United States Playing Card Co., Cincinnati, Ohio. 49,103, ren. 12–7–65. Cl. 22.
New York Consolidated Card Co., The, New York, N.Y., to The United States Playing Card Co., Cincinnati, Ohio. 49,107, ren. 12–7–65. Cl. 22.
Nielsen, A. C., Co., Chicago, Ill. 800,022, pub. 9–21–65. Cl. 101.
Nishimoto Trading Co., Ltd.: *See*—
Nishimoto Trading Co., Ltd., of Hawaii.
Nishimoto Trading Co., Ltd., of Hawaii, d.b.a. Nishimoto Trading Co., Ltd., Honolulu, Hawaii. 799,949, pub. 9–21–65. Cl. 46.
Norco Sales Co., Gardena, Calif. 799,811, pub. 9–21–65. Cl. 23.
Norman, Merle, Cosmetics, Inc., Los Angeles, Calif. 800,083–92. Cl. 51.
North American Aviation, Inc., El Segundo, Calif. 799,763, pub. 9–21–65. Cl. 19.
North American Metalline Co., Long Island City, N.Y., by Charles C. Spadone, Norwalk, Conn. 51,247, 12(c) pub. 12–7–65. Cl. 23.
North, Czela, d.b.a. Czela, Costa Mesa, Calif. 799,785, pub. 9–21–65. Cl. 22.
Norwood Industries, Inc., Norwood, Mass. 800,052. Cl. 15.
O.K. Tire and Rubber Co., Littleton, Colo. 799,772, pub. 9–21–65. Cl. 21.
Ogival, S.A.: *See*—
René Brandt, Fabrique d'Horlogerie Ogival.
Ohio Art Co., The, Bryan, Ohio. 799,791–2, pub. 9–21–65. Cl. 22.
Ohio Leather Co., The, Girard, Ohio. 799,676, pub. 9–21–65. Cl. 1.
Opotow Dental Mfg. Corp., Brooklyn, N.Y. 686,092, canc. Cl. 52.
Orr and Sembower, Inc., Reading, Pa. 415,319, ren. 12–7–65. Cl. 34.
P.I.D. Mfg. Co., Hendersonville, N.C. 800,048. Cl. 2.
Parish Tithing, Inc., Detroit, Mich. 800,099. Cl. 101.
Park Industries, Inc., Murfreeesboro, Tenn. 799,839, pub. 9–21–65. Cl. 26.
Parke, Davis & Co., Detroit, Mich. 157,369, 12(c) pub. 12–7–65. Cl. 18.
Parke, Davis & Co., Detroit, Mich. 172,229, 12(c) pub. 12–7–65. Cl. 18.
Parke, Davis & Co., Detroit, Mich. 222,658, 12(c) pub. 12–7–65. Cl. 18.
Parke, Davis & Co., Detroit, Mich. 226,510, 12(c) pub. 12–7–65. Cl. 18.
Penney, J. C., Co., New York, N.Y. 799,935–6, pub. 9–21–65. Cl. 39.
Pharmacia Laboratories, Inc., New York, N.Y. 799,741, pub. 9–21–65. Cl. 18.
Phelps, Loren, Enterprises: *See*—
Phelps, Loren.
Phelps, Loren, d.b.a. Loren Phelps Enterprises, St. Johnsbury, Vt. 799,893, pub. 9–21–65. Cl. 36.
Picker X-Ray Corp., White Plains, N.Y. 799,834, pub. 9–21–65. Cl. 26.
Pillsbury Co., The, Minneapolis, Minn. 799,944–5, pub. 9–21–65. Cl. 45.
Pioneer Printing Ink Corp., Monroe, Mich. 686,802–3, canc. Cl. 11.
Pinehurst Handmade Soap & Candle Co., Pinehurst, N.C., from The Handmade Soap & Candle Co., Southern Pines, N.C. 800,094–5. Cl. 52.
Pitman-Moore Co.: *See*—
Allied Laboratories, Inc.
Pitman-Moore Co., to The Dow Chemical Co., Midland, Mich. 343,885, new certificate. Cl. 18.
Pitman-Moore Co., to The Dow Chemical Co., Midland, Mich. 342,302, new certificate. Cl. 18.
Plas-Steel Products, Inc., Walkerton, Ind. 799,816, pub. 9–21–65. Cl. 23.
Pocono Fabricators Inc., East Stroudsburg, Pa. 799,716–17, pub. 9–21–65. Cl. 12.
Polan Industries Inc., Huntington, W. Va. 799,824, pub. 9–21–65. Cl. 26.
Pony of the Americas Club, Inc., Mason City, Iowa. 800,046, pub. 9–21–65. Cl. A.
Poppin Products: *See*—
Terry, William C.
Port-A-Crib, Inc., Ballwin, Mo. 799,869, pub. 9–21–65. Cl. 32.
Porter, H. K., Co., Inc., Pittsburgh, Inc., Pittsburgh, Pa., from Master Fan Corp., Los Angeles, Calif. 799,884, pub. 9–21–65. Cl. 34.
Posen, Michael A., d.b.a. Golden Pharmaceutical Co., Chicago, Ill. 799,751, pub. 9–21–65. Cl. 18.
Postgraduate Courses for Latin American Physicians, Inc., Miami, Fla. 800,043, pub. 9–21–65. Cl. 107.
Powerhouse, Inc.: *See*—
Interwoven Stocking Co.
Pitman-Myers Co., to The Dow Chemical Co., Midland, Mich. 61,758, new certificate. Cl. 6.
Pride Service, Inc., Glen Rock, N.J. 799,737, pub. 9–21–65. Cl. 15.
Primeatize, Inc., Hollywood, Fla. 799,947, pub. 9–21–65. Cl. 46.
Princeville Canning Co., St. Francisville, La. 799,957, pub. 9–21–65. Cl. 46.
Produits d'Hygiene Buccale, Levallois-Perret (Seine), France. 799,995, pub. 9–21–65. Cl. 51.
Puerto Rico Distillers, Inc., Arecibo, Puerto Rico. 799,985, pub. 9–21–65. Cl. 47.
Purex Corp., Ltd., Lakewood, Calif. 800,096. Cl. 52.
Purex Corp., Ltd., Lakewood, Calif. 799,681, pub. 9–21–65. Cl. 4.
Puritan Chemical Co., Atlanta, Ga. 800,001, pub. 9–21–65. Cl. 52.
Rainbow Crafts, Inc., Cincinnati, Ohio. 799,795, pub. 9–21–65. Cl. 22.
Rawlings Corp., The, St. Louis, Mo. 799,922, pub. 9–21–65. Cl. 39.
Reserve Office Force Co., St. Louis, Mo. 800,018, pub. 9–21–65. Cl. 101.
Restonic Corp., Chicago, Ill. 799,878, pub. 9–21–65. Cl. 32.
Reversible Collar Co., Boston, to Gibson Lee, Inc., d.b.a. Middlesex Products Corp., Cambridge, Mass. 204,861, ren. 12–7–65. Cl. 39.
Rexall Drug and Chemical Co.: *See*—
Seamless Rubber Co., Inc., The.
Reynolds Yarns, Inc., Plainview, N.Y. 800,071. Cl. 43.
Rheem Electronics Corp., Hawthorne, Calif. 799,833, pub. 9–21–65. Cl. 26.
Rice-Stix Dry Goods Co., St. Louis, Mo., by Dwight S. Williams Co. Inc., New York, N.Y. 59,231, 12(c) pub. 12–7–65. Cl. 39.
Rice-Stix Dry Goods Co., St. Louis, Mo., by Dwight S. Williams Co. Inc., New York, N.Y. 92,829, 12(c) pub. 12–7–65. Cl. 39.
Ritoloy, Inc., Hazel Park, Mich. 686,861, canc. Cl. 26.
Robinsons, Inc., Orlando, Fla. 800,021, pub. 9–21–65. Cl. 101.
Robinson, Lorin B., Dayton, Ohio. 799,715, pub. 9–21–65. Cl. 12.
Robinson, Wm. C., & Son Co., Baltimore, Md. 204,742, 12(c) pub. 12–7–65. Cl. 15.
Rodwell, Robert D., & Associates, Inc., Milwaukee, Wis. 800,006, pub. 9–21–65. Cl. 100.
Roger & Gallet, Ltd.: *See*—
Roger & Gallet S.A.
Roger & Gallet S.A., Paris, France, from Roger & Gallet, Ltd., New York, N.Y. 800,082. Cl. 51.
Rohm & Haas Co., Philadelphia, Pa. 799,674, pub. 9–21–65. Cl. 1.
Rothrock, John B., North Bennington, Vt. 799,912, pub. 9–21–65. Cl. 38.
Rototone, Inc., Houston, Tex. 686,903, canc. Cl. 36.
Rototone, Inc., Houston, Tex. 686,904, canc. Cl. 36.
Rowlax Laboratories Co., New York, N.Y. 799,940, pub. 9–21–65. Cl. 44.
Royal Industries, Inc., Pasadena, Calif. 799,808, pub. 9–21–65. Cl. 23.
S.A.R.L. J. Calvet et Cie, Bordeaux (Gironde), France. 800,077. Cl. 47.
S and W Fine Foods, Inc., San Francisco, Calif. 799,978, pub. 9–21–65. Cl. 46.
San Juan Islands Cannery, Laconner, Wash. 799,966, pub. 9–21–65. Cl. 46.
Sanitarium and Hospital Equipment Co., to Battle Creek Equipment Co., Battle Creek, Mich. 204,491, ren. 12–7–65. Cl. 44.
Sanitary Scale Co., Belvidere, Ill. 799,825, pub. 9–21–65. Cl. 26.
Savolite, Inc., New York, N.Y. 364,487, 12(c) pub. 12–7–65. Cl. 51.
Saxon Paper Corp.: *See*—
Chemical Paper Co.
Schenley Distillers, Inc., New York, N.Y. 799,988, pub. 9–21–65. Cl. 49.
Schneider, William S., Arthur P. Corella, and Vincent Wayne Rodgers, d.b.a. Hanky Panky Co., Los Angeles, Calif. 799,967, pub. 9–21–65. Cl. 46.
Schoellkopf, Buddy, Products, Inc., Dallas, Tex. 799,871, pub. 9–21–65. Cl. 32.
Scholastic Magazines, Inc., New York, N.Y. 799,911, pub. 9–21–65. Cl. 38.
Schott, Andrew F., Green Lake, Wis. 800,062. Cl. 38.
Schrank, M. C., Co., Bridgeton, N.J. 799,928, pub. 9–21–65. Cl. 39.
Schuler, L. C., Co., Inc., Marshall, Minn. 686,801, canc. Cl. 10.
Scot Lad Foods, Inc., Chicago, Ill. 799,979–80, pub. 9–21–65. Cl. 46.
Scott Paper Co., Chester, Pa. 686,910, canc. Cl. 37.
Scripto, Inc.: *See*—
Scripto Mfg. Co.

Scripto Mfg. Co., by Scripto, Inc., Atlanta, Ga. 420,390, 12(c) pub. 12–7–65. Cl. 37.

Seaboard Citrus: *See*—
Cheesman, Kenneth D.

Seaflight S.p.A., Messina, Italy. 799,758, pub. 9–21–65. Cl. 19.

Seagram, Joseph E., & Sons, Inc., New York, N.Y., from Vikin Corp., San Jose, Calif. 686,990, canc. Cl. 52.

Seamless Rubber Co., The: *See*—
Seamless Rubber Co., Inc., The.

Seamless Rubber Co., Inc., The, New Haven, Conn., to Rexall Drug and Chemical Co., d.b.a. The Seamless Rubber Co., Los Angeles, Calif. 206,835, ren. 12–7–65. Cl. 39.

Senco Inc., Baltimore, Md. 415,985, 12(c) pub. 12–7–65. Cl. 26.

Serge Kirchhofer: *See*—
Anger, Wilhelm.

Sheffield Hosiery Mills, Inc., Miami, Fla. 800,070. Cl. 39.

Sierra Engineering Co., Sierra Madre, Calif. 800,072. Cl. 44.

Signode Steel Strapping Co., Chicago, Ill. 686,793, canc. Cl. 2.

Simmons Hardware Co., St. Louis, Mo., to Val-Test Distributors, Inc., Chicago, Ill. 47,375, ren. 12–7–65. Cl. 23.

Simmons Milk Products, Inc., Chicago, Ill. 799,981, pub. 9–21–65. Cl. 46.

Simone Cochard Beauty Preparations: *See*—
Bohme, Pierre.

Singer, Arthur A., New York, N.Y. 799,767, pub. 9–21–65. Cl. 21.

Snider, D. B., Inc., Mt. Clemens, Mich. 799,757, pub. 9–21–65. Cl. 19.

Soabar Co., Philadelphia, Pa. 799,798, pub. 9–21–65. Cl. 23.

Society for Savings, Hartford, Conn. 800,100. Cl. 102.

Sole Mfg. Co., Inc., Maple Glen, Pa. 800,055–6, Cl. 22.

Southwestern Broom Mfg. Co., The, Evansville, Ind., by D. W. Swindle, d.b.a. D. W. Swindle & Sons Co., Nashville, Tenn. 47,736, 12(c) pub. 12–7–65. Cl. 29.

Southwestern Broom Mfg. Co., The, Evansville, Ind., by D. W. Swindle, d.b.a. D. W. Swindle & Sons Co., Nashville, Tenn. 47,841, 12(c) pub. 12–7–65. Cl. 29.

Spadone, Charles C.: *See*—
North American Metaline Co.

Spalding, A. G., & Bros. Inc., Chicopee, Mass. 799,789, pub. 9–21–65. Cl. 22.

Sports Industries: *See*—
Strebler, George L.

Springs Cotton Mills, The, Lancaster, S.C. 799,930, pub. 9–21–65. Multiple Class (Classes 39 and 42).

Srago, Glenda R., d.b.a. Glenn Industries, Oklahoma City, Okla. 799,877, pub. 9–21–65. Cl. 32.

Stairs, Shirley, d.b.a. Hillhopper Originals, Sandpoint, Idaho. 799,783, pub. 9–21–65. Cl. 22.

Staley, A. E., Mfg. Co., Decatur, Ill. 686,983, canc. Cl. 46.

Stalfort, John C., & Sons, Inc., Baltimore, Md. 416,236, 12(c) pub. 12–7–65. Cl. 6.

Standard Brands Inc., New York, N.Y. 799,958, pub. 9–21–65. Cl. 46.

Standard Cork Insulation Co. Ltd., to Cork Insulation & Asbestos Co. Ltd., London, England. 203,815, ren. 12–7–65. Cl. 1.

Standard Laboratories, Inc., Morris Plains, N.J. 799,743, pub. 9–21–65. Cl. 18.

Standard Oil Co. (New Jersey), Bayonne, N.J., to Humble Oil & Refining Co., Houston, Tex. 204,957, ren. 12–7–65. Cl. 52.

Standard Oil Co., The, Cleveland, Ohio. 799,736, pub. 9–21–65. Cl. 15.

Stanley Greetings, Inc., Dayton, Ohio. 686,917–18, canc. Cl. 38.

Stanley, James S., Princeton, N.J. 799,907, pub. 9–21–65. Cl. 38.

Stauffer Chemical Co., New York, N.Y. 799,694, pub. 9–21–65. Cl. 6.

Stern's Nurseries, Inc., Geneva, N.Y. 686,782, canc. Cl. 1.

Storer, Douglas F., New York, N.Y. 687,013, canc. Cl. 107.

Strauss, Levi, & Co., San Francisco, Calif. 686,924, canc. Cl. 39.

Strauss-Simmons., Inc., New York, N.Y. 800,036, pub. 9–21–65. Cl. 105.

Strebler, George L., d.b.a. Sports Industries, St. Louis, Mo. 800,050. Cl. 9.

Stuart, Inc., St. Paul, Minn., from Gerald E. Copelli, d.b.a. Jay Cee Novelty Co., Brooklyn, N.Y. 799,782, pub. 9–21–65. Cl. 22.

Studio 5 Advertising: *See*—
Moline, Carl J.

Swift & Co., Chicago, Ill. 686,969, canc. Cl. 46.

Swindle, D. W.: *See*—
Southwestern Broom Mfg. Co., The.

Swindle, D. W., & Sons Co.: *See*—
Southwestern Broom Mfg. Co., The.

Syracuse Ornamental Co., Inc., Syracuse, N.Y. 799,856, pub. 9–21–65. Cl. 27.

Tangyes Ltd., Birmingham, England. 799,802, pub. 9–21–65. Cl. 23.

Tara Deb Inc., New York, N.Y. 686,889, canc. Cl. 28.

Terry, William C., d.b.a. Poppin Products, to Laura Lee Candies, Inc., Miami, Fla. 730,887, new cert. Cl. 46.

Texas Instruments Inc., Dallas, Tex. 686,883, canc. Cl. 26.

Tex-Sun Glove Co., Corsicana, Tex. 799,919, pub. 9–21–65. Cl. 39.

Tex-Sun Glove Co., Corsicana, Tex. 799,920, pub. 9–21–65. Cl. 39.

Thermal Dynamics Corp., Lebanon, N.H. 799,830, pub. 9–21–65. Cl. 26.

Thomas Industries Inc., Louisville, Ky. 799,777, pub. 9–21–65. Cl. 21.

Thompson-Hayward Chemical Co., Kansas City, Kans. 799,693, pub. 9–21–65. Cl. 6.

Tiley Pratt Co., The, Essex, Conn., by The Torrington Co., Torrington, Conn. 202,735, 12(c) pub. 12–7–65. Cl. 19.

Toensmeire, Patrick A., and Associates: *See*—
Toensmeir, Patrick A.

Toledo Scale Corp., Toledo, Ohio. 799,851, pub. 9–21–65. Cl. 26.

Toledo Scale Corp., Toledo, Ohio. 686,871, canc. Cl. 26.

Tomson, P. C., & Co., Inc., Philadelphia, Pa., to B. T. Babbitt, Inc., Albany, N.Y. 207,505, ren. 12–7–65. Cl. 6.

Torrington Co., The: *See*—
Tiley Pratt Co., The.

Trend Mills, Inc., Rome, Ga. 799,938, pub. 9–21–65. Cl. 42.

Tri-Valley Growers, San Francisco, Calif. 799,969, pub. 9–21–65. Cl. 46.

U.S. Photo Supply Co., Inc., Washington, D.C. 686,870, canc. Cl. 26.

Uarco Inc., Barrington, Ill. 799,817–19, pub. 9–21–65. Cl. 23.

United Lighting and Ceiling Co., Oakland, Calif. 799,886, pub. 9–21–65. Cl. 34.

United Kingdom Tobacco Co., Ltd., The, d.b.a. Muratti Sons & Co., London, England. 799,740, pub. 9–21–65. Cl. 17.

United Tool & Plastics, Inc., Bridgeport, Conn. 799,678, pub. 9–21–65. Multiple Class (Classes 2 and 21).

United States Ceramic Tile Co., Canton, Ohio. 799,835, pub. 9–21–65. Cl. 26.

United States Ceramic Tile Co., Canton, Ohio. 799,862, pub. 9–21–65. Cl. 30.

United States Filter Corp.: *See*—
Central Hadley Corp.

United Newspapers Magazine Corp., New York, N.Y. 800,066. Cl. 38.

United States Playing Card Co.: *See*—
New York Consolidated Card Co., The.

United States Playing Card Co., The, to The United States Playing Card Co., Cincinnati, Ohio. 48,874, ren. 12–7–65. Cl. 22.

United States Playing Card Co., The, to The United States Playing Card Co., Cincinnati, Ohio. 48,877, ren. 12–7–65. Cl. 22.

United States Playing Card Co., The, to The United States Playing Card Co., Cincinnati, Ohio. 48,885, ren. 12–7–65. Cl. 22.

United States Playing Card Co., The, to The United States Playing Card Co., Cincinnati, Ohio. 48,891, ren. 12–7–65. Cl. 22.

United States Playing Card Co., The, to The United States Playing Card Co., Cincinnati, Ohio. 49,420, ren. 12–7–65. Cl. 22.

United States Playing Card Co., The, to The United States Playing Card Co., Cincinnati, Ohio. 50,079, ren. 12–7–65. Cl. 22.

Universal Jet Industries, Inc., Hialeah, Fla. 799,887, pub. 9–21–65. Cl. 34.

Universal Match Corp., St. Louis, Mo. 799,700, pub. 9–21–65. Cl. 9.

Valley Dolomite Corp., St. Louis, Mo. 799,710, pub. 9–21–65. Cl. 12.

Val-Test Distributors, Inc.: *See*—
Simmons Hardware Co.

Vanity Fair Mills, Inc., Reading, Pa. 799,926–7, pub. 9–21–65. Cl. 39.

Vectra Co., The: *See*—
National Plastic Products Co., Inc.

Vemaline Products Co., Franklin Lakes, N.J. 799,775, pub. 9–21–65. Cl. 21.

Vermiculite-Northwest, Inc., Seattle, Wash. 799,677, pub. 9–21–65. Cl. 1.

Vidal, A., S.A.S., Venice, Italy. 799,996, pub. 9–21–65. Cl. 51.

Vikin Corp.: *See*—
Seagram, Joseph E., & Sons, Inc.

Volt, W. J., Rubber Corp., Santa Ana, Calif. 799,781, pub. 9–21–65. Cl. 22.

Wadsworth Watch Case Co., The, Dayton, Ky., to Elgin National Watch Co., Elgin, Ill. 416,216, ren. 12–7–65. Cl. 2.

Wadsworth Watch Case Co., The, Dayton, Ky., to Elgin National Watch Co., Elgin, Ill. 416,475, ren. 12–7–65. Cl. 28.

Wadsworth Watch Case Co., The, Dayton, Ky., to Elgin National Watch Co., Elgin, Ill. 416,945, ren. 12–7–65. Cl. 28.

Warner, William R., & Co., Inc., New York, N.Y., to Warner-Lambert Pharmaceutical Co., Morris Plains, N.J. 415,644, ren. 12–7–65. Cl. 18.

Weldstar Co., Aurora, Ill. 799,885, pub. 9–21–65. Cl. 34.

Westcott Electronics: *See*—
Heath, Westcott, Jr.

Western Red and Northern White Cedar Association, New Brighton, Minn. 800,044, pub. 9–21–65. Cl. 200.

Western Process, Inc., Palo Alto, Calif. 800,080. Cl. 50.

Weyerhaeuser Co., Tacoma, Wash. 800,047. Cl. 1.

Weyerhaeuser Co., Tacoma, Wash. 799,895–901, pub. 9–21–65. Cl. 37.

White Laboratories, Inc.: *See*—
Galen Co.

Whipper-Clipper Co., Inc., The, Bonham, Tex. 799,863, pub. 9–21–65. Cl. 31.

Whittaker, James H., Jr., d.b.a. Whittaker Realty, Roscommon, Mich. 800,019, pub. 9–21–65. Cl. 101.

Whittaker Realty: *See*—
Whittaker, James H., Jr.

Wickersham, Duane E., d.b.a. Wick's Pies, Winchester, Ind. 800,073. Cl. 46.

Wick's Pies: *See*—
Wickersham, Duane E.

Williams, Dwight S., Co. Inc.: *See*—
Rice-Stix Dry Goods Co.

Winderman, Alex, Miami Beach, Fla. 686,916, canc. Cl. 38.

Wright, E. T., & Co., Inc., Rockland, Mass. 799,917, pub. 9–21–65. Cl. 39.

Wrigley, Wm., Jr. Co., Chicago, Ill. 799,973, pub. 9–21–65. Cl. 46.

Writ, Inc., Milwaukee, Wis. 800,035, pub. 9–21–65. Cl. 104.

Zenith Radio Corp., Chicago, Ill. 799,770–1, pub. 9–21–65. Cl. 21.

U.S. GOVERNMENT PRINTING OFFICE:0——1965

U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
December 14, 1965 Volume 821 Number 2

PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of October 1965

Examiner affirmed	218
Examiner affirmed in part	45
Examiner reversed	105
Total	368

Adjudicated Patents

(C.A. Tex.) Fox Patent No. 2,999,552 (285—333), for TUBULAR DRILL STRING MEMBER. Claims 2, 4 and 5 *Held* valid and infringed. *Arnold Pipe Rentals Co.* v. *Engineering Enterprises, Inc.*, 350 F.2d 885; 146 USPQ 416.

(D.C. Okla.) Lloyd Patent No. 2,650,344 (324—37), for MAGNETIC TESTING APPARATUS. Claim 9 *Held* invalid and not infringed. *AMF Tuboscope, Inc.* v. *Arrow Pipe Service, Inc.*, 245 F. Supp. 218; 146 USPQ 366.

(D.C. Ind.) Starkey and Ransburg Patent No. 2,685,536 (117—93.4), for METHOD FOR ELECTROSTATICALLY COATING ARTICLES. Claims 1 to 11 *Held* valid and infringed. *Ransburg Electric-Coating Corp.* v. *Ford Motor Co.*, 245 F. Supp. 308; 146 USPQ 436.

(D.C. Okla.) Price and Wood Patent No. 2,685,672 (324—37), for APPARATUS FOR MAGNETIC DETECTION OF FLAWS IN FERROMAGNETIC PIPE. Claims 1 and 2 *Held* valid but not infringed. *AMF Tuboscope, Inc.* v. *Arrow Pipe Service, Inc.*, 245 F. Supp. 218; 146 USPQ 366.

(D.C. Okla.) Price Patent No. 2,746,012 (324—37), for INDUCTIVE ELECTROMAGNETIC INSPECTION. Claims 1 and 3 *Held* invalid and not infringed. *Id.*

(D.C. Ind.) Starkey and Ransburg Patent No. 2,794,417 (118—626), for APPARATUS FOR ELECTROSTATICALLY COATING ARTICLES. Claims 3 and 4 *Held* valid and infringed. *Ransburg Electric-Coating Corp.* v. *Ford Motor Co.*, 245 F. Supp. 308; 146 USPQ 436.

(D.C. Pa.) Morgan Patent No. 2,839,909 (66—198), for KNITTED FABRIC, *Held* invalid. *Jones Knitting Corp.* v. *Morgan*, 244 F. Supp. 219; — USPQ —.

(D.C. Ind.) Crouse Patent No. 2,893,893 (117—93.43), for METHOD AND APPARATUS FOR ELECTROSTATIC COATING. Claims 1 to 3, 5 to 7, 9, and 10 *Held* valid and infringed. *Ransburg Electric-Coating Corp.* v. *Ford Motor Co.*, 245 F. Supp. 308; 146 USPQ 436.

(D.C. Ind.) Ransburg Patent No. 2,893,894 (117—93.42), for METHOD AND APPARATUS FOR ELECTROSTATICALLY COATING. Claims 1 to 8 *Held* valid and infringed. *Id.*

(D.C.N.Y.) Berning Patent No. 2,934,865 (24—74), for BUCKLE FOR BELTS OR THE LIKE, *Held* valid and infringed. *Dal-Bac (Pty), Limited* v. *Ferma Astorwerk Otto Berning & Co.*, 244 F. Supp. 516; 146 USPQ 267.

Adverse Decisions in Interferences

In the designated interferences involving the indicated claims of the following patents final decisions have been rendered that the respective patentees were not the first inventors with respect to the claims listed.

Patent No. 2,825,653, W. R. Dorsey and S. I. Strashun, CONTINUOUS PROCESS FOR DEHYDRATING LIQUID OR SEMI-LIQUID CONCENTRATES UNDER SUB-ATMOSPHERIC PRESSURE, decided Sept. 30, 1963, Interference No. 91,305, claims 1, 2, 3, 4, 5, 6, 7, 8 and 9.

Patent No. 2,854,405, E. V. Bergstrom, CONTINUOUS HYDROCARBON CONVERSION PROCESS EMPLOYING A COMPACT MASS LIFT, decided July 20, 1965, Interference No. 90,312, claims 1 and 2.

Patent No. 2,854,405, E. V. Bergstrom, CONTINUOUS HYDROCARBON CONVERSION PROCESS EMPLOYING A COMPACT MASS LIFT, decided July 20, 1965, Interference No. 91,890, claims 3 and 7.

Patent No. 2,859,845, R. Bachman, ELECTROMAGNETIC CLUTCH, decided Mar. 29, 1963, Interference No. 91,148, claims 1, 2, 3 and 4.

Patent No. 2,862,069, G. A. Marchand and D. W. Powers, DYNAMIC TRANSDUCER, decided May 28, 1965, Interference No. 90,896, claim 1.

Patent No. 2,971,925, DeL. E. Winkler and K. Nozaki, POLYMERIZATION CATALYSTS, decided Oct. 26, 1965, Interference No. 93,423, claims 1 and 4.

New Applications Received During October 1965

Patents	13,820
Designs	708
Plant Patents	21
Reissues	34
Total	14,583

Issue—December 14, 1965

Patents	1326	No. 3,222,683 to No. 3,224,008, incl.
Designs	98	No. 203,150 to No. 203,247, incl.
Reissues	14	No. 25,939 to No. 25,952, incl.
Total	1438	

Patent No. 2,981,326, J. MacGregor, HYDRAULICALLY OPERATED SHIP'S HATCH COVERS, decided June 10, 1965, Interference No. 93,198, claim 1.

Patent No. 2,986,577, G. A. Kurhajec, PRODUCTION OF ESTERS AND ALCOHOLS, decided June 25, 1965, Interference No. 93,921, claims 1, 2, 3, 5 and 6.

Patent No. 2,986,847, M. Sato, PROCESS FOR LINING METAL PIPES WITH GLASS, decided June 9, 1965, Interference No. 93,051, claims 1 and 2.

Patent No. 3,004,996, A. N. Arakelian, A. Rhodes and T. R. Hopkins, PHOSPHORUS AND SULFUR CONTAINING COMPOSITIONS AND METHOD FOR PREPARING SAME, decided Apr. 13, 1965, Interference No. 92,599, claims 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 and 12.

Patent No. 3,024,290, A. L. Henne, PROCESS FOR REPLACING VINYLIC HALOGENS WITH FLUORINE, decided Aug. 25, 1965, Interference No. 93,920, claims 1, 2, 3, 4, 5, 7, 9, 11, 13 and 14.

Patent No. 3,039,488, H. E. Bowerman, SLUSH PUMP VALVES, decided Sept. 7, 1965, Interference No. 93,731, claims 1, 2, 4 and 5.

Patent No. 3,042,845, M. A. Rosenberg, CAPACITOR STRUCTURE, decided Sept. 13, 1965, Interference No. 93,836, claims 1, 2, 3, 4, 5 and 6.

Patent No. 3,050,134, P. Multin, MEANS FOR PROTECTING CONSTRUCTIONS AND BUILDINGS AGAINST THE RISK OF FIRE, decided Sept. 7, 1965, Interference No. 94,756, claim 1.

Patent No. 3,051,665, M. Wismer and W. R. Hydro, METHOD OF FOAMING AN ADMIXTURE OF EPOXY RESIN, A CHLOROFLUOROCARBON, AND A CURING CATALYST, decided Oct. 6, 1965, Interference No. 93,773, claims 1, 2, 6, 7, 8 and 9.

Patent No. 3,065,228, A. Bowers, PROCESS FOR THE PRODUCTION OF Δ^5-ANDROSTENE-19-OL AND Δ^5-PREGNENE-19-OL COMPOUNDS, decided Aug. 30, 1965, Interference No. 93,402, claims 1, 3 and 5.

Patent No. 3,066,151, J. P. Thorn, W. A. Dimler, Jr., and J. A. Gallagher, EPOXY ESTERS DERIVED FROM POLYCYCLOPENTADIENES, decided Sept. 14, 1965, Interference No. 94,462, claims 1, 2 and 3.

Patent No. 3,067,373, R. Hopt, L. Falk and A. Haring, POWER-UNIT LOAD UNIT ASSEMBLY, decided Sept. 14, 1965, Interference No. 94,244, claims 6 and 8.

Patent No. 3,087,922, W. H. Whittington, METHOD AND APPARATUS FOR PYROLYZING POLYMERS, decided Oct. 15, 1965, Interference No. 94,243, claim 1.

Patent No. 3,089,038, R. F. Ruts, IMPEDANCE MEANS INCLUDING TUNNELING DEVICE FOR PREFORMING LOGIC OPERATIONS, decided Oct. 6, 1965, Interference No. 94,367, claims 1 and 8.

Patent No. 3,097,658, J. C. Runco, ROTARY JAR WASHER, decided Oct. 12, 1965, Interference No. 94,624, claim 1.

Patent No. 3,129,406, R. Perley, DIGITAL SIGNAL COMPARISON CIRCUIT, decided Oct. 22, 1965, Interference No. 94,707, the claim.

Patent No. 3,130,392, E. W. Miller, DESKEWING USING LAST BIT OF A BYTE, decided Sept. 24, 1965, Interference No. 94,463, claims 1, 5, 6 and 7.

Patent No. 3,140,963, P. G. J. Svedberg, BIDIRECTIONAL SEMICONDUCTOR SWITCHING DEVICE, decided Sept. 28, 1965, Interference No. 94,705, claims 1 and 2.

Disclaimers

3,126,811.—*Walter W. Kennedy*, Rockford, Ill. AIR DISTRIBUTION OUTLET. Patent dated Mar. 31, 1964. Disclaimer filed Sept. 1, 1965, by the assignee, *Barber-Colman Company*.

Hereby enters this disclaimer to claims 3, 5, 6 and 7 of said patent.

3,090,926.—*Walter Engel*, Nurnberg, Germany. TRANSISTOR AMPLIFIER WITH TUNNEL DIODE IN EMITTER CIRCUIT. Patent dated May 21, 1963. Disclaimer filed Aug. 26, 1965, by the inventor; the assignee, *Siemens-Schuckertwerke Aktiengesellschaft*, consenting.

Hereby enters this disclaimer to claim 1 of said patent.

Patents Available for Licensing or Sale

2,895,722. CONCRETE MIXER. Everett Hunkins, University City, Mo. Correspondence: Gravely, Lieder & Woodruff, 705 Olive St., St. Louis 1, Mo.

3,210,141. CABINET AND SANITARY KIT COMBINATION. Osie M. Thomas, 14855 Water Ave., Visalia, Calif.

3,212,407. HYDRAULIC SHIFTING DEVICE. John Rorvik, P.O. Box 215, Circle, Mont.

The following 2 patents are offered by: Manager, Law Division, American Cyanamid Company, Wayne, N.J.

2,911,339. STREPTOMYCES AUREOFACIENS FERMENTATION PROCESS.

Re. 25,840. TETRACYCLINE FERMENTATION.

General Electric Company is prepared to grant non-exclusive licenses under the following 3 patents upon reasonable terms to domestic manufacturers.

Applications for license under the following patent may be addressed to: Patent Counsel, Power Transmission Division, General Electric Company, 6901 Elmwood Ave., Philadelphia, Pa., 19142.

3,165,610. ELECTRICAL CIRCUIT INTERRUPTER HAVING EXTERIOR POSITIONED ACTUATING MEANS.

Applications for license under the following patent may be addressed to: Division Patent Counsel, Missile and Space Division, General Electric Company, Valley Forge Space Technology Center, P.O. Box 8555, Philadelphia, Pa., 19101.

3,189,478. CONDUCTIVE SILVER COATING OF RESINS HAVING AMINE GROUPS AT THE SURFACE.

Applications for license under the following patent may be addressed to: General Electric Company, Patent Counsel, Silicone Products Department, Chemical and Metallurgical Division, Waterford, N.Y., 12188.

3,197,728. ORGANOPOLYSILOXANE COMPOSITIONS.

Erratum

In the OFFICIAL GAZETTE of November 9, 1965, among the patents listed as being available for licensing or sale. Patent 3,209,637. "FLOATABLE DIVING ASSEMBLY" should have been KEYBOARDS AND ACCESSORIES.

Notice of Tentative Recordation of a Trade Name

[T.D. 56491]

Tentative recordation of trade name under section 42, Trademark Act of 1946, and section 11.16, Customs Regulations

TREASURY DEPARTMENT,
OFFICE OF THE COMMISSIONER OF CUSTOMS,
Washington, D.C., Sept. 27, 1965.

To Collectors of Customs and Others Concerned:

An application has been filed in the Treasury Department for the recordation of the following-described trade name under the provisions of section 42, Trademark Act of 1946, and section 11.16, Customs Regulations:

"DUETEENO ORIGINALS," a trade name used by Swissknit Manufacturing, Inc., a corporation organized under and by virtue of the laws of the State of New York, located and doing business at 112 West 34th Street, New York, New York. The trade name is associated with imported children's wearing apparel manufactured in various Far-Eastern areas.

Any person who on or before November 15, 1965, notifies the Commissioner of Customs, Washington, D.C., 20226, of his opposition to the recordation of the trade name described above will be furnished with a copy of the application for recordation, the documents filed in support of the application, and instructions as to the procedure to be followed to file a formal notice of such opposition. The customs officers concerned will be advised of the filing of any opposition proceeding.

Until December 1, 1965, or until final determination has been made in any case in which notice has been received of the filing of an opposition proceeding, any article of foreign manufacture which bears a name or mark copying or simulating the trade name described above shall be detained, without seizure. Thereafter, the articles so detained shall be treated in accordance with the provisions of section 11.17 of the Customs Regulations.

LESTER D. JOHNSON,
Commissioner of Customs.

United States Adopted Names

List No. 12

July 1, 1965–October 31, 1965

The following nonproprietary names for the drugs described have been adopted by the USAN Council (the nomenclature committee sponsored by the American Medical Association, the American Pharmaceutical Association, and the United States Pharmacopeia) in cooperation with the interested manufacturers. The designation "United States Adopted Names" (U.S.A.N.) has been coined to distinguish these formally adopted nonproprietary names from other nonproprietary names. Adoption of such names does not imply endorsement of the products involved by the A.M.A. Council on Drugs, the USP, or the National Formulary.

Any comments or suggestions should be addressed to Doctor Joseph B. Jerome, Assistant Secretary, Council on Drugs, American Medical Association, 535 N. Dearborn St., Chicago, Ill., 60610.

alverine citrate: spasmolytic agent
anagestone acetate: progestin
azacosterol hydrochloride: hypocholesteremic
biphastic insulin: hypoglycemic
bolandiol dipropionate: anabolic agent
bunamidine hydrochloride: veterinary anthelmintic
butalbital: sedative and hypnotic
butriptyline hydrochloride: antidepressant
carbazocine: analgesic
chromonar hydrochloride: coronary vasodilator
clamoxyquin hydrochloride: amoebacide
clocortolone acetate: glucocorticoid
cloflucarban: antiseptic
clothiapine: tranquilizer
cyprolidol hydrochloride: psychotherapeutic drug
dioxybenzone: sunscreen agent
doxycycline: antibiotic
edrofuradene: antibacterial agent
estradiol enanthate: estrogen
estrazinol hydrobromide: estrogen
etafurazone: poultry histomonastat
etomide hydrochloride: analgesic
felypressin: vasoconstrictor
fenamole: anti-inflammatory agent
fenethylline hydrochloride: central stimulant
fenimide: tranquilizer
guaiapate: antitussive
guaithylline: antiasthmatic
guanoctine hydrochloride: antihypertensive
guanoxyfen sulfate: hypotensive and anti-depressant
haloperidol: tranquilizer
imidoline hydrochloride: tranquilizer
iron sorbitex: intramuscular hematinic
lactulose: laxative
metofurone: antimycotic agent
neomycin palmitate: antibiotic
neomycin undecylenate: antibacterial and antifungal agent
oxybenzone: sunscreen agent
prolintane hydrochloride: antidepressant
proxazole: antispasmodic, analgesic, anti-inflammatory
quinetolate: antiasthmatic
sodium icthosylate: antiseptic
sulfomyxin: antibiotic
suloxybenzone: sunscreen agent
terodiline hydrochloride: coronary dilator
thiothixene: pyschotherapeutic agent
trifluperidol: tranquilizer
urokinase: plasminogen activator

United States Adopted Names (USAN) and United States Adopted Names (Proposed) (USAN)

QUARTERLY CUMULATIVE LIST

January 1, 1965–September 30, 1965

This is a revised alphabetical listing of the nonproprietary names *proposed for adoption* by the USAN Council which were published in the Trademark Bureau Bulletin during the period indicated. The listing also incorporates the revised lists of *adopted* nonproprietary names issued by the USAN Council, but not published in the Bulletin.

The Quarterly Cumulative List is intended to supplement USAN Cumulative List 3, 1961–1964, published annually for the Council by the United States Pharmacopeia; it is distributed with an issue of the Trademark Bureau Bulletin.

An asterisk (*) before a name indicates an *adopted name;* all other names on the list are *proposed for adoption.*

Since Q.C.L. is cumulative, only the latest issue need be consulted. All preceding lists may be discarded.

Any comments or protests regarding proposed names should be brought promptly to the attention of the USAN Council, American Medical Association, 535 N. Dearborn St., Chicago, Ill., 60610.

*algeldrate: antacid
*alverine citrate: spasmolytic
amfetyline hydrochloride: central stimulant
*anagestone acetate: progestin
*azacosterol hydrochloride: hypocholesteremic
*bamethan sulfate: vasodilator
bamifylline hydrochloride: antispasmodic
*benzydamine hydrochloride: analgesic; anti-inflammatory; antipyretic
*biphasic insulin: hypoglycemic
*bolandiol dipropionate: anabolic
*bolmantalate: anabolic agent
*buformin: oral hypoglycemic
*bunamidine hydrochloride: veterinary anthelmintic
*buquionolate: poultry coccidiostat
*butalbital: sedative and hypnotic
*butoxamine hydrochloride: inhibitor of fatty acid mobilization
*butriptyline hydrochloride: antidepressant
*calcium polycarbophil: antidiarrheal
*candicidin: antifungal antibiotic
*carbazocine: analgesic
*chromonar hydrochloride: coronary vasodilator
clobenzepam: anti-allergic agent
*clocortolone acetate: glucocorticoid
*cloflucarban: antiseptic
clopenthixol: tranquilizer
*clorophene: disinfectant
*coumermycin: antibiotic
cyclofynol: tranquilizer
cyclophenazine hydrochloride: tranquilizer
*cyprazepam: tranquilizer
*cyprolidol hydrochloride: psychotherapeutic agent
*cyproterone acetate: antiandrogen
*debrisoquin sulfate: hypotensive agent
*dextran 40: blood suspension stabilizer (flow improver)
*dextran 45: blood plasma volume extender in extracorporeal circulation; antithrombogenic agent
*dextran 75: blood plasma volume extender
*dicloxacillin: antibiotic
*dihydroergotamine mesylate: sympatholytic
*dimethisterone: progestin
*dimethyl sulfoxide: anti-inflammatory agent
*dioxybenzone: sunscreen agent
*doxycycline: antibiotic
*edrofuradene: antibacterial agent
*encyprate: antidepressant
*estradiol undecylate: estrogen
*estrazinol hydrobromide: estrogen
*etafurazone: poultry histomonastat
*ethiodized oil I 131: anti-oncotic agent
*ethynerone: progestin
*etomide hydrochloride: analgesic
*felypressin: vasoconstrictor
*fenamole: anti-inflammatory agent
fenethylline hydrochloride: central stimulant
*fenfluramine hydrochloride: sympathomimetic (anorexic)
fenimide: tranquilizer
*floxuridine: antiviral agent
*flubanilate hydrochloride: antidepressant
*fluocortolone: glucocorticoid
*fluocortolone caproate: glucocorticoid
*flurogestone acetate: progestin
*gestonorone caproate: progestin
*glyhexamide: hypoglycemic
guaiapate: antitussive
*guaithylline: antiasthmatic
*guanoctine hydrochloride: antihypertensive

*guanoxyfen sulfate: hypotensive and antidepressant
*hamycin: antifungal agent
*hetacillin: antibiotic
*hexedine: antibacterial
*hydroxyurea: antineoplastic
*imidoline hydrochloride: tranquilizer
*indoxole: anti-inflammatory and antipyretic
*iron sorbitex: hematinic
lactulose: laxative
*levofuraltadone: antibacterial
*lypressin: antidiuretic
*mecloqualone: sedative and hypnotic
*medrysone: topical anti-inflammatory
*meprednisone: glucocorticoid
*medisoprol Hg 197: diagnostic agent
*mesoridazine: tranquilizer
*metabromsalan: disinfectant
*metazamide: analgesic
*metofurone: antimycotic agent
*mithramycin: antineoplastic
*nafoxidine hydrochloride: antifertility agent and cholesterol lowering agent
*namoxyrate: analgesic
*nandrolone decanoate: long-acting anabolic
*neutral Insulin: hypoglycemic
*nitralamine hydrochloride: fungicide
*nogalamycin: antineoplastic
*oxafuradene: antibacterial
*oxybenzone: sunscreen agent
*pipobroman: antineoplastic
*piposulfan: antineoplastic
*poloxalene: surfactant
prolintane hydrochloride: antidepressant
*propranolol hydrochloride: antiarrythmic agent
proxazole: antispasmodic
*puromycin: antibiotic
*pyrroliphene hydrochloride: analgesic
*quindecamine acetate: topical anti-infective
*quinetolate: antiasthmatic
*rolitetracycline nitrate: antibiotic
*sodium actinoquinol: treatment of flash burns (opthalmic)
*sodium glymidine: oral hypoglycemic
*sodium ichthosylate: antiseptic
*sodium metrizoate: contrast medium
sodium polymixate: antibiotic
*sulfalene: antibacterial agent
*sulfametin: antibacterial
sulisobenzone: sunscreen agent
*suloxybenzone: sunscreen agent
*terodiline hydrochloride: coronary dilator
*testosterone ketolaurate: androgen
*testosterone phenylacetate: androgen
*thioguanine: antineoplastic
*thiothixene: psychotherapeutic agent
*triclocarban: disinfectant
*trifluperidol: tranquilizer
*trimolide: sedative
*trioxsalen: pigmenting agent
*urokinase: plasminogen activator
*vinglycinate sulfate: antineoplastic
viridomycin: antifungal antibiotic

PATENT EXAMINING CORPS

R. A. WAHL, Superintendent

CONDITION OF PATENT APPLICATIONS AS OF NOVEMBER 1, 1965

PATENT EXAMINING OPERATIONS AND GROUPS	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
CHEMICAL EXAMINING OPERATION—I. MARCUS, Acting Director.		
GENERAL CHEMISTRY, GROUP 110—W. B. KNIGHT, Acting Manager. Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries.	7-11-62	2-18-59
GENERAL ORGANIC CHEMISTRY, GROUP 120—G. D. MITCHELL, Acting Manager. Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids.	12- 7-62	8-12-60
PETROLEUM CHEMISTRY, GROUP 130—J. R. LIBERMAN, Manager. Hydrocarbons; Halogenated Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices; Organic Chemistry (Part) e.g.: Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	2- 5-63	7-14-61
HIGH POLYMER CHEMISTRY, GROUP 140—L. H. GASTON, Acting Manager. Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins: Reclaiming; Pore-Forming.	1- 2-63	3- 2-60
COMPOSITIONS AND MOLDING, GROUP 150—L. H. GASTON, Manager. Compositions (Part) e.g.: Coating; Molding; Adhesive Compositions; Abrading; Liquid Purification or Separation; Gas Separation; Special Utility; Molding Processes.	9-11-62	2-26-60
COATING AND LAMINATING, GROUP 160—J. REBOLD, Manager. Coating: Processes, Apparatus and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Ornamentation; Adhesive Bonding; Special Manufactures	7-25-62	9-22-60
SPECIALIZED CHEMICAL ARTS AND INDUSTRIES, GROUP 170—W. B. KNIGHT, Manager. Bleaching and Dyeing; Fertilizers; Foods; Fermentation; Photography; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Metallurgical Apparatus; Gas, Heating and Illuminating; Cleaning Processes; Liquid Purification; Thermolytic Distillation; Preserving.	10- 1-62	11-25-60
CHEMICAL ENGINEERING, GROUP 180—G. D. MITCHELL, Manager. Gas, Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Distillation; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	12-18-62	10-30-61
ELECTRICAL EXAMINING OPERATION—N. H. EVANS, Director.		
POWER, GROUP 210—M. L. LEVY, Manager. Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art.	11-26-62	11-22-60
SECURITY, GROUP 220—S. BOYD, Manager. Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedos, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	1- 3-63	10-21-60
INFORMATION TRANSMISSION, GROUP 230—S. W. CAPELLI, Manager. Communications; Multiplexing Techniques; Facsimile and Related Art.	10-22-62	2-26-60
INFORMATION STORAGE AND RETRIEVAL, GROUP 240—W. W. BURNS, Manager. Data Processing, Computation and Conversion; Storage Devices and Related Art.	7- 5-62	4-26-61
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—B. G. MILLER, Manager. Semi-Conducter and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks.	10- 4-62	8- 1-60
RADIATION AND INSTRUMENTS, GROUP 260—F. M. STRADER, Manager. Optics; Radiant Energy; Measuring.	9-27-62	8-26-60
ELEMENTS, GROUP 270—E. J. SAX, Manager. Conductors; Switches; Miscellaneous.	2-21-63	12-20-61

Total number of pending applications (excluding Designs)	197,288
Total number of Design applications pending	4,847
Total number of applications awaiting action (excluding Designs)	151,692
Total number of Design applications awaiting action	2,448
Date of oldest new application awaiting action	July 5, 1962
Date of oldest amended application awaiting action	Feb. 18, 1959

EXPIRATION OF PATENTS

The patents within the range of numbers indicated below expire during December 1965, except those which may have been extended under the provisions of the Veterans Patent Extension Act (64 Stat. 316 as amended by 66 Stat. 321) and those which may have expired earlier due to shortened terms under the provisions of Public Law 690. A list of Veterans' patents which have been extended appears in the *Annual Index of Patents—1965*.

Patents ..... Numbers 2,455,347, to 2,457,706 inclusive
Plant Patents ..... Numbers 813 to 817, inclusive

PATENT EXAMINING OPERATIONS AND GROUPS (Continued)	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
MECHANICAL ENGINEERING EXAMINING OPERATION—F. H. BRONAUGH, Director.		
MATERIAL HANDLING, GROUP 310—A. BERLIN, Manager Material or Article Handling and Dispensing; Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Fluid Sprinkling and Fire Extinguishers; Coin Handling and Check Controlled Apparatus; Classifying and Assorting Solids.	9- 9-63	9-26-62
MANUFACTURING; METAL AND PLASTICS WORKING, GROUP 320—N. BERGER, Manager Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus.	11- 2-62	2-14-61
MACHINE TOOLS, MECHANISMS AND ELEMENTS, GROUP 340—A. M. HORTON, Manager Machine Tools for Shaping or Dividing Involving Cutting or Breaking; Machine Elements Including Power Transmission Components, Work and Tool Holders.	4-26-63	1-16-61
TOOLS, JOINTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Manager Miscellaneous Hardware; Tools; Joints; Cutlery; Locks; Fasteners; Rod Pipe and Electrical Connectors; Buckles; Buttons, Clasps, Etc.; Pushing and Pulling.	5-27-63	4-18-62
FLUID HANDLING, GROUP 360—E. PAUL, Manager Fluid Handling; Valves; Pipes and Tubular Conduits; Fluent Material Handling; Lubrication; Baths, Closets and Sinks; Joint Packing; Centrifugal Bowl Separators.	4-26-63	12-15-61
POWER PLANTS, MOTORS AND PUMPS, GROUP 370—C. F. GAREAU, Manager Power Plants, Combustion Power Plants, Expansible Chamber Motors, Rotary Motors and Rotary Expansible Chamber Motors, Expansible Chamber Devices and Internal Combustion Engines, Pumps and Pump Regulation.	10-14-63	11-20-62
HEAT GENERATION, TRANSFER AND UTILIZATION, GROUP 380—P. L. PATRICK, Manager Furnaces, Liquid Heaters and Vaporizers, Burners, Heat Exchange, Automatic Temperature and Humidity Regulation; Refrigeration; Drying; Ventilation; and Illumination.	5-13-63	5-25-61
GENERAL ENGINEERING AND INDUSTRIAL ARTS EXAMINING OPERATION—J. A. MANIAN, Director.		
AMUSEMENT, HUSBANDRY AND PERSONAL TREATMENT, GROUP 410—A. RUEGG, Manager Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery and Toiletry.	4- 8-63	12- 4-61
CIVIL ENGINEERING, GROUP 420—B. BENDETT, Manager Building Structures; Bridges, Closures; Closure Operators; Safes; Earth Engineering; Drilling; Mining.	3-22-63	4-19-61
PHYSICS, GROUP 430—R. L. EVANS, Manager Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	3-11-63	12-20-61
TEXTILES AND APPAREL, GROUP 440—W. S. COLE, Manager Textiles, Winding and Reeling; Tying Strands; Apparel; Boot and Shoe Making; Sewing Machines.	2-25-63	10-18-60
TRANSPORTATION, GROUP 450—P. ARNOLD, Manager Railways and Rolling Stock; Brakes; Land Vehicles; Aeronautics; Ships.	3-28-63	7-25-61
FURNITURE AND RECEPTACLES, GROUP 460—W. S. COLE, Manager Furniture; Supports; Cabinet Structures; Receptacles; Baggage.	6- 6-63	2-16-62
PRINTING, STATIONERY AND MATERIAL TREATMENT, GROUP 470—L. W. VARNER, Manager Printing; Typewriters; Stationery; Material Treatment.	9- 6-62	7-28-60
DESIGNS, GROUP 490—J. A. MANIAN, Manager Industrial Arts; Household, Personal and Fine Arts.	1-27-65	1-25-63

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

IN RE MINOO DOSSABHOY MEHTA

No. 7217. Decided July 8, 1965

[52 CCPA —; 347 F.2d 859; 146 USPQ 284]

1. PATENTABILITY — COMPOUND — OBVIOUSNESS — STRUCTURALLY SIMILAR COMPOUNDS—POSITION ISOMER.

"The fact that a position isomer of a compound is known is some evidence of the obviousness of that compound. Position isomerism is a fact of close *structural* similarity which is to be taken into consideration with all other relevant facts in applying the test of obviousness under 35 U.S.C. 103. *In re Lohr*, 50 CCPA 1274, 317 F.2d 388, 137 USPQ 548. It is the closeness of the relationship rather than the mere name, or, here, position number, which is significant, *In re Herr*, 50 CCPA 705, 304 F.2d 907, 134 USPQ 176, *In re Druey*, 50 CCPA 1538, 319 F.2d 237, 138 USPQ 39, and which gives rise to an inference that the claimed compound is obvious, *In re Hass*, 31 CCPA 895, 141 F.2d 122, 60 USPQ 544, *In re Henze*, 37 CCPA 1009, 181 F.2d 196, 85 USPQ 261."

2. SAME—SAME—SAME—SAME—PROPERTIES MUST BE CONSIDERED.

"A compound is not * * * merely a structural formula; its properties as part of the whole must be considered, *In re Papesch*, 50 CCPA 1084, 315 F.2d 381, 137 USPQ 43. The similarity of *properties* of a reference compound as compared with a claimed compound gives rise to an even stronger inference of obviousness than that of structural similarity alone, and conversely, where the properties are different, they imply non-obviousness, when they are unexpected."

3. SAME—PROCESS—OBVIOUSNESS.

"* * * appellant has not shown that having a different alcohol reactant presents one of ordinary skill in the art with considerations, evident from the structure and properties of that reactant, which would lead him to believe the process steps would not operate successfully with his alcohol reactant. The claims do not include any reaction conditions whatsoever, much less any such as indicate a necessity for a non-obvious adjustment of the process to compensate for the use of a different alcohol reactant. Merely arguing that the alcohol reactant is different or 'unusual' is not convincing. The difference has not been shown *relevant* to the process steps or reaction conditions. *In re Norman*, 50 CCPA 817, 309 F.2d 517, 135 USPQ 328. Differences which, insofar as the record shows, are merely structural and do not affect the reacting group, do not necessarily prove non-obviousness."

4. SAME—EVIDENCE—UNSWORN EXHIBIT.

Held, with respect to an unsworn exhibit, that "* * * it can be taken merley as argument and not to establish facts."

5. SAME—PARTICULAR SUBJECT MATTER—"PREPARATION OF BASIC ESTERS AND QUATERNARY COMPOUNDS THEREOF."

The refusal of all claims in an application entitled "Preparation of Basic Esters and Quaternary Compounds Thereof," as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 765,947.

AFFIRMED.

Albert L. Jacobs, *James W. Dent* for appellant.

Clarence W. Moore (*J. E. Armore* of counsel) for the Commissioner of Patents.

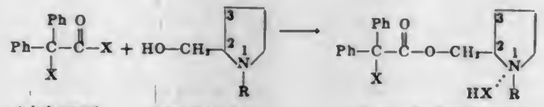
Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, JR., *Associate Judges*

MARTIN, *J.*, delivered the opinion of the court.

This appeal is from the refusal of the Patent Office to issue a patent on process claims 1 and 4–6, and product claims 12 and 13

in appellant's application Serial No. 765,947, filed October 8, 1958, for "Preparation of Basic Esters and Quaternary Compounds Thereof." The Examiner's rejection of the claims as unpatentable over the prior art (35 U.S.C. 103) was affirmed by the Board and adhered to on reconsideration. There are no other claims in the application.

The application discloses, first, the preparation of N-alkyl pyrrolidyl benzilates in the acid addition salt form. The benzilates are esters and are produced by the reaction of a haloaceytl halide with an alcohol. The halogen acid split out in the reaction loosely assosiates with a nitrogen atom of the alcohol to give the acid addition salt form. For example, α-chloro-diphenyl-acetylchloride (the haloacetyl halide) is reacted with a 1-alkyl-2-hydroxymethyl pyrrolidine [1] (the alcohol) to produce the corresponding 1- (or N-) alkyl pyrrolidyl benzilate (the ester), thus:



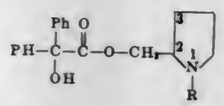
A haloacetyl halide (the X represents a halogen such as chlorine, and Ph represents a phenyl group).

An alcohol (R represents an alkyl group of from 1 to 4 carbon atoms or an allyl group).

A pyrrolidyl benzilate (the ester in acid addition salt form).

Such benzilate esters in the acid addition salt form are the subject of product claim 12.

Upon addition of water and a base, the α-halogen (on the diphenyl-containing benzilate moiety) and the loosely bonded acid, depicted as HX···, will be removed giving the free ester form:



The process of producing the free ester via reaction of the alcohol with the haloacetyl halide is the subject of process claims 1, 4 and 5. The process covered in claim 1 has been described above. Claim 4 is specific to the process wherein the N-alkyl substituent of the prolinol is methyl, and the haloacetyl halide is the chloride. Process claim 5 specifies the base which is used to produce the free ester form from the acid addition salt form to be "an aqueous solution of an alkali."

It is stated in appellant's disclosure that the claimed free ester compounds, as produced by the above described and claimed process, "are valuable as intermediates in the preparation of the corresponding quaternary compounds which possess valuable properties as spasmolytics." The disclosure thus includes a further

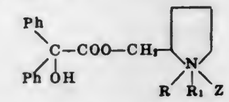
[1] Note that the pyrrolidine ring



is numbered beginning from the ring nitrogen atom so that a 1-alkyl pyrrolidine is the same as an N-alkyl pyrrolidine. The 2-hydroxymethyl pyrrolidine portion of the alcohol may also be termed a prolinol, thus appellant is dealing with an N-alkyl prolinol as the alcohol reactant.

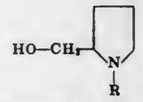
process step for the preparation of quaternary compounds by reaction of the free ester intermediate above described with another "ester" of the general formula R_1Z, where R_1 is an alkyl or aralkyl group and Z is a halogen, alkyl sulphate or aryl sulphonate radical. Those "esters," examples of which are dimethyl sulphate and methyl bromide, react with the nitrogen of the pyrrolidine ring. Process claim 6 shows the structure of the resultant product as compound (IV) and reads as follows:

6. A process for the preparation of compounds of the general formula

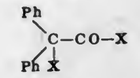


(IV)

where Ph is a phenyl group, R is selected from the group consisting of alkyl groups having from 1 to 4 carbon atoms and the allyl group, R_1 is selected from the group consisting of alkyl groups and aralkyl groups and Z is selected from the group consisting of halogen atoms, alkyl sulphate radicals and aryl sulphonate radicals which comprises reacting a 1-alkyl-2-hydroxymethylpyrrolidine of the general formula

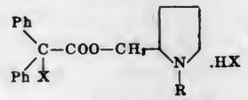


with an acid halide of the general formula



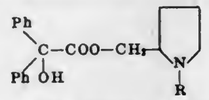
(II)

to give a compound of the general formula



(III)

treating the compound of the general Formula III with water and a base whereby it is converted into a compound of the general formula

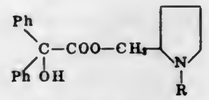


(I)

and reacting the compound of the general Formula I with an ester of the general Formula R_1Z.

Product claim 13 broadly covers both the quaternary end product, by the use of the phrase "non-toxic salts thereof," as well as the free ester intermediate:

13. Compounds of the general formula



where Ph is the phenyl group, R is selected from the group consisting of alkyl groups having from 2 to 4 carbon atoms, and the allyl group, and non-toxic salts thereof.

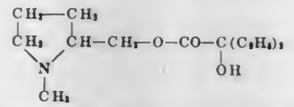
We find no disclosure, *other than that above quoted*, which shows the utility or properties of either the free esters, which are intermediates, or the quaternary compounds, which "possess valuable properties as spasmolytics."

The references applied are:

Blicke, 2,695,301, November 23, 1954.
Feldkamp et al., 2,844,591, July 22, 1958.
King et al., Synthetic Mydriatics. Diphenylchloracetyl Chloride as a Reagent for the Preparation of Benzilic Esters of Tertiary Amino-alcohols. J. Chem. Soc. (1947), pages 164–168.

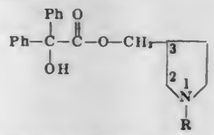
Blicke discloses 2-(1-methyl) pyrrolidylmethyl benzilate and its salts, which "have useful pharmacological properties and in particular are antispasmodic agents having an atropine-like activity." Blicke states that his benzilates are "most conveniently used in the form of acid addition or quaternary ammonium salts," which are "innocuous [non-toxic] to the animal organism in therapeutic doses * * *." The quaternary ammonium salts are produced in the same manner as appellant's quaternary salts, that is, by the reaction of the free ester with an alkyl or aralkyl ester of inorganic acids or organic sulfonic acids, for example "methyl bromide" and "[di]methyl sulfate." Claim 1 of Blicke sets forth the structure of his compounds:

1. A member of the group consisting of 2-(1-methyl)-pyrrolidylmethyl benzilate having the formula



and acid-addition and quaternary ammonium salts thereof.

Feldkamp et al. disclose N-alkyl pyrrolidyl benzilates, and the acid addition and quaternary ammonium salts thereof, which have "useful pharmacological properties and are particularly useful since they have high antispasmodic activity when administered as the free base or as the acid addition or quaternary ammonium salt." The Feldkamp et al. benzilates differ from appellant's free ester intermediates in being position isomers, the benzilate ester linkage being substituted on the 3-position of the pyrrolidine ring, thus:



R can be methyl, ethyl, propyl, allyl, butyl or benzyl.

King et al. show the use of diphenyl chloracetyl chloride to esterify certain *amino*-alcohols, for example, β-dimethylaminoethanol, and aminocyclohexanols. The benzilic esters thus produced are stated to "possess mydriatic properties comparable with those of atropine." The reaction is said to follow "the method generally used for tropeines * * *," and is depicted thus:

$$CPh_2Cl—COCl + H\cdot OR \rightarrow CPh_2Cl—CO_2R \rightarrow CPh_2(OH)\cdot CO_2R$$

The reactant formula on the left represents diphenylchloracetyl chloride which is the haloacetyl halide specifically used by appellant. The above reaction refers to the alcohols as "H·OR," but the R group is not further described. The alcohol are generally termed "amino-alcohols," "tertiary amino-alcohols" and "secondary and/or cyclic alcohols." More specifically as to their reaction, King et al. disclose that:

* * * *trans*-2-dimethylamino*cyclo*hexanol, * * * gave on heating with diphenylchloracetyl chloride the expected *chloro-ester hydrochloride*, and this was hydrolysed to the *benzilate hydrochloride* by dissolving in boiling water. The free base combined without difficulty with methyl iodide, and the methiodide [the quaternary salt form] and corresponding *methochloride* were readily crystallised. * * *

There is no showing in King et al. of an alcohol containing a ring nitrogen or, more specifically, a prolinol.

The Examiner's rejection of product claims, affirmed by the Board, was stated in the answer as follows:

Product claims 12 and 13 are rejected as lacking invention over Blicke who discloses the obvious homologs of compounds defined by claim 13 and obvious equivalents of the compounds defined by claim 12. The equivalence of hydroxy and chloro in this type of compounds is clearly shown by King et al. No invention can be seen in obvious equivalents of the prior art or in an obvious intermediate in view of King et al. which must be hydrolysed to hydroxy to be useful.

Claim 13 is further rejected as lacking invention over Feldkamp et al. who disclose position isomers of the claimed compounds. (*Ex parte Ruddy*, 121 USPQ 427; *In re Henze*, 85 USPQ 261).

We interpret the rejection as being based on section 103, and, to phrase the rejection without putting the cart before the horse, the homologs and position isomer of Blicke and Feldkamp et al., and the teaching of α-chloro in King et al., are said to render the claimed compounds obvious.

[1] Appellant's compounds of claim 13 are the adjacent position isomers of the compounds of Feldkamp et al. Appellant's benzilate moiety is bonded to the pyrrolidine ring via a methylene bridge at the 2-position while the same moiety in a Feldkamp et al. compound is similarly bonded at the 3-position. But for that single difference the compounds are alike. The fact that a position isomer of a compound is known is some evidence of the obviousness of that compound. Position isomerism is a fact of close *structural* similarity which is to be taken into consideration with all other relevant facts in applying the test of obviousness under 35 U.S.C. 103. *In re Lohr*, 50 CCPA 1274, 317 F.2d 388, 137 USPQ 548. It is the closeness of the relationship rather than the mere name, or, here, position number, which is significant, *In re Herr*, 50 CCPA 705, 304 F.2d 907, 134 USPQ 176, *In re Druey*, 50 CCPA 1538, 319 F.2d 237, 138 USPQ 39, and which gives rise to an inference that the claimed compound is obvious, *In re Hass*, 31 CCPA 895, 141 F.2d 122, 60 USPQ 544, *In re Henze*, 37 CCPA 1009, 181 F.2d 196, 85 USPQ 261.

[2] A compound is not, however, merely a structural formula; its properties as part of the whole must be considered, *In re Papesch*, 50 CCPA 1084, 315 F.2d 381, 137 USPQ 43. The similarity of *properties* of a reference compound as compared with a claimed compound gives rise to an even stronger inference of obviousness than that of structural similarity alone, and conversely, where the properties are different, they imply non-obviousness, when they are unexpected. Here, the sole property of appellant's claim 13 compounds, in their quaternary form, is stated in terms of its utility, to "possess valuable properties as spasmolytics." The Feldkamp et al. position isomers "have high antispasmodic activity" when administered in, for example, the free quaternary ammonium salt form. Spasmolytic mean antispasmodic,[2] and thus the "properties" of the two position isomers are the same insofar as the record shows. While a showing of significantly enhanced activity of the same general type, or a different therapeutic

[2] Dorland's Illustrated Medical Dictionary, 23rd edition (1957), p. 1273.

activity or property may constitute evidence of non-obviousness there are no showings of such type here. Thus, we agree with the Examiner and the Board that the compounds of claim 13 are obvious.

Appellant presents us with no showing of any problem or difficulty in the art that his 2-position isomer solves as compared to the 3-position isomer of Feldkamp et al. Nor would the apparent novelty of one of the reactants, a 2-prolinol as compared to the Feldkamp et al. 3-prolinol, carry any weight to show non-obviousness. Blicke shows 2-position prolinol isomers, and thus it is clear that 2-position prolinols are generally known to the art as well as 3-position prolinols.

The compounds of claim 13 were also rejected over the adjacent lower N-alkyl homolog of Blicke. The homologous compounds of Blicke provide an additional inference of obviousness since they have the same property as appellant's compounds, being "antispasmodic agents * * * [which have] an atropine-like activity." Thus the rejection is properly based on *either* the position isomer or the homolog, when considered with their properties.

The α-chloro-containing intermediates of claim 12 were rejected on what were considered to be equivalent compounds of Blicke, α-hydroxy compounds, in view of King et al. which was said to teach the equivalence of chloro and hydroxy at the α-position of the benzilate moiety. We think the rejection is sound.

Appellant maintains that King et al. and Blicke cannot be properly combined. It is urged that one concerned with the antispasmodics of Blicke would not turn to the mydriatics of King et al., particularly since the latter does not show prolinols or the pyrrolidine moiety in the end products. That argument is not convincing. Blicke's "antispasmodic agents" have "an atropine-like activity" while the King et al. benzilates "possess mydriatic properties comparable with those of atropine." That is a more than sufficient reason, within the context of this case, for one of ordinary skill in this art to look to King et al.

Clearly, neither the Examiner nor the Board, nor do we, maintain that the α-chloro group is equivalent to the α-hydroxy group for *all* purposes. The compounds of claim 12 are intermediates and it is clear from the disclosure of Blicke and King et al. that as functioning in those intermediates, the two groups are sufficiently equivalent to show the α-chloro group to be obvious. Blick shows α-hydroxy benzilate hydrohalide acid addition salts. Upon treatment with a base those acid addition salts are converted to the corresponding α-hydroxy free esters, which, except for being the lower homologs, would be among appellant's free esters of claim 13. Similarly, the α-chloro-containing benzilate acid addition salts of King et al., upon neutralization and hydrolysis in boiling water, are converted to the α-hydroxy free ester. Thus in the intermediates, it makes no significant difference whether the α carbon of the benzilate moiety is substituted with a hydroxyl or a chloro group, since the same step converts either to the same type of end product. We need not explore other properties of the α-chloro of claim 12 since their only disclosed utility, or "property," is that of an intermediate for the end products. There is nothing of record to show that in their role as intermediates the α-chloro-containing compounds function any differently than the corresponding α-hydroxy compound. Thus we must affirm the rejection of claim 12.

The process claims were rejected solely on King et al. the Board stating:

> Process claims 1, 4, 5 and 6 have been rejected as being for a conventional procedure disclosed by King et al. on the ground that there is no invention in substituting in this old reaction another alcohol. * * * We fail to see why it is unobvious to apply the reaction generally disclosed by King et al. in the equation on page 164 of the article to a particular alcohol. * * * *In re Larsen*, 49 CCPA [711]; 1961 C.D. 567; 772 O.G. 889; 292 F.2d 531; 130 USPQ 209; *In re Novak et al.*, 49 CCPA [1283]; 784 O.G. 1106; 306 F.2d 917; 134 USPQ 335; *Commonwealth Engineering* v. *Watson*, 127 USPQ 355; aff'd 129 USPQ 338. These decisions specifically hold that there is no invention in applying an old chemical reaction or process to another and analogous material where there is at least a reasonable expectation of success. The *Larsen* case involved an esterification process.

We think the rejection is sound. The reaction of King et al., while not employing a prolinol as the alcohol, is clearly shown by the various alcohols employed therein to be a general esterification reaction, and the diphenylchloroacetyl chloride to be a useful benzilating agent in the general field of appellant's compounds. The chloroacetyl chloride is used in King et al. to produce benzilates having atropine-like activity, which we have noted above is closely related to the spasmolytic activity and utility of appellant's compounds. Thus King et al. is not non-analogous art.

Appellant urges that the "tertiary amino alcohols to which the authors [King et al.] refer are quite unrelated to the prolinols employed by appellant." Appellant also states that his "N-substituted prolinols are so little known that their preparation is recited in the application." Clearly it is evident that both Blicke and Feldkamp et al. show that one working with antispasmodic agents which have "atropine-like" activity, as do the mydriatics of King et al., would know of the identical prolinol reactants of the process claims here. Thus, one of ordinary skill in this art, viewing King et al. alone with the desired end product esters in mind, would be expected to consider the claimed process obvious.

The process as claimed merely calls for mixing the reactants and then hydrolyzing and quaternizing the ester. The latter two steps are shown in King et al. for the benzilates (esters) produced therein. Thus the significant part of the process appears to lie in the naming of the specific reactants. It being generally known that prolinols are used in the production of antispasmodic benzilate esters, the teaching of King et al. as to the availability of the chloroacetyl chloride in the general synthesis of esters having related properties would suggest its use in a process such as claimed here.

[3] Further, appellant has not shown that having a different alcohol reactant presents one of ordinary skill in the art with considerations, evident from the structure and properties of that reactant, which would lead him to believe the process steps would not operate successfully with his alcohol reactant. The claims do not include any reaction conditions whatsoever, much less any such as indicate a necessity for a non-obvious adjustment of the process to compensate for the use of a different alcohol reactant. Merely arguing that the alcohol reactant is different or "unusual" is not convincing. The difference has not been shown *relevant* to the process steps or reaction conditions. *In re Norman*, 50 CCPA 817, 309 F.2d 517, 135 USPQ 328. Differences which, insofar as the record shows, are merely

structural and do not affect the reacting group, do not necessarily prove non-obviousness.

We think the Examiner's reasoning sound:

> • • • The real criterion is not [only] whether the steps themselves are shown in the prior art but whether the use of the material in the process claimed is suggested. (*Ex parte Wagner*, 88 USPQ 220). The reference clearly suggests that diphenylhaloacetylhalide and an alcohol be reacted to produce an ester (35 U.S.C. 103). The final product is old and suggests the moieties to use in the King et al. process.

The Examiner clearly recognized that the reactants must be considered in a process claim as well as the manipulative steps, otherwise, as appellant states, "it would virtually make it impossible for any applicant to obtain a claim on a chemical synthesis."

Appellant relies on an unsworn "Exhibit," prepared by him and filed before taking appeal to the Board. The exhibit reviews certain literature and gives conclusions of tests made of the products produced by the method of the Blicke patent. Neither the Board nor the Examiner mentioned the "Exhibit" in the answer or decision.

[4] We note first that, being unsworn, it can be taken merely as argument and not to establish facts. We find that portion of the argument presented by the exhibit which is a review of relevent literature to be a strong indication that the synthesis in Blicke produces an ambiguous product, i.e., a mixture of pyrrolidine and piperidine esters, the latter being produced from the former by rearrangement in basic solution. However, the process claims are not rejected on Blicke, but on King et al., and thus the deficiencies in the Blicke process are not relevant to the rejection.

The fact that the Blicke process may produce an impure product is not relevant to the rejection of the product claims for two reasons. First, the product claims here do not admit of a relative degree of purity, and there is no support in the disclosure for any such purity. Second, the rejection of the product claims here is based on the structure and properties of the Blicke and/or Feldkamp et al. products, apparently as otherwise purified. That more pure end products are directly produced without necessity of subsequent additional purification steps is a fact which, while it may tend to show the process to be unobvious as compared to Blicke, is not pertinent to the product claims or to the rejection of process claims on King et al. We consider the unsworn exhibit as an additional argument, but find it not relevant to the issues.

[5] For the foregoing reasons the decision of the Board is affirmed.

AFFIRMED.

SMITH, J., concurring.

The result reached by the majority follows, I think, by applying to the record here the analysis we relied upon *In re Lohr*, 50 CCPA 1274, 317 F.2d 388, 137 USPQ 548:

> Considering all of the evidence in the record: the close structural similarity, the similar method of making the compounds, the similar properties, the same use, and the inconclusive showing of the affidavit, we are constrained to agree with the Board of Appeals that the claimed compounds and compositions are obvious in view of the prior art.

In cases dealing with complex technical subject matter, it is particularly incumbent on the applicant to establish in the record the significance of the technical differences upon which he relies in seeking reversal of a finding of obviousness. There is no question but both the process and the product here claimed are different from the processes and products of the cited prior art. Under 35 U.S.C. 103 we must determine whether such a process and product as a whole would have been obvious to one of ordinary skill in the related art at the time the invention was made. I do not agree with the analysis of the majority in which the relationship of the structures of the claimed and prior art products is considered as giving "rise to an inference that the claimed compound is obvious." We must endeavor to ascertain the pertinent technical and scientific *facts* rather than to place so large a reliance on *inferences* in making this difficult determination. We cannot overcome our failure so to do by paying lip service to such decisions as *In re Papesch*, 50 CCPA 1084, 315 F.2d 381, 137 USPQ 43.

Here, it seems to me that because it is the claimed subject matter "as a whole" which we are required to pass upon, we are necessarily required to pass upon *all* the general relationships shown in the record which existed at the time the invention was made. Thus I do not agree with the majority that the process claimed can be found to be obvious in view of King et al. alone "with the desired end product esters in mind." Instead, the analysis must be made on the basis of the knowledge of one skilled in the art *without* having a knowledge of appellant's claimed invention before him.

Upon such an analysis I find differences between the prior art and the invention of the appealed claims. However, since I find nothing in the specification or in the evidence of record from which to find patentable significance in these differences, I have no choice but to find with the Board that the invention as a whole would have been obvious to one of ordinary skill in this art at the time the invention was made. I would affirm entirely on this specific ground.

U.S. Court of Customs and Patent Appeals

IN RE FRANCIS J. HASSLER

No. 7318. Decided July 1, 1965

[52 CCPA —; 347 F.2d 911; 146 USPQ 167]

1. PATENTABILITY—REFERENCES—*In re Palmquist* OVERRULED BY *In re Foster*.

   In connection with a newspaper article, which appeared in "The News and Observer," Raleigh, North Carolina, reporting progress of experiments by appellant and his coworkers, and with respect to appellant's position, in reliance on *In re Palmquist*, 51 CCPA 839, 319 F.2d 552, 138 USPQ 234, that, because the article was not prior to appellant's first date of invention, it was not a proper reference to be utilized in determining obviousness under 35 U.S.C. 103, *Held* that "the line of argument concerning the unavailability of The News and Observer article has been rendered moot by our • • • decision in *In re Foster*, • • • 145 USPQ 166, in which that aspect of *In re Palmquist* relied on by appellant for support was explicitly overruled."

2. SAME—SAME—PRINTED PUBLICATION—PUBLICATION REPORTING APPELLANT'S INVENTION—35 U.S.C. 102(b).

   "We agree with the Board's holding that The News and Observer article is a valid reference under 35 U.S.C. 102(b) *for what is disclosed therein*, since it was available to the public for more than a year prior to applicant's filing date. • • • The publication is not removed as a reference merely because it discloses appellant's own invention, or an early stage of that invention, and the publication, having been available to the public for more than a year, may not be overcome by a showing of invention prior to the

publication date. The question then is to determine what is disclosed therein and whether that disclosure, taken with prior art, renders the claimed invention obvious to one of ordinary skill in the art."

3. SAME—SAME—SAME—SAME—LOSS OF RIGHT TO PATENT—OBVIOUSNESS—35 U.S.C. 102(b).

"In view of the knowledge which one of ordinary skill in this art possesses, as evidenced by the patents to Vickers and Stevens et al., The News and Observer article would make the subject matter presently claimed entirely obvious. Since the claimed invention has been obvious to the public for more than a year prior to appellant's filing date, we hold appellant to have lost his right to patent under 35 U.S.C. 102(b)."

4. SAME—PARTICULAR SUBJECT MATTER—APPARATUS FOR BULK CURING TOBACCO LEAVES.

The decision of the Board of Appeals, refusing, as unpatentable, all claims to apparatus for bulk curing tobacco leaves, is affirmed.

APPEAL from the Patent Office. Serial No. 164,789.

AFFIRMED.

Raymond T. Lippitt (*William K. West, Jr.*, of counsel) for appellant.

Clarence W. Moore (*Raymond E. Martin* of counsel) for the Commissioner of Patents.

Before RICH, *Acting Chief Judge*, and MARTIN, SMITH, and ALMOND, JR., *Associate Judges*

MARTIN, *J.*, delivered the opinion of the court.

MARTIN, *J.*

The issues we must determine in this appeal are whether a newspaper article reporting progress of experiments by appellant and his coworkers is available as a reference, and if so, whether it, coupled with knowledge of the art either as generally known or as shown by certain patents, is sufficient to make the presently claimed invention obvious to one of ordinary skill in the art.

A newspaper article titled "Bulk Leaf Curing Method Ready for Form Testing," appeared in "The News and Observer," Raleigh, North Carolina, on November 10, 1958. The article reports the results of a method of bulk curing tobacco regarded as "so promising that private manufacturers have now been encouraged to consider the development of commercial equipment and to aid in farm-scale testing." The method is stated to have been developed by agricultural engineers with the "N.C. Agricultural Experiment Station and USDA," and was "tested at the Oxford Research Station this summer" under a "cooperative tobacco curing program" headed by appellant, Dr. Francis J. Hassler.

Nineteen months later, on June 13, 1960, appellant Francis J. Hassler filed an application Serial No. 35,499 for "Method and Apparatus for Bulk Curing Tobacco." A subsequent requirement for division by the Patent Office led to the instant application, Serial No. 164,789, filed January 8, 1962, titled the same as the parent, but the claims of which are restricted to the apparatus alone. As will be seen in greater detail below, the newspaper article disclosure corresponds in great part to the apparatus now claimed.

Appellant, in his main and reply brief, has taken two approaches to the article disclosure. First, it is urged that the article "merely identifies a bulk curing process which is being tested." Appellant notes that the Patent Office admits the article does not disclose all the claimed structure, nor does it disclose the nature of the curing process. It is argued that the article is merely "a disclosure of Dr. Hassler's early experimental work" which is now being used to preclude the patenting of "the ultimate commercial reality of those experiments." Appellant reasons that:

Since the News and Observer article was published at a time when the invention was in the experimental stage, appellant is entitled to the "hospitality" accorded by law and the disclosure of the article should not be construed strictly against him.

In view of the fact that the article does not disclose all the claimed structure, appellant states that The News and Observer article "clearly does not consistitute a statutory bar."

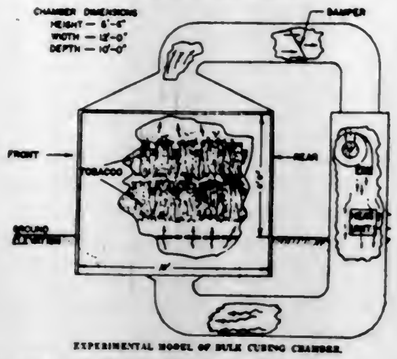
Appellant takes a second position, in major part relying on *In re Palmquist*, 51 CCPA 839, 319 F.2d 552, 138 USPQ 234, to the effect that the "Board's rejection of the present claims is clearly based upon 35 U.S.C. 103," but "since the News and Observer article clearly is not prior to applicant's first date of invention, it is not a proper reference to be utilized in determining obviousness under 103."

The Solicitor's brief points out that there is no evidence of record showing that the claimed invention had been *completed* prior to the publication of The News and Observer article, thus the reliance on *Palmquist* was not well founded. The Solicitor also points out that the two lines of argument are inconsistent, the appellant arguing on the one hand that the invention *had not been completed* prior to the article which therefore cannot be a barring anticipatory disclosure, and, on the other hand, that the invention *had been completed* prior to the publication, and in view of *Palmquist* the article was not an available reference for a section 103 rejection. Appellant's reply brief is devoted almost entirely to the argument based on *Palmquist*, urging that since The News and Observer article is a report of appellant's own invention it is both absurd and unnecessary to require him to swear behind it, citing M.P.E.P. 715.01(c).

We think the contradiction between the two lines of appellant's argument is more apparent than real. [1] As we see it, appellant is arguing that The News and Observer article is not a complete disclosure, and so much of the invention as was disclosed therein was made prior to the publication thereof. Nevertheless, the line of argument concerning the unavailability of The News and Observer article has been rendered moot by our recent decision in *In re Foster*, 52 CCPA —, — F.2d —, 145 USPQ 166, in which that aspect of *In re Palmquist* relied on by appellant for support was explicitly overruled.

[2] We agree with the Board's holding that The News and Observer article is a valid reference under 35 U.S.C. 102(b) *for what is disclosed therein*, since it was available to the public for more than a year prior to applicant's filing date. *In re Ruscetta*, 45 CCPA 968, 255 F.2d 687, 118 USPQ 101; *In re Foster*, supra. The publication is not removed as a reference merely because it discloses appellant's own invention, or an early stage of that invention, and the publication, having been available to the public for more than a year, may not be overcome by a showing of invention prior to the publication date. The question then is to determine what is disclosed therein and whether that disclosure, taken with prior art, renders the claimed invention obvious to one of ordinary skill in the art.

The News and Observer article consists of text, three photographs, and a diagram, the last being reproduced here:



EXPERIMENTAL MODEL OF BULK CURING CHAMBER

The pertinent part of the article text states:

BULK LEAF CURING METHOD READY FOR FARM TESTING

By Tom Byrd

• • • • • • •

More Uniform Leaf

"It [the method] also has the potential for producing a more uniform leaf," Dr. Hassler said, "which will make grading easier."

A special barn is required to bulk-cure tobacco. However, the leaf is prepared for market the same way as conventionally-cured tobacco.

• • • • • • •

In this new bulk-curing process tobacco is placed in frames by the armful, rather than tied on sticks three or four leaves at a time.

Two men can frame the tobacco and place it in the barn as rapidly as at least four men can prime it from the field. Under present barning methods, about 10 barn hands are needed to keep up with four primers.

Laboratory tests show there are no significant chemical differences in the bulk-cured and conventionally-cured tobacco. Representative samples of tobacco bulk-cured at the Oxford station last summer averaged $62 per hundred on the open market.

• • • • • • •

New Approach

• • • • • • •

"Throughout our work," Dr. Hassler continued, "we have recognized that the present curing method is a major factor in characterizing our flue-cured tobacco. Therefore, in the research and development of this new process we have been very careful to compare those qualities that characterize our flue-cured tobacco."

The first photograph shows a worker placing tobacco leaves in a trough-like loading bin. A horizontal bar having numerous long spikes extending downward therefrom is disposed above the tobacco in the loading bin. The caption states:

Bill Johnson places tobacco into frames for curing. Spikes at top of frame are pushed through tobacco to hold it in place.

The second photograph shows two workers lifting the special "frame" which holds the tobacco, and is captioned:

Wiley Henson (left) and Rupert Watkins move a frame of tobacco from loading racks to curing barn. Frame holds 10–12 sticks.

The third photograph shows the interior of the curing chamber. Two tiers of the special frames which hold the tobacco are shown therein, one end of each frame being supported by posts in the center of the barn, while the other end of each frame is apparently supported on the walls visible at the edges of the photo. The caption states:

Interior of barn used for bulk curing is shown here. Hot air moves up through the floor and through the frames of tobacco. Two-thirds as much tobacco could be cured in this chamber as in a 16 x 16 foot barn.

The disclosure of the appealed application will be readily apparent from the certain of the drawings:

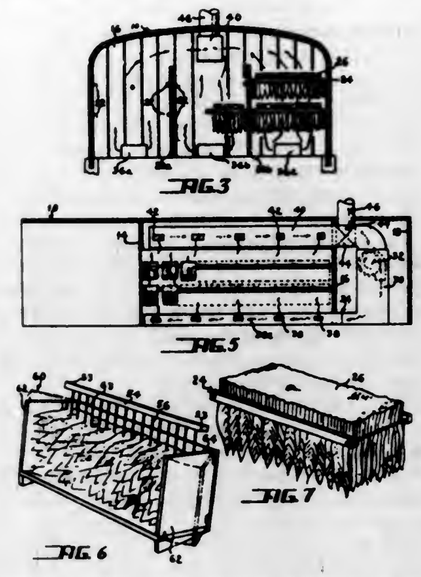


FIG. 5 shows a longitudinal section view of a curing barn, and FIG. 3 shows a cross-sectional view through the drying chamber portion. Referring to FIG. 5, furnace 30 heats air which is moved from the furnace room (delineated by the area between right end wall 18 and partition 16) by a blower 32 through duct 36*c* into the drying chamber (delineated by the area between left end wall 14 and partition 16). Hot air leaving ports 38 passes through the tobacco 26 (FIG. 3) racked in special frames 24. Dimensions of the frames, barn partitioning (i.e. consider FIG. 3, partitions 20*a*, 20*b*, and FIG. 5, walls 14, 16), and close leaf packing are "* * * such as to force the circulated air to flow between the bulked tobacco leaves." The air then exits via upper duct 40. Element 44 is a damper and outlet duct 46 communicates to the outside atmosphere. By adjustment of the damper, varying amounts of fresh air may be admitted to the heating system, and, if desired, "* * * duct 46 may be closed, such that the air within the system is recirculated without addition of fresh air." A particular cycle of temperature and humidity throughout a 3-stage drying process is disclosed.

The apparatus used in the process of loading the frames or racks with tobacco leaves to be dried is illustrated in FIGS. 6 and 7. The loading bin has an open top and open side. Tobacco leaves are placed butt end first into the bin and a frame or rack side-member 54 is pressed downwardly to force the spikes 56 through the tobacco leaves. A second side-member (not shown) receives the spikes, and the two side-members are fastened together by end rods (FIG. 7). The loading bin end panels 62 (FIG. 6) are then swung away, and the completed frame or rack of tobacco is lifted out and positioned in the curing barn, being slid thereinto on rails 22 (FIG. 3), mounted on the partitions 20*a*, and 20*b*, and the sidewalls.

FIGS. 6 and 7 correspond to the first two photographs of The News and Observer article, with the exception that workers are seen in the photos manipulating the bin and frame or rack of tobacco.

Appellant's claim 9, representative of claims 9–15 on appeal, reads as follows except that the breakdown, numbering and emphasis are ours:

9. Apparatus for bulk curing tobacco leaves comprising

A. a plurality of *tobacco leaf supporting racks* [also called "frames" by appellant], each of said racks including sections movable apart to receive a batch of tobacco leaves in bulk form with the flat surfaces thereof disposed generally in one direction and with at least a substantial portion of the flat surfaces of the leaves generally parallel and movable together to support the batch of leaves in a compressed state, the sections of each rack when together including means for continuously peripherally confining the batch of leaves along a pair of straight parallel first sides and a pair of straight parallel second sides extending perpendicular to said first sides and spike means extending within the peripheral confining means between a pair of parallel sides thereof in piercing relation to the batch of leaves in a direction generally perpendicular to the parallel flat surfaces thereof so as to provide interior support for the leaves while permitting flow of air between the leaves within the confining means in the direction of disposition of the flat surfaces thereof,

B. *a barn structure* for supporting said plurality of racks when the sections thereof are together in supporting relation to respective batches of tobacco leaves, said barn structure including

1. spaced pairs of elongated horizontally extending *rail means*, each pair of rail means providing substantially continuous upwardly facing supporting surfaces disposed generally in the same horizontal plane, said rail means being included within said barn structure with the supporting surfaces of each pair of rail means spaced apart a distance sufficient to engage and support a group of said racks in side-by-side relation with the first sides of the peripheral confining means of said racks extending horizontally adjacent said supporting surfaces and with adjacent second sides of adjacent racks extending horizontally therebetween in substantially abutting relation,
2. said barn structure including *vertical wall means* extending upwardly from *a floor and a roof supported by said vertical wall* means above said floor, said rail means being disposed within said vertical wall means at positions between said floor and said roof, said *vertical wall means defining with said roof and said floor upper and lower air spaces* disposed respectively above and below said rail means, said vertical wall means including *closable door means* adjacent one end of said pairs of rail means openable to provide access completely horizontally across the associated supporting surfaces to permit said groups of leaf supporting racks to be moved into said side-by-side relation by horizontal sliding movement along the associated supporting surfaces, said barn structure and the vertical wall means thereof with said door means closed confining direct vertical communication between said air spaces solely to the rack occupying spaces defined between the pairs of supporting surfaces of each of said pair of rail means,
3. *fan means* having a suction side and a pressure side for creating a forced flow of air,
4. *means* for communicating the pressure and suction sides of said fan means with said air spaces respectively so as *to establish a circulatory path of air flow* including generally vertical flow of air through said rack occupying air spaces,
5. *means for heating* the air flowing in said path,
6. and *means for introducing* controlled amounts of atmospheric air into *and exhausting controlled amounts of air* from the air flowing in said path,

the capacity of said fan means, said heating means and said air introducing and exhausting means being such that sufficient air of a *desired temperature and moisture content* can be forced generally vertically through said rack occupying spaces to effect a yellowing of the leaves supported by said racks, a subsequent drying thereof, and a final ordering of the leaves.

Claim 10 depends from claim 9 and specifies two tiers of rail means to support the frames or racks of tobacco. Claim 11 also depends from claim 9 and specifies the two tiers of rails and a pair of inner partitions in the curing chamber. Claim 12 depends from claim 11 and additionally specifies walls defining a furnace room adjacent the curing chamber. Claim 13 depends from claim 9 and specifies a humidifier "for introducing a controlled amount of moisture" into the circulating air. Claims 14 and 15 are similar to claim 12, in independent form, with claim 15 additionally specifying separate dampers for each lower air duct. There are no allowed claims.

We deem it unnecessary to set forth any further analysis of how The News and Observer article was applied to the claims. It will be evident from comparison of the diagram reproduced above with the elements of the claim that there are but few claim elements lacking. Because some claim limitations are missing from the article, the Examiner and Board evidently viewed the loss of right to involve the question of obviousness. Both appellant and the Solicitor in their briefs similarly characterize that aspect of the issue. To supply the missing elements, the Board of Appeals has taken "judicial notice" of several elements and has also relied on secondary references.

In particular, the Board took "judicial notice of dampers," and stated that it is "common practice in air conditioning systems to provide means for introducing * * * and exhausting controlled amounts of air from the system." The Board also took judicial notice that it is common to have a separate furnace room in a building. The Board relied on the following references:

Stevens et al., 2,752,096, June 26, 1956.
Vickers, 2,808,283, October 1, 1957.

Stevens et al. is directed to a tobacco curer employing the circulation of heated air. The apparatus disclosed comprises a small furnace placed on the floor in a conventional tobacco barn. Horizontal air outlet conduits extend from the top of the furnace to various parts of the barn. A second air conduit, containing several air inlets, is placed in the peak of the barn. That conduit extends downwardly at one end of the barn, along the floor through a blower and into the furnace. By means of this system, air is heated and circulated through the outlet conduits throughout the entire barn and may be returned by way of the inlet conduits.

The teaching in Stevens et al. relied on by the Board pertains to the disclosure of a means for supplying moisture to the air, which means consists of a waterline terminating in a spray nozzle which is located in the air path between the furnace and the horizontal air outlet conduits. Stevens et al. states:

> * * * The purpose of this construction is to introduce very moist air into the tobacco barn after the tobacco has been cured. This restores enough moisture to the tobacco so that it may be handled without crumbling.

While Stevens et al. discloses using that humidifying device *after* the tobacco has been cured, we are here concerned with structure, not method. We do not see any difference in the "humidifier" means as called for in claim 13 and that shown in Stevens et al. Stevens et al. also quite clearly shows the humidifier in the same apparatus context, that of an air circulating tobacco curing apparatus. In view of that teaching of Stevens et al., it would be obvious to provide air humidifying means in conjunction with the tobacco curing apparatus claimed.

It was unnecessary to take judicial notice of dampers as recited in the claims since The News and Observer article shows damper means on the upper exhaust conduit. Further, Stevens et al. shows (in their FIG. 1) a T-junction in the air conduit leading from the peak of the barn down to the furnace. The T-junction leads a short distance through the barn wall to the outside atmosphere, and at the outer end thereof appears a conventional hinged flap-type closure. That conduit and hinged closure appears to be a type of conventional damper, and its function is well known.

Also we are in complete agreement with the Board that providing doors for the curing chamber would be obvious; though not shown in The News and Observer article, such structure is inherent.

Vickers was cited for the purpose of showing a frame in which the tobacco leaves are impaled for hanging in a curing barn. The rejection alternatively relied on Vickers for that showing, in the event that the first two photographs of The News and Observer were not considered to show all the detailed structure claimed. Suffice it to say that the difference between Vickers' tobacco curing stick and that claimed is one of capacity. Vickers intends his tine-type stick to replace the traditional stick without an increase in capacity of tobacco secured thereon. An increase in capacity is not reflected structurally in the claim, but in any event is clearly evident from the disclosure in The News and Observer, in which each frame is said to hold "10 to 12 sticks" of tobacco. Any details of a frame which would function as does that claimed, if not shown in The News and Observer article, are quite well supplied by equivalent structure in Vickers.

[3] Viewing the record as a whole, we are satisfied that the Board did not err in its application of the pertinent art to the claims. In view of the knowledge which one of ordinary skill in this art possesses, as evidenced by the patents to Vickers and Stevens et al., The News and Observer article would make the subject matter presently claimed entirely obvious. Since the claimed invention has been obvious to the public for more than a year prior to appellant's filing date, we hold appellant to have lost his right to patent under 35 U.S.C. 102(b). *In re Foster*, supra.

[4] In view of the foregoing, the decision of the Board is affirmed.

AFFIRMED.

SMITH, *J.*, concurring.

In my opinion, the publication in the *Raleigh News and Observer* on November 10, 1958, more than one year prior to appellant's filing date, is an enabling disclosure which so described the invention here claimed that one of ordinary skill in the tobacco flue-curing art can be said to have had possession of the invention at that time. The additional references cited are at best evidence of what one of ordinary skill in this art would be expected to know.

In *Cohn* v. *United States Corset Co.*, 93 U.S. 366, 377 (1876), the Court stated the guiding principle which I think is applicable here:

> • • • the evidence shows that the Johnson *specification, in connection with the known state of the art at the time when it was filed and published, was sufficient to enable one skilled in the art* of corset-making and in the use of the jacquard *to make the patented corset.* • • • [Emphasis added.]

See also *In re Sheppard*, 52 CCPA 859, 339 F.2d 238, 144 USPQ 42; *In re LeGrice*, 49 CCPA 1124, 301 F.2d 929, 133 USPQ 365. Cf. *In re Wenzel*, 24 CCPA 1050, 88 F.2d 501, 33 USPQ 30.

Appellant urges that since the publication describes his own experimental work, it is clear that his date of invention is earlier than the publication date. While this undoubtedly is true, no exceptions are provided under 102(b) when, as here, the invention was *described* in the printed publication.

Appellant urges that the publication should be "strictly construed" to the end that since the invention was in an experimental stage on the date of publication, appellant is entitled to the "hospitality" accorded by law to encourage experimentation and further development of an invention before an application is filed thereon. Congress has seen fit to fix the time period for such "hospitality" at one year from the date of a publication describing the invention and we can do nothing about it except to review and compare the invention claimed and the invention described in the publication.

Appellant urges that when this is done,

> There are two fundamental reasons why the News and Observer article does not meet such strict tests. First, the article does not clearly disclose all of the structural limitations set forth in the claims. Second, the article is completely lacking in any disclosure of how a complete structure *could be used to obtain the results alluded to.* So long as the article includes these deficiencies the invention has not been placed in the possession of the public, nor would one skilled in the art be enabled to make *and use* the structure or to practice the invention.

I have reviewed the *News and Observer* publication in view of appellant's position and have concluded that it does convey to one of ordinary skill in the tobacco flue-curing art a sufficient disclosure of the invention to permit it to be put into practical operation. Hence, it seems to me that it meets the requirements of a publication spelled out in *In re LeGrice*, supra, and the cases therein discussed.

I do not, therefore, regard this case as involving a rejection under 35 U.S.C. 103 and I agree fully with the statement in appellant's brief that:

> • • • It can be stated unequivocally that if the present claims are held to be unpatentable, it is not because Dr. Hassler failed to make an invention, but solely because Dr. Hassler was not sufficiently diligent in filing his application.

To the extent the resolution of the issue here requires a determination of patentability under section 103, as the majority seems to indicate, I would *reverse* for the reasons more fully elaborated in my dissenting opinion in *In re Foster*, 52 CCPA —, — F.2d —, 145 USPQ 166. However, it does not seem to me that this issue is here presented since the publication relied upon "describes" the claimed invention within the meaning of section 102(b) and the many decisions which have interpreted it. I therefore concur in the result reached but do so solely on this basis.

U.S. Court of Customs and Patent Appeals

IN RE HARRY LOUIS YALE, FRANCIS ALEXANDER SOWINSKI AND JACK BERNSTEIN

No. 7403. Decided July 19, 1965

[52 CCPA —; 347 F.2d 995; 146 USPQ 400]

1. PATENTABILITY—LOSS OF INTERFERENCE—COUNT IS "PRIOR ART" WITHIN MEANING OF 35 U.S.C. 103.

"• • • the disclosure and the claims of Ullyot corresponding to the interference counts are not a reference under 35 U.S.C. 102(e), since appellants' effective filing date for the compounds of the appealed claims precedes that of Ullyot. However • • • appellants have conceded priority of invention

of the three chemical compounds set forth in the counts in interference. Under the proper circumstances, a concession of priority or disclaimer of interference counts renders those counts available with the same effect as a 'prior art' reference disclosing such subject matter • • • and the counts may be combined with other prior art to show lack of patentable distinction between the counts and appealed claims • • • the legislative history of 35 U.S.C. 102 and 103 makes it clear that the 'prior art,' which section 103 requires us to compare with 'the subject matter sought to be patented' in a given situation, refers to at least the statutory prior art material named in section 102. It seems clear that the three chemical compounds which appellants lost in interference by concession of priority are materials of which it must be said 'before the applicant's invention thereof the invention was made in this country by another.' Those compounds become 'prior art' within the meaning of 35 U.S.C. 103 and, in accordance with that provision, appellants may not obtain any claim which distinguishes over that 'prior art' only in matters which would have been obvious to one having ordinary skill in the art *at the time appellants' invention was made*."

2. SAME—SAME.

"• • • the issue before us • • • requires a finding that the compounds of the counts were invented before the compounds of the present claims. We note that the record fails to establish *any* date to which Ullyot is entitled for conception and reduction to practice of the products of the interference counts, much less whether that date does in fact precede the date of December 23, 1955, to which the Board held appellants are entitled for constructive reduction to practice of the presently claimed subject matter. That void in the record apparently arises from appellants' concession of priority of the interference subject matter. We are unwilling to view that concession of priority of invention as extending to the distinctly different chemical compounds herein claimed. • • • the final products of the interference counts can be made using processes and intermediates unrelated to the present compounds, and it does not necessarily follow from the concession of priority as to those final products that the winning party, Ullyot, invented the final products before Yale invented the compounds of the appealed claims."

3. SAME—SAME.

"We agree with appellants that the particular circumstances of this case preclude a finding that the counts of the interference, directed to the piperazinyl-propyl-trifluoromethyl phenothiazine final products, are indeed *prior* art to the subject matter of the appealed claims, the halo-lower alkyl-trifluoromethyl phenothiazine intermediates. Since 35 U.S.C. 103 is very specific in requiring that a rejection on the ground that an invention 'would have been obvious' must be based on a comparison between the prior art and the subject matter as a whole *at the time the invention was made*, we think, on this record, the Board erred in treating the counts as 'prior art,' and its decision rejecting appellants' claims as obvious in view of those counts must be reversed."

4. APPEAL TO U.S. COURT OF CUSTOMS AND PATENT APPEALS—REMAND.

"• • • we think it necessary to remand this case for clarification of the Board's position with respect to its use of the Ullyot disclosure in rejecting appellants' claims."

APPEAL from the Patent Office. Serial No. 683,219.

REVERSED and REMANDED.

Lawrence S. Levinson (*Robert Alpher*, *Merle J. Smith*, *William H. Saltzman* of counsel) for appellants.

Clarence W. Moore (*J. E. Armore* of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, Jr., *Associate Judges*

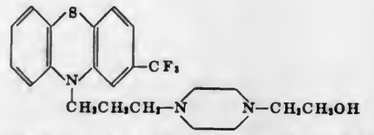
WORLEY, *Chief Judge*, delivered the opinion of the court.

This is an appeal from the decision of the Board of Appeals which affirmed the Examiner's rejection of claims 12, 13 and 18 in appellants' application [1] for "Trifluoromethyl Phenothiazines."

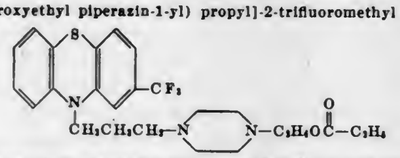
[1] Serial No. 683,219, filed September 11, 1957.

An understanding of the issues here will be facilitated by setting forth a summary of the proceedings leading to this appeal.

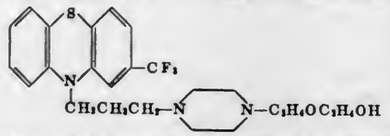
Appellants' application, along with applications of three other parties, was involved in two interference proceedings in the Patent Office relating to priority of invention of certain piperazinyl-lower alkyl-trifluoromethyl phenothiazines, useful as tranquilizers. The subject matter of the interference counts is represented by the following chemical compounds:



10[3'-(4-β-hydroxyethyl piperazin-1-yl) propyl]-2-trifluoromethyl phenothiazine



10[3'-(4-β-acetoxyethyl piperazin-1-yl) propyl]-2-trifluoromethyl phenothiazine



10[3'-(4-β,β'-hydroxyethoxyethyl piperazin-1-yl) propyl]-2-trifluoromethyl phenothiazine

It appears from the record that the above tranquilizers may be prepared by various processes, one of which involves reacting the desired piperazine derivative with a phenothiazine intermediate. During the motion period of the interference proceedings, appellants moved to amend one of the interferences by adding the following proposed count or claim, directed to the phenothiazine intermediates useful in the synthesis of the tranquilizer compounds, to their application:

10-(3-halopropyl)-2-trifluoromethylphenothiazine.[2]

The Examiner denied appellants' motion to add those particular phenothiazine intermediates as an issue in the interference, stating:

• • • The proposed count which is directed to the intermediate for the final product, which forms the count of the interference, does not involve a distinct and independent invention. The preparation of the final product via the intermediate of • • • [the proposed count] involves a single inventive concept for which only a single patent may issue. • • •

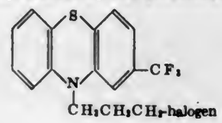
• • • • • • • •

Moreover, the count is deemed to be so broad as to be unpatentable to each of the parties in the use of the term halo which is not properly supported by any of the parties and which has not been shown to be suitable or operable in the inclusion of the fluoro derivative.

No appeal of the Examiner's decision could then be taken by reason of Rule 244(d).

Appellants subsequently conceded priority of invention of the three phenothiazine tranquilizers at issue in the interference proceedings. Upon resumption of ex parte prosecution of their application before

[2] Those compounds may be represented by the structural formula



the Examiner, appellants continued to seek a claim to some of the phenothiazine intermediates of the proposed count by amending the proposed count to exclude fluorine from the scope of the expression "halo." The resultant claim is present claim 18:

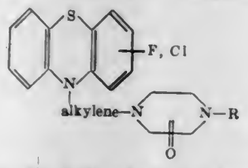
18. 10-(3-halopropyl)-2-trifluoromethylphenothiazine, wherein the halo has an atomic number greater than 9.

In addition, appellants persisted in prosecution of claims which differ somewhat in scope from claim 18, corresponding to claims 12 and 13:

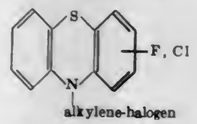
12. 10-halo(lower alkyl)-2-trifluoromethylphenothiazine, wherein the halo has an atomic number greater than 9.

13. 10-(3-chloropropyl)-2-trifluoromethylphenothiazine.

The Examiner rejected claims 12, 13 and 18 on certain prior art having effective dates prior to the filing date of the present application. The Board, in reversing that rejection, accorded appellants the benefit of earlier copending applications[3] which, in the Board's opinion, adequately supported the subject matter of the claims. The Board, however, rejected claims 12, 13 and 18 under the provisions of Rule 196(b) as unpatentable over Ullyot,[4] the winning party of the subject matter in interference in which appellants conceded priority. It took the position that claims 12, 13 and 18 are drawn to intermediates which are obvious to one skilled in the art as being suitable for the preparation of compounds of the counts in interference, now claims 1, 7 and 11 of the Ullyot patent. In support of that position the Board referred to the Cusic patent[5] which shows that certain piperazinylphenothiazine tranquilizer compounds of the formula



may be prepared by reacting the desired piperazine derivative with a phenothiazine intermediate of the formula



In addition, the Board relied on the disclosure of Ullyot, who states that 10-(piperazinylalkyl)-2-trifluoromethylphenothiazines may be prepared by reacting a 10-(haloalkyl)-trifluoromethylphenothiazine with the requisite piperazine. The Board also noted that Ullyot sets forth two phenothiazine intermediates, 10-(2′-chloroethyl)-2-trifluoromethylphenothiazine and 10-(3′-chloro-2′-methylpropyl)-2-trifluoromethylphenothiazine, which fall within the scope of appellants' claim 12 and are homologs of the compounds of claims 13 and 18.

With that background information, we now consider the arguments advanced by appellants in asking us to reverse the decision of the Board. In the main, appellants contend the Board erred in two respects: (1) in holding that the present claims are not patentably distinct from the counts of the interferences, and (2) in holding

[3] Serial No. 554,936, filed December 23, 1955, and Serial No. 597,325, filed July 12, 1956. Those applications did not disclose the subject matter of the interference counts.
[4] U.S. Patent No. 3,058,979, issued October 16, 1962, on an application Serial No. 658,526, filed May 13, 1957.
[5] U.S. Patent No. 2,787,617, issued April 2, 1957, on an application filed September 20, 1955.

that the counts of the interferences and the disclosure of the Ullyot patent are "prior" art against the appealed claims. As appellants' last contention presents the more serious question, we shall discuss it first.

Appellants point out that the Board held they were entitled to the filing date of their earliest parent application, December 23, 1955, for the claimed subject matter, and that the Ullyot patent relied on by the Board was filed May 13, 1957, some one and one-half years later. It is appellants' position that, based on the above facts and the only evidence in the record, appellants were the prior inventors of the subject matter of the appealed claims.

To discuss the merits of appellants' argument we turn to the pertinent portions of 35 U.S.C. 102 and 103, as well as decisions of this court. Those statutory provisions read:

§ 102. Conditions for patentability; novelty and loss of right to patent.
A person shall be entitled to a patent unless—

* * * * * * *

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or

* * * * * * *

(g) before the applicant's invention thereof the invention was made in this country by another who had not abandoned, suppressed, or concealed it. In determining priority of invention there shall be considered not only the respective dates of conception and reduction to practice of the invention, but also the reasonable diligence of one who was first to conceive and last to reduce to practice, from a time prior to conception by the other.

§ 103. Conditions for patentability; non-obvious subject matter.
A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. * * *

[1] To be sure, the disclosure and the claims of Ullyot corresponding to the interference counts are not a reference under 35 U.S.C. 102(e), since appellants' effective filing date for the compounds of the appealed claims precedes that of Ullyot. However, as noted above, appellants have conceded priority of invention of the three chemical compounds set forth in the counts in interference. Under the proper circumstances, a concession of priority or disclaimer of interference counts renders those counts available with the same effect as a "prior art" reference disclosing such subject matter, *In re Williams and McCabe*, 20 CCPA 738, 62 F.2d 86, 16 USPQ 66, and the counts may be combined with other prior art to show lack of patentable distinction between the counts and appealed claims, *In re Sola*, 22 CCPA 1313, 77 F.2d 627, 25 USPQ 433. The 1952 Patent Act did not change the force of those decisions. As we recently pointed out in *In re Harry*, 51 CCPA 1541, 333 F.2d 920, 142 USPQ 164, the legislative history of 35 U.S.C. 102 and 103 makes it clear that the "prior art," which section 103 requires us to compare with "the subject matter sought to be patented" in a given situation, refers to at least the statutory prior art material named in section 102. It seems clear that the three chemical compounds which appellants lost in interference by concession of priority are materials of which it must be said "before the applicant's invention thereof the invention was made in this country by another." Those compounds become

"prior art" within the meaning of 35 U.S.C. 103 and, in accordance with that provision, appellants may not obtain any claim which distinguishes over that "prior art" only in matters which would have been obvious to one having ordinary skill in the art *at the time appellants' invention was made.*

[2] That analysis, however, does not completely dispose of the issue before us, since it requires a finding that the compounds of the counts were invented before the compounds of the present claims. We note that the record fails to establish *any* date to which Ullyot is entitled for conception and reduction to practice of the products of the interference counts, much less whether that date does in fact precede the date of December 23, 1955, to which the Board held appellants are entitled for constructive reduction to practice of the presently claimed subject matter. That void in the record apparently arises from appellants' concession of priority of the interference subject matter. We are unwilling to view that concession of priority of invention as extending to the distinctly different chemical compounds herein claimed. As noted earlier, the final products of the interference counts can be made using processes and intermediates unrelated to the present compounds, and it does not necessarily follow from the concession of priority as to those final products that the winning party, Ullyot, invented the final products before Yale invented the compounds of the appealed claims.

[3] We agree with appellants that the particular circumstances of this case preclude a finding that the counts of the interference, directed to the piperazinylpropyl-trifluoromethyl phenothiazine final products, are indeed *prior* art to the subject matter of the appealed claims, the halo-lower alkyl-trifluoromethyl phenothiazine intermediates. Since 35 U.S.C. 103 is very specific in requiring that a rejection on the ground that an invention "would have been obvious" must be based on a comparison between the prior art and the subject matter as a whole *at the time the invention was made*, we think, on this record, the Board erred in treating the counts as "prior art," and its decision rejecting appellants' claims as obvious in view of those counts must be reversed. See *In re Taub*, 52 CCPA —, — F.2d —, — USPQ —, decided concurrently herewith.

The next question is whether the disclosure of the Ullyot patent also constitutes a "reference" against appellants. The Board did review the pertinent disclosure of the Ullyot patent. In addition to disclosing both generically and specifically several 10-(piperazinylalkyl)-2-trifluoromethyl phenothiazines in which the alkylene group linking the piperazine and phenothiazine rings may be *ethylene*, *propylene* or *2-methylpropylene*, Ullyot discloses synthesis of those compounds by reacting 10-(haloalkyl)-trifluoromethyl phenothiazine intermediates with the desired piperazine derivative. Two specific intermediates employed in that synthesis, the 10-(2′-chloro*ethyl*)- and the 10-(3′-chloro-2′-*methylpropyl*)-2-trifluoromethyl phenothiazines, were disclosed and synthesized in examples.

[4] Unfortunately, it is not clear from the Board's opinion whether, in relying on the disclosure of the Ullyot patent, it applied the well established principle of estoppel that an interference settles not only the rights of the parties under the issues or counts of the interference but also settles every question of the rights to any claim which might have been presented and determined in the interference

proceedings. *In re Chase*, 21 CCPA 1183, 71 F.2d 178, 22 USPQ 77; *Avery* v. *Chase*, 26 CCPA 823, 101 F.2d 205, 40 USPQ 343; *In re Gregg*, 44 CCPA 904, 244 F.2d 316, 113 USPQ 526, and cases cited therein. While the doctrine of estoppel has been applied where a party has neglected or refused to contest priority of patentable subject matter which is *clearly* common to his application and the application of his opponent in interference (see *In re Long*, 23 CCPA 1078, 83 F.2d 458, 29 USPQ 357, and *In re Rhodes*, 23 CCPA 816, 80 F.2d 525, 28 USPQ 75), we can express no opinion on that issue where it is not certain the Board intended to raise it, and where it is not clear from the Board's opinion whether it regarded the Ullyot patent specification, when considered as a whole, to *clearly* disclose the chemical compounds recited in appealed claims 12, 13 and 18 (*In re Rhodes*, supra; *Lawson* v. *Bruce*, 42 CCPA 893, 222 F.2d 273, 105 USPQ 440; *Binstead* v. *Littmann*, 44 CCPA 839, 242 F.2d 766, 113 USPQ 279; *Mahan* v. *Doumani*, 51 CCPA 1516, 333 F.2d 896, 142 USPQ 19). Nor did it discuss appellants' contention, made here as well as below, that no question of estoppel arises against them, since they unsuccessfully attempted to amend the interference under Patent Office Rule 233 to place in issue a proposed count reading "10-(3-halopropyl)-2-trifluoromethylphenothiazine." Compare, for example, *American Viscose Corporation* v. *Coe*, 70 App. D.C. 328, 106 F.2d 849, 42 USPQ 259, and *Power Patents Co.* v. *Coe*, 71 App. D.C. 369, 110 F.2d 550, 44 USPQ 389. Under the circumstances, we think it necessary to remand this case for clarification of the Board's position with respect to its use of the Ullyot disclosure in rejecting appellants' claims.

The decision is reversed and remanded for further proceedings.

REVERSED AND REMANDED.

SMITH, *J.*, concurs in the result.

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

2,395,449, S. W. Briggs, FILTER UNIT, filed Aug. 6, 1965, D.C., N.D. Ill. (Chicago), Doc. 65c1307, *Southwick W. Briggs et al.* v. *Fram Corporation.* Same, Doc. 65c1308, *Southwick W. Briggs et al.* v. *Wix Corporation.* Same, filed Oct. 11, 1965, D.C., N.D. Ill. (Chicago), Doc. 65c1683, *Southwick W. Briggs et al.* v. *Western Auto Supply Company.* Same, Doc. 65c1684, *Southwick W. Briggs et al.* v. *Montgomery Ward & Co. Incorporated.* Same, Doc. 65c1685, *Southwick W. Briggs et al.* v. *Sears Roebuck & Co.*

2,431,112, Everest and Jennings, ONE-ARM DRIVE FOR WHEEL CHAIRS; **2,502,449**, J. C. Miller, REMOVABLE FOOTREST FOR WHEEL CHAIRS, filed Sept. 11, 1961, D.C., N.D. Ill. (Chicago), Doc. 61c1527, *Everest & Jennings, Inc. et al.* v. *The Colson Corporation.* Leave given to plaintiffs to dismiss portion of complaint as to Patent No. 2,431,112 with prejudice Apr. 29, 1965. Judgment holding Patent No. 2,502,449 invalid Aug. 18, 1965.

2,445,322, M. C. Fridolph, BODY GARMENT; **2,707,286**, E. G. Mayer, GIRDLES, filed Jan. 25, 1962, D.C., S.D.N.Y., Doc. 62/414, *Sarong, Inc.* v. *William Gluckin & Co. et ano.* Consent judgment; defendants enjoined June 18, 1964. Same, filed Dec. 12, 1962, D.C., S.D.N.Y., Doc. 62/4051, *Sarong, Inc.* v. *The Stephanie Co., Inc.* Consent judgment; defendant enjoined June 18, 1964. Same, filed Nov. 16, 1962, D.C., S.D.N.Y., Doc. 62/3797, *Sarong, Inc.* v. *Lido Foundations, Inc.* Order of dismissal dated June 8, 1964, vacated and case is restored Sept. 10, 1964.

2,450,152, H. B. Miller, FRUIT PICKER'S CRANE, filed Apr. 30, 1963, D.C. Conn. (New Haven), Doc. 9795, *Hunt-Pierce Corporation* v. *FMC Corporation.* Stipulation and order of dismissal Sept. 8, 1965. Same, filed Oct. 22, 1965, D.C., N.D. Calif. (San Francisco), Doc. 44,299, *Howard B. Miller et al.* v. *Utility Body Company.* Same, Doc. 44,300, *Howard B. Miller et al.* v. *The Ohio Brass Company.* Same, filed Oct. 25, 1965, D.C. Nebr. (Omaha), Doc. 02392, *Howard B. Miller et al.* v. *Elliott Manufacturing Co.* Same, filed Oct. 25, 1965, D. C., W.D. Wis. (Madison), Doc. C–65–123, *Howard B. Miller et al.* v. *Highway Trailer Industries, Inc.* Same, filed Oct. 26, 1965, D.C., S.D. Ohio (Columbus), Doc. 7587, *Howard B. Miller et al.* v. *U.S. Air Conditioning Corp.* Same, filed Oct. 27, 1965, D.C. Minn. (Minneapolis), Doc. 4–65/331, *Howard B. Miller et al.* v. *Tel-E-Lect, Inc.* Same, filed Oct. 28, 1965, D.C., N.D. Ohio (Toledo), Doc. C65–226, *FMC Corporation* v. *Daybrook-Ottawa Corporation.*

2,450,694, J. A. Sauer, SELF-LOCKING NUTS, filed Sept. 28, 1965, D.C., M.D. Tenn. (Nashville), Doc. 4248, *Elastic Stop Nut Corporation of America* v. *Kaynar Mfg. Co., Inc.*

2,544,246, G. H. Butterfield, CORNEAL CONTACT LENS, filed Sept. 30, 1965, D.C., S.D. Calif. (Los Angeles), Doc. 65–1434–HW, *George H. Butterfield, Sr.* v. *Mueller Welt Contact Lenses, Inc.*

2,570,703, H. E. Overacker, OPERATING GEAR FOR TUNING ELEMENTS; **2,724,799**, Overacker and Hewlett, ADJUSTABLE COUPLING DEVICE AND MONITORING MEANS THEREFOR; **2,850,676**, Kan and Oliver, REGULATED FILAMENT SUPPLY, filed Sept. 9, 1965, Ct. Cls., Doc. 320–65, *Hewlett-Packard Company* v. *The United States.*

2,571,435, A. L. Flamm, GAS FUELED CIGAR LIGHTER, **filed** Nov. 19, 1962, D.C., S.D.N.Y., Doc. 62/3805, *Ronson Corporation* v. *Bentley Lighter Corporation*. Order of discontinuance dated June 8, 1965, vacated and case restored to docket (notice Oct. 1, 1965.) **Same**, Doc. 62/3808, *Ronson Corporation* v. *Mark 69 Ltd.* Decree as above.

2,585,174, J. W. Rosendahl, SERVING DISH FOR CORN ON THE COB, **filed** Sept. 10, 1965, D.C.N.J. (Newark), Doc. 977–65, *Cardinal China Company* v. *Jean W. Rosendahl.*

2,592,449. (See 2,431,112.)

2,707,280. (See 2,445,322.)

2,724,799. (See 2,570,703.)

2,731,293, A. D. L. Hutchinson, DUMP TRUCKS; **2,890,909**, same, SEMI TRAILER DUMP TRUCK, **filed** Aug. 12, 1959, D.C., W.D. Wash. (Seattle), Doc. 4874, *Archibald D. L. Hutchinson* v. *Pacific Car & Foundry Company*. Patent No. 2,890,909 brought into case by defendant's counterclaim for declaratory judgment. Decree dismissing plaintiff's complaint with prejudice; claims 4 through 8 of Patent No. 2,890,909 held invalid July 20, 1961. **Appealed** C.C.A., 9th Cir., Doc. 17652. Judgment of District Court affirmed July 2, 1963.

2,785,810, V. J. Kneib, BALE LOADING MACHINE; **2,909,264**, same, **filed** Nov. 25, 1964, D.C.N.C. (Elizabeth City), Doc. 506, *Vincent J. Kneib et al.* v. *Darf Corporation*. Defendant enjoined (notice Jan. 11, 1965).

2,814,401, B. Mendez, VEHICLE LOADING ASSEMBLY, **filed** May 20, 1964, D.C. Puerto Rico (San Juan), Doc. 226–64, *Bernardo Mendez* v. *Jose Marquez Sein*. Consent judgment; defendant enjoined July 6, 1965.

2,847,625, W. J. Popowsky, ELECTRICAL CONTROL APPARATUS; **2,956,234**, E. O. Olsen, INDUSTRIAL PROCESS CONTROL APPARATUS, **filed** Sept. 14, 1965, D.C., E.D.N.Y. (Brooklyn), Doc. 65C–951, *The Foxboro Co.* v. *Honeywell, Inc.*

2,848,045(*a*), D. L. Bennett, VERTICAL VENETIAN BLIND; **3,038,534(*a*)**, R. J. Cayton, VERTICAL VENETIAN BLINDS; **3,054,446(*a*)**, same; **3,061,005(*a*)**, Bopp and Taylor, LOUVER TYPE WINDOW BLIND, **filed** May 21, 1964, D.C., E.D.N.Y. (Brooklyn), Doc. 64C–536, *Louverdrape, Inc.* v. *National Vertical Blind Corp.* Consent judgment for injunction Oct. 27, 1965.

2,848,045(*b*); **2,993,535**, E. F. Taylor, WINDOW BLIND CONSTRUCTION; **3,028,910**, Bopp and Taylor, SHAFT HOOK AND MOUNTING FOR VERTICAL BLINDS; **3,038,534(*b*)**; **3,054,446(*b*)**; **3,061,005(*b*)**, **filed** Sept. 9, 1965, D.C., S.D.N.Y., Doc. 65/2733, *Louverdrape, Inc. et ano.* v. *M. Klahr, Inc.*

2,850,676. (See 2,570,703.)

2,884,505, Strain and Rockwood, VARIABLE CONTROL FOR ELECTRICAL IMPEDANCE ASSEMBLIES, **filed** Sept. 9, 1965, D.C., W.D. Wash. (Seattle), Doc. 6543, *Electro Scientific Industries, Inc.* v. *John Fluke Manufacturing Co., Inc. et al.*

2,890,909. (See 2,731,293.)

2,909,264. (See 2,785,810.)

2,956,234. (See 2,847,625.)

2,957,272, Berzack and Berzac, ACTION TOY SAVINGS BANK; **Des. 182,157**, same, **filed** Sept. 1, 1965, D.C., E.D. Mich. (Detroit), Doc. 27299, *John Berzac and Stephen Berzack* v. *Mitchell Greetings Co. et al.*

2,957,793, J. W. Dickey, LAMINATING POLYURETHANE FOAM; **Re. 25,493**, same, METHOD OF AND AN APPARATUS FOR FORMING LAMINATED STRUCTURE OF ADHERED MATERIALS, **filed** Sept. 3, 1965, D.C., S.D.N.Y., Doc. 65/2686, *Reeves Brothers, Inc.* v. *Alltex Laminating Corp.* **Same, filed** Oct. 11, 1964, D.C., W.D.N.C. (Charlotte), Doc. 2044, *Reeves Brothers, Inc.* v. *Thrift Dye Works, Inc.*

2,965,936, B. Hillberg, HANGER ASSEMBLY FOR SUSPENDED CONCRETE FORMS; **2,965,937**, same, OUTSIDE HANGER ASSEMBLY FOR SUSPENDED CONCRETE FORMS, **filed** Oct. 25, 1962, D.C., W.D. Mo. (St. Joseph), Doc. 1176, *Superior Concrete Accessories, Inc.* v. *Richmond Screw Anchor Co., Inc.* Patent No. 2,965,936 held infringed; defendant enjoined. Patent No. 2,965,937 held invalid (notice Sept. 7, 1965.)

2,965,937. (See 2,965,936.)

2,993,535. (See 2,848,045(*b*).)

3,023,893, R. Zaborowski, PROCESS FOR SEPARATING PARTICLES OF SOLID MATERIAL ACCORDING TO SPECIFIC GRAVITY, **filed** Sept. 27, 1965, D.C. Kans. (Kansas City), Doc. KC–2399, *Stamicarbon, N.V.* v. *McNally-Pittsburg Manufacturing Corporation*.

3,025,625, E. H. Colvin et al., MOSAIC PLAQUE AND METHOD OF FORMING, **filed** Feb. 19, 1964, D.C., W.D. Tex. (San Antonio), Doc. 3386, *Texas Mosaic Company* v. *Montgomery Ward & Company*. Final decree dismissing case with prejudice Sept. 28, 1965.

3,028,910. (See 2,848,045(*b*).)

3,031,902, Parske and Hansen, INDEX MECHANISM; **Re. 25,737**, W. E. Brainard et al., MACHINE TOOL WITH MECHANICAL CUTTING TOOL CHANGER; **Re. 25,812**, M. Morgan et al., AUTOMATIC MACHINE TOOL, **filed** Sept. 20, 1965, D.C., N.D. Ill. (Chicago), Doc. 65c1575, *Kearney & Trecker Corp.* v. *Cincinnati Milling Machine Co. et al.*

3,035,572, J. J. Houghtaling, VIBRATOR, **filed** Nov. 5, 1963, D.C. Maine (Portland), Doc. 8–18, *Magic Fingers, Inc.* v. *Robert E. Auger et al.* Patent held invalid; defendants' motions for summary judgment upon Count I of the complaint granted; clerk directed to enter final judgment dismissing Count I of the complaint July 13, 1964. **Appealed**, Sept. 9, 1964, C.C.A., 1st Cir., Doc. 6408. In District Court, stipulation for dismissal filed—action dismissed with prejudice Sept. 21, 1965.

3,038,534. (See 2,848,045.)

3,043,950, M. E. Keck, LUMINAIRE; **3,065,338**, D. E. Husby et al., same; **Des. 187,750**, same, **filed** Jan. 14, 1965, D.C., N.D. Ill. (Chicago), Doc. 65c50, *Westinghouse Electric Corporation* v. *Revere Electric Mfg. Co.* Stipulation dismissing complaint without prejudice Sept. 23, 1965.

3,049,775, E. J. Ondeck, STRAND CHUCK, **filed** Nov. 11, 1963, D.C., M.D. Fla. (Jacksonville), Doc. 63–258–J, *Supreme Products Corporation* v. *Holley-Edwards Sales, Inc.* Final judgment in favor of defendant; patent held invalid Sept. 16, 1965.

3,054,446. (See 2,848,045.)

3,057,287, J. J. Gray, VENTILATOR EXPANSION SCREED SUPPORT AND HOOD CONSTRUCTION, **filed** Nov. 3, 1964, D.C., N.D. Calif (San Francisco), Doc. 42952, *John J. Gray et al.* v. *Ernest Rutzke et al.* Consent judgment in favor of plaintiff; injunction issued Sept. 30, 1965.

3,058,895, L. A. Williams, ELECTROLYTIC SHAPING, **filed** Jan. 2, 1963, D.C., N.D. Ill. (Chicago), Doc. 63c8, *Anocut Engineering Company* v. *Sundstrand Corporation*. By agreement, cause dismissed without prejudice June 30, 1965.

3,061,005. (See 2,848,045.)

3,064,460, S. J. Dziadulonis, MACHINE FOR REDUCING AND ROUGHENING THE MARGIN OF A SOLE, **filed** Sept. 21, 1965, D.C. Mass. (Boston), Doc. 65–681–F, *Industrial Shoe Machinery Corp.* v. *Accurate Shoe Machines, Inc.*

3,065,338. (See 3,043,950.)

3,074,485, H. E. McGowen, Jr., LATCH FOR RETRIEVABLE VALVES OR THE LIKE, **filed** May 21, 1965, D.C., S.D. Tex. (Houston), Doc. 65–H–311, *Camco, Inc. et al.* v. *Harold Brown Company, Inc.* Stipulation of dismissal Sept. 27, 1965.

3,075,317, S. Craft, SOUND PRODUCING DEVICES, **filed** Sept. 23, 1965, D.C., S.D.N.Y., Doc. 65/2877, *I.T.C. Co.* v. *Frey-Lieb Co., Inc.*

3,084,512, D. A. Huelskamp, HYDRAULIC MOLDING MACHINES, **filed** Apr. 9, 1963, D.C., S.D. Ind. (Indianapolis), Doc. IP 63–C–179, *Kochring Company* v. *National Automatic Tool Company, Inc.* Case dismissed without prejudice Nov. 27, 1963. **Same**, Doc. IP 63–C–181, *Kochring Company* v. *National Automatic Tool Company, Inc.* Patent held valid and infringed; injunction issued against defendant July 26, 1965.

3,095,470, H. Dozier, INSULATED ELECTRICAL TERMINAL CONSTRUCTION, **filed** Sept. 17, 1965, D.C., S.D.N.Y., Doc. 65/2809, *U.S. Terminals, Inc.* v. *Sealectro Corp.*

3,110,357, Jenn and Morrison, ACOUSTIC CURB, **filed** Sept. 23, 1965, D.C., E.D. Pa. (Philadelphia), Doc. 38930, *Jenn-Air Products Co., Inc.* v. *Penn Ventilator Co., Inc.*

3,121,649, R. E. Oliver, METHOD OF INSTALLING ROOF INSULATION ON BUILDINGS, **filed** Sept. 7, 1965, D.C., S.D. Tex. (Houston), Doc. 65–H–564, *Adsur, Inc.* v. *Cleveland Fabrication Co.*

3,134,587, R. L. Sjostrom, SHEET FOLDING MACHINE, **filed** Mar. 1, 1965, D.C., N.D. Ill. (Chicago), Doc. 65c315, *Robert L. Sjostrom et al.* v. *Chicago Dryer Company, Inc.* Stipulation of dismissal Sept. 27, 1965.

3,145,329, Deakin and Powell, DIODE RECEPTACLE, **filed** Sept. 29, 1965, D.C., E.D.N.Y. (Brooklyn), Doc. 65C–992, *Sealectro Corp.* v. *L.V.C. Industries, Inc.*

3,160,165, B. B. Greenble, COLLAPSIBLE BUILDING STRUCTURE WITH CENTER POST ERECTING STRUCTURE, **filed** Sept. 29, 1965, D.C., N.D. Ill. (Chicago), Doc. 65c1612 *Rob-Ric Co.* v. *Ideal Industries, Inc.*

3,175,040, D. R. Von Recklinghausen, BALANCED STEREOPHONIC DEMODULATOR APPARATUS, **filed** Sept. 30, 1965, D.C., S.D.N.Y., Doc. 65/2927, *H. H. Scott, Inc.* v. *Fisher Radio Corp.*

3,180,006, Mahaffy and Harder, PACKAGING APPARATUS, **filed** Sept. 22, 1965, D.C., S.D.N.Y., Doc. 65/2862, *Mahaffy and Harder Engineering Co.* v. *Standard Packaging Corp.*

3,191,848, G. L. Meyers, TAMPERPROOF RECLOSABLE CARTON, **filed** Sept. 22, 1965, D.C., S.D. Ohio (Cincinnati), Doc. 6024, *Waldorf Paper Products Co.* v. *American Can Company.*

Re. 25,493. (See 2,957,793.)

Re. 25,687, Kravitz and Lettvin, MEANS FOR VACCINATING, **filed** Sept. 3, 1965, D.C., N.D. Ill. (Chicago), Doc. 65c1481, *American Cyanamid Co.* v. *Lincoln Laboratories, Inc.*

Re. 25,737. (See 3,031,902.)

Re. 25,812. (See 3,031,902.)

Des. 182,157. (See 2,957,272.)

Des. 187,750. (See 3,043,950.)

ABBREVIATURES OF APPLICATIONS

Published at the request of the applicant or owner in accordance with Notice of July 28, 1964, 804 O.G. 813. The abbreviatures are identified by serial number of the applications and arranged in chronological order. The heading of each abbreviature of application, published herein indicates the number of pages of specification, including claims, and sheets of drawings contained in the application as originally filed. The files of these applications are available to the public for inspection and photocopies of them, or any part thereof, may be purchased for 30 cents a page.

433,228. **USE OF SPENT OIL SHALE IN RENOVATION OF WASTE WATERS.** Buell O'Connor, Cincinnati, Ohio, assignor to the United States of America as represented by the Secretary of the Interior. Filed February 16, 1965. Published December 14, 1965. Class 210—24. No Drawing. 6 pages of specification.

It has now been found that certain contaminants, i.e., phosphate ions, dissolved organic materials and biological organisms, may be effectively removed from waste water by treatment with spent oil shale.

Spent oil shale is the residium from the process in which oil shale is retorted at about 900–1100° F. to produce synthetic liquid fuels, as is more fully described in Bureau of Mines Report of Investigations 4825 (R.I. 4825).

Treatment of the waste water may be by means of either dynamic or static processes. In the former the waste water is passed through or over a bed of the spent shale.

Static process involve addition of the spent shale to the waste water under static conditions, which may be followed by agitation for increased contact between water and shale. The shale is then removed by filtration or decantation.

REISSUES

DECEMBER 14, 1965

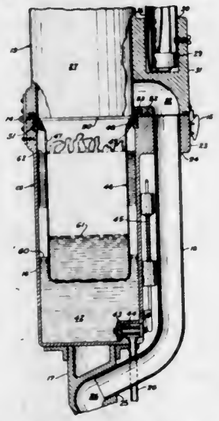
Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

25,939
UNITARY FLOOR SCRUBBING AND DRYING APPLIANCE

Don C. Krammes, Canton, Ohio, assignor to The Hoover Company, North Canton, Ohio, a corporation of Ohio

Original No. 3,117,337, dated Jan. 14, 1964, Ser. No. 652,565, Apr. 12, 1957. Application for reissue May 14, 1965, Ser. No. 459,517

10 Claims. (Cl. 15—320)



5. In a unitary floor scrubbing and drying appliance,

(a) an outer receptacle mounted on said appliance and forming a reservoir for clean liquid, said outer receptacle having an opening in its top portion and a detergent dispensing opening in its bottom portion,

(b) an inner collapsible receptacle mounted within said outer receptacle, said inner receptacle having an inlet opening positioned adjacent said opening in the top portion of said outer receptacle,

(c) a water pick up suction nozzle and suction creating means on said appliance, and

(d) conduit means connecting said nozzle to said suction creating means and to separator means for supplying dirty liquid picked up through said nozzle to said inner receptacle,

(e) the arrangement being such that when said inner collapsible receptacle is empty it is compressed to a collapsed condition by liquid in said outer receptacle and expands to occupy a greater volume in said outer receptacle as liquid is dispensed from said outer receptacle, and as dirty liquid is collected in said inner receptacle it occupys the same space formerly occupied by the liquid dispensed from said outer receptacle.

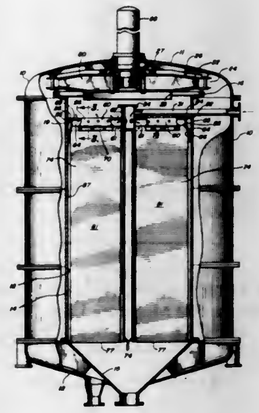
25,940
MEANS FOR FREEZING EXPOSURE OF SALT WATER PURIFICATION SYSTEM

John Hans Davids, Beloit, Wis., assignor, by mesne assignments, to Desalination Plants (Developers of Zarchin Process) Limited, Tel Aviv, Israel, an Israel company

Original No. 3,103,792, dated Sept. 17, 1963, Ser. No. 85,522, Jan. 30, 1961. Application for reissue Feb. 12, 1964, Ser. No. 354,195

9 Claims. (Cl. 62—123)

9. In a vacuum freezing system for rendering saline liquid potable, tank means having an inner substantially vertical wall surface and providing a freezing chamber, a bracket member carried by the wall of said tank means and forming an upwardly open channel, and supply means



for delivering saline liquid to said channel, saline liquid discharging from said channel upwardly over said bracket member and then downwardly onto said inner wall surface of said tank means.

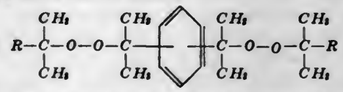
25,941
POLYETHYLENE COMPOSITION AND PROCESS OF CROSSLINKING

Razmic S. Gregorian, Silver Spring, Md., assignor to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Original No. 3,118,866, dated Jan. 21, 1964, Ser. No. 946, Jan. 7, 1960. Application for reissue Jan. 21, 1965, Ser. No. 441,942

9 Claims. (Cl. 260—94.9)

8. A composition useful in the production of crosslinked polyethylene consisting essentially of polyethylene and 0.001–10% by weight of said polyethylene of a crosslinking agent of the formula



wherein R is a member of the group consisting of methyl and phenyl.

25,942
SPRINKLER HEAD

Elmer N. Reynolds, 16104 Lashburn St., Whittier, Calif.

Original No. 2,990,120, dated June 27, 1961, Ser. No. 18,195, Mar. 28, 1960, which is a substitute for abandoned application Ser. No. 691,431, Oct. 21, 1957. Application for reissue June 20, 1963, Ser. No. 290,282

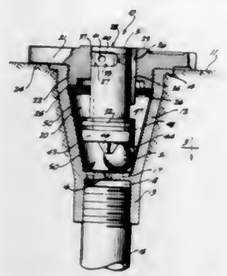
11 Claims. (Cl. 239—206)

5. In a sprinkler head:

(A) a housing having a hollow interior defined by a frusto-conical surface which flares outwardly toward one end;

(*B*) *fluid discharge nozzle means rotatably mounted at the larger end of said housing, said nozzle means having a projection at the inner end;*

(*C*) *and a movable element disposed within the flaring hollow interior of said housing, freely movable upwardly and circularly by fluid introduced into said housing for intermittent engagement with said projection to effect intermittent rotational movement of said nozzle means.*



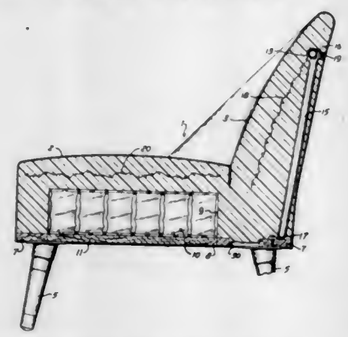
25,943

FOAM PLASTIC ARTICLE OF FURNITURE

David E. Lawson, 553 McIntyre Lane, Maumee, Ohio

Original No. 3,084,980, dated Apr. 9, 1963, Ser. No. 64,945, Oct. 25, 1960. Application for reissue Mar. 10, 1964, Ser. No. 358,679

9 Claims. (Cl. 297—455)



8. A load supporting structure, comprising a frame, a foam plastic cushion supported by the frame and having a load supporting surface, a flexible sheet-like reinforcing member embedded within the cushion and bonded to the foam plastic, said member having at least one generally V-shaped bend extending out of a plane parallel to the load supporting surface, said bend being disposed to straighten out when a load is applied to the load supporting surface to thereby stretch and distort the foam plastic in the bent area and provide a resistance to the load.

25,944

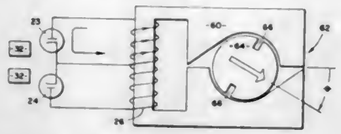
THERMIONIC DIODE CONVERTER SYSTEM

Ned S. Rasor, Lexington, Mass., by North American Aviation, Inc., assignee, El Segundo, Calif.

Original No. 3,146,388, dated Aug. 25, 1964, Ser. No. 223,695, Sept. 14, 1962. Application for reissue June 11, 1965, Ser. No. 464,896

13 Claims. (Cl. 318—138)

1. Apparatus for directly converting thermal energy to alternating current comprising a pair of thermal energy converter diodes connected in a push-pull circuit relationship adapted to generate D.C. voltages of opposite polarity upon the application of thermal energy, said circuit having an output, each of said diodes having a first and second mode of operation, and means inductively connected to said push-pull circuit for alternately controlling the mode of operation of said diodes so that an alternating current is generated at said output.



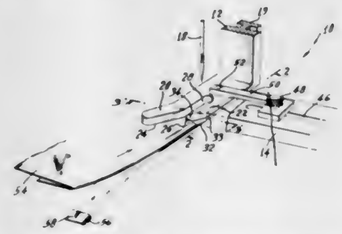
25,945

ZIPPER FOOT DEVICE

Abe Brenner, 255 W. 23rd St., New York, N.Y.

Original No. 3,140,680, dated July 14, 1964, Ser. No. 338,413, Jan. 17, 1964. Application for reissue May 20, 1965, Ser. No. 463,980

8 Claims. (Cl. 112—151)



1. In a zipper foot device for sewing a zipper and material together, the combination comprising a [pair of] substantially horizontal [legs] *leg* having [a separation] *an opening* defined [therebetween] *therein* to accommodate a reciprocating sewing needle therein, one *side* of said horizontal [legs] *leg* having a groove of uniform shape defined therein extending the length of said [one leg] *side* along the lower corner which is remote from said [separation] *opening*, said groove having a lower edge along the bottom of said one *side of said* horizontal leg in the same horizontal plane as the bottom of the [other of the pair of] horizontal [legs] *leg* and an upper edge along that side of said one horizontal leg which is most remote from said [separation] *opening*, the defining surface of said groove curving upwardly from said lower edge and extending into a curved portion which terminates at said upper edge, the surface of said groove forming a guide to press material against gripper elements of a zipper to be sewn thereto as the material and gripper elements are moved beneath the sewing needle during the operation of the sewing machine, limiting means on the side of said one horizontal leg adjacent said upper edge for movement relative to said groove, and means to releasably secure said limiting means to said zipper foot and relative to said groove.

25,946

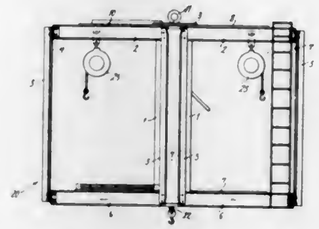
METHOD AND APPARATUS FOR SINKING MINE SHAFTS

Charles K. Bain, 410 N. Newstead Ave., St. Louis, Mo.

Original No. 2,667,750, dated Feb. 2, 1954, Ser. No. 293,306, June 13, 1952. Application for reissue Aug. 19, 1964, Ser. No. 403,674

18 Claims. (Cl. 61—40)

1. The method of sinking mine shafts, comprising, excavating a shaft section to a predetermined depth, *providing a concrete lining section in the shaft extending down to a predetermined distance above the bottom of the excavated section,* rigidly mounting a plurality of guide beams in vertical position along the sides of the excavated section, *the beam extending into the lining section against the inner surface thereof at a plurality of points around the interior thereof, thereby being aligned with the inner surface of the lining section, and depending into the excavated section but terminating above the bottom thereof;* [securing concrete-supporting bottom forms to the lower portions of said beams above the bottom of said excavated section,] *and connecting the lower ends of the suspended beams together into a rigid framework suspended in the excavation from above, and aligned at the top with the previous lining section, plumbing the suspended framework while it is suspended, and centering it in the shaft in vertical position, and securing the bottom of the framework in plumbed position against the surfaces of the excavation, whereby the framework is stabilized in vertical position; securing concrete-supporting bottom forms to the lower portions of said beams above the bottom of said excavated section,* securing upright forms to said beams to extend along the wall of said excavated section but spaced therefrom, said bottom forms *substantially but not wholly* closing the space between said upright forms and said wall, *whereby they avoid interference with the plumbing of the framework, then closing any space between the bottom forms and the walls of the excavation,* and pouring concrete between said upright forms and said wall to mold a shaft-lining section having its lower end spaced above the bottom of said excavated shaft section, *then clearing out a further excavated section below the one just poured, then rigidly mounting guide beams suspend thereinto as before and repeating the procedure to form a new lining section in the last excavated section including removing upright forms from a previously poured concrete lining section, and connecting them to the guide beams suspended in the further excavated section.*



25,947

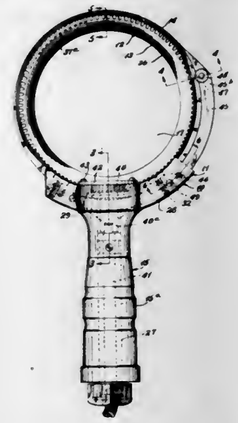
TRIMMING AND SLICING DEVICE

Louis A. Bettcher, Amherst, Ohio, assignor to Bettcher Industries, Inc., Vermilion, Ohio, a corporation of Ohio

Original No. 3,024,532, dated Mar. 13, 1962, Ser. No. 38,556, June 24, 1960. Application for reissue Mar. 2, 1964, Ser. No. 358,678

14 Claims. (Cl. 30—276)

14. A cutting tool for cutting slices from a meat product by drawing the tool thereacross comprising a ring-shaped support means having an annular groove; handle means extending substantially radially therefrom and rigid with said support means and adapted to be manually grasped for holding and manipulating the tool; a rotatable annular blade having an annular base portion at one end thereof provided with gear teeth, and an inwardly facing annular cutting edge at the other end thereof and lying in a plane parallel to and appreciably spaced from the plane of the adjacent face of said ring-shape support means, the diameter of said cutting edge being substantially less than the inside diameter of said base portion of said blade, the annular portion immediately adjacent to said cutting edge sloping radially outwardly and towards said annular base portion; said base portion being circumferentially slidably movable in said groove; and rotatable driving means supported by said handle means including a gear meshed with said gear teeth for imparting rotation to said blade; said support means and blade having a common central opening for passage of severed slices therethrough and being substantially annularly coextensive so as to extend around and lie wholly outside of said common opening; said blade being disposed with the cutting end thereof projecting from said support means and said common opening being substantially greater in diameter than the combined axial length of said support means and blade; said cutting edge comprising the innermost annular portion of said other end of said blade whereby said blade is effective to cut a slice from a meat product in response to rotation of the blade and simultaneous translatory movement thereof imparted thereto by manual movement of said support means substantially in its own plane and across said meat product in a substantially parallel relation to the portion of said meat product from which said slice is being cut.



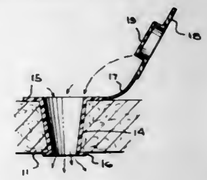
25,948

VENTED ACOUSTIC PANEL

Jerome W. Schutt, Sacramento, Calif., assignor to Aircoustic Co., Inc., San Francisco, Calif., a corporation of California

Original No. 3,159,090, dated Dec. 1, 1964, Ser. No. 165,751, Jan. 12, 1962. Application for reissue May 3, 1965, Ser. No. 457,904

6 Claims. (Cl. 98—40)



1. A vented panel of the character described comprising a flat substantially rigid body composed of fibrous material, said body being formed with venting apertures distributed thereover, respective annular protective sleeves of smooth sheet material disposed in said apertures, said sleeves being provided with outwardly projecting top [and bottom] annular flanges engaging [respective opposite surfaces] *the top surface* of the body, and respective

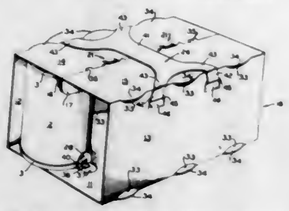
closure elements removably disposed in said sleeves and sealingly engaging the inside wall surfaces of said sleeves below the plane of the [top] annular flanges.

25,949
CARRIER FOR CANS

Noble Andre, deceased, late of San Francisco, Calif., by Jean D. Andre, executrix, San Francisco, Calif., assignor to St. Regis Paper Company, a corporation of New York

Original No. 2,926,782, dated Mar. 1, 1960, Ser. No. 557,885, Jan. 9, 1956. Application for reissue Feb. 26, 1962, Ser. No. 176,501

4 Claims. (Cl. 206—65)



1. A package comprising; a pair of horizontal, parallel rows of upright cylindrical cans, said rows being in side by side relation at opposite sides of a vertical plane and said cans having radially outwardly projecting chimes at their upper and lower ends, an elongated cardboard blank folded along spaced, parallel lines extending normal to the length of said blank defining an end panel intermediate the ends of said blank, a pair of side panels adjoining said end panel, a pair of end sections respectively adjoining said side panels; said end panel extending across and in engagement with one of the corresponding ends of the cans of said rows, said pair of side panels extending over and in close engagement with the oppositely outwardly facing sides of said pair of rows, each of said end sections extending over one row of said cans substantially in engagement with the ends thereof that are opposite to the ends in engagement with said end panel and said end sections terminating at said plane, a flat sided extension integral with one end section of said pair projecting at right angles to the latter to a position between said rows of cans when the other end section of said pair is generally coplanar with said one end section, whereby the flat sides of said extension respectively face the adjacent sides of the cans of said rows, locking tabs integral with said one end section of said pair extending across said plane and across said extension and in engagement with the flat side of said extension that faces the row of cans that are below said one end section for holding said extension between said rows of cans, the cans in said pair of rows being disposed in adjacent pairs with one can of each such adjacent pair thereof being in each row, tabs integral with said end panel extending between the adjacent sides of each of said adjacent pairs of cans, openings formed in said tabs into which the chimes at the ends of the cans that are in engagement with said end panel extend.

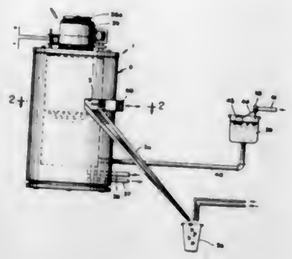
25,950
DISPENSING UNITS

Richard J. Mueller, Franklin Park, and James Johnson, La Grange, Ill., assignors to Automatic Canteen Company of America, Chicago, Ill., a corporation of Delaware

Original No. 3,059,450, dated Oct. 23, 1962, Ser. No. 13,659, Feb. 17, 1960. Application for reissue Aug. 18, 1964, Ser. No. 402,676

14 Claims. (Cl. 62—344)

2. A dispensing unit for ice comprising means for storing a supply of flake ice, an opening in said means, and means for discharging ice from said first mentioned means outwardly through said opening, said discharging means including means for rotating ice around the inside of said first mentioned means, and means in said first mentioned means for deflecting ice outwardly through said opening, said deflecting means comprising a deflecting member disposed in horizontal alignment with said opening, and another deflecting member disposed above said opening, said other deflecting member having a bottom surface slanting downwardly in the general direction of the path of travel of said rotating ice at an acute angle to the horizontal, and a horizontally inwardly disposed surface sloping downwardly and inwardly toward the center of rotation of said ice at an acute angle to the vertical.

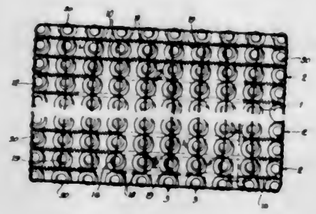


25,951
MULTIPLE COIL SPRING ASSEMBLY

Fred A. Nachman, Jr., Chicago, Ill., assignor to Nachman Corporation, Chicago, Ill., a corporation of Illinois

Original No. 3,079,615, dated Mar. 5, 1963, Ser. No. 73,094, Dec. 1, 1960. Application for reissue May 28, 1964, Ser. No. 381,605

7 Claims. (Cl. 5—246)



7. A multiple coil spring assembly comprising a plurality of coil springs arranged in parallel spaced apart lengthwise and crosswise rows, means for interconnecting adjacent coil springs in one row one with the other and with adjacent coil springs of adjacent parallel spaced apart rows, a top border frame member and a bottom border frame member positioned about the assembled coil springs adjacent the top and bottom coil springs respectively of the outermost coil springs in the rows, and continuous, unidirectional flat bands of resilient material bridging the intermediate springs of each lengthwise row, said bands having terminal flanges overlapping and disposed in surface contact with the inner extremities of the terminal coils of the coil springs outwardly of the ends of the bands thereby joining the springs of the several rows, and means interconnecting the border frame members and the adjacent terminal coils of the outermost coil springs in the rows.

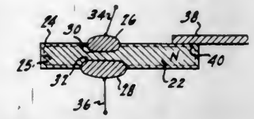
25,952
SEMI-CONDUCTOR DEVICES

Jacques I. Pankove, Princeton, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Original No. 2,843,511, dated July 15, 1958, Ser. No. 420,401, Apr. 1. 1954. Application for reissue Dec. 23, 1959, Ser. No. 861,733

16 Claims. (Cl. 148—33)

14. A semi-conductive device comprising a semi-conductive body having an interior portion of one conductivity type and a first lower value of conductivity, a surface portion substantially surrounding said interior portion and also of said one conductivity type but having a



second higher value of conductivity and a low lateral conductance, and a rectifying connection to the interior portion of said semi-conductive body.

PATENTS

GRANTED DECEMBER 14, 1965

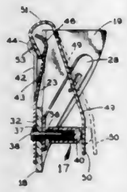
GENERAL AND MECHANICAL

3,222,683
NECKTIE WITH SUSPENDED ORNAMENT
Louis L. Less, Clinton, Iowa, assignor to One-In-Hand Tie Company, Clinton, Iowa, a partnership of Iowa
Original application Oct. 4, 1962, Ser. No. 228,378, now Patent No. 3,167,784, dated Feb. 2, 1965. Divided and this application July 16, 1964, Ser. No. 390,256
3 Claims. (Cl. 2—150)



1. An article of neckwear comprising, in combination
a necktie including a knot and a tie body portion which depends from said knot when the tie is worn;
a loop of material attached to the back of said tie body portion;
an ornament; and
means suspending said ornament from said loop of material and comprising at least one curved arm attached to said ornament and extending upwardly therefrom and into said loop of material.

3,222,684
NECKTIE KNOT DEVICE
Harry Kanter, 535 E. 86th St., New York, N.Y., and Robert Kallman, 612 Forest Hills Drive, Wilmington, N.C.
Filed Dec. 7, 1964, Ser. No. 416,461
9 Claims. (Cl. 2—153)



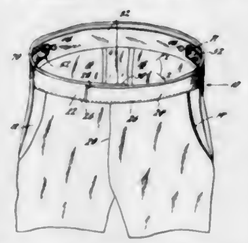
1. A support and former device for pretied neckties comprising a former member including symmetrically oppositely disposed wing element directed rearwardly and laterally from a medial axis and having oppositely downward converging side edges, a fastening assembly including an abutment member medially located at the lower part of said former member, a locking arm hinged adjacent its upper end to the medial upper part of said former member and being swingable between a latch position with its lower end substantially in engagement with said abutment member and rearwardly spaced a predetermined distance from said former member and an unlatch position out of engagement with said abutment member, spring means urging said locking arm toward said latch position, and means for adjusting said predetermined distance separating the lower end of the locking arm from the lower part of said former member when said locking arm is in its latch position.

3,222,685
HAIR VEILING AND HOLDING NET
Mary Phyllis Crouch, 720 Cayuga St., Storm Lake, Iowa
Filed Sept. 24, 1963, Ser. No. 311,055
1 Claim. (Cl. 2—207)



A hair veiling and holding net comprising: a hood made of attractively dressy tulle having requisite self-shape-sustaining properties and embodying a crown, opposed side portions, a back portion, and a neck-embracing portion, said neck-embracing portion having a terminal lower edge, an inelastic cloth hem C-shaped in plan and upper edges enclosing and stitched to the lower edge of said neck portion, said hem being of a restricted diameter and serving to circumferentially contract and gather the components of said neck portion, said hem having forward terminal free end portions which when in use are spaced apart a predetermined distance from each other, and a substantially C-shaped resilient wire member of a diameter corresponding to the diameter of said hem and completely pocketed and retentively concealed in said hem, said wire member being substantially circular in cross-section and that portion of the hem containing the same being snugly and conformingly oriented and cooperable therewith, said hem and the resilient wire member confined therein providing a readily applicable and removable hood positioning and retaining collar, the diameter of said collar being significantly smaller than the hood proper so that when the hood is being worn the hair enclosing side and back portions are distended and accordingly project beyond and overhang the outer periphery of said collar.

3,222,686
ADJUSTABLE WAIST BAND CONSTRUCTION
William F. Farah, Farah Bldg., El Paso, Tex.
Filed Oct. 19, 1961, Ser. No. 146,202
3 Claims. (Cl. 2—237)



1. In a trouser garment, an interior skirt in the waist portion comprising a double-walled length of fabric with free upper edges enclosing the inwardly folded top edge

of the garment and secured thereto in a line of stitching, the bottom of said skirt folded in a hem, secured by stitching, a plurality of female, fastener elements secured in openings in said skirt, in spaced relation peripherally of said waist portion, adjacent the side seam of the garment, a tab at each side of the garment, with one end inserted between an end of said skirt and the outer material of the garment, and secured by the stitching of said side seams, and a male fastener element carried by each tab, and located for selective engagement in said female elements when the tab is folded over the edge of and along said skirt, said tabs comprising a single strip of fabric with side edges folded laterally inwardly in overlapping relation, and secured by stitching along the region of overlap, and folded lengthwise about a middle line, transverse the length of the strip, the said male element being located at the folded end of said tab.

3,222,687
ADJUSTABLE STRAP
William Rosenzweig, Roslyn, N.Y., assignor, by direct and mesne assignments, to Fashion Development Corporation, New York, N.Y., a corporation of New York
Filed May 31, 1963, Ser. No. 284,589
9 Claims. (Cl. 2—323)



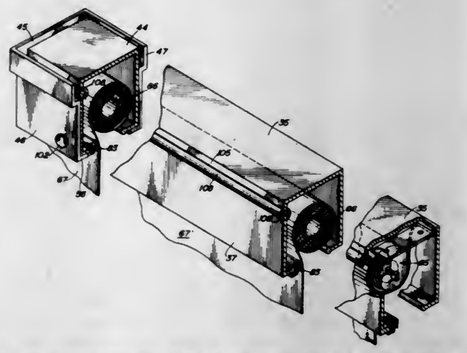
1. An adjustable strap comprising, an anchorage buckle having a first cross bar and a second cross bar spaced from said first cross bar and thereby forming a first aperture, a third cross bar spaced from said second cross bar and thereby forming a second aperture, and a fourth cross bar spaced from said third cross bar and thereby forming a third aperture; an adjusting buckle having a first end cross bar and a first intermediate cross bar spaced from said first end cross bar and thereby forming a first aperutre, a second intermediate cross bar spaced from said first intermediate cross bar and thereby forming a second aperture, and a second end cross bar spaced from said second intermediate cross bar and thereby forming a third aperture; and a tape threaded through said first aperture of said anchorage buckle, under said second and third cross bars of said anchorage buckle, through said third aperture of said anchorage buckle, over said third cross bar of said anchorage buckle and through said second aperture thereof, under said second cross bar of said anchorage buckle and through said first aperture thereof, over said second and third cross bars of said anchorage buckle and through said third aperture thereof, through said third aperture of said adjusting buckle, around said second intermediate cross bar of said adjusting buckle and through said second aperture thereof, around said first intermediate cross bar of said adjusting buckle and through said first aperture thereof, back to said anchorage buckle and through said third aperture thereof, back to said adjusting buckle and through said first aperture thereof, around said first intermediate cross bar of said adjusting buckle and through said second aperture thereof, and around said second intermediate cross bar of said adjusting buckle and through said third aperture thereof.

3,222,688
ADJUSTABLE STRAP
William Rosenzweig, Roslyn, N.Y., assignor, by direct and mesne assignments, to Fashion Development Corporation, New York, N.Y., a corporation of New York
Filed Sept. 17, 1963, Ser. No. 309,558
9 Claims. (Cl. 2—323)



1. An adjustable strap, comprising an anchorage buckle having first, second and third cross bars and first and second apertures, an adjusting buckle having first, second and third cross bars only and first and second apertures only, and a tape passing on one side of the first and second cross bars of the anchorage buckle, then in a first passage through the second aperture of the anchorage buckle to the other side of said anchorage buckle, then around the second cross bar of the anchorage buckle, then in a second passage through the first aperture of said anchorage buckle to said one side of said anchorage buckle, then around the first cross bar of said anchorage buckle to the other side of said anchorage buckle, then past said first and second cross bars of said anchorage buckle at said other side thereof, then in a third passage through an aperture of said anchorage buckle to said one side thereof, then through an aperture of said adjusting buckle, around a cross bar of said adjusting buckle, back to the anchorage buckle and around said third cross bar thereof, in a fourth passage through an aperture thereof, then back to said adjusting buckle and through an aperture thereof, said third passage through said anchorage buckle being disposed between said first and fourth passages through said anchorage buckle.

3,222,689
SHOWER CURTAIN
Theodore Efron, Chicago, Walter F. Hess, Deerfield, and Maynard J. Seldmon, Chicago, Ill., assignors to Theodore Efron Mfg. Co., Chicago, Ill., a corporation of Illinois
Filed Nov. 14, 1963, Ser. No. 323,653
6 Claims. (Cl. 4—149)



2. In combination with a shower bath installation a pair of facing vertical trackways secured in spaced relation to opposed end walls of said bath installation;
a pair of support brackets fastened to said opposed walls adjacent upper ends of said trackways;
a header assembly bridging said trackways and horizontally disposed therebetween to define a housing

for a curtain assembly, said header assembly being supported at either end by said brackets;

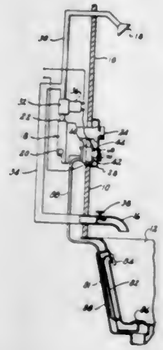
said header assembly defining a storage area for a curtain when the shower bath installation is not in use and comprising first and second generally L-shaped channels, the first channel formed with an integral longitudinally extending solid bead along a longitudinal edge and the second channel being formed with an integral longitudinally extending hollow socket portion along a corresponding edge thereof, the socket portion of said second channel receiving the beaded edge of said first channel in snug fitting, articulated, hinged relation to render one of said L-shaped channels a door permitting access into said storage area for insertion and removal of said curtain therefrom;

a one-piece, flexible, retractible, and extensible curtain slidable vertically in said trackways to open and close an opening therebetween;

a self-winding roller mounted within said header assembly and supporting said curtain,

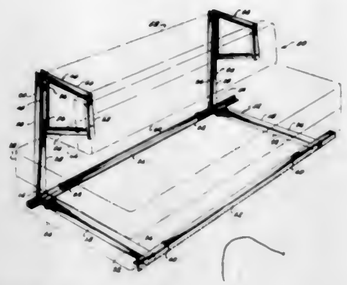
said curtain being slidably positionable in a drawn position to extend in a vertical plane with side edges within said trackways to block said opening forming an entranceway to said shower bath installation, said curtain terminating at its lower edge at a forward sill of said shower bath installation, and said curtain being retractible to wind onto said roller for storage within said header assembly to expose said entranceway and to provide access therethrough.

3,222,690
COMBINATION MANUAL-AUTOMATIC WATER CONTROL MEANS FOR TUB-SHOWER INSTALLATION
Thomas E. Noakes, Detroit, Mich., assignor to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware
Filed Jan. 4, 1963, Ser. No. 249,392
7 Claims. (Cl. 4—194)



1. In a tub-shower installation having a water mixing device equipped with a manually-adjustable member for causing the device to supply water of varying temperatures to the tub or shower: the improvement comprising an electric valve connected with the mixing device to act as a shut off; a switch electrically connected with the electric portion of the valve for energizing and de-energizing same; and an operator for the switch interrelated with the manually-adjustable member so that the operator is prevented from movement to the valve-open position when the manually-adjustable member is at a relatively high temperature setting.

3,222,691
BOLSTER BRACKET FOR CONVERTIBLE FURNITURE
Ralph H. Osborne, 1670 Ocean Ave., Santa Monica, Calif.
Filed Apr. 26, 1962, Ser. No. 190,416
1 Claim. (Cl. 5—59)



In a frame structure for convertible lounge chair or sofa, a bolster bracket comprising:

a first elongated member adapted to be secured to a vertically extending section of a mounting member, said first member being a channel member having a pair of side flanges extending substantially at right angles from an intersecting web;

a second elongated member of a predetermined length, said second member being a channel member similar to said first member and additionally having a bent-out tab at a corner of one of its side flanges;

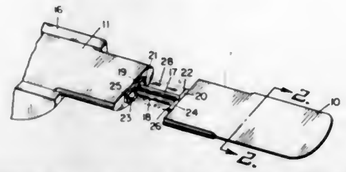
a third elongated member, said third member being a channel member similar to said first member and adapted to mount a bolster to its web;

a fourth elongated member of length greater than that of said second member, said fourth member being a channel member similar to said first member and additionally having axially aligned cutouts intersecting the edges of its side flanges;

pivot means axially perpendicular to said side flanges connecting said elongated member substantially from end to end, said side flanges of said elongated members having end edges engaging structure of adjacent webs to form a collapsible quadrilateral with the first member normally extending in a substantially vertical plane, the second member extending in a substantially horizontal plane, the third member normally inclined outward and downward from the second member and the fourth member normally inclined upward from a horizontal plane, the third and fourth members being foldable into the first and second members with said side flanges extending from said webs toward the center of said quadrilateral, said pivot means connecting said first member to said second member including a bolt secured axially perpendicular to said side flanges;

and torsion spring means including a torsion spring mounted on the shaft of said bolt, a disc rotatably mounted on the end of said shaft, and a pin affixed to said disc for engaging said bent-out tab, one end of said torsion spring being disposed to engage structure of said first member and the other end being disposed to rotatably engage said disc, such that said second member is rotatably urged into alignment with said first member and said quadrilateral is simultaneously biased to the folded condition, whereby said bolster is positioned at an inclined angle and at a predetermined distance before said first member when said quadrilateral is placed in the unfolded condition, and is moved back and positioned substantially aligned with said first member when said quadrilateral is placed in the folded condition.

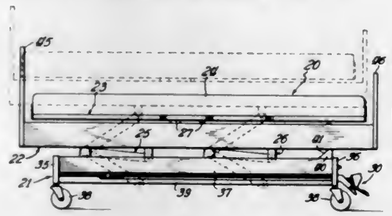
3,222,692
SUPPORT FOR THERAPY EQUIPMENT
Alexander Shewchenko, Hull, Quebec, Canada, assignor to Atomic Energy of Canada Limited, Ottawa, Ontario, Canada, a corporation of Canada
Filed Nov. 23, 1964, Ser. No. 413,176
Claims priority, application Canada, Dec. 16, 1963 891,327
3 Claims. (Cl. 5—66)



1. A stretcher comprising a first body supporting section a second body supporting section spaced from the first body supporting section and a pair of bars connecting said first and second sections and extending longitudinally of the stretcher, arms connected to the ends of each of said bars at one end of each of said arms and shafts connected to the other end of each of said bars, said shafts being mounted in the first and second body supporting sections respectively and providing for rotational movement so that said bars can be positioned to give voids at both sides of the stretcher, the centre of the stretcher or on either side of the stretcher.

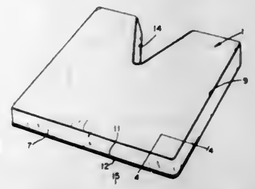
3,222,693
ADJUSTABLE BED
Fred Pruim, Chicago, and Justin J. Wetzler, Evanston, Ill., assignors to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Jan. 14, 1963, Ser. No. 251,268
15 Claims. (Cl. 5—68)

1. An adjustable bed comprising a relatively fixed frame, a movable frame, a mattress support frame, head elevation linkages interconnecting the head portion of said stationary frame with the head portion of said movable frame and the foot portion of said stationary frame with the foot portion of said movable frame and operable to elevate said movable frame, a link disconnectably connected to said elevation linkages and actuatable to operate said elevation linkages, latch means for selectively disconnecting either the head or foot portions of said elevation linkages from said link to prevent elevation of the disconnected portion of the movable frame when said link is actuated, and means for actuating said link.

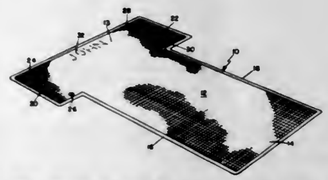


3,222,694
PORTABLE SEAT CUSHION
William F. Schick, 3870 Culver Road, Rochester, N.Y.
Filed Dec. 3, 1962, Ser. No. 241,764
10 Claims. (Cl. 5—338)

10. A portable seat cushion which is selectively usable on a soft surface or on an irregular hard surface to provide relief from pressure at the base of the spine of a person sitting on said cushion comprising: a resilient cushioning element having a front edge, a pair of side edges extending rearwardly from said front edge and a rear edge joining the ends of said side edges remote from said front edge; a recess formed by the contour of said rear edge for underlying the base of said spine; a rigid board-like element; and means for retaining said rigid board-like element in underlying relationship to said resilient cushioning element to thereby lend rigidity to said resilient cushioning element when said portable seat cushion is located on a soft surface to thereby prevent said portable seat cushion from sinking into said soft surface to an extent which would permit said soft surface to effectively exert pressure on the base of said spine.



3,222,695
KINDERGARTEN REST MAT
Stewart S. Brown, 5207 Irwin Ave., San Diego, Calif.
Filed Apr. 29, 1963, Ser. No. 276,663
2 Claims. (Cl. 5—344)



1. A rest mat made from flexible material adapted to be rolled, said mat comprising:

an elongated body having a head portion and a foot portion unitary therewith;

flaps unitary with and extending laterally from each side of said head portion; and

co-operating fastening means in each flap, said foot portion being rollable on itself onto that part of the head portion proximal thereto, the distal part of said head portion being foldable back over the rolled up foot portion, and said fastening means being interengageable to retain said foot portion within said head portion.

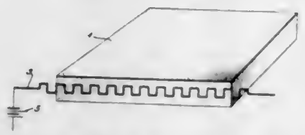
3,222,696
SEATING PAD
Norman Grimshaw, Ashton-under-Lyne, England, assignor to Vitafoam Limited, Middleton, Lancashire, England, a company of Great Britain, Northern Ireland and the Isle of Man
Filed Oct. 21, 1963, Ser. No. 317,646
6 Claims. (Cl. 5—355)



1. A seating pad comprising, a unitary moulded, resilient platform having a series of spaced apart tongues formed integrally along at least two opposite sides there-

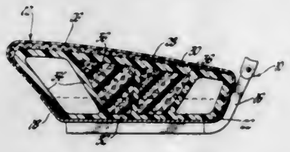
of, and projecting outwardly therefrom, rigid reinforcing members moulded within said tongues, said tongues and members being adapted to be provided with attachment hooks for attachment to a furniture unit, said platform having openings therethrough, a pad of foamed material on the top surface of said platform, a sheet of thermoplastic material extending over the top surface of said pad opposite to said platform and extending around the edges of said pad of foamed material to enclose the latter, and other thermoplastic material located on the under surface of said platform, said sheet of said thermoplastic material and said other thermoplastic material being welded together by heat sealing through said openings in said platform.

3,222,697
PROFILED POLYURETHANE FOAM ARTICLES OF MANUFACTURE
Wilhelm Scheermesser, Bad Honnef, Germany, assignor to Mobay Chemical Company, a corporation of Delaware
Filed June 29, 1956, Ser. No. 594,819
Claims priority, application Germany, July 4, 1955, Sch 15,400, Patent 1,706,682; July 5, 1955, Sch 15,418, Patent 1,709,027, Sch 15,423, Patent 1,709,028; Oct. 5, 1955, Sch 15,995, Patent 1,713,841, Sch 15,996, Patent 1,713,842; Oct. 28, 1955, Sch 16,153, Patent 1,718,704, Sch 16,154, Patent 1,710,495
13 Claims. (Cl. 5—361)



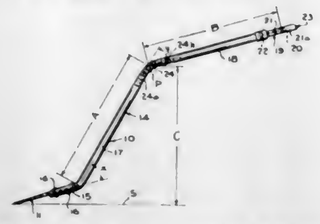
1. As a new article of manufacture, a body of polyurethane foam having at least one profiled surface comprising a plurality of ribs and grooves formed therein, said body being characterized by a compression-stress curve that approximates a straight line.

3,222,698
RESILIENT PLASTIC SEAT ELEMENTS
John J. Levenson, St. Clair Shores, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 13, 1962, Ser. No. 244,475
5 Claims. (Cl. 5—361)



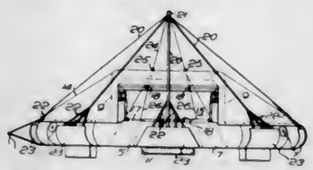
1. A resilient integral plastic seat support element adapted to be mounted on a seat frame, said seat support element having an upper supporting member, a lower supporting member positioned beneath said upper supporting member, strut members interconnecting said supporting members, said upper supporting member being integrally connected to one end of each of said struts, said lower support member being integrally connected to the other end of each of said struts, said strut members forming apertures between said supporting members and at least one of said apertures being filled with a resilient foam to control the softness of said seat support element.

3,222,699
SNOW SHOVEL WITH HANDLE MOUNTED ICE CHOPPER
Lewis L. Zeisig, 425 N. Main St., Monroe Falls, Ohio
Filed Apr. 16, 1963, Ser. No. 273,379
4 Claims. (Cl. 7—14.55)



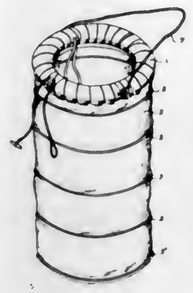
1. A snow or like shovel comprising: a shoveling scoop having a surface-engaging forward edge and an opposite rearward edge; and a handle including a bend therein defining elongated inner and outer extents of approximately the same lengths on the order of twenty-six inches and disposed at an obtuse inside angle to each other; said inner handle extent being centrally attached to extend from said rearward edge of the scoop at an upward and rearward inclination with respect to said general plane of the scoop approximating an outside angle of forty-five degrees with respect to the general plane, and said outer handle extent being presented rearwardly of said bend and substantially in parallelism to said general plane of the scoop; whereby in a position of initial shoveling use of the scoop at an acute angle to a horizontal surface said outer handle extent will extend generally horizontally at a predetermined height above said surface at which the apex at said bend will be positioned at a height from said surface on the order of twenty-six inches, such that in conjunction with said outside angle different mature persons of widely varying heights, standing erect on said surface can readily grip said generally horizontal outer handle extent in the widely separated hands of downstretched arms, without substantial bending of the body in that positon and in other positions of normal shoveling use of the shovel.

3,222,700
INFLATABLE LIFERAFTS
Rex Stanley Smith, Grange, West Kirby, England, assignor to P. Frankenstein & Sons (Manchester) Limited, a company of Great Britain, Northern Ireland and the Isle of Man
Filed June 1, 1964, Ser. No. 371,601
3 Claims. (Cl. 9—11)



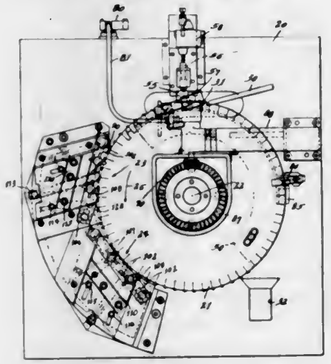
1. A liferaft comprising, an endless, inflatable tubular gunwale of oval shape provided with a flexible impermeable floor united to the gunwale, two parallel, inflatable, upstanding, spaced-apart tubular curved arches extending on a curved line from one side of the gunwale to its opposite side, two straight, inflatable bracing tubes extending in parallelism from one of the arches to the other and maintaining the arches in their spaced-apart relation and with the distance between them being substantially uniform from their points of joinder to the gunwales to their upper ends, and a flexible canopy marginally united to the gunwale and supported by the inflated arches and their straight bracing tubes.

3,222,701
LIFE BUOYS
André Fest, Paris, France, assignor to Louise Pierrette Perraud, Paris, France
Filed Nov. 29, 1963, Ser. No. 326,900
Claims priority, application France, Dec. 7, 1962, 917,990, Patent 1,349,458
4 Claims. (Cl. 9—330)



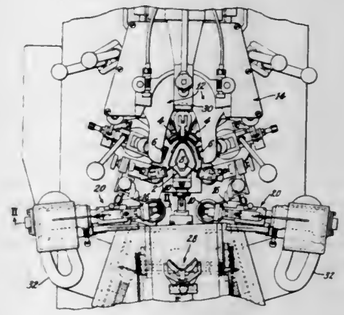
1. A life buoy provided with means to protect the wearer's body from the attack of marine life, comprising a buoy, a sheath of thick fabric attached to one side of said buoy, a plurality of rigid reinforcing rings spaced along said fabric sheath, said sheath being adapted to be folded against the buoy in the inoperative position and to unfold freely under the weight of said rings when said buoy is immersed, a bottom in said sheath, a central aperture in said bottom, an elastic cord along the edge of said aperture, said aperture being capable of expansion to permit the passage of the user's body therethrough.

3,222,702
MACHINE FOR SLOTTING SCREW HEADS
Charles O. Lofgren and Axel Anderson, Rockford, Ill., assignors to Sundstrand Corporation, a corporation of Illinois
Filed Oct. 2, 1961, Ser. No. 142,088
3 Claims. (Cl. 10—6)



1. In a machine tool, a cutting station, a workholding device having a plurality of workholders, means for rotating the workholding device about an axis and relative to the cutting station to move successive workholders through said station, each of said workholders comprising, a first member having a V-shaped notch with the base of the V extending radially with respect to said axis for establishing two-point contact with a generally cylindrical workpiece of a range of sizes held extending radially of said axis and with the axis of the workpiece parallel with said base, a series of said workholders having their notches lying in a plane transverse to said axis, a second member for gripping a workpiece in said notch of the first member, said second member having an elongate gripping surface extending generally parallel to said axis, means mounting said second member for reciprocal movement along a line at a slight angle to said gripping surface and at substantially a right angle to said plane whereby advance of said second member moves said gripping surface progressively toward and across said notch, a spring connected between said second member and said device for yieldably urging said second member in advancing direction, and means for positively retracting said second member from an advanced position.

3,222,703
LASTING MACHINE
Ernest Broughton and Stuart R. Burns, Leicester, England, assignors to United Shoe Machinery Corporation, Flemington, N.J., a corporation of New Jersey
Filed July 11, 1963, Ser. No. 294,377
Claims priority, application Great Britain, July 20, 1962, 27,931/62
3 Claims. (Cl. 12—12)

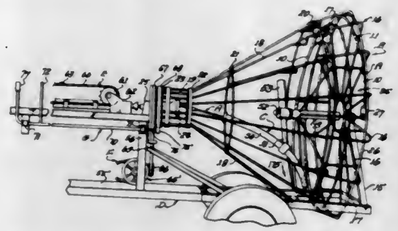


1. In a machine for shaping uppers over lasts, ball wipers mounted in the machine to engage opposite marginal portions of the upper at the ball line, means for moving the ball wipers inwardly widthwise of the last while yieldably pressing the ball wipers toward the last bottom for wiping the upper over the ball region of the last, forepart wipers movable heighwise of the last into engagement with exposed surfaces of the ball wipers after widthwise movement of the ball wipers, the forepart wipers thereafter being movable widthwise between the ball wipers and the upper previously wiped by the ball wipers, and thin resilient plates each having an inner operative end overlying an associated ball wiper and being pressed thereby against the upper, the plate adjacent the exposed surface of the ball wiper forming an opening therewith through which the forepart wiper passes during its inward movements whereby the plates are held pressed against the upper by the forepart wipers while the ball wipers are displaced away from the last bottom.

3,222,704
REEL MECHANISM FOR FEEDING SEWER CLEANING TOOL DRIVE ROD WITH FREE-WHEELING ANCHORAGE OF DRIVE ROD TO REEL
Peter L. Ciaccio, Culver City, Calif., assignor to Flexible Manufacturing Corporation, Culver City, Calif., a corporation of California
Filed July 15, 1963, Ser. No. 295,124
2 Claims. (Cl. 15—104.3)

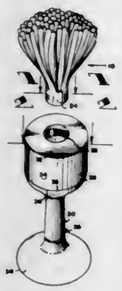
1. In combination: a drive rod reel cage comprising a plurality of circumferentially-spaced peripheral rods and a plurality of spokes defining the periphery and back of a

storage chamber respectively, an annular series of arcuate bends integrally joining the rear ends of said peripheral rods to the outer ends of respective spokes and collectively defining an annular internal peripheral back corner in said reel, and means cooperating with said spokes and peripheral rods to define an annular peripheral storage chamber in which a tool-driving rod may be stored in the form of a plurality of coils laid internally against said peripheral rods, said storage chamber having, in its radially inward forward area, an annular mouth through which the drive rod may be projetced from the chamber and retracted into the chamber; a circular anchor ring of round cross-section freely rotatable in said annular cor-



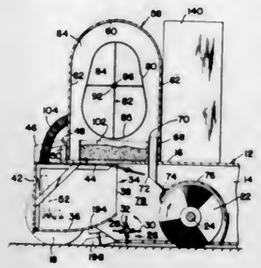
ner within said chamber and having slidable bearing engagement with said arcuate bends; and an anchoring connection between the rear end of said drive rod and said anchor ring, said connection being freely movable in orbital path in said chamber as the result of free rotatability of said anchor ring; and fixed connection comprising a block secured to said ring and projecting diagonally forwardly and toward said axis, said block having a bore parallel to the adjacent portion of said ring, said drive rod having a swivelling mounting in said bore; and abutment means secured to said drive rod and abutting respective ends of said block so as to anchor said drive rod to said sleeve.

3,222,705
DISPOSABLE BRUSH AND SANITARY HANDLE
Albert C. Peterka, 756 W. 1st Place, Mesa, Ariz.
Filed Feb. 3, 1964, Ser. No. 342,078
6 Claims. (Cl. 15—176)



1. In a disposable brush and sanitary handle the combination of: a disposable brush having a substantially cylindrical shank; a handle for said brush in which it is removably secured; said handle having an opening in one end tightly engaged by the shank of said brush to prevent foreign matter from accumulating inwardly of the handle and around the shank of the brush; said handle having a cap in which said opening is disposed; a body of said handle upon which said cap is rotatably mounted; and means, actuated by relative rotation of said cap and said body for gripping said shank of said brush internally of said opening.

3,222,706
SWEEPING MACHINE
Kenneth B. Kaar, Lincoln, Nebr., and Guy E. Coons, deceased, late of Lincoln, Nebr., by Sylvia Irene Coons, executrix, Lincoln, Nebr., assignors to Sweep-All Company, Inc., Lincoln, Nebr., a corporation of Nebraska
Filed Apr. 12, 1962, Ser. No. 187,136
2 Claims. (Cl. 15—340)

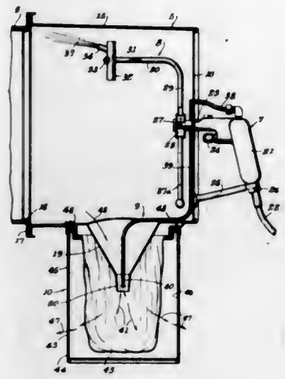


1. In a sweeping machine having a main frame which has ground wheels providing for movement of said machine over a surface, means on said main frame forming a chamber intermediate the ends of said main frame, a brush rotatably mounted on said main frame and disposed in said chamber, suction means on said main frame disposed above said chamber and communicating therewith for removing dirt from said brush and said chamber, removable filter means operatively associated with said suction means for collecting dirt removed from said brush and chamber, means pivotally supporting at least one of the ground wheels on said main frame, power means on said main frame connected to said wheel supporting means for moving at least one of said wheels up and down to move said brush between a surface engaging position and a position spaced above said surface, an impeller rotatably mounted on said main frame at a position forwardly of said brush for impelling trash into the path of said brush, guard means mounted on said main frame and projecting into said chamber at a position adjacent the front and top sides of said brush for deflecting trash impelled toward the top side of said brush by said impeller, a trash collecting receptacle on said main frame having an open rear side disposed above said impeller and located so that trash impelled into the path of said brush is thrown into said receptacle through the open rear side thereof, said receptacle having a front door and a pusher member connected thereto which extends rearwardly from said front door, means pivotally mounting said door and pusher member for rotation about a substantially horizontal axis disposed above said receptacle, and means for rotating said door and pusher member in a direction to move said door away from the front end of said receptacle and move said pusher member forwardly through said receptacle to move trash therein out the front end thereof.

3,222,707
BRAKE-HOUSING CLEANER
Howard M. Allenbaugh, Los Angeles, Calif., assignor of forty-nine percent to Donald L. Felton, Los Angeles, Calif.
Filed Mar. 5, 1964, Ser. No. 349,563
2 Claims. (Cl. 15—345)

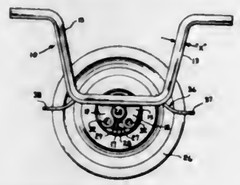
1. A brake-housing cleaner comprising:
(a) a hood having an open side adapted to be placed against the open side of a brake housing,
(b) an air gun connected to the hood and serving as a hand grip therefor, said gun having a ported discharge nozzle extending into the interior of the hood,

(c) means mounted on said nozzle for free rotational movement thereon to produce an epicycloidal jet of air received from the discharge nozzle of the air gun, said means being disposed to direct said air jet into the brake housing to dislodge particles therein,
(d) said hood being provided with a lateral tubular extension with a constricted opening,



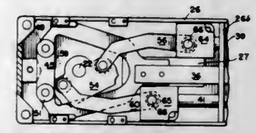
(e) means to conduct an auxiliary air stream from said air gun, said means terminating in a discharge tube to produce Venturi flow in said constricted opening creating suction in the interior of the hood to move dislodged particles outward of said discharge tube, and
(f) a collector to receive said particles and pass the air bearing the same to atmosphere.

3,222,708
ANTI-FOULING CASTER
Richard W. Butsch, Evansville, Ind., assignor, by mesne assignments, to Bliss & Laughlin, Incorporated, Oak Brook, Ill., a corporation of Delaware
Filed Dec. 15, 1961, Ser. No. 159,619
2 Claims. (Cl. 16—41)



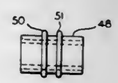
1. A caster comprising: a frame having a pair of parallel sidemembers, each sidemember having a horizontal portion with a wing projecting downwardly therefrom; an axle passing through openings in said wings and thereby mounted on said frame; means for retaining the axle in the openings in said wings; a wheel on said axle; and a scraper including a portion disposed adjacent the periphery of said wheel to prevent accumulation of foreign matter on said periphery, and said scraper further including two side portions extending alongside said wings, each side portion having a lower surface resting on and vertically supported by said axle and each side portion having an upper surface engaging the underside of one of said sidemembers, whereby said scraper is positioned against said frame by said axle.

3,222,709
DOOR CLOSING MECHANISM
David H. Ellis, West Chicago, Ill., assignor to Rixson, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Jan. 7, 1963, Ser. No. 249,699
8 Claims. (Cl. 16—55)



1. A door closing mechanism for a swinging door comprising
(a) a spindle having connection with the door on the pivot axis thereof,
(b) a camming member fixed on said spindle for rotation therewith upon swinging movement of the door,
(c) said camming member comprising an arm terminating in a radially facing first cam means of expanding radius and having a driving element disposed radially toward said spindle adjacent said cam means and in a different plane,
(d) a resiliently yieldable force means substantially surrounding said camming member positioned for engagement by said driving element for imposing a low resistance to rotation of said camming member during a predetermined extent of angular movement of the camming member in the door opening direction, and
(e) bearing means mounted on said force means in a different plane and positioned for engagement by said first cam means when said camming member is rotated in the door opening direction beyond said predetermined extent of angular movement,
(f) said first cam means acting with said bearing means to increase the resistance of said force means to the rotation of said camming member in the door opening direction.

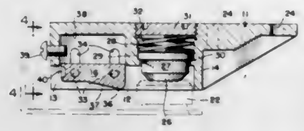
3,222,710
DRAPERY RAIL APPARATUS
John J. Potye, 1245 Marengo, Forest Park, Ill.
Filed May 17, 1963, Ser. No. 281,192
8 Claims. (Cl. 16—87.2)



1. A slip ring of the type used to engage and carry drapery supporting members and adapted to be slidably mounted on a drapery support rail of circular cross section and having cord means for controlling the sliding movement of the ring including a circular hollow ring-like body having a hollow interior with an interior wall shaped to match and fit with said support rail, said body being formed of relatively rigid but resilient material, the body having an opening leading from the exterior thereof to the interior thereof, said opening having a size such that said body may be resiliently expanded from its normal shape to allow said support rail to be passed therethrough and into the hollow interior of the body, means on the body providing a releasable locking engagement with the cord means, and flange means on the exterior of

the body so as to allow reception of a drapery supporting member on said body while said flange means prevents longitudinal movement of said members with respect to said body.

3,222,711
PIVOT BRACKET FOR CENTER-HUNG DOORS
Michael L. Cecala, Franklin Park, Ill., assignor to Rixson Inc., a corporation of Illinois
Filed June 1, 1962, Ser. No. 199,507
4 Claims. (Cl. 16—151)



2. A bracket element for the bottom pivotal mounting of center-hung doors comprising,

(a) a body having a channel in one face opening at one end of the body and terminating intermediate the ends of the body,

(b) said body having a bore in the bottom of said channel adjacent the inner end thereof,

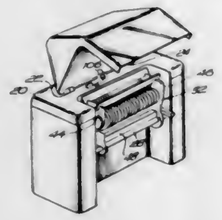
(c) a thrust-bearing trunnion slidably seated in said bore with one end protruding into the channel,

(d) means positioned in said bore for resiliently holding said trunnion against axial movement into said bore, and

(e) a shiftable latch bar mounted in the body and normally extending into the said channel intermediate the open end thereof and the said trunnion,

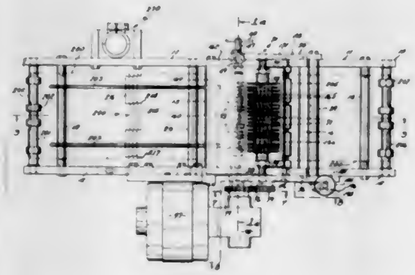
(1) said latch bar being shiftable toward the floor of said channel and gravity-actuated normally to a position outwardly beyond the said one end of said trunnion for engaging a thrust bearing axially seated on the trunnion and holding the said bearing against lateral displacement from the trunnion.

3,222,712
MEAT TENDERIZING MACHINE
Oscar Robert Deckert, Harvard, Mass., assignor to Sir Steak Machinery, Inc., Concord, Mass., a corporation of Massachusetts
Filed Jan. 23, 1964, Ser. No. 339,746
7 Claims. (Cl. 17—26)



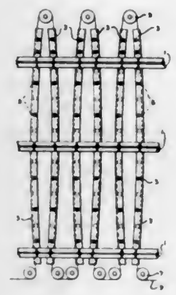
1. A meat tenderizing machine, comprising a housing, said housing being formed with a pair of spaced vertical walls defining a passage, a pair of spaced parallel rods extending horizontally across said passage between said walls, power driven rotary coupling means extending through one of said walls, a processing head assembly mounted on said rods, said head including a frame, a pair of spaced parallel processing rollers rotatably mounted to said frame, connecting means mounted on one pair of ends of said rollers for cooperative driving engagement with said coupling means, said frame being formed with at least one depending abutment to engage the front edge of the foremost rod and a latch movably mounted at the end of said frame opposite the drive connection end, said latch having a shoulder portion for engagement with the rearward edge of the foremost rod when said latch is in locking position, the outer edge of said latch being adapted to bear against the other of said walls to hold said connecting means in driving engagement with said coupling means.

3,222,713
MEAT SCORING MACHINE
Sam S. Stein, Sandusky, and Louis L. Cerny, Cleveland, Ohio, assignors to Sam Stein Associates Inc., Sandusky, Ohio, a corporation of Ohio
Filed Aug. 10, 1964, Ser. No. 388,483
14 Claims. (Cl. 17—26)



1. An apparatus for scoring a meat patty or the like comprising conveyor means for moving the patty along a path; upper and lower scoring means disposed respectively above and below said path at one point along said path for scoring the patty as it passes said scoring means; each said scoring means comprising a transversely directed arbor; a plurality of generally circular scoring blades carried by each said arbor and spaced axially therealong; each scoring blade having a plurality of generally radiating teeth spaced around the circumference of said blade; each said tooth having a substantially radially disposed back edge and an outwardly tapering front edge; a horizontally disposed stripper plate having slots through which the teeth of the blades of the lower scoring means extend upwardly; said conveyor means having horizontal runs both forward and rearward of said plate at approximately the horizontal level of said plate; the scoring blades of each said scoring means being so oriented that said front edges first contact the patty; and power means rotating said scoring means and moving said conveyor means whereby the circumferences of said scoring means and said conveyor means move in the same direction and whereby said teeth are successively projected into the patty at both the top and bottom thereof with a drawing and slicing motion; said horizontal runs of said conveyor belt and said stripper plate and said scoring means being so positioned and arranged that a portion of each meat patty is engaged by the scoring teeth before the remainder of the patty leaves the conveyor means at the entering side and a portion of each meat patty is disposed on the discharge run of the conveyor means before the last portion of the patty leaves the scoring teeth.

3,222,714
APPARATUS FOR SMOOTHING POLYVINYL ALCOHOL FILM DURING CONDITIONING OF SAID FILM IN A CONTROLLED ATMOSPHERE CHAMBER
Selichi Sakakibara and Takuya Ono, Kurashiki-shi, Japan, assignors to Kurashiki Rayon Co., Ltd., Kurashiki-shi, Japan, a corporation of Japan
Filed Oct. 11, 1962, Ser. No. 229,842
Claims priority, application Japan, Oct. 14, 1961, 36/37,413
1 Claim. (Cl. 18—1)



Apparatus for removing wrinkles from polyvinyl alcohol film and for conditioning said film to prepare a uniformly smooth polyvinyl alcohol film product which comprises,

a controlled atmosphere chamber;

passage means contained in said chamber whereby polyvinyl alcohol film introduced into said chamber is conducted through said chamber in a continuous zig-zag path and where said zig-zag path comprises a plurality of curvilinear sections having a generally convex form,

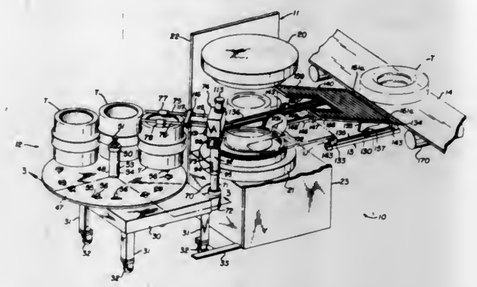
said passage means including a plurality of driven rolls for drawing said polyvinyl alcohol film through said chamber,

said passage means also including a plurality of idler rolls spaced between successive driven rolls and said idler rolls having parallel axes and being arranged along a support that is generally convex in form whereby said polyvinyl alcohol film is drawn over said idler rolls and firmly engages each idler roll with a finite area of contact and where said idler rolls maintain said film in said plurality of convex sections during the passage of said film through said chamber,

and means associated with said idler roll supports where the number and spacing of said idler rolls can be adjusted to vary the length of the unsupported polyvinyl alcohol film span between successive driven rolls and to vary the contact area of said film on each idler roll,

and means for regulating the speed of said driven rolls, said speed regulating means and said means for varying the number and spacing of said idler rolls on said supports allowing said polyvinyl alcohol film to be subjected to varying amounts of desired tension along said film zig-zag path to suit the local conditions of said film as it passes through said chamber whereby wrinkles formed in said film due to changes in physical characteristics of said film are continuously removed and whereby the film emerging from said chamber is a uniformly smooth polyvinyl alcohol film product.

3,222,715
APPARATUS FOR LOADING GREEN TIRES IN A TIRE PRESS
Edward J. Harris, 1733 Tanglewood Drive, Akron, Ohio
Application Oct. 7, 1964, Ser. No. 402,256, which is a continuation of application Ser. No. 788,456, Jan. 22, 1959. Divided and this application Jan. 25, 1965, Ser. No. 427,794
10 Claims. (Cl. 18—2)



6. A tire-curing unit of the character described, comprising

(a) a lower mold section with a vertical axis, and

(b) a loading device for a green tire carcass including

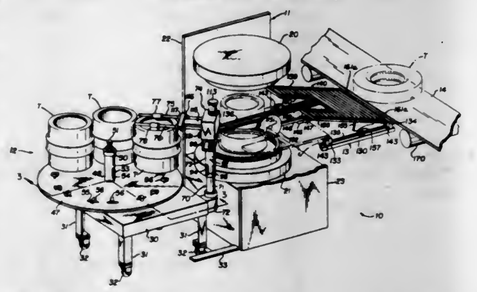
(1) means with a horizontal top surface, which surface is provided with positioning means adapted to contact circumferentially spaced positions of a green tire adjacent its bottom edge when the tire is supported vertically on the surface,

(2) an upright standard close to said surface,

(3) wing members carried by means projecting from said standard and means for spreading the wing members to contact the interior of a green tire at different circumferential locations on the tire to engage the tire while positioned vertically on said surface and to support the tire in a vertical position when it is not supported by said surface, and

(4) means for moving the wings while supporting the tire in a vertical position, to a position over the lower mold section.

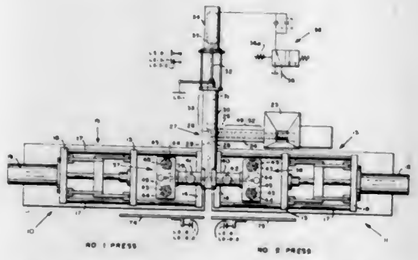
3,222,716
TIRE CURING PRESS AND UNLOADING APPARATUS THEREFOR
Edward J. Harris, 1733 Tanglewood Drive, Akron, Ohio
Application Oct. 7, 1964, Ser. No. 402,277, which is a division of application Ser. No. 788,456, Jan. 22, 1959. Divided and this application Jan. 25, 1965, Ser. No. 427,793
13 Claims. (Cl. 18—2)



12. The combination of a tire press with a front for loading green tires and a rear for unloading cured tires,

a conveyor attached radially to the rear of the press to move cured tires substantially horizontally away from the press, the conveyor being large enough to support a tire thereon, and a bead ring with means for moving the same relative to the conveyor, to a position above the conveyor, the conveyor having an opening therein in the edge toward the press large enough to accommodate that portion of the bead ring which would prevent such relative vertical movement, and means for tilting the conveyor to facilitate movement of tires thereon away from the press.

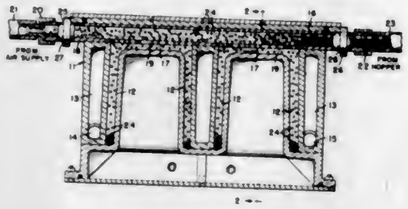
3,222,717
BLOW MOLDING SYSTEM
Sheldon Saslawsky, Bridgeport, Conn., and Richard P. Hyland, East Walpole, Mass., assignors to The Producto Machine Company, Bridgeport, Conn., a corporation of Connecticut
Filed Mar. 16, 1962, Ser. No. 180,273
6 Claims. (Cl. 18—5)



1. In a blow molding system, identical presses mounted in opposed aligned relation, each of said presses having separate sets of reciprocable platens; separate single piston and cylinder means only at the far ends of said presses and connected to their corresponding platens, said connecting means being such that equal movements in opposite directions of said piston and cylinder means produce equal and opposite movements of the corresponding platens; extruder means; separate manifold means for each of said presses connected to the outlet of said extruder means; extrusion head means for each of said separate sets of platens connected to said separate manifold means and arranged to extrude plastic parisons between said platens when said platens are open; valve means for each of said manifold means; accumulator means connected to the outlet of said extruder means, whereby said extruder means continues to run when both of said valve means are closed, and the output therefrom is received by said accumulator means; means responsive to the filling of said accumulator means for opening said platens; and cycle operating means for controlling the operation of said platens and valve means for effecting the production of plastic articles alternately by said separate presses.

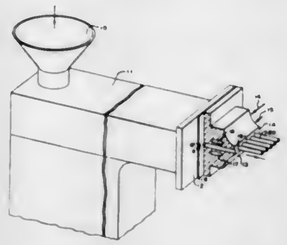
3,222,718
MOLD AND VALVE MEANS FOR FILLING SAME
Gerson Meyer, Baltimore, Md., assignor to Life-Like Products Inc., Baltimore, Md., a corporation of Maryland
Filed Nov. 29, 1962, Ser. No. 240,994
4 Claims. (Cl. 18—5)

1. In a mold having a cavity to be filled with material to be molded from an external source of supply of such material, said mold having a wall forming a tubular passageway adjacent said cavity, said wall having an opening therethrough communicating with said cavity, a hollow tube rotatably mounted in the passageway, said tube having an opening in the wall thereof adapted to register with the wall opening in one position of rotation therein,



means for communicating one end of the tube for reversible flow with a source of flowable moldable material and for connecting the opposite end to a source of air current.

3,222,719
EXTRUSION APPARATUS
Paul H. Wagner, Borger, Tex., and Edward J. Kosinsky, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed July 27, 1962, Ser. No. 212,821
1 Claim. (Cl. 18—12)

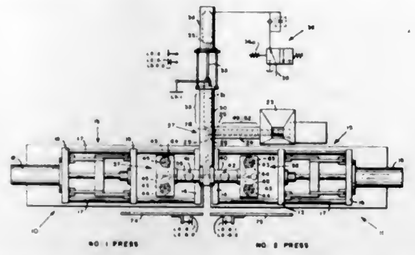


Apparatus for forming a thermoplastic material into strands comprising a die having a plurality of orifices, means to supply thermoplastic to said die under pressure to force same through the orifices therein to form the material into a plurality of strands, insulating means adjacent to said die and having a plurality of openings in same of a diameter sufficient to allow the passage therethrough of said strands, a temperature control strand plate having a linear heat gradient along same communicating with said insulating means and having a plurality of conduits through same of sufficient diameter to allow passage of the strands emerging from said die, said strand plate having provided within same a plurality of conduit means to allow the circulation therethrough of a coolant, and means to introduce to and remove coolant from said strand plate.

3,222,720
HEATER INDICATING MEANS FOR EXTRUSION SYSTEM
Sheldon Saslawsky, Fairfield, Conn., and Richard P. Hyland, East Walpole, Mass., assignors to The Producto Machine Company, Bridgeport, Conn., a corporation of Connecticut
Original application Mar. 16, 1962, Ser. No. 180,273. Divided and this application Nov. 17, 1964, Ser. No. 411,862
4 Claims. (Cl. 18—12)

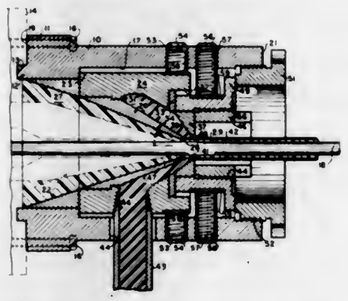
1. In plastic molding apparatus, an extruder; injection head means; duct means connecting said injection head means to said extruder; heating zones located at appropriate points along said extruder, duct means and said injection head means, each of said zones including a plurality

of heater resistors arranged in parallel; indicating means including contact means in the circuit for said heater resistors and adapted to open and close said contact means on each side of a preset point to maintain a predetermined temperature in said zone; a relay including contact means



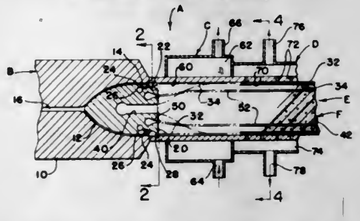
in series with said indicator contact means; means responsive to the normal current drawn by all of said heater resistors for holding said relay contacts open; and alarm means rendered effective by the closing of said relay contact means incident to a reduction in current being drawn when certain of said heater resistors are ineffective.

3,222,721
DUAL EXTRUSION APPARATUS
Maurice Reynolds, Jr., Marion, Ind., assignor, by mesne assignments, to Anaconda Wire and Cable Company, a corporation of Delaware
Filed June 25, 1962, Ser. No. 204,871
7 Claims. (Cl. 18—13)



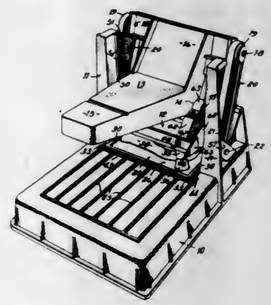
1. An apparatus for extruding multilayered strand covering, comprising:
(A) a tubular housing,
(B) a tubular die-holder within said housing,
(C) means restraining said die-holder from lateral movement within said housing,
(D) a first extrusion die within said die-holder
(a) having walls defining a first extrusion aperture,
(E) a second extrusion die within said housing
(a) coaxial with said first die and
(b) having walls defining a second extrusion aperture larger than said first aperture,
(F) means cooperating with said die-holder to restrain said second die from lateral movement within said housing,
(G) said first and second dies and said die-holder forming at least some of a plurality of walls defining an annular space communicating with said second aperture,
(H) an entrance through said housing communicating with said space,
(I) means passing radially through said housing for adjusting the transverse position of said die holder, and
(J) means passing radially through said housing for independently adjusting the transverse position of said second die,
(K) means at one end of said housing locking said dies and said die-holder therein, said dies and said die-holder being easily removable from said housing through said end upon the release of said locking means.

3,222,722
APPARATUS FOR EXTRUDING ELONGATED PLASTIC BODIES
Friedrich A. Reifenhauser, Troisdorf, Bezirk Cologne, Germany, assignors to Reifenhauser K.G., Troisdorf, Bezirk Cologne, Germany
Filed July 3, 1964, Ser. No. 380,176
Claims priority, application Germany, July 9, 1963, R 35,636
9 Claims. (Cl. 18—13)



1. An apparatus for extruding a foam filled tubular plastic body comprising an outer extruder body, an inner extruder core, said body and core coacting to form a generally tubular extrusion orifice, means for forcing heated thermoplastic material through said orifice to form an elongated, tubular plastic body, a recess in said core and coterminous with at least a portion of said orifice, said recess opening toward said tubular body adjacent the exit end of said orifice, means in said core for supplying an adhesive liquid to said recess whereby said adhesive liquid is deposited onto the inner surface of said body as it passes through said orifice, an injection orifice in said core and means for forcing a foamable plastic material through said injection orifice and into said tubular body where it foams to fill said body with said adhesive liquid bonding said foamed plastic material to said extruded tubular body.

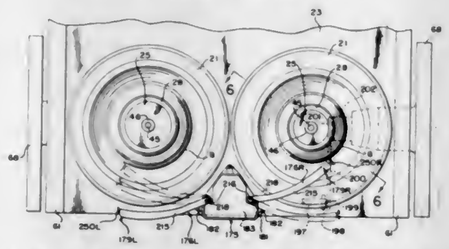
3,222,723
MOLDING PRESS
Robert Boggild and William L. Dale, both of 5463 Hill & Dale Drive, Cincinnati 13, Ohio
Filed Feb. 26, 1963, Ser. No. 261,163
5 Claims. (Cl. 18—16)



1. A toy press comprising,
a base,
a lower die mounted on said base and having a mold cavity,

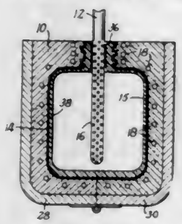
a pair of spaced mounting posts projecting upwardly from said base and having their ends free,
vertically extending ways projecting inwardly from said posts and having their upper ends free,
a platen mounted between said posts for vertical movement with respect to said base and having vertical recesses receiving said ways,
an upper die mounted on said platen and having a mold cavity facing said lower die,
and a lever and linkage system for moving said platen toward said lower die to bring said dies into engagement.

3,222,724
APPARATUS FOR SHAPING AND CURING TIRES
Leslie E. Soderquist, Silver Lake, Ohio, assignor to McNeil Corporation, Akron, Ohio, a corporation of Ohio
Filed Nov. 22, 1963, Ser. No. 325,552
9 Claims. (Cl. 18—17)



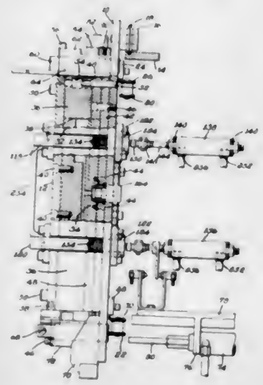
1. A mechanism for controlling the shaping of unvulcanized tire bands in a press having relatively movable mold sections, comprising, a sensing arm rotatably movable in a plane normal to the axis of a shaping band while said band is being shaped and before mating engagement of said mold sections, a transmission means correlating the approaching movement of said mold sections with the shaping of said band, a control cam in said transmission means having a contour surface with a configuration preselected according to the construction characteristics of said band, said control cam being operative to program to movement of said sensing arm ahead and away from said shaping band, arm sensor means carried by said arm for interrupting said band shaping upon contact of said band with said arm, cam means carried by said transmission means, and switch means sequentially actuated by said cam means to control the approaching movement of said mold sections and energize said arm sensor means.

3,222,725
MOLDING PROCESS AND APPARATUS
Millard F. Smith, Westport, Conn. (% Neirad Industries, Inc., P.O. Box 295, Saugatuck, Conn.)
Filed Oct. 25, 1961, Ser. No. 147,668
4 Claims. (Cl. 18—26)



2. Apparatus for making molded articles having different predetermined wall thicknesses comprising
A. a mold having a molding surface
B. a plurality of independent temperature control means each embedded in the mold adjacent to a different selected portion of the molding surface for independently varying the temperature of the surface in different ones of said selected portions of the molding surface,
C. and means to deliver finely divided solidifiable material suspended in a flowing stream of gas toward the molding surface, including
(1) a stream delivery conduit movable into a fixed delivery position near the molding surface
(2) and orifice means communicating with the conduit and directing the stream toward the molding surface when the conduit is in its delivery position.

3,222,726
INJECTION SOLE MOLDING MACHINES
Paul W. Senfleben, Beverly, and William P. Crossen, Magnolia, Mass., assignors to United Shoe Machinery Corporation, Flemington, N.J., a corporation of New Jersey
Filed Feb. 19, 1963, Ser. No. 259,578
11 Claims. (Cl. 18—30)

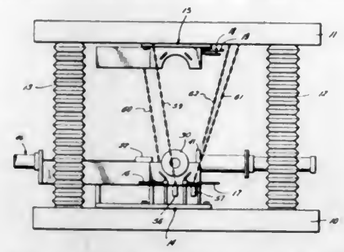


4. In an injection molding machine, a mold assembly including an upper mold member, an axially slidable sprue barrel constructed and arranged for mating engagement with an injection nozzle, said barrel being seated in a counterbore provided in the upper mold member, means for applying pressure to the barrel to move the barrel axially thereby to seat the barrel firmly against the base of the counterbore to obviate the flow of fluid plastic between the end of the barrel and the seat of the counterbore, a carrier for the mold assembly, and means for removably securing the upper mold member to the carrier comprising only fastening members spaced away from the sprue barrel.

3,222,727
MOLDING APPARATUS
Bruce Ford and George E. Wells, Sand Springs, Okla., assignors to The Youngstown Sheet and Tube Company, Boardman, Ohio, a corporation of Ohio
Filed Apr. 2, 1963, Ser. No. 269,997
8 Claims. (Cl. 18—30)

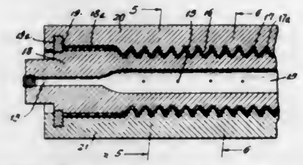
1. A molding apparatus for molding plastic fittings comprising,
a press having a fixed platform and a movable carrier,
a first mold half supported on the fixed platform,
a second mold half supported on the carrier, said two mold halves having confronting cavities therein,

a way on the first mold half communicating with the cavity on the first mold half,
a ram reciprocal on said way for forcing dry molding material into said cavities and holding it under pressure,
a surface on said second mold half cooperative with said ram for confining material on said way,
said first and second mold half cavities forming with



said ram the external configuration of a pipe fitting,
core means extensible through and retractable from said cavities and forming a passageway through a fitting therein,
means for reciprocating said ram, said ram forming an external solid surface of said configuration between the extremities of said passageway,
and means for applying heat to said mold for curing a fitting therein.

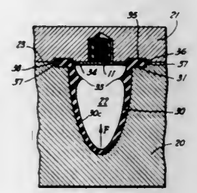
3,222,728
APPARATUS FOR MAKING MOLDED FLEXIBLE HOSE
Fred T. Roberts and Robert E. Roberts, Wilton, Conn., assignors to Fred T. Roberts & Company, Wilton, Conn., a partnership
Original application June 2, 1958, Ser. No. 739,067, now Patent No. 3,084,086, dated Apr. 2, 1963. Divided and this application July 18, 1962, Ser. No. 210,810
5 Claims. (Cl. 18—35)



1. Apparatus for making molded corrugated flexible hose which comprises a transversely corrugated mandrel having longitudinally fluted areas of reduced diameter adapted to be positioned within a tubular hose body to be cured, a mold having a complementary, transversely corrugated cavity formed in a plurality of longitudinal sections, said mandrel with said hose body thereon being positioned in molding relation within said mold with the transverse corrugations on the mandrel nested in the complementary corrugations in said cavity and with its fluted areas adjacent to and aligned with the junctions of said mold sections.

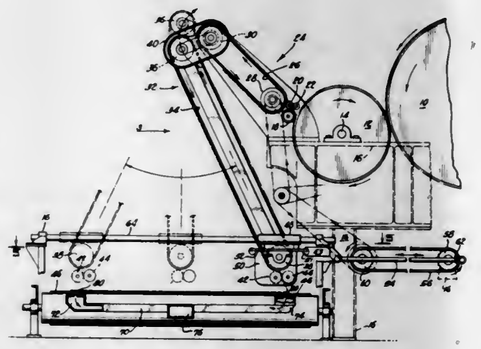
3,222,729
MOLDING AND VULCANIZING DEVICE
Antonio Boschi, Milan, Italy, assignor to Pirelli S.p.A., Milan, Italy
Filed Nov. 3, 1961, Ser. No. 149,983
Claims priority, application Italy, Nov. 18, 1960, 19,914/60
1 Claim. (Cl. 18—36)

A sectional mold for injection-molding and vulcanizing rubber articles comprising a rigid container member and a rigid cover member mating with each other along an interface to jointly define a part at least of an injection and vulcanization cavity in the mold, at least one of said members having a recess therein about the cavity at a location adjacent said interface; an insert of compact rubber filling said recess and also constituting a lining on one only of said members in an arrangement wherein a surface portion of said insert cooperates with an exposed surface portion on the other of said members to define a part at least of the geometrical configuration of said cavity corresponding to the configuration of the



article to be molded in the mold and wherein the remaining surface portion of the insert is backed by adjacent portions of said members against deformation under hydraulic pressure in the cavity consequent to injection and vulcanization of a vulcanizable mix in the cavity; and a rigid frame adapted to form a part of the article to be vulcanized, said rigid frame serving to assist said other member in supporting said insert against deformation by abutting said exposed surface portion on said other member.

3,222,730
METHODS AND APPARATUS FOR PRODUCING TEXTILE FABRICS
Frank Kalwaites, Somerville, N.J., assignor, by mesne assignments, to Johnson & Johnson, New Brunswick, N.J., a corporation of New Jersey
Filed Nov. 13, 1961, Ser. No. 151,876
6 Claims. (Cl. 19—163)

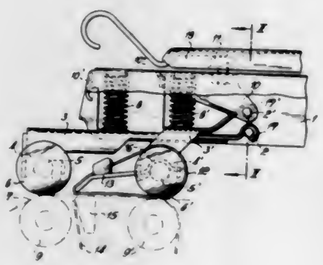


1. In apparatus for depositing a fibrous web in a plurality of overlapping folds on an air-permeable, movable conveyor wherein the fibrous web is deposited with a to-and-fro movement having a direction generally transverse to the direction of movement of the air-permeable, movable conveyor, the improvement which comprises vertically movable conveyor means to deliver said fibrous web for deposition on said air-permeable, movable conveyor with

a linear speed less than the linear speed of said to-and-fro transverse movement, and suction-applying means located substantially only at the extremities of the to-and-fro transverse movement of the fibrous web to restrain movement of the outermost portions of said fibrous web while permitting movement of the internal portions of said fibrous web with respect to the surface of the air-permeable, movable conveyor, whereby the fibrous web is drafted during its deposition on said air-permeable, movable conveyor.

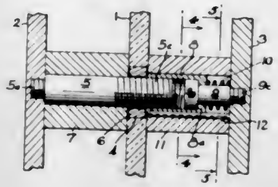
5. A method of depositing a fibrous web in a plurality of overlapping folds on an air-permeable movable conveyor, wherein the fibrous web is deposited with a to-and-fro movement having a direction transverse to the direction of movement of the air-permeable movable conveyor comprising; conveying said fibrous web substantially vertically downward for deposition on said air-permeable movable conveyor while providing said vertically moving web with a to-and-fro movement, depositing said web on said air-permeable movable conveyor while simultaneously drafting said web, and restraining movement of the outermost portions of said fibrous web at the extremities of the to-and-fro transverse movement of the fibrous web while permitting movement of the internal portions of said fibrous web with respect to the surface of the air-permeable movable conveyor.

3,222,731
TOP ROLLER SUPPORT ARRANGEMENT FOR A TEXTILE DRAWING MECHANISM
Rolf Krämer, Stuttgart-Feuerbach, Germany, assignor to SKF Kugellagerfabriken Gesellschaft mit beschrankter Haftung, Stuttgart-Bad Cannstatt, Germany, a company of Germany
Filed Mar. 8, 1963, Ser. No. 263,873
Claims priority, application Germany, Mar. 17, 1962, S 78,540
7 Claims. (Cl. 19—252)



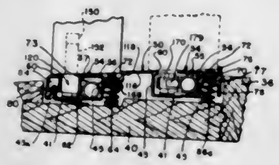
1. In a top roller arrangement for a textile drawing mechanism,
(a) an elongated carrier arm,
(b) two bracket members, and
(c) a first and a second roller, each of said rollers being mounted on one of said bracket members for rotation about an axis extending perpendicularly to the direction of elongation of said arm, each of said bracket members being mounted on said arm for independent pivoting movements toward and away from a common plane tangential to both of said rollers, and for swinging movements substantially parallel to said plane about a pivoting axis substantially perpendicular to said plane, each of said bracket members being provided with abutment means, the abutment means of both of said bracket members engaging each other for transmitting any swinging movement of one of said bracket members to the other bracket member.

3,222,732
DUPLEX PUSH PLATE ASSEMBLY FOR SWINGING DOORS
Fred J. Miller, 520 Bryant St., San Francisco, Calif.
Filed Oct. 31, 1963, Ser. No. 320,422
2 Claims. (Cl. 20—16)



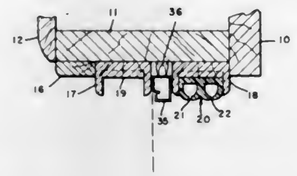
1. In a duplex push plate assembly for swinging doors, a first push plate and a second push plate mounted on opposite sides of such a door, a rod secured at one end thereof to the first push plate and arranged at substantially right angles to such push plate and having a threaded end portion extending through an opening in the door, an adjustable sleeve having an internally threaded portion adjustably mounted on and connected to the threaded end portion of the rod, a compression spring interposed between the second push plate and the adjustable sleeve to urge the said adjustable sleeve toward the door, a structurally rigid member connecting the adjustable sleeve and the second push plate, the adjustable sleeve being rotatably adjustable on the rod to adjust the second push plate toward the door, a spacing sleeve mounted on the rod and arranged with its ends abutting the door and the first push plate, and a rotatable adjusting sleeve mounted on and keyed to the adjustable sleeve to adjust the adjustable sleeve on the rod toward the door, whereby the second push plate is drawn into abutting relation with one end of the rotatable adjusting sleeve and the other end of the rotatable adjusting sleeve is brought into abutting relation with the door, and the first push plate is drawn into firm engagement with the spacing sleeve.

3,222,733
REMOVABLE SASH WINDOW
James A. Wahlfeld, Peoria, and Robert C. L. Jacobs, East Peoria, Ill., assignors to Wahlfeld Mfg. Co., Peoria, Ill., a corporation of Illinois
Filed June 2, 1964, Ser. No. 372,022
14 Claims. (Cl. 20—52.2)



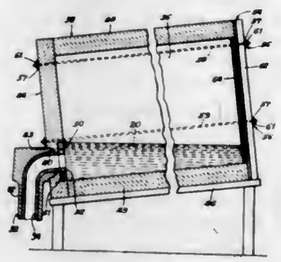
13. A window construction for tiltable mounting of sash comprising side extrusions having stile engaging slideways defining inwardly diverging planes and movable laterally with respect to each other a distance less than the width of a blind stop when supporting a sash, said slideways having a recessed guide way, a sash supported in slidable relationship between said slideways and having means engaging in each of said guideways including a retractible bolt at the top of the stiles and aligned rigid pivot pin at the bottoms of the stiles projecting into the guideways, said guideways being deeper than the distance of projection of said bolt and pin from the stiles for the stiles to frictionally engage said slideways in sealed sliding relationship.

3,222,734
STORM WINDOW AND SCREEN INSTALLATION FOR EXISTING STANDARD WINDOW FRAME STRUCTURE
William Punt, 900 Benjamin SE., Grand Rapids, Mich.
Filed July 10, 1963, Ser. No. 294,050
3 Claims. (Cl. 20—55)



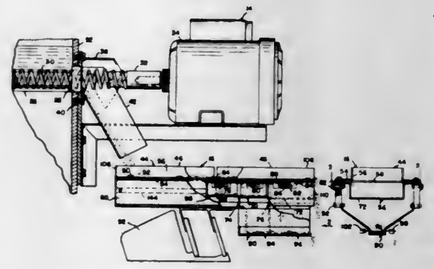
1. In combination with a wall structure including a frame having vertical and horizontal members together defining a window opening, a window assembly, comprising:
a pair of spaced channel rails normally secured to opposite members of said frame, respectively, said rails each having a central groove on the side thereof facing the other of said channel rails,
at least one of said rails having a pair of spaced discontinuities in said groove providing increased space between the said rails at said discontinuities;
a retainer strip of flexible rubber-like material received in each of said grooves, said strips each providing a pair of guideways disposed in spaced parallel planes, respectively;
a pair of window panes having the opposite edges thereof slidably received in opposite guideways of said retainer strips, respectively; and
top and bottom rails for each of said window panes, each of said rails having grooves receiving the respective edges of said window panes,
the opposite ends of said top and bottom rails terminating adjacent said retainer strips,
said retainer strips being deflectable into the said groove discontinuities by said top and bottom rails to release said window panes from said guideways.

3,222,735
PRESSURE CASTING APPARATUS WITH GAS-PERMEABLE CHILL ASSEMBLY
Edmund Q. Sylvester, Shaker Heights, Ohio, assignor to Amsted Industries Incorporated, Chicago, Ill., a corporation of New Jersey
Filed June 19, 1963, Ser. No. 290,278
17 Claims. (Cl. 22—69)



1. In an arrangement for casting molten metal the combination of: a pressure container for holding the molten metal; a mold assembly; a cavity formed within said mold assembly; said cavity having one end communicating with said container and having another end defined by a gas-permeable chill member; means for applying superatmospheric pressure to said container in order to force the molten metal therein into said cavity; and means for sealing said one end after said cavity is filled.

3,222,736
PROPERTIES CONTROLLER FOR GRANULAR MATERIAL
Harry W. Dietert, Kerrville, Tex., Howard L. Jameson, Livonia, Randolph L. Dietert and Thomas H. Hanna, Detroit, Alexander L. Graham, Livonia, and Ralph E. Steinmueller, Detroit, Mich., assignors to Harry W. Dietert Co., Detroit, Mich., a corporation of Michigan
Filed July 9, 1962, Ser. No. 208,442
9 Claims. (Cl. 22—89)



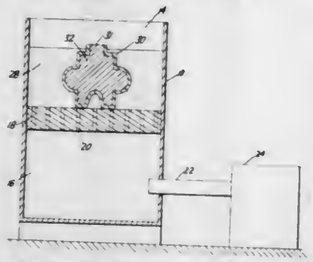
1. Granular material conditioning apparatus comprising a mill including rotatable mixing structure, a mill motor connected to the mixing structure for rotation thereof on energization, means for energizing the motor, material separating structure positioned adjacent the mill for receiving a sample of granular material from the mill in one end thereof including a first elongated trough having a first transverse slot thereacross through which a portion of the granular material in accordance with the moldability of the sample of granular material falls on movement of the sample of granular material from the one end toward the other end of the trough, a second trough positioned beneath the first trough for receiving a portion of the sample of granular material falling through said first slot in one end thereof, means connected to the troughs for moving the granular material longitudinally of said troughs from the one end toward the other thereof, sample feed mechanism operably associated with the mill for feeding a sample of granular material to be conditioned from the mill to the separating structure, additive metering means positioned adjacent to the mill for metering additive thereto, a control circuit connected to the motor and additive metering means for controlling the additive metering means in accordance with electric signals received thereby and first light sensitive means connected in the control circuit for producing an electric signal therein to stop addition of additive in one stage of granular material conditioning in the mill in accordance with the light sensed thereby, a first light source connected in said control circuit and directed toward said light sensitive means across said second trough whereby the light falling on the light sensitive means from the first light source and therefore the electric signal produced by the light sensitive means varies in accordance with the level of the granular material passing through said second trough at the first light source and therefore the moldability of the sample of granular material.

3,222,737
METHOD OF PREPARING CERAMIC MOLDS
Raymond Reuter, Palos Park, Ill., assignor to Nalco Chemical Company, Chicago, Ill., a corporation of Delaware
Filed July 19, 1962, Ser. No. 211,091
7 Claims. (Cl. 22—196)



1. An improved process for forming a hollow ceramic shell casting mold which comprises: blending a rapid-drying binder composition with a refractory material, said binder comprising 40–90% by weight of an acidic, stable, salt-free silica sol comprising an aqueous liquid having colloidally dispersed therein 25–50% by weight of substantially discrete, dense, non-agglomerated particles of silica having an average particle diameter of 5–150 mu, said silica sol having a pH ranging from 2.6 to 3.8 and a specific conductivity not greater than 1000 micromhos/cm., at 77° F., and 10–60% by weight of a lower alkyl polar organic alcohol having a carbon atom content no greater than 4, said alcohol being compatible with said silica sol; and pouring said blend into the cavity of a hollow expendable pattern; allowing said blend to gel sufficiently to form a gelled core; and thereafter coating the pattern with a ceramic material to build-up a plurality of coats around the pattern to form a ceramic shell.

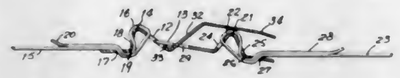
3,222,738
METHODS OF REMOVING EXPENDABLE PLASTIC PATTERNS
Richard T. Carter, 33 Adams St., Milford, N.H.
Filed Apr. 18, 1963, Ser. No. 273,989
4 Claims. (Cl. 22—196)



1. A method of removing an expandable pattern of a heat softenable wax material from a shell mold comprising immersing said mold containing said pattern in a fluidized particulate material at a fluidizing gas temperature greater than 350° F. to soften said pattern within one minute without damaging said shell.

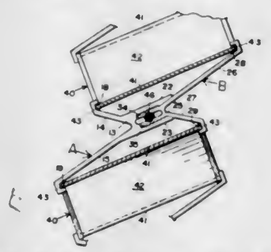
3,222,739
QUICK RELEASABLE BUCKLE WITH BELT LENGTH ADJUSTMENTS
Frank L. Davis, 30 Mariners Lane, Northport, Long Island, N.Y.
Filed Mar. 18, 1964, Ser. No. 352,857
5 Claims. (Cl. 24—75)

1. A quick releasable buckle with belt length adjustments comprising the combination of
sheet metal plates,
one of said plates having a keeper slot and the other of said plates having a head to pass through said slot and be retained by a surface of the plate in which the slot is formed,
each of said plates having a cross ridge in the shape of an inverted V, with cross slots in the relatively inclined walls forming the ridges,
belt forming webbing extending through said cross slots and looped over said cross ridges,
said keeper slot in the one plate being a continuation of a cross slot in that plate whereby the loop of webbing about the cross ridge of the plate in which said slot is



formed is disposed in opposition to the head of the other buckle plate to act as a stop limiting movement of said head in the releasing direction, and
the plate having the keeper slot having a wall inclined with respect to the adjacent portion of said V-shaped cross ridge and supporting said head in the engaged relation of the plates, said inclined wall having an aperture which forms an end surface of said continuation of said cross slot, said inclined wall having a handle extension projecting as a cover over the webbing holding ridged portion of said head-carrying plate.

3,222,740
SUN SCREENS
David E. Valverde, Miami, Fla., assignor to Metallic Engineering Co., Inc., Miami, Fla., a corporation of Florida
Filed Dec. 23, 1963, Ser. No. 332,345
2 Claims. (Cl. 24—83)

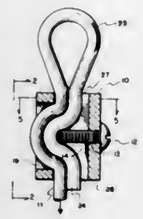


1. A clip for grilles, sun screens and the like comprising a pair of body portions positioned in proximity of each other, a pair of finger portions mounted on one side of each of said body portions and extending in a direction toward the other of said body portions, said pairs of finger portions being telescopically engaged, a pair of arm portions extending outwardly of the other side of said body portions and extending at an oblique angle away from said body portions and a slotted portion mounted at the free edge of each of said arm portions for receiving an edge portion of a tracery bar.

3,222,741
CABLE CLAMPS
Olaf E. Kling, Apt. 2C, 651 Busse Highway, Park Ridge, Ill., and John P. Jorgenson, 3408 Robbins Road, Hillsboro Shores, Pompano Beach, Fla.
Continuation of application Ser. No. 82,641, Jan. 13, 1961. This application Oct. 21, 1964, Ser. No. 405,453
4 Claims. (Cl. 24—125)

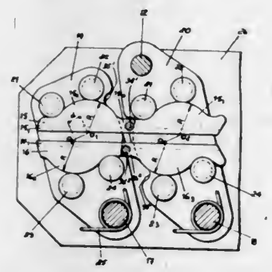
1. A cable clamp comprising
a body member having
a first cable confining region adapted to confine a terminal fetch of cable,

a second cable confining region beyond said first cable confining region and so disposed that a bight of a secondary fetch of cable confined therein may be extended outwardly therefrom,
a third cable confining region, adapted to confine a tertiary fetch of cable, and so disposed in respect of said first cable confining region that a tertiary fetch of cable confined therein may be brought into contact with a terminal fetch of cable confined in said first cable confining region, and
confining means carried by said clamp body member adapted to bring the bights of terminal and tertiary fetches of cable confined therein into contact, and extendable to within said third cable confining region



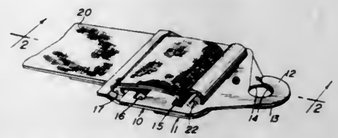
to displace said bights to the extent that, in a clamped position, the axis of the terminal fetch of cable at the center of the bight thereof is indexed with the axis of the third cable confining region,
an opening in said body member, opposite said cable confining means, and opposed openings on either side of said first mentioned opening comprising end openings having a long and a short dimension,
said first mentioned opening having a long and a short dimension, the short dimension being approximately equivalent to the short dimension of said opposed openings, and the long dimension thereof being substantially longer than the long dimension of said opposed openings.

3,222,742
SELF-TIGHTENING CLAMPS
Jean Persiaux, Lannoy, France, assignor to Tractel S.A., Paris, France, a society of France
Filed Sept. 23, 1963, Ser. No. 310,551
Claims priority, application France, Sept. 27, 1962, 910,670, Patent 1,342,298
13 Claims. (Cl. 24—134)



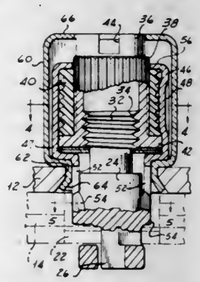
1. Self-tightening clamp for a hauling or hoisting appliance having a cable or the like comprising a pair of cooperating jaws, said jaws having inner cooperating surfaces for engaging and gripping a cable, each jaw having an outer surface provided with cylindrical bearings machined in the actual thickness of the jaw and extending the width thereof, and means controlling the tightening action of the jaws on the cable, said means comprising pivoting side plates pivotally arranged on opposite sides of the jaws and means carried by the side plates and disposed in constant rolling contact with substantially the entire width of the cylindrical bearings of one jaw and means carried by the side plates and disposed in constant rolling contact with substantially the entire width of the cylindrical bearings of the other jaw.

3,222,743
SECURED SISTER-HOOK ASSEMBLY
Herman G. Alofs, 1512 Yorkshire SE., Grand Rapids, Mich.
Filed Sept. 30, 1963, Ser. No. 312,581
5 Claims. (Cl. 24—165)



1. A sister hook assembly, comprising:
two similarly formed plates each having a hook portion and at least one slot for receiving belt means, said plates being normally positioned in opposite relationship whereby said hook portions overlap and define together an opening,
said plates having a ridge adjacent said slot along the side thereof toward said hook portion, and
a C-shaped spring extending through said slots and having a gap, said spring receiving said plates in clamping relationship at said gap whereby separation of said hook portions causes resilient expansion of said spring and increase of said gap,
said spring bearing on said plates on the opposite side of said ridge from said opening to maintain said spring close to the adjacent edge of said plate at said opening to avoid interference with said belt means.

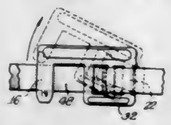
3,222,744
PANEL FASTENER
Werner Dellith, Ringwood, N.J., assignor to Camloc Fastener Corporation, Paramus, N.J., a corporation of New York
Filed July 26, 1963, Ser. No. 297,909
9 Claims. (Cl. 24—221)



1. In a fastening device for use with a stationary engageable element, an outer housing, an inner housing formed with means for engaging said element to lock said inner housing against rotary movement, means mounting said inner housing for rotary and axial movement on said outer housing, a bushing in frictional engagement with said inner housing, a nut, means for securing said nut to said bushing for rotation therewith, a

stud in threaded engagement with the nut, means carried by said stud for engaging said stationary element in one rotary position and being free from engagement in another rotary position and means carried by said stud for engaging said inner housing to prevent rotation of said housing relative to said stud.

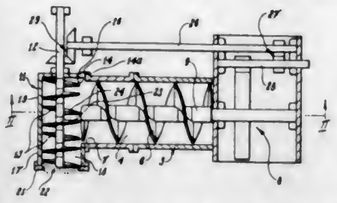
3,222,745
STRAP BUCKLE
Herbert Palmleaf, Lake Forest, and Anthony Tako, North Lake, Ill., assignors to A. J. Gerrard Manufacturing Company, Des Plaines, Ill., a corporation of Illinois
Filed Mar. 3, 1964, Ser. No. 348,958
2 Claims. (Cl. 24—269)



1. A strap buckle comprising an elongated leg portion, said leg portion having a longitudinal rib extending substantially the full length thereof and projecting out of the plane of said buckle in one direction, a finger portion joined at one end to said leg portion adjacent one end thereof substantially perpendicularly thereto, said finger portion having a locking tooth at the other end thereof with an abutment edge offset from the plane of said buckle in said one direction and facing in the direction of said leg portion, a first arm portion joined at one end to said leg portion adjacent the other end thereof, a second arm portion joined at one end to said leg portion and being spaced from said first arm portion in the direction of said finger portion, a third arm portion joined at one end to said leg portion and being spaced from said second arm portion in the direction of said finger portion, said arm portions being substantially perpendicular to said leg portion, said first and second arm portions serving to define a first slot therebetween, said second and third arm portions serving to define a second slot therebetween, a bridge portion extending transversely of the other ends of said arm portions and joined thereto whereby to close the adjacent ends of said first and second slots, said bridge portion having a longitudinal rib extending substantially the full length thereof and projecting out of the plane of said buckle in said one direction, said first arm portion having the edge thereof opposite said first slot spaced inwardly of the adjacent ends of said leg portion and said bridge portion whereby to define a locking recess, said second arm portion having the edge thereof along said first slot bent out of the plane of said buckle in said one direction and having the edge thereof along said second slot convex in the direction of said finger portion, and said first and third arm portions having the edges thereof along said first and second slots respectively bent out of the plane of said buckle in the other direction.

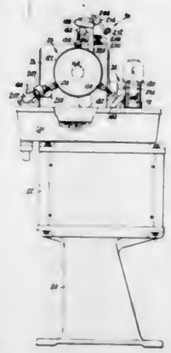
3,222,746
EXTRUSION MACHINERY
Ilia Tucakovic, 276–280 Whitehorse Road, Ringwood, Victoria, Australia
Filed June 21, 1963, Ser. No. 289,683
2 Claims. (Cl. 25—14)

1. Extrusion apparatus comprising a hopper, a first casing communicating with said hopper, a first screw conveyor disposed in said first casing, said first screw conveyor having a portion of substantial length communicating with said hopper to receive material from the hopper, said first screw conveyor having a continuous helical peripheral edge that defines a first cylinder, a second casing of substantially smaller diameter than said first casing, said second casing communicating with the discharge end of said first casing and having a discharge end having a die opening remote from said first casing, a second screw conveyor disposed in said second casing, said second screw conveyor having a plurality of longitudinally spaced heli-



cal flights thereon each extending for not more than one complete turn and being spaced apart substantial axial distances from each other, the outer peripheral edges of the flights of said second screw conveyor defining a second cylinder of substantially smaller diameter than said first cylinder, and means for rotating said first and second screw conveyors.

3,222,747
MACHINES FOR OPERATING ON BLANKS OF CERAMIC WARE
Frank William Meadows and Norman Pearce, Stoke-on-Trent, England, assignors to Service (Engineers) Limited, Stoke-on-Trent, England, a British company
Filed Nov. 30, 1962, Ser. No. 241,235
Claims priority, application Great Britain, Dec. 8, 1961, 44,055/61
14 Claims. (Cl. 25—24)

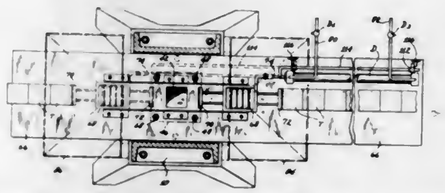


1. A machine for operating on hollow-ware ceramic blanks comprising a frame support, a work support mounted on the frame support for rotation about its axis and provided with means to grip a ceramic blank, and a tool mounted on the frame support and operative to stroke the side wall of the blank comprising a plurality of arms affixed to a housing rotatable about a fixed axis normal to said work support axis and adapted upon rotation of said housing to alternately stroke the side of the blank.

3,222,748
TILE PRESS MECHANISM
Harold W. Lamb, Washington Crossing, N.J., assignor to Crossley Machine Company, Inc., a corporation of New Jersey
Original application Oct. 12, 1962, Ser. No. 230,044, now Patent No. 3,179,998, dated Apr. 27, 1965. Divided and this application Jan. 22, 1965, Ser. No. 427,373
4 Claims. (Cl. 25—42)

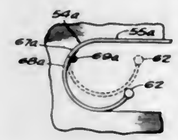
1. In a tile press of the type having a vertical base, a vertically elongated stationary die member on a horizontal portion of said base, a vertically movable die case

slidably mounted over said stationary member for forming a die cavity, an open bottomed dust box horizontally slidable on a platform across said die cavity for depositing clay dust therein, said dust box having abutment means for pushing completed tile from the area of the die cavity, and a vertically movable ram on said base above the die cavity for pressing the clay dust deposited therein into tile; means for depositing clay dust in said die cavity in a single sweep of said dust box from either side of said cavity, said means comprising, in combination, a horizontal platform fixedly mounted on the top of said die case and vertically movable therewith, said platform having an opening coincident with the inner wall of said die case, an air cylinder fixedly mounted on said platform



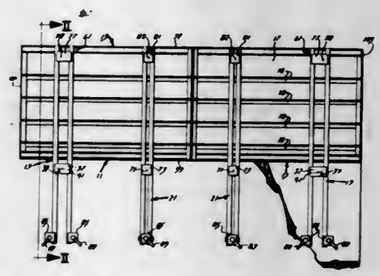
in parallel, but offset, relation with the path of travel of said dust box and having means for attaching its piston to one end of said dust box, said air cylinder having communication at each end with a source of air pressure provided with electrical pressure control valve means for effecting movement of said dust box in either direction across, and a limited distance beyond the farther edge of the die cavity; means for supplying clay dust to said dust box at either end of its stroke to be swept into the die cavity upon its next reverse stroke across said cavity; and the abutment means on said dust box comprising projecting portions at both its ends for abutment with a tile from either direction to push it from the area of the die cavity.

3,222,749
BUILDING CONSTRUCTION
Wilson E. Haas, 1511 Bolero Drive, Santa Barbara, Calif.
Filed Jan. 25, 1963, Ser. No. 255,147
18 Claims. (Cl. 25—121)



1. A mold for poured concrete construction comprising: a base, an opposed pair of longitudinal apertured forms attached to said base and a pair of end plates, collapsible open core molds inserted in said apertures each having a top portion and a pair of resilient arcuate side members the edges of which project inwardly, side spreader means in said core molds including substantially flat rectangular plates pivotally attached to the top portion of said core molds at each end thereof, said spreader means having diverging faces which engage the inner projecting edges of said arcuate side members to spread the same outwardly when said spreader is in the vertical position, the curvature of said resilient arcuate side members being such as to allow a simultaneous decrease in both the horizontal and vertical dimensions when the spreader is moved to the horizontal position so that the core mold is easily extracted from or inserted into the said apertured forms, the curvature of the said side portions constituting an arc greater than a semicircle when in the expanded position and the inner edge of said side portions having a flange to restrict the seepage of concrete into the interior of the core.

3,222,750
INTERMITTENT VERTICAL SLIDING FORM PANEL DEVICE
Stanley Kimball, Berkeley, Calif., assignor, by mesne assignments, to Kaiser Industries Corporation, Oakland, Calif., a corporation of Nevada
Filed Aug. 21, 1961, Ser. No. 132,750
9 Claims. (Cl. 25—131)

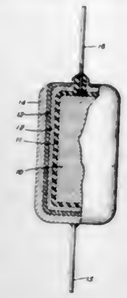


7. A form panel device for use in pouring concrete, including a panel structure having a front face portion and a rear face portion, at least one first panel support unit attached to the rear face portion of said panel structure and adapted to both position said panel structure for the pouring of concrete and support such structure during pouring, said first panel support unit including an extensible portion comprising outer and inner telescoping assemblies, said outer assembly being directly affixed to the panel structure and said inner assembly being adapted to be removably affixed to a mass of concrete, fluid-operated means connecting said outer and inner assemblies, said fluid-operated means being operable to move said outer assembly relative to said inner assembly and said mass of concrete when said inner assembly is removably affixed to and is supported by said mass of concrete, said outer assembly including an anchor plate member provided with an opening, said inner assembly being provided with at least one opening adapted to be aligned with said anchor plate member opening, a first anchor means being partially embedded in concrete and said openings being adapted to be aligned so that said first anchor means may pass through said openings and provide support for said panel support unit, at least one second panel support unit attached to the rear face portion of said panel structure, said second panel support unit having a non-extensible structure and being adapted to be removably affixed to the mass of concrete when the fluid operated means is non-operative for effecting relative movement of the telescoping assemblies of said first support unit.

3,222,751
PREANODIZATION OF TANTALUM ELECTRODES
Fred N. Fuss, Plaistow, N.H., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed May 23, 1960, Ser. No. 31,125
2 Claims. (Cl. 29—25.31)

1. In the method of fabricating a tantalum solid electrolytic capacitor comprising the steps of anodizing a mechanically worked dense tantalum body, coating said dense tantalum body with a semiconductive layer and depositing a counter-electrode upon and in intimate contact with said semiconductive layer, the improvement

which comprises anodically depositing a film of tantalum pentoxide of a thickness in the range of 1000 to 3000 Angstroms on said dense tantalum body and heating in



vacuum at a pressure of the order of 10^{-4} mm. of mercury at a temperature of the order of 1700° to 2600° C. for a time period ranging from 30–60 minutes prior to anodizing.

3,222,752
METHOD FOR MARKING METAL ARTICLES
Earle F. Miller, Jr., 803 S. Star, El Dorado, Kans.
Filed Feb. 25, 1963, Ser. No. 260,788
4 Claims. (Cl. 29—90)

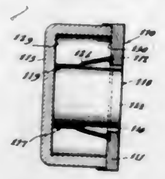


1. A method of permanently marking a critical high stress metal article of or for manufacture with intelligence indicia comprising symbols, numerals or letters, including

the step of peening the critical high stress metal article with discrete spherical peening particles through a stencil bearing intelligence indicia having rounded and smooth filleted indicia free of sharp corners so that the critical high stress metal article when stenciled with the indicia will be free of high stress concentration areas, and said discrete spherical peening particles being of a size and impelled with compressed gas at a sufficient pressure to give the stenciled indicia the desired depth, surface smoothness and uniformity in the critical high stress metal article that will visibly contrast with the unstenciled surface of the critical high stress metal article.

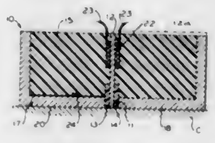
3,222,753
SPEAKER MAGNET STRUCTURE AND METHOD OF FORMING THE SAME
Elmore A. Heppner, Round Lake, Ill., assignor to Heppner Manufacturing Co.
Filed May 18, 1959, Ser. No. 813,911
5 Claims. (Cl. 29—155.5)

1. The method of securing a cylindrical speaker magnet between spaced walls of a housing and coaxially of an opening in one of the walls, comprising the steps of: securing the magnet coaxially in an annular retainer provided with a transversely outwardly extending portion and an original length substantially equal to the spacing between the walls; positioning the retainer coaxially of said opening with the opposite ends of the retainer juxtaposed to said walls; and deforming the outwardly ex-



tending portion transversely inwardly toward a longitudinally extending configuration to increase the over-all length of the retainer and cause the ends to press retentively against said walls.

3,222,754
METHOD OF MAKING MAGNETIC TRANSDUCER HEAD
William J. Homan, San Jose, Calif., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 23, 1959, Ser. No. 861,512
3 Claims. (Cl. 29—155.5)

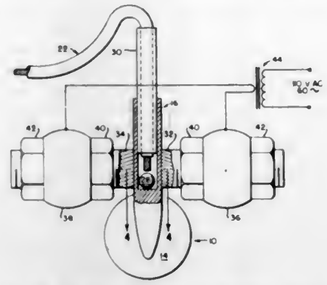


3. The method of making a transducer head which comprises providing a magnetically permeable cup-shaped shield, with a portion of the shield bottom acting as a temporary holding means, providing an opening in the bottom of the shield bounded on one side thereof by said temporary holding means, fitting into such opening a magnetically permeable probe and non-magnetic spacing means of a total combined thickness equal to the width of the opening, whereby the probe is supported in the opening in upwardly extending condition within the shield, coating the inside of the bottom portion acting as a temporary holding means with a non-adherent coating material, pouring into the shield a quantity of flowable, hardenable, non-magnetic potting material, hardening the potting material, and removing the portion of the bottom acting as a temporary holding means.

3,222,755
METHOD OF ASSEMBLING AN ELECTRODE
Albert M. Grass, 77 Reservoir Road, Quincy, Mass.
Filed Aug. 2, 1961, Ser. No. 128,746
1 Claim. (Cl. 29—155.5)

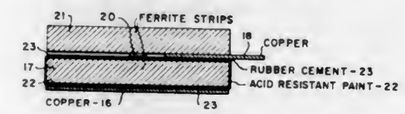
A method of assembling an electroencephalographic electrode and the like of the type having a tubular shank portion provided with a recess extending inwardly from one end thereof, comprising the steps of locating a pellet of solder in the bottom of said recess, engaging opposite sides of the shank with electrical contacts, said electrical contacts being fabricated from stainless steel shaped to conform to the engaged surfaces of the shank and having a relatively low resistance to electrical current and a relatively low thermal conductivity, providing a force on the contacts in a direction radially of the shank to achieve a high pressure contact engagement at the surfaces of engagement between the contact and the shank, passing an

electrical current through the electrical contacts and the shank to heat the shank in the area of the solder, assembling a sleeve of high-temperature-resistant plastic over a first end of the insulated wire, inserting the first end of the insulated wire into the shank and engaging said end of the wire with the melted solder, said sleeve having a length



sufficient so that after the wire is inserted into the shank and engaged with the solder the sleeve will extend beyond the free end of the shank a substantial distance, shutting off the current to allow the solder to solidify, said solidified solder providing the electrical connection between said wire and the shank, and deforming said shank into a liquid type sealing engagement with said sleeve.

3,222,756
TECHNIQUES ASSOCIATED WITH INDUCTIVE SENSING OF TUNNEL DIODE MEMORY CELLS
Melvin M. Kaufman, Merchantville, N.J., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Aug. 23, 1961, Ser. No. 133,533
2 Claims. (Cl. 29—155.5)

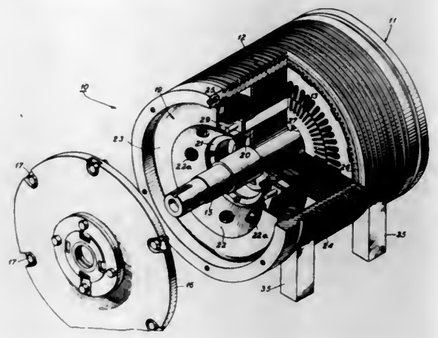


1. The method of making a transformer unit for sensing tunnel diode memory cells, comprising the steps of:
providing first and second ferrite bodies, each of said bodies having opposed flat surfaces;
coating one ferrite body with an acid resistant material to prevent absorption of acid by said ferrite body;
cementing a thin copper plate to one of the opposed flat surfaces of the coated ferrite body;
photo-etching in the copper plate a transformer secondary and a plurality of transformer primaries adjacent to the secondary;
attaching a second thin copper sheet to the other of the opposed flat surfaces of the coated ferrite;
attaching the uncoated ferrite to the coated ferrite with one of the flat sides of the uncoated ferrite adjacent the transformer side of said coated ferrite.

3,222,757
METHOD OF MAKING MOTOR SHELLS
Paul H. Papa, Chicago, Ill., assignor to Goodman Manufacturing Company, Chicago, Ill., a corporation of Illinois
Filed Jan. 11, 1962, Ser. No. 165,546
5 Claims. (Cl. 29—155.5)

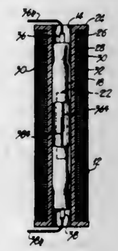
1. The method of making motor shells having circumferentially extending cooling fins and internal air circulating passageways extending perpendicular to said cooling fins, which comprises the steps of

(a) forming a series of parallel spaced grooves along one side of an elongated flat metal plate for substantially the length thereof,
(b) forming a series of parallel spaced grooves along the opposite side of the plate perpendicular to the first mentioned grooves,



(c) forming the plate to the form of a true cylinder,
(d) securing the adjacent ends of the plate together to form a generally cylindrical shell and
(e) trueing the inner periphery of the cylindrical shell by a machining operation.

3,222,758
METHOD OF MAKING A SWITCHING ASSEMBLY
Richard H. Marks, Chicago, Ill., assignor to C. P. Clare & Company, Chicago, Ill., a corporation of Delaware
Filed Jan. 31, 1962, Ser. No. 170,122
8 Claims. (Cl. 29—155.5)



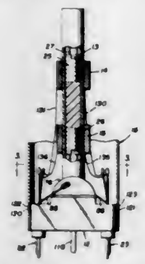
1. A method of making switching assemblies using sealed switch units that are operated by the application of a field of a first strength and are released when the applied field drops to a second strength less than said first strength, which method comprises the steps of disposing magnetically saturated permanent magnets of opposite polarities adjacent a pair of the sealed switch units, and adjusting the strengths of the fields of said permanent magnets to fall in the range between said first and second strengths and closer to said first strength than said second strength.

3,222,759
PROCESS FOR FABRICATING A CABLE SYSTEM
Wallace B. MacKenzie, Yonkers, N.Y., assignor to Phelps Dodge Copper Products Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed July 23, 1962, Ser. No. 211,854
1 Claim. (Cl. 29—155.5)

A process for fabricating a cable system comprising the steps in sequence of lining the interior of an outer covering with a resin coating, said resin coating containing contaminants therein, subjecting the inner resin coated

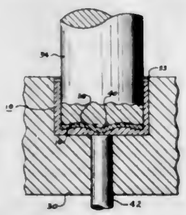
surface of the outer covering to a solvent selectively chosen to have the solvent properties of the oil to be used in the completed cable system, said solvent being stable at temperatures of 125° C. to 175° C., heating said outer covering to a temperature between 125° C. and 175° C. for a period of 10 to 60 minutes in the presence of said selectively chosen solvent thus removing all contaminants in said resin dissolvable in said solvent, removing said selectively chosen solvent containing the dissolved contaminants, inserting into said outer covering a plurality of conductors and filling said covering with oil under pressure.

3,222,760
METHOD OF MAKING A COUPLING DEVICE
John J. Antalek, Glenview, Ill., assignor to TRW Inc., a corporation of Ohio
Original application June 22, 1959, Ser. No. 821,802, now Patent No. 3,130,350, dated Apr. 21, 1964. Divided and this application Dec. 6, 1963, Ser. No. 328,547
13 Claims. (Cl. 29—155.5)



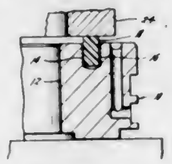
1. The method of making a transformer of the type which includes a base member having a plurality of terminal members thereon, a coil form for supporting a coil and a capacitor having opposed electrodes, which comprises a steps of positioning said capacitor on said base member with said terminal members in engagement with the electrodes of said capacitor at points spaced above the upper surface of said base member, conductively bonding said terminal members to said electrodes by immersing the upper portion of said capacitor and the ends of said terminal members engaging said opposed electrodes in molten solder, then mounting said coil form on said base member, and connecting the ends of a coil wound on said coil form to said terminal members.

3,222,761
PROCESS OF FORMING CUP-SHAPED ARTICLES
Frank J. Sabo, South Bend, Ind., assignor to Arrowhead Engineering Corporation, Walkerton, Ind., a corporation of Indiana
Filed Nov. 29, 1957, Ser. No. 699,665
8 Claims. (Cl. 29—156.5)



1. A process of fabricating cup-shaped pistons having a disc-shaped wear resistant and strengthening insert in the bottom thereof from a disc-shaped metal slug of relatively soft material and a preformed metal insert of lesser diameter than said slug and of a relatively hard material having a protrusion on one face and a recess on the other face complementary to and in the same relative location as said protrusion for receiving an actuating link, comprising placing said insert on said slug with the protrusion in contact therewith, axially aligning said insert and said slug, confining said slug on the bottom and sides in a die cavity, pressing said protrusion by a plunger into the contacting face of said slug initially and thereafter forcing the metal of said slug and insert into face to face contact from said protrusion radially outwardly to expel the air from between said slug and insert, thereafter forcing said plunger and insert into said slug, and continuing said plunger movement to elongate the marginal edge of said slug to form a cylindrical side wall portion.

3,222,762
METHOD OF FORMING VALVE SEAT
Ivan E. Nowlin, Houston, Tex., assignor to ACF Industries Incorporated, New York, N.Y., a corporation of New Jersey
Filed Sept. 25, 1961, Ser. No. 140,418
4 Claims. (Cl. 29—157.1)



4. The method of forming a valve comprising the steps of:

machining an annular groove in the seat and providing the circumferential walls of the groove with thread serrations,

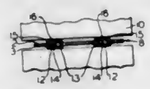
inserting one end of a strip of sealing material of predetermined length into the groove,

progressively inserting the remainder of the strip into the groove until the other end of the strip abuts said one end of said strip forming a butt joint with said one end of said strip,

applying and retaining sufficient pressure on said insert for a sufficient duration to cause the sealing material to flow and fill the thread serrations in the circumferential walls of the groove and to cause said butt joint to establish a fluid-tight seal,

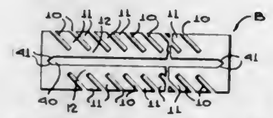
machining off the excessive amount of said insert.

3,222,763
METHOD OF MAKING A HOLLOW ARTICLE
Charles A. Heuer, East Alton, Ill., assignor to Olin Mathieson Chemical Corporation, East Alton, Ill., a corporation of Virginia
Filed Feb. 26, 1960, Ser. No. 11,224
2 Claims. (Cl. 29—157.3)



1. In the fabrication of a hollow article from a composite panel comprised of two unified metal components with one of said two component sheets of substantially the same thickness being 1100 type aluminum alloy and the other of said two component sheets being 3004 type aluminum alloy and having internally disposed within said panel a pattern of separation adapted for expansion by fluid pressure to form a corresponding desired fluid passageway system, the method comprising heat treating said panel at a temperature of at least 900° F. to fully anneal said aluminum alloys; hot rolling said panel between mill rolls to the desired elongation with said panel being at a temperature of at least 900° F. upon entry between said rolls and being discharged from said rolls at a temperature within the range from about 520° F. to about 600° F.; and injecting into said pattern of separation within said panel said fluid pressure of sufficient magnitude to expand said pattern of separation into said desired fluid passageway system whereby said 1100 aluminum alloy sheet is expanded to a substantially greater extent than the corresponding portion of said 3004 aluminum alloy sheet.

3,222,764
METHOD OF MAKING ARTICLES HAVING BASE LAYERS AND INTEGRAL FINS PROJECTING THEREFROM
Ants Hansson, Evanston, and Robert M. Brick, Hinsdale, Ill., assignors to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Feb. 28, 1962, Ser. No. 176,196
9 Claims. (Cl. 29—157.3)



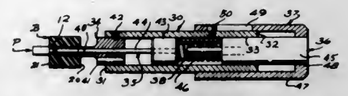
1. The method of producing an externally finned hollow structure having a reduced base portion with external fins projecting therefrom, said method comprising the steps of preparing a billet with an internal channel therein, placing a resist in said channel, forming discontinuities in said billet which extend inwardly from a surface thereof, placing a resist within said discontinuities, rolling said billet by roll contact with said surface to reduce its thickness and extend its area causing the portions between adjacent discontinuities to form scales on the billet, opening said channel to form a hollow structure, and bending said scales away from said reduced base portion to provide spaced fins integrated with the base portion and extending therefrom.

3,222,765
METHOD FOR PRODUCING WELDED DISK WHEELS
Gordon C. J. Parent, Southgate, and Karl Luther, Lathrup Village, Mich., and Walter W. Bulgrin and Meredith H. MacKusick, Akron, Ohio
Filed Sept. 26, 1960, Ser. No. 58,581
3 Claims. (Cl. 29—159.01)



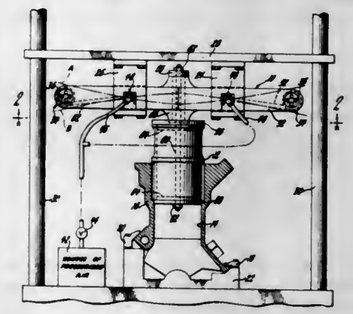
2. In a method of making a disk wheel assembled in a rim and having a curved bowl shape tapering from a flat hub portion to a relatively thin rim flange, the steps of cold spinning a flat circular axially perforate blank into a curved bowl of tapering thickness by axially displacing successive elements of the blank from the hub portion radially outwardly while maintaining the outer diameter of the blank constant, die-forming the spun bowl to provide a cylindrical rim flange thereon, pressing said bowl into a metal tire rim while maintaining the concentricity of said disk and rim, and making a continuous circumferential weldment spaced from the edg of the rim flange of said bowl and penetrating through said rim flange into said rim.

3,222,766
TERMINAL PIN REMOVING TOOL
David N. Camargo, Sylmar, Calif. (% Union Aircraft Co., 1106 W. Isabel St., Burbank, Calif.)
Filed July 1, 1963, Ser. No. 291,781
2 Claims. (Cl. 29—203)



1. A tool for removing a terminal pin engaged through an opening in a body having front and rear surfaces, said pin having a forwardly disposed stop shoulder engaging said front surface, an annular groove adjacent the rear surface and a snap ring normally partially engaged in said groove and engaging said rear surface, said tool including an elongate, manually engageable body with front and rear ends, an elongate forwardly opening tubular terminal pin and snap ring receiving stem projecting forwardly from the body, an elongate terminal pin engaging plunger shiftably carried by the body and slidably engaged through the stem, spring means carried by the body and engaging the plunger to normally yieldingly urge the plunger forwardly where it projects from the forward end of the stem, said plunger being adapted to be urged rearwardly in the stem and body by a terminal pin when said stem is urged forwardly into engagement about a terminal pin and about a snap ring related thereto, and a manually engageable driver shiftably carried by the body rearward of the plunger and adapted to be shifted forwardly relative to the body and into engagement with the plunger to shift the plunger forwardly in the stem and to urge a terminal pin and snap ring forwardly out of engagement in the stem and through an opening in a body with which said pin and snap ring are related, said spring means engaging the driver and normally yieldingly urging the driver rearwardly relative to the body.

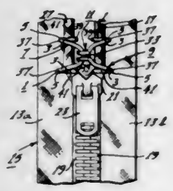
3,222,767
PRESS-FITTING APPARATUS HAVING A FLEXURAL MEMBER DRIVEN BY FLUID OPERATED VIBRATORS
Peter Ashurkoff, Grosse Pointe Farms, and William L. Drayer, Warren, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed May 20, 1963, Ser. No. 281,621
4 Claims. (Cl. 29—252)



1. A vibratory apparatus for press-fitting two members together where one of the members has an opening and the other is adapted to be inserted into the opening, comprising an elongated beam type flexural member having the opposite ends thereof adapted to vibrate freely and located at antinodal points, first means for supporting said flexural member at the nodal points thereof with the longitudinal axis of the flexural member substantially normal

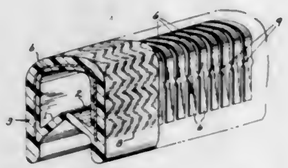
to the direction of insertion, second means adapted to couple one of said two members with said flexural member at an antinodal point thereof, and vibrator means operatively associated with each end of said flexural member for generating resonant standing-wave vibrations in the latter to facilitate the mating engagement of the two members.

3,222,768
METHOD OF APPLYING END CONNECTORS TO SLIDE FASTENERS
Theodore M. Wright, 934 Haddon Ave., Camden, N.J.
Original application Jan. 10, 1963, Ser. No. 250,610, now Patent No. 3,163,906, dated Jan. 5, 1965. Divided and this application Aug. 27, 1964, Ser. No. 392,451
5 Claims. (Cl. 29—410)



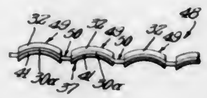
1. The method of applying to a tape member of a slide fastener a staple-like element of a hook-and-eye connector which comprises substantially reversely bending a length of stiff wire intermediate its ends to provide a loop and a pair of legs beyond said loop, bending each of said legs at substantially a right angle to the plane of said loop, driving said legs through said tape from one surface of said tape until said loop lies snugly against said one surface, then bending said legs back toward said loop until said legs snugly engage the opposite surface of said tape, said legs then extending beyond an edge of said tape to provide terminal portions therefor, then reversely bending said legs around said tape edge to bring said terminal portions back over onto said one tape surface, and finally clinching said leg terminal portions against said one tape surface to thereby affix said element to said tape.

3,222,769
METHODS OF MAKING STRIP STRUCTURES
George R. Le Plae, Detroit, Mich., assignor to Backstay Welt Company, Inc., Union City, Ind., a corporation of Indiana
Filed Dec. 22, 1961, Ser. No. 161,560
5 Claims. (Cl. 29—413)



1. The method of making a generally channel-shaped strip structure for embracing engagement with and clamping retention on an edge flange or other support, said method comprising the step of transversely slotting a one piece sheet metal core strip of resilient character to thereby provide it with a series of longitudinally disposed, transversely extending core elements connected intermediate their ends by frangible means, completely enclosing said core strip in a flexible covering, and breaking said frangible connecting means while the core strip is in its covering to thereby disconnect said transversely disposed core elements for increased core flexibility.

3,222,770
METHOD OF MAKING VALVE STEM RETAINER LOCKS
Murray D. Braid, Mentor, Ohio, assignor to TRW Inc., a corporation of Ohio
Filed Jan. 6, 1964, Ser. No. 335,731
14 Claims. (Cl. 29—413)



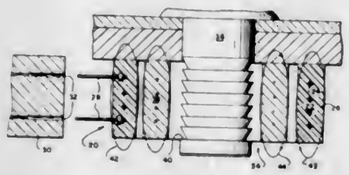
1. The method of forming a one-piece retainer lock comprising:

providing shaped sheet material with a longitudinally extending base portion that extends radially inwardly a predetermined distance from one side thereof, a longitudinally extending forward portion extending radially from the base portion to the other side wall, a longitudinally extending rib projecting from said forward portion adjacent the other side wall, and a plurality of transversely extending longitudinally spaced slots in said shaped sheet material with the end of each slot being a predetermined distance within the base portion,

coining the sheet material to provide a crimped sheet having a plurality of transversely extending and longitudinally spaced arcuate sections,

cutting the crimped sheet material along the transverse center line of one slot to provide one end wall, bending the sheet material around a suitable bending shoe, cutting the sheet material along the transverse center line of another slot to provide the other end wall, and joining said end walls to provide a split tubular retainer lock.

3,222,771
METHOD OF SECURING OBJECTS TOGETHER BY MAGNETIC DEFORMATION
Robert J. Schwinghamer, 7314 Martha Drive SE., Huntsville, Ala.
Original application Oct. 21, 1964, Ser. No. 405,596. Divided and this application Feb. 16, 1965, Ser. No. 433,233
6 Claims. (Cl. 29—421)
(Granted under Title 35, U.S. Code (1952), sec. 266)



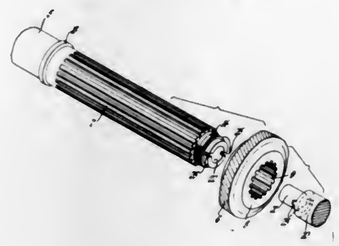
1. The method of securing objects together; comprising:

(a) inserting a fastener shaft through said objects so as to project therefrom;

(b) placing a ring nut about said projecting shaft, said ring nut being made of a material which can be deformed by an instanteous magnetic field;

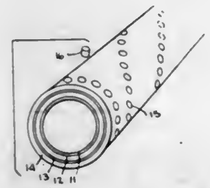
(c) producing a magnetomotive force through said deformable ring nut of sufficient strength to contract said ring nut about said projecting shaft, thereby preventing the withdrawal of said shaft through said objects.

3,222,772
METHOD OF MOUNTING A FIRST MEMBER NON-ROTATABLY AND RIGIDLY ON A SECOND MEMBER
George A. Leyner, Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 15, 1962, Ser. No. 230,656
6 Claims. (Cl. 29—447)



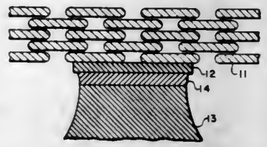
1. A method of mounting a first member non-rotatably and rigidly on a second member comprising providing a set of external splines on the second member; providing a mating set of internal splines in the first member, the splines being dimensioned for a sliding fit when the helix angles of the sets are substantially identical, the helix angles of the two sets being slightly different in the unstressed condition of the members; effecting a dimensional change in at least one of the members so as to provide a sliding fit between the two sets of splines; sliding the first member onto the second member so that the sets of splines are engaged; and substantially reestablishing the normal dimensions of the members so as to create an interference fit between the two sets of splines due to the inequality of helix angle of the splines.

3,222,773
PROCESS FOR ASSEMBLING CONCENTRICALLY SPACED NUCLEAR FUEL ELEMENTS
John L. Zambrow, Westbury, and Benjamin Litt, Flushing, N.Y., assignors, by mesne assignments, to Sylvania Electric Products Inc., a corporation of Delaware
Filed Aug. 29, 1960, Ser. No. 52,450
9 Claims. (Cl. 29—474.3)



1. The method of obtaining a spaced relationship between an outer tube and an inner cylinder which comprises passing an intermediate tube having radially extending perforations spaced apart from one another over said inner cylinder, placing dowels in said perforations, said dowels having a length sufficient to engage said outer tube and said inner cylinder when in said spaced relationship, passing said outer tube over said intermediate tube, attaching ends of said dowels to at least one of said outer tube and said inner cylinder, and removing said intermediate tube.

3,222,774
METHOD OF BRAZING POROUS MATERIALS
Donald J. Kump, Clearfield, and Norman F. Lauziere, Pine Glen, Karthaus, Pa., assignors to Curtiss-Wright Corporation, a corporation of Delaware
Filed Mar. 1, 1961, Ser. No. 92,710
4 Claims. (Cl. 29—488)



3. A method of brazing porous materials, comprising the steps of placing one side of a metal dam of about .001" to .010" thickness and including nickel in its composition in contact with a porous metal; apposing a metal element having a surface including nickel to the other side of said dam, said porous metal and said metal element being selected from the group consisting of steel, stainless steel, nickel base alloy, cobalt base alloy, tungsten, platinum, molybdenum, columbium, and chromium; disposing brazing alloy between and in contact with said dam and said metal element to form a brazing assembly; said dam and said brazing alloy being brazingly compatible with each other and with said porous metal and said metal element; said brazing alloy having an initial liquidus appreciably higher than its initial solidus and lower than the initial liquidus of said dam and containing in its composition an interstitial element capable of solid phase diffusion into said dam; heating said assembly to a temperature above said brazing solidus and below said brazing liquidus for a first period to progressively alloy said dam and said metal element with said brazing alloy by solid phase diffusion during said first period to lower the liquidus of said dam to approximately the liquidus of said brazing alloy to form a reaction material combining said dam and said brazing material; further heating said assembly during a second period to a temperature above the liquidus of said reaction material to unite said reaction material and said porous metal, and thus raising the solidus of said reaction material during said second period above the temperature of said assembly by further progressive alloying of said reaction material to freeze said reaction material while maintaining said second temperature to join said porous metal and said metal element by metallurgical bonding with a minimum of infiltration of reaction material into the pores of said porous metal.

3,222,775
METHOD OF BONDING SHEETS OF METAL
John B. Whitney, Wichita, Kans., assignor to Boeing Company, a corporation of Delaware
Filed Sept. 12, 1960, Ser. No. 55,292
8 Claims. (Cl. 29—497)



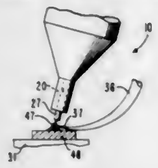
1. A method of bonding sheets of steel comprising the steps of, cleaning the members to be bonded by vapor degreasing with a chlorohydrocarbon and further cleaning the members with an alkaline cleaner, spraying a thin wet coat of a ceramic adhesive consisting of a water suspension of fired and ground boric acid, sodium nitrate, and powdered quartz frit on each of the contacting faces of the members to be bonded, said boric acid and said

sodium nitrate being present in an amount sufficient to permit bonding to the members, allowing the adhesive to dry, placing a sheet of brazing alloy foil composed of silver, copper and lithium between the members to be bonded and in contact with the coats of ceramic adhesive, said brazing alloy covering the entire contacting faces of the members, placing the members into contact under a pressure of from one to three atmospheres, and firing the structure in air at a temperature of from 1600 to 1800 degrees F. for a time of from 10 to 30 minutes.

3,222,776
METHOD AND APPARATUS FOR TREATING MOLTEN MATERIAL

Richard J. Kawecki, Endicott, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Dec. 4, 1961, Ser. No. 156,834
15 Claims. (Cl. 29—503)



12. The method of forming a workpiece on a supportable base from a molten material comprising the steps:
introducting a quantity of molten material into discharge conduit of capillary size having a discharge opening;
subjecting the molten material at said discharge opening to ultrasonic oscillations of a frequency and amplitude to cause the material to pass from said discharge opening; and
varying at least one of the following parameters in a predetermined manner, to wit: the temperature of said molten material, the amplitude of said ultrasonic oscillations, the frequency of said ultrasonic oscillations, and the relative movement between said base and said discharge opening in accordance with a predetermined pattern to provide a preselected shape.

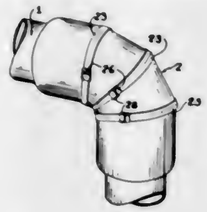
13. The method of treating molten solder for the joining of at least two bodies comprising the steps:
introducing a quantity of molten solder into a discharge conduit of capillary size having a discharge opening;
positioning a probe in adjacent relationship with respect to said discharge opening;
touching at least one of said bodies with said probe;
introducing the ultrasonic oscillations in said probe to cause the molten solder to pass from said discharge opening; and
establishing mechanical contact between at least one of the bodies and the molten solder adjacent to the discharge opening to flow solder about said bodies to effect thereby the joining.

3,222,777
METHOD FOR FORMING A MITER JOINT FOR PIPE INSULATION

Donald P. Rutter, Bernardsville, and Anthony E. Cimochowski, Somerville, N.J., assignors to Johns-Manville Corporation, New York, N.Y., a corporation of New York

Filed Sept. 12, 1961, Ser. No. 137,565
4 Claims. (Cl. 29—526)

1. Method for providing a miter joint with a metallic cover comprising:
(a) forming a miter joint comprising at least two pieces of pipe insulation having adjacent mating surfaces shaped to form a desired angular bend in a pipeline,
(b) providing a metallic strip having a longitudinal extent many times greater than its transverse extent and having longitudinally extending edges,
(c) said metallic strip having at least some portions wherein the transverse cross-sectional configuration is substantially planar,
(d) wrapping said metal strip around said miter joint so that said metallic strip covers said miter joint throughout its full circumferential extent,



(e) drawing said longitudinal edges of said metallic strip into substantially continuous and contiguous relationship throughout their circumferential extent with the outer surfaces of said pieces of pipe insulation adjacent said miter joint by applying a force to at least one end of said metallic strip, and
(f) elongating said metallic strip in directions generally parallel to its longitudinal extent and changing said transverse cross-sectional configuration of at least some of said portions from planar to arcuate by applying sufficient force to said one end of said metallic strip.

3,222,778
PROCESS FOR RETAINING THE DUCTILITY OF METAL

Noble N. Ida, Boulder, Colo., assignor to Martin-Marietta Corporation, Baltimore, Md., a corporation of Maryland

No Drawing. Filed Jan. 17, 1962, Ser. No. 166,930
3 Claims. (Cl. 29—528)

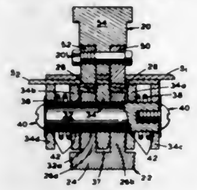
1. An improved process for forming parts from metal by retaining the ductility of the metal comprising the steps of degreasing said metal, alkaline cleaning said metal, removing the brittle films comprising reaction products with said metal, coating said metal with a flowable sealant of aliphatic hydrocarbon that will adhere to said metal at a lower temperature than the heat treating temperature of said metal, maintaining said metal in an inert atmosphere after deoxidizing thereof until said sealant is adhered thereto, and deforming said sealed metal into a part.

3,222,779
STITCHING APPARATUS

Theodore C. Zinniger, Hayward, Calif., assignor to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware

Original application Feb. 28, 1963, Ser. No. 261,648. Divided and this application Feb. 5, 1965, Ser. No. 435,777
10 Claims. (Cl. 29—566)

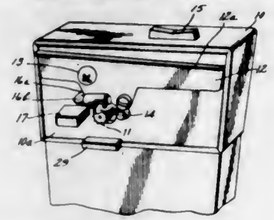
1. In an apparatus for joining overlapping pieces of material together the combination of a die and a punch, said die including an anvil and at least one cutter element biased against said anvil, said anvil being provided with a work-engaging surface, said punch also having a cutter element cooperatively associated with the cutter element of the die and aligned with the said anvil on said die, the cutter element on the punch being provided with a work-engaging surface which matches the configuration of the work-engaging surface on the anvil and the side edges of the cutter element on the punch being angularly disposed in planes normal to the work-engaging surface of said last-mentioned cutter element whereby as the punch and die are closed about overlapping pieces of material a portion of each piece of material will be displaced out of the respective normal planes thereof to effect a joint therebetween.



3,222,780
LID HOLDING MEANS FOR CAN OPENER

Arthur H. Freeman, Brockport, N.Y., assignor to General Electric Company, a corporation of New York

Filed Dec. 27, 1963, Ser. No. 333,874
5 Claims. (Cl. 30—6.4)



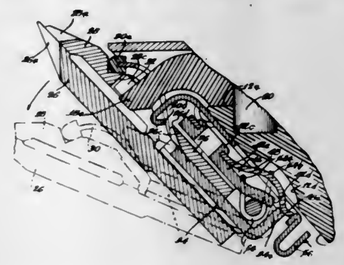
1. A can opener comprising:
(a) a casing having a forward wall;
(b) means secured to said casing for severing the lid of a can;
(c) support means affixed to said casing having a first pivot portion spaced from said wall;
(d) a magnet holder having a second pivot portion;
(e) one of said pivot portions comprising a pin;
(f) the other of said pivot portions comprising a sleeve adapted for mating pivotal relation with said pin;
(g) means defining a shoulder on said sleeve;
(h) a projection on said pin for rotative abutment with said shoulder to support said magnet holder in a generally horizontal position;
(i) a magnet secured to said magnet holder and adapted to engage the lid of the can being severed when the magnet holder is in the horizontal position; and
(j) means defining a longitudinal open-ended slot in said sleeve adjacent said shoulder for permitting axial relative sliding between said sleeve and said pin when said projection is positioned in said slot so that said magnet holder may be selectively moved between said horizontal position and a depending storage position or removed from said support means.

3,222,781
HAIR CLIPPER

William P. Luther, Racine, and William Ulke, Milwaukee, Wis., assignors to John Oster Manufacturing Co., Milwaukee, Wis., a corporation of Wisconsin

Filed Apr. 5, 1963, Ser. No. 271,555
5 Claims. (Cl. 30—210)

1. A hair clipper comprising a casing, a cutting assembly, a driving mechanism in said casing operable to actuate said cutting assembly, means for detachably supporting said cutting assembly on said casing including a mounting plate secured to said casing and a tongue pivoted to said plate, a passageway formed on said cutting assembly to slideably receive said tongue, said cutting assembly being pivotal with said tongue between an inoperative position in which said cutting assembly may be removed and an operative position in which said cutting assembly is engaged with said driving mechanism and is restrained against detachment from said tongue, a latch slideably

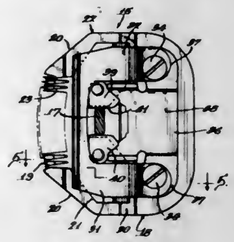


mounted between said mounting plate and said casing, a hook-like projection extending outwardly of said casing from one end of said latch, spring means biasing said projection into locking engagement with said cutting assembly when it is in said operative position, and manually operable means for sliding said latch in opposition to said spring means to disengage said projection from said cutting assembly thereby permitting said tongue and cutting assembly to be rotated to the inoperative position in which the cutting assembly may be detached from said tongue.

3,222,782
CUTTING HEAD FOR HAIR CLIPPER

Stephen Sadlon, Racine, Wis., assignor to John Oster Manufacturing Co., Milwaukee, Wis., a corporation of Wisconsin

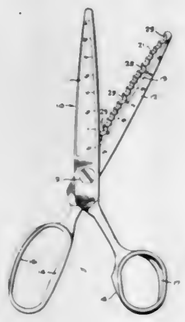
Continuation of application Ser. No. 251,956, Jan. 16, 1963. This application Feb. 5, 1965, Ser. No. 433,536
5 Claims. (Cl. 30—223)



4. A blade set for use on a hair clipper comprising a stationary blade defining a row of teeth on the front edge with the teeth tips lying along a curve, said front edge including large angled portions on each side of said row of teeth which slope sharply away from said teeth whereby the row of teeth occupies a substantially reduced portion of said front edge, said teeth having lower edges which are cut away near the tips so that they are extremely thin whereby hair may be cut very short, a movable blade adapted to overlie said stationary blade and defining a row of cutting teeth with the tips lying along a curve corresponding to the curve defined by said stationary blade teeth tips, means on said blades to guide

said movable blade along an arcuate path corresponding to the curve of said row of teeth, said movable blade teeth tips being positioned slightly behind said stationary blade teeth tips, said means solely determining the arcuate path of said movable blade.

3,222,783
PINKING SHEARS FOR MAKING PLEATS
Donald Kolts and Helen R. Hunger, both of 417 S. Hill St., Los Angeles, Calif.
Filed Mar. 21, 1963, Ser. No. 267,052
2 Claims. (Cl. 30—230)



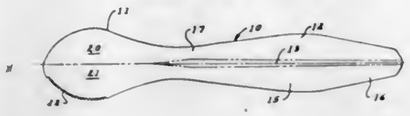
2. In pinking shears for forming pleats as described, a pair of pivotally connected blades having a series of interengaging cutting teeth and notches, a remotely spaced pair of said teeth and complementary notches being longer than the others whereby to mark and identify a predetermined length of a cut made by said shears.

3,222,784
ADJUSTABLE GUIDED SLICING KNIFE
Chester Phillips, 761 Hylan Blvd., Staten Island, N.Y., and Milton L. Cohen, 652 Park Lane, Cedarhurst, N.Y.
Filed May 24, 1963, Ser. No. 283,031
4 Claims. (Cl. 30—293)



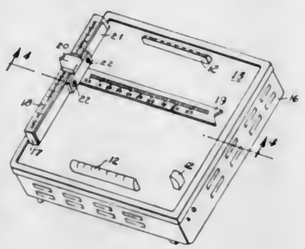
1. An adjustable slicing knife comprising a longitudinally extending blade having a cutting edge along the bottom thereof and longitudinally extending opposite side faces, a rearwardly directed handle member affixed at its leading end to one end of said cutting blade, a first coupling member located on the side of said handle adjacent to the leading end thereof and having a forwardly directed coupling face forming a predetermined obtuse angle to one of the side faces of said cutting blade, a longitudinally extending gauge bar parallel to and laterally spaced from a side face of said cutting blade, a second coupling member affixed to the trailing end of said gauge bar and longitudinally movable relative to said first coupling member and having a rearwardly directed second coupling face engaging said first coupling face and forming an angle with said gauge bar substantially equal to said predetermined angle, and means secured to said coupling members releasably locking said coupling members against relative movement.

3,222,785
KNIFE
Thomas E. Bastis, Oakland, Calif., assignor to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware
Filed Nov. 22, 1963, Ser. No. 325,542
4 Claims. (Cl. 30—355)



1. A knife comprising a unitary sheet of foldable metal having a blade portion and a handle portion, said blade portion formed by a portion of said sheet including a U-shaped cross section wherein the legs of the U are in contact with each other and one leg of said U extends beyond the other, the extending portion of said one leg being provided with a cutting edge, and said handle portion being formed by another portion of said sheet being of a closed hollow configuration.

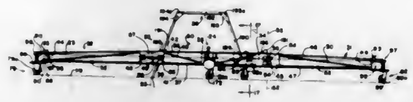
3,222,786
READER FOR SUPERIMPOSABLE CARD SYSTEM
William P. Gingras, Rockville, Md., assignor to Jonker Business Machines, Inc., a corporation of Delaware
Filed Sept. 18, 1962, Ser. No. 224,903
2 Claims. (Cl. 33—76)



1. An illuminated reader for inspection of perforated data cards, comprising a lightbox including an illuminated front surface panel, data-card positioning formations on said panel, an elongated guide bar secured to said panel and extending parallel to and adjacent one edge thereof, one side surface of said bar being of ferromagnetic material, a sliding scale member having a scale portion extending across said panel and a second portion positioned against said side surface of said guide bar, and a pair of permanent magnets adjustably threaded through said second portion to present their ends against said ferromagnetic surface, said magnets being spaced from one another in the direction of the length of said guide bar.

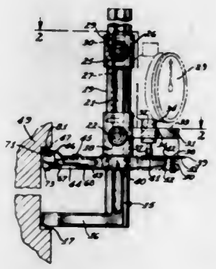
3,222,787
ROAD GAUGE
Edwin Young, 44 Marian Drive, Lakeside Park, South Fort Mitchell, Ky.
Filed Oct. 31, 1962, Ser. No. 234,434
11 Claims. (Cl. 33—86)

8. A pavement surface line contour gauging device comprising in combination an elongate lightweight substantially straight frame, a pair of spaced string-line supporting means on said frame, a string-line supported by and spanning the space between said string-line supporting means, a plurality of pavement engaging wheels supporting said frame, one of said wheels being disposed beneath each one of said string-line supports and said string-line, said string-line being supported in parallel relation to an imaginary straight line extending between the points of said pavement surface contacted by said two wheels beneath said string-line supports and string-line, guide means supported on said frame intermediate its ends and adjacent said string-line, a floating scale vertically slideable in said guide means adjacent and in cooperative indicating relation to said string-line and having a swivel



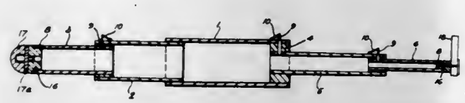
caster wheel engaging the pavement surface therebeneath, and handle means for pushing and guiding said device along on said pavement surface, said handle means comprising an arm pivotally coupled adjacent one of its ends to said frame, a supporting caster wheel adjacent the other end of said arm, a handle pivotally secured to said arm adjacent said caster wheel and extending upwardly, rearwardly, and downwardly, the rear end of said handle being adapted to engage the pavement surface to preclude undesired movement of the gauge.

3,222,788
DIAL INDICATOR CALIPER GAGE
Eddie E. Neslund, 1241 S. 27th, Phoenix 34, Ariz.
Filed Oct. 25, 1963, Ser. No. 318,893
4 Claims. (Cl. 33—148)



1. A dial indicator caliper gage comprising in combination.
- a. a frame,
- b. an integral laterally extending anvil arm,
- c. a work contacting anvil fixed on the outer end of said laterally extending anvil arm having,
- d. a work contacting surface facing in both directions of longitudinal extent of said frame,
- e. a setting carriage slidable longitudinally on said frame,
- f. a clamiping plug actuated by a thumb screw on said setting carriage to engage said frame for clamping said carriage to said frame,
- g. a dial gage clamping bracket formed integral with said setting carriage having a plurality of radially spaced dial gage mounting bores having their axes extending parallel to the direction of movement of said setting carriage on said frame and lying in a plane passing through said work contacting anvil,
- h. a dial indicator having,
- i. a mounting barrel adapted to be accurately positively located in each of said mounting bores,
- j. an actuating stem on said dial indicator,
- k. an arm pivoted intermediate its ends on said carriage,
- l. an abutment surface defining a plane located at right angles to said plane passing through said work contacting anvils and said dial gage bore axes on one end of said pivoted arm adapted to engage the outer end of said actuating stem of said dial indicator when mounted in any of said mounting bores in said dial gage clamping bracket,
- m. a work sensing abutment surface on the other end of said pivoted arm facing in both directions longitudinally of said frame and in longitudinal alignment with said work contacting anvil on said laterally extending anvil arm.
- n. and a centering adaptor on said setting carriage associated with said work sensing abutment surface.

3,222,789
LINEAR MEASURING INSTRUMENTS
Donald Bishop, St. Albans, and Jonathan Heath Ripper, Barnhurst, England, assignors to National Research Development Corporation, London, England, a British corporation
Filed Apr. 20, 1961, Ser. No. 104,315
Claims priority, application Great Britain, June 16, 1960, 21,270/60
5 Claims. (Cl. 33—161)



1. An adjustable measuring instrument comprising a tubular holder, at least one tubular extension member telescopically mounted in and extendable from a first end of the tubular holder, at least one tubular extension member telescopically mounted in and extendable from a second, opposite, end of said tubular holder, each of the tubular extension members extendable from one end of the tubular holder being moveable into the smallest of the tubular extension members extendable from the other side of the tubular holder whereby the measuring instrument is collapsible to a length at least comparable to the length of said tubular holder, clamp means on the tubular holder and adjacent a first end thereof with the tubular extension member extendable from that end and next adjacent the inner wall of said tubular holder to hold said tubular extension member at any position along its length with respect to said holder whereby said extension member is fully adjustable, locking means on the tubular holder and adjacent the second, opposite, end thereof to lock the tubular extension member extendable from that end and next adjacent the inner of said tubular holder to lock said extension member in a fully extended position whereby said extension member is non-adjustable, and a graduated scale provided on said fully adjustable extension member.

3,222,790
MEASURING INSTRUMENT
Hans Meyer, Le Bugnon 24, Renens, Vaud, Switzerland
Filed Feb. 11, 1964, Ser. No. 344,025
Claims priority, application Switzerland, Mar. 8, 1963, 2,970/63
2 Claims. (Cl. 33—166)

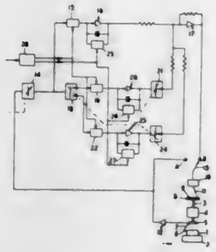
2. In a size-measuring instrument provided with a rotatable control spindle, the combination of step-up means

including a peripherally toothed step-up member rigid with the spindle, a pinion including a flexible toothed rim meshing with said toothed step-up member, a dial



indicator mechanism controlled by said pinion, the dial indicator showing the digits and decimals of the measured size.

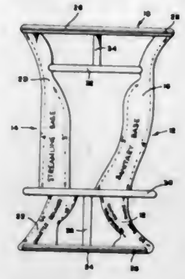
3,222,791
MEASURING AND RECORDING ARRANGEMENTS
Keith Gordon Huntley, Dukeswood, Gerrards Cross, Arthur Tisso Starr, New Barnet, Hertfordshire, and Vincent Arthur Gault, Hounslow, Middlesex, England, assignors, by direct and mesne assignments, to The Rank Organisation Limited, a British company
Filed Feb. 15, 1961, Ser. No. 89,532
Claims priority, application Great Britain, Feb. 17, 1960, 5,667/60
18 Claims. (Cl. 33—174)



1. A system comprising sensing means adapted to be placed in approximately concentric rotational relationship with an object for the purpose of feeling a given contour of said object, gauge means for deriving a gauge signal comprising a contour signal component corresponding to said contour and an eccentricity signal component corresponding to any residual eccentricity in said rotational relationship, means including electrically responsive display means for translating said contour signal component into a visible corresponding contour trace upon a chart in spaced relation with a chart datum, signal derivation means including sine wave extracting means for deriving from the gauge signal the sine wave representing the eccentricity signal component and means applying to said display means said sine wave as a reference trace superimposed upon said contour trace.

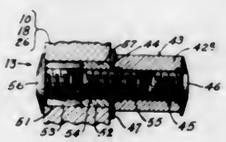
3,222,792
TEMPLATE FOR MARKING CORNER CUTS OF A MOLDING
Robert N. Esbom, 222 E. 9th St., Port Angeles, Wash.
Filed Mar. 21, 1963, Ser. No. 267,002
5 Claims. (Cl. 33—174)

1. A template for marking corner cuts on moldings and the like, comprising: at least two elongated, irregularly shaped, spaced-apart strips of relatively thin, flexible, non-stretchable sheet material, said strips being interconnected at each end thereof by generally parallel connecting bar means; guide bar means being thicker than and interconnecting said strips and being generally at a predetermined distance from both of said connecting bar



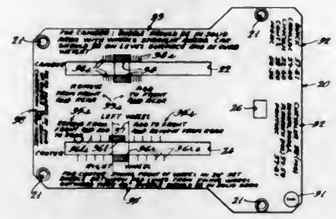
means; and each of said strips having curve configurations on each edge thereof on each portion thereof between said guide bar means and each of said connecting bar means.

3,222,793
ADJUSTABLE GAGE AND GAGING ELEMENT MOUNTING MEANS
Stanley G. Johnson, West Hartford, Conn., assignor to The Johnson Gage Company, Bloomfield, Conn., a corporation of Connecticut
Filed May 24, 1963, Ser. No. 282,916
11 Claims. (Cl. 33—199)



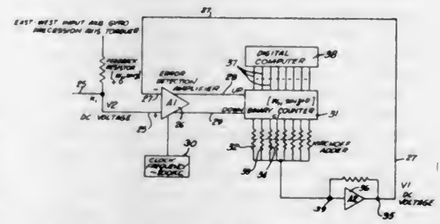
1. An adjustable gage comprising frame means having a plurality of spaced mounting holes with a maximum of three extending therethrough, mounting means mounted in each hole and having a bearing surface exterior of the hole, gaging means mounted on each bearing surface; and at least one of said mounting means being adjustable and including a hardened stud having an outer cylindrical surface forming the bearing surface, the stud having an inner end surface accurately squared with respect to the cylindrical bearing surface and an opposite outer end, the cylindrical bearing surface being the surface of maximum diameter on the stud, the stud having a threaded securing hole extending from the inner end thereof, removable shoulder means carried by the outer end of the stud and extending radially beyond the bearing surface, a bushing of soft metal received in a mounting hole in the frame means and having an outer bearing surface slightly smaller than the diameter of the mounting hole and smaller in diameter than the bearing surface of the stud, the bushing having a threaded securing hole therethrough and a stud end and an opposite end, a securing screw received in the stud end of the securing hole in the bushing and extending partially thereinto and received in the securing hole in the stud and securing the bushing and the stud together, a lock screw in the securing hole in the bushing at the opposite end, and one of the securing holes being eccentric to its outer surface.

3,222,794
WHEEL ALINEMENT INDICATOR
Joseph H. Pereue and Bert F. Abbott, Rock Island, Ernest Miles Bacon, Milan, and Charles W. MacMillan, Rock Island, Ill., assignors to Bear Manufacturing Company Rock Island, Ill., a corporation of Delaware
Filed July 26, 1961, Ser. No. 127,053
7 Claims. (Cl. 33—203.18)



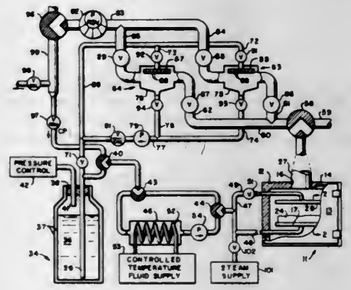
4. Vehicle wheel alining apparatus comprising, in combination, a gauge to be attached to the wheel and including means for determining at least one criterion of wheel alinement, an indicator operatively associated with said means and including a scale plate having a slot therein revealing said indicator and having scale marks thereon adjacent said slot for indicating the value of said criterion, at least one replaceable scale plate for said indicator correlated to respective vehicles and adapted to overlie said first-named scale plate, said replaceable scale plate having a slot therein substantially coextensive with the slot in said first-named plate, means for mounting said replaceable scale plate on said first-named scale plate with the slots thereof in alinement with one another to aline the replaceable scale plate with said indicator, said replaceable scale plate including a scale adjacent the slot therein co-operating with said indicator and comprising first indicia correlated to the factory specification of the criterion for the respective vehicle and co-operable with said indicator to indicate compliance with the factory specification, and second indicia disposed to opposite sides of said first indicia and co-operable with the indicator to indicate the amount of correction required and the manner in which to effect such correction when the criterion is not in compliance with the factory specification.

3,222,795
ACCELERATED NORTH-SEEKING GYRO-COMPASSING SYSTEM
James C. Gevas, Newark, N.J., assignor to General Precision, Inc., Little Falls, N.J., a corporation of Delaware
Filed May 25, 1960, Ser. No. 31,741
4 Claims. (Cl. 33—226)



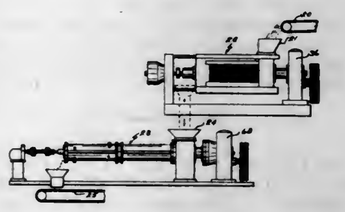
1. A gyroscopic system for rapidly determining true north including a platform having an east-west input axis gyro thereon and connected in feedback relation to the platform to stabilize the same, means for positioning the platform in an approximated north-south heading, means responsive to the precession of the east-west input axis gyro in a first position resulting from the angular rotation of the earth for producing a first signal, means for rotating the input axis of said gyro to a second position approximately 180 spacial degrees displaced from said first position, means responsive to precession of said gyro in said second position for producing a second signal, and computing means responsive to said first and second signals and providing an output proportional to the error between the heading angle of the platform and true north.

3,222,796
METHOD OF FREEZE-DRYING FOODS BY DIRECT GAS INJECTION
Morris R. Jeppson, Alamo, Calif., assignor to Cryodry Corporation, San Ramon, Calif., a corporation of California
Filed June 11, 1962, Ser. No. 201,609
6 Claims. (Cl. 34—5)



1. In a method of freeze-drying a solid substance such as meat, the steps comprising freezing said substance, impaling said substance on a plurality of spaced gas injection means, reducing the water vapor content from the environment about said substance, and promoting the sublimation of ice within said substance by forcibly injecting, through said gas injecting means, relatively warm dry gas into said substance and drying from the inside-out.

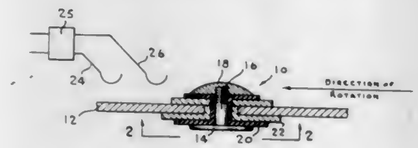
3,222,797
METHODS FOR THE REMOVAL OF MOISTURE FROM POLYMERIC MATERIALS
Carl W. Zies, Lakewood, Ohio, assignor to International Basic Economy Corporation, New York, N.Y., a corporation of New York
Filed Feb. 9, 1965, Ser. No. 431,389
17 Claims. (Cl. 34—17)



1. A method of substantially removing all liquid from a liquid-bearing polymeric material containing a substantial amount of liquid, said method comprising (1) advancing the material through an elongated enclosure to a discharge point, (2) gradually increasing mechanical pressure on the advancing material and simultaneously

progressively increasing the temperature of the material-liquid system such that the sensible heat within the material-liquid system upon flash cooling is sufficient in itself to evaporate the liquid, expand the material and rupture the surface thereof, (3) establishing a mechanical pressure on the material-liquid system to prevent any substantial loss of liquid in vapor form, (4) thereafter maintaining the mechanical pressure on the material-liquid system throughout a sufficient length of the enclosure above the vapor pressure of the liquid at the progressively increasing temperatures of the system to keep the liquid of the material of the material-liquid system in the form of a liquid in said length of the enclosure, and (5) immediately discharging the material-liquid system to a zone outside of said enclosure, thereby instantaneously releasing the vapor pressure of the liquid therein to explosively vaporize said liquid, thereby expanding the polymeric material and rupturing the surfaces thereof for the spontaneous escape of substantially all of the liquid therefrom by utilizing the sensible heat within the cooling system.

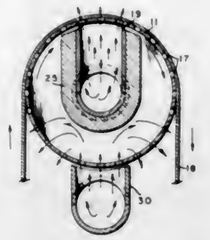
3,222,798
DRYER SENSING DEVICE
James M. Thornberry, Morton Grove, and John E. Maas, La Grange Park, Ill., assignors to Controls Company of America, Melrose Park, Ill., a corporation of Delaware
Filed Nov. 26, 1962, Ser. No. 240,051
10 Claims. (Cl. 34—45)



1. In a dryer having a drum rotatable within a housing, an electricaly conductive sensor insulated from and mounted on the drum for rotation therewith and having a sensing surface exposed to the drum interior and a contact surface lying within a small arc,
means carried in the housing and periodically engaged by the contact surface of the sensor as the drum rotates to alternately impress a fixed charge on the sensor and to sense the residual charge on the sensor after the drum has rotated subsequent to impression of the charge to allow leakage from the sensor at a rate dependent upon the moisture content of the material being dried,
said sensor being mechanically and electrically isolated from said means during the interval between impressing and sensing the charge on the sensor,
and means connected with said last-mentioned means and responsive to a sensed residual charge of predetermined value to effect a dryer control function.

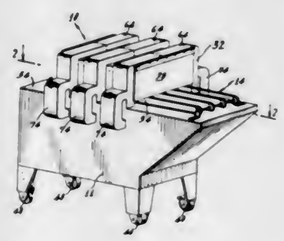
3,222,799
APPARATUS FOR TREATING FILAMENTS
Ernest A. Taylor, Jr., Decatur, Ala., assignor, by mesne assignments, to Monsanto Company, a corporation of Delaware
Filed Mar. 22, 1962, Ser. No. 181,664
5 Claims. (Cl. 34—122)

3. Apparatus for annealing spaced portions of a continuous tow comprising, a rotating drum having a plurality of apertures in the periphery thereof; a first means adapted for directing a heated medium through only a first portion of said apertures; and, a second means adapted for simultaneously directing a cooling medium through only a second portion of said apertures, said first means and said second means being positioned in



a common plane and adapted so that said heated and cooling mediums are successively passed through all of the apertures in sequence upon rotation of said drum.

3,222,800
APPARATUS FOR SHRINKING WRAPPERS OF PACKAGES
Martin Siegel, Englewood Cliffs, and Seymour Zelnick, Toms River, N.J., assignors to Weldotron Corporation, Newark, N.J., a corporation of New Jersey
Filed May 29, 1962, Ser. No. 198,540
12 Claims. (Cl. 34—212)



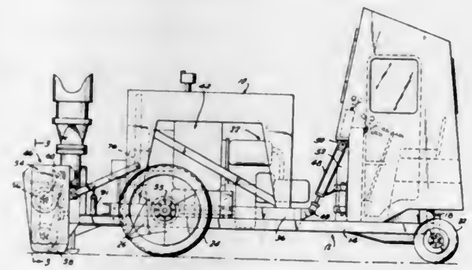
1. Apparatus for shrinking heat-shrinkable wrappers of packages, comprising:
(a) a heating chamber having a top, bottom, sides and opposite open ends for the passage of the package through the chamber,
(b) conveyor means positioned in said chamber and extending from said open ends for moving the package through said heating chamber,
(c) said conveyor means comprising a series of laterally spaced longitudinally extending conveyor members for supporting the package, each of said conveyor members being a helically wound coil of wire connected at its ends to form an endless member which is resiliently stretchable along its length, and
(d) a series of laterally spaced ducts surrounding said chamber and extending along said top, bottom and sides of said chamber for simultaneously transmitting heated air to said top, bottom and sides of said chamber as the package passes therethrough,
(e) said top, bottom and sides of said chamber having a series of openings for the flow of said heated air from said ducts into said chamber, whereby the heated air simultaneously impinges on the top, bottom and sides of the package for the wrapper heat-shrinking operation.

3,222,801
SPIKE HEEL CONSTRUCTION
Ferdinand W. Mostertz, 701 Carpenter Lane, Philadelphia, Pa.
Filed Dec. 3, 1963, Ser. No. 327,700
4 Claims. (Cl. 36—39)



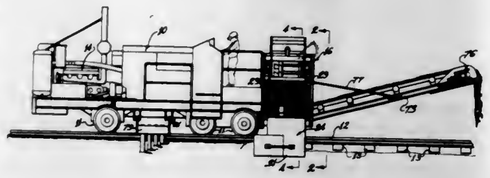
1. A spike heel for a woman's shoe comprising a narrow elongated heel shaft terminating with a spherical tip of greater diameter than the maximum cross-sectional size of the adjacent portion of the heel shaft to which it is connected, said spherical tip constituting the walking surface of the heel whereby the same may be utilized for walking on carpet without damage to the carpet.

3,222,802
SELF-PROPELLED VEHICLE AND MOUNTING FOR TOOL OR IMPLEMENT
Henry E. Kiernan, 136 W. Pulaski Road, Huntington Station, N.Y.
Filed Feb. 12, 1963, Ser. No. 258,051
3 Claims. (Cl. 37—43)



1. A self-propelled vehicle of the type having a mounting for a snowblower or other implement at one end thereof which is shiftable between elevated and lowered positions comprising: a primary rigid frame extending longitudinally of the vehicle and having leading and trailing ends; a first wheel assembly including a supporting axle pivotally mounted on said frame adjacent the trailing end of said frame; a second wheel assembly including a supporting axle mounted on said frame adjacent the leading end of said frame; an auxiliary frame pivotally mounted at an intermediate portion of said primary frame and pivotally mounted on said second wheel assembly and having an outer end of said auxiliary frame projecting beyond the leading end of said primary frame and having the inner end overlapping the intermediate portion of said primary frame; said auxiliary frame having means thereon for supporting an implement such as a snowblower; a prime mover mounted on said auxiliary frame at an intermediate portion of said auxiliary frame between the second wheel assembly and the inner end of said auxiliary frame and serving as a counterbalance for said implement such that the weight distribution is essentially over the second wheel assembly; power transmission means; means connecting said power transmission means to said prime mover and said second wheel assembly to propel the vehicle; power take-off means mounted on said prime mover; means connecting said power take-off means to said implement whereby said implement is adapted to be operated while the vehicle is traveling substantially at zero miles per hour; and hydraulic operating means including a cylinder pivotally mounted on said primary frame and a piston pivotally mounted to said auxiliary frame so that when the piston moves within said cylinder said auxiliary frame is shifted between elevated and lowered positions.

3,222,803
BALLAST REMOVING APPARATUS
John D. Holley and Ernest E. Bode, Montgomery, Ala., assignors to Kershaw Manufacturing Company, Inc., a corporation of Alabama
Filed Feb. 24, 1964, Ser. No. 346,832
9 Claims. (Cl. 37—104)

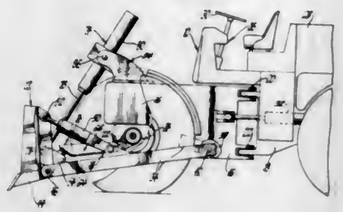


1. Apparatus for removing ballast from beneath the crossties of a railroad track comprising:
(a) a vehicle frame supported by wheels for riding on the rails of a railroad track,
(b) an endless chain ballast removing unit having spaced apart cross members and mounted on said frame for rotation in a vertical plane transversely of the vehicle frame,
(c) said endless unit having a lower run extending beneath the crossties under both rails of the railroad track and an upwardly and inwardly inclined run extending over said crossties,
(d) an upwardly inclined slide member positioned within the confines of said endless unit and extending inwardly of and along the under surface of said inclined run from a point adjacent the lower end of said inclined run to a point intermediate the ends of said inclined run to support ballast as it is pulled upwardly by the spaced apart cross members of said inclined run and discharge the ballast intermediate said ends of the inclined run, and
(e) a conveyor unit mounted transversely of and within the confines of said endless ballast removing unit in position to receive the ballast discharged from said slide member.

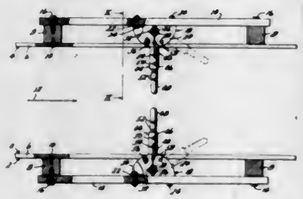
3,222,804
LIFT MECHANISM FOR DOZER BLADE ASSEMBLY
Bernard A. Kuhl, Lakewood, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Jan. 14, 1964, Ser. No. 337,591
4 Claims. (Cl. 37—144)

4. In combination with a rubber-tired vehicle having a frame supporting a front wheel-carrying axle, a dozer assembly comprising a pair of push arms pivotally connected at one end thereof to said frame, a dozer blade extending transversely of said vehicle and pivotally mounted to the other end of said push arms for pivotal movement about a first transverse axis, a lift mechanism connected between said vehicle and said dozer blade, said lift mechanism comprising a first member connected to said dozer blade for pivotal movement about said first transverse axis, a second member connected to said front

axle for pivotal movement about a second transverse axis, means universally pivotally interconnecting said first and second members at a point located to one side of a plane passing through said first and second axes when said blade is in a normal dozing position, first operating means connected between said first member and said vehicle for raising and lowering said dozer blade, second operating means connected to said dozer blade for selectively pivoting the latter about the first transverse axis and about said universal interconnection between said first and second members so that said blade can be rotated about the longitudinal axis of the vehicle, said first operating means connected to said first member at a point so that a portion of the forces acting against said dozer blade during the normal dozing operation are transmitted to said front axle so as to decrease the loading on the push arms.

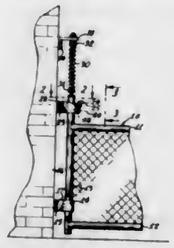


3,222,805
CATTLE GATE
Robert Hansen, Strong City, Kans.
Filed Apr. 30, 1963, Ser. No. 276,740
2 Claims. (Cl. 39—84)



1. A cattle gate for use in connection with a chute consisting of a pair of spaced apart vertical and generally parallel walls, said gate comprising:
(a) a bracket,
(b) means for supporting said bracket rigidly at a fixed elevation adjacent one of said chute walls,
(c) an elongated gate arm pivoted at one end in said bracket for movement in a horizontal plane from an open position in which it extends forwardly in the direction of normal movement of cattle through said chute, and wherein it is disposed closely adjacent said wall and does not block said chute, to an intermediate closed position in which it extends partially across and blocks said chute, and further to a released position in which it extends rearwardly in a direction opposite to the direction of normal movement of cattle through said chute, and wherein it is disposed closely adjacent said wall and does not block said chute,
(d) resilient means carried by said bracket and biasing said gate arm at all times in a direction to move it from said open position through said intermediate closed position to said released position, and
(e) stop means carried by said bracket and normally arresting movement of said gate arm when said arm is in said closed position, whereby to prevent movement of said arm to its released position, said stop means being manually releasable from a position outside of said chute.

3,222,806
SELF-CLOSING GATE
Wayne D. Martin, 610 S. Stapley Drive, Mesa, Ariz.
Substituted for abandoned application Ser. No. 318,648, Oct. 24, 1963. This application Mar. 15, 1965, Ser. No. 445,828
2 Claims. (Cl. 39—84)



1. A self closing gate comprising in combination:
A. a support,
B. a hinge member pivotally and vertically axially slidable on said support,
C. a cam ring fixed on said support surrounding said hinge member having,
D. a depressed centering portion upwardly facing cam roller receiving surface,
E. upwardly sloping cam surfaces extending along each side of said depressed centering surface,
F. a cam roller journaled on said hinge member adapted to be received in said depressed centering portion and roll on said upwardly sloping surfaces so as to raise said hinge member and gate when said gate is swung to either side of closed position and to cause said gate to normally return by gravity to closed position when released,
G. and further means to return said gate to closed position comprising a combined torsion and compression spring having one end fixed to said support and its other end fixed to said hinge member in neutral torisonal condition when said cam roller is in said depressed centering portion for yieldingly normally torsionally swinging said gate to closed position while axially yieldingly forcing said cam roller against said cam surface on said cam ring and in said depressed centering portion to hold said gate in closed position.

3,222,807
PANEL DISPLAY APPARATUS
Richard E. Swank, Battle Creek, Mich. (12520 Pacific Ave., Los Angeles, Calif.)
Filed June 22, 1962, Ser. No. 204,530
4 Claims. (Cl. 40—36)

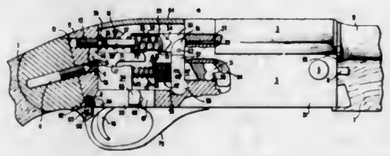
1. An apparatus for reciprocating a plurality of substantially parallel panels along adjacent paths parallel with said panels into and out of a display zone from a storage zone, said panels having ends extending in the direction of said parallel paths and connecting sides extending transversely of said paths, comprising;
a frame structure;
a plurality of rail means substantially parallel with said paths and secured to said frame structure, said rail means extending from said storage zone into said display zone;

support means connected to each panel supporting said panel upon one of said rail means for movement lengthwise thereof;
an elongated, flexible and endless element;
means on said frame structure guiding and supporting said element of lengthwise movement thereof with said element forming a plurality of adjacent spiral loops, axially aligned, each loop having spaced first and second reaches and substantially defining a plane parallel with and adjacent to one of said panels and extending substantially through said storage and display zones, said first reach being adjacent one of said ends of an associated panel and said second reach being adjacent the other end of said associated panel, said means further guiding said endless element from the last of said spiral loops back to the first of said spiral loops;



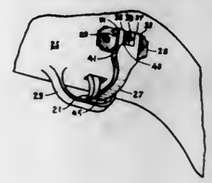
drive means connected to said element for effecting said lengthwise movement of said element in said guide means, said first and second reaches being moved in opposite directions;
first and second engageable means on each panel adjacent said first and second reaches, respectively; and
a pair of spaced, releasable engaging means on said element for effecting releasable connections with said engageable means, one of said engaging means being connectible only with the first engageable means for moving respective panels into viewing positions and the other engaging means being connectible only with the second engageable means to return said respective panel to said storage zone in response to a unidirectional movement of said endless element.

3,222,808
SHOTGUN FRAME AND BLOCK ASSEMBLY
Walter H. B. Smith, deceased, late of New York, N.Y., by Katherine B. Groves, executrix, New York, N.Y.; Alice Denhoff, substitute executrix of said Walter H. B. Smith, deceased
Original application Dec. 2, 1959, Ser. No. 856,751, now Patent No. 3,077,045, dated Feb. 12, 1963. Divided and this application May 11, 1962, Ser. No. 199,553
2 Claims. (Cl. 42—44)



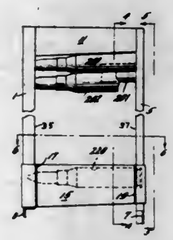
1. A frame and block assembly for firearms comprising a frame having at least a front wall and a channel-shaped member extending forward from said front wall, said channel-shaped member comprising a pair of side walls and a bottom wall, a block approximately coextensive with said channel-shaped member and having an upper portion with an axially-extending aperture, a barrel detachably secured in said aperture, said block having a lower portion disposed between said side walls of said frame, a removable hinge pin extending through aligned apertures in said side walls and said lower portion of said block adjacent the forward ends thereof, said lower portion of said block having a rear wall adjacent said front wall, said rear wall having a transverse groove extending at least partially between said side walls, a reciprocatable bolt extending through an axially-extending aperture in said front wall, said bolt having a shoulder aligned with and adapted to seat in the groove in said block and a spring for biasing said shoulder into said groove.

3,222,809
AUTOMATIC SAFETIES FOR GUNS
Harvard J. Bryan, 9303 Sorrento, Dallas, Tex.
Filed June 8, 1964, Ser. No. 373,388
17 Claims. (Cl. 42—70)



1. The combination with a gun having a tubular barrel and firing actuation means which move generally parallel to the longitudinal axis of said barrel to fire said gun, an automatic safety comprising:
(a) an external finger attached to said gun, said finger being movable along a path generally transverse to the longitudinal axis of said barrel from a normal position to an armed position and having a firing actuation means engaging portion,
(b) said firing actuation means engaging portion of said finger being in engagement with said firing actuation means when in said normal position to restrain actuation thereof,
(c) said firing actuation means engaging portion of said finger being transversely displaced to position it out of engagement with said firing actuation means when in an armed position, and
(d) biasing means urging said finger into the normal position.

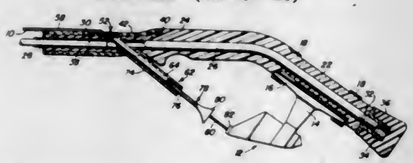
3,222,810
MAGAZINE LOADING CLIP
Daniel D. Musgrave, 8201 Caraway St., Cabin John, Md.
Filed June 23, 1964, Ser. No. 377,250
2 Claims. (Cl. 42—87)



1. In a clip for loading a double staggered column of cartridges into a firearm box magazine having fixed lips the combination of: front and rear channel means for retaining said cartridges in said column and adapted for entry into said magazine through the top thereof, and adapted for engagement with the follower thereof; connecting means joining the top extremities of said front and rear means and positionally adapted for retaining the topmost of said cartridges in said column; a slider

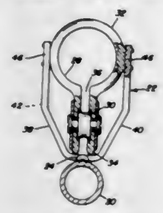
surrounding said front and rear means near the bottom thereof and slideable upwardly thereon, said slider comprising detent means for retaining the bottommost of said cartridges in said column, converging resilient guide means slideable relative to said front and rear means and positionally adapted for directing individual cartridges of said column between the lips of said magazine, and ratchet means integral with said guide means and adapted for preventing sliding of said detent means away from said connecting means.

3,222,811
HANDLE FOR FISHING RODS
George A. Henson, P.O. Box 513–A, Green Mountain Falls, Colo.
Filed Apr. 4, 1963, Ser. No. 270,668
5 Claims. (Cl. 43—18)



1. In combination, a spinning rod, one piece handle means embodying an elongated forward handgrip having its forward end portion connected to the reaward end of said spinning rod, and a complemental elongated rearward handgrip integrally joined to the rearward end of said forward handgrip and angled rearwardly and downwardly, a reel bracket mounted on and depending from the underneath side of said rearward handgrip, a spinning reel carried by said bracket and having a fishing line discharge, the median portion of said forward handgrip having a passage extending diagonally upwardly therethrough from the bottom side to and opening through the top side, an anti-friction collar embedded in said top side and having a line guiding opening axially aligned with the upper end of said passage, said collar being flush with said top side and providing a thumb rest, rearwardly downwardly inclined line guide means having an upper portion located and mounted in said passage and a lower portion depending below the underneath side of said forward handgrip and inclined toward, spaced forwardly of, and oriented and aligned with said line discharge, said line being threaded upwardly and slidingly through said line guide means and passing upwardly and forwardly through the opening in said collar.

3,222,812
FISH LINE GUIDE
Harold F. Gorham, 102 Highland, National City, Calif.
Filed June 29, 1964, Ser. No. 378,751
1 Claim. (Cl. 43—24)



In combination with a fishing rod, a line guide comprising:

(a) a pair of elongated bases attached to the rod, said bases extending longitudinally of one another and spaced from one another along said rod,

(b) a pulley,

(c) loop guide means for supporting said pulley, said loop comprising a substantially circular member having upper, lower and side portions, said lower portion having a pair of depending arms supporting said pulley, said side portions each having a pair of circumferentially displaced bulges extending outwardly,

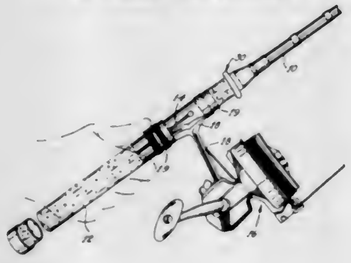
(d) means for attaching said loop guide means to said bases including:

(1) a first pair of resilient arms formed in a V-shape and integral with said bases, said first pair of arms having the juncture of the V-extending adjacent one of said side portions, said juncture having a pair of recesses seating said pair of bulges on said one side,

(2) a second pair of resilient arms formed in a V-shape and integral with said bases, said second pair of arms having the juncture of the V extending adjacent the other of said side portions, said juncture having a pair of recesses seating said pair of bulges on said other side,

(3) said cooperating pairs of recesses and bulges being mated and pressed together, and said loop being welded to said arms adjacent said bulges and recesses.

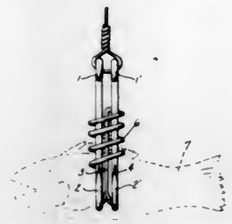
3,222,813
METHOD OF AND MEANS FOR CONTROLLING CASTING OF A FISHING LINE
Robert Lindsay Buckeridge, Hastings, New Zealand, assignor to True Temper Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Nov. 13, 1961, Ser. No. 151,887
2 Claims. (Cl. 43—25)



1. A fishing rod and reel assembly comprises a fishing rod and handle therefor, a spinning reel carried by the handle, a fishing line carried by said reel and rod, said line being maintained along the length of said fishing rod, a fishing line controlling means comprising a resillently deformable O-ring telescopically positioned around said fishing rod handle adjacent the reel mounting, said O-ring being manually slidable rearwardly on said rod handle during a casting operation to overlap a portion of the fishing line drawn manually upwardly of the reel and rearwardly of the O-ring prior to said movement; the line being clamped thereby between the O-ring and an underlying surface of said rod handle by means of manual pressure exerted on said O-ring during casting.

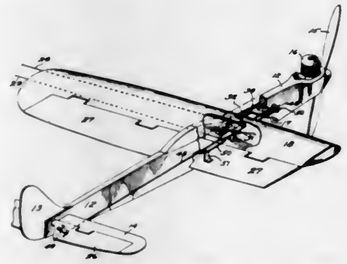
3,222,814
FISHING TACKLES
Michael Rossnan, 11724 Lovejoy St., Silver Spring, Md.
Filed Feb. 3, 1965, Ser. No. 430,091
2 Claims. (Cl. 43—36)

1. Fishing tackle comprising a pair of fishhooks, each fishhook having a shank, an eye and a barbed bight portion, a coiled spring encircling said shank portions and having one of its free ends attached to one of said shank portions and its other free end attached to the other of said shank portions for holding said shank portions in a spaced parallel relation and for rotatably biasing said barbed bight portions about a vertical axis in opposite directions, said barbed bight portions being



rotatable about said vertical axis against the bias of said spring to a set position in which said bight portions are disposed in the same direction in spaced parallel planes, said bight portions being adapted to be releasably held in said set position by a bait secured thereto.

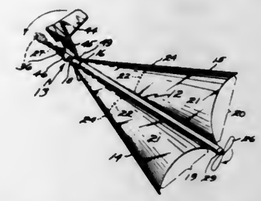
3,222,815
TETHERED MODEL AIRPLANE FOR STUNT PERFORMANCE
Henry Struck, Hamburg, Conn., assignor to The A. C. Gilbert Company, New Haven, Conn., a corporation of Maryland
Filed Apr. 13, 1964, Ser. No. 359,324
8 Claims. (Cl. 46—77)



1. A model airplane adapted for stunt performance comprising in combination, a fuselage, a bellcrank pivotally mounted on said fuselage, airfoils projecting from said fuselage in rigid relation thereto at least one of which airfoils is adjustable to selective distances from the other airfoil longitudinally of said fuselage, a control aileron hinged to one of said airfoils, tethering control lines, a rockable lever having opposite ends connected respectively to said control lines and pivotally mounted on said adjustable airfoil having means operably related to said bellcrank in a manner to cause transmission of movement from said lever to said bellcrank with variable leverage when the distance between said airfoils is changed, and means operatively relating another arm of said bellcrank to said aileron.

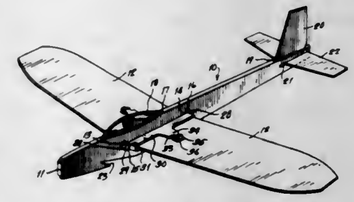
3,222,816
TOY POWERED FLEX WING
William L. Effinger, Jr., Hamden, and Henry Struck, Hamburg, Conn., assignors to The A. C. Gilbert Company, New Haven, Conn., a corporation of Maryland
Filed May 28, 1964, Ser. No. 370,815
17 Claims. (Cl. 46—78)

1. A toy aircraft of the flex wing type comprising a main spar extending rearward from the air entering nose of the craft, lateral spars angled relatively to said main spar at respectively opposite sides thereof joining said main spar at said nose of the craft, a flexible wing sheet bridging triangular spaces between said main spar and each of said lateral spars, means to maintain said lateral spars so angled with respect to said main spar that on of said spaces is substantially wider than the other



of said spaces, and a bladed propeller at one end of said main spar powered to cause its blades to attack the air in such rotary direction that the resulting tendency of the craft to roll is opposed in flight by the relatively stronger lifting tendence of said wing sheet over the wider of said triangular spaces.

3,222,817
TOY AUTOMATIC WING FOLDING CATAPULT PLANE
Edward Brandstetter, 100—25 Queens Blvd., Forest Hills, Long Island, N.Y.
Filed Nov. 29, 1963, Ser. No. 326,893
20 Claims. (Cl. 46—80)

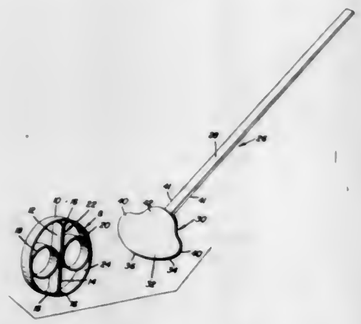


1. A toy catapult airplane which when projected into the air automatically folds its wings upwardly to vertical position and at the top of such projection automatically unfolds its wings to gliding position, comprising an elongated body having sides, a pair of wings including a pair of wing members, means at the inner ends of said wing members for connecting said wings to said body and enabling them to fold upwardly to a substantially vertical position, and depending means carried by said wings and movable toward said body beneath the lines of fold of said wings to support said wings at a given dihedral angle, and elastic means connected to apply to said wings at points outwardly of said lines of fold, a downward force sufficient to maintain said depending means normally against the sides of said body to support said wings for gliding, and yieldable when the toy is projected into the air to permit the wings to fold upwardly to vertical position and thereby to withdraw said depending means from the sides of said body.

3,222,818
HOOP AND TRUNDLING STICK THEREFOR
Willie P. Grubbs, New Albany Hotel, Room 402, Albany, Ga.
Filed July 17, 1963, Ser. No. 295,769
4 Claims. (Cl. 46—220)

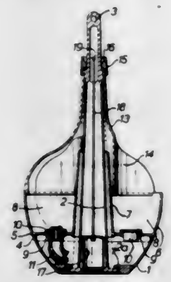
1. An amusement and exercising toy hoop comprising an endless annular rim having inner and outer relatively wide peripheral surfaces, the outer surface constituting a traction surface which is capable of being rolled by a

running youngster over a gymnasium floor, an out-of-doors pavement, or like surface, stabilizing means comprising an internal brace extending midway across the open portion of said hoop and having diametrically opposite end portions affixed to cooperatively associated interior peripheral surfaces of said rim, a pair of duplicate ring-like members, each of an outside diameter less than the outside diameter of said hoop, said ring-like members being disposed diametrically opposite to each other and having corresponding outer peripheral portions proportional in width with and contacting and rigidly joined with cooperating inner peripheral portions of said hoop at points diametrically opposite each other and spaced



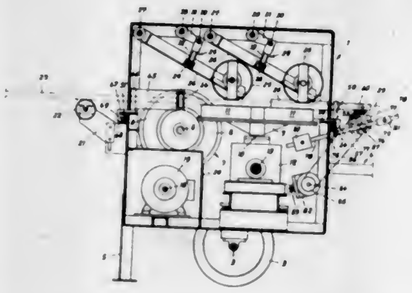
circumferentially equidistant from the places of attachment of the end portions of said brace to said hoop, and a companion trundling implement complemental to said hoop and comprising an elongated handle provided at a leading end with hoop guiding and controlling pusher head generally flat-faced and having a smooth arcuately shaped leading edge functionally designed and structurally adapted to engage and otherwise cooperate with (1) said hoop, (2) said brace and (3) said ring-like members, said head being of a length greater than the width of said hoop, and the end portions of said head being proportional with the inside diametral measurements of said ring-like members.

3,222,819
CONTAINERS FOR PLANTS
David Marcan, Burrough's Grove, Pump Lane, Little Marlow, England
Filed Oct. 22, 1963, Ser. No. 317,969
Claims priority, application Great Britain, Apr. 30, 1963, 7,213/63; July 15, 1963, 27,993/63
6 Claims. (Cl. 47—38.1)



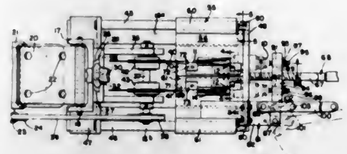
1. A plant container without any drainage hole comprising a pillar member, a lower section carried by said pillar member for containing liquids, an intermediate section mounted on said lower section for containing soil, wick means extending between said intermediate and lower sections for feeding liquid from said lower section to said soil in said intermediate section, an upper section mounted on said intermediate section, said upper section having a given plurality of spaced recesses therein, said recesses in combination with said intermediate section defining said given plurality of separate chambers for respectively containing plants therein, said pillar member extending upwardly from said lower section through said intermediate and upper sections, means communicating with said pillar member for permitting the introducing of said liquid into said lower section through said pillar, and water level indicating means extending upwardly within the confines of said pillar member from said lower section.

3,222,820
CLEANING MACHINE FOR BOARDING PLANKS OR THE LIKE
René Burri, Brugg, Switzerland, assignor to Baumberger & Co. A.G., Brugg, Switzerland
Filed Oct. 16, 1963, Ser. No. 316,597
Claims priority, application Switzerland, Oct. 19, 1962, 12,258/62
8 Claims. (Cl. 51—4)



1. In a machine for reconditioning or cleaning lumber, particularly boards previously used in concrete forms, a frame, a first grinding disc, means supporting said first grinding disc in said frame for rotation on a vertical axis, a second grinding disc, means supporting said second grinding disc in said frame for rotation on an horizontal axis in such relationship with said first grinding disc that a board moving with an horizontal side surface thereof in engagement with the upper end surface of said first grinding disc is simultaneously engageable by a vertical end surface of said second grinding disc on a vertical side surface of the board, first adjustable presser means mounted in said frame for engagement with the board to urge the board towards said first grinding disc, and second presser means mounted in said frame for engagement with the board, said second presser means including a threaded spindle, means rotatably and non-displaceably supporting said spindle in said frame in an horizontal position, manually operable means secured to one end of said spindle for rotating the same, means threadedly engaging said spindle, means supporting said spindle engaging means for guiding the latter longitudinally of the spindle, and a resilient arm having one end secured to said spindle engaging means and the free end in a position to be moved toward and away from the board by rotation of said spindle, whereby said second presser means is operable to resiliently urge the board towards said second grinding disc.

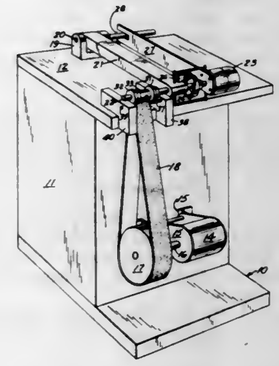
3,222,821
COTTON PICKER SPINDLE SHARPENING DEVICE
Arthur L. Hubbard, Des Moines, Iowa, assignor to Deere & Company, Moline, Ill., a corporation of Delaware
Filed Nov. 3, 1961, Ser. No. 150,018
5 Claims. (Cl. 51—92)



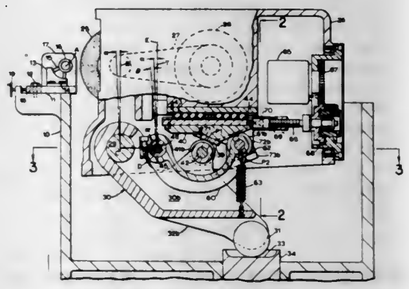
1. A tool for sharpening cotton picker spindles, the spindles being of the type having a driven end and a picking end, the latter having a cone-shaped surface, an axially extending flat face recessed from the surface, and a plurality of axially spaced teeth having front faces lying in a common plane and extending inwardly from the cone-shaped surface to the flat face and defining with the cone-shaped surface a series of alined picking points, the tool comprising: a frame; a grinding wheel rotatably supported on the frame; a pair of guides on the frame transversely disposed in respect to the axis of the grinding wheel and lying in a plane parallel to the axis; a carriage supported on the guides for movement toward or away from the grinding wheel; a jig secured to the carriage including a member having a cone-shaped cavity for accommodating the cone end of a spindle and a radial slot in the member for exposing teeth on a spindle, the axis of the cavity being substantially at right angle to the axis of the grinding wheel and so disposed that the flat face of a spindle will lie in a plane substantially tangential to the grinding wheel, said jig further having a lever with an abutment thereon for contacting the driven end of a spindle and effective to hold the spindle in the jig; and means moving the carriage on the guides whereby the grinding wheel may contact a spindle in the jig to effect grinding of the front faces on the teeth.

3,222,822
CAM FINISHING APPARATUS
Irving G. Winer, 3241 Kentucky Ave. S., St. Louis Park, Minn.
Filed Nov. 21, 1963, Ser. No. 325,284
8 Claims. (Cl. 51—144)

1. Apparatus for finely finishing the surfaces of edge cams which comprises
a stationary portion and
a relatively movable portion;
said stationary portion comprising
support means for firmly and rigidly securing a master cam follower pin and an axially aligned abrasive web support pin,
drive means for causing rapid movement of an endless web of abrasive material over said abrasive web support pin, and
mounting means for pivotally supporting one end of a rocker arm;
said relatively movable portion comprising
a rocker arm pivotally supported in said stationary mounting means for limited movement,
a spindle journalled for rotation in said arm on an axis spaced generally horizontally from and parallel to the pivotal axis, and parallel to and spaced from and overlying the axis of the stationary pins,
drive means for rotating said spindle relative to said arm, and
means adapted to secure a master cam and at least one cam to be finished to said spindle for rotation therewith, said securing means adapted to secure said master cam to said spindle overlying said cam follower pin and said cam to be finished overlying said abrasive web support pin;
said relatively movable portions adapted to rotate said cams in edge contact with said stationary pins under force of gravity imposed by said movable portion, whereby the contours of said master cam are precisely reproduced in said cam to be finished.



3,222,823
GRINDING MACHINE TRUING COMPENSATION MECHANISM
William B. Seidel, Cincinnati, Ohio, assignor to The Cincinnati Milling Machine Co., Cincinnati, Ohio, a corporation of Ohio
Filed Apr. 2, 1963, Ser. No. 269,998
6 Claims. (Cl. 51—165)

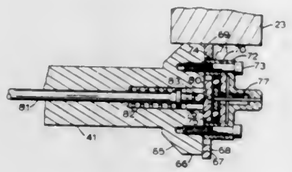


1. In a grinding machine,
(a) a fixed base member,
(b) a workpiece support member, a grinding wheel support member, and a truing tool support member, one of said support members fixed relative to the base member for truing compensation and the other two support members movable relative to said one support member and the base member for truing compensation,

(c) a truing compensation actuator mounted on one of said members for linear movement relative thereto along a path and in camming relationship with two other of said members to relate relative movement between three of said members for truing compensation, one of said three members fixed and the other two movable relative thereto in response to incremental linear movement of the compensation actuator along said path, said camming relationship effected through two straight cam surfaces inclined with respect to said path to produce predetermined relative movement between the grinding wheel support member and the workpiece support member and between the truing tool support member and the grinding wheeel support member,

(d) and means to produce an incremental linear movement of said compensation actuator along said path for each truing operation on the grinding wheel.

3,222,824
MACHINE TOOL POSITIONING MECHANISM
William B. Seidel, Cincinnati, Ohio, assignor to The Cincinnati Milling Machine Co., Cincinnati, Ohio, a corporation of Ohio
Filed Oct. 30, 1963, Ser. No. 320,194
7 Claims. (Cl. 51—165)



1. A mechanism for positioning a movable machine tool element comprising,

(a) a locating member rotatable about an axis and having a peripheral surface of varying distance from said axis adapted for engagement with the machine tool element,

(b) a reference member adjacent said locating member and having a peripheral surface normally extending a predetermined distance from said axis and beyond the peripheral surface of the locating member when the reference member and the locating member are not engaged with said machine tool element, said reference member displaced laterally with respect to said axis when both the locating member and the reference member are engaged with the machine tool element,

(c) and means to indicate the extent of lateral displacement of the reference member relative to said axis.

3,222,825
MACHINE TOOL WITH WORKPIECE TRANSPORTING HEADSTOCK
William B. Seidel, Cincinnati, Ohio, assignor to The Cincinnati Milling Machine Co., Cincinnati, Ohio, a corporation of Ohio
Filed Sept. 26, 1963, Ser. No. 311,871
13 Claims. (Cl. 51—215)

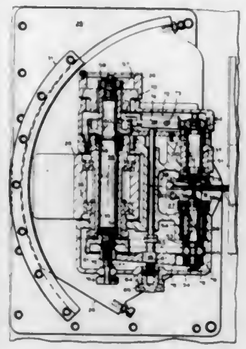
1. In a machine tool, the combination comprising

(a) a forming tool operable to effect a forming operation on workpieces,

(b) a magazine to hold unoperated workpieces,

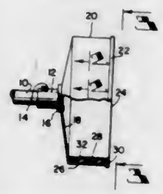
(c) a pivotal headstock having a rotatable driver selectively operable to grip and release a workpiece,

(d) means to swing the headstock from the magazine to an operating position at the forming tool and from the operating position to the magazine to carry a workpiece to and from the operating position,



(e) and means to render said driver effective to grip a workpiece when the headstock is at the magazine and to release a workpiece as the headstock returns from the operating position to the magazine.

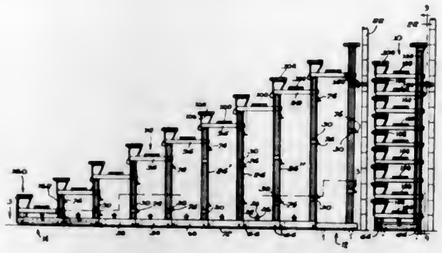
3,222,826
ABRADING MACHINE TOOL
Charles L. Kastl, 5248 E. Virginia, Phoenix, Ariz.
Filed Aug. 16, 1963, Ser. No. 302,601
5 Claims. (Cl. 51—358)



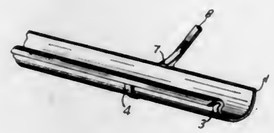
1. In an abrading machine tool the combination of: a drum; a shaft rotatably supporting said drum; an annular wall of said drum extending longitudinally and parallel with the axis of said shaft; said shaft connected to one end of said drum; an opposite end of said drum being open; a soft resilient liner carried on the interior of said annular wall; and abrasive material carried on an interior portion of said resilient liner; said resilient liner and said abrasive material readily romovably supported frictionally and centrifugally in said drum; said liner having opposite ends abutted with each other.

3,222,827
GRANDSTAND CONSTRUCTION
Paul A. Smith, Gibsonia, Pa., assignor to Playtime Equipment Corporation, Mars, Pa., a corporation of Pennsylvania
Filed Jan. 23, 1962, Ser. No. 168,113
3 Claims. (Cl. 52—9)

1. In a movable grandstand, a forward section having a horizontal seating surface, roller means providing vertical support for said section and disposed in rolling support with a floor, lever means carrying said roller means and pivotally secured to said section for lowering said roller means into rolling support with said floor and for raising said roller means whereby the weight of said section is transferred from said roller means to said floor, spring means compressible between an extension of said lever means and a portion of said section for pivotally moving said roller means into rolling engagement with said floor, actuator means depending from a forward edge portion of said seating surface and pivotally secured to said forward section, cam means carried by said actuator means, and arm means pivotally secured intermediate of its ends to said section and having a cam follower at one end thereof engageable with said cam means and at the other end engageable with the extension of said lever means to compress said spring means whereby said roller means are raised to transfer the weight of said section from said roller means to said floor.

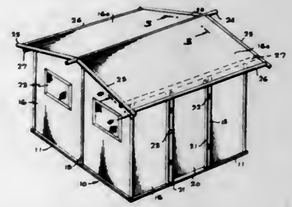


3,222,828
ROOF GUTTER
Knud Kvan, Knarreborgvej 11, Copenhagen Kastrup, Denmark
Filed Apr. 16, 1963, Ser. No. 273,496
1 Claim. (Cl. 52—11)



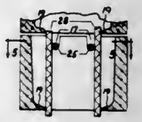
A gutter comprising an elongated gutter member of substantially semi-circular cross-section with upper edges, said gutter member being constituted of plastic material and being relatively flexible, and a supporting member for said gutter member, said supporting member being a rigid metal member including a portion of bow shape in which the gutter member is supported such that the outer surface of the gutter member is in contact with the inner surface of the supporting member, said supporting member including a straight portion located adjacent one of the edges of the gutter member and enabling the connection of the gutter to a support, said supporting member further including a bead extending inwardly over the said one edge of the gutter member, said supporting member having an upper terminal horizontal edge disposed at a diametrically opposed location from said straight portion, said gutter member at the other of the edges thereof including a horizontal flat flange extending outwardly over the said upper terminal edge of the supporting member in face to face relation to entirely cover the same, said gutter member having an inward recess at the outer surface thereof below the said flat flange, said recess being bounded on one side by said flat flange, said supporting member including an inwardly extending projection at the inner surface thereof disposed at the said upper terminal edge, said inwardly extending projection having an upper horizontal surface which is a continuation of the said upper terminal edge, said projection and recess having conforming shapes with the projection being accommodated snugly in the recess and defining a tortuous path for entry of a fluid between the gutter member and the supporting member, said gutter member being sufficiently flexible for providing elastic snap-engagement of the projection into the recess when said one edge of the gutter member is positioned beneath said bead and the gutter member is pressed into the support member.

3,222,829
KNOCKDOWN SHELTER
Lucy M. Bening, 1813 Scott Road, Burbank, Calif.
Filed June 18, 1962, Ser. No. 203,315
1 Claim. (Cl. 52—92)



A knock-down portable shelter comprising side posts and medial positioned end posts, said side posts having longitudinally extending anchoring slots therein, panels having their side edges slidably received in said slots and means anchoring said panels against lateral movement relative thereto, said anchoring means comprising beads on said panel edges, said medial positioned end posts having removable interlocking engagement with a rigid medial roof supporting member, rafter elements extending laterally from said roof supporting member, a rigid member detachably secured to the upper ends of said side posts underlying and supporting the lower end portions of said rafters, and said roof comprising panels having sliding interlocking engagement with said rafters and said rigid medial roof supporting member whereby said shelter may be readily disassembled into a compact form for transporting from place to place.

3,222,830
WALL CONSTRUCTION AND MODULE
George R. Ivany, 23360 Belmont Drive, Westlake, Ohio
Filed Mar. 4, 1963, Ser. No. 262,615
10 Claims. (Cl. 52—98)



1. In a wall construction, primary molded modules of the hollow building block type laid up with mortared joints in courses,

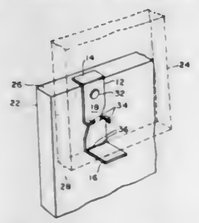
said primary modules being substantially symmetrical about longitudinal and about transverse vertical centerplanes,

each said module having transverse vertical webs joining side walls and spaced from each other to define an integral void between successive webs and spaced from respective module ends to define voids jointly with abutting modules,

the centerplanes of successive said webs in a module having the spacing therebetween equal to twice the sum of one half the vertical joint thickness plus the spacing from the end of the module to the centerplane of the nearest web,

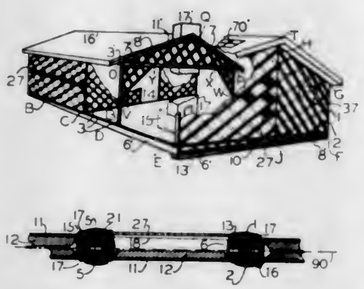
the voids formed integrally and jointly in each course being vertically aligned into stacks with voids of the other courses,
each web having at its top a set of similar reinforcing bar receiving notches,
spaced from adjacent interior side wall faces with corresponding notches of respective webs of a module in alignment,
and each adapted to seat at least one horizontal reinforcing rod below the top surface of a module,
a horizontal reinforcing bar seated in aligned notches of a plurality of modules in at least one course,
opposed lips projecting inwardly from the inner faces of opposite sides of and at locations spaced downwardly from the top of said module,
and said lips having generally longitudinal edge portions outwardly offset from the vertical projections of respective adjacent notches,
vertical reinforcing rods in at least one said stack of aligned voids, each said vertical rod extending through a plurality of courses and positioned between a horizontal reinforcing rod and said lips on an adjacent side of the modules,
whereby the vertical rods are spaced from adjacent side walls of the modules,
and poured concrete filling each reinforced stack and embedding said reinforcing rods.

3,222,831
ANCHORING CLIP FOR OVERLAPPING WALL PANELING OR SIDING
John S. Pritchard, Portland, Oreg., assignor to Evans Products Company, Portland, Oreg., a corporation of Delaware
Filed July 10, 1963, Ser. No. 294,021
5 Claims. (Cl. 52—99)



2. A blind-type clip for anchoring in place overlapping panel members and the like including an underlayment and an overlayment, said clip comprising
a thin, stiff, elongate plate including a main body portion,
said main body portion including a nail hole therethrough for fastening said plate to said underlayment,
spacer means for providing said overlayment and said underlayment with a constant predetermined overlap, said spacer means including a pair of flanges bent in opposite directions from opposite ends of said main body portion and at right angles thereto,
said flanges including a first flange for engaging the top edge of an underlayment and a second flange of greater length than said first flange for engaging the bottom edge of an overlayment,
said second flange being frangible such that it can readily be removed from the remainder of said clip following the installation of said overlayment,
blind fastening means including a pair of integral sharp-pointed prongs struck from the opposite side edges of said main body portion intermediate said flanges and projecting in the same general direction as but a lesser distance than said second flange for penetrating the underside of said overlayment,
the broad surfaces of each of said prongs being disposed generally transversely of said main body portion,
said prongs being divergent with respect to one another in a direction toward their extremities and toward the longitudinally opposite ends of said plate member.

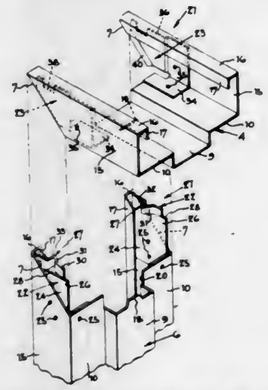
3,222,832
CROSSED LATTICE WALL STRUCTURE
Peter Presunka, 14 Claver St., Ottawa, Ontario, Canada
Filed Nov. 26, 1962, Ser. No. 241,104
2 Claims. (Cl. 52—207)



1. A crossed lattice wall structure comprising:
(a) two oppositely facing building structures secured together in back-to-back relationship,
(b) each of said building structures comprising a spaced parallel array of longitudinal building components,
(c) each of said building components having a plane inner face and an outer surface said outer surface including two parallel recesses,
(d) each of said recesses having a flat ledge which is parallel to and spaced from said plane inner face,
(e) said building structures having said plane inner face lying in one common plane and said outer surface facing away from said common plane,
(f) said spaced parallel array defining parallel spaces between the recesses of said adjacent longitudinal building components,
(g) in said cross lattice wall structure each of said longitudinal building components of one of said back-to-back building structures contacting in intersecting relationship a plurality of building components of another one of said back-to-back building structures,
(h) said components of both said building structures being inclined at an acute angle from the vertical, and
(i) securing means securing together said building components at their points of intersection,
(j) covering panels, each being independently placed in said spaces and having edges of said panels covering and securing to said ledges of said recesses of adjoining components in said array.

3,222,833
MOUNTING MECHANISM FOR SECTIONAL METAL DOOR FRAMES
Harold L. Woodrum, Cincinnati, Ohio, assignor to The Steelcraft Manufacturing Company, Rossmoyne, Ohio, a corporation of Ohio
Filed Aug. 8, 1963, Ser. No. 300,732
3 Claims. (Cl. 52—211)

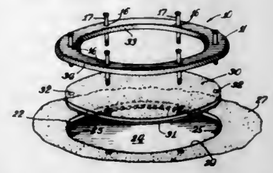
1. A sectional metal door frame adapted to be mounted in the door or window opening of a wall comprising:
a header adapted to be mounted in a horizontal position across the top of said opening, said header being generally channel-shaped in cross section providing a web and a pair of limbs adapted to embrace the wall surface on opposite sides of the opening;
a pair of jambs adapted to be mounted in vertical position along opposite sides of said door opening, said jambs being generally channel-shaped in cross section providing a web and a pair of limbs adapted to embrace the opposite sides of the wall adjacent the opening;
the adjoining ends of the limbs of said header and jambs being mitered to interfit one another upon installation in the door opening;
a tongue projecting upwardly from the web of each of said jambs at the mitered end thereof;
respective apertures formed in the opposite end portions of the web of said header adjacent the mitered ends thereof, said apertures adapted to receive said tongues to provide a pivotal connection between the header and jambs, adapting each jamb to be



installed in a canted position with the tongue thereof inserted in said aperture;
said pivotal connection being located relative to said mitered ends of the jambs and header to bring said mitered ends into mating relationship with one another upon pivotal motion of the jambs about said tongue to a vertical position;
respective pairs of latching elements mounted in the limbs of said jams adjacent the mitered ends thereof, each of said latching elements including a latching detent, said latching detents projecting inwardly toward one another;
and respective pairs of keeper elements mounted on the limbs of said header on opposite sides and adjacent the mitered end portions thereof;
said keeper elements each including a yieldable arm projecting outwardly toward the mitered end of the header;
each yieldable arm of the keeper element including an open slot adapted to receive the latching detent of the latching element.

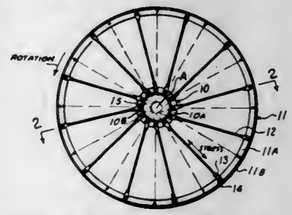
3,222,834
CARPET RETAINING MEANS
William G. Taft, 154 Nanti St., Park Forest, Ill.
Filed Apr. 23, 1963, Ser. No. 275,036
8 Claims. (Cl. 52—221)

2. The combination of a service duct having an access opening, a floor overlying the duct and having an opening therein above the duct access opening, an access cover plate disposed in the floor opening, a main body of carpet having an opening therein corresponding generally to the floor opening, and a severed portion of carpet disposed in the carpet opening, a carpet retaining member comprising an annular ring overlying the adjacent edges of the main body of carpet and the severed portion of carpet, apertures formed in said ring through which



screws are disposed and threaded into the duct whereby the main body of carpet and the severed portion of carpet are clamped and retained in position at the duct access opening, and said screws and ring being removable so that the severed portion of carpet and access cover may be withdrawn to permit access to the service duct thereunder.

3,222,835
PRESTRESSED CONCRETE
Gerald C. Francis, P.O. Box 512, Lansing, Mich.
Filed May 29, 1961, Ser. No. 113,457
4 Claims. (Cl. 52—223)



1. A method of prestressing a concrete slab, comprising: locating an inner tension member and a peripheral compression member on a common central axis with the compression member radially outwardly spaced from the tension member, connecting said members with a plurality of cables extending in annularly spaced radial lines, immobilizing one of said members, rotating the other of said members about said common center whereby to impart tension loading to said cables, immobilizing said rotated member, pouring a slab of concrete between said members and around said cables, allowing the concrete to set and then releasing said members whereby cable stresses are imparted to said concrete.

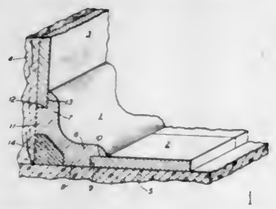
3,222,836
STRUCTURAL ELEMENT FOR CORNER CONSTRUCTION
Paul N. Collin, Golf, and Paul W. Collin, Park Ridge, Ill., assignors to Allmetal Weatherstrip Company, Evanston, Ill., a corporation of Illinois
Filed Feb. 6, 1963, Ser. No. 256,664
8 Claims. (Cl. 52—281)



5. In a main wall and associated partitioning wall assembly which defines a corner between the partitioning wall and the main wall from which the partitioning wall extends substantially perpendicularly, said main wall including a top plate, a lower sill, stud members interconnecting the sill and plate and wall panels extending

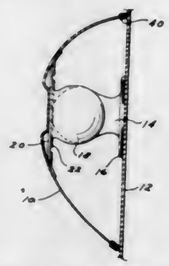
across the space between the sill and plate, and said partioning wall including a partitioning sill and a partioning plate with wall panels extending therebetween, the improvement comprising a unitary sheet metal member having a base portion attached at its top end to the top plate of said main wall and at its lower end to the lower sill of said main wall, said base portion being dimensioned to have a length greater than the distance between the bottom of the top plate and the top of the sill but less than the distance between the top of the top plate and the bottom of the sill, a bent flange portion extending forwardly substantially perpendicularly from the upper end of the base portion and overlying said partitioning plate, a pair of outwardly facing sections formed from continuations of the lateral edge portions of the base portion, said sections comprising inner walls in substantially overlying parallel relation to the base portion and joined thereto at their forward edges, a back wall integral with the inner edge of each inner wall and extending substantially forwardly therefrom for a distance corresponding to the thickness of said wall panels, and a portion extending forwardly from the back wall having an edge portion turned backwardly as a spring lip to form a tongue and lip, and a partitioning stud member, a pair of longitudinally aligned grooves defined by said partitioning stud member, said grooves being spaced apart a distance corresponding to the spacing between said tongue and lip portions, said tongue and lip portions being received in attaching relation within said aligned grooves in said partitioning stud member, said grooves being dimensioned to have a length corresponding to the length of the tongue and lip portions and a width less than the normal over-all width of the tongue and lip portions, said normal width corresponding to the width prior to insertion of said tongue and lip portions within said grooves.

3,222,837
BATHROOM AND KITCHEN MOLDING
Eugene J. Daley, 956 Athens St., San Francisco, Calif.
Filed Nov. 6, 1961, Ser. No. 150,278
3 Claims. (Cl. 52—288)



1. In combination with a pair of walls adjoining each other at a right angle to provide a right angle corner:
(a) an elongated rigid molding strip of imperforate ceramic material extending longitudinally of said corner having parallel longitudinally extending free edges and a generally right angle cross sectional contour providing a pair of legs extending at a right angle to each other, having a reentrant surface within the 90° angle thereof;
(b) said reentrant surface being of generally double-ogee contour transversely of said strip providing convexly curved surfaces extending generally toward each other from the free edges of said strip and an intermediate concavely curved surface in continuation of said convex surfaces;
(c) the said legs of said strip being relatively thick along said free edges and being formed with a rabbet along each free edge on the side of each leg that is opposite to each of said convex surfaces;
(d) each rabbet being of a depth in a direction transversely of each leg approximately equal to the thickness of the marginal portion of a conventional flat bathroom wall tile;
(e) conventional flat bathroom wall tiles respectively secured to said walls adjacent to said corner formed thereby providing wall covering with a marginal portion of each tile within one of the rabbets formed on said molding strip and with the surface defining one side of each rabbet substantially against and in lapping opposed relation to the surface of the marginal portion of the tile that is opposed thereto and that faces outwardly of the wall against which the tile is secured and a waterproof sealant between the opposed lapping surfaces of said tile and said one side of said rabbet securing said tile in each rabbet and sealing said tile and strip against leakage past said rabbets.

3,222,838
PLASTIC EDGING FOR TRIM STRIP
Theodore J. Sweeney, Grosse Pointe, Mich., assignor to Chicago United Products Company, Inc., Detroit, Mich., a corporation of Michigan
Filed Oct. 25, 1962, Ser. No. 233,047
1 Claim. (Cl. 52—403)



In an automobile body a metal trim piece overlying a finished surface of a portion of the body wall and resiliently tensioned thereagainst, said trim piece being of elongated channel shape opening toward the body wall and having longitudinally extending cut abrasive edges opposed to the finished surface of the wall, spring means secured to the inside of the channel-shaped trim piece spaced from said edges and secured to the body wall tensioning the trim piece against the finished surface while allowing limited relative shifting between the trim piece and wall, a weather-resistant, non-abrasive, non-metallic, smooth channel-shaped edge sealer received over and secured to each of said cut longitudinal edges of the trim piece and disposed between the same and the finished surface of the wall holding the edges spaced from the finished surface to insulate them from the finished surface and prevent abrading thereof while allowing relative movement between the edges and such surface, and each edge sealer extending along the inside and outside of the marginal edge only of the trim piece and relatively inconspicuous at the meeting line of the trim piece and finished surface of the automobile body wall.

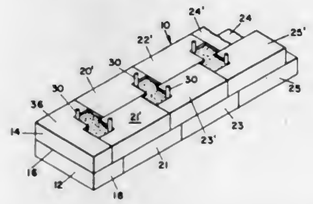
3,222,839
SUPPORTING PANELS IN FRAMES
Arthur Alfred Philpot, 37 Northumberland St., Tusmore, South Australia, Australia
Filed Jan. 13, 1961, Ser. No. 82,468
Claims priority, application Australia, Jan. 18, 1960, 56,568/60
9 Claims. (Cl. 52—498)

5. A panel-supporting frame comprising a frame member of constant cross-sectional shape, a cyclic portion extending along one of said members, a narrow mouthed channel extending along the other said member, said cyclic portion being rotatably retained within said narrow mouthed channel by the walls thereof, a panel supporting flange integral with said cyclic portion and extending outwardly through the mouth of said channel, a panel supporting portion integral with said channel walls,



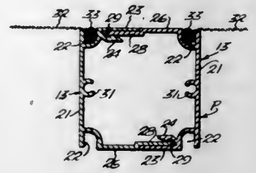
said panel supporting portion and panel supporting flange being positionable in an adjacent but spaced relationship defining a panel supporting recess but said panel supporting flange being movable in said mouth to a panel release position upon rotation of said cyclic portion within said channel, and releasable locking means between said members operable to retain said members in the said adjacent but spaced relationship.

3,222,840
WALL STRUCTURE AND BUILDING BLOCK THEREFOR
Morton M. Rosenfeld, Mount Vernon, N.Y. (271 Madison Ave., New York, N.Y.)
Filed Mar. 9, 1962, Ser. No. 178,714
4 Claims. (Cl. 52—561)



1. A solid masonry wall structure comprising a plurality of alternate first and second courses of blocks superimposed over each other with a desired overlap, each course having two rows of blocks abutting at a medium plane of said wall with each row being completely on one side of said plane, a rectangular starter block for each of said first courses, said rectangular block having a length equal to the width of said wall, an L-shaped starter block for each of said second courses, both said starter blocks being of equal length with said L-shaped block having a width greater than said rectangular block by an amount equal to said overlap, said L-shaped block providing an open indented corner having dimensions of one half said length and double said overlap, said starter blocks being set with said length transversely across said plane, each of said blocks of said rows being of substantially solid rectangular shape of a width equal to one half said length of said starter blocks, said rectangular shape having a notch at one corner of dimensions equal to one half said width of said shape, said overlap being less than said notch dimensions, said blocks of rectangular form being set in said rows with each notch thereof juxtaposed to said medium plane at the interior of said wall, and pairs of spaced upright reinforcement rods, each pair having a rod at each side of said medium plane and at each side of a plane tangent to each rod of said pair and perpendicular to said medium plane, each of said rods being in a notch and abutting against an adjacent block of said first courses and each of said rods being in a corner of a notch in said second courses.

3,222,841
SCREEN ENCLOSURE
Robert Lipof, Miami, Fla., assignor to Aire-Lite Industries, Inc., Hialeah, Fla., a corporation of Florida
Filed Oct. 8, 1962, Ser. No. 228,914
4 Claims. (Cl. 52—731)



1. A self mating extruded structural member for screen enclosures comprising a substantially elongated body portion, spline receiving slots formed along each edge of said elongated body portion adapted for holding screen edges therein, a first flange member at the side of one of said spline receiving slots extending at substantially right angle to said body portion, said first flange member being in alignment with one edge of said body portion, interlocking means formed on the inner surface of said first flange member, said interlocking means consisting of an interlocking member extending in spaced relation to said first flange member, shoulder means formed on said interlocking member and facing said first flange member, a second flange member at the corresponding side of the other spline receiving slot extending at substantially right angle from said body portion in the same direction as said first flange member, said second flange member having a portion in alignment with said edge of said body member, said aligned portion being substantially the same width as said first flange and a further extended portion stepped inwardly a distance equal to the thickness of said first flange member and second interlocking means mounted on the free end of said inwardly stepped portion of said second flange member said second interlocking means having a shoulder adapted to be received by said first named interlocking means of a second identical self mating extruded structural member for interengagement of said shoulders and similarly locking said mating members together at both sides thereof.

3,222,842
METHOD FOR INSTALLING CEMENTED ANCHORS
Vernon W. Luedloff, Torrance, and Albert F. Joneikis, Long Beach, Calif., assignors to Harvey Aluminum (Incorporated), Torrance, Calif., a corporation of California
Filed Jan. 15, 1963, Ser. No. 251,576
3 Claims. (Cl. 52—742)



1. Method for establishing a subterranean anchor and ground level tie-down comprising the steps of
driving an elongated metallic tubular stake below ground level, the tubular stake including a ground-piercing head at one end and a driving head at the

opposite end with an explosive charge and detonating means located intermediate the ends of the tubular stake and confined in close proximity to the piercing head within a portion of the tubular stake which has been weakened with a pluraltiy of longitudinally extending wall surface demarcations, the piercing head and weakened portion of the tubular stake being driven a substantial distance below ground level, then

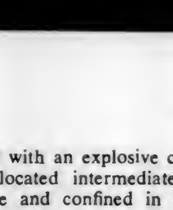
detonating the explosive charge located within the driven tubular stake to expand the weakened portion of the tubular stake so that the plurality of stake wall sections between wall surface demarcations extend radially from the tubular stake in angled relationship to the longitudinal axis of the tubular stake into a hollow subsurface chamber formed by the explosion, the piercing head being separated from the tubular stake opening a passageway at that end of the tubular stake,

moving the radially extended sections of the tubular stake downwardly into the hollow subsurface chamber formed by the explosion,

delivering a semi-fluid, settable material through the tubular body into the hollow subsurface chamber in surrounding and covering relationship to the radially extended sections of the tubular stake, and

securing tie-down means to the tubular stake contiguous with ground level.

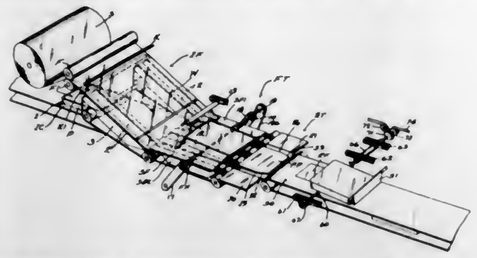
3,222,843
FOAM PACKAGING METHOD AND CONSTRUCTION
Marvin Schneider, Wyncote, Pa., assignor, by mesne assignments, to Pyles Industries, Inc., Southfield, Mich., a corporation of Michigan
Filed Nov. 20, 1961, Ser. No. 153,406
20 Claims. (Cl. 53—27)



1. The protective packaging method which comprises at least partially surrounding an object with at least one flexible bag having connected side walls defining an enclosure, one of said side walls being directed against said object and another of said side walls being directed away from said object, inserting a foaming settable plastic material into said enclosure of said bag, and causing said plastic material in said bag to set in foamed condition while said bag is engaged with said object, said bag and the foamed set plastic therein taking on the configuration of that portion of said object against which it engages.

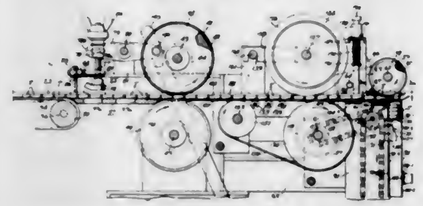
3,222,844
METHOD AND MACHINE FOR WRAPPING CONTINUOUSLY MOVING PRODUCTS WITH A FLEXIBLE OVERWRAP
Donald Paul Smith, Robert A. Zuercher, and William R. Luck, Jr., Dallas, Waldo E. Hultsman, Irving, and Larry D. Cook, Dallas, Tex., assignors to Applied Developments Incorporated of Texas, Dallas, Tex., a corporation of Texas
Filed Apr. 4, 1962, Ser. No. 185,156
34 Claims. (Cl. 53—32)

26. The method of wrapping a continuously moving product with a flexible wrapper which comprises, placing said wrapper over said moving product with the flaps of the wrapper extending beyond the front, rear, and opposite sides of the product, causing said flaps to move downwardly over the product, tucking the front flap under the product



to thereby form a longitudinally folded trailing flap of a width not greater than the bottom of the product, and then tucking said trailing flap underneath said moving product by advancing said trailing flap at a faster rate than that with which said product moves.

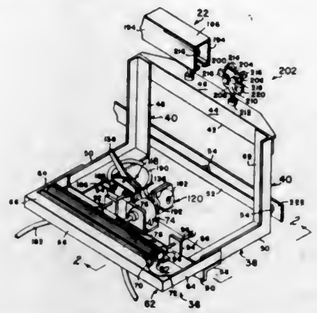
3,222,845
APPARATUS FOR STACKING TILES IN MAGAZINES
Malcolm A. Schweiker, Worcester, Pa., assignor to American Olean Tile Company, Inc., Lansdale, Pa., a corporation of New York
Filed Dec. 20, 1962, Ser. No. 246,082
17 Claims. (Cl. 53—245)



1. Apparatus for feeding and stacking tiles and the like articles, comprising in combination, means for supplying a line of tiles end-to-end to a first feed point, a first tile feed means at said first feed point for positively and continuously feeding forward tiles arriving thereat to a second feed point, a second tile feed means at said second feed point for positively and continuously feeding out tiles arriving thereat to a stack, stack holding means for receiving tiles fed out by said second tile feed means, said second tile feed means moving tiles at a faster rate than the line of tiles arriving thereat is moving whereby to move tiles out one-by-one to the stack holding means, means for moving said stack holding means down as tiles are fed thereto, means upstream of said first feed means for halting the movement of the line of tiles to said first feed point, and means responsive to said stack holding means for operating said tile line halting means to halt the movement of tiles to said first feed point when said stack holding means reaches a predetermined lowered position.

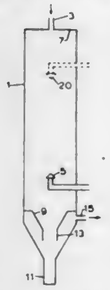
3,222,846
BAG FILLING APPARATUS WITH CLAMPING RACK
Sidney Lipschutz, Philadelphia, Pa., assignor to Chemical Sales, Inc., Philadelphia, Pa., a corporation of Pennsylvania
Filed Feb. 19, 1962, Ser. No. 173,962
9 Claims. (Cl. 53—266)

1. An apparatus for filling a flexible bag with corrosive liquid comprising an endless conveyor, a plurality of bag supporting racks on said conveyor, each of said racks including a T-coupler for receiving air thereto, and a plurality of lengths of hose connecting the T-coupler of each rack with the T-coupler of an adjacent rack whereby air



may be supplied to each of said racks through a series connection, each of said racks having a clamping bar which is air actuated, a filling device for filling said bags with a corrosive liquid, and a heat sealing assembly.

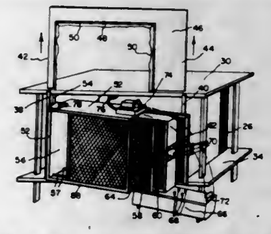
3,222,847
PROCESS OF SPRAYING AND COOLING A GAS
Robert N. Secord, Wenham, and Charles B. Wendell, Canton, Mass., assignors to Cabot Corporation, Boston, Mass., a corporation of Delaware
Filed Sept. 5, 1963, Ser. No. 306,856
3 Claims. (Cl. 55—71)



1. In the process of simultaneously cooling and removing entrained solids from a stream comprising a hot gaseous medium which process comprises contacting said gaseous medium with a volatile liquid spray in a cooling zone to agglomerate said solids while cooling said gaseous medium and evaporate said liquid the improvement which comprises introducing a spray of said liquid into the lower portion of said zone, said spray being directed upwardly into the upper portion of said zone and countercurrently to said stream thereby providing a relatively large contact time between said liquid and said medium.

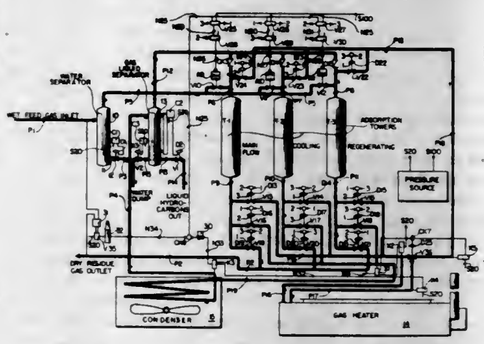
3,222,848
ELECTROSTATIC AIR CLEANER
Robert L. Koble, Jr., Phoenix, Ariz., assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware
Filed Apr. 16, 1962, Ser. No. 187,660
4 Claims. (Cl. 55—131)

1. In an electrostatic air cleaner the combination of: a cabinet having an open side portion forming a fluid inlet for said cabinet; a grid frame mounted in said open side portion; an electrostatic grid having an outlet side and an opposite inlet side, said inlet side disposed toward said fluid inlet, said grid removably mounted in said frame and normally extending over a substantial area of said open side portion of said cabinet; first means in said cabinet for forcing air through said grid; and second means pivotally mounting one end of said grid frame on said cabinet and on a substantially vertical axis whereby the opposite end of said grid frame may be swung clear of said open side portion of said cabinet; and third means permitting removal of said grid from said opposite end of said grid frame when said grid frame at said opposite end is swung clear of said open side portion of said cabinet; a lint screen removably mounted in said grid frame at the inlet side of said grid and removable from said grid frame at said opposite end thereof when it is swung clear



of the open side portion of said cabinet; a fluid outlet for said cabinet situated so that said grid is between the inlet and the outlet; a bottom structure of said cabinet below said grid frame; fourth means slidably supporting said grid frame thereabove near said opposite end to permit pivotal movement of said opposite end relative thereto about said substantially vertical axis; stop means connected to said grid frame to limit outward pivotal movement of said opposite end of said grid frame relative to said cabinet; said second means comprising bearings separable laterally of said substantially vertical axis to permit removal of said grid frame from said cabinet; and seventh means connected to said grid frame and movable in an arcuate path relative to said cabinet and disposed to oppose separation of said bearings; portions of said separable bearings being connected to said cabinet and to said grid frame.

3,222,849
SHORT CYCLE REGENERATION
Alfred O. Fischer, Shreveport, La., assignor to American Machine & Foundry Co., a corporation of New Jersey
Filed Mar. 29, 1963, Ser. No. 269,070
18 Claims. (Cl. 55—163)

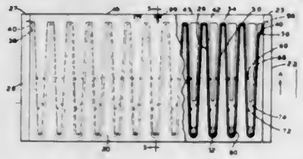


1. a cyclic adsorption system for removing liquid components from a gas stream, comprising the combination of,

(a) plural gas adsorption towers,

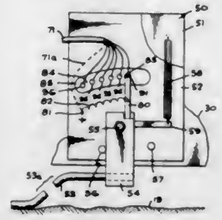
(b) gas stream splitting and throttling means for dividing the gas into a throttle-controlled main-flow stream and a split regenerating stream,
(c) gas heater, condenser and separator means,
(d) sequential valve means for routing the main-flow through at least one tower performing an adsorption function, and for passing the split-stream through a tower being cooled, through the heater means and into a tower being regenerated, and then through the condenser and separator means,
(e) intermittent means for controlling the sequence of the valve means to cycle the towers,
(f) temperature measuring means connected to measure the exit temperatures of the towers being cooled and being regenerated, and connected to actuate said intermittent means when both temperatures have reached preset values, and
(g) other temperature responsive means connected to the outlets of the heater and condenser means, and coupled to actuate the throttling means to adjust the main-flow stream to maintain the split-stream flow at a rate which will simultaneously maintain the heater temperature above a predetermined minimum and the condenser temperature below a predetermined maximum.

3,222,850
FILTER
Charles G. Hart, Syracuse, N.Y., assignor to Cambridge Filter Corporation, Syracuse, N.Y., a corporation of New York
Filed May 11, 1961, Ser. No. 109,364
1 Claim. (Cl. 55—500)



An air filter comprising a rigid rectangular open frame having an upstream and downstream end and having side and top and bottom members formed of light weight nonmetallic rigid slabs, an elongated rectangular sheet of filter medium haxing ends and side edges formed in a multiplicity of pleats comprising folds and intermediate flank portions disposed within said frame and having its ends adhesively secured to opposed side frame members and its pleat edges adhesively secured to the top and bottom frame members, a plurality of individual support combs disposed within said frame in uniformly spaced apart parallel relation with respect to each other and parallel with said top and bottom members, said combs having a back bone portion extending from side member to side member and a plurality of like teeth of tapering configuration and uniformly spaced apart and conforming to and projecting into the downstream side of each of said pleats, substantially to the upstream fold, and engaging the flank portions thereof intermediate the folds thereof, said teeth having a plurality of integral oppositely projecting spaced apart light weight spines each of a length less than one half the spacing between adjacent combs all of the same length and having free ends and extending perpendicularly to the plane of the comb and teeth thereof, from adjacent the edges of each tooth to provide support for the flanks of said medium between adjacent comb teeth, and a support rod extending from the top to the bottom member of said casing and lying within each of the upstream folds, and secured to the ends of each of the teeth extending into each of said upstream folds, said rods having pointed ends projecting into and embedded in the top and bottom members of said frame, the backbone of each of said combs having an open resilient recess having a slit, said resilient recess and slit being disposed in the opposite side of said backbone from said teeth, said resilient recess and slit being disposed substantially centrally of the length of said backbone, a brace rod extending from top member to bottom member and affixed to said top member and said bottom member and said brace rod disposed in said recess in the backbone of each comb, said combs having at the opposite ends of the backbone thereof projecting into and embedded in the side members of said frame.

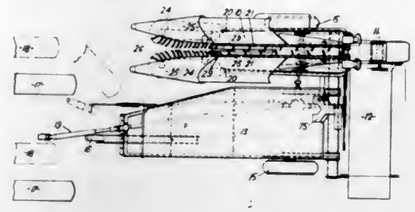
3,222,851
AUTOMATIC PICKER HEAD ELEVATION CONTROL
Harold L. Schnaidt, 5249 Montecito Drive, and Harold L. Honn, 3064 Elmwood Ave., both of Bakersfield, Calif.
Filed Feb. 1, 1963, Ser. No. 255,435
7 Claims. (Cl. 56—11)



1. In a cotton picking machine having a vertically movable picker head and auxiliary power means for raising said picker head, an automatic picker head elevation control which includes: a control means for controlling said auxiliary power means to selectively move said picker head in up or down direction; electrical operating means, including electrical power source means, for selectively operating said control means; ground follower means pivotally mounted on said picker head; spring means urging said follower means into contact with the ground surface; a switch contactor movable with said follower means over a contactor path corresponding to the range of elevations at which said picker head is to be operated; a plurality of contact terminals disposed along said contactor path, said contact terminals corresponding to intermediate elevations of said picker head; a switching circuit for selectively connecting said electrical operating means to its power source through said switch contactor and said contact terminals; and a plurality of elevation selection switches in said switching circuit for selecting which of said contact terminals shall be connected for up and down operation, respectively, of said electrical operating means.

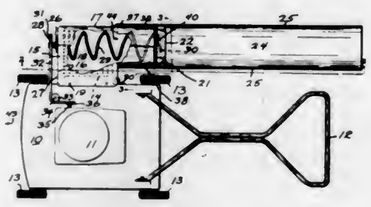
3,222,852
SNAPPING ROLL ASSEMBLY FOR CORN HARVESTERS
Walter H. Ward, Three Rivers, Vereeniging, Transvaal, and Richard L. Millman, Vereeniging, Transvaal, Republic of South Africa, assignors to South African Farm Implement Manufacturers Limited, Vereeniging, Transvaal, Republic of South Africa
Filed Apr. 29, 1963, Ser. No. 276,357
Claims priority, application Great Britain, Apr. 28, 1962, 16,299/62
4 Claims. (Cl. 56—104)

1. In a corn harvester, the combination comprising, a pair of elongated counterrotating gripping rolls journalled with their axes disposed down and forward of the harvester, said gripping rolls having axially extending flutes and helically wound ridges for gripping stalks and pulling them downwardly and rearwardly, the axial flutes and helical ridges on one of said gripping rolls being disposed to intermesh with the axial flutes and helical ridges on the other of said gripping rolls as said rolls are rotated, a pair of elongated counterrotating smooth snap-



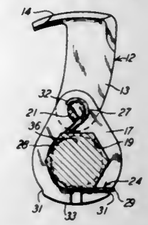
ping rolls journalled above and generally parallel to said gripping rolls, said snapping rolls having relatively short clearing pieces at the rear ends thereof rotating in directions opposite to the long forward portions of the associated snapping rolls, and an endless conveyor chain having fingers extending over said snapping rolls for moving ears of corn rearwardly over the snapping rolls.

3,222,853
GRASS AND LEAF BALER FOR ROTARY LAWN MOWERS
Henry F. Michael, 408 S. Jessica Ave., Sioux Falls, S. Dak.
Filed Mar. 30, 1964, Ser. No. 355,771
2 Claims. (Cl. 56—202)



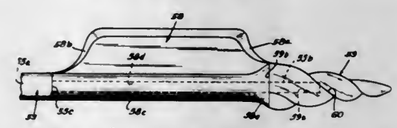
1. A grass and leaf catcher including a baler for a rotary lawn mower having a discharge opening, said catcher comprising a unit having a material receiving casing, said casing having a leaf and grass receiving opening therein and being adapted to be attached to said mower so that said casing opening is adjacent said discharge opening, said casing having a plurality of small openings therein for the passage of air, a tapered neck portion integrally connected to and extending from said casing in which grass and leaves are adapted to be compressed after they enter said casing through said discharge opening, the neck portion being open at each end thereof, a rotatable auger member mounted in said casing and extending into said neck portion, said auger member being in the form of a helically wound rod, means to rotate said auger member, an annular coil spring fastening means adapted to releasably fasten a disposable sack on the outer surface of said neck portion so that the sack may receive compressed grass and leaves as they are ejected through the end of said neck portion remote from said mower discharge opening, chain means attached to said neck portion and being adapted to releasably fasten said coilspring to said neck portion, and sack support means integrally connected to and extending from said casing.

3,222,854
SWING-KNIFE MOUNTING
John W. Barth, Cudahy, Wis., assignor to Jacobsen Manufacturing Co., Racine, Wis., a corporation of Wisconsin
Filed Mar. 2, 1964, Ser. No. 348,516
3 Claims. (Cl. 56—294)



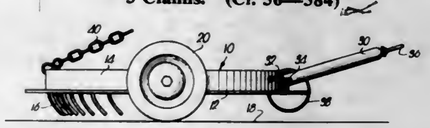
1. A swing-knife assembly comprising in combination a rotatable and polygonally-shaped shaft, a pair of plates having polygonally-shaped openings receiving said shaft for rotation therewith and extending from said shaft and having axially aligned openings in the extending portions, a pin removably disposed in said aligned openings and extending beyond both said plates, a knife removably mounted on said pin intermediate said plates and being radially extendable under centrifugal force of rotation of said shaft and being radially retractable, said shaft and said pin having grooves therein axially beyond said plates and adjacent thereto, and a spring clip disposed in said grooves and extending between said shaft and said pin and partly around both on opposite sides thereof and adapted to be releasably spring-loaded on both and being in axial interference fit with said plates for retaining and spacing the latter on said shaft and said pin.

3,222,855
HARVESTING SPINDLE
Fred D. Lasswell, Jr., 329 Bayshore Blvd., Tampa, Fla.
Original application June 15, 1960, Ser. No. 36,448, now Patent No. 3,129,551, dated Apr. 21, 1964. Divided and this application Sept. 18, 1963, Ser. No. 309,616
4 Claims. (Cl. 56—328)



1. A spindle for a crop harvester including a flexible picker fin mounted on the spindle for rotation therewith, said picker fin having a generally cylindrical hub, a forward portion of said hub having an outwardly flaring conical shape, and a nose cone for said spindle having its rearward end abutting the enlarged portion of the conical hub portion of the picker fin.

3,222,856
COMBINATION RAKE AND CART
James L. Haynes, Kansas City, Mo. (609 S. Grove, Kewanee, Ill. 61443)
Filed Nov. 29, 1963, Ser. No. 326,708
3 Claims. (Cl. 56—384)



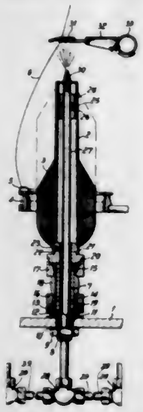
1. A yard implement comprising:
a generally circular, normally substantially horizontal frame;

a pair of diametrically opposed wheels on the frame having axes of rotation extending substantially radially thereof, the wheels being adapted for supporting the frame in spaced relationship from the ground during movement thereof;

a plurality of spaced tines on the semicircular portion of the frame rearwardly of the wheels and projecting toward the ground, whereby forward movement of the implement collects cut grass and leaves or the like in front of the tines; and

means coupled with said rearward portion for raising the latter to move the tines away from the ground, there being structure centrally disposed on the semicircular portion of the frame forwardly of the wheels for engaging the ground to support the frame during movement thereof and actuation of said means, whereby the cut grass and leaves or the like collected by the tines may be dumped when desired.

3,222,857
METHOD OF AND DEVICE FOR TREATING YARNS, THREADS, AND THE LIKE WITH A FLUID MEDIUM DURING THE SPINNING OR TWISTING OPERATION
Johann Jacob Keyser, Grabenallee 16, Aarau, Switzerland
Filed Aug. 1, 1963, Ser. No. 299,239
Claims priority, application Germany, Aug. 9, 1962, K 47,466
12 Claims. (Cl. 57—3.5)



9. The method of fluid treatment of yarn during twisting which comprises twisting said yarn during lineal movement through a twisting zone of a spinning and twisting machine, and directing a stream of treating fluid under pressure at the yarn as it enters said twisting zone during twisting of the yarn so that said fluid impinges on said yarn and penetrates the fibers simultaneously with said twisting, said stream being confined to said yarn in said twisting zone.

3,222,858
TWISTED CABLE ASSEMBLY AND METHOD OF MAKING THE ASSEMBLY
William J. Gilmore, Manitou Beach, and Lilburn L. Mesler, Palmyra, Mich., assignors to American Chain & Cable Company, Inc., New York, N.Y., a corporation of New York
Filed Sept. 13, 1963, Ser. No. 308,779
5 Claims. (Cl. 57—141)

3. In a twisted cable assembly which includes a continuous length of wire disposed alongside itself in a plurality of substantially overlaid runs of similar configuration, said runs describing a pair of spaced closed loop sections and a corresponding pair of intermediate sections longitudinally twisted into a composite strand; said assembly being improved in that said wire is in a



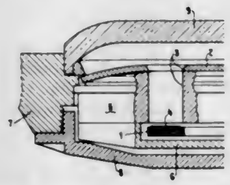
condition of elastic torsional deformation about its own axis of a direction tending to maintain said intermediate section of the runs in their aforementioned longitudinally twisted state.

3,222,859
CRIMPING OF YARNS BASED ON THERMOPLASTIC POLYMERS
Jean Auguste Joly, Lyon, France, assignor to Societe Rhodiaceta, Paris, France, a French body corporate
Filed Apr. 19, 1961, Ser. No. 103,997
Claims priority, application France, Apr. 27, 1960, 825,457; Jan. 9, 1961, 849,175
15 Claims. (Cl. 57—160)



1. Process for the production of crimped yarns of thermoplastic polymers which comprises passing a first yarn and a second yarn through a compressed fluid feed jet, the said first yarn being of a thermoplastic polymer and being fed at a rate greater than said second yarn, the said first yarn and second yarn being subjected in the compressed fluid feed jet to the action of a turbulent fluid, thereby producing a composite mock-boucle yarn in which the said first yarn constitutes a peripheral yarn in which the individual filaments have a random, non-periodic crimp and the said second yarn constitutes a core yarn; and, after setting the crimp in the said peripheral yarn, removing the core yarn, leaving a crimped set yarn of the thermoplastic polymer.

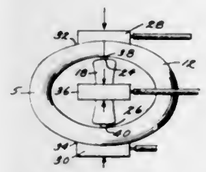
3,222,860
RESERVE POWER INDICATING SYSTEM IN A TIMEPIECE
Gaston Raval, La Neuveville, Switzerland, assignor to Omega Louis Brandt & Frere S.A., Bienne, Switzerland
Filed June 15, 1964, Ser. No. 375,104
Claims priority, application Switzerland, July 20, 1963, 9,021/63
5 Claims. (Cl. 58—152)



1. A reserve power indicating system in a timepiece having a balance wheel, particularly in an electric or electronic timepiece, said balance wheel having a lower limit amplitude at which proper operation of the timepiece is warranted and a nominal amplitude exceeding said limit amplitude, a mark on said balance wheel and at least one

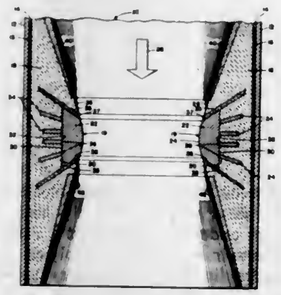
reference mark on a stationary portion of the timepiece, window means allowing observation of said balance wheel, said mark and reference mark having a size in circumferential direction of the balance wheel which is small compared with the said limit amplitude and nominal amplitude of the balance wheel, said mark and reference mark coinciding when the balance wheel is in the reversal point of its oscillation at said limit amplitude.

3,222,861
METHOD FOR PRODUCING INTEGRAL STUDS IN LINK ANCHOR-CHAIN BY PROJECTION WELDING
Fred B. Money, Thorofare, N.J., assignor to Baldt Anchor, Chain & Forge Division of The Boston Metals Company, Chester, Pa., a corporation of Maryland
7 Claims. (Cl. 59—35)



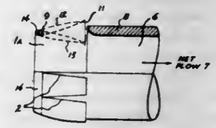
1. A method of forming an integral stud link which comprises the steps of bending a length of metal bar into oval link form, closing the link and joining the abutting ends thereof, providing a stud at each of its outer ends with a zone defining a localized path for electric current, disposing said stud within the link, said zones adjoining the inner surfaces of the longitudinal sides of the link and resistance projection welding said stud to said link whereby said zones are upset to integrally join said stud to said link.

3,222,862
HIGH TEMPERATURE NOZZLE FOR ROCKET MOTOR
Eli M. Sadownick, Sacramento, Calif., assignor to Aerojet-General Corporation, Azusa, Calif., a corporation of Ohio
Filed Apr. 12, 1962, Ser. No. 186,985
5 Claims. (Cl. 60—35.6)



1. A nozzle for a rocket motor comprising a steel housing, an insulator secured to the inner surface of the housing, a convergent-divergent portion formed from graphite and comprising a heat sink secured to said housing with said insulator positioned therebetween, a tungsten insert trapezoidal in cross-section mounted in the throat of said convergent-divergent portion with the small base of said insert forming a continuation of the inner surface of the convergent-divergent portion and adapted to be exposed to the hot gas stream passing through the nozzle, the large base of said insert bearing against a surface of the heat sink so that a decreasing temperature gradient is formed in the insert extending from the small base to the large base whereby the temperature of the large base is lower than the temperature of the small base, a plurality of pyrolytic graphite plates embedded in the graphite heat sink, at least some of the plates being positioned so the inner edges thereof engage the large base of said insert, the crystals forming the pyrolytic graphite plates being oriented so that each of the plates is a good conductor of heat in directions parallel to the surfaces of the plate to effect a rapid transfer of heat from the large base of the insert to the heat sink and thereby reduce the temperature of the insert and decrease erosion, the sides of the insert being covered by respective washer-shaped plates of pyrolytic graphite with the inner edges thereof being exposed to the hot gas stream, the crystals in said latter plates of pyrolytic graphite being oriented so that each of said latter plates is a good heat conductor in directions parallel to the surfaces of the plate and a good insulator in directions transverse to the surfaces of the plate, said latter plates covering the sides of the insert acting both to cool the throat of the nozzle and to prevent heat from the heat sink from entering the insert through the sides thereof, whereby the nozzle can be operated at a higher gas temperature with a stable performance characteristic.

3,222,863
AERODYNAMIC INLET
Garry W. Klees, Mercer Island, Bjarne E. Syltebo, Bellevue, and Wilton S. Viall, Kent, Wash., assignors to The Boeing Company, Seattle, Wash., a corporation of Delaware
Filed Oct. 7, 1963, Ser. No. 314,136
15 Claims. (Cl. 60—35.6)



1. An air inlet for a power plant, comprising:

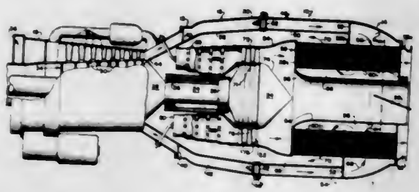
(a) an engine housing having a principal air passageway disposed therein, said principal air passageway opening into said housing from an upstream portion thereof;

(b) means upstream of said principal air passageway to provide ram air into said principal air passageway and to an external lateral surface of said engine housing;

(c) a plurality of foils disposed upstream of said principal air passageway and pivotally connected to said engine housing, being connected in such a manner as to enable a downstream edge of each of said foils to move inward relative to said engine housing upon a decrease of air pressure within said principal air passageway, thus creating an auxiliary air passageway across each of said foils into said engine housing, and conversely, upon an increase of air pressure within said principal air passageway and at a desired pre-determined air pressure therein, to enable

each of said foils to pivot outwardly relative to said engine housing.

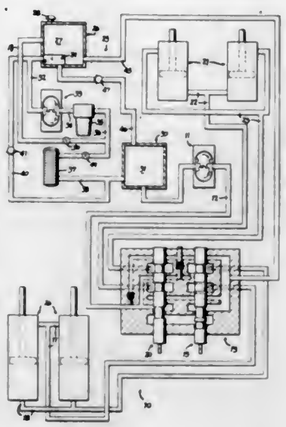
3,222,864
GAS TURBINE ENGINE FIXED BOUNDARY RECUPERATOR
Neal L. Dyste, Redondo Beach, and Erich Willi Gellersen, Santa Monica, Calif., assignors to The Garrett Corporation, Los Angeles, Calif., a corporation of California
Filed Dec. 31, 1962, Ser. No. 248,353
5 Claims. (Cl. 60—39.51)



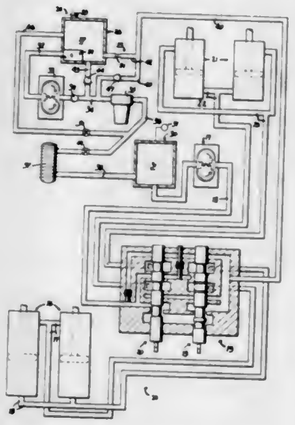
1. A gas turbine engine comprising:
an elongate casing having an air inlet at one end and an exhaust opening at the other end;
a gas turbine power unit within said casing and having an exhaust passage communicating with said exhaust opening and further having an air intake;
a wall within said casing about said power unit and spaced inwardly from said casing to define with the latter a generally annular air inlet passage communicating at one end with said air inlet of said casing and at the other end with said air intake of said power unit,
said inlet passage encircling said power unit and extending substantially the full length of said casing in direct heat transfer relation to the casing, whereby inlet air flowing through said inlet passage cools said casing;
a heat exchanger within said other end of said casing having first passage means and second passage means through which said exhaust passage of said power unit communicates with said exhaust opening, and third passage means through said said other end of said annular inlet passage communicates with said air intake of said power unit,
said first passage means and said third passage means being disposed in heat transfer relation, whereby the inlet air entering said power unit is preheated by exhaust gases flowing through said first passage means; and
means for proportioning exhaust gas flow from said power unit through said first and second passage means, thereby to regulate preheating of the inlet air entering said power unit.

3,222,865
HYDRAULIC APPARATUS AND METHOD
Raymond J. Miller, Racine, Wis., assignor to J. I. Case Company, Racine, Wis., a corporation of Wisconsin
Filed Nov. 20, 1964, Ser. No. 412,627
8 Claims. (Cl. 60—52)

2. In a method of supplying hydraulic liquid to the system pump of a hydraulic system, the steps of
(1) removing liquid from a reservoir space at atmospheric pressure,
(2) pressurizing said liquid,
(3) filtering said liquid and
(4) cooling said liquid,
(5) confining the pressurized, filtered and cleaned liquid in a second reservoir space,
(6) supplying liquid under pressure from said second reservoir space to said system pump, and recirculating return liquid from said system to said first atmospheric reservoir for subsequent reintroduction into said second reservoir only after steps (1) through (4) have been performed thereon.

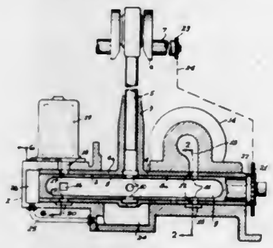


3,222,866
HYDRAULIC APPARATUS AND METHOD
Harold A. Lehmann, Racine, Wis., assignor to J. I. Case Company, Racine, Wis., a Wisconsin corporation
Filed Dec. 21, 1964, Ser. No. 419,976
7 Claims. (Cl. 60—52)



1. In a hydraulic system wherein a system pump supplies hydraulic fluid under relatively high pressure to a motor element under the control of a valve element, a novel dual reservoir system for supplying a volume of clean, cool hydraulic fluid commensurate with varying motor element demands to said system pump at superatmospheric pressures substantially less than the output pressure of said system pump comprising first and second reservoirs separate and distinct from one aonther, said first reservoir being vented to the atmosphere and said second reservoir being sealed from the atmosphere and supplying fluid directly to said system pump, a valve conduit interconnecting said reservoirs, a supply pump interposed in said interconnecting conduit and intermittently supplying make-up fluid to said system reservoir at superatmospheric pressure less than the pressure supplied by said system pump, recirculating means discharging used fluid into said interconnecting conduit mergeable with the intermittent flow of make-up fluid, a filter and a heat exchanger interposed in said interconnecting conduit between said supply pump and said second reservoir downstream of said recirculaitng discharge for cleaning and cooling all fluid flow prior to delivery into the second reservoir.

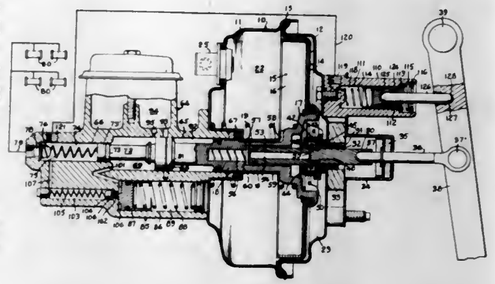
3,222,867
BALANCED ROTARY COMMUTATING VALVE
Kenneth Gauldie, Toronto, Ontario, Canada, assignor to Hydraulic Crushers Limited, New Liskeard, Ontario, Canada
Filed May 10, 1965, Ser. No. 454,629
5 Claims. (Cl. 60—54.5)



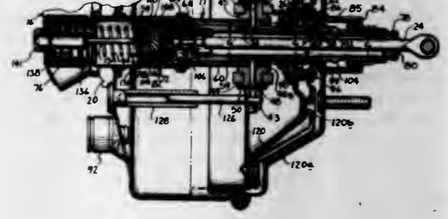
1. In combination with a hydraulically-operated jaw crusher, a plunger cylinder, a plunger mounted for reciprocating movement in said cylinder, a crankshaft carrying said plunger and being continuously rotatable to impart reciprocating movement to said plunger, a ram cylinder, and a hydraulic fluid receiving vessel, valve mechanism for placing said plunger cylinder out of communication with said ram cylinder and into communication with said vessel during alternate strokes of said plunger and into communication with said ram cylinder and out of communication with said vessel during intervening strokes of said plunger which comprises a housing, a cylindrical valve member rotatably mounted in said housing and having an elongated valve chamber therein, said housing having a first passage in constant communication with said plunger cylinder, said valve member having an opening in constant communication with said first passage and said chamber and first and second pairs of diametrically opposite ports communicating with said chamber, said housing having a second passage in constant communication with said ram cylinder, a third passage in constant communication with said vessel, a first annular passage in constant communication with said second passage, and a second annular passage in constant communication with said third passage, said valve member being rotatable sequentially to open said first pair of ports while closing said second pair of ports and to close said first pair of ports while opening said second pair of ports, and means drivably connecting said valve member and said crankshaft.

3,222,868
BRAKE OPERATING MECHANISM
William Stelzer, Bloomfield Hills, Mich., assignor to Kelsey-Hayes Company, Romulus, Mich., a corporation of Delaware
Filed Feb. 8, 1963, Ser. No. 257,284
11 Claims. (Cl. 60—54.6)

1. In a power unit to produce hydraulic pressure for hydraulic brakes, a fluid pressure motor, a master cylinder having a plunger directly connected to said motor to be actuated thereby, valve means to control differential pressure in said motor, manually operable means for operating said valve means, and a hydraulic reaction device separate from said motor and connected solely to said master cylinder to be directly subject solely to pressures in said master cylinder, said reaction device having mechanical engagement with said manually operable means to transmit reaction forces thereto proportional to pressures developed in said master cylinder.



3,222,869
DUAL HYDRAULIC BRAKE SYSTEMS AND BRAKE BOOSTER MECHANISMS THEREFOR
Edward A. Rockwell, 167 Ashdale Place, Los Angeles, Calif.
Filed May 3, 1963, Ser. No. 277,832
21 Claims. (Cl. 60—54.6)



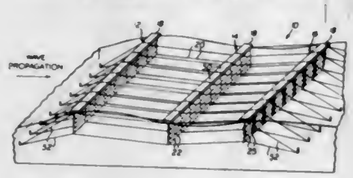
1. In a power booster for brakes, a housing including means for mounting, a pair of master cylinders fixed in parallel relation to forwardly project from said housing and having parallel pistons extending rearwarding inside said housing, said master cylinders being connected to fluid pressure transmitting lines to actuate said brakes, a movable pedal for actuating said pistons, a movable power wall in said housing providing power assist for said pedal, axially movable actuating means including relatively movable annular telescoping push and pull members extending longitudinally in said housing along an axis between said master cylinders, means connecting said push member for movement within said pull member upon movement of said power wall, additional means including a rod connecting said pull member for movement responsive to movement of said pedal and having a travel commensurate therewith, mechanism in said housing including a lateral projection for transmitting force from movement of said pull member to operate said pistons thereby producing fluid pressure in

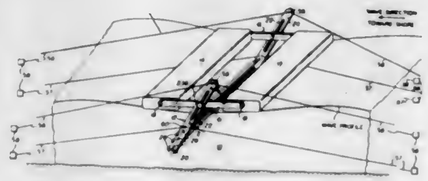
said lines, and reaction means between said push and pull members and said additional means for transmitting a portion of the reaction force presented by said pistons by way of said projection from said pull member for application to said pedal, by way of said additional means and said rod.

3,222,870
WAVE DAMPING APPARATUS

Henry F. Miller, Clifton, and Thomas J. Rhodes, Kinnelon, N.J., assignors to United States Rubber Company, New York, N.Y., a corporation of New Jersey

Filed Mar. 12, 1962, Ser. No. 178,842
6 Claims. (Cl. 61—5)





1. A device for attenuating the amplitude of incident waves in a liquid passing therethrough comprising two end baffles and at least one intermediate baffle therebetween, said baffles being disposed perpendicular to the direction of wave propagation of said incident waves and being maintained in substantially parallel planes and spaced apart from each other in the direction of wave propagation by inextensible and flexible spacing means connecting the top of each of said baffles to the next adjacent baffle and by inextensible and flexible mooring means attached between each of said end baffles and fixed anchoring devices, said mooring means having normal catenary sag to allow said baffles to oscillate horizontally, said anchoring devices being at the end of each of said mooring means, float means at the top of each of said baffles from which said baffles are supported and depend vertically into said liquid, each of said baffles having a plurality of openings at different levels in substantially the same plane with pivotally mounted closure means over each of said openings, each of said closure means being larger than each of said openings and swingable in the same direction from horizontal pivot means to uncover the openings thereby permitting flow of liquid in one direction only, said end baffles having said pivotally mounting closure means swingably mounted in opposite directions to uncover the openings thereof, said end baffle nearest to the oncoming wave and the next adjacent baffle having said pivotally mounted closure means swingably mounted in a direction towards the other of the end baffles to uncover the openings and thereby to permit liquid to flow therethrough in the direction of wave propagation.

3,222,871
METHOD AND APPARATUS FOR TRANSPORTING MATERIAL IN A LIQUID HAVING WAVE PROPAGATION

Henry F. Miller, Clifton, and Thomas J. Rhodes, Smoke Rise, N.J., assignors to United States Rubber Company, New York, N.Y., a corporation of New Jersey

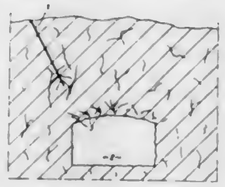
Filed May 4, 1962, Ser. No. 192,504
3 Claims. (Cl. 61—5)

1. A dredging device for transporting material beneath a liquid surface from one zone to another, said device being actuated by energy associated with waves propagated in said liquid, said device comprising a float means, a horizontal support member attached to each side of said float means, an elongate member movably attached to each of said support members and depending into said liquid to a level beyond said float means, a baffle mounted between the lower ends of said elongated members and spaced from said float means to define an unobstructed passageway therebetween, said baffle having a series of openings disposed at different levels in substantially a common plane with pivotally mounted closure means depending from horizontal pivot means at different levels over each of said openings, each of said closure means being larger than said openings and swingable in the same direction from each level of pivot means to uncover said openings so as to permit liquid to flow therethrough in one direction only, said elongate members being pivotally mounted to said horizontal members to fixedly position the baffle with said plane of the openings at a selected angle relative to the support members and further being movable vertically relative to said horizontal members to shift the closure means vertically with respect to said float means, and said device having inextensible and flexible anchoring lines connected thereto and extended beyond said float means in opposite directions from said plane of the openings and secured to fixed anchors provide in the bed of the liquid for positioning said floats on the liquid.

3,222,872
METHOD OF STRENGTHENING AND SEALING ROCK

Ulf Mårten Langefors, Stockholm, and Sten Harald Brännfors, Lidingo, Sweden, assignors to Nitroglycerin Aktiebolaget, Gyttorp, Sweden

Filed May 2, 1961, Ser. No. 107,175
Claims priority, application Sweden, May 5, 1960, 4,474/60
9 Claims. (Cl. 61—36)



1. A method of creating a layer of sealing material across a broad area of an earth formation, comprising:
(a) drilling a plurality of spaced holes in said formation;
(b) said holes being spaced a predetermined distance from one another;
(c) depositing a sealing material and an explosive material in each of said holes; and
(d) detonating said explosive material;
(e) said predetermined distance between said holes being such that the pressure created by detonation of said explosive material is sufficient to form interconnecting fractures between said holes and distribute said sealing material throughout said fractures between said holes, whereby a practically continuous layer is formed across the earth formation by said sealing material.

3,222,873
GROUTABLE ROCK ANCHOR

Chester I. Williams, 347 Greenbriar SE., Grand Rapids, Mich.

Filed July 31, 1961, Ser. No. 128,054
2 Claims. (Cl. 61—45)

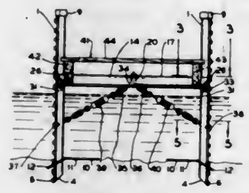


1. A groutable anchor assembly for engagement with the wall of a hole bored in a rock formation, said hole having a mouth, said anchor assembly comprising: a stress-resisting rod of substantial length having inner and outer end portions and adapted for insertion axially into said hole with said outer end portion adjacent said mouth and said inner end portion being deformed; temporary rock-gripping means disposed intermediate said portions nearer the outer end than the inner end and including circumferentially spaced shoes readily accessible from said mouth and adapted to be engaged with the wall of said hole and engaging said outer portion of said rod, said spaced shoes defining a channel between said inner and outer portions for the introduction of grout, said temporary rock-gripping means being adapted to restrain said assembly against retraction while permitting insertion thereof relative to said wall, said rock-gripping means in gripping position projecting radially beyond said rod; a removable surface plate of larger area transverse to said rod than the cross section of said rock-gripping means in gripping position, said plate having an aperture receiving said outer portion; means for applying force between said surface plate and said temporary means via said outer portion and including a threaded portion on said outer portion and nut means engaging said threaded portion and said plate; grout-supply means intersecting said surface plate; and means forming a vent conduit extending substantially from said surface plate and between said shoes to a point adjacent to the inner end of said rod.

3,222,874
STRUCTURAL FRAMEWORK FOR BOAT PIERS

Frank J. Zink, Glen Ellyn, Ill.

Filed Feb. 12, 1962, Ser. No. 172,437
8 Claims. (Cl. 61—48)

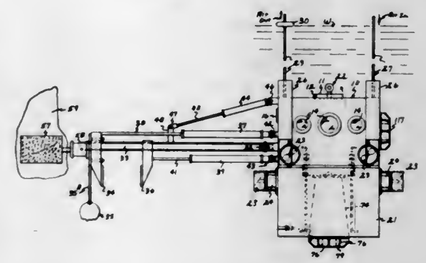


5. A boat pier comprising a pair of uprights each being T-shaped in cross-section and integrally including a flange and a web, the latter extending inwardly from the flange, said flange having a plurality of laterally presented spaced studs, a cross-beam disposed transversely between the uprights abuttingly engaged at its opposite end therewith, said cross-beam and being provided at its opposite ends with swingable latching hangers in engagement with the uprights and in optional retentive engagement with any selected one of the studs, and a plurality of deck assemblies each being mounted at one of its transverse ends on said cross-beam.

3,222,875
SUBMERGIBLE APPARATUS

James W. Justus, 20525 Marlin Road, Cutler Ridge, Miami, Fla.

Filed Sept. 13, 1961, Ser. No. 137,880
1 Claim. (Cl. 61—69)



Submergible apparatus adapted to be submerged in water and comprising a sealed compartment, at least one downwardly opening compartment and of a size, shape and weight for rescue, research and salvage mounted beneath said sealed compartment, a removable closure member between said sealed compartment and said downwardly opening compartment adapted to selectively communicate the compartments with each other and separate said compartments from each other, a control valve between said sealed compartment and said downwardly opening compartment whereby relative pressure between the compartments may be controlled, air supply means adapted to be supported at the surface of the water in which the apparatus is submerged and communicating with said sealed compartment to introduce air into said sealed compartment, means to exhaust air from said sealed compartment, a plurality of downwardly opening trim tanks carried by at least one of said compartments, means to selectively introduce air into and exhaust air from said trim tanks whereby water is removed from and introduced into said trim tanks to raise and lower said downwardly opening compartment and said sealed compartment and maintain the apparatus on an even keel, means to selectively introduce air into and exhaust air from said downwardly opening compartment whereby water is removed from and introduced into said downwardly opening compartment, a removable closure member adjacent an upper portion of said sealed compartment, self-propelled means to propel said apparatus through the water while the apparatus is submerged, an outwardly projecting tool carrying boom carried by the sealed compartment and power operating means for moving said boom to selected positions relative to the sealed compartment, said tool comprising a housing having one end thereof open and disposed to engage a submerged surface, means to introduce air continuously into said housing while said housing is adjacent said submerged surface to thus prevent the entry of water into said housing, and means to support painting apparatus and a worker within said housing.

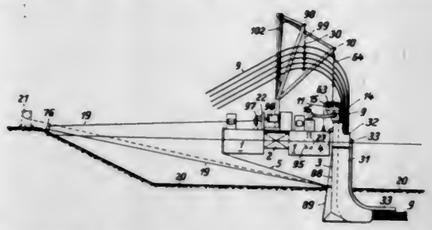
3,222,876
SYSTEM AND APPARATUS TO PLACE FLEXIBLE PIPES AND CABLES UNDER GROUND BELOW WATER

Rudolf Joachim Harmstorf, Schillerstr. 45, Hamburg-Altona, Germany

Filed Aug. 22, 1962, Ser. No. 218,627
7 Claims. (Cl. 61—72.4)

1. A submarine trenching system for laying continuous flexible pipes or cables comprising, in combination, a substantially vertically disposed enclosed longitudinal

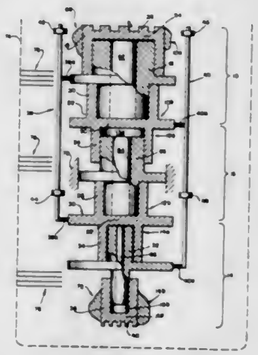
carrier having a front, a rear, a lower flush-jet portion adapted to be introduced into the bed of the water body to be trenched and a longitudinally extending forward edge, at least one first longitudinally extending channel defined behind said forward edge in said carrier, water connection means for feeding pressurized water into said first channel, a plurality of discharge nozzles communicating with said first channel and arranged in said lower portion of said carrier adjacent said forward edge for ejecting pressurized water supplied through said first channel, at least one second longitudinally extending channel defined behind said forward edge and said first channel in said carrier, entrance means for feeding at least one flexible pipe or cable to be laid into said second channel, an opening defined at the rear of said lower end portion of said carrier in communication with said second channel for issuing said flexible pipe or cable therefrom, means for introducing said flexible pipe or cable into said entrance means of said carrier, a floating unit disposed forward of said carrier, abutment means defined on said floating unit abutting said carrier forward edge, a flexible carrier suspension tension member having one end affixed to said carrier and its other end connected to said floating unit at an elevation above said carrier suspending said carrier from said floating unit, carrier suspension take-up mechanism mounted on said floating unit and associated with said carrier suspension



tension member to raise and lower said carrier with respect to said floating unit, a flexible towing tension member affixed at one end to said carrier forward edge at said lower portion and supported at a stationary point remote from said floating unit in the laying direction, towing takeup mechanism connected with the other end of said towing tension member to move said carrier and said floating unit abutting said carrier in the direction of the laying operation, two flexible steering tension members each having one end affixed to said carrier lower portion forward edge and extending obliquely to said towing tension member, a steering tension member being disposed on each horizontal side of said towing tension member, and a steering take-up mechanism mounted on said floating unit on each horizontal side of said towing tension member forward of said abutment means and connected with the other end of a steering flexible tension member for varying the lengths of said steering tension members to thereby steer the carrier, whereby said carrier may be steered transversely to the laying direction by shortening one of said steering tension members and simultaneously equally lengthening the other one of said steering tension members, and whereby said carrier may be tilted with respect to said floating unit about said abutment means by simultaneously equally varying the lengths of said steering tension members.

3,222,877
LOW TEMPERATURE REFRIGERATOR
Frank P. Brooks, 5 Inverness Road, Winchester, Mass.
Filed Jan. 22, 1964, Ser. No. 339,399
10 Claims. (Cl. 62—6)

1. A heat pump comprising in combination
(A) first and second mechanical heat pump stages, each stage having a low temperature portion and a high temperature portion,
(1) each stage
(a) substantially confining a working fluid therein, and
(b) being operable to compress the working fluid therein, thereby heating the fluid, in the stage's high temperature portion and expand the working fluid, thereby cooling it, in the stage's low temperature portion,
(2) said low temperature portion of said first stage being in close thermal relationship with said high temperature portion of said second stage, and
(3) said high temperature portion of said first

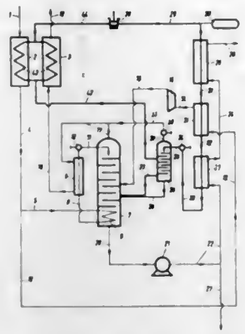


stage being thermally isolated from said low temperature portion of said second stage,
(B) first heat exchange means in thermal communication with said high temperature portion of said first stage to remove heat therefrom,
(C) second heat exchange means in termal communication with said low temperature portion of said second stage to transfer heat thereto, and
(D) actuating means
(1) connected with said stages,
(2) successively operatiing each stage to alternately compress the working fluid therein and to expand the compressed working fluid, and
(3) operating said stages according to a fixed sequence wherein expansion in said first stage occurs at substantially the same time as compression in said second stage.

3,222,878
METHOD AND APPARATUS FOR FRACTIONATION OF AIR
Rudolf Becker, Wiesbaden, Germany, assignor to Gesellschaft für Linde's Eismaschinen Aktiengesellschaft, Wiesbaden, Germany
Filed Dec. 12, 1963, Ser. No. 330,019
Claims priority, application Germany, Dec. 21, 1962, G 36,700
17 Claims. (Cl. 62—13)

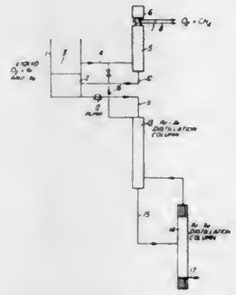
1. In a process for producing oxygen by low temperature fractionation, which comprises the after-fractionation steps of withdrawing liquid oxygen from a fractionation column, compressing said liquid oxygen, and vaporizing the resultant compressed liquid oxygen in indirect heat transfer relationship with a compressed circulating

gas, the improvement which comprises employing as said gas, a gaseous mixture of 8–30 mol percent oxygen, not more than 10 mol percent nitrogen, and the remain-



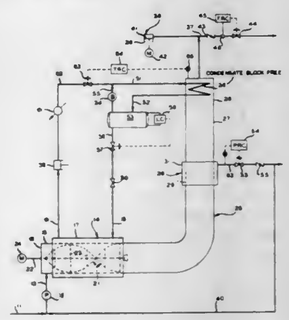
der consisting essentially of argon, said gaseous mixture being at least partially condensed during the vaporization of oxygen.

3,222,879
RECOVERY OF KRYPTON AND XENON FROM AIR SEPARATION PLANTS
Roman Stoklosinski, 59 Winchester Road, London, England
Filed Feb. 25, 1963, Ser. No. 260,551
Claims priority, application Great Britain, Feb. 27, 1962, 7,600/62
2 Claims. (Cl. 62—22)



1. A method of recovering a mixture of krypton and xenon from the methane-contaminated sump vapour product of an air distillation column, said product also containing oxygen, said method comprising the following steps: passing said sump vapour product upwardly through a further distillation column provided with a liquid reflux, in countercurrent with said liquid reflux, to thereby preferentially extract from said vapour product krypton and xenon, condensing said vapour product at the top of said further distillation column, returning part of said vapour product to said liquid reflux, and removing the oxygen content from said condensate, returning the reflux containing krypton and xenon to said sump to provide a sump liquid enriched in krypton and xenon, withdrawing said enriched sump liquid and passing it at an increased pressure into the top of a first rectifying column, permitting said enriched sump liquid to flow down said first rectifying column and thereby enriching the concentration of krypton and xenon in said liquid, removing the enriched liquid from the bottom of said first rectification column, and introducing said enriched liquid at an intermediate point into a second rectifying column, removing vapour from the top of said second rectifying column and returning said vapour to the bottom of said first rectifying column, recycling uncondensed vapour from the top of said first rectifying column to the bottom of said further distillation column, and removing the product mixture of krypton and xenon from the bottom of said second rectifying column.

3,222,880
FRACTIONAL CRYSTALLIZATION CONTROL SYSTEM
Robert A. Findlay, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Jan. 3, 1963, Ser. No. 249,279
9 Claims. (Cl. 62—58)

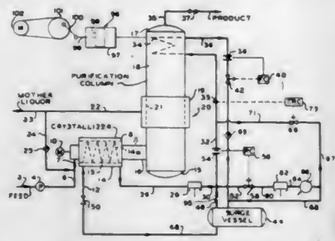


1. In a process in which crystals and adhering mother liquor are continuously passed as a slurry from a chilling zone through a filtering zone from which a stream of mother liquor is withdrawn, the crystals and remaining mother liquor are passed from said filtering zone into a reflux zone, the crystals are passed from said reflux zone into a melting zone, heat is introduced into said melting zone to melt the crystals to obtain a melt by passing a heat exchange fluid in indirect heat exchanging relationship with the crystals, a portion of the melt is withdrawn from the melting zone as a product stream, and the remainder of the melt is passed countercurrently to the movement of crystals as reflux therefrom; the improvement comprising passing said heat exchange fluid in a vaporous state substantially at the condensation temperature thereof in indirect heat exchanging relationship with the crystals at such a rate of flow that only a portion of said heat exchange fluid is condensed, the uncondensed portion being sufficiently great to sweep the condensed portion through the indirect heat exchange with the crystals and eliminate the formation of pockets of said condensed portion, providing a uniform temperature of said heat exchange fluid throughout said indirect heat exchange with the crystals.

3,222,881
FRACTIONAL CRYSTALLIZATION
John J. Moon and Robert O. Dunn, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Jan. 14, 1963, Ser. No. 251,387
11 Claims. (Cl. 62—58)

1. In a process for the resolution of mixtures by crystallization comprising passing a heat exchange fluid in indirect heat exchange in a crystallization zone with a liquid mixture resolvable by crystallization and thereby cooling said mixture to a temperature sufficient to form crystals of at least one component of said mixture and vaporizing said fluids, removing the resulting vaporous heat exchange fluid from said zone, withdrawing said crystals from said zone and introducing the thus withdrawn crystals into a crystal purification zone, compressing said vaporous heat exchange fluid to elevate the temperature thereof to above

the melting point of said crystals, passing a stream of the thus compressed vaporous heat exchange fluid in indirect heat exchange with said crystals in said purification zone thereby melting said crystals and condensing at least a portion of said stream of compressed heat exchange fluid, withdrawing the resulting at least partially condensed heat exchange fluid from said crystallization zone, and recycling said at least partially condensed heat

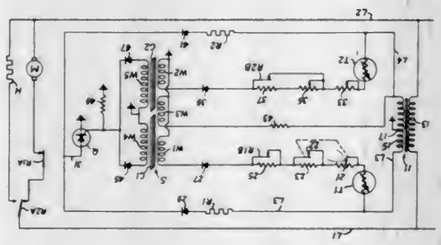


exchange fluid to said crystallization zone, the improvement comprising measuring the pressure of said stream of compressed vaporous heat exchange fluid, and controlling said pressure of said stream of compressed vapqrous heat exchange fluid by removing responsive to the thus measured pressure a sufficient portion of said compressed vaporous heat exchange fluid from said stream to maintain said pressure substantially constant.

3,222,882
REFRIGERATION TEMPERATURE AND FROST CONTROL

Walter T. Sutton, Jr., and James D. Broyles, Lexington, Ky., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Jan. 17, 1964, Ser. No. 340,590
19 Claims. (Cl. 62—80)



19. A method of controlling the operation of refrigeration apparatus which includes cooling means adapted when energized to absorb heat from a refrigerated zone, at least a portion of said cooling means being subject to frost build-up, a first relay adapted to energize said cooling means, defrost means adapted when energized to defrost said cooling means, a second relay adapted to prevent energization of said cooling means and to energize said defrost means, and an electrical circuit interconnected with said first and second relays and through which said relays are selectively energized, said circuit including current switching means responsive to pulses applied thereto for controlling the conductivity of said circuit; said method comprising:

applying out-of-phase pulses respectively to said first and second relays,

sensing the temperature within said zone,

applying pulses to said current switching means in phase with the pulses applied to said first relay to cause energization of said first relay by conduction of pulses through said circuit when the temperature within said zone has a predetermined relationship with respect to a preselected temperature level,

sensing the actual frost build-up on said cooling means,

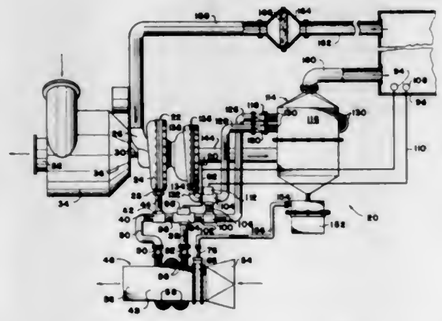
applying pulses to said current switching means in phase with the pulses applied to said second relay when the actual frost build-up on said cooling means exceeds a preselected amount, to cause energization of said second relay by conduction of pulses through said circuit,

whereby said first relay causes energization of said cooling means when the temperature within said zone rises above said preselected temperature level, and said second relay energizes said defrost means and prevents energization of said cooling means when the actual frost build-up on said cooling means exceeds said preselected amount.

3,222,883
TEMPERATURE AND HUMIDITY CONTROL SYSTEMS FOR ENCLOSURES

Donald L. Glaspie, New Orleans, La., assignor to The Boeing Company, Wichita, Kans., a corporation of Delaware

Filed Sept. 9, 1963, Ser. No. 307,687
15 Claims. (Cl. 62—172)

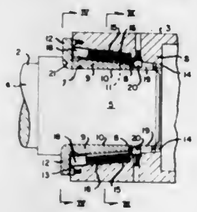


5. An air cycle air conditioning system comprising, in combination, a compressor having an air inlet and an air outlet and being operable to receive air at said air inlet and compress same therein and discharge compressed air from said air outlet, power means operatively connected to said compressor for operation of said compressor, said power means having an exhaust outlet, first heat exchanger means having a high pressure inlet operatively connected to the outlet of said compressor and positioned relative to said exhaust of said power means to receive exhaust gases therefrom at the low pressure inlet of said heat exchanger means to heat air from said compressor passing through said heat exchanger means, second heat exchanger means operatively connected to said outlet of said compressor and having means therewith to draw relatively cool air therethrough to cool air from said compressor passing through said second heat exchanger means, first mixing valve means having air inlets operatively connected to the air outlets of said heat exchanger means to receive compressed air therefrom with said mixing valve means being operable to mix air received from said first and second heat exchanger means, thermostat means having a heat sensing element operatively connected to said first mixing valve means operable to regulate said mixing valve means, a reheat heat exchanger having a high pressure air inlet operatively connected to the outlet of said first mixing valve means and having a low pressure air inlet and outlet, second mixing valve means having inlets operatively connected to the outlet of said first mixing valve means and the high pressure outlet of said reheat heat exchanger and being operable to mix air therefrom, humidity sensing means operatively connected to said second mixing valve means and operable to regulate same, a turbine connected to the outlet of said second mixing valve means and being operable to expand air passing therethrough, water separator means operatively connected to the outlet of said turbine means and connected to said low pressure inlet of said reheat heat exchanger, and means connected to said low pressure outlet of said low pressure side of said reheat heat exchanger to transfer air received therefrom to an enclosure to be conditioned.

3,222,884
SPINDLE COUPLING

David Lyle, Mount Lebanon, Pa., assignor to Blaw-Knox Company, Pittsburgh, Pa., a corporation of Delaware

Filed May 11, 1964, Ser. No. 366,483
8 Claims. (Cl. 64—1)



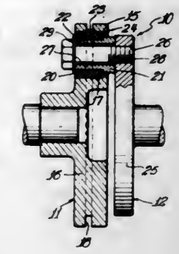
1. A spindle coupling comprising a cylindrical male coupling member having a recessed portion at a side thereof providing a surface extending generally longitudinally of the male coupling member, a female coupling member having a socket receiving the male coupling member, the female coupling member having a generally longitudinally extending surface disposed opposite said surface of the male coupling member when the male coupling member is inserted into the female coupling member, the opposed surfaces of the male and female coupling members as initially formed before the male coupling member is inserted into the female coupling member being disposed at an angle to each other providing, when the male coupling member is inserted into the female coupling member, a space therebetween tapering from relatively small to relatively great width in the direction from the bottom of the socket of the female coupling member outwardly, a generally wedge-shaped device in said space connecting the coupling members to turn together when one of them is driven, said device being movable relatively to the female coupling member, and stop means limiting such relative movement.

3,222,885
RESILIENT COUPLING

Charles E. Heln, Newfield, N.Y., assignor to Morse Chain Company, Ithaca, N.Y., a corporation of New York

Filed Apr. 29, 1963, Ser. No. 276,504
5 Claims. (Cl. 64—11)

1. A coupling comprising a drive member, a driven member, one of said members having a straight-sided axial socket therein, said socket member having a slot in the outer periphery thereof opening into said socket, a straight-sided resilient element having a dimension different than the dimension of said socket so as to be deformed when inserted in the socket and thereby frictionally retained in the socket with a portion of said element expanded into the slot to tend to retain said resilient element against movement of said element in the socket,

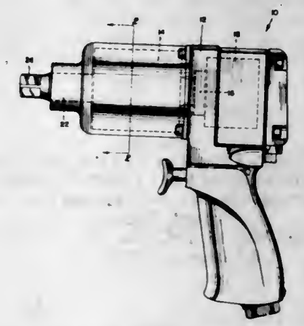


and means for connecting said element to said other member to provide a resilient coupling connection between said members.

3,222,886
SPINDLE BLADE

George P. Schivley, Jr., Bethlehem, Pa., assignor to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey

Filed May 2, 1963, Ser. No. 278,520
10 Claims. (Cl. 64—26)



1. In an impulse tool having a housing means defining a cavity adapted to contain a fluid, spindle means in said housing means and the fluid, and drive means operatively associated with one of said means for causing relative rotation between said housing and spindle means, said housing and spindle means each having at least one sealing portion cooperating with the sealing portion of the other to divide said cavity into a high pressure portion and a low pressure portion during a relatively short portion of each revolution of relative rotation between said housing and spindle means for causing an impulse; and

(a) at least one of the sealing portions being of reduced area defined by generally converging walls adjacent its terminal edge, said walls terminating at said edge in closely adjacent but spaced apart relation forming parallel lines of juncture bounding the reduced area for abruptly cutting off and initiating bypass flow before and after causing an impulse.

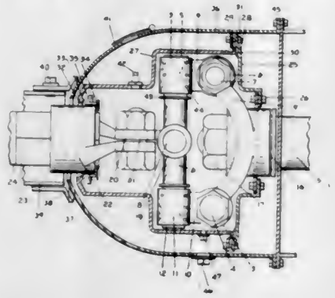
3,222,887
CASING FOR UNIVERSAL JOINTS

John Barletta, General Delivery, Alameda, Calif.

Filed Mar. 5, 1962, Ser. No. 177,942
1 Claim. (Cl. 64—32)

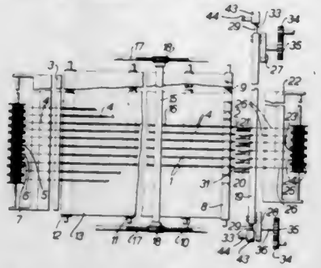
In a universal joint lubrication assembly, a universal joint connecting drive shaft to a driven shaft, a lubricant containing casing enclosing said universal joint, a hous-

ing member surrounding said casing, said universal joint comprising a cross-trunnion member and means connecting said trunnion to said shafts, said casing concentric with the axis of rotation of the said drive shaft and comprising three portions, a first tubular portion surrounding the end of said driven shaft, a second tubular portion surrounding the end of said drive shaft and means fixedly connecting said second portion to said drive shaft in fluid tight relation, said first and second portions at one end having substantially radially inwardly directed



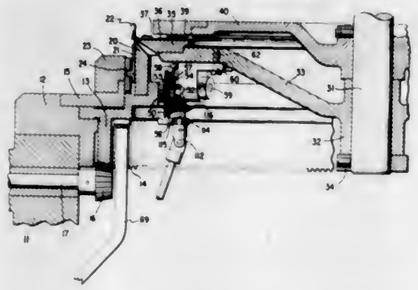
flanges, a third portion at circumferential spaced intervals connecting said first and second portions to form spaced lubricant chambers, said third portion extending radially outwardly beyond said first and second portions and said cross trunnion positioned within said third portion and having the ends thereof extending into said chambers, sealing means between the said flange of said first portion and said driven shaft.

3,222,888
METHODS AND APPARATUS FOR MANUFACTURING INTERLOCKED LOOPED FABRIC
Bernard Moise Turner, 3A Marston Ferry Road, Oxford, England
Filed May 15, 1962, Ser. No. 194,886
8 Claims. (Cl. 66—1)



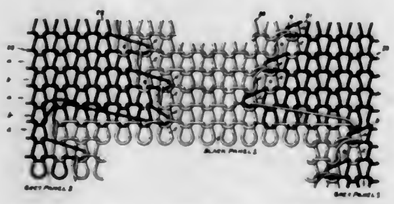
1. A method of manufacturing interlocked looped fabric comprising rotating each guide needle of a number of parallel and coplanar guide needles in circular paths of substantially the same diameter to lay guide needle yarn around two adjacent receiving needles of a number of parallel and coplanar receiving needles, moving two hooks in elliptical paths around adjacent receiving needles so that a first hook catches yarn laid by the guide needle under the two adjacent receiving needles to form a loop in an alternate course over and around one of the two receiving needles, and so that a second hook catches yarn laid by the guide needle over the said two receiving needles to form a loop in the next alternate course under and around the other of the said two receiving needles, moving the hooks away from the receiving needles and the yarn, feeding the alternate course loops along the receiving needles as they are formed, catching yarn supplied to the receiving needles and drawing this yarn away from the receiving needles, clamping the receiving needle yarn and drawing the alternate course loops from the receiving needles over the clamped receiving yarn which forms intermediate courses between alternate courses of the fabric, and imparting tension in a wale-wise direction to open the course loops.

3,222,889
DIAL DRIVE FOR KNITTING MACHINES
Lester Mischon, Miami Beach, Fla., assignor, by mesne assignments, to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed May 6, 1963, Ser. No. 278,114
7 Claims. (Cl. 66—28)



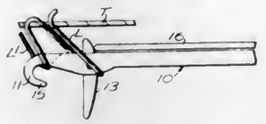
1. A dial drive for a cylinder and dial knitting machine comprising a pair of wheels disposed in peripheral abutting relation, one of said wheels having a knurled periphery, wheel supporting means journalling said wheels on axes substantially radially of said cylinder one on said cylinder and the other on said dial, and mechanism responsive to turning movement of said cylinder for rotating one of said wheels about its own axis.

3,222,890
KNITTING METHOD AND APPARATUS
Oscar Fregeolle, Lincoln, and Florian C. Dube, Central Falls, R.I., assignors to Draper Corporation, Hopedale, Mass., a corporation of Maine
Filed Nov. 10, 1960, Ser. No. 68,507
14 Claims. (Cl. 66—43)



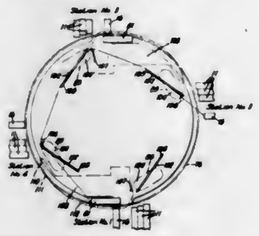
1. A method of knittting a solid color tubular fabric having first and second adjacent areas of first and second yarns, respectively, on a circular, independent needle, knitting machine having a needle cylinder, needles and at least a first and a second knitting stations which comprises the steps of raising to a latch clearing position at said first feeding station a needle at one of the junctions of said areas, wrapping a bight of said second yarn around the shank of said raised needle, knitting said second yarn in said second area at said first feeding station, and knitting said first yarn in said first area at said second feeding station and during one and the same stroke of the needle cylinder as that of the previous step, said raised needle now drawing a stitch of said first yarn through both said wrapped bight and a previously drawn stitch of said first yarn and being the last needle to knit at said one junction.

3,222,891
COMPOUND NEEDLE
Norman Wignall, Blackburn, England, assignor to Kintslaid Engineering Company Limited, a company of Great Britain and Northern Ireland and the Isle of Man
Filed Oct. 8, 1963, Ser. No. 314,782
Claims priority, application Great Britain, Oct. 9, 1962, 38,094/62
4 Claims. (Cl. 66—121)



1. A compound needle comprising, a shank having a hook formed integrally with it at one end, the shank having a slot slightly spaced from and in the plane of the hook, a loop separator pivotally mounted in the slot and adapted to pivot from a position wherein the hook and separator together form a closed loop, to a position wherein the hook is open, characterized in that the separator has parts of it extending on both sides of its pivot, the ends of said separator extending laterally of said shank when said separator is at an angle to said shank, a movable actuator, the end part of the separator remote from the hook co-operating with said actuator, the actuator being adapted for longitudinal movement with respect to the shank, the end of said actuator being in contact with said separator from the closed position of said separator to a position of at least about 90° to said shank, said actuator effecting a positive controlled opening of the hook from its completely closed position to an open position wherein the separator is positioned perpendicular to the shank of the needle, and means for moving said separator independently of the movement of said needle.

3,222,892
YARN SEVERING MECHANISM FOR KNITTING MACHINES
James D. Moyer, Wyomissing, Pa., assignor to Textile Machine Works, Wyomissing, Pa., a corporation of Pennsylvania
Filed Jan. 11, 1962, Ser. No. 165,551
7 Claims. (Cl. 66—134)



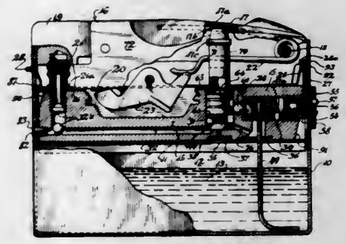
3. In a circular knitting machine having a rotarily operated circle of needles, a plurality of knitting stations, guide fingers for feeding yarn to said needles at each of said stations, and means at each of said stations for moving said fingers thereat between an active knitting position in which said fingers feed their yarns to said needles and inactive positions, in combination with means associated with certain of said stations for severing yarns, and means whereby said severing means associated with each of said certain stations is adapted to sever the yarns of at least two stations of said plurality of stations other than the station with which it is associated, the yarns of one of said two stations being severed by the severing means associated with one of said certain stations and the yarns of the other of said two stations being severed by the severing means associated with at least two of said certain stations.

3,222,893
WARP KNIT FABRIC
Max Busch and Willem Hey, Arnhem, Netherlands, assignors to American Enka Corporation, Enka, N.C., a corporation of Delaware
Filed July 25, 1962, Ser. No. 212,192
Claims priority, application Netherlands, Aug. 3, 1961, 267,887
4 Claims. (Cl. 66—192)



1. A warp knit fabric having an open chain stitch pattern extending over two wales, the stitches in each wale being knit of two differently appearing yarns, and overlapping inlay yarns each extending over four wales within each course.

3,222,894
LIGHTER
Allen B. Gellman, Glencoe, Ill., assignor, by mesne assignments, to Waltham Watch Company, Chicago, Ill., a corporation of Delaware
Filed July 23, 1962, Ser. No. 211,664
7 Claims. (Cl. 67—7.1)



1. In a pyrophoric lighter utilizing liquified fuel under pressure, a fuel control comprising: means defining a fuel chamber; a burner; means defining a fuel passage connecting said fuel chamber with said burner; a valve seat in said fuel passage; a ball valve between said valve seat and said burner; and a reciprocable plunger adjacent said ball and having a shoulder and a recess, said plunger having a first position in which said shoulder holds said ball valve member against said valve seat and a second position aligning said recess with said ball, permitting the pressure of said fuel to move said ball away from said valve seat.

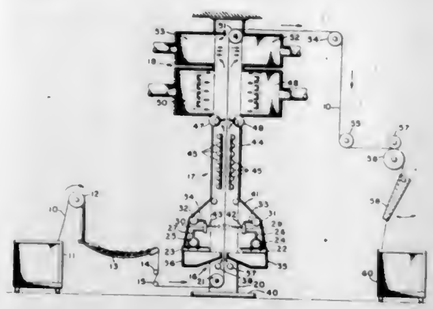
3,222,895
APPARATUS FOR TREATMENT OF NAPPED FABRIC
William N. Sheppard, Pensacola, Fla., assignor, by mesne assignments, to Monsanto Company, a corporation of Delaware
Filed Dec. 1, 1961, Ser. No. 156,447
5 Claims. (Cl. 68—5)

2. Apparatus for treating napped fabric composed at least in part of acrylic fibers comprising:

(a) a frame supporting a pair of carbonate supply headers;

(b) a pair of propelling gas supply headers;

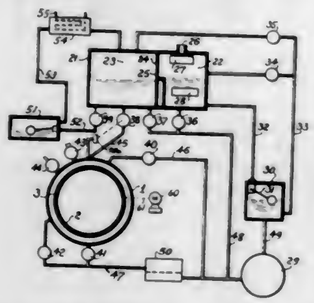
(c) conduits extending between said carbonate supply headers and said gas supply headers to a plurality of opposed spray nozzles, the nozzles being disposed so that streams of finely divided carbonate solution suspended in the propelling gas normally emitted therefrom are directed generally horizontally onto the said fabric normally passing upwardly therebetween;



(d) opposed banks of heating elements disposed along the fabric path above the spray nozzles for heating both sides of the fabric and to evaporate the carbonate therefrom; and

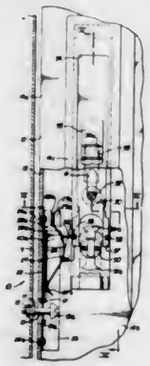
(e) opposed cool air ducts disposed in the fabric path above the heating lamps to reduce the temperature of the fabric quickly by a flow of cool air thereon.

3,222,896
DRY CLEANING MACHINE
Irving Schneider, Livingston, N.J., assignor, by mesne assignments, to Engelhard Hanovia, Inc., Newark, N.J., a corporation of New Jersey
Filed Aug. 12, 1963, Ser. No. 301,240
4 Claims. (Cl. 68—12)



4. A dry cleaning machine comprising a storage tank operated under atmospheric pressure for holding cleaning solvent and having a cold compartment and a warm compartment separated by a partition provided with a hole for communication, said cold compartment having an exhaust port and refrigerating means adjacent to said exhaust port and also in contact with the solvent; a wash chamber communicating with said warm compartment by means of a pipe connection and a valve, which is closed and operated under vacuum; a wash basket rotatably mounted within said wash chamber and having perforated wall; driving means adapted to rotate said wash basket, selectively, at predetermined speeds; electric heating means, mounted on said wash basket, with thermostatic control; an electric supply for said heating means; a pump adapted to create vacuum and to transfer mixtures of liquid solvent, solvent vapor and air, thereby causing the condensation of said vapor, the intake of said pump having a pipe connection with the lower portion of said wash chamber for the transfer of liquid solvent from said chamber, a second pipe connection with the upper portion of said chamber for the transfer of vapor from said chamber, and a third pipe connection with the storage tank for receiving liquid solvent for mixing with vapor received from said chamber for the transfer and condensation of said vapor; an air separator communicating with the outlet of said pump and having a float valve and pipe connections adapted to deliver air and vapor into said cold compartment at the low position of the float, and to deliver liquid solvent into the storage tank at the high position of said float.

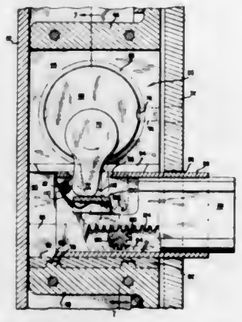
3,222,897
LATCH MECHANISM
Ray N. Du Shane, Jr., Fullerton, Calif., assignor to Northrop Architectural Systems, Los Angeles, Calif., a corporation of California
Filed Dec. 3, 1962, Ser. No. 241,688
22 Claims. (Cl. 70—97)



20. In a sliding door latch mechanism for locking opposed members of a door assembly, at least one of which is movable toward and away from the other member, the combination of: a latch bolt means on one of said members; bolt engagement means on the other of said members movable longitudinally thereof for latching and unlatching the bolt means and movable away from said bolt means into non-jamming position of the engagement means; movable actuating means on the other member for the bolt engagement means; and means interconnecting the actuating means and the bolt engagement means for translating movement of the actuating means into longitudinal movement of the bolt engagement means, said interconnecting means including a pivotal connection for movement of the bolt engagement means about an axis thereof into said non-jamming position.

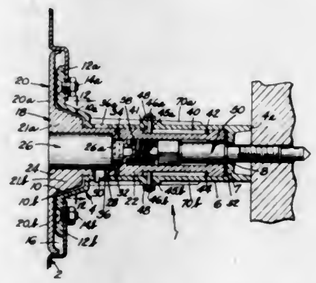
3,222,898
LOCK
Abner L. Lunsford, Atlanta, Ga., assignor, by mesne assignments, to Anaconda Aluminum Company, Louisville, Ky., a corporation of Montana
Filed Apr. 13, 1962, Ser. No. 187,252
15 Claims. (Cl. 70—134)

15. A lock comprising a longitudinally expandable bolt assembly having an inner member slidably supported within an outer member for longitudinal reciprocation relative to said outer member between a retracted position wherein said inner member is located within said outer member and a projected position wherein said inner member projects outwardly from one end of said outer member, means supporting said bolt assembly for longitudinal reciprocation along a path wherein said one end of said outer member is shifted between a retracted unlocked and a projected locked position and vice versa, means interconnecting said bolt members so that they are simultaneously moved relative to said supporting means and relative to each other, and bolt assembly



actuating means for shifting said bolt assembly between said retracted and projected positions, and vice versa, whereby the longitudinal dimension of said bolt assembly is increased during projecting movements of said bolt assembly and the longitudinal dimension of said bolt assembly is decreased during movement of same to a retracted position.

3,222,899
CABINET LOCK
Albinus G. Bodoh and Walter E. Goluska, Glenview, Ill., assignors to The Seeburg Corporation, Chicago, Ill., a corporation of Delaware
Filed Oct. 5, 1962, Ser. No. 228,594
13 Claims. (Cl. 70—140)



1. A lock for joining a door to a frame provided with retaining means comprising:

a housing fixed to the door;

stop means for positioning the housing relative to the frame;

a lock handle telescopically mounted in the housing for rotational and limited axial displacement relative thereto;

a socket in one end of the lock handle;

a lock bolt rotatively mounted in the housing for one-way axial displacement relative thereto, a portion of the said lock bolt being rotatively received in the socket;

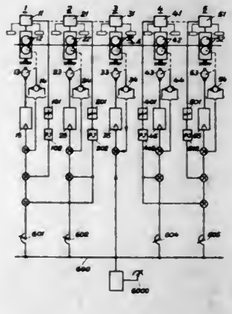
clutch means associated with the socket of the lock handle for clutchingly engaging the lock bolt;

spring means in the socket for urging the lock handle away from the lock bolt toward a position wherein the clutch means engages the lock bolt;

means adapted for rotation of the lock handle so as to rotate the lock bolt relative to the retaining means of the frame when the clutch means engages the lock bolt; and

means for retaining the lock handle against the spring means in a position wherein the clutch means is disengaged from the lock bolt.

3,222,900
SPEED CONTROL FOR ROCKING MILL STANDS
Erik Helsing, Vasteras, Sweden, assignor to Allmanna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a corporation of Sweden
Filed May 1, 1962, Ser. No. 191,561
Claims priority, application Sweden, May 3, 1961, 4,618/61
8 Claims. (Cl. 72—21)

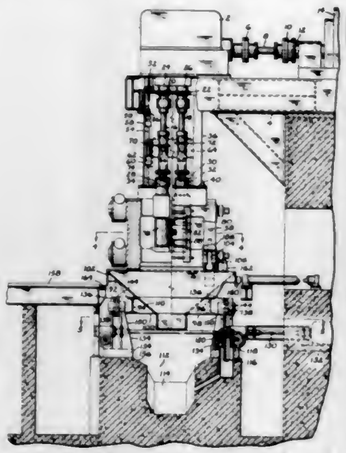


1. Rolling mill for thin goods comprising a roller train with a first base rolling mill and at least second and third other mills, each mill comprising a housing, driving means and at least one pair of working rollers mounted in said housing, means mounting at least the housings of said second and third mills for movement in relation to the ground, at least said second and third mills being provided with means responsive to movement of the housings in two opposite directions for measuring the tensile force upon the housing resulting from the pull of the rolled goods and for producing an output signal, means to adjust the roll speed of the base mill to a desired value, means for adjusting the roll speeds of the second and third mills to other values, so as to produce a certain tensile force in the rolled goods from the adjacent mills between adjacent housings, and means to feed the output signal of the measuring means upon movement of the corresponding housing at least indirectly to the driving means of the same mill.

3,222,901
ROLLING MILL
William J. Hill, Worcester, Mass., assignor to Morgan Construction Company, Worcester, Mass., a corporation of Massachusetts
Filed July 19, 1962, Ser. No. 211,034
11 Claims. (Cl. 72—39)

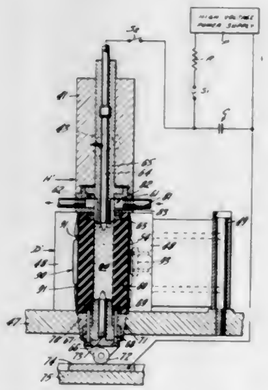
1. Means for supporting a roll housing in a rolling mill, said means comprising a foundation having spaced portions, a plurality of vertically adjustable elevational means carried by said foundation, a platform mounted on said elevational means, a roll housing supported by said platform, link means connected intermediate said

foundation and said platform for preventing movement of said platform in the direction of said pass line while allowing vertical adjustment of said platform, and an



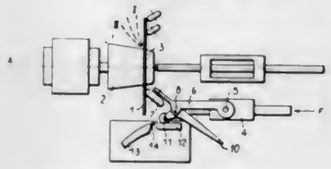
opening through said platform below said roll housing whereby cooling water flowing over said rolls may flow downward between the spaced portions of said foundation.

3,222,902
ELECTRO-HYDRAULIC FORMING METHOD AND APPARATUS
Robert John Brejcha, Westchester, Seymour Bazell, Chicago, and Joseph L. Radnik, Berwyn, Ill., assignors, by mesne assignments, to American Can Company, New York, N.Y., a corporation of New Jersey
Filed Dec. 28, 1961, Ser. No. 162,790
16 Claims. (Cl. 72—56)



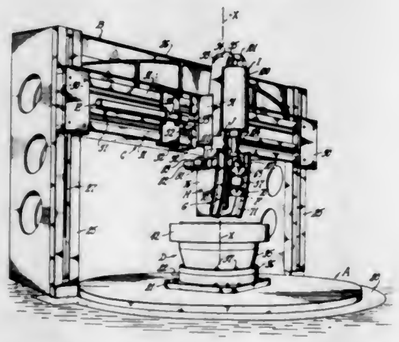
1. A forming head mechanism for electro-hydraulically shaping a tubular container body in a forming die comprising a support movable relative to said die, a tubular elastomeric member insertible within said body and mounted on said support, an electrode having an exposed tip mounted within each end of said elastomeric member and defining therein a container, an energy transmitting medium within said container, said electrode tips being immersed in said medium and being spaced apart a predetermined distance, and contacts on said electrodes externally of said elastomeric member and connected to an electrical power source which selectively discharges electrical energy across said electrode tips whereby shock waves are created within said medium which propagate outwardly from said electrodes and transmit energy to said elastomeric member for shaping said container body to the contour of said die.

3,222,903
DEVICE TO BE ADDED TO A LATHE, FOR SPINNING
Vittorio Caboni, % Ing. P. Guazzo, Via XX Settembre 74, Turin, Italy
Filed Apr. 22, 1963, Ser. No. 275,191
3 Claims. (Cl. 72—81)



1. A device adapted to be supported by a lathe for controlling the working movement of a spinning tool comprising: a longitudinal first guiding means having a sliding carriage thereon; a supporting arm for mounting a spinning tool at one end thereof and connected pivotably at the other end to said carriage; a lever having two arm portions and a fulcrum point located between said arm portions, said fulcrum point defining a pivotal connection means for pivotably joining said lever and said supporting arm; a rotating follower mounted on one of said two arm portions; a second guiding means parallel to said first guiding means and having a carriage sliding thereon; and a guide pattern mounted on the carriage of said second guiding means and adapted to be engaged by said follower, whereby movement of the opposite arm of said lever by an operator effects angular displacement of said follower-mounting arm.

3,222,904
METHOD AND APPARATUS FOR EXTRUSIVE ROLLING OF NON-CYLINDRICAL HOLLOW BODIES
Adolph W. Ernestus, Los Angeles, Calif., assignor to N.T.W. Missile Engineering, Inc., Los Angeles, Calif., a corporation of California
Filed May 14, 1962, Ser. No. 194,301
10 Claims. (Cl. 72—91)

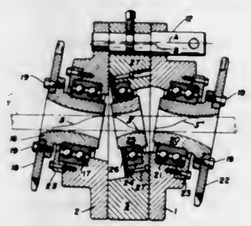


2. Extrusive rolling apparatus comprising: a female forming die having an inner wall flaring toward an open large end; means holding the die and rotating it; a roller unit including a slide and a forming roller journalled therein on an axis generally parallel to the cross-sectional contour of said inner wall in a plane of the axis of rotation; a guide in which said slide is guided for movement in an extrusion path parallel to said cross-sectional contour; a holder in which said guide is mounted for adjustment generally radially of the axis of die rotation, a power-operated actuator for moving said roller slide along said extrusion path; and means for adjusting said guide radially to adjust said roller closer to said inner wall of the die for reducing the wall thickness of the work.

3,222,905
METHOD OF FORMING TUBULAR METAL PRODUCTS BY EXTRUSIVE ROLLING
Adolph W. Ernestus, Los Angeles, Calif., assignor to N.T.W. Missile Engineering, Inc., Los Angeles, Calif., a corporation of California
Filed Dec. 13, 1963, Ser. No. 330,454
16 Claims. (Cl. 72—91)

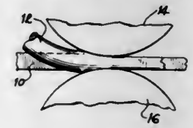
7. An improved method of fabricating integrally ribbed tubes of malleable metal, including the following steps: providing a tubular work piece of greater wall thickness than that required in the finished tube; and forcibly drawing said work piece through a sizing die to effect a sizing and burnishing operation against its outer surface while simultaneously applying against its inner surface a plurality of forming rolls applying radially outward pressure against said inner surface to reduce the wall thickness of the work piece while extruding radially inwardly a series of spaced reinforcing integral ribs and simultaneously elongating the work piece axially.

3,222,906
TUBE PROCESSING APPARATUS
Bernard J. Aurin III, 409 N. Neville St., Pittsburgh, Pa.
Filed Apr. 13, 1962, Ser. No. 187,408
4 Claims. (Cl. 72—162)



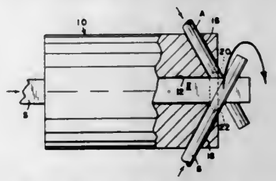
1. Apparatus for linearly straightening and rounding solid and hollow tubular members, comprising a pair of fixed, spaced connected roll housing members, a third roll housing member disposed between and having one end thereof pivotally connected between said spaced fixed housing members and having the opposite end of the housing resiliently supported between said fixed housing members for selective vertical pivotal movement beneath a screw threaded member opposed to said resilient support, a ring-roll rotatably mounted in each fixed housing members adjacent each end thereof and provided with an elongated hyperbolic shaped internal opening therethrough having a minimum internal diameter larger than a tubular member to be engaged thereby and axially aligned for passage of a tube therethrough, each said ring-rolls having substantially parallel axes of rotation similarly inclined relative to the horizontal plane of the longitudinal axis of said tube, means associated with each said spaced ring-rolls for imparting rotary movement thereto relative to said housing in a common direction of rotation, and a third ring-roll rotatably mounted in said adjustable housing and provided with an elongated hyperbolic shaped internal opening therethrough whose minimum internal diameter is larger than that of a tubular member to be received therein during passage through said first-named rolls, said third ring-roll having its axis of rotation oppositely inclined to that of the axis of the adjacent ring-rolls and relative to said horizontal plane of the longitudinal axis of the tubular member being processed therein, said ring-rolls at the medial diameter of the opening therethrough having their axis of rotation alternately vertically offset relative to the longitudinal center line of the tube being processed.

3,222,907
METHOD OF ROLLING METAL
Natalis H. Polakowski, 500 Kin Court, Wilmette, Ill.
Filed Nov. 13, 1962, Ser. No. 238,320
4 Claims. (Cl. 72—250)



1. A method for the rolling of elongate metal stock comprising the steps of providing wire-like metallic members having a thickness approximately equal to said stock, locating said members along the lateral edges of said stock, providing working rolls through which said stock and said members are adapted to pass, providing guide means defined in said working rolls for maintaining said members in position with said stock being confined therebetween, and passing said stock and said members through said working rolls whereby said stock and said members are simultaneously deformed.

3,222,908
METHOD OF AND APPARATUS FOR FABRICATING METALLIC STRIPS
Filbert A. Molella, 509 Bronson Road, Syracuse, N.Y.
Filed Nov. 3, 1961, Ser. No. 149,892
5 Claims. (Cl. 72—299)

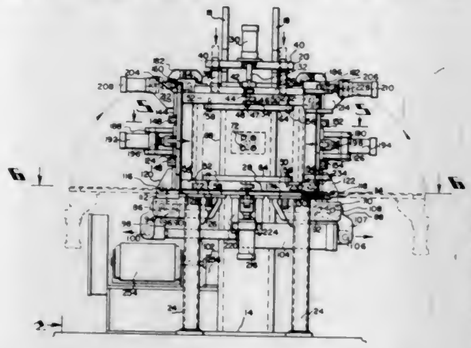


1. The method of forming an elongated metallic strip into a predetermined configuration which comprises securing a metal deforming means to a portion of the strip and imparting simultaneous rotary and longitudinal movement to the metal deforming means so that the metal deforming means envelops the metallic strip causing the strip to assume a configuration determined by the path generated by the metal deforming means.

3,222,909
COOLER FRAME FORMING MACHINE
Adam D. Goettl and Robert L. Koble, Jr., Phoenix, Ariz., assignors to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware
Filed Jan. 17, 1963, Ser. No. 252,243
15 Claims. (Cl. 72—306)

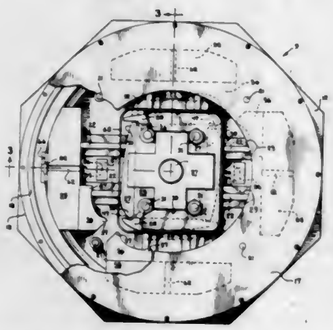
1. In a machine for forming a one piece, generally C-shaped, evaporative cooler frame having upper and lower pan sections integral with one vertical side which is provided with angularly disposed flanges, the combination of: a main frame; a rectangularly shaped first form-

ing plate having opposite edges; a generally box-shaped die assembly, said plate and said die assembly mounted on said frame; first means carried by said frame and disposed to cause relative movement between said plate and said die assembly to vary the spaced relation thereof; rectangularly shaped second and third forming plates having first edges pivoted about opposite edges of said first forming plate into positions at opposite sides of said die assembly and at substantially right angles to said first plate; power operated means disposed, pivotally, to actuate said second and third forming plates relative to said first forming plate; a pair of first flange forming members pivoted to each one of said second and third forming



plates at opposite edges thereof which are disposed at substantially right angles to said respective first edges; a second flange forming member pivotally mounted on each of said second and third forming plates at free edges of said plates opposite to said first edges which are pivoted to opposite edges of said first forming plate; opposite ends of said second flange forming members extending beyond the pivotal axes of said first flange forming members a distance equal to the width of a flange to be formed adjacent said first flange forming members; means on said second and third forming plates disposed to pivot said flange forming members relative to said second and third plates.

3,222,910
METHOD OF FORMING METALLIC SHEET MEMBERS
Ralph E. Roper, Indianapolis, Ind., assignor to Wallace Expanding Machines, Inc., Indianapolis, Ind., a corporation of Indiana
Filed Feb. 23, 1962, Ser. No. 175,152
7 Claims. (Cl. 72—332)



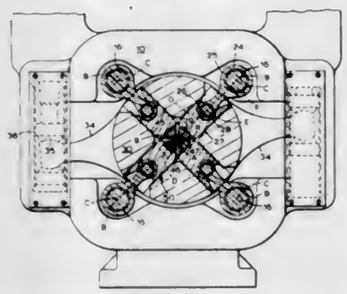
1. A method of forming sheet metal parts which comprises placing an annular member formed of sheet metal about an inner die structure and within an outer die structure, expanding the inner die structure to stretch the annular member and to force it against the outer die structure to produce a plurality of expanded parts connected by expanded scrap metal, and cutting the scrap metal to separate said parts.

3,222,911
FLEXIBLE OVERLAY FORMING
James Stanley Kirkpatrick and Donald L. Erickson, Dearborn, Mich., assignors to Brooks & Perkins, Inc., Detroit, Mich., a corporation of Delaware
Filed Apr. 16, 1962, Ser. No. 187,673
9 Claims. (Cl. 72—363)



1. A method of forming a metal sheet blank into an object of non-planar shaped cross sectional contour, comprising providing a rigid forming member of a contour generally corresponding to the desired object contour, providing a flexible metal overlay sheet of an area exceeding that of said blank in the portion thereof desired to be contoured, disposing said sheet blank in a position between said forming member and overlay sheet to be covered by the latter at said portion, causing said overlay sheet to be tensioned from points outwardly of said portion so as to wrap and conform said sheet and sheet blank about said forming member, and said blank sheet to assume and retain said cross sectional contour as an object so conformed, and employing said overlay sheet to form a register mark upon the conformed object while the latter is positioned between said overlay sheet and forming member, by manipulating a tool from the exterior of said overlay sheet to form a register indicium on said object.

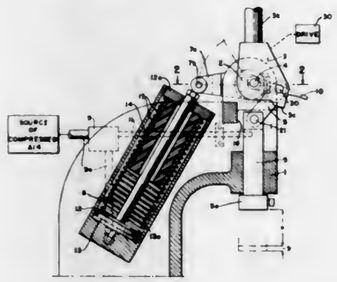
3,222,912
SWAGING MACHINE WITH ADJUSTABLE STROKE
Otto A. G. Specht, Cincinnati, Ohio, assignor to The Cincinnati Milling Machine Co., Cincinnati, Ohio, a corporation of Ohio
Filed Sept. 9, 1963, Ser. No. 307,420
3 Claims. (Cl. 72—402)



1. In a swaging machine having an operating zone in which a workpiece is received on an axis,
(a) a frame,
(b) a plurality of crankshafts mounted in the frame parallel to said axis and angularly spaced around said axis,
(c) a drive rod connected to each of said crankshafts,

(d) a hammer pivotally connected to each drive rod for reciprocation thereby,
(e) a guide block mounted in said frame and surrounding said axis, said guide block adjustable about said axis and having angularly spaced straight radial ways to receive, respectively, said hammers,
(f) and means to effect angular adjustment of said guide block from an angular position in which said radial ways are in line with the crankshafts and said axis to shorten the stroke of said hammers.

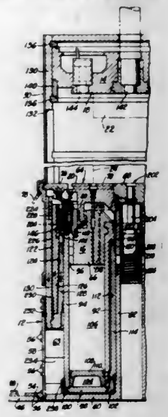
3,222,913
TOGGLE PRESS
Otto Leopold, Strindbergstrasse 20, Kassel, Hessen, Germany
Filed Sept. 18, 1963, Ser. No. 309,610
Claims priority, application Germany, Sept. 20, 1962, L 43,009
10 Claims. (Cl. 72—429)



1. A toggle press comprising, in combination:
(a) a support;
(b) a plunger movably mounted on said support;
(c) a toggle linkage interposed between said support and said plunger for moving the latter from an inoperative position to a position just short of its operative position which corresponds to a position of said toggle linkage which is just short of its dead center position;
(d) fluid pressure means interposed between said support and said toggle linkage for moving the latter with respect to said support, said fluid pressure means acting on said toggle linkage with a substantial mechanical advantage; and
(e) means operatively associated with said toggle linkage for actuating said fluid presure means when said linkage is just short of its dead center position, thereby to cause said fluid pressure means to move said toggle linkage while the same is in its dead center position, and, through the intermediary of the dead center toggle linkage, to move said plunger from just short of its operative position to its final operative position.

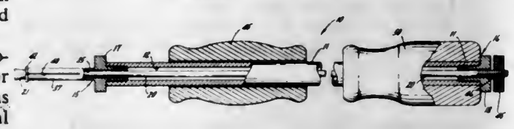
3,222,914
IMPACT APPARATUS
Frederick A. Monahan, La Mesa, Calif., assignor, by mesne assignments, to International Electronic Corporation, Burbank, Calif., a corporation of California
Filed Sept. 11, 1961, Ser. No. 137,409
16 Claims. (Cl. 72—453)

1. In impact apparatus for exerting controlled forces upon a material or workpiece, the combination of: a frame; a pair of hammers supported upon said frame for slidable movement relative to each other, said hammers including directly opposed platens, said hammers including reversely opposed coaxially arranged, mutually axially slidable pressure portions of said hammers comprising walls respectively opposite each other defining an annular pressure chamber, one of said hammers further including an internal reservoir for storage of fluid under pressure mounted on said hammer; said reservoir having a fluid capacity substantially equal to the capacity of said pressure chamber, and passage means between said reser-



voir and said pressure chamber having a transverse area comparable to the transverse area of said pressure chamber for introducing fluid under pressure substantially instantaneously from said reservoir into said pressure chamber to urge said platens toward each other for work upon the material or workpiece disposed therebetween.

3,222,915
SHEET METAL PULLER
Samuel M. Swisher, 16 N. Wallace St., Indianapolis, Ind.
Filed July 16, 1962, Ser. No. 210,024
1 Claim. (Cl. 72—457)

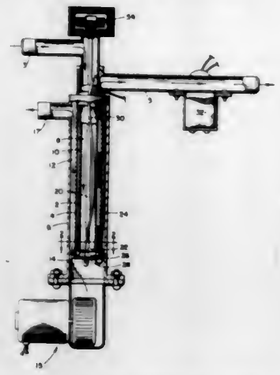


In a sheet metal straightening tool comprising an elongated hollow cylindrical bar, a handle received on said bar and fixed to one end thereof, an impact handle slidably mounted on said bar for impact engagement with said fixed handle, and metal engaging means, the improvement which comprises a hollow tip member threaded into the other end of said cylindrical bar and coaxial therewith, said hollow tip member including a hexagonal enlarged proximal portion and a reduced cylindrical slotted elongated projection portion extending away from said bar, both of said portions being coaxial with said bar, said projecting portion having slots therein which are opposed and extended longitudinally and having an enlarged distal end, said distal end having a radially extending surface facing toward said proximal portion, a rod extending through the hollow interior of said bar and tip, a frustoconically shaped button received on one end of said rod with its converging surfaces extending into said projecting portion, an externally knurled internally threaded member threadedly received on the other end of said rod whereby rotation of said knurled member draws said frustoconical button into said projecting portion causing spreading thereof.

3,222,916
METAL OXIDE CONCENTRATION METER

Karl A. Davis, Woodland Hills, Calif., assignor to North American Aviation, Inc.

Filed Feb. 12, 1962, Ser. No. 172,566
2 Claims. (Cl. 73—15)

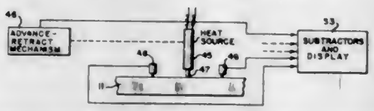


2. A liquid alkali metal plugging meter comprising:
(a) a housing member,
(b) a plate positioned transversely in said housing and having a central port with a plurality of communicating ports extending radially from said central port,
(c) a movable rod axially positioned in said housing,
(d) said rod being adapted to be received in said central port,
(e) means for moving said rod into and out of said central port,
(f) heater means in said housing member adjacent said plate,
(g) cooling means spaced from said heater means and said plate,
(h) said heating and cooling means adjusting the temperature of the liquid metal adjacent said plate,
(i) means for sensing the temperature of the liquid metal adjacent said plate, and
(j) flowmeter means cooperating with said housing for sensing the liquid metal flow rate through said plate.

3,222,917
NON-DESTRUCTIVE TESTING OF OBJECTS

Wilfred Roth, West Hartford, Conn., assignor to Gabb Special Products, Inc., Windsor Locks, Conn., a corporation of Connecticut

Filed Mar. 7, 1962, Ser. No. 178,146
12 Claims. (Cl. 73—15)

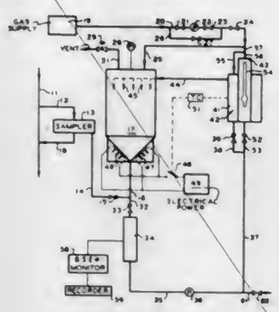


1. Apparatus for the non-destructive testing of objects to detect defects or flaws therein which comprises means for applying a thermal pulse to a localized region on one surface of a said object, pickup transducer means responsive to the temperature of said object at a localized region on said one surface spaced from the region of thermal pulse application for producing a pulse signal output having leading and trailing edges of substantial slope and a peak value therebetween, and display means for displaying the rise and fall of said pulse signal output as a function of time, whereby the pulse signal output from the object under test may be compared with that of an acceptable object to detect defects or flaws therein.

3,222,918
MEASUREMENT OF SPECIFIC GRAVITY AND BASIC SEDIMENT AND WATER CONTENT OF OIL

Louis E. Kuntz and Glen G. Hebard, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed July 5, 1962, Ser. No. 207,623
5 Claims. (Cl. 73—53)



1. Apparatus for determining the quality of oil passing through a pipeline comprising means for withdrawing a stream of oil from said pipeline, means for taking samples from said stream, means for reintroducing the remainder of said stream into said pipeline, a first container, means for introducing into said first container the samples from said means for taking, means for maintaining the temperature of the oil in said first container substantially constant at a predetermined value, a capacitance measuring cell, means for withdrawing oil from said first container and passing the thus withdrawn oil into and through said capacitance measuring cell as the dielectric material therefor, means responsive to the output of said capacitance measuring cell for producing a signal representative of the basic sediment and water content of the oil passing through said capacitance measuring cell, a second container, means for passing the oil from said capacitance measuring cell into said second container, means in said second container for indicating the specific gravity of the oil in said second container, and means for introducing a gas into said first and second containers under pressure, and means for maintaining the pressure of the gas in said first and second containers substantially constant at a predetermined value.

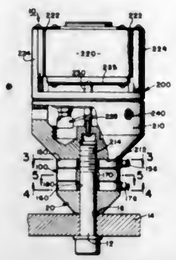
3,222,919
MECHANICAL IMPEDANCE MEASURING SYSTEM

Bernard A. Shoor and Dale R. Burger, Pasadena, Calif., assignors to Endevco Corporation, Los Angeles, Calif., a corporation of California

Filed Jan. 12, 1962, Ser. No. 165,735
8 Claims. (Cl. 73—67.1)

1. A mechanical impedance head comprising a cylindrical member having a plurality of axially extending cavities formed therein,
a pair of circular end plates mounted at the respective ends of said cylindrical member,
a plurality of solid elastic cylindrical bodies interconnecting said end plates and adapted to receive axial forces applied across said end plates and responsive to such forces by changing in length in proportion to such forces,

each of said solid elastic cylindrical bodies being mounted within one of said cavities and secured to said end plates,
means for detecting changes in length of said cylindrical bodies,

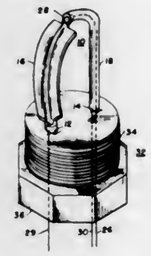


a plurality of accelerometers mounted on one of said end plates,
each of said accelerometers being mounted within one of said cavities.

3,222,920
UNITARY CORROSION TEST PROBE HAVING A TUBULAR REFERENCE SPECIMEN

Glenn A. Marsh and Edward Schaschl, Crystal Lake, Ill., assignors, by mesne assignments, to Union Oil Company of California, Los Angeles, Calif., a corporation of California

Filed Dec. 19, 1961, Ser. No. 160,506
8 Claims. (Cl. 73—86)



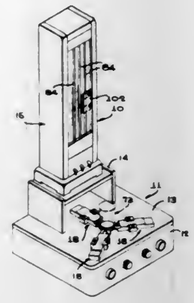
6. A corrosion-measuring device for use in a corrosive environment comprising a first specimen of tubular cross-section having the longitudinal opening therein fluid-tightly sealed at the ends thereof whereby the inner surface of said tubular specimen is isolated from said corrosive environment, a second ribbon-like specimen conjunct with said first specimen, said specimens being fabricated of an undivided, homogeneous piece of an electrically conductive material, the exposed surfaces of said specimens being adapted to contact the same corrosive environment, and electrical conductor means electrically connected to the terminal ends of said specimens.

3,222,921
DOUBLE SEAM TESTING DEVICE

Warren F. Schreiber, Darien, Conn., and James M. Schmidt, Broomall, Pa., assignors to Continental Can Company, Inc., New York, N.Y., a corporation of New York

Filed Dec. 13, 1962, Ser. No. 244,306
16 Claims. (Cl. 73—94)

1. A can seam compression testing device for testing a can seam of the type including wall portions and at least a single space therebetween, said device comprising a backing member, seam clamp means mounted for movement towards and away from said backing member for cooperation with said backing member for clamping a can seam therebetween, seam gaging probe means mounted for movement relative to said clamp, said probe means being movable toward said backing member for moving the wall portions of the can seam toward each other

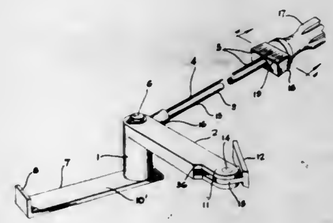


thereby decreasing the space between the wall portions at the clamped portion of a seam, and a gaging device reactive to the movement of said probe means relative to said clamp means and the movement of the wall portions for indicating the measured amount of space between the wall portions of the can seam.

3,222,922
SKI AND BOOT RELATIVE TORQUE INDICATORS

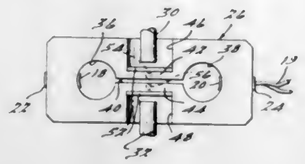
Peter Isaac, 9 Crown Hill Place, Apt. 410, Toronto, Ontario, Canada

Filed June 12, 1961, Ser. No. 116,476
8 Claims. (Cl. 73—133)



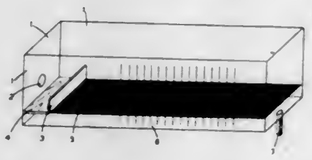
1. A device for measuring the torque between a boot and a ski comprising in combination load moving means in the form of a load bearing arm one end of which is bearable against said boot, device setting means connected to and co-acting with said load moving means for positioning and holding said device against said ski, an effort applying resilient arm, a rigid indicator rod, said load bearing arm and said resilient arm being fixed immovably relative to each other in angular relationship at one end of each, the end at which said load bearing arm is fixed being opposite to that which is bearable against said boot, said indicator rod being fixed immovably relative to said load moving means to the junction of said two arms to lie parallel with said resilient arm, and a measuring scale adjacent said rod whereon the extent of deflection of said resilient arm relative to said rod may be read.

3,222,923
WELDER TRANSDUCER
Milton J. Lebow, Oak Park, Mich., assignor to Lebow Associates, Inc., Oak Park, Mich., a corporation of Michigan
Filed June 9, 1961, Ser. No. 116,034
16 Claims. (Cl. 73—141)



1. A pressure-current sensing probe comprising a one-piece transducer body, said body having a flat elongated cavity formed in a medial portion thereof, the opposite sides of said body adjacent said cavity being deformable toward each other within said cavity, force-responsive strain gages on said transducer body adjacent said cavity for sensing the degree to which said deflectable side portion deforms, and means on said deflectable side portions of said transducer body for concurrently sensing a voltage drop across said transducer body which has a magnitude which varies in accordance with the variations in the magnitude of the current flow across said transducer body.

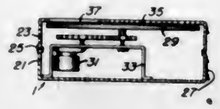
3,222,924
MINERAL WOOL QUALITY TEST
Jack E. Gaston, Manheim Township, Lancaster County, Pa., assignor to Armstrong Cork Company, Lancaster, Pa., a corporation of Pennsylvania
Filed Feb. 6, 1963, Ser. No. 256,633
4 Claims. (Cl. 73—159)



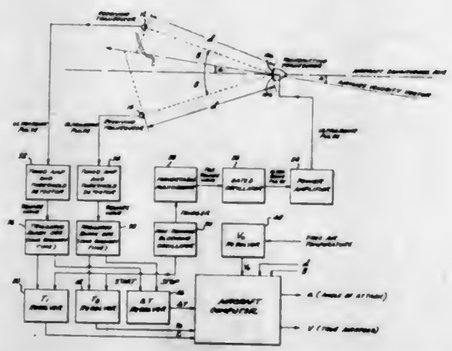
1. The method of determining the board-making quality of mineral wool which comprises forming a definite quantity of an aqueous dispersion of a clay and the mineral wool to be tested, passing the dispersion to a head box, passing the dispersion from the head box to a drainage wire adapted to retain the clay and fibers, and measuring the volume and the length of the mat of the retained clay and fibers.

3,222,925
APPARATUS FOR THE CLASSIFICATION AND EVALUATION OF FALLOUT FROM AEROSOLS
Robert D. Kracke, Bel Air, and Albert Pfeiffer, Edgewood, Md., assignors to the United States of America as represented by the Secretary of the Army
Filed June 25, 1959, Ser. No. 822,976
6 Claims. (Cl. 73—170)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. A fallout meter comprising a plate having an unobstructed upper surface and having an elongated slot therethrough, a supporting surface positioned closely adjacent and beneath said plate, flat collecting members carried by said supporting surface and means producing relative movement between said plate and said supporting surface at a constant rate in a direction transverse to the major dimension of said slot, said slot being so proportioned that the ratio of the width of said slot to the amount of movement in a given time is constant throughout the length of said slot.



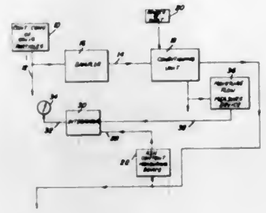
3,222,926
AIR MASS RELATIVE MOTION METER
Thurman W. Carver, Wichita, Kans., assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware
Filed July 10, 1961, Ser. No. 123,005
12 Claims. (Cl. 73—180)



6. Apparatus for measuring air mass relative motion from an aircraft, comprising a transmitter of compressional wave pulse energy mounted on the aircraft in the free airstream, two receivers of such compressional wave pulse energy mounted on the aircraft at predetermined locations in the free airstream displaced rearwardly from the transmitting location, the receiving locations being laterally spaced from each other and from a line through the transmitting location parallel to the heading of the aircraft, timing means operatively associated with said two receivers for measuring the difference of time lapse between transmission of wave pulse energy and reception of such wave pulse energy by said two receivers, and means for computing said air mass relative motion from such time lapse difference at which the wave pulse energy was received at said two receivers from said transmitter.

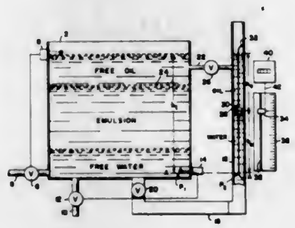
3,222,927
CONTINUOUS PROCESS FOR DETERMINING MOISTURE CONTENT AND HEAT OF COMBUSTION OF SOLID FUELS
Leonard Messer, P.O. Box 231, Pittsburgh, Pa.
Filed Mar. 8, 1962, Ser. No. 178,377
13 Claims. (Cl. 73—190)

1. A non-destructive method for providing instantaneous calorific information in connection with a solid particle fuel exhibiting a heat value characteristic which is a substantially linear function of ash content only for a constant value of moisture content comprising the steps of: diverting a sample flow of solid fuel particles from a continuous product flow thereof; reducing the moisture content of the sample flow of solid particles to a predetermined constant level; simultaneously determining the instantaneous rates of product flow movement and quantitive moisture content reduction measuring the instantaneous ash content of the sample flow at said constant moisture level calibrated in accordance with



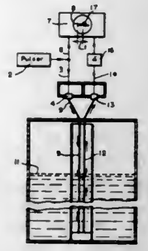
said linear function; recording a said calibrated ash content measurements at a rate porportional to said determined rate of product flow movement to identify the portion of the product from which the sample flow is derived; and calculating the instantaneous calorific value of said fuel from the ash content measurement, the moisture content reduction and the product flow rate.

3,222,928
TANK GAUGE APPARATUS
William F. Walker, Tyler, Tex., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey
Filed Jan. 24, 1962, Ser. No. 168,353
13 Claims. (Cl. 73—224)



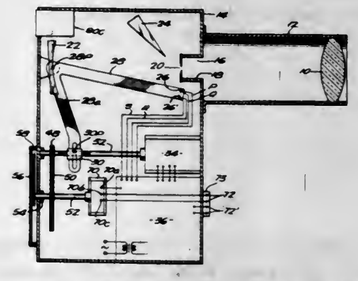
9. The method of gauging the proportion of oil and water in a tank which is filled repeatedly with a mixture of oil and water which may settle in the tank in layers of free oil, an emulsion of oil and water and free water comprising a cycle of operation including the sequential steps of filling the tank to a predetermined level with the mixture of oil and water to be gauged, connecting to the tank a vertically extending tube containing a gauging liquid therein, said connection providing fluid communication between the lower end of the tube and the tank at a level so that the gauging liquid is responsive to the pressure head of the water in said tank whereby the pressure head condition of the gauging liquid is indicative of the proportion of oil and water in the tank, sensing said condition of said gauging liquid to give an indication of the head for making a record of said oil-water proportion and draining the oil-water mixture from the tank, and repeating said cycle for successive tank fillings of oil-water mixtures whereby the amount of oil that is delivered from the tank may be determined.

3,222,929
AUGMENTED-SIGNAL MECHANICAL WAVE DEPTH GAUGE
Henry P. Kalmus, 3000 University Terrace NW., Washington 16, D.C., and Max L. Libman, Box 112, Rte. 5, Fairfax County, Va.
Filed Sept. 21, 1964, Ser. No. 398,003
9 Claims. (Cl. 73—290)



3. Liquid level indicating means comprising
(a) first and second elongated sonic pulse transmitting elements extending into the liquid,
(b) means for transmitting mechanical pulses along said first element in one direction and into the liquid,
(c) a substantial portion of said first element being displaced in the liquid at such an angle that a pulse transmitted along the electrode travels a substantial horizontal distance while traversing said portion, and produces a corresponding wave front in the liquid having a substantial horizontal component of motion,
(d) a portion of said second element being adjacent said substantial portion of the first element and at least generally parallel thereto, whereby said moving wave front of the liquid produces a pulse in said second element moving in the same general direction as said wave front,
(e) transducer means at the end of said second element toward which said pulses are moving, for converting said pulses to electric pulses indicative of the depth of the liquid.

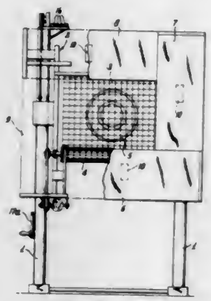
3,222,930
SPECTROPYROMETER APPARATUS AND METHOD
Warren K. Smith, 100 Coral Sea Circle, China Lake, Calif.
Filed Dec. 4, 1961, Ser. No. 156,822
28 Claims. (Cl. 73—355)



4. A pyrometric system comprising: first means including means to intercept radiant energy emitted from a body of unknown temperature, and means to disperse the intercepted energy in a band according to wave length; second means comprising first and second twin radiant-energy detectors, constructed and arranged to position said detcetors to intercept substantially all of said dispersed band of energy with said first detector

receiving energy of all shorter wave lengths and said second detector receiving energy of all longer wave lengths, said detectors when energized providing respective electrical outputs incident to interception of respective portions of said energy and said second means including means responsive to said outputs to cause movement of said detectors to a position equalizing the said electrical outputs; third means including means to energize said detectors; and fourth means comprising relatively movable indicator means connected to said second means and moved thereby incident to movement of said detectors to said position and constructed and arranged to indicate the absolute temperature of said body.

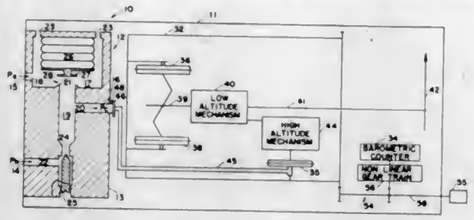
3,222,931
TARGET FOR GOLF DRIVING PRACTICE
Tadashi Takata, 68 Honcho Himejishi, Hyogoken, Japan
Filed June 17, 1963, Ser. No. 288,318
Claims priority, application Japan, June 20, 1962, 37/33,455
1 Claim. (Cl. 73—379)



A golf driving practice device comprising a frame, a flexible net positioned to receive a driven ball and attached at one end to one side of said frame, a shaft rotatably mounted on the opposite side of said frame and upon which the opposite end of said net is wound, said shaft being spring biased to turn in a direction which maintains said net taut, an indicator for indicating the force of an impact against said net, said indicator being responsive to rotation of said shaft, a target positioned behind and visible through said net, a plurality of shields positioned about the periphery of said net, an indicator for each shield actuated when said shield is struck, an electrical circuit connecting each shield and its respective indicator, a switch in said circuit adapted to be closed when said shield is struck, holding means for temporarily retaining said switch in its closed position, and timer means for automatically releasing said holding means after a predetermined period of time.

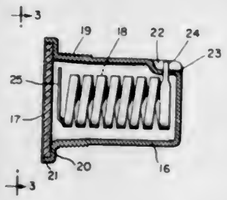
3,222,932
PRESSURE RESPONSIVE INSTRUMENT
John W. Henneman, Rock Island, Ill., assignor to The Bendix Corporation, Davenport, Iowa, a corporation of Delaware
Filed Mar. 19, 1963, Ser. No. 266,397
9 Claims. (Cl. 73—386)

4. In an altimeter means for producing a signal variable as a multiple of static pressure comprising a pressure sensitive capsule, a pressure passage means for communicating fluid pressure to said pressure sensitive capsule, means for varying the fluid pressure in said pressure passage means as a function of said static pressure comprising a flow passage in fluid communication with said pressure passage means and having a passage opening, flow restricting means disposed in said flow passage for limiting the flow of a pressurized fluid through said flow passage, and means for relieving the fluid from said flow passage including a fluid chamber open to said static pressure, a resilient pressure responsive member disposed in said chamber and valve means actuated by said pres-



sure responsive member and disposed for varying said passage opening, said last mentioned means maintaining the pressure change of the fluid pressure in said pressure passage less said static pressure a function of the ratio of the effective area of the pressure responsive member to the effective area of the valve.

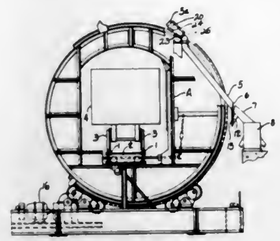
3,222,933
PRESSURE GAUGE FOR A PRESSURIZED VESSEL
John W. Howard, 475 El Medio, Pacific Palisades, Calif.
Continuation of application Ser. No. 69,716, Nov. 16, 1960. This application June 4, 1964, Ser. No. 374,879
6 Claims. (Cl. 73—418)



1. An improved pressure gauge for mounting in the sidewalls of a pressurized vessel, said pressure gauge comprising: a casing; an integral combined lens and dial member mounted in and closing off one end of said casing; a spirally turned tube coupled to the other end of said casing and extending coaxially within said casing towards said dial member; means defining an opening in said other end of said casing sealably retaining one end of said tube; means formed on the peripheral sidewalls of said casing for coupling to the sidewalls of said pressurized vessel, and, a pointer formed by the other end of said spirally turned tube, said pointer being positioned to extend diametrically across said casing and being designed to function with said dial member.

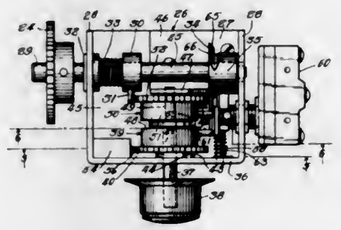
3,222,934
CAR DUMPER SAMPLING MEANS
Armand Bur, 1213 North Ave., Parma, Ohio
Filed Feb. 4, 1963, Ser. No. 255,787
7 Claims. (Cl. 73—421)

1. In combination, a car dumper, a sampling pipe mounted thereon and movable to a material receiving position and having a plurality of sample receiving openings spaced from one another lengthwise of said pipe, said openings being arranged to receive respective samplings of material dumped from a car mounted on said dumper, a gate in said pipe arranged to move to closed position within the pipe between said openings when said pipe is in material receiving position, and means to operate the car dumper to cause material to flow from the car successively into said openings and to restore



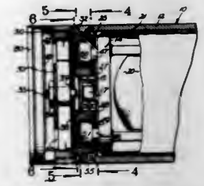
said dumper to non-dumping position, said gate being movable to open position when the dumper is so restored to non-dumping position whereby to condition the sampling pipe to discharge received samples of said material.

3,222,935
STEPPING DEVICE
Frederick Fetzer, Strongsville, Ohio, assignor to Hollymatic Corporation, a corporation of Illinois
Filed Oct. 4, 1962, Ser. No. 228,473
3 Claims. (Cl. 74—3.52)



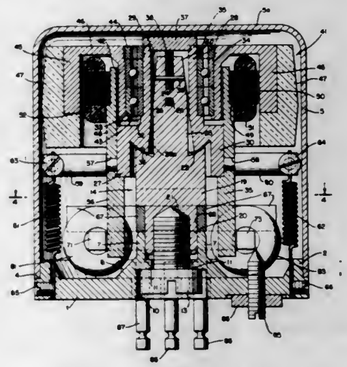
1. A stepping device, comprising: a reaction member movable to a moved position; an operating member engageable with said reaction member for said movement thereof; a stop member; means for moving said stop member to a variable desired location from an ultimate initial position; means for urging said operating member into stopping engagement with said stop member at said desired location; means for moving said operating member in increments from said stopping engagement with said stop member at said desired location into engagement with said reaction member for movement thereof, the total of said increments of movement of said operating member determining the total movement of said operating member required to engage and move said reaction member; means for retaining said engagement of the operating member with the reaction member; means for releasing said engagement, said means for urging thereby returning said operating member to said stopping engagement with said stop member after said moving of said reaction member, said desired location of said stop member determining the number of said increments required to move said operating member into said engagement with said reaction member; and means on said stop member for retaining said reaction member in said moved position when said stop member is at said initial position.

3,222,936
DAMPER MEANS FOR SINGLE-AXIS GYROSCOPE
Warren Talbot, Woodland Hills, and Sven F. Jerlstrom, Van Nuys, Calif., assignors, by mesne assignments, to Security First National Bank, Los Angeles, Calif., a national banking association
Filed June 4, 1962, Ser. No. 199,940
2 Claims. (Cl. 74—5.5)



1. A damper for a single-axis gyroscope having a gimbal swingably mounted on gimbal end plate means comprising:
a fluid-containing, damper cavity mounted in said end plate means;
a gimbal stud rigidly affixed to said gimbal in such a manner that said stud extends into said cavity; and
a piston slidably mounted on said gimbal stud in said cavity, the density of said piston being approximately the same as the density of the fluid in said cavity.

3,222,937
GYROSCOPE
Henry Konet, Ho-Ho-Kus, N.J., assignor to Special Devices Laboratories, Inc., South Orange, N.J., a corporation of New Jersey
Filed Jan. 23, 1959, Ser. No. 788,642
35 Claims. (Cl. 74—5.6)

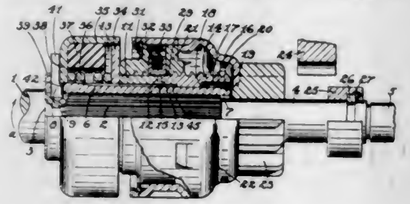


1. In a rate gyroscope, a fixed pedestal comprising a spindle having a vertical first axis, a sleeve-like gimbal element, bearing means mounting said element on and about said spindle for pivotal movement only about a second axis diametral of said element and normal to and intersecting said first axis, and a rotor journalled on said element for spinning about a third axis normal to said second axis.

3,222,938
ENGINE STARTER GEARING
James J. Digby, Elmira, N.Y., assignor to The Bendix Corporation, Elmira, N.Y.
Filed Jan. 8, 1964, Ser. No. 336,544
4 Claims. (Cl. 74—7)

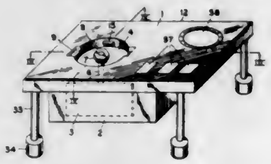
1. In an engine starter drive:
a power shaft having a shoulder formed thereon and a pilot hole adjacent said shoulder,
a driving sleeve splined on the power shaft,

a locating pin mounted in said sleeve and engaging in said pilot hole to maintain the sleeve in engagement with said shoulder,
a hollow screw shaft slidably journalled on the driving sleeve,
a driving clutch ring splined on the driving sleeve having an overrunning clutch connection with said screw shaft,
means defining the normal engaged position of the screw shaft and the driving clutch ring,
yielding means urging the screw shaft toward its normal position,
yielding mesh-enforcing means including an enclosing cup member having a bottom flange slidably mounted on the driving sleeve,
said yielding mesh-enforcing means resisting move-



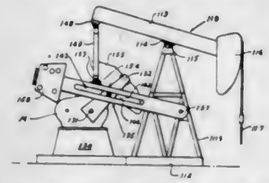
ment of the driving clutch member away from its normal position,
said locating pin having a flattened stem protruding radially from the driving sleeve and providing a shoulder substantially flush with the exterior surface of said sleeve,
said bottom flange of the cup member being normally seated against the flat surface of the locating pin and engaging said shoulder to thereby retain the locating pin in operative position,
cushioning means resisting further axial movement of the driving clutch member after a predetermined compression of the mesh-enforcing means,
a control nut threaded on said screw shaft,
a pinion slidably journalled on the power shaft for movement into and out of mesh with a gear of the engine to be started, and
a barrel member rigidly connecting the control nut and pinion.

3,222,939
KITCHEN APPLIANCE DRIVE UNIT
Rudolf Staeger, Alsterdorfer Strasse 155, Hamburg, Germany
Filed July 16, 1962, Ser. No. 210,616
Claims priority, application Germany, July 18, 1961, St 18,094
3 Claims. (Cl. 74—16)



1. A kitchen-appliance power unit, comprising a generally rectangular relatively thick rigid first plate; a plurality of relatively stiff elastic legs spaced about the periphery of said first plate; elastic boots in said legs; a generally rectangular relatively thin second plate disposed below said first plate and extending parallel therewith, said legs extending downwardly through said second plate; a substantially rectangular housing depending from said second plate; vibration-absorbing means suspending said second plate from said first plate; a motor mounted in said housing and having an upwardly extending drive shaft, said first plate and second plate each being provided with a respective throughgoing opening registering with one another and with said housing, said drive shaft projecting through the opening in said second plate into the opening in said first plate; locking means extending into said opening of said first plate and coplanar therewith for releasably retaining an accessory operable by said motor, and means for releasing said retaining means.

3,222,940
COUNTERBALANCE MEANS
Joe Chastain, P.O. Box 4035, Midland, Tex.
Filed Nov. 13, 1961, Ser. No. 151,723
7 Claims. (Cl. 74—41)

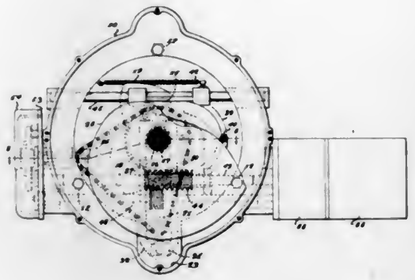


1. A device of the type described including: a support means; an elongate walking beam pivotally mounted intermediate its ends at a fixed point on said support means for reciprocating oscillation about such fixed point in a substantially vertical plane, one end of said walking beam being adapted to be connected to a reciprocably movable vertical load; an auxiliary beam member pivotally mounted at one end on said support for swingable oscillation in a substantially vertical plane about such pivotal connection with said support; a connecting link member pivotally connected at one end to the end of the walking beam opposite said reciprocably movable load and at its other end to said auxiliary beam adjacent its outer swingable end, said link member connecting said elongate walking beam and said auxiliary beam parallel to each other, whereby said elongate walking beam is swingable about its pivotal mounting intermediate its ends by said auxiliary beam; a drive shaft carried by said support and rotatably mounted thereon; a crank arm rigidly secured to said drive shaft and rotatable therewith; connecting means operatively interconnecting said crank arm and said auxiliary beam, whereby said crank arm is connected with said elongate swingable walking beam opposite the end of said walking beam to which said load is adapted to be connected for causing reciprocating oscillating movement of said walking beam upon rotary movement of said crank arm by said drive shaft; and a counterbalance weight means on said crank arm outwardly of said crank arm from said drive shaft beyond the connection of said crank arm with said auxiliary beam for imposing a torque on said drive shaft; and second counterbalance weight means mounted on said auxiliary beam at a point spaced outwardly from the pivotal connection of said auxiliary beam on said support beyond the connection of said auxiliary beam with the connecting link member, said second counterbalance weight means coacting with said first counterbalance weight means on the crank arm for varying the load applied to said walking beam.

3,222,941
BUILDER MOTION
Albert E. Winslow, Greenville, S.C., assignor to Winslow, Incorporated, a corporation of South Carolina
Filed June 1, 1961, Ser. No. 114,132
14 Claims. (Cl. 74—55)

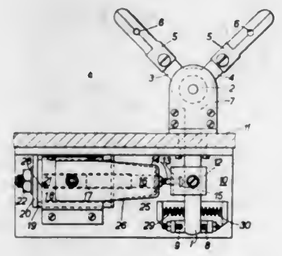
1. A builder motion for actuating a winding traverse comprising a driven oscillator cam, a cycling cam having

a worm wheel assembled coaxially therewith, slide means disposed for rectilinear following motion at said cycling cam to deliver movement to said traverse, means mounted in following engagement with said oscillator cam for oscillation thereby, a worm mounted for rotation and for



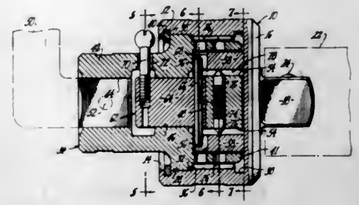
axial sliding, and selectively operable means operatively connected to said worm for selectively rotating said worm, said worm being engaged by said following means for oscillation in response to said oscillation of said following means and engaging said worm wheel for angularly oscillating and selectively rotating said cycling cam.

3,222,942
DEVICE FOR DETACHING MERCURY DROPS FROM A CAPILLARY TUBE
Herbert MacDonald Davis, Barnehurst, and William Hartshorn Lockwood, Pinner, England, assignors to United Kingdom Atomic Energy Authority, London, England
Filed Jan. 9, 1961, Ser. No. 81,466
Claims priority, application Great Britain, Jan. 16, 1960, 1,655/60
4 Claims. (Cl. 74—102)



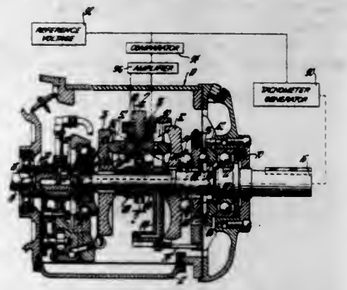
1. A device for detaching mercury drops from a capillary tube comprising a moveable arm including a mounting for holding a capillary tube, an electromagnet having armature moveable between an unenergized and an energized position, a lost-motion coupling coupling said armature to said arm, the coupling serving to delay movement of the arm until after the armature has moved a predetermined amount, first loading means acting on said armature to return it to the unenergized position, two substantially non-resilient stops defining the limits of the movement of said arm, and second loading means acting on said arm to restore said arm to one of said limits after being moved therefrom to the other of said limits by the energization of said electromagnet.

3,222,943
RATCHETER
Russell H. McDonald, Canoga Park, Calif., assignor, by mesne assignments, to Pendleton Tool Industries, Inc., Los Angeles, Calif., a corporation of Delaware
Filed June 25, 1963, Ser. No. 290,551
7 Claims. (Cl. 74—157)



1. A ratchet mechanism, comprising:
an outer body having a circular opening extending axially into one end thereof, the wall of said opening being serrated to form ratchet teeth;
an inner member rotatably mounted in said body opening, said member having a transverse guideway within said body opening which opens at opposite ends toward said ratchet teeth;
a ratchet pawl slidable in said guideway and having ratchet teeth at its ends adapted for driving engagement with said body teeth, said pawl being movable in one direction in said guideway to a first position of driving engagement with said body, wherein said mechanism is conditioned to ratchet in one direction, and said pawl being movable in the opposite direction in said guideway to a second positon of driving engagement with said body teeth, wherein said mechanism is conditioned to ratchet in the opposite direction;
means for resiliently retaining said pawl in each of said positions thereof;
a pawl actuator coaxially journaled in a bore in said inner member;
means operatively connecting said pawl actuator and pawl, whereby the latter is shiftable from one driving position thereof to the other by rotation of said actuator; and
a transverse pawl reversing lever on said actuator extending to the exterior of said member through a side wall slot in the member.

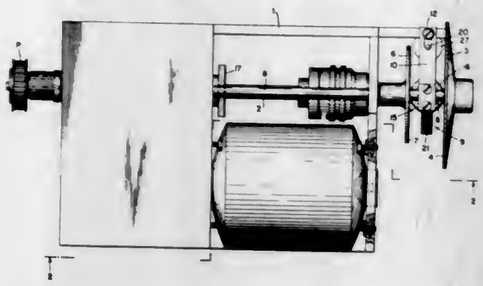
3,222,944
DRIVE TRANSFER MECHANISM
John L. Harned, Detroit, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 14, 1961, Ser. No. 138,106
9 Claims. (Cl. 74—190.5)



1. In a drive transfer mechanism, the combination of driving and driven members respectively provided with

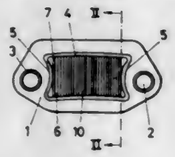
coaxial driving and driven surfaces, a rotatable member between the surfaces for transferring drive therebetween, and means developing an electrical force for causing the rotatable member to tiltably steer itself to certain drive ratio establishing positions.

3,222,945
RECORDER
Richard S. Kampf, Denver, Colo., assignor to Honeywell, Inc., a corporation of Delaware
Filed Jan. 12, 1962, Ser. No. 165,916
6 Claims. (Cl. 74—200)



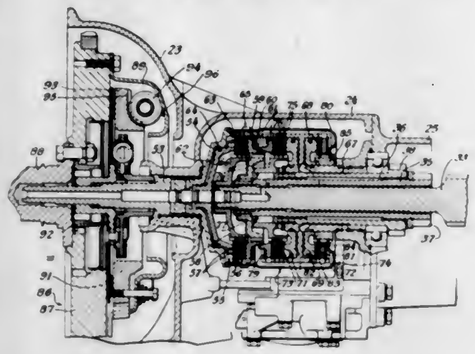
1. A self-adjusting inertia activated, variable-speed transmission including, a frame, a rotatable input disc pivotally mounted in said frame, a rotatable output disc having a face portion partially overlying and substantially parallel with a portion of the face of said input disc, a shaft, an intermediate wheel, the wheel being mounted for slidable rotatable movement along the shaft by inertia when the speed of one of the discs is altered and having a portion of its surface engaging said input disc and a portion of its surface engaging said output disc, a crank arm, one end of the crank arm being positioned to pivotally support one end of the shaft in a position to effect movement of the longitudinal axis of the shaft from one side of a line connecting the centers of said discs to the other side of said line, and a damping device operably positioned to contact the other end of the crank arm to delay the movement of the shaft and the inertial movement of the intermediate wheel therealong in the direction which causes the wheel to move towards the center of said input disc when the speed of rotation of one of the discs is altered.

3,222,946
LINK CHAIN WITH TRANSVERSELY SLIDABLE SETS OF SEGMENTS MOUNTED IN CAGES
Herbert Steuer, Bad Homburg vor der Hohe, Georg Ott, Bergen-Enkheim, Georg Rack, Kalbach, and Rudolf Schrodt, Kronberg, Taunus, Germany, assignors to Reimers Getriebe K.G., Ascona, Switzerland, a firm of Switzerland
Filed Apr. 29, 1964, Ser. No. 363,544
Claims priority, application Germany, May 2, 1963, R 35,074
14 Claims. (Cl. 74—236)



1. A link chain for an infinitely variable cone pulley transmission having at least two pairs of conical pulley disks with radially extending teeth thereon and the disks of each pair being movable relative to each other in the axial direction inversely to the movement of the disks of the other pair for the purpose of varying the speed ratio of the transmission, said chain comprising a plurality of links and each of said links comprising a plurality of link straps having apertures, and a tubular cage mounted in said apertures and a set of segments enclosed within and slidably guided by said cage and adapted when entering between said toothed conical disks of one pair to be shifted within said cage transversely to the direction of travel of said chain so as to form teeth adapted to engage positively with the teeth of said disks, said cage having opposite end walls facing in the direction of travel of said chain and each having a part curved inwardly toward the other end wall, the outermost segments of said set directly engaging upon and being supported by and tiltable on said curved parts of said end walls, the end walls of said apertures in said link straps of each link fully engaging with the outer sides of said end walls of said cage, the total thickness of all of said segments substantially equalling said space between the curved parts of the end walls, and the surfaces of the outermost segments facing the end walls of the cage deviating from the inner surfaces of such end walls.

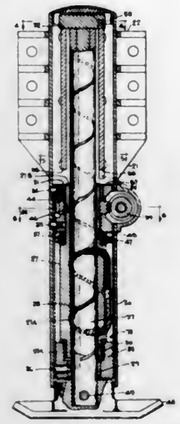
3,222,947
POWER TRANSMISSION SYSTEMS FOR VEHICLES
Alan J. Atkins and Albert Norman Bland, Leamington Spa, England, assignors to Automotive Products Company Limited, Leamington Spa, England
Filed Nov. 2, 1962, Ser. No. 235,065
Claims priority, application Great Britain, Nov. 8, 1961, 40,050/61
18 Claims. (Cl. 74—336)



1. A power transmission system for transmitting the drive from an engine to road wheels of a vehicle, the transmission system comprising a layshaft gear assembly, a plurality of friction clutches operable by fluid pressure means to control the speed ratio between the input and output ends of said layshaft gear assembly, means responsive to vehicle speed to control the operation of said clutches, and a drive take-up means operated automatically by increase of engine speed from an idling speed.

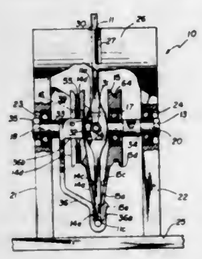
3,222,948
TRANSLATIONAL DRIVE MECHANISM
Le Roy S. DeMart, Lancaster, Ohio
Filed May 14, 1962, Ser. No. 194,412
19 Claims. (Cl. 74—424.8)

1. Extensible and retractable means for sustaining a compressive load comprising a casing adapted to be attached to a supported element, threadably interengageable, relatively rotatable nut and screw members carried by said casing, rotary driving means for inducing relative rotation of said members to effect axial displacement of one with relation to the other and with relation to the casing, keying portions inhibiting angular rotation of the non-rotatively driven member with respect to the casing throughout a substantial proportion of the travel of the displaceable member, gated portions of limited peripheral extent coacting with said keying portions and permitting limited angular rotation of the



non-rotatively driven member at a predetermined position in the axial travel of said axially displaceable member, and supplemental load supporting abutment portions carried partly by the casing and partly by said axially displaceable member and movable into and out of axially overlapping positions in response to such limited angular rotation.

3,222,949
CONTROL MECHANISM
Ronald T. Peterson, 1141 Denker, Wichita, Kans.
Original application Mar. 25, 1963, Ser. No. 267,626. Divided and this application Jan. 29, 1964, Ser. No. 345,830
8 Claims. (Cl. 74—471)



8. A control lever mechanism comprising, a frame, control means carried by said frame pivotable about a transverse axis and a longitudinal axis, first driven means, second driven means, and interlocking means pivotally connected to said frame and tiltable by said control means with lateral movement of said control means from a neutral position in such a manner that said interlocking means remains interlocked with one of said driven means and disengages and unlocks the other of said driven means for permitting the same to be driven by said control means for controlling the position of the same.

3,222,950
ROCKER ARM FOR INTERNAL-COMBUSTION ENGINES
John R. Winter, Jr., 4276 S. Shore Drive, Pontiac, Mich.
Continuation of application Ser. No. 160,696, Dec. 14, 1961. This application June 3, 1964, Ser. No. 374,876
18 Claims. (Cl. 74—519)



1. In a rocker arm for an internal combustion engine or the like, said arm having end portions and a hub intermediate said end portions, an abutment portion carried by each of said end portions, whereby reciprocating motion is transmitted from one end of the arm to the other by rocking the arm about the hub, each of said abutment portions having one side farther from the hub than the other, an oil passage means carried by said arm providing oil conductive communication for delivery of oil from the interior of the hub to said one side of one of said abutment portions farther from the hub.

3,222,951
HANDLE OPERATING MEANS
Ethan K. Maursey, Warren, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 20, 1964, Ser. No. 406,662
4 Claims. (Cl. 74—543)

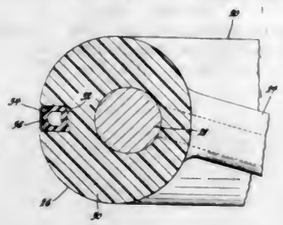


1. Means for operating a mechanism having a driven shaft comprising, in combination, a handle member provided with a slot opening outwardly from the surface of said handle member and a hub portion adjacent one end of said handle member for receiving said shaft for free axial movement therein, means on said hub portion for nonrotatably securing said handle member to said shaft, and a member having a first decorative portion located within said slot and anchored to said handle adjacent the other end thereof and a second holding portion, said holding portion being releasably secured directly within said hub and including means operable indepedently of said nonrotatable securing means and engageable with cooperating means on said shaft to positively lock said shaft against axial movement within said hub portion.

3,222,952
STEERING WHEEL
William A. Frye, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed June 13, 1963, Ser. No. 287,659
11 Claims. (Cl. 74—552)

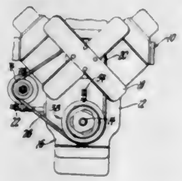
1. A steering wheel comprising a hub, spokes and rim connected to the hub by said spokes, said rim having a circumferential groove extending inwardly of the rim from its major diameter, a continuous ornamental band having

an outside diameter substantially equal to the major diameter of said rim and an inside diameter greater than the inside diameter of said groove and positioned in and



carried loosely by said groove, and resilient means cooperating with said band and rim groove for positioning said band in said rim groove for resiliently centering the band with respect to the groove and the rim.

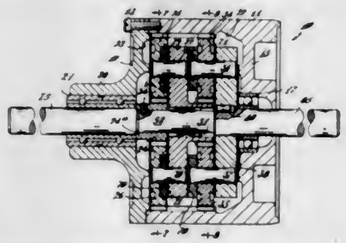
3,222,953
TORSION-KEYED VIBRATION DAMPER
Lysle I. Benjamen, 951 N. Adams, Birmingham, Mich.
Filed May 27, 1963, Ser. No. 283,357
4 Claims. (Cl. 74—574)



3. A vibration damper for the rotatable crankshaft of an engine comprising a first member adapted to be coupled to a crankshaft for rotation with the latter, a second member of predetermined inertia mass to dampen crankshaft vibrations, said members respectively including radially spaced opposed annular frictional drive surfaces and a plurality of radially opposed annularly spaced parti-cylindrical drive pockets, and unitary resilient means comprising a sleeve-like body and a plurality of spaced nodules projecting radially therefrom, said body including said nodules being respectively radially compressed between said surfaces and radially opposed pairs of said pockets, whereby said resilient means permits said members to oscillate to a limited extent relative to each other as they rotate with a crankshaft to dampen vibrations in the latter while said nodules resiliently key said members against permanent relative angular displacement.

3,222,954
PLANETARY SPEED-REDUCER
Emil S. Wuertz, Hingham, Mass., assignor to The Murray Company of Texas, Inc., Dallas, Tex., a corporation of Delaware
Filed Aug. 9, 1963, Ser. No. 301,001
1 Claim. (Cl. 74—801)

The combination with a frame comprising spaced vertical members, a bracket fixed at the inner side of one of said frame members, a ball bearing carried by said bracket, a power input shaft turning in said bearing and which extends outwardly through an opening in the bracket and through an aperture in said last-named frame member, a drive pulley fixed to the outboard end of said input shaft, a stationary shaft coaxial with the input shaft, a part fixed to the other frame member having a socket within which one end of said stationary shaft is fixed and rigidly secured, a cylindrical drum of a length to extend substantially from one frame member to the other, said drum being coaxial with said shafts and open at both ends, the drum having a transverse internal spider spaced from one end, said spider comprising a hub portion which houses a ball bearing through which passes the stationary shaft, a speed-reducer unit within the drum and spaced from one end of the latter, said unit comprising a cylindrical hollow housing of an external diameter so as to fit snugly within the drum, the housing comprising a body portion having an integral web at one end provided with an axial opening for passage of the stationary shaft, and having a removable cover at its opposite end comprising an elongate hub portion, the body portion and cover member having internal annular surfaces operative, as the housing rotates during use, to cause lubricant, urged outwardly by centrifugal force, to move toward the central portion of the housing, the body portion of the housing being provided with integral elongated teeth constituting an internal gear, the housing having coaxial ball bearings at opposite ends respectively, the input shaft entering the housing through one of said bearings and the stationary shaft entering the housing through the

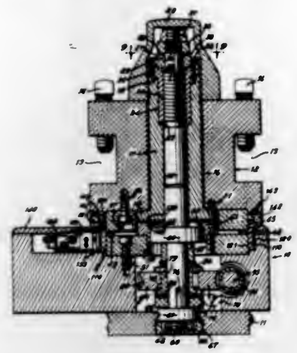


other of said bearings, the proximate ends of said shafts being spaced apart, a pinion fixed to the input shaft within the housing and adjacent to the bearing for said shaft, a carrier coaxial with the input shaft and which is rotatable relatively to the latter, said carrier being located adjacent to the inner end face of the aforesaid pinion, a plurality of parallel stud shafts fixed to said carrier, a planetary pinion arranged to turn on each of said stud shafts, each planetary pinion meshing with the pinion on the input shaft and also with the teeth of said integral gear, a pinion coaxial with and fixed relatively to said carrier, a second carrier coaxial with the stationary shaft and fixed to the latter, said second carrier being located adjacent to the bearing through which the station ary shaft enters the housing, a plurality of parallel stud shafts fixed to the last-named carrier, and a planetary gear on each of the latter stud shafts, said last-named planetary gears meshing with the pinion fixed to the first carrier and also with the teeth of the internal gear, all of the planetary pinions having the same number of teeth and being of the same pitch diameter.

3,222,955
INDEXING DEVICE
Paul A. Ross, Cincinnati, Ohio, and Cletus M. Wessels, South Fort Mitchell, Ky., assignors to The American Tool Works Company, Cincinnati, Ohio, a corporation of Ohio
Filed May 18, 1962, Ser. No. 195,729
29 Claims. (Cl. 74—826)

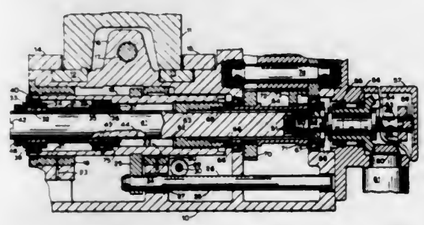
1. An indexing device comprising a base,
an indexable member mounted for rotation and axial movement upon said base,
locking members for precisely locating and locking said indexable member in an indexed position upon said base,
said locking members comprising tapered interfitting parts attached respectively to said indexable member and to said base and adapted to cam said indexable member into a precise angular position upon

axial movement of said indexable member toward said base,
a motor mounted upon said base,
means responsive to rotation of said motor in a first direction to move said indexable member axially



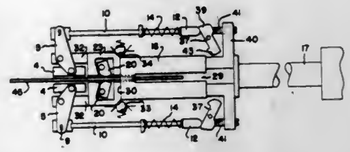
away from said base and to rotate said indexable member relative to said base, and
means responsive to rotation of said motor in a reverse direction for axially moving said indexable member toward said base.

3,222,956
MACHINE TOOL SPINDLE MECHANISM
Lewis A. Dever and Lawrence A. Attermeyer, Cincinnati, Ohio, assignors to The Cincinnati Milling Machine Co., Cincinnati, Ohio, a corporation of Ohio
Filed July 14, 1964, Ser. No. 382,468
8 Claims. (Cl. 77—4)



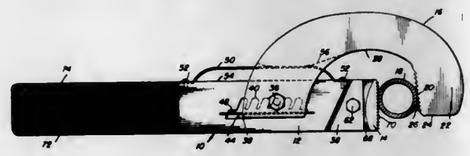
1. A boring machine spindle carrier having a spindle mechanism therein comprising:
(a) a quill,
(b) anti-friction means for supporting said quill in the carrier to permit free axial movement thereof,
(c) means for confining said quill to axial movement only,
(d) a boring spindle received through said quill,
(e) means coupled directly to said boring spindle for axial movement thereof,
(f) means for rotatably supporting said boring spindle in a selected axial position in said quill and including releasable means for axially fixing said boring spindle in said quill, and
(g) means for rotatably driving said boring spindle in said quill.

3,222,957
WIRE-STRIPPER MECHANISM
Leo Kramer, Chester, N.J., and Alfred L. Medesha, Sayre, and John P. Law, Athens, Pa., assignors to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Filed June 8, 1964, Ser. No. 373,154
7 Claims. (Cl. 81—9.51)



1. A straight-line motion mechanism for stripping insulation from a wire, comprising:
(a) a base;
(b) a single slide slidably mounted on said base for movement between first and second positions;
(c) a pair of wire-clamping jaws movably mounted on said base and mechanically actuated in response to slide position for movement between clamped and unclamped positions;
(d) a pair of cooperating insulation cutters mounted on said slide and located to receive a wire extending between said wire-clamping jaws;
(e) means for moving said slide from said first position away from said wire-clamping jaws to said second position;
(f) biasing means to close said wire-clamping jaws in response to the starting movement of said slide from said first position; and
(g) positively actuated means carried by said slide and mechanically coupled to said insulation cutters to close said cutters in response to the continuing movement of said slide from said first position.

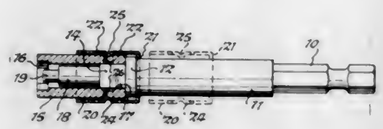
3,222,958
WRENCH HAVING A SPRING-BIASED PIVOTED OUTER JAW ADJUSTABLE IN A SLOTTED GUIDE
Martin L. Houdesheldt, Garden Grove, Iowa
Filed Aug. 5, 1964, Ser. No. 387,582
4 Claims. (Cl. 81—109)



1. A wrench comprising an elongate shank, a transversely extending jaw on one end of said shank, said shank having an elongate slot extending transversely therethrough, a plurality of spaced apart notched seats in one elongate wall of said slot, and a somewhat U-shaped adjustable jaw member, a transversely extending jaw on the inner side of one leg of said U-shaped jaw member adjacent the end of said leg, the other leg of said U-shaped jaw member being bifurcated and having its bifurcations straddling said elongate shank and said notched wall of its elongate slot, said jaw member bifurcations having aligned pivot apertures extending transversely therethrough, and a pivot member extending through said bifurcation pivot apertures and said shank elongate slot, said pivot member being seatable in any selected notched seat to adjustably space said jaw of said adjustable U-

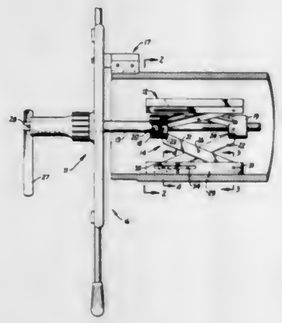
shaped jaw member in cooperative relation to said shank end jaw, and a bowed leaf spring mounted on the elongate shank edge straddled by said adjustable jaw bifurcations and biased against the bight of the U formed by said bifurcations, and the opposite ends of said bowed leaf spring being fixedly secured to the elongate shank edge.

3,222,959
MAGNETIC DRIVING TOOL OR IMPLEMENT
Frederick G. Clark, Buffalo, N.Y., assignor of one-half to Wade Stevenson, Buffalo, N.Y.
Filed Feb. 6, 1964, Ser. No. 342,994
3 Claims. (Cl. 81—177)



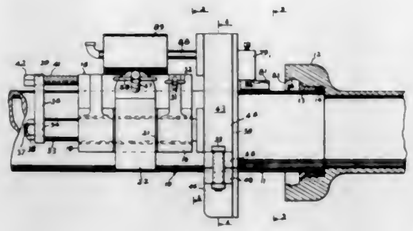
1. A tool for driving screw-threaded fastenings, said tool including a shank,
a socket removably supported on the outer end of said shank for cooperating with fastenings to be driven and having a hole extending through the same,
a shoulder formed on said shank and against one face of which said socket may abut,
a collar of cylindrical form having an inwardly extending flange on one end thereof engaging the other face of said shoulder,
said collar extending about said socket,
fingers on the cylindrical part of said collar extending circumferentially thereof and having inwardly extending projections thereon cooperating with the opposite ends of said hole in said socket for holding said socket in operative position on said tool.

3,222,960
ARBOR CONSTRUCTION FOR PIPE TOOLS
John B. Gill, 20433 Earl St., Torrance, Calif.
Filed Nov. 19, 1963, Ser. No. 324,765
10 Claims. (Cl. 82—4)



1. In an arbor construction for pipe tools containing a central shaft and groups of radially expandable fingers for holding said shaft in central alignment within a pipe, in combination, a pipe enaging member on each group of expandable fingers pivotally attached to two fingers at the ends therof, one of said pivotal attachments being fixed and the other held for axial movement in a slot on the member.

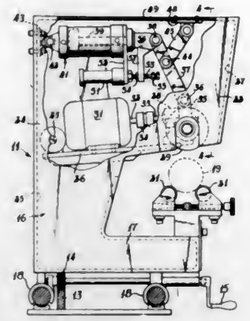
3,222,961
APPARATUS FOR MAKING AN ANNULAR CUT IN A CYLINDRICAL-LIKE ARTICLE
James H. Broadhead, James E. Hamilton, and Louie E. Martine, Birmingham, Ala., assignors, by direct and mesne assignments, to Utility Tool Company, a corporation of Delaware
Filed Oct. 15, 1962, Ser. No. 230,360
7 Claims. (Cl. 82—70.2)



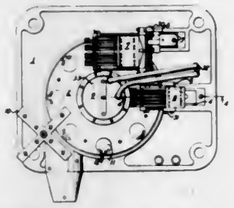
1. Apparatus for making an annular cut in a cylindrical-like article comprising:
(a) a support bracket,
(b) means to mount said support bracket on the article to be cut,
(c) an annular split housing carried by said support bracket disposed to surround said cylindrical-like article and having a first section detachably connected to a second section, with said first section extending an angular distance greater than said second section,
(d) a split ring gear mounted for rotation within said housing and disposed to surround said cylindrical-like article,
(e) there being an annular guideway within said split housing for receiving said split ring gear,
(f) an annular bearing member carried by said split ring gear and having a diameter greater than the length of the chord extending between the points of connection of said first and second sections of said annular housing whereby said split ring gear is retained within said first section upon separation of said second section from said first section,
(g) a cutting tool carried by said split ring gear in position to engage the article to be cut, and
(h) means to rotate said split ring gear whereby said cutting tool moves around said article to make an annular cut therein.

3,222,962
MULTIPLE DISC CUTTER APPARATUS
Buford R. Everett, Aurora, and Robert Shallenberg, Wheaton, Ill., assignors, by mesne assignments, to K-Line Corporation, Geneva, Ill., a corporation of Illinois
Filed Mar. 19, 1965, Ser. No. 441,267
5 Claims. (Cl. 82—83)

1. A cutter head assembly comprising, a housing including a mounting base and a hollow head portion spaced above said base, work support means on said base, a substantially horizontal platform pivoted at one end in said hollow head portion, a cutter disc assembly mounted firmly on the other end of said platform and disposed above the work support means, an electric motor supported on and adjacent to the pivoted end of said platform, a drive connection between said motor and the cutter disc assembly, vertically arranged toggle linkage connected at one end to the cutter disc assembly and at its other end to the hollow head portion, a piston-cylinder assembly mounted in said hollow head portion, means connecting said piston-cylinder assembly with the toggle linkage operable to actuate said toggle linkage for carrying the cutter disc assembly toward and away from the support means, and a dash-pot arranged to limit movement of said toggle linkage in both directions.



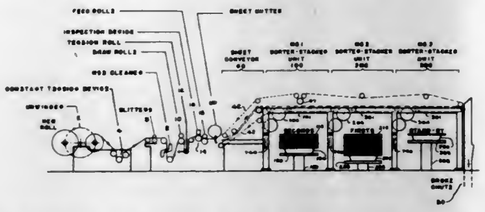
3,222,963
DEVICE FOR SCORING OF CRYSTALLINE SEMICONDUCTOR MATERIALS
Faat Hatovich Nabiullin, 3–rd Mytishchinskaja ulitsa, 14–a, Apt. 78; Ruben Grigorjevich Adamjan, per. Vedernikov 4/12, Apt. 38; Efim Mikhailovich Gertsik, 3–rd Mytishchinskaja ulitsa, 14–a, Apt. 98; Ustin Yosifovich Ushko, 3–rd Mytishchinskaja ulitsa, 14–a, Apt. 138; Valentin Mikhailovich Dolgov, Zh–377, 118 kvartal, korpus I, Apt. II; Jury Nickolaevich Tselov, ulitsa Fonvizina, 6–b, Apt. 66; and Valentin Petrovich Sharanov, 2–nd Novo-Ostankinskaja ulitsa, 4–b, Apt. 55, all of Moscow, U.S.S.R.
Filed Mar. 11, 1964, Ser. No. 352,420
14 Claims. (Cl. 83—10)



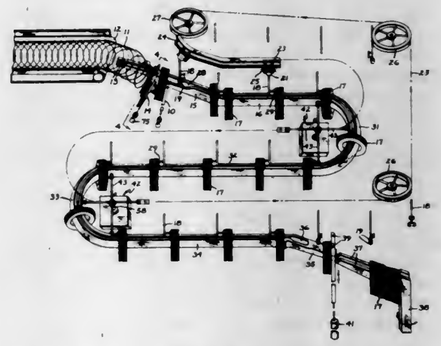
1. A semi-automatic apparatus for scoring sheet blanks of crystalline semi-conductor materials for subsequent division of said blanks into separate laminae, said semi-automatic device comprising: a bed, a multi-positional turntable on said bed; means for holding the blanks mounted on said turntable; guides including carriages movably arranged on said guides; working heads including scoring tools mounted on said carriages and swingable in a plane perpendicular to the plane of scoring; and means for removing said blanks after scoring.

3,222,964
METHOD OF SHEETING WEBS
David Noel Obenshain, Luke, Md., assignor to West Virginia Pulp and Paper Company, New York, N.Y., a corporation of Delaware
Original application Oct. 9, 1962, Ser. No. 230,790. Divided and this application Mar. 6, 1964, Ser. No. 349,971
13 Claims. (Cl. 83—26)

1. The method of inspecting, cutting, sorting and delivering sheets of paper which comprises, in combination, advancing a single web of paper at constant speed successively past an inspection station and a sheet cutting station, scanning each sheet length of the web as it passes the inspection station to determine the quality thereof while developing classification signals characteristic of any significant defects, cutting successive sheets of predetermined, uniform length from the leading end of the traveling web at the cutting station, continuing the advance of the sheets at undiminished speed along a path which includes a plurality of sorting stations, separating the sheets of first quality at one sorting station, separating the sheets of second quality at another sorting station, conveying the separated sheets at high velocity away from each sorting station to sheet stacking tables associated with the respective sorting stations, and smoothly and progressively slowing down the separated sheets to a relatively low velocity as the sheets advance across a sheet stacking table.



3,222,965
COILING, CUTTING, AND TRANSPORTING LARGE ROD BUNDLES
John H. Hitchcock, Worcester, Mass., assignor to Morgan Construction Company, Worcester, Mass., a corporation of Massachusetts
Filed Aug. 9, 1962, Ser. No. 215,954
13 Claims. (Cl. 83—27)

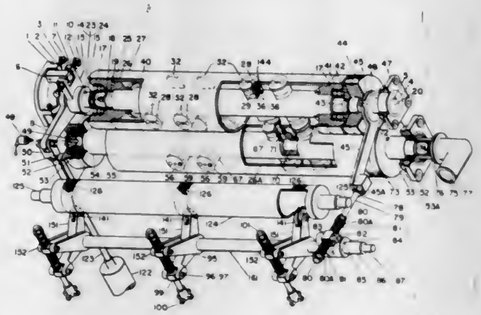


13. The method of collecting into bundles successive, nonconcentric overlapping rod rings as they are delivered from a conveyor, comprising the steps of impaling successive rings as they leave the conveyor on an inclined stem, allowing the impaled rings to slide along the stem to a movable stop, separating the rings and shearing the rod at said separation to form divided rod bundles of preselected weight, removing said stop, and moving said divided bundles along a tubular track.

3,222,966
HIGH SPEED WEB PUNCHING DEVICE
Isidor Tornberg, Plainfield, N.J., Harvey M. Broad, Huntington, N.Y., and Wilford J. Armstrong, Point Pleasant, and Odon E. Sugar, Edison, N.J., assignors to Newsday, Inc., Garden City, N.Y.
Filed Mar. 19, 1963, Ser. No. 266,300
7 Claims. (Cl. 83—98)

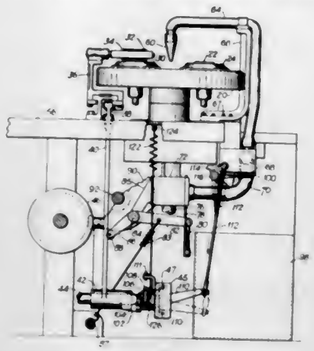
1. Device for simultaneously punching a plurality of flexible moving webs that comprises,

a rotatable punching cylinder;
a rotatable pad cylinder in spaced parallel relationship to said punching cylinder;
hollow punch means the inner surface of which define a passage therethrough and having a toothed cutting edge, said punch means being radially mounted in said punching cylinder with said cutting edge extending beyond the surface thereof;
resilient pad means mounted in said pad cylinder and located therein so as to be directly exposed to said punching cylinder only near and at the point of closest approach between said pad means and said punch means, the surface of said pad means being flush with the surface of said pad cylinder;
means capable of controlling the spaced relation between said cylinders to a distance slightly in excess of the thickness of said webs during operation of said device;
the extension of said cutting edge beyond the surface of said punching cylinder being such as to penetrate said pad means at the point of closest approach between said cylinders;
means capable of removing punch-outs through the passage in said punch means;
drive means capable of rotating said cylinders at a predetermined speed; and
means capable of transporting webs under a predetermined tension between said cylinders at the point of closest approach therebetween and in a direction normal to the centerline between the axes of said punching cylinder and said pad cylinder.

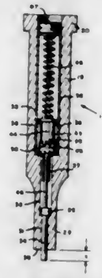


3,222,967
TOBACCO DIE CLIPPING COLLECTOR FOR INDIVIDUAL MACHINE
Thomas A. Godfrey, Elmont, N.Y., assignor to American Machine & Foundry Company, a corporation of New Jersey
Filed July 20, 1962, Ser. No. 211,358
2 Claims. (Cl. 83—100)

1. A cigar machine having cutting means therein for severing tobacco trim for a cigar binder or wrapper, a scavenger system in said machine for collecting said trim, said system comprising a suction trap individual to said machine, mounted in proximity to said machine, individual dumping means for said trap in said machine, and a scrap accumulator individual to said trap and proximate thereto, means in said system for delivering the total scrap produced in each individual cutting operation to said trap in a corresponding individual scavenging operation, means in said machine, operative once per cutting cycle of said machine subsequent to each said delivery, for actuating said dumping means, and means responsive to said dumping means for directing scrap from said trap into said accumulator in response to each said dumping.



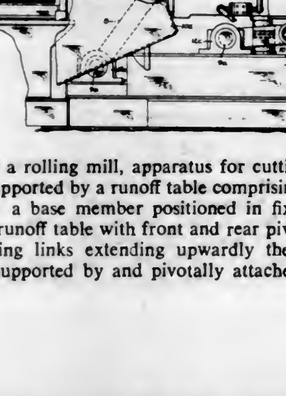
3,222,968
MACHINE PUNCH HAVING AN EJECTOR PIN
Carl Ernest Larson, Bemus Point, N.Y., assignor to The Producto Machine Company, Bridgeport, Conn., a corporation of Connecticut
Filed May 6, 1963, Ser. No. 278,262
11 Claims. (Cl. 83—128)



1. In a punch, a body portion having a piercing end; a bore and counterbore within said body portion forming a shoulder therebetween; an ejector pin slidingly received within said bore and having a headed portion slidingly received within said counterbore, said pin extending outwardly beyond said piercing end when said headed portion contacts said shoulder; plunger means mounted within said body portion adapted to contact said headed portion; spring means normally urging said plunger toward said headed portion; and means wholly within said body, located between said plunger and spring means and responsive to the forcing of said ejector pin into said bore such that its outer end is within said bore for selectively restricting the motion of said plunger toward said headed portion, whereby when said punch is inverted, the outer extremity of said ejector pin lies substantially flush with the piercing end of said punch.

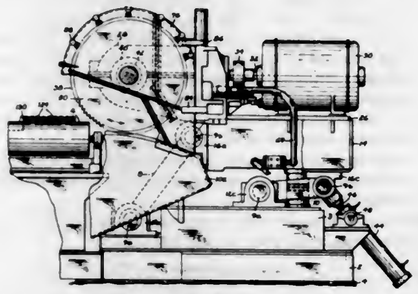
3,222,969
WIDE WEB FEED FOR BINDER AND WRAPPER DIE
Sigurd Clausen, Brooklyn, N.Y., assignor to American Machine & Foundry Company, a corporation of New Jersey
Filed June 7, 1962, Ser. No. 200,768
4 Claims. (Cl. 83—152)

1. A cigar manufacturing machine, said machine comprising the following mounted in substantially vertical array from the top downward in named order in said machine, a reel, means in said reel for carrying a web of reconstituted tobacco, a rotatable web feed suction drum arranged to feed said web in a direction substantially vertically downwardly and rectilinearly from said reel, a first fixed suction head, a second angularly adjustable suction head carrying a linear cutting means at a first cutting station, means for rotating said second suction head so that said linear cutting means may be disposed either transversely or angularly with respect to the direction of feed of said web, a transfer and a die,



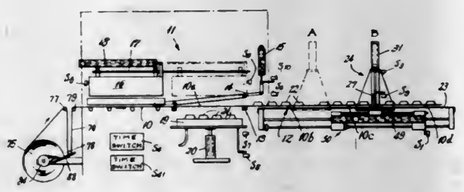
a vertically reciprocable suction carriage disposed in front of and near the top of said machine, means for actuating said web feed suction drum to feed said leading end of said web from said reel to a position overlying said first fixed suction head, means for thereafter actuating said suction carriage to convey said leading end to a position beyond said cutting station and overlying said transfer, means responsive to said conveying for actuating said cutting means to sever said leading end beyond said cutting station from said web, means responsive to said severing for rotating said transfer to transfer said severing end to said die.

3,222,970
LINK MOUNTED SAW ASSEMBLY
William J. Hill, Holden, Mass., assignor to Morgan Construction Company, Worcester, Mass., a corporation of Massachusetts
Filed Apr. 12, 1963, Ser. No. 272,616
6 Claims. (Cl. 83—157)



1. In a rolling mill, apparatus for cutting longitudinal stock supported by a runoff table comprising the combination of: a base member positioned in fixed relationship to said runoff table with front and rear pivotally mounted supporting links extending upwardly therefrom, a saw frame supported by and pivotally attached to the upper extremities of said links for transverse displacement with respect to the longitudinal axis of said runoff table, a saw blade rotatably mounted on said frame and extending outwardly therefrom, a drive motor mounted on said frame and operatively connected to said blade, retractable and adjustable means for cleaning and cooling the cutting edges of said blade during the cutting operation by directing a high pressure stream of coolant thereon, means for preventing the deposit of said coolant on said stock during the cutting operation, means for alternately advancing and withdrawing said pivotally mounted frame through a cutting cycle across the longitudinal axis of said runoff table, said front and rear supporting links cooperating to maintain said saw blade in a substantially horizontal path during said cutting cycle, and means for crowding and holding said stock in fixed relationship to the path of said saw blade and for preventing narrowing of the kerf and pinching of said blade by said stock during said cutting cycle.

3,222,971
ROLL-FED THERMOFORMING MACHINE
Charles F. Gerletz, Bridgeport, Conn., assignor to National Cleveland Corporation, Cleveland, Ohio, a corporation of Ohio
Filed May 15, 1963, Ser. No. 280,523
7 Claims. (Cl. 83—218)

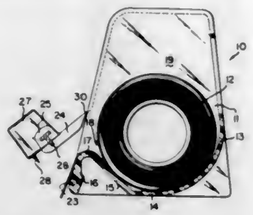


1. An indexing and shearing attachment for advancing section-by-section a thermoplastic web from a supply roll through the forming station of a thermoforming machine comprising a frame attachable to the delivery end of the machine; a delivery table on the frame; a gripper and shearer carriage mounted on said frame to travel along the latter; web gripping and shearing means mounted on said carriage; means to operate the web gripping and shearing means to grip the web and cut off a molded terminal section of the web; a subcarriage mounted on said frame; power-operated means for reciprocating said subcarriage; and means for coupling the gripper and shearer carriage and subcarriage for movement together including infinitely variable means for adjusting the position of the gripper and shearer carriage relative to the subcarriage in infinitely small increments longitudinally of the plastic web.

3,222,972
DISPENSER FOR COILED SHEET MATERIAL
James F. Fulton, Mamaroneck, N.Y., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed Apr. 8, 1963, Ser. No. 271,285
4 Claims. (Cl. 83—564)

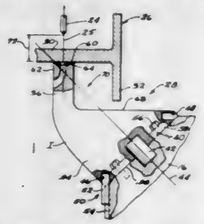
1. A dispenser for metallic foil or the like comprising a receptacle for receiving a coiled roll of said metallic foil or the like, a guide bar movably carried by said receptacle, movable cutter means carried by said guide bar, said guide bar having a T-shaped cross sectional configuration, said cutter means having a slot complementary to and receiving said guide bar, said cutter means being adapted to sever a length of said foil from said roll thereof when said guide bar is moved to one

position thereof and being adapted to permit said foil to be dispensed when said guide bar is moved to another



position thereof and means always tending to maintain said guide bar in said other position thereof.

3,222,973
REVERSIBLE DIE BLOCK
Richard E. Lang, 100 Grienbriar Drive, Carnegie, Pa.
Filed June 11, 1964, Ser. No. 374,322
13 Claims. (Cl. 83—640)



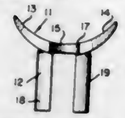
1. In a punch press having a frame, a punch bit supported on said frame for reciprocal movement along its central axis, and means for powering said punch bit in one direction to pierce an element and for retracting said punch bit in the opposite direction, the improvement comprising: a die block supported on the base of said frame for rotation about an axis which is inclined with respect to said central axis, said rotational axis extending from the base of said frame toward said punch bit; said die block including an arm portion having a pair of divergently extending die openings; said die block being rotatable about said rotational axis from a first position wherein one of said die openings is aligned with said punch bit to a second position wherein the other of said die openings is aligned with said punch bit; and means for maintaining said die block in said first and second positions.

3,222,974
ATTACHMENTS FOR MOUTHPIECES OF SAXOPHONES AND LIKE MUSICAL INSTRUMENTS
Maurice E. Amon, 45 Hume Hill Drive, Amherst, Ohio
Filed Aug. 6, 1964, Ser. No. 387,855
10 Claims. (Cl. 84—383)



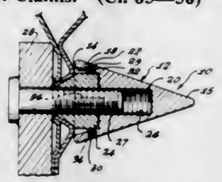
1. An attachment for the mouthpiece of a saxophone or like musical instrument, said attachment comprising a member having a transversely arched top and a wedge-shaped element depending from said top and adapted for insertion between the mouthpiece and the reed of said instrument to space said reed from the mouthpiece.

3,222,975
EXPANSIBLE FASTENER
Robert E. Scott, 1471 Club Drive, Rte. 3, Bloomfield Hills, Mich.
Filed May 15, 1961, Ser. No. 110,162
4 Claims. (Cl. 85—37)



1. A one-piece integral fastener consisting of a head and a stud projecting from the bottom of said head, said head comprising a solid bridge section containing the stud axis at the top of the stud and wings extending from opposite sides of said bridge section, at least one of said wings extending angularly upwardly from said bridge section, and said stud comprising spaced legs projecting down from said head with one leg on each side of the stud axis and axially associated with one of said wings, the top of each stud leg being integrally joined directly to the underside of said head adjacent the juncture of its associated wing with said bridge, whereby when said wings are relatively oppositely rocked toward each other the head material at said bridge section between an associated stud leg and head wing deforms to relatively oppositely rock said legs to correspondingly diverge with respect to said head.

3,222,976
THEFT PREVENTION DEVICE FOR AUTOMOBILE WHEELS
Charles G. Holman, 1327 W. 42nd St., Los Angeles, Calif.
Filed Jan. 6, 1964, Ser. No. 335,918
4 Claims. (Cl. 85—56)



2. A theft-proof cover for covering the end of a threaded member and a flat-sided nut threadedly received by and mounted upon said member, comprising:

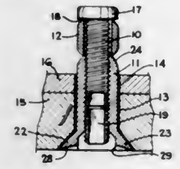
a hollow metal body having a rear wall and a smooth, continuous, forwardly converging outer surface extending forward from said rear wall, said body including a first continuous inner surface extending forward from said rear wall to define a rear opening for receiving said nut, a second continuous inner surface displaced forwardly from said first inner surface, said second inner surface being of a threaded tubular configuration adapted for threadedly receiving said end of said threaded member, a threaded side opening extending between said outer surface and said rear opening, and a pair of opposing slots in said outer surface adjacent said rear wall for receiving an open-end wrench to secure said body to said threaded member over said nut;

and a screw threadedly received by said side opening to engage a flat side of said nut.

3,222,977
THREE PIECE BLIND FASTENER
Rudolph M. Vaughn, 611 Lido Park Drive, Newport Beach, Calif.
Filed Nov. 5, 1963, Ser. No. 321,599
2 Claims. (Cl. 85—72)

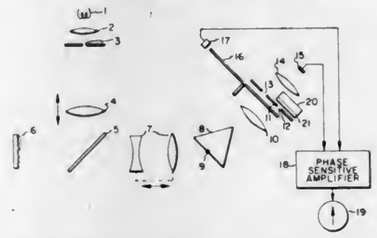
1. A three piece blind fastener unit comprising, in combination: a bolt, an elognated nut, and a sleeve, said

bolt having an enlarged head defining an annular shoulder facing towards the end of said bolt, said nut comprising an elongated tubular member with internal threads for threading to said bolt, and said sleeve comprising a tubular member having exterior chamfered ends, whereby said sleeve may be telescoped over said bolt so that one of said chamfered ends engages said annular shoulder, and said nut threaded up on said bolt until it engages under the opposite chamfered end of said sleeve, and the assembled unit passed through registered openings in first and second members to be fastened together, further threading of said nut causing said sleeve to expand over



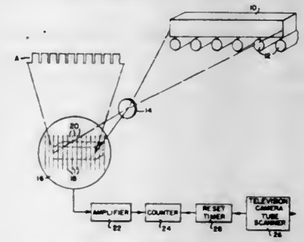
said nut so that said opposite chamfered end engages the interior and adjacent exterior periphery of said registered openings on one side whereby said members are locked together by said unit, an end portion of said bolt including an annular groove to define a weakened area so that said bolt may be broken off at said groove after said fastener has been secured, said end portion including flattened areas falling within the diameter of said bolt to define wrench flats on either side of said groove so that after breaking off of said bolt at said groove there remain wrench flats to enable torgue testing of said fastener to be carried out and to enable said bolt to be backed out of said nut if it is desired to disassemble said fastener.

3,222,978
SURFACE ROUGHNESS METER
Marc G. Dreyfus, Stamford, Conn., assignor to Barnes Engineering Company, Stamford, Conn., a corporation of Delaware
Filed Aug. 4, 1961, Ser. No. 129,266
12 Claims. (Cl. 88—14)



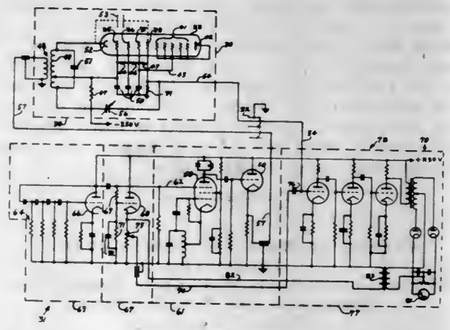
1. An optical roughness measuring instrument for measuring R.M.S. roughness over a predetermined range comprising, in combination and in optical alignment, a source of optical radiations, means for producing a beam therefrom of suitably low divergence, a roughness sample holder, means for directing said beam onto the surface of the sample in said holder at substantially normal incidence to produce a reflected beam, means for selecting two narrow wavelength bands of the reflected beam, the wavelength of the shorter band being at least ten times as long as the maximum R.M.S. roughness to be measured, a radiation detector, means for imaging the two selected narrow bands of the reflected beam thereon, means for attenuating at least one of the narrow bands, means for chopping the radiation located intermediate the light source and the detector, means for generating a reference signal said means being actuated in synchronism with the chopping means, a phase sensitive A.C. amplifier, means for connecting the output of the radiation detector to the input of said amplifier, and means for indicating polarity and magnitude of the amplifier output whereby said means indicate a function of the relative amounts of radiation in the two bands striking the detector.

3,222,979
NON-CONTACTING DIMENSIONAL GAGING OF OBJECTS WITH AN ELECTRON-OPTICS DEVICE
Richard R. Webster, Bethel Park, Pa., assignor to Jones & Laughlin Steel Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Feb. 9, 1962, Ser. No. 172,270
22 Claims. (Cl. 88—14)



1. Apparatus for measuring the edge to edge dimension of an article having a substantially uniform light intensity which is different than the background surrounding the article comprising, in combination, an electron-optics device having a photosensitive surface therein, means for focusing an image of said article on the photosensitive surface, means in the electron-optics device for converting the electrical image produced on the photosensitive surface into a video output signal representing that image, and means for dividing the photosensitive surface into areas of different photosensitivity between the edges of said image when the image is focused thereon whereby a series of pulses will be produced in the video output of the electron-optics device with the number of pulses being a function of the distance between said edges of the image.

3,222,980
DEVICE FOR ACCURATELY MEASURING SMALL AMOUNTS OF RADIANT ENERGY
Henry P. Kalmus, 3000 University Terrace NW., Washington, D.C.
Continuation of application Ser. No. 18,893, Mar. 31, 1960. This application Dec. 21, 1964, Ser. No. 420,053
2 Claims. (Cl. 88—23)

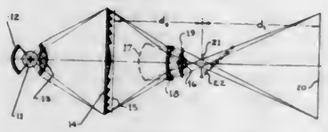


1. Radiant energy measuring means comprising

(a) a photo-multiplier tube having a plurality of electrodes including,

(b) a photosensitive cathode,
(c) an electrode functioning as an anode, and
(d) a plurality of intermediate dynodes;
(e) input circuit means for applying between the cathode and at least one, but less than all of said dynodes successively higher levels of a high frequency voltage, said last dynodes being active and the remaining electrodes being inactive;
(f) means for square-wave modulating said voltage at a low frequency rate to produce groups of high frequency pulses at said low frequency rate when said cathode is stimulated by radiation;
(g) output circuit means coupled to the anode electrode;
(h) low frequency measuring circuit means responsive only to said low frequency and supplied by said output circuit means;
(i) means electrically connecting the inactive electrodes to one of the active dynodes to thus provide D.-C. bias between said electrode functioning as an anode and the inactive electrodes at a sufficiently low level so that these electrodes remain inactive during operation of the tube, the active dynodes constituting a first group of successive dynodes adjacent to the cathode and the inactive dynodes constituting a second group of successive dynodes; and
(j) output impedance means connected to said anode for developing an output signal at said low frequency across said impedance, said output impedance means being of extremely high ohmic value, in the order of megohms.

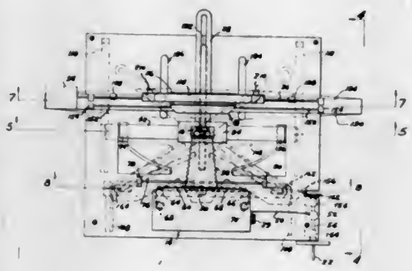
3,222,981
TWO-ELEMENT PROJECTION LENS
James W. Lucas, 1122 S. Robertson, Los Angeles, Calif.
Filed Nov. 24, 1961, Ser. No. 157,027
9 Claims. (Cl. 88—24)



1. In a projection system substantially corrected for spherical and chromatic aberration, in combination: a condensing means adapted to condense the rays from a light source through a transparent object, the combination of wide-angle projection lens elements having a maximum diameter less than one-half object width, consisting of a negative lens positioned in fixed axially spaced relation to said condensing means, and a positive lens disposed in spaced relation to said negative lens on the side thereof remote from said condensing means, said positive lens being adjustable to varying distances from said negative lens for focusing, said negative lens being so positioned with reference to said condensing means that light rays from each small area of said object will pass through a corresponding small area of said negative lens, which area does not change during focusing.

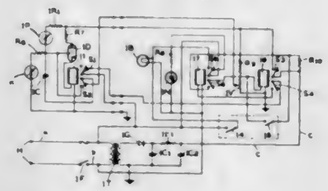
3,222,982
SCANNING PHOTOGRAPHIC COPYING APPARATUS
William G. Gelb, 13517 Vassar Drive, Detroit, Mich.
Filed Dec. 13, 1961, Ser. No. 159,003
5 Claims. (Cl. 88—24)

1. A machine of the type described, comprising: a bar operative to support copy which has an extension along an axis; a lens supported on a point separated from said axis; light-sensitive film having an extension in a direction parallel to said axis disposed at a point displaced from said axis in the same direction as said lens and at a greater distance from said axis than said lens; means for adjusting the spacing between the copy, the lens and the film in such a manner that the copy bar is continually focused at the film by the lens; means operative to constrain any two of the copy bar, lens and



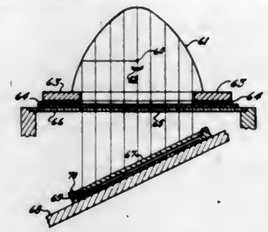
film for motion parallel to said axis; and a drive bar pivotably supported at whichever of the copy bar, lens and film is not moveable parallel to the axis and slidably connected to the two members which are moveable parallel to the axis so that as said drive bar is pivoted about its point of support it moves the other two elements parallel to the axis at rates proportional to their distances from the non-moveable element.

3,222,983
AUTOMATIC EXPOSURE TIMING MEANS
Satoru Ouchi, 1060 3-chome Kitazawa, Setagaya-ku, Tokyo, Japan
Filed May 16, 1962, Ser. No. 195,243
11 Claims. (Cl. 88—24)



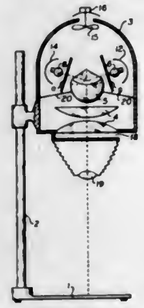
1. A photographic enlarger comprising a light permeable member adapted to support a sheet of photographic paper having a sensitized face and a rear face, means including a first electric lamp for projecting an image to be printed upon said sensitized face, a first photoresistance element supported adjacent to and directed toward said sheet rear face, means including a solenoid-actuated switch connecting said projector lamp to a source of electric current, a capacitor connected to said first photoresistance element whereby the charge on said capacitor is a function of the integrated current through said photoresistance element, means responsive to the charge on said capacitor for controlling the opening and closing of said switch and a second compensating photoresistance element connected in shunt with said capacitor and exposed to non-image-forming light to discharge said capacitor at a rate in accordance with the intensity of said non-image-forming light incident on said second compensating photoresistance element.

3,222,984
COORDINATE TRANSFORMATION
Albert M. Loshin, 2195 Central Road, Fort Lee, N.J.
Original application Oct. 2, 1957, Ser. No. 687,844, now Patent No. 3,094,783, dated June 25, 1963. Divided and this application Feb. 4, 1963, Ser. No. 256,176
11 Claims. (Cl. 88—24)
(Granted under Title 35, U.S. Code (1952), sec. 266)



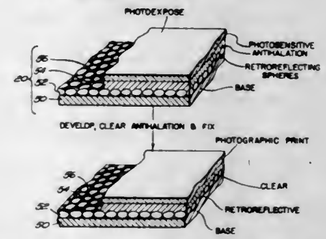
1. A device for reproducing a figure represented by a semitransparency wherein a height to width ratio variation is obtained, said device comprising:
(a) a first surface upon which an original size figure is mounted,
(b) a tiltable surface mounted for angular movement about one axis only which axis is parallel to said first surface, and
(c) lens free photographic means for transferring said figure from said first surface to said tiltable surface including a parallel beam of light generated with a semi-shielded parabolic reflector and passing through the transparent sections of said original figure to selectively vary the intensity of different areas of the beam while the beam remains parallel, said intensity-varied parallel beam impinging on a light-sensitive coated material attached to said tiltable surface,
(d) thereby resulting in a figure of varied height to width ratio proportional to the difference in inclination of the two surfaces.

3,222,985
PROJECTION PHOTOGRAPHIC COLOR PRINTING APPARATUS
Armin Remesat, Great Neck, N.Y.
(25 Robinson St., Shoreham, N.Y. 11786)
Filed Jan. 29, 1963, Ser. No. 254,810
12 Claims. (Cl. 88—24)



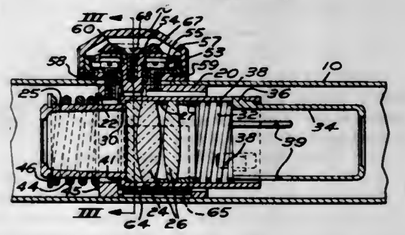
1. A projection photographic printing apparatus adapted to utilize multiple sensitized photographic material, comprising illuminating means including three spaced light sources, each of which has suitably colored filtering means, and means for operating and regulating the operation of the light sources; an integrator for receiving and mixing the different colored light rays emitted by said three light sources; an optical condenser; means for accommodating a negative-carrier in the path of the light rays passing through the apparatus to the projecting objective; and a projecting objective, arranged in sequence; said integrator consisting of light-transmitting material which has a substantially spherically shaped base and pyramidal roof, has a ground glass finish on its surface and is arranged between said three light sources, and is provided with a reflector for directing the light rays emitted by said light sources through the filter toward the roof of the integrator.

3,222,986
SYSTEM OF OPTICAL PROJECTION OF IMAGES BY REFLEX REFLECTED ILLUMINATION
Gerald Altman, 41 Westminster Road, Newton Center, Mass.
Original application Jan. 4, 1963, Ser. No. 249,351. Divided and this application Mar. 6, 1964, Ser. No. 349,853
10 Claims. (Cl. 88—24)



1. A projection system comprising means including a sheet having, as components of said sheet in optical communication, a representation and a multiplicity of minute reflex reflecting elements, said multiplicity of minute reflex reflecting elements each inherently including means for acquiring incident radiation from substantially any one of a multiplicity of inward directions and means for redirecting resulting radiation in substantially the opposite one of a multiplicity of outward directions for the purpose of establishing a selected substantially common path for an incident ray of radiation direct toward said representation and for a resulting ray of radiation redirected by said multiplicity of reflex reflecting elements, said path characteristically being substantially dependent upon the direction of said incident ray and characteristically being substantially independent of the angle of incidence between said incident ray and said sheet, means for directing such radiation into said path from a source, and means for projecting an image of said representation onto a viewing screen in terms of such radiation.

3,222,987
LENS MOUNTING AND ADJUSTMENT MEANS FOR TELESCOPIC SIGHTS
Norman A. Wrigglesworth, Buffalo, N.Y., assignor to American Optical Company, Southbridge, Mass.
Filed June 10, 1960, Ser. No. 35,300
1 Claim. (Cl. 88—32)



In a telescopic sight, a lens housing including a cylindrical main body portion and a reduced diameter nose

portion, the juncture of said main body portion and said nose portion presenting radially extending inner and outer faces, an erector lens group seated upon said inner face within said main body portion, a lens housing extension removably fixed to that end of the lens housing remote from said nose portion, resilient means interposed between said extension and said lens group holding the latter in seated relation against said inner face, a cylindrical mounting sleeve receiving said main body portion of the lens housing and having an inwardly projecting annular shoulder at one end through which said nose portion of the lens housing projects, said mounting sleeve and lens housing radial clearance therebetween, and resilient means mounted on said nose portion and engaging the outer side of said annular shoulder to maintain said outer face of the lens housing in seated relation with the inner side of said annular shoulder.

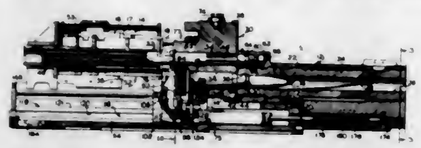
3,222,988
MISSILE LAUNCHING SYSTEM
James T. Bull, Huntsville, Ala., Irving M. Dow, Bethesda, and William E. Engle, Hyattsville, Md., William J. Kellinger, Washington, D.C., and John M. O'Keefe, Hillcrest Heights, Henry N. Schofield, Kensington, and Richard E. Taylor, Hyattsville, Md., assignors to the United States of America as represented by the Secretary of the Navy
Filed Apr. 26, 1961, Ser. No. 106,411
18 Claims. (Cl. 89—1.7)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A missile launching system having all major components thereof longitudinally arranged and secured on a single level of support and comprising, in combination, an elevatable and trainable launcher, launching rails on said launcher, a ramming mechanism having missile supporting and guiding rails, said ramming mechanism rails being in longitudinal alignment with said launcher rails when the launcher is positioned at zero degrees elevation and train, a first missile magazine having a plurality of missile cells disposed in parallel relation with said ramming mechanism, a second missile magazine having a plurality of missile cells and a ramway disposed in parallel relation with said ramming mechanism and longitudinally spaced from said first magazine in a direction toward said launcher, said ramming mechanism extending through said space separating said magazines, said ramway in said second magazine and to said launcher, transfer means movably disposed in said space between said magazines and selectively operable in transverse and vertical directions for movement between a selected cell and said ramming mechanism, and extendable extractor means carried by said transfer means for moving missiles from said magazines onto said transfer means for further movement to said ramming mechanism.

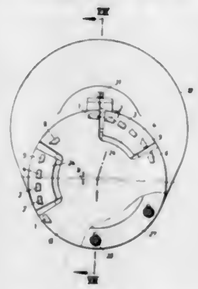
3,222,989
REVOLVER-TYPE GUN WITH BOLT
Ewald A. Kamp, Chicago, Ill., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed Mar. 25, 1960, Ser. No. 17,717
7 Claims. (Cl. 89—155)

1. A gun for the discharge of cartridges each including a case and a projectile, said gun including a receiver, a barrel mounted to said receiver, a drum disposed in said receiver for rotation adjacent the breech end of said barrel, a plurality of drum-chambers arranged in said drum for successive alignment with said barrel when said drum is rotated, each of said drum-chambers being of a shorter length than the case of the cartridge and adapted to inclose the rear portion thereof when in a chambered position for discharge into said barrel, a barrel-chamber disposed in said barrel to receive the projectile and a front portion of the case of the cham-



bered position cartridge, a crane mounted bolt reciprocably disposed in said receiver for engageably moving successive ones of the cartridges to the chambered position, and cam means mounted in said receiver for cooperation with said crane mounted bolt to vertically actuate said bolt to a battery position rearward of the cartridge moved thereby to the chambered position.

3,222,990
METHOD OF SEPARATELY ROUGHING AND FINISHING BEVEL GEARS
Hans Rebeski, Remscheid, Germany, assignor to W. Ferd. Klingelnberg Sohne, Huckeswagen, Rhineland, Germany
Filed Mar. 23, 1962, Ser. No. 182,023
Claims priority, application Germany, Mar. 25, 1961, K 43,306
9 Claims. (Cl. 90—5)

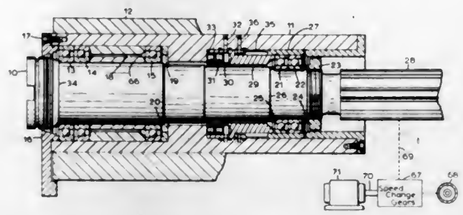


1. A method of separately roughing and finishing bevel gears with cycloidal tooth traces by means of one and the same cutter head comprising roughing blade means and finishing blade means, which includes the steps of: adjusting said roughing and finishing blade means and the work piece into which the teeth are to be cut relative to each other for the roughing cut so that said roughing blade means only will cut the work piece and rotating the workpiece and cutter head, and subsequently adjusting said roughing and finishing blade means relative to each other and adjusting said work piece angularly relative to said cutter head so that said finishing blade means only will cut the workpiece and rotating the workpiece and cutter head.

3,222,991
BEARING PRELOAD MECHANISM FOR MACHINE TOOL
Kendall F. Bone, Cincinnati, Ohio, assignor to The Cincinnati Milling Machine Co., Cincinnati, Ohio, a corporation of Ohio
Filed May 22, 1964, Ser. No. 369,366
5 Claims. (Cl. 90—11)

1. In a machine tool having a spindle rotatable at a selected one of a plurality of speeds and supported in a set of bearings received at a fixed axial location, a mechanism for axially preloading the bearings of said set comprising in combination:

(a) means for producing a preloading force acting in the axial direction of the spindle and having a magni-

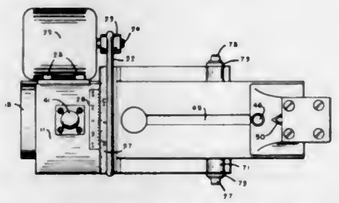


tude dependent upon the one speed of spindle rotation selected,

(b) means for applying said preloading force to the spindle to produce a corresponding preload strain in the set of bearings, and

(c) means for locking the spindle and set of bearings in a fixed axial relationship to maintain said preload strain in the set of bearings.

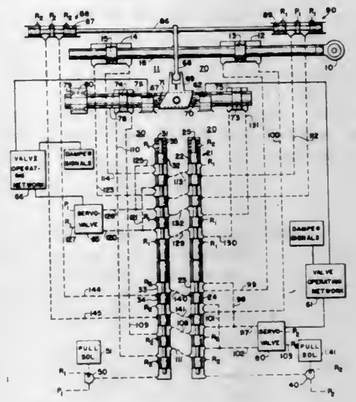
3,222,992
MACHINE TOOL FIXTURE
James E. Ettorre, 472 Stratfield Road, Fairfield, Conn., and Andrew C. Lindmark, 994 Birmingham St., Bridgeport, Conn.
Filed Nov. 8, 1963, Ser. No. 322,306
20 Claims. (Cl. 90—20)



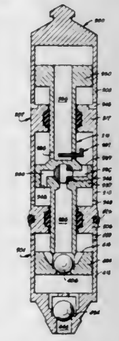
1. A fixture for a machine tool comprising in combination, a sub-base; a standard integrally connected to one end of said sub-base; a spindle mounted in said standard for free rotary movement about an axis parallel with said sub-base; a face plate connected to said spindle; an index about the peripheral edge of said plate; a vernier on said standard with which said index cooperates; a disc fixed to said spindle; and clamping means adapted releasably to clamp said disc in any of the rotary positions of said plate.

3,222,993
CONTROL APPARATUS
Robert F. Rasmussen, Brooklyn Center, Minn., assignor to Honeywell Inc., a corporation of Delaware
Filed Mar. 20, 1964, Ser. No. 353,467
14 Claims. (Cl. 91—20)

1. In a dual tandem ram, fluid type compound servomotor having two power sections, a variably positioned first servo valve for one section, a variably positioned second servo valve for the other section, means including an on-off engage valve and first servo valve for transmitting pressure fluid from one fluid pressure source to one power section; means including a second on-off engage valve and second servo valve for supplying fluid pressure from a second pressure source to the other power section; and servo operated, servo centering control valves operable with said rams in said power sections and effective on the two engage valves being in unoperated positions, applying pressure to at least one of said rams to effect return thereof to a normal or centered position.



3,222,994
FLUID MOTOR
Charles L. English, 2204 E. 25th Place, Tulsa, Okla.
Original application Feb. 13, 1961, Ser. No. 89,053, now Patent No. 3,109,379, dated Nov. 5, 1963. Divided and this application Aug. 14, 1963, Ser. No. 305,913
7 Claims. (Cl. 91—224)

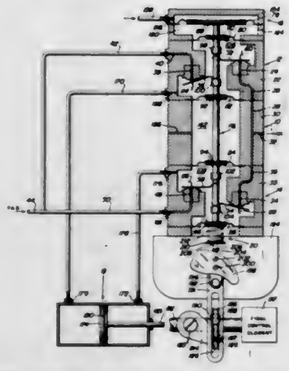


1. A subsurface pump unit fluid motor, comprising:
a cylinder member,
a piston member reciprocally disposed in the cylinder member,
said piston member having a first set of working areas facing one end of the cylinder member and a second set of working areas facing the opposite end of the cylinder member,
said first set of working areas having a combined area larger than the cross-sectional area of the interior of the cylinder member and larger than said second set of working areas,
said cylinder member having a power fluid inlet and an exhaust fluid outlet,
a valve chamber in said piston member,
first passageway means extending partially through the piston member from the valve chamber into communication with said first set of working areas,
second passageway means intersecting the valve chamber and communicating with both said inlet and said outlet,
valve means positioned in the valve chamber and op-

eratively connected to the piston member for placing said first passageway means in communication with said inlet and applying power fluid pressure to said first set of working areas for one stroke of the piston member, and, alternately, placing said first passageway means in communication with said outlet during the opposite stroke of the piston member, and

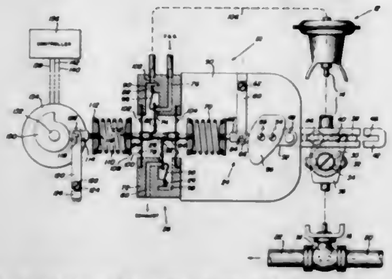
means for applying fluid pressure against the second set of working areas during said opposite stroke of the piston member.

3,222,995
CONTROLLING APPARATUS
Wayne D. Reed, Philadelphia, Pa., assignor to Honeywell Inc., a corporation of Delaware
Filed Apr. 14, 1964, Ser. No. 359,734
11 Claims. (Cl. 91—359)



1. A fluid control device, comprising two pneumatic relays, a wall portion forming a separate chamber for each relay, a pair of spaced-apart apertures formed in the wall portion of each relay to respectively form a fluid inlet and exhaust port for each of the chambers, a pair of flexible members positioned in each chamber forming opposing wall portions thereof, a connecting rod extending through and in fluid-tight engagement with each of the flexible members, a third chamber formed by a stationary wall portion and one of the flexible members, an inlet passageway formed in the stationary wall portion of said third chamber for applying a fluid pressure representative of the magnitude of a condition thereto, a separate flapper positioned to substantially cover each port, a separate spring for one end of each flapper positioned to normally retain each flapper in substantial fluid-tight engagement with an inner wall surface of the chamber forming the end of its associated port, the other end of the flapper covering the exhaust port in one of the relays being operably connected for movement with the connecting rod to open the last-mentioned port while the flapper covering the inlet port in the second of the first two mentioned relays is simultaneously opened upon the occurrence of an increase in the magnitude of the fluid in the third chamber from a preselected level, the other end of the flapper covering the inlet port in said one of the relays being operably connected for movement with the connecting rod to open the last-mentioned port while the flapper covering the outlet port in the second one of the aforementioned relays is simultaneously closed upon the occurrence of a decrease in the magnitude of the fluid in said third chamber from the preselected level, a cylinder, first and second inlets adjacent opposite ends of the cylinder, a piston slidably disposed within the cylinder, a passageway connecting the fluid under pressure in said first chamber by way of the first inlet with an inner portion of the cylinder that is at one end of the piston, another passageway connecting the fluid under pressure in the second chamber by way of the second inlet with an inner portion of the cylinder that is at the other end of the piston, the piston rod being connected for movement with the piston, and a feedback spring and linkage interconnecting the piston rod with the connecting rod to apply a negative feedback force to said connecting rod.

3,222,996
CONTROLLING APPARATUS
Horst R. Thieme, Ardsley, and Albert E. Stone, Spring House, Pa., assignors to Honeywell Inc., a corporation of Delaware
Filed Mar. 29, 1963, Ser. No. 269,093
11 Claims. (Cl. 91—382)



1. An apparatus for positioning a fluid pressure operated control member in accordance with the magnitude of a digital control signal, comprising an electro-mechanical means to transform the digital control signal into substantially proportional straight-line motion, a pilot valve having a non-restricted spring loaded flapper nozzle fluid exhaust valve and a spring loaded flapper nozzle fluid supply valve for simultaneously supplying and exhausting regulated amounts of a fluid under pressure into a common chamber, the flappers of the valve being operably connected for simultaneous opposite opening and closing movement with a connecting rod passing through the pivot valve, a first compression spring positioned between the electro-mechanical means and one end of the connecting rod for transmitting the straight-line motion in the form of a spring load to the rod, a fluid pressure actuator operably connected to apply a force proportional to the magnitude of the fluid pressure generated in the chamber by the simultaneous opening and closing of the nozzle to the controlled member, a negative feedback linkage operably connected for movement with the controlled member at one end and being operably connected at its other end to change the force applied to the end of a second compression spring, and the other end of the last-mentioned spring being operably connected to the connecting rod to transmit the motion of the feedback linkage in the form of a spring load to an opposite end of the rod to thereby balance the force being applied to the pilot valve by the first compression spring.

3,222,997
PNEUMATIC CONTROL SYSTEM
Leland F. Blatt, 24121 Mound Road, Grosse Pointe, Mich., and Frank H. Wiesenhofer, 24252 Lexington Ave., East Detroit, Mich.
Filed May 27, 1963, Ser. No. 283,157
1 Claim. (Cl. 91—407)

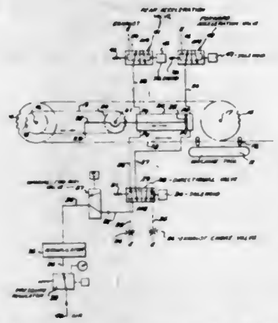
In a pneumatic control system including a source of air pressure, a cylinder and a reciprocal piston with piston rod attachable to a machine tool element for reciprocally feeding the same; the improvement comprising a directional valve connected to said source including a control spool for selectively delivering pressure fluid alternately to opposite ends of the cylinder and separate exhaust ports alternately receiving exhaust from opposite ends of the cylinder respectively;

an adjustable choke valve connected to each exhaust port for metered control of exhaust from both ends of the cylinder alternately;

an acceleration control valve connected to one end of said cylinder including a movable spool which in one position provides unrestricted exhaust bi-passing the choke valves providing maximum acceleration in the opposite direction, and in a second position cuts off said unrestricted exhaust, with said exhaust directed to said directional valve and one of said choke valves for controlled deceleration of said machine tool element bringing it to a smooth stop at the end of the cylinder stroke;

and a pneumatic circuit interconnecting said valves and cylinder;

and a second acceleration control valve in said circuit connected to the other end of said cylinder and including a movable spool which in one position provides unrestricted exhaust bi-passing the choke valves

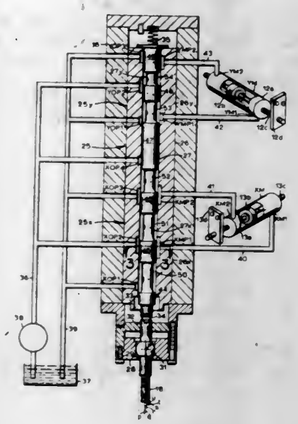


providing maximum acceleration in the opposite direction, and in a second position cuts off said unrestricted exhaust, with said exhaust directed to said directional valve and one of said choke valves for controlling deceleration of said machine tool element and for bringing it to a smooth stop at the end of the cylinder stroke, said first acceleration valve being a rear acceleration valve and said second acceleration valve being a forward acceleration valve, solenoids connected respectively to each valve spool, and remote control means connected with said solenoids for regulating movements of the respective control spools, said remote controls including switch means for simultaneously actuating said directional valve and one acceleration control valve for unrestricted cylinder exhaust, switch means for simultaneously reversing said directional valve and actuating the second acceleration control valve for unrestricted cylinder exhaust;

and independent means operably engaged on predetermined movement of said piston rod switch to selectively reverse said acceleration control valves respectively cuting off said unrestricted exhaust.

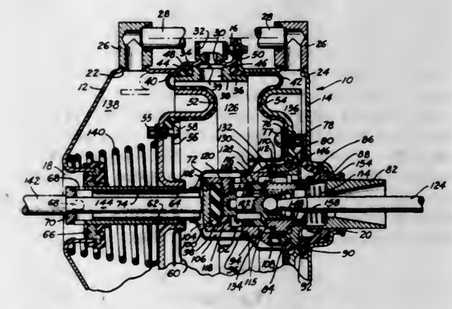
3,222,998
TWO DIMENSIONAL HYDRAULIC TRACING SYSTEM
John F. Verhoeven, Cincinnati, Ohio, assignor to The Cincinnati Milling Machine Co., Cincinnati, Ohio, a corporation of Ohio
Filed Nov. 14, 1963, Ser. No. 323,730
16 Claims. (Cl. 91—413)

1. A hydraulic tracing valve having a set of motor ports for connection to opposite sides of a single hydraulic motor and having a set of operating ports for connection to a pressure and return line, one of said sets having three ports and the other set having two ports, said valve member having a plurality of spaced lands operable to block a port when in full registration therewith, said lands spaced to block all of the ports of said one set of ports when the valve member is in a centered position and to expose



two ports of said one set to two ports of the other set of ports when the valve member is moved from the centered position toward either end of the operating range, one of said lands blocking one of the ports of the other set of ports as the valve member moves to one end of the operating range and another of said lands blocking the other port of said other set of ports as the valve member moves to the other end of the operating range.

3,222,999
FLUID PRESSURE SERVOMOTOR
Robert R. Hager, South Bend, Ind., assignor to The Bendix Corporation, South Bend, Ind., a corporation of Delaware
Filed Dec. 31, 1962, Ser. No. 248,334
9 Claims. (Cl. 91—434)

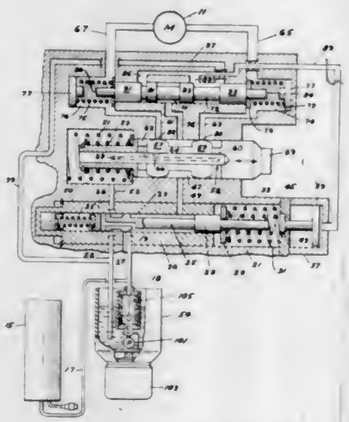


1. In a fluid pressure device a housing;
a first movable wall in said housing;
a second movable wall;
a first diaphragm connecting said first movable wall to said housing;
a second diaphragm connecting said second movable wall to said housing;
a valve housing having a portion mounted within said housing, said valve housing having a portion being slidably mounted through said first movable wall and affixed to said second movable wall to support said

movable walls in said housing and permit relative movement therebetween; and

a fluid control valve slidably mounted within said valve housing and held by said second diaphragm for relative movement with respect to said valve housing.

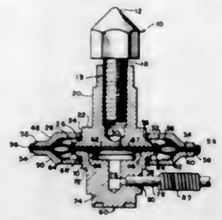
3,223,000
GUN CONTROL
James A. Payne, Warren, and Lawrence R. Conard, Birmingham, Mich., assignors, by direct and mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed May 27, 1964, Ser. No. 370,738
10 Claims. (Cl. 91—448)



1. In a hydraulic system for controlling a rotatable hydraulic motor to move a load, the combination of a source of fluid pressure, a valve assembly hydraulically connected to said source of fluid pressure, a regulator valve, a motor control valve and a pressure sensing valve mounted in said assembly, said regulator valve being spring centered in said assembly to reduce the pressure in said assembly available from said source of fluid pressure, said pressure sensing valve being spring centered in said assembly having opposite ends exposed to fluid pressure differentials in said system, said pressure sensing valve being adapted to be moved longitudinally by predetermined unequal forces exerted by fluid pressure in said system when a predetermined pressure differential appears across said sensing valve, a housing secured to said valve assembly adjacent said regulator valve, a piston mounted in said housing adapted to contact and displace said regulator valve so that full source pressure is allowed in said assembly, a conduit connecting said housing with said regulator valve, said piston being adapted to displace said regulator valve to admit full source pressure in said assembly when a predetermined pressure differential appears across said pressure sensing valve.

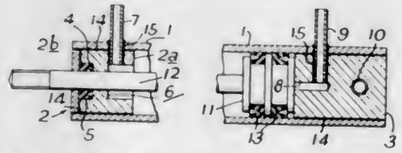
3,223,001
POWER ELEMENT ASSEMBLY
David L. Morgan, Shelton, Conn., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
Filed Nov. 4, 1963, Ser. No. 321,146
7 Claims. (Cl. 92—91)

1. In a power embodiment, the combination comprising an operating element and a stud element oppositely arranged, diaphragm means adapted to expand and contract in response to pressure variations, said operating element being engaged by a portion of said diaphragm means, said stud element being connected to another portion of said diaphragm means, housing means for said diaphragm means, spaced abutment means on said housing means disposed on opposite sides of said diaphragm



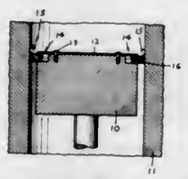
means, and stop means on said operating and stud elements cooperating with said abutment means for limiting expansion of said diaphragm means in response to increased pressure variations.

3,223,002
AIR CYLINDERS AND MANUFACTURE THEREOF
Yule Courtenay Edenborough, 55 Tring Road, Dunstable, England
Filed July 30, 1963, Ser. No. 298,725
Claims priority, application Great Britain, Oct. 10, 1962, 38,378/62
8 Claims. (Cl. 92—169)



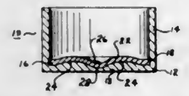
1. A cylinder for a pneumatically-operated piston and cylinder device, the cylinder comprising an axial wall and end walls, one end wall having a bore to receive a piston rod therethrough, and a sleeve consisting of glass fibres bonded to each other and the axial wall of the cylinder; the cylinder being formed of a rigid synthetic plastic.

3,223,003
SEALING MEANS RESPONSIVE TO FLUID PRESSURE TO PROVIDE RADIAL AND AXIAL SEALING EFFECTS
George Gerard, Yonkers, and Jacob Brayman, Staten Island, N.Y., assignors to Barogenics, Inc., a corporation of New York
Original application July 28, 1961, Ser. No. 127,738, now Patent No. 3,156,475, dated Nov. 10, 1964. Divided and this application Nov. 3, 1964, Ser. No. 413,677
5 Claims. (Cl. 92—182)



1. Apparatus comprising, first and second fluid enclosure means of which one surrounds the other, and both are disposed axially and radially of a central axis to jointly enclose at least part of a region occupiable by pressurized fluid; there being between said two means an annular zone which has an entrance to an axial end of said region and is a zone of potential leakage of fluid from said region; and said second means providing next to said entrance a surface presented towards said region and extending radially towards said zone entrance and first means; a closed annular resilient carrier ring disposed next to said surface to be axially between it and a portion of said region and to be radially between said first means and a portion of said region; said carrier ring having first and second surfaces which are disposed on radial and axial sides, respectively, of said carrier ring, and which register with, respectively, an axially extending surface of revolution on said first means and said radial surface on said second means; a first closed annular resilient seal ring disposed on the same radical side of said carrier ring as said first surface to have said first surface interposed between said first seal ring and said zone entrance; and a second closed annular resilient seal ring disposed on the same axial side of said carrier ring as said second surface to have said surface interposed between said second seal ring and said zone entrance; said carrier ring being axially forceable and radially deformable by respectively, axial and radial components of the pressurized fluid in said region to squeeze said first and second seal rings against, respectively, said first and second means, and to force said first and second surfaces against, respectively, said axial surface on said first means and said radial surface on said second means so as, thereby, to provide a seal against leakage of said fluid from said region through said zone.

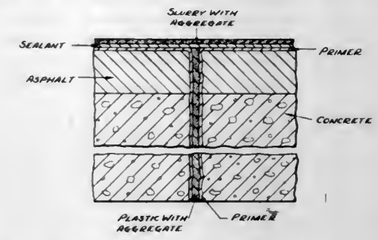
3,223,004
CUP-SHAPED ARTICLES
Frank J. Sabo, Walkerton, Ind., assignor to Arrowhead Engineering Corporation, Walkerton, Ind., a corporation of Indiana
Original application Nov. 29, 1957, Ser. No. 699,665. Divided and this application Aug. 20, 1958, Ser. No. 756,151
9 Claims. (Cl. 92—222)



1. A piston, comprising circumferentially continuous walls of aluminum forming a hollow cylindrical member, a disc-shaped member joined integrally at its entire marginal edge to said walls at one end of said cylindrical member and being thicker adjacent its edges than at its center, an annular groove in the internal surface of said side walls adjacent said disc-shaped member, and a steel disc-shaped insert in contact with the inner surface of said disc-shaped member seated at its marginal edge in said groove and having on its upper surface a central recess and an annular ridge spaced from and concentric with said central recess and having on its lower surface a central protrusion and an annular groove spaced from and concentric with said central protrusion.

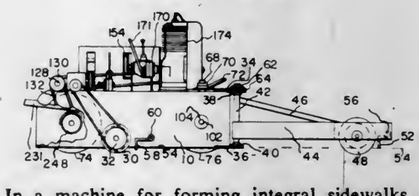
3,223,005
SEALING MEANS FOR CRACKED SURFACES
Harold V. Carlson, Hudson, Ohio, assignor to The Firestone Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed Mar. 8, 1961, Ser. No. 94,380
8 Claims. (Cl. 94—17)

3. A concrete surface, having a crack therein, the surfaces of the crack and the adjoining area being covered with a primer coat of nitrile rubber and water- and fuel-resistant resin composition, the amount of the resin composition being substantially 20 to 80 parts by weight per 100 parts of the rubber and containing at least substantially 50 percent by weight of heat-reactive phenol-aldehyde resin with the balance selected from the group consisting of phenol-aldehyde resins, coal-tar pitches and water-tar pitches, with the balance of the crack filled with a mixture of nitrile rubber and resin composition, as de-



fined, admixed with sand, the surface of the crack and the adjoining area being covered with a mixture of nitrile rubber and resin composition, as defined.

3,223,006
MACHINE FOR FORMING INTEGRAL SIDEWALKS AND CURBS
Alvin A. Jones, 4239 N. 7th St., and John W. Lattimore, 1727 N. 32nd St., both of Phoenix, Ariz.
Filed Nov. 6, 1961, Ser. No. 150,364
3 Claims. (Cl. 94—45)

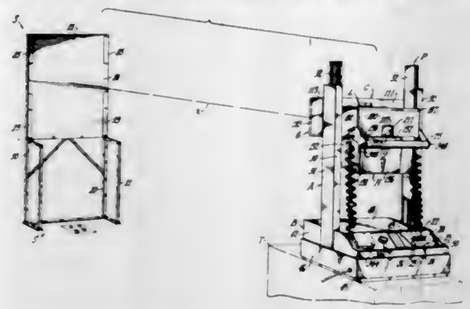


2. In a machine for forming integral sidewalks and curbs, the combination of: a frame; side portions on said frame; traction wheels supporting said frame; an engine supported on said frame; ratio differential drive mechanism driven by said engine and coupled to said traction wheels, whereby a traction wheel engaging one of said forms may be rotated at a greater speed than a traction wheel supported on the other of said forms, thereby permitting said traction wheels accurately and uniformly to move said machine on curved portions of said forms; and concrete forming roller means rotatably mounted on said frame and extending laterally between said side portions thereof; peripheral portions of said concrete forming roller means disposed to form concrete between said forms; and drive means for rotatably driving said concrete forming roller means; a guide wheel arm pivotally mounted on a vertical axis on said frame and extending in a forwardly direction thereon; a guide wheel rotatably mounted on said arm and engageable with a form on which said machine runs; and means for locking said arm and said guide wheel in various angular positions about said vertical axis with respect to said frame.

3,223,007
APPARATUS FOR SIMULTANEOUSLY PHOTOGRAPHING IDENTIFICATION PORTRAIT AND PRINTED MATERIAL
Jack L. Craven, Anaheim, Arthur M. Hedglin, Fullerton, Dick T. Craven, East Whittier, John B. McCarville, Monrovia, and Roy L. Sweeney, Pasadena, Calif., assignors to Electro-Photo Corp., a limited partnership, San Marino, Calif., a corporation of California
Filed May 25, 1962, Ser. No. 197,764
4 Claims. (Cl. 95—1.1)

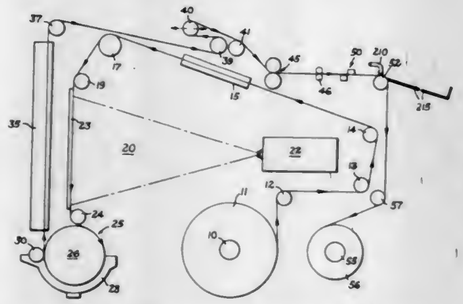
1. In a camera, in combination: an easel including a base and upright parallel columns anchored to the base; a camera head having a pair of slides embraced between and guided by said columns for vertical travel adjusting

the height of said camera head; endless drive chains each extending vertically between a respective column and an adjacent slide and each anchored at one point to the respective slide; a pair of sprockets journalled on each column in vertically spaced relation with a respective chain trained therearound; a reversible electric motor in said base driving the lower sprockets of said pairs; a plurality



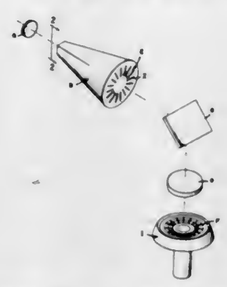
of electric circuits for energizing said motor, each circuit having a manually-operable starting switch therein for initiating a driving operation in which the camera head is moved toward a predetermined position of elevation; and a limit switch in each circuit, automatically responsive to arrival of the camera head at one of said predetermined positions, to stop the movement at that position.

3,223,008
ELECTROPHOTOGRAPHIC APPARATUS
Francis Hunstiger, Parma Heights, Ohio, assignor to Harris-Intertype Corporation, Cleveland, Ohio, a corporation of Delaware
Filed Nov. 30, 1962, Ser. No. 241,423
7 Claims. (Cl. 95—1.7)



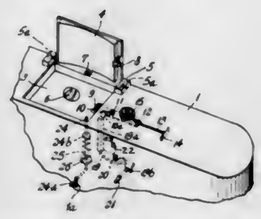
1. In an electrophotographic apparatus for producing copies of an original wherein a web of electrophotographic paper is fed sequentially through a charging station, an exposing station and a developing station to form on said web a series of developed images, and wherein the exposing station includes a flashing light source for exposing said moving web to a light image to be reproduced, the improvement comprising,
means to advance said web continuously through said stations,
means to energize said flashing light source for exposure of said web to an image to be reproduced,
and said flash energizing means including flash control means cooperatively associated with said web advancing means for forming a series of images and for varying the number of flash exposures for a given length of web whereby successive images of one series may be spaced a uniform predetermined distance apart and the successive images of another series may be spaced apart a uniform distance different from the spacing of said one series.

3,223,009
HIGH SPEED PHOTOGRAPHIC APPARATUS
Narinder S. Kapany, Woodside, Calif., assignor to Optics Technology, Inc., Belmont, Calif., a corporation of California
Filed Oct. 1, 1962, Ser. No. 227,601
11 Claims. (Cl. 95—11)



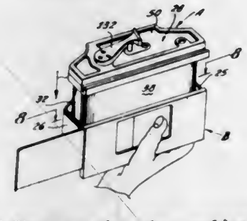
1. A photographic apparatus for continuously photographing a high speed event comprising:
(a) a light transmitting matrix composed of a plurality of light transmitting fibers,
said fibers being arranged at the input end of said matrix substantially evenly thereacross and at the output end of said matrix in a sequence of channels;
(b) a film plane;
(c) means for projecting said sequence of channels on said film plane with film areas between said channels; and
(d) means producing relative motion between said output end of said matrix and said film plane for scanning said sequence along said film plane over said film areas to record each of the channel images on one of said film areas.

3,223,010
PHOTOGRAPHIC CAMERA WITH RETRACTABLE PHOTOFLASH REFLECTOR
Waldemar T. Rentschler and Willy Pross, both of Calmbach (Enz), Germany, assignors to Alfred Gauthier, G.m.b.H., Calmbach (Enz), Germany, a corporation of Germany
Filed May 27, 1964, Ser. No. 370,638
Claims priority, application Germany, May 29, 1963, G 37,842
7 Claims. (Cl. 95—11)



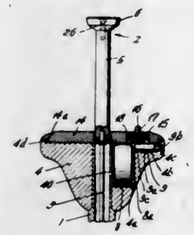
1. A photographic camera comprising: a shutter speed control settable to a plurality of positions, one of said positions corresponding to a shutter speed suitable for taking photoflash exposures; a photoflash unit comprising a reflector retractable into said camera; and means connected to said reflector and to said shutter speed control to permit said reflector to be extended only when said control is in said one of said positions and to prevent said control from being moved out of said one of said positions when said reflector is extended.

3,223,011
ROLL FILM MAGAZINE
Charles J. Hunt, Orange, and Elwood R. Swanson, Garden Grove, Calif., assignors to Beattie-Coleman, Inc., Anaheim, Calif., a corporation of California
Filed Oct. 25, 1963, Ser. No. 318,891
8 Claims. (Cl. 95—34)



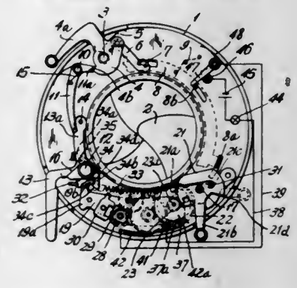
1. In a roll film magazine, the combination of:
a magazine housing having an outer wall, two end walls, a first side wall, a second side wall, and an inner wall with an aperture in the inner wall for exposing film at the focal plane of a camera,
said housing being divided into a first section and a second section with said aperture in the second section, said two sections being normally mated and releasably interconnected;
film transport means on said first section adapted to direct the film past said aperture of the second section;
a spring-loaded pressure plate mounted on said first section to press the film against the rim of the aperture in the second section; and
cooperative means on the two sections to retract said pressure plate to an ineffective position in response to separation of the two sections and to advance the pressure plate to an effective position in response to mating of the two sections.

3,223,012
CABLE RELEASE
Waldemar T. Rentschler, Calmbach (Enz), Germany, assignor to Alfred Gauthier, G.m.b.H., Calmbach (Enz), Germany, a corporation of Germany
Filed June 13, 1963, Ser. No. 287,664
Claims priority, application Germany, June 16, 1962, G 35,232
9 Claims. (Cl. 95—53)



1. A cable release for photographic cameras comprising a finger collar; an actuating device comprising a pushrod and a pushbutton threadedly attached thereto, said actuating device being displaceably mounted with respect to said finger collar; a battery mounted within said pushbutton; a lamp mounted within said actuating device; a contact switch mounted on said pushbutton; and conductive means connecting said battery, said lamp, and said contact switch all within said actuating device.

3,223,013
PHOTOGRAPHIC CAMERA WITH BUILT-IN OR ATTACHABLE DELAYED-ACTION DEVICE
Waldemar T. Rentschler, Calmbach (Enz), Germany, assignor to Alfred Gauthier, G.m.b.H., Calmbach (Enz), Germany, a corporation of Germany
Filed Mar. 4, 1963, Ser. No. 262,749
Claims priority, application Germany, Mar. 9, 1962, G 34,446
4 Claims. (Cl. 95—53.3)

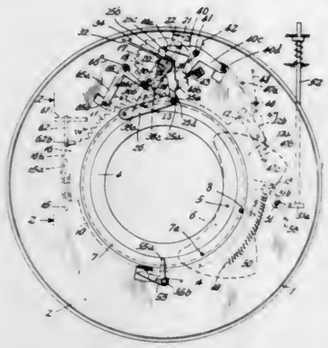


1. The combination of: a delayed-action device for delaying operation of the shutter of a photographic camera for a delay period; a control member connected to said device to move therewith; a signal light; first switch means electrically connected to said light and comprising a relatively fixed contact pin and a leaf contact spring; at least one serration on said control member to engage said spring and bring it into contact with said pin near the end of said delay period to flash said light to indicate the end of said delay period; and second switch means electrically connected in circuit with said light and said first switch means, and comprising a movable contact engaging said shutter to move therewith to close said second switch means only after said shutter has undergone an initial movement at the beginning of said delay period.

3,223,014
PHOTOGRAPHIC SINGLE-LENS REFLEX CAMERA HAVING INTRA-LENS SHUTTER PROVIDED WITH SWING-THROUGH BLADES
Erwin Weller, Calmbach (Enz), Germany, assignor to Alfred Gauthier, G.m.b.H., Calmbach (Enz), Germany, a corporation of Germany
Filed Nov. 28, 1961, Ser. No. 155,438
Claims priority, application Germany, Nov. 30, 1960, G 31,036
13 Claims. (Cl. 95—61)

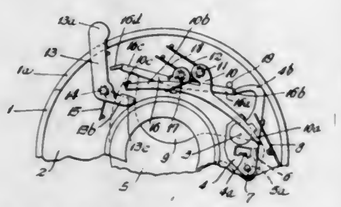
1. A photographic single lens reflex camera comprising
(a) an intra-lens shutter housing,
(b) a shutter means including a series of shutter blades for movement between open and closed positions thereof,
(c) a shutter drive means including a spring means for biasing said drive means in the cocked position thereof,
(d) means for cocking said shutter drive means,
(e) a shutter-actuating means connected to said shutter means to effect the operation thereof,
(f) a spring means for biasing said shutter actuating means, said latter spring means being weaker than said spring means biasing said drive means,
(g) a unidirectional driving connection between said shutter drive means and shutter actuating means operative during the exposure rundown of said blades,

(h) locking means acting on said shutter actuating means to resist the bias of said spring means biasing said shutter actuating means,
(i) control means for effecting the release of said locking means,
(j) a powered programming means operatively connected to said control means for sequencing the operation of said shutter blades,



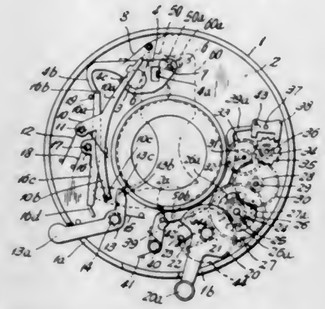
(k) said locking means including means to effect disengagement of said movable members of said unidirectional driving connection between said shutter drive means and shutter actuating means whereby the latter automatically moves the blades to their open position after the running down of the exposure has taken place.

3,223,015
PHOTOGRAPHIC SHUTTER
Waldemar T. Rentschler and Karl F. Helber, Calmbach (Enz), and Helmut Straub, Hofen (Enz), Germany, assignors to Alfred Gauthier, G.m.b.H., Calmbach (Enz), Germany, a corporation of Germany
Filed Aug. 31, 1962, Ser. No. 220,727
Claims priority, application Germany, Sept. 16, 1961, G 33,141
6 Claims. (Cl. 95—62)



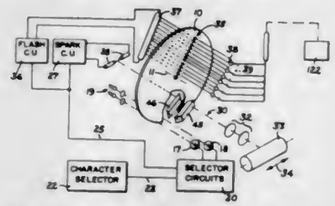
1. A photograph self-cocking shutter construction comprising a cocking and release device, a driving member adapted to be actuated by said cocking and release device, shutter blades, a shutter blade actuator movable in response to movement of said driving member for actuating the shutter blades, the said driving member being disposed in the path of said cocking and release device so as to be in response to movement of the cocking and release device into engagement with the shutter blade actuator, and movable arresting means adapted to engage the shutter blade actuator for preventing movement of the shutter blade actuator prior to movement of the arresting means, the said arresting means including a two arm lever having one arm normally engaging said shutter blade actuator to prohibit unintentional actuation thereof and having its other arm disposed in the path of movement of said cocking and release device so as to be movable in response to the continued movement of the cocking and release device to release the shutter blade actuator whereby the shutter blade actuator actuates the shutter blades only after the connection between the driving member and shutter blade actuator has been established and the cocking and release device has been removed from engagement with the driving member.

3,223,016
PHOTOGRAPHIC INTRA-LENS SHUTTER WITH DELAYED-ACTION DEVICE
Waldemar T. Rentschler, Calmbach (Enz), Germany, assignor to Alfred Gauthier, G.m.b.H., Calmbach (Enz), Germany, a corporation of Germany
Filed Mar. 4, 1963, Ser. No. 262,741
Claims priority, application Germany, Mar. 6, 1962, G 34,411
8 Claims. (Cl. 95—63)



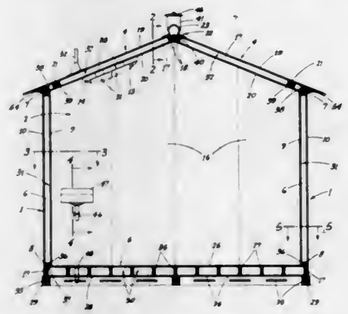
1. A photographic camera comprising a shutter mechanism including a pair of shutter blades mounted for mutually opposite movement between open and closed positions, and means for driving the same, a delayed action device, means on one of said shutter blades to engage said delayed action device and to effect the release thereof upon initial release of said shutter blades and prior to the opening of said blades, and means for prohibiting opening of said shutter blades until after the completion of the running down movement of said delayed action device.

3,223,017
PHOTOGRAPHIC TYPE COMPOSITION
Richard C. O'Brien, Huntington, N.Y., assignor to Harris-Intertype Corporation, Cleveland, Ohio, a corporation of Delaware
Filed June 10, 1963, Ser. No. 286,859
3 Claims. (Cl. 95—85)



1. A character matrix disc adapted for continuous rotation about a fixed axis in a phototypesetting machine, comprising a rigid opaque disc member having means thereon defining its center including an axis through said center about which said member is to rotate, a plurality of master characters formed by transparent portions of said disc member, there being a plurality of circular rows of master characters concentric with said center and each said row including a complete and different typographic font, like master characters in each of said fonts being arranged in a common radially extending zone on said disc member, a selection code formed within each of said zones as a plurality of transparent pulse generating marks located in an angularly spaced relation to each other and in one of two possible circular rows also concentric with said center of said disc member such that said marks can be scanned sequentially as the disc rotates about its axis, and said selection code marks in a zone being arranged in a uniques code pattern and different from the arrangement of the selection code marks in other zones forming a distinct direct address to all the master characters in the corresponding said zone.

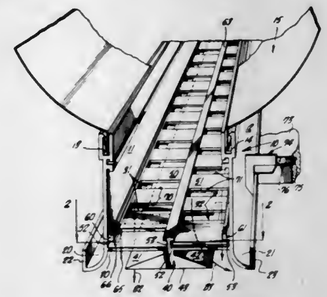
3,223,018
BUILDING STRUCTURE WITH AIR CIRCULATION MEANS
Emmitt M. Tucker, Sr., Shady Cove, Oreg.; Radina Tucker, executrix of Emmitt Marcus Tucker, deceased
Filed Nov. 5, 1963, Ser. No. 321,489
3 Claims. (Cl. 98—31)



2. In a building structure having hollow wall sections provided with air intake and outlet openings at the top and bottom, respectively, a pair of roof sections supported by the wall sections and sloping upwardly toward each other to form a ridge, each roof section including upper and lower roof surfacings spaced apart in parallel relation, and a ridge beam along the upper end of each roof section, the ridge beams of the two roof sections cooperating with each other in abutting relation when said sections are erected, the lower roof surfacings terminating at the inner edges of the wall sections and extending to abutting relation with each other at the ridge beams, and the upper surfacing overlying the wall sections and termniating short of the outer vertical edges of the ridge beams, the air outlet openings from the wall sections communicating with the spaces between the roof surfacings, and a cover secured on the upper roof surfacings over the gap formed between the adjacent ends of said upper roof surfacings and spaced from the ridge beams to provide a passage extending lengthwise of the roof; said passage being open to atmosphere, and the upper faces of the ridge beams being transversely slotted to establish air communication between said passage and the spaces between the upper and lower roof surfacings.

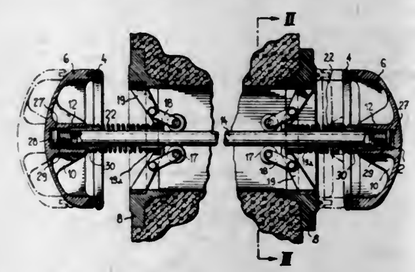
3,223,019
LINEAL AIR DIFFUSER
Francis R. Schuh, Newport Beach, Calif., assignor to Kaiser Gypsum Company, Inc., Oakland, Calif., a corporation of Washington
Filed Aug. 19, 1963, Ser. No. 302,841
13 Claims. (Cl. 98—40)

1. An air distribution system wherein both the volume and direction of air flow may be selectively varied, said system comprising
an air supply duct which includes
opposite disposed elongated side walls whose lower portions are outwardly curved and terminate in an upwardly directed flange and
a bottom air diffuser wall joined to said side walls proximate where said lower curved portions commence;
an air deflector member disposed adjacent said diffuser wall, said deflector member being somewhat narrower than said diffusion wall and having a substantially planar bottom surface aligned with the bottom edges of said side walls and a tapered upper surface; and
a damper control plate slidably engaged on said diffuser wall,



said diffuser wall and said damper control plate each having a plurality of openings therein, first ones of said openings being aligned with said air deflector member, second ones of said openings being disposed outwardly of said air deflector member, and third ones of said openings cooperating with said first and second openings so that (1) said third openings register with said first openings in one position of said control plate, (2) said third openings register with said second openings in another position of said control plate, and (3) said third openings do not register with either said first and second openings in still another position of said control plate along the diffuser wall.

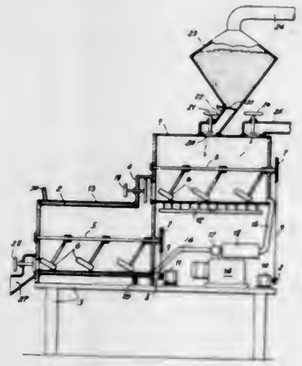
3,223,020
VALVE MECHANISM PARTICULARLY ADAPTED FOR SHELTERS AND THE LIKE
Hugo Rickenbach, Lindenstrasse 77, St. Gallen, Switzerland
Filed July 1, 1963, Ser. No. 291,812
13 Claims. (Cl. 98—119)



1. A valve arrangement for shelters or the like for closing a ventilating conduit in the event of overpressure or suction, comprising a valve disc arranged at each end and outside of said ventilating conduit, a connecting rod extending axially of said ventilating conduit for operably interconnecting said valve discs with one another, spring

means for holding said valve discs in their inoperative position normally spaced from the associated end of said ventilating conduit to provide an unobstructed flow passage through said ventilating conduit, means for supporting said connecting rod for sliding movement axially of said ventilating conduit permitting alternate closure of the ends of said ventilating conduit by the associated valve discs in dependence upon pressure impulses acting upon said valve discs.

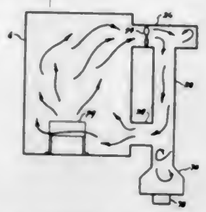
3,223,021
APPARATUS FOR PRESSURIZED ROASTING OF COFFEE, COCOA AND THE LIKE
Hans Osswald, Kreuzplatz 16, Zurich, Switzerland
Filed Mar. 2, 1961, Ser. No. 92,852
2 Claims. (Cl. 99—236)



1. An apparatus for roasting coffee and cocoa beans comprising two horizontally disposed vertically offset drums including an upper roasting drum and a lower cooling drum, a transition member interconnecting end portions of said drums, a valve in said transition member normally sealing said drums relative to each other, means for heating said roasting drum, means for cooling said cooling drum, a normally sealed bean inlet fitting in said roasting drum, an upper normally sealed husk discharge outlet in said roasting drum, a lower normally closed bean discharge opening in said cooling drum remote from said roasting drum, means for selectively supplying air under pressure to said drums and producing a vacuum therein, said last mentioned means including a connection in the lower part of said roasting drum remote from said transition member and a connection in the lower part of said cooling drum remote from said bean discharge opening, the air supply means including an air compressor, said connections comprising a conduit and a multi-cock in said conduit selectively in communication with the pressure and suction side of the air compressor whereby the roasting drum can be closed hermetically to the bean inlet fitting and also to the husk discharge outlet, and independent valve means controlling the bean inlet fitting and the husk discharge outlet.

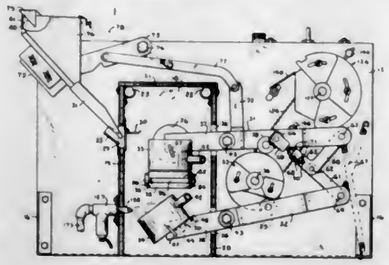
3,223,022
SMOKE-HEATING MEANS
Jacob A. Powell, Reseda, Calif.
(8823 Lankershim Blvd., Apt. 1, Sun Valley, Calif.)
Filed Feb. 14, 1961, Ser. No. 89,304
1 Claim. (Cl. 99—259)

Structure for treating edibles by flowing fumes thereover comprising a cabinet within which an edible substance may be completely contained while a substantially constant quantity of fumes continually recirculates around said substance, supply means for initially supplying said quantity of fumes including means for controlling the rate at which fumes are produced, fan means including a propeller, motor means including a reversible motor, said propeller being connected to said reversible motor for rotation of said propeller in two opposite directions to cause accelerated flow of said fumes



through said chamber means in either of two generally prevailing opposite directions, duct means interconnecting said cabinet, said supply means and said fan means, and heating means comprising a source of heat contained within said chamber means for cooking said edibles simultaneously during treatment thereof by said fumes.

3,223,023
MACHINE FOR DISPENSING LIQUIDS
James E. Miller, 225 Ellsworth St., Gary, Ind.
Filed May 8, 1961, Ser. No. 108,415
13 Claims. (Cl. 99—283)

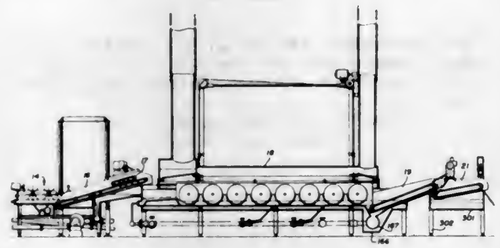


7. In combination: a support, a casing carried by the support and provided with an opening, an open ended stationary member vertically disposed in the casing, a pair of elongate levers pivoted on the support and respectively provided with an upper hollow head and a lower hollow head located in the casing, rollers carried by the levers, a chute movably mounted on the support for conducting a commodity to the member, means operatively connecting the chute with one of the levers, and means interposed between the levers for engaging the rollers to actuate the levers to cause the chute to enter the opening and permit the discharge of a commodity into the member after the lower head engages the lower end of the member and then effect a retraction of the chute as the upper head is brought into effective engagement with the upper end of the member.

3,223,024
FOOD WASHING AND COOKING APPARATUS
Clark K. Benson and Andrew A. Caridis, Millbrae, Calif., assignors to Heat and Control, Inc., San Francisco, Calif., a corporation of California
Filed Jan. 23, 1961, Ser. No. 84,265
8 Claims. (Cl. 99—352)

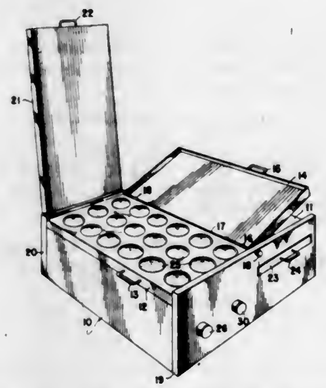
1. A continuous flow food cooking system comprising a cooker including a vat adapted to hold a quantity of heated cooking oil, conveying means for introducing a product at a uniform rate into the vat to be cooked, said conveying means delivering said product to the vat evenly distributed across the path of product movement, means

serving to remove excess water from the product prior to entry thereof into the vat, the last named means including air jet means forming a slanting curtain of relatively high pressure air impinging upon the product and directed against the direction of movement thereof to remove the excess water in a direction leading away from the vat, said last named means also including upper and lower perforated conveyors for retaining and advancing the product while it moves through the curtain of air, drum means serving to positively advance the laterally dis-



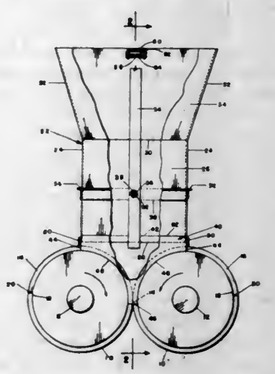
tributed product at a uniform rate along the vat, means defining a plurality of adjacent channels in the vat laterally of said path of product movement, an end region of the vat being disposed downstream of the air jet means to receive the product, means providing a relatively thin, flat, broad stream of oil to flow along said path in said region to quickly remove the product from said region and advance the product in the vat further along said path, said stream being directed to quickly remove the product from said region and feed the product toward the drum means.

3,223,025
MULTIPLE EGG BROILER
Russell B. Johns, 4349 Dorr St., Toledo, Ohio
Filed July 20, 1964, Ser. No. 383,737
1 Claim. (Cl. 99—377)



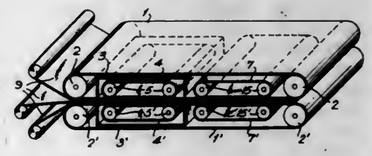
A multiple egg cooker comprising, in combination, a pan for cooking a plurality of eggs simultaneously, a serving pan adjacent to the cooking pan, a frame for supporting the pans in a substantially horizontal position, and electrical heating panel which is pivotally mounted on the frame at one side of the cooking pan for movement between a substantially horizontal position above the cooking pan and a substantially vertical position, and a common pivotal mounting which is located between the pans and which secures both pans pivotally to the frame for movement through an arc of substantially 180°.

3,223,026
COMPACTER DE-AERATOR
Edward D. Flemming, Bellevue, and Frank Wislocker, Seattle, Wash., assignors, by mesne assignments, to Weyerhaeuser Company, Tacoma, Wash., a corporation of Washington
Filed May 22, 1962, Ser. No. 196,643
4 Claims. (Cl. 100—90)



1. A compacter de-aerator apparatus comprising:
a pair of power-operated, rotatable compacting rolls mounted side-by-side with the axes thereof in an approximately common horizontal plane, each of said rolls being provided with an annular scarf on each side of the outer surface thereof; hopper means mounted above said rolls, a throat means extending from the lower portion of said hopper means to the area between said rolls for feeding material to be compacted between said rolls; sealing means mounted between the lower end of said throat means and the surface of said rolls to prevent the escape of the material to be compacted;
a pivot bar extending entirely across, entirely within, and rigidly mounted in said throat means;
a plurality of finger means pivotally mounted on said pivot bar for venting air from said material to be compacted extending upwardly through the interior of said hopper means, the lower ends of said plurality of finger means terminating above the nip of said rolls and below said pivot bar; means pivotally connected to the upper ends of each of said plurality of finger means for moving said plurality of finger means about said pivot bar.

3,223,027
PROCESSING METHOD AND DEVICE OF SYNTHETIC RESIN SHEET
Shigenari Soda, Oryo-cho, Nara, and Kenkichi Murakami and Junichi Nakashima, Jyotoku, Osaka, Japan, assignors to Sekisui Kagaku Kogyo Kabushiki Kaisha, Osaka, Japan
Filed Jan. 29, 1962, Ser. No. 169,547
Claims priority, application Japan, Jan. 28, 1961, 36/2,581
5 Claims. (Cl. 100—93)



1. Apparatus for continuously processing thermoplastic resin sheets comprising, in combination, a pair of endless

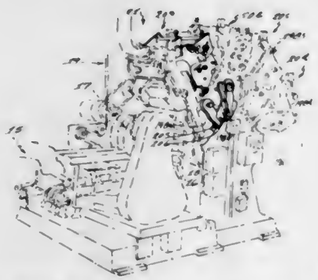
steel belts trained around respective pairs of longitudinally spaced idler rollers, said belts having co-directional inner runs extending in closely spaced parallel relation to receive said sheets therebetween at a material entry end of said steel belt; a pair of endless slat-type conveyors trained around respective pairs of rollers spaced longitudinally a distance substantially less than the longitudinal spacing of said idler rollers, each slat-type conveyor being arranged within a respective steel belt and said slat-type conveyors having co-directional inner runs each in driving engagement with the inside surface of the inner run of its associated steel belt; the inner runs of said slat-type conveyors pressing the engaged steel belt portions toward each other; pressing and heating means positioned in operative relation with said steel belts longitudinally between said slat-type conveyors and the material entry end of said steel belts to heat and soften thermoplastic resin sheets passing between said steel belts; pressing and cooling means positioned in operative relation with said steel belts at their portions thereof engaged by said slat-type conveyors to cool and set the thermoplastic resin sheets passing between said steel belts; and compartment means enclosing said pressing and heating means to thermally isolate said pressing and heating means from said pressing and cooling means; each compartment means including first and second walls extending transversely of said steel belts and substantially normal thereto, each with an edge substantially engaging the associated steel belt; the first wall of each compartment means being disposed between the entry end of said pressing and heating means and the adjacent idler roller of the respective steel belt; the second wall of each compartment means being disposed closely adjacent the exit end of said pressing and heating means; each compartment means including a third wall extending longitudinally of the associated steel belt and interconnecting said first and second walls and disposed between the associated pressing and heating means and the outer run of the associated steel belt.

3,223,028

INTERCHANGEABLE INKING UNIT FOR MULTI-COLOR PRESSES

Ward E. Brigham, Rutherford, N.J., assignor to Sun Chemical Corporation, New York, N.Y., a corporation of Delaware

Filed June 3, 1963, Ser. No. 284,868
12 Claims. (Cl. 101—40)



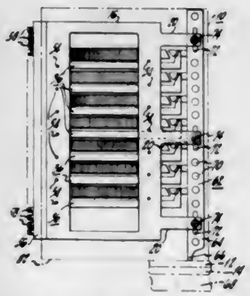
1. In an inker unit for use with multi-color printing presses having a linearly moving blanket to receive successive superimposed impressions from a series of printing cylinders and having power means for moving the blanket, the combination including a framework, means for removably mounting said framework at each of the color stations of a press, a printing cylinder shaft rotatably mounted in axially fixed position on said framework, said shaft including means for detachably connecting said shaft for driven engagement with the power means for moving the blanket, printing cylinder means detachably supported on said shaft, color supply means supported by said framework in operative engagement with said printing cylinder, indicia means for positioning said shaft in predetermined angular relationship with respect to the framework, and means for removably connecting said printing cylinder means with said shaft in predetermined angular and axial relationship with said framework, whereby said inker units may be interchangeably mounted at any color station on the press with the printing cylinder means in registry with the blanket.

3,223,029

INFORMATION TRANSLATING APPARATUS

Elvin D. Simshauser, Merchantville, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed Nov. 13, 1962, Ser. No. 237,212
5 Claims. (Cl. 101—93)



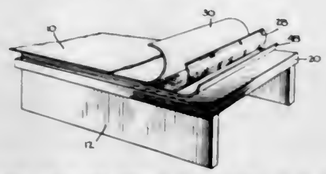
1. Printing apparatus for printing columns of dots on a document to form a character, said apparatus comprising a plurality of magnetic core structures disposed in vertically stacked relationship, each of said core structures having an air gap therein, a plurality of stylus assemblies having flag members arranged in side-by-side relationship and having stylus tips for forming said column of dots on said document, said members extending vertically past said vertically stacked core structures, each of said flag members having a portion extending outwardly toward a different one of said core structures, bodies of magnetic material mounted on said portions and extending into said gaps, and signal coils wound around said core structures.

3,223,030

APPARATUS FOR DRYING PRINTING COLORS

Walter Rainer, Dornbirn, Austria, assignor to Heberlein Patent Corporation, New York, N.Y., a corporation of New York

Filed Oct. 8, 1962, Ser. No. 228,881
Claims priority, application Austria, Oct. 27, 1961, A 8,111/61
4 Claims. (Cl. 101—115)



1. A screen printing device comprising a base means extending along a given path and adapted to support an elongated web of material to be printed, a plurality of screen printing members spaced along said path and each of which is positioned to print upon the web of material passing over said base means, motive means

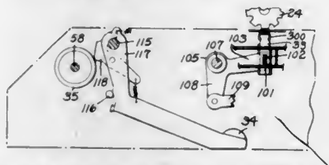
arranged to move the web of material along said base means and said screen members, and a flexible resilient mat coextensive with said base means and lying on the surface of said base means for supporting said web, the resiliency of said mat being such that it absorbs the shock forces which occur when the screen member prints upon the web, said flexible resilient mat including, as a lamination thereof, an electrical resistance heater of fabric-like material.

3,223,031

PRINTING APPARATUS

Thomas G. Makowski, Inkster, Marcel E. Verdoodt, Warren, and Ernest M. Huntley, Garden City, Mich., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed Dec. 17, 1962, Ser. No. 245,058
6 Claims. (Cl. 101—109)



1. Printing apparatus for printing information on a record member, comprising: a plurality of printing elements settable to present a line of information to be printed on the record member, said settable printing elements being disposed to one side of said record member; a plurality of interposers disposed at the opposite side of said record member, each interposer having a flat face confronting the record member and in alignment with one of said printing elements; a cap of resilient plastic material carried by said flat faces of said interposers, said cap being of a unitary construction and being formed with slits dividing same into a plurality of sections, one for each of said interposers; and means for impacting at least certain of said interposers for effecting a printing action from at least some of said printing elements onto said record member.

3,223,032

GRAINING PROCESS

Harold Boardman and Richard L. Wagner, Wilmington, Del., assignors to Hercules Powder Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Oct. 4, 1963, Ser. No. 313,753
11 Claims. (Cl. 101—149.2)

1. A process for graining the metal surface of a laminate of a metal foil having a thickness between about 0.01 inch and about 0.0001 inch bonded to a thermoplastic substrate having a Rockwell R hardness of less than about 95 at the temperature at which graining is effected, a Shore D hardness of at least 40 at room temperature and a compressive strength of at least 900 p.s.i. at room temperature, which comprises contacting the metal surface of said laminate with a lithographic grained metal master plate under pressure of from about 200 p.s.i. to about 10,000 p.s.i. at a temperature below the melting point of the thermoplastic.

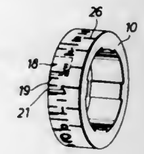
3,223,033

RECORDING ASSEMBLY HAVING CHARACTER AND CODE MARKINGS

Gunnar E. Sundblad, Bromma, Sweden, assignor to Svenska Dataregister AB, Stockholm, Sweden, a corporation of Sweden

Filed Feb. 8, 1962, Ser. No. 171,967
6 Claims. (Cl. 101—368)

1. A recording element for recording characters in coded and character form comprising a recording element having a surface divided into a plurality of discrete areas disposed in a given geometric arrangement having a predetermined portion including more than one of the discrete areas, code recording means disposed in a selected combination of said areas in accordance with the coded representation of a given character, the selected



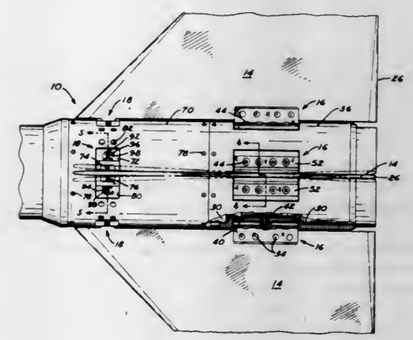
combination of areas being such that a code recording means is always disposed in one of the areas located in the predetermined portion of the geometric arrangement, and character recording means disposed completely within one of the areas in said combination for recording said character in its usual form.

3,223,034

ROCKET FIN ASSEMBLY

Alvin J. Robertson, Glendora, Calif., assignor to Atlantic Research Corporation, Fairfax, Va., a corporation of Virginia

Filed May 6, 1964, Ser. No. 365,306
10 Claims. (Cl. 102—50)



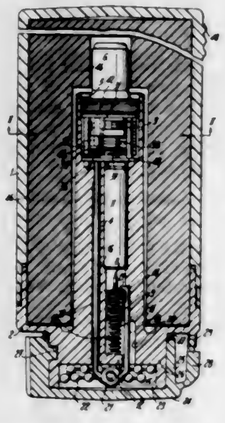
1. An adjustable rocket fin assembly comprising
(a) a fin having a leading edge, a trailing edge, a tip, and a base, said tip and base being spaced apart and extending between said leading edge and said trailing edge, said fin including a projection extending from said base,
(b) first mounting means attached to said base at a position displaced from said projection to permit relative rotational movement between said fin and said first mounting means about an axis through said base and said tip, said first mounting means being adapted for mounting on a rocket casing,
(c) second mounting means adapted to be mounted on said casing, said second mounting means including a recess for adjustably receiving said projection, and
(d) adjusting means mounted on said second mounting means and cooperating with said projection to

effect limited transverse movement of said projection within said recess and to effect limited rotational movement of said fin relative to said first mounting means.

3,223,035
HAND GRENADE

Robert Simmen, Geneva, Switzerland, assignor to Mefina S.A., Fribourg, Switzerland, a corporation of Switzerland

Filed June 2, 1964, Ser. No. 371,893
Claims priority, application Switzerland, June 14, 1963, 7,433/63
5 Claims. (Cl. 102—64)



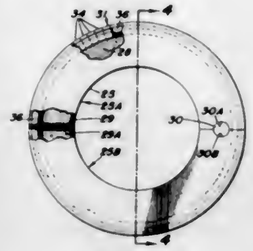
1. A hand grenade comprising a body, an explosive charge and a detonator housed in the body, a primary pyrotechnic time fuse for the firing of the detonator, a striker movably mounted on the body between an armed and an unarmed position, a spring on the striker adapted to urge the striker when in the armed position and a locking pin movably carried on the body against the striker in the armed position, in which a detonator safety device is carried in the body and comprises a fuse carrier carried movably in the body between an armed and an unarmed position, an intermediary fuse secured to the fuse carrier, locking means for locking the fuse carrier in a position remote from the detonator in the unarmed position and a delay mechanism connected to the locking pin and the locking means and adapted to bring the fuse carrier into the armed position after the locking pin is withdrawn from the striker, said locking pin having two parts, one of which forms the locking means of the delay mechanism and the other being adapted to be carried against the striker in the armed position.

3,223,036
DOUBLE-LAYER WARHEAD

Robert Anspach, Silver Spring, Md., assignor to the United States of America as represented by the Secretary of the Navy

Filed June 7, 1956, Ser. No. 590,079
4 Claims. (Cl. 102—67)

1. In a missile warhead, a plurality of rod elements of rectangular cross-section arranged in concentric layers, the rod elements of each layer lying in parallel relation to each other, the layers being disposed in parallel planes and at an angle with respect to each other, and means rigidly securing corresponding end portions of the rod elements of one layer to corresponding end portions of

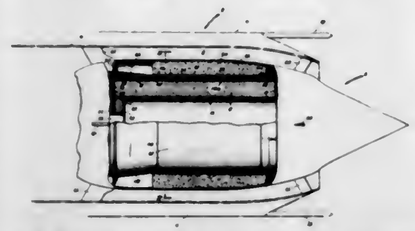


rod elements of another layer, thereby to form a projectile.

3,223,037
INNERBODY CONTINUOUS ROD WARHEAD

Eugene L. Nooker, Silver Spring, Charles R. Brown, Takoma Park, Victor J. Dietz, Silver Spring, and Harold S. Morton, Takoma Park, Md., assignors to the United States of America as represented by the Secretary of the Navy

Filed July 28, 1961, Ser. No. 128,344
11 Claims. (Cl. 102—67)



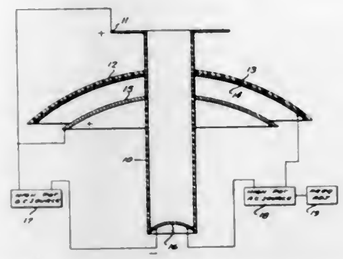
1. In combination with a missile having a cylindrical forward body portion, and an innerbody member secured concentrically within said body portion in spaced relationship therewith and having an outer skin; a continuous rod warhead mounted within said innerbody, said warhead including a cylindrical charge of high explosive, a continuous rod projectile surrounding said charge, a stress skin closely surrounding said projectile, an annular layer of foam material closely surrounding said stress skin and filling the annular space between it and the outer skin of said innerbody, and means in one end of the cylindrical charge for causing detonation thereof.

3,223,038
ELECTRICAL THRUST PRODUCING DEVICE

Agnew H. Bahnson, Jr., deceased, late of Winston-Salem, N.C., by Wachovia Bank and Trust Company, executor, P.O. Box 3099, Winston-Salem, N.C.

Filed Sept. 10, 1964, Ser. No. 395,621
6 Claims. (Cl. 103—1)

1. Apparatus for producing relative motion between the apparatus and surrounding ambient atmospheric fluid medium in open communication with the ambient environment in which the apparatus is located comprising a carrier member of electrical insulation material extending along a longtitudinal axis, a plurality of electrodes exposed to surrounding ambient atmosphere mounted on said carrier member at spaced positions along said axis to produce electrically charged ions in said medium and effect predominantely uindirectional flow thereof along said axis, means applying a unidirectional electrical po-

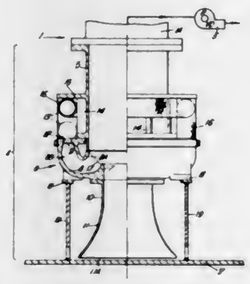


tential between certain of said electrodes to produce said ions and accelerate the same predominantly unidirectionally along said axis and means applying an alternating electrical potential between others of said electrodes augmenting production of said ions and thrust effects arising from relative motion thereof along said axis.

3,223,039
SUCTION PIPES FOR USE IN PUMPING LIQUID FROM CONTAINERS

William Graham Cowan, East Kilbride, Scotland, assignor to J. H. Carruthers & Company Limited, East Kilbride, Scotland, a British company

Filed Oct. 31, 1963, Ser. No. 320,480
Claims priority, application Great Britain, Nov. 1, 1962, 41,288/62
7 Claims. (Cl. 103—2)

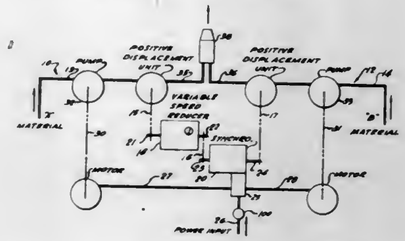


1. A suction intake device for use in pumping liquid from a container, comprising a standpipe with a bottom entry, an annular U-duct entry branching from the standpipe above said bottom entry the inner limb of the U-duct being sloped to discharge liquid upwards and radially inwards so that the discharged liquid merges smoothly with the upward flow through the standpipe, an annular seat at the upper end of the outer limb of the U-duct, and a buoyant ring surrouding the standpipe and vertically reciprocable into and out of sealing engagement with the seat so that the pumping proceeds through both the bottom entry and the U-duct entry until the liquid reaches a predetermined low level whereupon the buoyant ring closes the U-duct entry against the atmosphere and pumping continues through the bottom entry alone.

3,223,040
TWO COMPONENT PUMPING AND PROPORTIONING SYSTEM

Henry T. Dinkelkamp, Mount Prospect, Ill., assignor to Stewart-Warner Corporation, Chicago, Ill., a corporation of Virginia

Filed Apr. 9, 1962, Ser. No. 186,188
6 Claims. (Cl. 103—11)

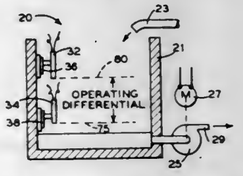


1. A two component pumping and proportioning system, comprising in combination a pair of positive displacement units each including a frame having aligned pump and air motor cylinders, a connected piston assembly including pump and air motor pistons received in its respective cylinder, a crankshaft rotatably supported by said frame, means to interconnect the piston assembly and the crankshaft for related movements therewith operable to reciprocate the piston assembly relative to the cylinders, component inlet and outlet means communicating with each pump cylinder, a differential unit having two mechanical inputs and a carrier member interconnecting the mechanical inputs, said carrier member being actuated by the mechanical inputs to move in either of two opposite directions at all speed ratios of the mechanical inputs except at a given speed ratio with the opposite directions of movement corresponding to an increase and a decrease from the given speed ratio, a power distributor including a sealed chamber and spaced ports operable to separate a common compressed fluid power input between two channels, control valve means associated with the separating means and actuated by the carrier member to adjustable positions over the ports operable to vary the ratio of power distribution between the two channels, means to connect the mechanical inputs of the differential unit separately to the crankshaft of the positive displacement units, and means to direct the two channels separately to the units to drive the units in such a manner that a change in operating speed ratio of the units causes a change in the opposite sense in the power distribution ratio to the units.

3,223,041
PUMP CONTROL SYSTEM

Frederic R. Quinn, Red Hook, N.Y., assignor to Zyrotron Industries, Inc., Red Hook, N.Y., a corporation

Filed Feb. 8, 1963, Ser. No. 257,244
11 Claims. (Cl. 103—11)



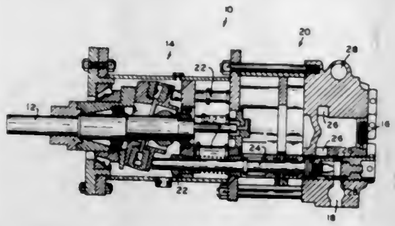
1. A pump control system for a liquid reservoir, comprising

a pump and a motor to operate said pump;

a source of voltage;

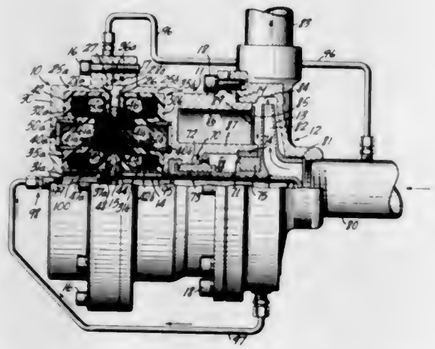
a first sensor positioned to sense a low liquid level in said reservoir;
a second sensor positioned to sense a high liquid level in said reservoir;
a first relay responsive to said first sensor and having a normally open relay front switch and connected to be energized through said first sensor to operate said open front switch to closed position whenever the liquid level is below said first sensor;
a second relay having a normally open relay front switch operable to closed position when the relay is energized, and having a normally closed relay back switch operable to open position when the relay is energized;
means connecting said second sensor to said second relay whereby said second relay will be de-energized when said liquid level reaches and affects said second sensor;
means connecting both said relay front switches in parallel to energize the second relay from said voltage source;
and means connecting said second relay back switch in an external circuit to control the pump motor.

3,223,042
MULTI-PISTON VARIABLE STROKE PUMP
Griffith N. Thresher, Tulsa, Okla., assignor to Frank Wheatley Corporation, Tulsa, Okla., a corporation of Oklahoma
Filed June 14, 1963, Ser. No. 288,025
4 Claims. (Cl. 103—38)



1. A multi-piston variable stroke pump power end comprising in combination:
a housing;
a drive shaft rotatably supported in said housing and having the rearward end thereof extending from said housing;
a multiplicity of push rods slideably supported in said housing adjacent the forward end of said drive shaft, each of said push rods supported parallel the axis of said drive shaft and each displaced an equal distance therefrom;
a forward wobble plate supported on said drive shaft, said forward wobble plate having engagement at the forward face thereof with the rearward end of each of said push rods, said forward wobble plate free to wobble on said drive shaft;
a rearward wobble plate supported about said shaft, the forward face thereof in bearing engagement with the rearward face of said forward wobble plate, the rearward face of said rearward wobble plate being formed at an angle relative to the forward face thereof;
a tubular wobble plate adjust member rotatably and axially supported about said shaft, said wobble plate adjust member having a flat forward face thereof inclined at an angle to the axis of said shaft, said forward face thereof in frictional engagement with said rearward face of said rearward wobble plate, said wobble plate adjust member having a portion thereof extending coaxially of said shaft and exteriorally of said housing;
bearing means rotatably supporting said wobble plate adjust member to said housing; and
means externally of said housing of adjustably securing said wobble plate adjust member to said shaft.

3,223,043
AXIAL AIR GAP MOTOR ADAPTED FOR CANNED PUMP
Harris Shapiro, Englewood, N.J., assignor to General Dynamics Corporation, New York, N.Y., a corporation of New York
Filed Sept. 24, 1963, Ser. No. 311,113
16 Claims. (Cl. 103—87)

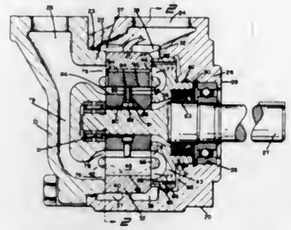


1. A wet, double axial air gap polyphase induction motor comprising, a pair of stator means each having polyphase winding means and mutually spaced axially from each other by a radially annular gap, the separate winding means on said two stator means being each responsive to current energization to produce respective magnetic fields rotating in push-pull magnetic relation in a common direction around said gap, a rotor disposed in said gap, said rotor being responsive to said fields to undergo rotation and to be overall repelled from each stator means, and said rotor being in axially spaced relation from each of said stator means to provide for radial flow of liquid on opposite sides of said rotor in paths each disposed between and bounded by said rotor and one of said stator means, the surface portion of said rotor exposed to liquid in said paths being provided by rotor material of homogeneous composition, and means impermeable to said liquid and interposed between each of said paths and the winding means of the stator means bounding that path so as to protect such winding means from liquid in such path.

3,223,044
THREE-AREA VANE TYPE FLUID PRESSURE ENERGY TRANSLATING DEVICES
Cecil E. Adams and Gerald E. De Villers, Columbus, Ohio, assignors to American Brake Shoe Company, New York, N.Y., a corporation of Delaware
Filed July 18, 1963, Ser. No. 296,017
11 Claims. (Cl. 103—136)

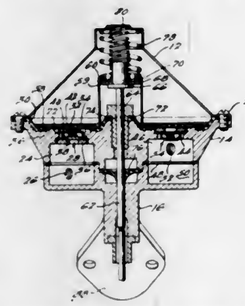
1. In a fluid pressure energy translating device,
a casing having side and peripheral walls forming a rotor chamber with circumferentially spaced low and high pressure ports in low and high pressure zones,
alternate transfer and sealing zones between said ports,
a rotor supported for rotation in said chamber,
vanes mounted in vane slots in said rotor, said vanes and rotor cooperating with said side and peripheral walls to form fluid transfer pockets in said transfer zones,

piston means for each vane movable with respect thereto, each of said piston means having a piston end exposed to fluid under pressure to urge said vane toward one of said walls,
passageway means within said rotor interconnecting said piston ends, said passageway means including



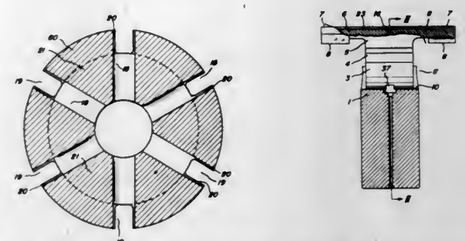
openings which rotate past said high pressure zone as said rotor rotates,
each of said piston means also forming a pressure operated element of a check valve in said passageway means which opens in response to pressure in said high pressure zone to admit pressure from said high pressure zone to the said piston end, said check valve being closed except when admitting pressure from said high pressure zone.

3,223,045
FUEL PUMP
William H. Shope, Clawson, Mich., assignor to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware
Filed May 4, 1959, Ser. No. 810,873
7 Claims. (Cl. 103—150)



1. A fluid pump comprising a housing having an inlet port and an exhaust port therein, valve means in each said port for preventing fluid flow therethrough in one direction, peripheral and inner shoulder means on said housing, annular diaphragm means secured to said housing along said peripheral shoulder means and said inner shoulder means and forming an annular fluid tight chamber communicating with said inlet and exhaust ports, a rigid support extended over and affixed snugly to a major portion of said diaphragm means thereby making the major portion of said diaphragm means substantially inflexible while providing flexible portions adjacent each said shoulder means, actuating means reciprocably mounted in said housing, said actuating means passing through the annulus of said diaphragm means and having shoulder means adapted for abutting and exerting an actuating force on said rigid support to move the same and said diaphragm means with respect to said inlet and exhaust ports, and resilient means exerting a reaction force on said diaphragm means in a direction opposing said actuating force to pressurize the fluid within said pump.

3,223,046
ROTARY RADIAL PISTON MACHINES
Karl Eickmann, 2420 Isshiki Hayama-machi, Miuragun, Kanagawa-ken, Japan
Filed Oct. 10, 1962, Ser. No. 229,644
Claims priority, application Germany, Oct. 13, 1961, B 64,364
13 Claims. (Cl. 103—161)

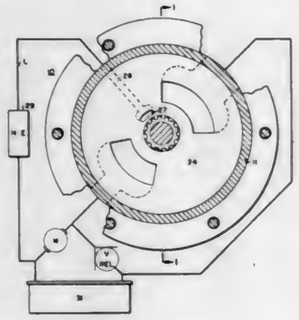


1. In a rotary fluid machine having a rotor formed with angularly spaced radial bores constituting cylinders, pistons reciprocable in said cylinders during rotation of said rotor to cyclically vary the effective volumes of the cylinders inwardly of the pistons for displacement of fluid into and out of said cylinders, a housing mounting said rotor, and guide means in said housing operable to reciprocate said pistons responsive to rotation of said rotor: the improvement comprising said rotor having an axially narrow peripheral portion centered on said cylinders and having a width, axially of said rotor, less than the internal diameter of said cylinders whereby to form slots extending radially outwardly from the cylinders and parallel to the rotor axis; each piston having a cylindrical bore extending transversely thereof adjacent its outer end, and a slot extending from said bore through the outer end of said piston, said last-named slots and bores extending parallel to the rotor axis; guide shoes cooperable with said guide means and each operable to reciprocate a respective piston, each guide shoe including a substantially cylindrical trunnion having direct seating engagement in the bore of the respective piston for transmission of radial forces directly from each shoe to the associated piston, an arcuate shoe portion interfitted with said guide means, and a stem connecting the trunnion to the shoe portion; and means restraining each trunnion against movement radially outwardly of its associated piston whereby said guide shoes may exert direct compression and traction forces on the associated pistons; the dimensions of each trunnion, stem and shoe portion, circumferentially of the rotor, being less than the diameter of the associated piston; whereby, in the radially inward limiting position of each piston, the trunnion, stem and shoe portion of its associated shoe may enter substantially fully into the rotor slot of the associated cylinder; whereby, for a given rotor diameter, the effective stroke of each piston is substantially increased.

3,223,047
POWER TRANSMISSION
William W. Toy, Bloomfield Hills, Mich., assignor to Sperry Rand Corporation, a corporation of Delaware
Filed Sept. 30, 1963, Ser. No. 312,681
6 Claims. (Cl. 103—162)

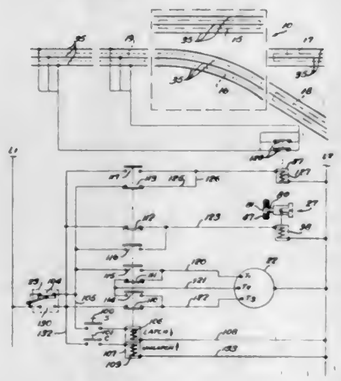
1. In a hydraulic system, the combination comprising
a housing,
a rotary fluid pressure energy translating device on said housing,
said device being of the type having a rotatable drive member,
a cylinder block rotatably mounted in said housing and having a plurality of axially positioned cylinders,
pistons reciprocable in said cylinders,

and motion-converting means interconnecting the reciprocating pistons to the rotatable drive member,
a valve plate associated with one end of said cylinder block,
said valve plate having an inlet and an outlet which alternately communicates with the cylinders in said block as said block rotates,
and a dividing wall interposed in said inlet and extending generally axially thereof to divide said inlet into a main inlet opening and a secondary inlet opening,



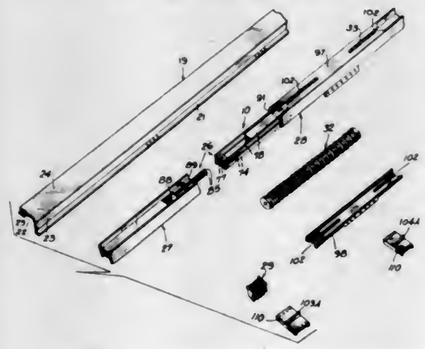
said valve plate being rotatable to vary the displacement of said device,
and a diversionary passage associated with said secondary inlet opening and adapted to register progressively therewith as the valve plate is rotated from a full-flow condition to a zero-flow condition.

3,223,048
MONO-RAIL TRACK SWITCH
Henry A. Gorjanc, Wickliffe, Ohio, assignor to The Cleveland Crane & Engineering Company, Wickliffe, Ohio, a corporation of Ohio
Filed Jan. 11, 1960, Ser. No. 1,543
3 Claims. (Cl. 104—102)



1. In an overhead monorail carrier system, a switch having a first frame, a second frame supporting said first frame for horizontal movement transversely of a rail on one side of the switch, a reversible electric motor mounted on one of said frames and connected by transmission means to the other of said frames, circuit means for controlling said motor for effecting movement of said first frame between first and second positions for selectively connecting said rail with either of two rails on the other side of the switch to provide a continuous path of travel for a carrier, said circuit means including a limit switch mounted on one of said frames and having first and second contacts closed in response to said first frame reaching said first and second positions, respectively, said first contacts being closed when said first frame moves from said first to said second position and opened when said frame reaches said second position and said second contacts being closed when said frame moves from said second to said first position and opened when said frame reaches said first position, first and second control switches electrically connected by said first and second contacts, respectively, when closed to a power conductor, relay means having a latch coil electrically connected to said first control switch and an unlatch coil electrically connected to said second control switch, said relay means having third contacts adapted to be closed upon energization of said latch coil and fourth contacts adapted to be closed upon energization of said unlatch coil, said fourth contacts being opened upon energization of said latch coil and said third contacts being opened upon energization of said unlatch coil, said reversible motor being connected through said third and fourth contacts to said first and second contacts, respectively, so that closing of said first control switch with said first frame in said first position latches said relay thereby closing said third contacts and conditioning said circuit to energize said motor in a sense to move said first frame toward said second position until said first contacts of the limit switch are opened disconnecting said motor and said first control switch from said power conductor and connecting said second control switch to said power conductor by closing said second contacts, and closing of said second control switch with said first frame in said second position unlatches said relay closing said fourth contacts and conditioning said circuit to energize said motor in a sense to move said first frame toward said first position until the second contacts of said limit switch are opened disconnecting said motor from said power conductor and connecting said first control switch with said power conductor.

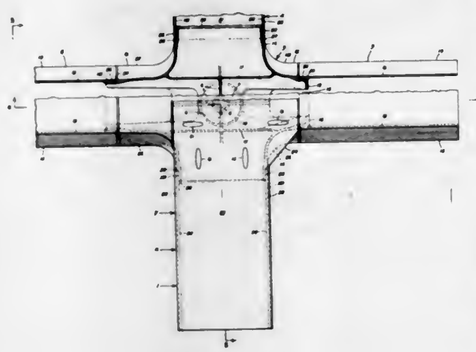
3,223,049
SPLIT SLIDING SILL AND CUSHIONING ARRANGEMENT
William H. Peterson, Homewood, Ill., assignor to Pullman Incorporated, Chicago, Ill., a corporation of Delaware
Continuation of application Ser. No. 196,320, May 21, 1962. This application June 9, 1965, Ser. No. 469,024
4 Claims. (Cl. 105—392.5)



1. A railway car comprising an underframe, a sliding sill, means mounting said sliding sill for lengthwise movement on said underframe, said sliding sill including a pair of lengthwise spaced sill sections movable relatively to each other from a spaced neutral position to an extended position and a contracted position and movable conjointly relative to said underframe when in said extended and contracted positions, couplers carried on the remote ends

of said sliding sill sections, a resilient stress relieving cushion means having a predetermined travel mounted on one of said sections, means fixed to the other of said sill sections for movement therewith and engaging said resilient stress relieving cushion means for connecting said sill sections and for rendering said resilient stress relieving cushion means operative upon buff and draft impact at said couplers thereby causing said sill sections to move to said contracted and extended positions respectively and relieving the stresses through the length of said sliding sill, a long travel lading protection cushion device having a travel in excess of the travel of said stress relieving cushioning means and said distance of movement of said sliding sill sections from said neutral position to said extended or contracted positions, said long travel cushion device being interposed for interaction between said sliding sill and said underframe and being operative during said conjoint movement of said sill sections, and means on said sill sections causing said long travel lading protection cushion device to be actuated during movement of said sill sections relatively to each other from said neutral to said contracted position, and said resilient stress relieving cushion means being actuated solely during movement of said sill sections from said neutral to said extended position.

3,223,050
UNDERFRAME END
Ernest J. Warnock, East Aurora, N.Y., assignor to Symington Wayne Corporation, Salisbury, Md., a corporation of Maryland
Filed May 14, 1962, Ser. No. 194,481
4 Claims. (Cl. 105—420)



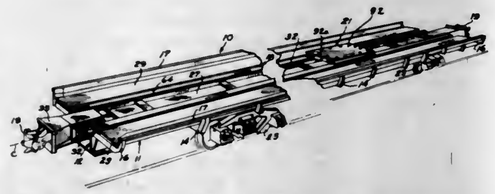
1. In a car underframe having center sills, a cast-weld underframe end comprising a center casting having front and rear and a pair of side arms, at least the rear and side arms having necked outer end portions bounded inwardly by outwardly facing abutment means, a pair of bolster sections on opposite sides of said casting and each having an end part receiving the necked portion of one of said side arms, the necked portion of the rear arm being received in an end part of the center sills, and weld means connecting said necked arms to said parts, said weld means for each arm including a plurality of welds spaced longitudinally thereof and each resisting both tensile and compressive forces, one of said welds for each arm filling a space between the abutment means thereof and an adjoining end of the related end part and being in compression under compressive forces.

3,223,051
CUSHIONED SLIDING CENTER SILL CONSTRUCTION
William H. Peterson, Homewood, Ill., assignor to Pullman Incorporated, Chicago, Ill., a corporation of Delaware
Filed Jan. 2, 1962, Ser. No. 163,797
17 Claims. (Cl. 105—454)



1. A cushioned railway vehicle comprising a car body including a sliding sill structure slidably supported by said car body, coupler means mounted on the remote ends of said sliding sill structure, said sliding sill structure including two endwise positioned sections, means interconnecting said sections for movement relative to one another from a spaced neutral position in the absence of a buff force on the coupler means toward each other to a position in which said sections are conjointly movable upon application of a buff force to said coupler means, said sections being movable relative to said car body at least when in said conjointly movable position, a cushion pocket defined by first stop means forming a part of each of said sections, a cushioning device having a total travel greater than the travel of said sections to said conjointly movable position disposed in said pocket between said first stop means and being operative upon the application of a buff force applied to said coupler means when said sliding sill structure is in a neutral position to resist relative movement of said sections from said neutral position, thereby to dissipate a portion of the energy of the buff force during the movement of said sections to said conjointly movable position so as to prevent damage to said sliding sill structure, and second stop means carried by said car body and engaging said cushioning device, said cushioning device being operative during the full length of travel thereof to provide relative movement between said sliding sill structure and said car body so as to prevent substantial damage to the lading carried by said vehicle.

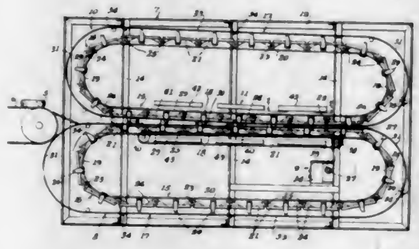
3,223,052
CUSHIONED LOW LEVEL RAILWAY VEHICLE
Jack E. Gutridge, Dyer, Ind., and Ralph Bergstrand, Homewood, Ill., assignors to Pullman Incorporated, Chicago, Ill., a corporation of Delaware
Filed Dec. 4, 1963, Ser. No. 329,343
10 Claims. (Cl. 105—454)



1. A cushioned underframe railway vehicle comprising an underframe formed as a beam structure capable of assuming the vertical loads to be carried along the length of said underframe and being deflected along the length thereof, a sliding sill extending lengthwise of said underframe and including laterally spaced sill members substantially detached from each other along the lengths thereof intermediate the ends, laterally spaced guide

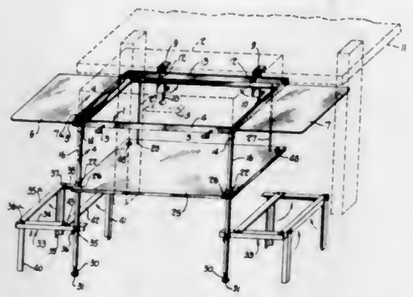
means fixed to said underframe and deflectable therewith confining respective ones of said sliding sill members at least against substantial vertical movement relative to said underframe and guiding said sliding sill for lengthwise movement of said underframe whereby said guide means acts on said sliding sill members in such a way that said sliding sill members will readily deform vertically in accordance with the deformation of the underframe but are constrained against excessive vertical deformation due to impacts, couplers carried on the opposite ends of said sliding sill, means mounting said couplers between said sliding sill members adjacent the ends thereof and interconnecting said sliding sill members for simultaneous movement lengthwise of said underframe, said sliding sill members each being of a length and having a cross section including a depth dimension of substantially lesser depth than said beam structure so that said sill members conform to the deflections of the said underframe and said guide means, said sliding sill members having a total solid cross sectional area capable of assuming the tension and compression loading longitudinally applied to said sliding sill at said couplers, and cushion means interposed for interaction between said underframe and sliding sill.

3,223,053
TORTILLA MACHINE
James A. Jimenez and Harold H. Olmsted, both of 6252 N. Hart Ave., Temple City, Calif.
Filed Oct. 23, 1962, Ser. No. 232,497
3 Claims. (Cl. 107—4)



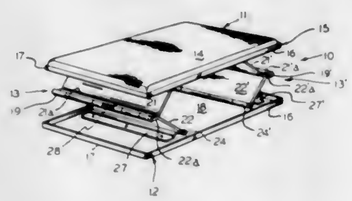
1. In a tortilla machine, a dough-flattening and conveying unit comprising
(a) a fixed endless track having a generally straight run therein,
(b) an articulated endless belt of hinge-connected flat plates provided with rollers to track around said track, thereby forming a straight run in said belt where the same is engaged with the straight run of the track,
(c) a loose endless band trained around the belt and having a straight and flat run in flat engagement with the flat plates of the belt and constituting a dough-flattening surface,
(d) a drive for said belt having separable driving connection with the plates of said belt while in the mentioned straight run thereof,
(e) a second and similar dough-flattening and conveying unit with the straight run of the endless band thereof in opposed relation with the flat run of the first endless band, and
(f) a separable interengaged driving connection between the plates of the endless belts that are in the runs thereof.

3,223,054
COLLAPSIBLE TABLE AND SHELVES
Frank J. Novak, 19968 Sheldon Road, Cleveland, Ohio
Filed Feb. 18, 1964, Ser. No. 345,664
5 Claims. (Cl. 108—111)



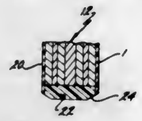
1. In collapsible table and shelf construction of the class described, in combination, a main body member, legs connected by resilient means to said body member, positioning parts on said body to receive said legs and maintain them in supporting position with respect to said body, and a shelf member movable along said legs from a position adjacent the body member to a position spaced therefrom, means on the legs to at least partially support said shelf member, said legs being foldable into positions closely adjacent the main body member upon withdrawal from the positioning parts, when the shelf member is in juxtaposition with said body member.

3,223,055
CHAIR ADAPTORS
August J. Braun, 165 N. Kostner, Chicago, Ill.
Filed May 11, 1964, Ser. No. 366,578
7 Claims. (Cl. 108—145)



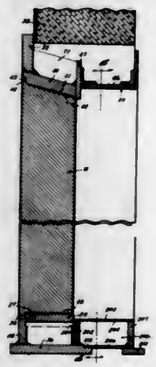
1. A self-contained foldable adaptor for selectively providing an elevated seat comprising: base means adaptable to rest on a surface; a seat assembly; and foldable hinged means disposed between and joining said base means and said seat assemblies together, said hinged means having at least two spaced apart hinge assemblies, each of said hinge assemblies having an upper leaf and a lower leaf, each of said leaves including a planar member and a planar section extending outwardly at an angle from the plane of the planar member, an intermediate hinge pivotably connecting the outer end of the planar section of said upper leaf to the outer end of the planar section of said lower leaf, an upper hinge pivotably connecting said upper leaf to said seat assembly, a lower hinge pivotably connecting said lower leaf to said base means, said planar sections of said leaves abutting against each other to prevent further movement when said hinge assemblies are unfolded past a fully extended position with said intermediate hinges moved toward the outer periphery of said adaptor to provide a stable position for said elevated seat.

3,223,056
TABLE CONSTRUCTION
William N. Wilburn, Grand Rapids, Mich., assignor to Wilburn Company, Grand Rapids, Mich., a corporation of Michigan
Filed Nov. 25, 1964, Ser. No. 416,191
1 Claim. (Cl. 108—150)



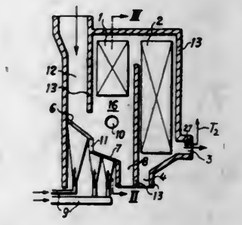
A table construction comprising: a base; a table top supported on said base; said top including a rigid core forming the main portion of said top, a thin bottom surface sheet under and bonded to the bottom surface of said core, and a decorative flat veneer sheet overlying, covering, and bonded to the upper surface of said core; said sheets both having portions extending beyond the entire peripheral edge of said core around the periphery of said table top, forming a peripheral cavity; said portions being in the same planes as their respective sheets; a cast-in-place, cured, peripherally extending, rigid resin edge filling said cavity, and bonded to the peripheral edge of said core, to the under surface only of the overlapping portions of said veneer sheet, and to the upper surface only of the overlapping portion of said bottom sheet to rigidify the overlapping sheet portions and prevent flexure thereof, while the sheet portions contain the resin only between them, with said resin having a vertical thickness equal to that of said core; said cast resin and sheet overlapping portions having generally beveled finished surfaces at their end junctures; said resin edge protruding laterally outwardly beyond both of said sheet portions around the entire table top periphery, forming a decorative visible rigid peripheral bumper preventing contact again and peeling and chipping damage to said sheets with bumping of said table by another like table, and preventing flexure of said edge portions transverse to their respective planes.

3,223,057
VAULT DOOR
Harry J. Lingal, Hamilton, Ohio, assignor to The Mosler Safe Company, Hamilton, Ohio, a corporation of New York
Filed July 26, 1963, Ser. No. 297,778
8 Claims. (Cl. 109—59)



1. A walk-in vault comprising,
a door frame,
a vault having a floor located behind said frame,
a pair of hinges mounted on one side of said frame,
a door mounted upon said hinges,
said door having a bottom recess therein,
a movable floor sill plate mounted beneath said door,
said plate having a top surface located in substantially the same horizontal plane when the door is open as that of the vault floor, and
means operable in response to locking of said door to move a portion of said sill plate upwardly into said door recess.

3,223,058
METHOD AND INSTALLATION FOR THE PRODUCTION OF STEAM, PARTICULARLY THROUGH THE COMBUSTION OF REFUSE AND OTHER LOW QUALITY FUELS
Richard Tanner, Zurich, Switzerland, assignor to Von Roll AG., Gerlafingen, Switzerland, a corporation of Switzerland
Filed Oct. 28, 1963, Ser. No. 319,258
Claims priority, application Switzerland, Oct. 31, 1962, 12,756/62
6 Claims. (Cl. 110—10)

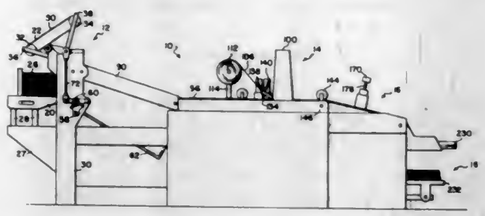


1. A method of producing steam comprising the steps of: supplying high quality fuel, air and water into a first combustion space, burning said high quality fuel in said first combustion space, supplying low quality fuel and air into a separate second combustion space shielded against heat radiation from said first combustion space, burning said low quality fuel in said second combustion space, leading gases produced in said second combustion space to a location spaced from the first and second combustion spaces, leading hot gases produced in said first combustion space to said location at which they are continuously mixed with said gases produced in said second combustion space, leading the mixed gases from said location into contact with a heat-transfer surface of a steam boiler to produce steam, and controlling the combustion process in said first combustion space to control thermal properties of said mixed gases and thus to obtain a desired thermal action at said heat-transfer surface, the step of controlling the combustion process in said first combustion space being effected by adjusting the supply of said high quality fuel, air, and water, to said first combustion space.

3,223,059
AUTOMATIC FEEDING, SEWING, CUTTING AND STACKING APPARATUS
Herbert Jacobs, 223 Stoneway Lane, Merion Station, Pa.
Filed Mar. 1, 1962, Ser. No. 176,593
6 Claims. (Cl. 112—2)

1. An automatic sewing apparatus for performing at least one sewing operation on a piece of goods, said apparatus comprising automatic feeding means including reciprocable and forward thrusting feeder foot means, a sewing station, cutting means and stacking means, said feeding means being adapted to feed automatically pieces of goods intermittently toward said sewing station in a predetermined sequence, said feeding means including a feeder belt assembly including adhesive tape means adapted to be advanced in a stroke by said reciprocable

and forward thrusting feeder foot means bearing against said goods, means for advancing said adhesive means after a stroke of said feeder foot means in a predetermined manner, said sewing station including a sewing machine and means to actuate the sewing machine in



response to the feeding of said goods, means adapted to actuate said cutting means in response to the movement of said goods through said sewing station and means adapted to actuate said stacking means in response to the movement of said goods beyond said cutting means.

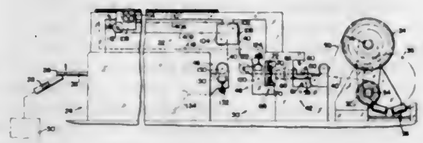
3,223,060
TWO-PART LOOPTAKERS
Robert J. Corey, % J. Wall, Box 588A, R.D. 1, Dover, N.J.
Original application Jan. 18, 1961, Ser. No. 83,580, now Patent No. 3,140,681, dated July 14, 1965. Divided and this application Apr. 23, 1964, Ser. No. 365,850
3 Claims. (Cl. 112—228)



1. A two-part looptaker for use in a single needle lockstitch sewing machine, said looptaker comprising a body part and a detachable hook part, said body part having a base and a first annular single gauge wall extending transversely from said base, said first wall having ends defining a cut-away portion therein, one of said ends tapering upwardly from said base and forming a triangular ledge extending into said cut-away portion, a blunted nose disposed on the end of said ledge, said hook part having a second annular single gauge wall, said second wall having an inwardly turned front edge flange portion tapering to an integral loop-seizing point, said second wall being detachably secured in overlying relation to a portion of said first wall proximate said one end thereof to extend said point substantially beyond the blunted nose of said first wall into said cut-away portion, said inwardly turned front edge flange portion and said point covering said ledge and said nose to prevent thread from entering therebetween.

3,223,061
METHOD OF AND APPARATUS FOR SPLICING WEB MATERIAL
Daniel S. Cvacho and William C. Whitaker, Chesterfield County, Va., assignors to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed July 18, 1962, Ser. No. 210,701
8 Claims. (Cl. 113—120)

1. The method of forming tubing and the like from a plurality of coils of relatively long strips of tube forming material which comprises: continuously feeding an active strip from an active coil through a strip accumulator and through tube forming means to form said tubing; accumulating an excess of active strip in said accumulator before a trailing end of said active strip is in the neighborhood of said accumulator; arresting the feed of a remaining end portion of said active strip and said trailing end to said accumulator while continuously feeding said excess from said accumulator to said tube forming means; clamping a leading end of a substitute strip from a substitute coil to said trailing end in overlapping relationship at two longitudinally rigidly spaced places in a cutting zone; cutting said strips transversely between said spaced places in said cutting zone to produce severed



overlapping material and trimmed abutting ends of said strips; removing said severed overlapping material; simultaneously moving said longitudinally rigidly spaced clamped strips with said clamped and abutting ends longitudinally to a welding zone; welding said trimmed abutting ends of said strips in said welding zone before said excess is exhausted from said accumulator; and then continuously feeding said remaining end portion of said active strip and said substitute strip to said accumulator and tube forming means in the same manner that said active strip previously was fed.

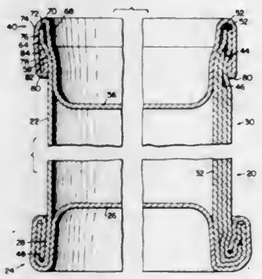
3,223,062
BUNG PATCH PLATE ASSEMBLY METHOD
Harry Mulder, Akron, Ohio, assignor to The Firestone Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Original application Jan. 24, 1961, Ser. No. 84,568, now Patent No. 3,143,244, dated Aug. 4, 1964. Divided and this application Sept. 18, 1963, Ser. No. 313,719
8 Claims. (Cl. 113—120)



1. The method of forming a reinforced bung opening in a single wall metallic container having a patch plate, comprising:
- forming a bung sleeve on and extending outwardly of said plate;
- applying an apertured reinforcing member around said bung sleeve and fitting against said patch plate inwardly of the outer perimeter of said patch plate;
- applying an apertured outer plate over said reinforcing member with its apertured inner edge contacting said bung sleeve and its outer edge abutting said patch plate inwardly of the outer perimeter thereof;
- and welding said inner edge to said bung sleeve and said outer edge to said patch plate by exterior welds.

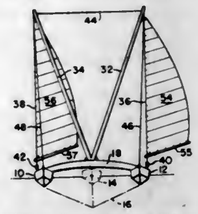
3,223,063
METHOD OF MAKING A LOW PRESSURE, HERMETICALLY SEALED, SHEET METAL CONTAINER
Leland R. Payton, Richmond, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed Feb. 27, 1962, Ser. No. 175,999
5 Claims. (Cl. 113—121)

1. A method in the manufacture of a low pressure, hermetically sealed, sheet container which comprises: forming from a rectangular sheet blank a vertical cylindrical body with upper and lower body ends; forming a sheet upper cup with an inner cup portion joined at its upper cup edge to an outward flange having an inward curl at the outer edge of said flange; initially upwardly and outwardly flaring said upper body end with said upper body end extending continuously upward and outward and terminating in an upper single thickness body end edge; introducing sealing compound around the inner surface of said upper body end and on said upper body end edge; initially inserting said upper cup into said upwardly and outwardly flared upper body end and inside said sealing compound; curling said outward flange and inward curl against the outer surface of said upper body end; performing a seam rolling step on said intially curled flange and curl and said upper body end to cause said upper end body to have an upwardly increasingly flared body portion joined by an upwardly uniformly flared merging body portion to an upwardly decreasingly flared body portion which terminates at said upper body end edge, said seam rolling step also causing said upper cup sealingly to engage said upper end body portion and to have an



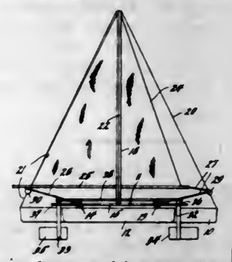
upwardly increasingly flaring inner cup portion tightly engaging the inside of said increasingly flaring body portion, said seam rolling step also causing said inner cup portion to have an upward substantially uniformly increasing flaring inner cup portion adjacent to but spaced from said decreasingly flaring body portion to form a side part of a sealing compound space in which said sealing compound is sealed at the bottom, said seam rolling step also causing said cup to form a reverse turn spaced above and turning above said upper body end edge to form an upper part of said sealing compound space above said upper body edge, said seam rolling step also causing said turn to merge with an outer cup part having a downward outwardly gradually flaring outer cup portion engaging the extreme upper end of said body adjacent said upper body end edge to seal the upper portion of said sealing compound, and causing said outer cup portion to merge with a gradually inwardly contracting outer cup portion, said seam rolling step also causing said last-named portion to be reversely folded with an increasingly flaring fold portion tightly engaging the outer surface of said increasingly flaring body portion.

3,223,064
SAILING RIG
Wilfrid G. White, Drinkwater Point, Yarmouth, Maine
Filed Feb. 24, 1964, Ser. No. 346,643
9 Claims. (Cl. 114—39)



1. A sailing rig for a hull, comprising a pair of masts arranged in V array with the base of the V mounted substantially amidships upon the hull, a substantially vertical sidestay connecting the top of each mast to the hull, and a sail secured at the hoist to each of said stays.

3,223,065
SAILBOAT
Aubrey Bennett Wilson, Jr., R.F.D. 1, Gordonsville, Va.
Filed May 4, 1964, Ser. No. 364,653
4 Claims. (Cl. 114—39)

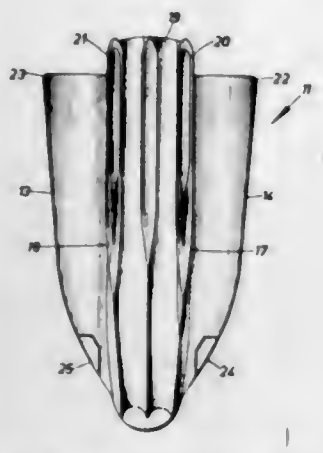


1. A sailing craft comprising an elongated hull each end of which is adapted to serve as a bow or cutwater,
- a float, and an outrigger structure, said hull, float and outrigger structure constituting a rigid assembly with the axes of hull and float disposed in spaced parallel relation and the outrigger structure connecting the same and constituting a support for an operator,
- a mast supported on said assembly approximately midway of the length of the hull,
- a triangular sail disposed upon that side of the mast remote from the float with its uppermost corner attached to the mast and its lower edge spaced above the hull and extending longitudinally thereof in both directions from the mast,
- a boom secured only to and supported solely by the sail at its lower edge so as to be freely movable relatively to the hull,
- and means accessible to an operator located on said outrigger structure for determining the position of the boom to vary as desired the relationship of the sail to the hull, whereby even though the direction of the wind may remain substantially constant, the operator may cause either end of the hull, as desired, to serve as a bow or cutwater.

3,223,066
BOAT STRUCTURE
Alfred D. Irving, 7290 21st Ave., Ville St. Michel, Quebec, Canada
Filed Feb. 12, 1965, Ser. No. 432,943
5 Claims. (Cl. 114—66.5)

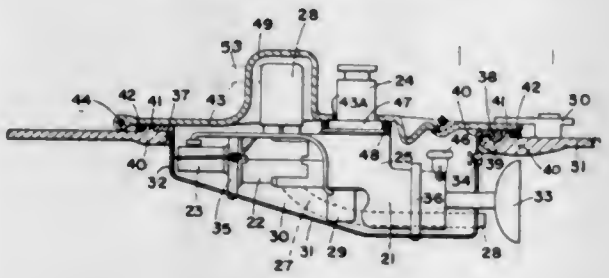
1. A water craft comprising: means for driving said craft over water; a hull having a forward end an aft end: a first pair of planes secured to the underside of said

hull in a fore and aft direction, said first pair of planes being spaced apart in parallel relationship, and to project below said hull underside; a mid plane secured to said hull underside in a fore and aft direction substantially parallel to and mid way between said first pair of planes, and to project a distance below said hull underside greater than the projection distance of said pair; and, a second pair of planes secured to the undersides



of said first pair in a fore and aft direction to project a distance therebelow greater than the projection distance of said mid plane, whereby upon said means driving said craft forwardly in water, said planes will lift said craft successively out of the water until supported entirely on said second pair of planes, said mid plane acting to add support during transition from said first pair to said second plane pair.

3,223,067
UNDERBOARD-ENGINED BOATS AND PROPULSION MEANS THEREFOR
John J. Horan, 420 Quigley Ave., Willow Grove, Pa.
Filed Nov. 4, 1964, Ser. No. 409,020
25 Claims. (Cl. 115—35)



2. A watercraft having a hull with a downward opening through the bottom thereof;

an upwardly projecting wall formation supported on said hull and bordering said opening;

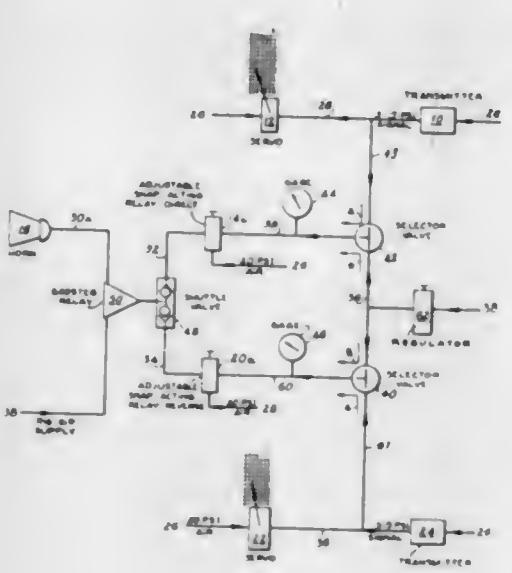
a mounting ledge means surmounting at least a portion of said wall formation and adapted to receive thereon a demountable propulsion-system assembly,

said wall formation being adjustable as to height of rise of said ledge means within said hull,

said wall formation being attached to said hull and consisting at least in part of flexible material intervening between said hull and said ledge means.

3,223,068
WARNING SYSTEMS
Roy L. Van Winkle, Edmond, Okla., assignor to The Geolograph Company, Oklahoma City, Okla., a corporation of Oklahoma
Filed Dec. 26, 1962, Ser. No. 247,142
2 Claims. (Cl. 116—65)

1. A dual warning system for indicating when the instantaneous value of a first given variable falls below a first predetermined value and for indicating when the instantaneous value of a second variable exceeds a second predetermined value comprising a first sensing means for sensing the instantaneous value of said first variable and for transforming the same into a corresponding output pneumatic pressure falling within a predetermined range of pneumatic pressures, a second sensing means for sensing the instantaneous value of said second variable and for transforming the same into a corresponding output pneumatic pressure falling within a predetermined range of pneumatic pressures, a first selector valve having a first inlet connecting with the output of said sensing means, a second selector valve having a first inlet connected with the output of said second sensing means, said selector valves having second inlets connected in common and to the outlet of a regulator valve, said regulator valve having an inlet connected to a source of pneumatic pressure, said first selector valve having a single outlet, said second selector valve having a single outlet, each selector valve being individually movable to place said first and second inlets thereof alternately in communication with the outlet thereof, a first pneumatic gage connected to the outlet of said first selector valve, a first pneumatic relay connected to the outlet of said first selector valve, a second pneumatic gage con-

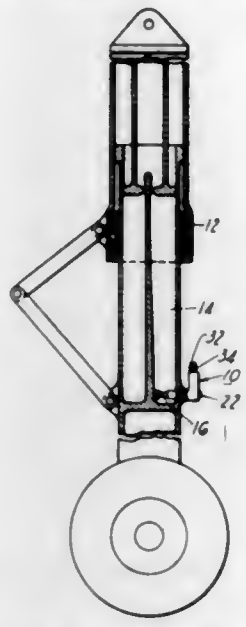


nected to the outlet of said second selector valve, a second pneumatic relay connected to the outlet of said second selector valve, said gages being calibrated in units of value corresponding to the values of said first and second variables, respectively, said first pneumatic relay having an outlet and being normally closed but adapted to be opened when the pressure directed thereto from said first sensing means indicates that the instantaneous value of said first variable has fallen below said first predetermined value so as to permit passage of pneumatic pressure through said first relay to the outlet thereof, said second pneumatic relay having an outlet and being normally closed but adapted to be opened when the pressure thereto from said second sensing means indicates that the instantaneous value of said second variable has exceeded said second predetermined value, a two-way check valve having two inlets and a single outlet connected such that its inlets are connected to the outlets of said pneumatic relays, respectively, an alarm device connected to the outlet of said two-way check valve, said first relay having means adjusting the same to change the pressure required to open said relay, and said second relay having means adjusting the same to change the pressure required to open said relay.

3,223,069
OVERLOAD INDICATING DEVICE FOR SHOCK ABSORBERS

Franklin C. Albright, South Bend, Ind., assignor to The Bendix Corporation, South Bend, Ind., a corporation of Delaware

Filed Nov. 4, 1963, Ser. No. 321,230
5 Claims. (Cl. 116—70)



1. In an aircraft shock absorber having a metering pin with fluid passages therein for transmital of pressures created by axial loading of the shock absorber, an indicating device to foretell overloading thereof, said device comprising:

a housing connected to said metering pin having a central opening therethrough;

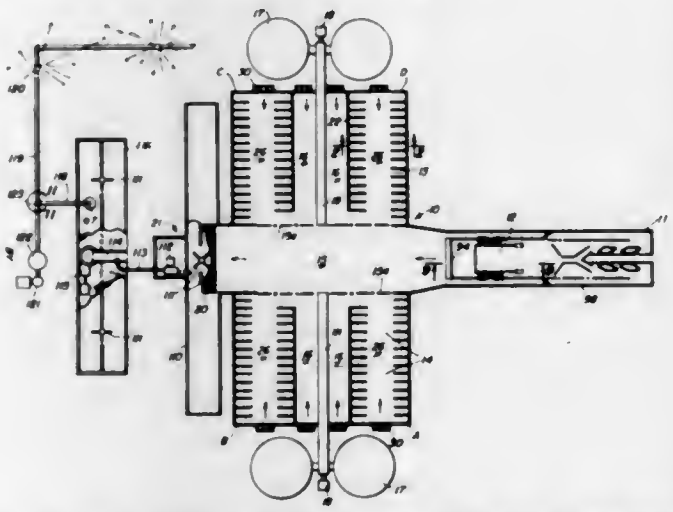
a movable means within said housing creating a variable volume chamber behind said means adjacent said metering pin passages; and

a lock means adapted to hold said movable means until overcome by pressure in said variable volume chamber.

3,223,070
DAIRY ESTABLISHMENT

Donald Joseph Gribble and Henry E. Bennett, Santa Rosa, Calif., assignors to AG Pro Inc., Santa Rosa, Calif., a corporation of California

Filed Nov. 5, 1963, Ser. No. 321,612
3 Claims. (Cl. 119—16)

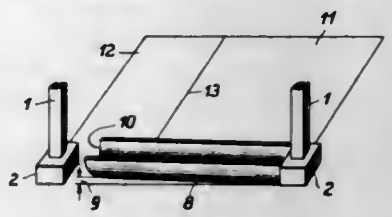


1. A dairy barn for cows and the like including a smooth, evenly contoured paved surface forming a floor providing a walking surface for cows in the barn, drain means for draining wash water from such floor opening to the top of the floor, said smooth, evenly contoured surface which forms such floor sloping toward said drain means whereby wash water discharged on the floor may be collected and disposed of through said drain means, said barn further including multiple rest areas with individual stalls for each cow and with each of said stalls having a bottom which is also of smooth pavement, but which is disposed at an elevation above the paved surface forming the floor, said stalls being dimensioned so that a cow can comfortably stand or lie in the stall, but offal from the cow falls outside the stall bottom and onto the floor providing the walking surface in the barn, said barn further including defined feeding areas having feeding troughs with means for discharging feed to the troughs, a cow-holding area, a milking area and a transfer area all bottomed with the walking surface forming said floor in the barn, and floor-washing means for washing the floor providing the walking surface in the barn where said floor bottoms said feeding, holding, milking and transfer areas operable to send wash water flowing over the floor with such water washing any cow offal thereon into said drain means, said floor-washing means including means located over a region of said floor which is uphill from said drain means constructed to collect water as a pool above said floor and operable after such collection of water as a pool to disperse the water as a sheet of water over said floor.

3,223,071
FEEDING TROUGH AND FLOOR ARRANGEMENT

Heinrich Biehl, Gut Heinrichshof, near Trittau, Germany

Filed May 6, 1964, Ser. No. 365,316
Claims priority, application Germany, June 25, 1963, B 72,415
2 Claims. (Cl. 119—28)



1. In combination, a livestock area, a dung area defined in said livestock area, a feeding trough for livestock within said livestock area comprising a trough body of elongated configuration having a bottom portion and wall portions extending upwardly from said bottom portion, upper edges defining the upper termination of said wall portions, said trough body being of uniform cross-sectional configuration throughout its length, ends defined on said trough body adapted to confine the material being fed within said trough, at least one of said ends being defined by a weir edge lying within the configuration of said bottom portion and vertically disposed between the lowermost portion of said bottom portion and the lowermost portion of said upper edges, said weir edge regulating the maximum depth of water or flowable feed confinable within said trough and being disposed over said dung area whereby trough contents discharged over said weir edge are received upon said dung area.

3,223,072
SWITCHING DEVICE

Helmut Karl Bross, Altenberg uber Nurnberg, Germany, assignor of thirty-three and one-third percent to Frank T. Johmann, Berkeley Heights, N.J.

Filed July 23, 1963, Ser. No. 297,152
11 Claims. (Cl. 120—42.03)

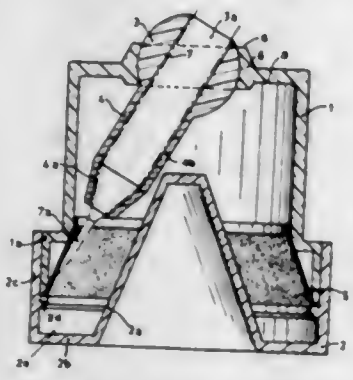
1. A switching mechanism comprising a first member carrying a latch receiver defining a series of longitudinally extending, circumferentially disposed, helical grooves of alternatingly deep and shallow longitudinal depths, said grooves being separated from each other by lands defining beveled-edge teeth, a second member carrying a latch ear

engageable with said latch receiver within said grooves and slidable on said teeth, said members being disposed for inward and outward longitudinal movement relative one another and also forward and backward circumferential movement relative one another as said ear moves in said grooves. and torsion means engaging one of said members



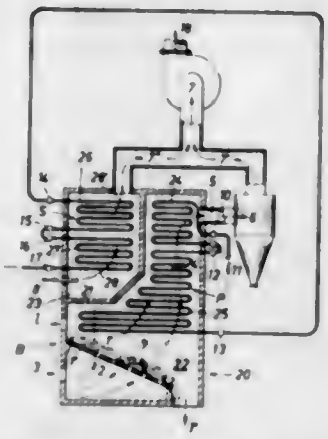
which twists upon backward circumferential movement of said latch ear relative to said latch receiver during relative inward longitudinal movement of said members, said torsion means subsequently untwisting to move said latch ear forward circumferentially relative to said latch receiver upon said latch ear becoming free of engagement with said latch receiver.

3,223,073
LEAD-SHARPENER
Marcel Mamin, La Tour-de-Peilz, Switzerland, assignor to Georges Dessonnaz, Lausanne, Canton of Vaud, Switzerland
Filed Apr. 28, 1964, Ser. No. 363,170
Claims priority, application France, Nov. 23, 1963, 954,807
2 Claims. (Cl. 120—91)



1. A pencil-lead sharpener comprising a base having a bottom, a peripheral flange projecting upwardly from said bottom and a central circular projection extending up from the bottom and having a peripheral guiding surface; a bell-shaped body received in the upper portion of said peripheral flange of the base and fitting tightly therein, means limiting entry of said body into said flange so that the lower edge of said body is spaced upwardly from said bottom, said bell-shaped body having a top portion with a central aperture having an annual resilient lip and defining an equatorial segment of a spherical surface with upper and lower openings of smaller diameter than the diameter of said spherical surface, a socket extending through said aperture and comprising a spherical ball portion fitting closely and revolvably in said aperture and having a diameter greater than that of said upper and lower openings and being thereby retained in said aperture, and a hollow stem portion extending downwardly from said ball portion and having a longitudinal passageway adapted to receive a pencil, and an inwardly facing frustoconical abrasive surface inside a lower portion of said bell-shaped body above the lower edge thereof and coaxial with said aperture and said guiding surface, said stem portion being orbitally movable around and in engagement with said guiding surface and being guided by said guiding surface to move the lead of a pencil received in said passageway orbitally along said abrasive surface to sharpen said lead, a lower portion of said central projection of said base and a lower portion of said flange below the lower edge of said bell-shaped body defining an annular receptacle below the lower edge of said abrasive surface to receive pulverant material abraded from said lead, the close fit of said ball portion in said aperture preventing escape of said pulverant material from the top portion of said bell-shaped body in the event the sharpener is inverted.

3,223,074
METHOD AND BOILER PLANT FOR COMBUSTION OF FUELS
Richard Tanner, Zurich, Karl Perl, Thalwil, and Hans Bauer, Oberengstringen, Switzerland, assignors to Von Roll A.G., Gerlafingen, Switzerland, a corporation of Switzerland
Filed Feb. 17, 1965, Ser. No. 433,438
Claims priority, application Switzerland, Jan. 29, 1962, 1,060/62
9 Claims. (Cl. 122—2)

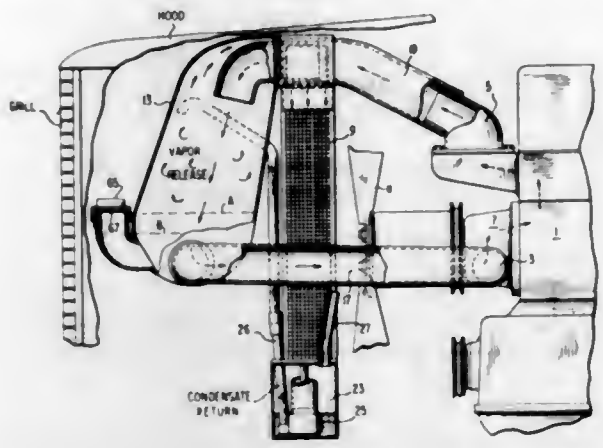


1. A method of burning different grades of fuel in a boiler installation incorporating a steam generator provided with at least two operatively interconnected heating systems, one of which defines only a pre-heater boiler section and the other only a superheating boiler section, comprising the steps of concurrently burning the different grades of fuel in separate combustion chambers of said boiler installation, conducting the respective streams of flue gas emanating from each fuel thus burned through a separate flow path in said boiler installation without mixing of said flue gases in said boiler installation, the stream of flue gas emanating from burning the low-grade fuel being conducted in heat-exchange relationship past the pre-heater boiler section and the stream of flue gas emanating from burning the high-grade fuel being conducted in heat-exchange relationship past the superheating boiler section, and re-combining said respective streams of flue gas externally of said boiler installation.

3,223,075
EBULLIENT COOLING SYSTEM
Lester P. Barlow, Stamford, Conn., assignor to The Barlow Vapor Cooling Company, Stamford, Conn., a corporation of Connecticut
Filed May 13, 1964, Ser. No. 367,188
30 Claims. (Cl. 123—41.24)

1. An ebullient cooling system comprising in combination with an engine having a cooling jacket with a coolant circulating therethrough and inlet and outlet circulating

conduits for said coolant, a compensating chamber connected to receive coolant from the outlet conduit including an upper level receptive of vapors released from the coolant entering the compensating chamber and a lower level in which collects the non-vaporized coolant

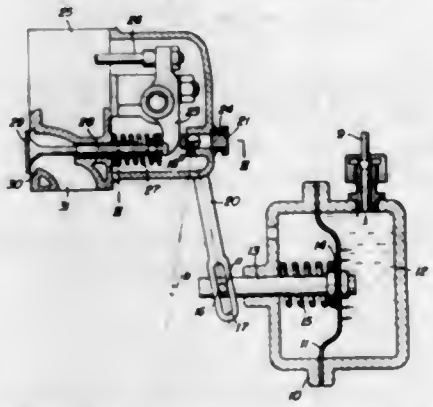


connected to the inlet circulating conduit, means in said system for maintaining the operating level of said non-vaporized coolant in the chamber substantially below the level of the coolant in the cooling jacket of said engine and a condenser connected to said compensating chamber for condensing said vapor coolant.

3,223,076
AUTOMATIC NONCOMPRESSION STARTING DEVICE

Haruo Isoda, Tokyo, Japan, assignor to Yasuhito Yamaoka; Tadao Yamaoka, successor by agreement of heirs of said Yasuhito Yamaoka, deceased

Filed Aug. 12, 1963, Ser. No. 301,466
Claims priority, application Japan, Mar. 19, 1963, 38/12,753
2 Claims. (Cl. 123—182)

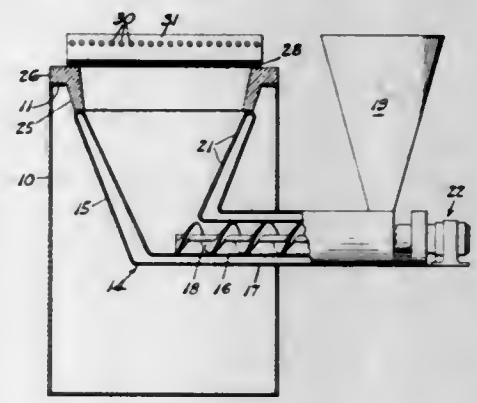


1. In an internal combustion engine, said engine including a cylinder, an exhaust port communicating with said cylinder, an exhaust valve adapted to open and close said port, a rocker arm adapted to actuate said valve, a push rod engaging said rocker arm, a bonnet surrounding said rocker arm, a slidable rocker arm pusher rod adjacent said rocker arm, bias means normally biasing said pusher rod out of engagement with said rocker arm, said rocker arm pusher rod being provided with a longitudinal slot having an abutment at one end thereof, a rotatable noncompression shaft having a half-round end positioned in said slot, said half-round end contacting said abutment, said rocker arm pusher rod causing said valve to open when in engagement with said rocker arm, a linkage coupled to said rocker arm pusher rod, said noncompression shaft coupled to said linkage, rotation of said noncompression shaft in one direction urging said rocker arm pusher rod against its said bias means and into engagement with said rocker arm, rotation of said shaft in the other direction allowing said bias means to act on said rocker arm pusher rod to move it out of engagement with said rocker arm, means coupled to said linkage for acting against the bias means thereby causing said valve to open before and during engine start-up, said means actuating the linkage after engine start-up to allow the bias means to move said pusher rod away from contact with the rocker arm thereby allowing said valve to close, said means acting as a function of engine speed.

3,223,077
CHARCOAL GRILL

Peter S. Tsakos, 171 Tacoma Ave., Buffalo, N.Y.

Filed Apr. 7, 1964, Ser. No. 357,904
6 Claims. (Cl. 126—25)

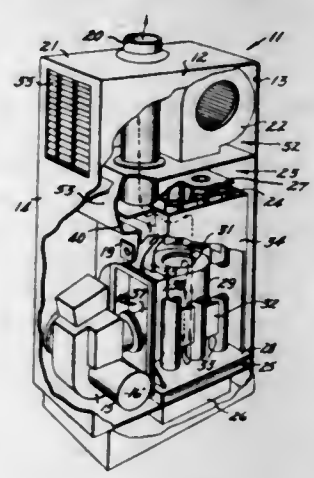


1. In a charcoal grill, a fire pot having an open upper end, underfeed charcoal stocking mechanism for said fire pot, means for supplying draft air through wall portions of said fire pot, an annular member of refractory material having its lower end against and in registry with the upper end of said fire pot, said annular member flaring upwardly to define a cooking area at its upper end, a screen extending across the upper end of said annular member to distribute heat laterally and arrest fly ash from said fire pot, and a grill surface comprising a series of spaced parallel horizontal bars spaced substantially above said screen, said fire pot and said annular member extending continuously upwardly to said grill surface and being imperforate excepting for said draft air supply means whereby the products of combustion pass substantially entirely upwardly through said grill surface.

3,223,078
WARM AIR FURNACE

Lorin G. Miller and James H. Miller, both of 220 South River, Eaton Rapids, Mich.

Filed Aug. 5, 1963, Ser. No. 299,990
2 Claims. (Cl. 126—110)



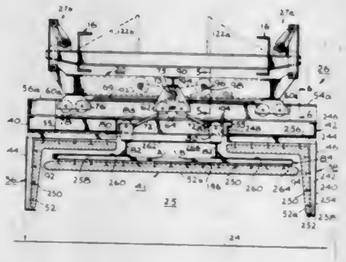
1. A positive pressure warm air furnace structure comprising:

(a) a receiving chamber for air to be warmed defined by louvered walls, a cover, and a floor plate;

(b) a plenum chamber below and communicating with said receiving chamber defined by walls, a cover

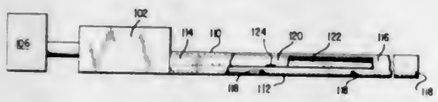
comprising the floor plate of said receiving chamber, and a bottom having openings therethrough;
(c) a blower positioned in said receiving chamber arranged to force air downward and into said plenum chamber;
(d) a plurality of vertical exchanger tubes in upper flow communication with said plenum chamber;
(e) a warm air distribution chamber beneath said tubes and into which said tubes are in flow communication defined by walls, a cover having openings therethrough in registry with said tubes, and duct connections;
(f) a baffle between each pair of said tubes and extending from said plenum chamber downwardly stopping short of said distributing chamber;
(g) an encasement in spaced concentric relation around all of said tubes and in closed contact at the top with said plenum chamber and at the bottom with said distributing chamber and defining openings therethrough for top exhaust and flame gun access; and
(h) a fibrous refractory inorganic tubular flame chamber about which said tubes are clustered and having a constriction at the upper end thereof and resting on said air distributing chamber and glowing in an incandescent manner upon ignition of fuel therein.

3,223,079
SURFACE HEATER ARRANGEMENT
Walter Wayne Keusder, 6420 Hedding St., Los Angeles, Calif., and Ugo Rachell, Anaheim, and Guy J. Payne, Los Angeles, Calif.; said Racheli and said Payne assignors to said Keusder
Filed June 27, 1963, Ser. No. 291,110
22 Claims. (Cl. 126—271.2)



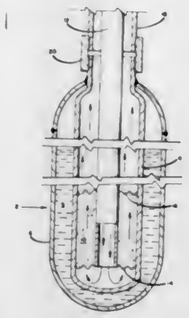
1. A surface heater comprising in combination: a frame member; supporting wheels coupled to said member; an intermediate frame movably coupled to said frame member for relative vertical movement with respect to said frame member; motion producing means coupled to said frame member and said intermediate frame for vertically moving said intermediate frame with respect to said frame member; a pair of hood wing members, slidingly supported from said intermediate frame member and each of said hood wing members comprising a top portion, a downwardly-depending side wall portion coupled to an outer edge of said top portion, and a downwardly-depending back portion coupled to a rear edge of said top portion and a rear edge of said side wall portion, and at least one of said pair of hood wing members having a plurality of movable burner plates pivotally coupled to a forward edge of said top portion, and a heat resistant material coupled to preselected interior surface portions of each of said hood wing members, said pair of hood wing members defining a volume comprising at least part of a burner cavity; means for slidingly moving said pair of hood wing members laterally of said intermediate frame to selectively increase and decrease the volume defined by said pair of hood wing members and to shift said pair of hood wing members laterally of said intermediate frame; and means for generating thermal energy in said volume defined by said pair of hood wing members.

3,223,080
SNOW MELTING APPARATUS
Franklin M. Watkins, Flossmoor, Ill., assignor to Sinclair Research, Inc., Wilmington, Del., a corporation of Delaware
Filed Aug. 3, 1962, Ser. No. 214,729
1 Claim. (Cl. 126—343.5)



A snow melter comprising a fuel burner in communication with a solid-topped, internally ceramic lined, combustion chamber, said combustion chamber being positioned to receive snow thereon and being insulated to insure substantially complete combustion of the fuel, combustion gas distributing means in communication with said combustion chamber to direct combustion products from said combustion chamber to contact directly snow charged to said melter, said gas distributing means comprising a closed-top, open-bottom tunnel member whose sides permit the passage of combustion gases laterally and upwardly along the length of the tunnel member to contact directly snow placed above the said distributing means, said tunnel member being positioned to receive snow directly thereon and being underlain by a receptacle comprising a trough-like member provided with a plurality of vertically disposed dam members engaging the bottom of said receptacle and providing a shallow water pool on the bottom of the receptacle.

3,223,081
BOTTOM-HOLE CATALYTIC HEATER USING HEAT TRANSFER LIQUID
Elton B. Hunt, Tulsa, Okla., assignor to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware
Filed May 24, 1963, Ser. No. 283,001
3 Claims. (Cl. 126—360)

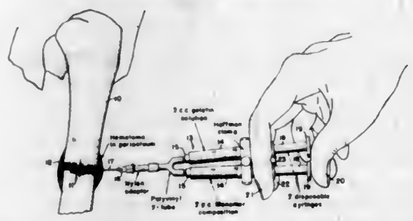


1. A bottom-hole heater for oil wells having in combination an elongated cylindrical enclosed vessel, a catalyst chamber therein, a fluid-tight jacket about said vessel defining an enclosed space between said jacket and said vessel, and a conduit extending into said chamber to form an annular space in said chamber and an annular opening at the top thereof, a fuel oxidation catalyst in said chamber, and heat transfer material in said enclosed space to remove heat from said chamber via said jacket.

3,223,082
PLASTER OF PARIS PRODUCTS AND THEIR MANUFACTURE
David F. Smith, 120 Grove St., Bay Head, N.J.
No Drawing. Filed Nov. 20, 1962, Ser. No. 239,059
9 Claims. (Cl. 128—91)

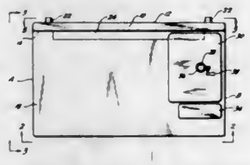
7. A dry, settable plaster of Paris bandage of substantially undelayed setting-time, comprising a flexible backing material coated with a substantially uniform combination of 100 parts by weight of powdered plaster of Paris and 0.2 to 2 parts by weight of a cellulose glycollic acid ether selected from the class consisting of cellulose glycollic acid ethers containing from 0.5 to 2 acid groups per anhydroglucose unit of the cellulose and having a viscosity between about 6 seconds and about 40 seconds as determined in 0.5 weight percent solution in 0.5 normal aqueous NaOH in a modified Ostwald-Fenske viscosimeter pipette ASTM D–445 #300 as compared with 5 seconds for the 0.5 normal NaOH alone.

3,223,083
METHOD FOR ADHESIVELY SECURING TOGETHER SKIN AND OTHER SOFT TISSUE AND BONE
Milton C. Cobey, Washington, D.C., assignor to The President and Directors of Georgetown University, Washington, D.C., a body corporate
Filed Sept. 9, 1960, Ser. No. 54,914
6 Claims. (Cl. 128—92)



1. The process of coating and adhesively securing together parts of severed living skin and other soft tissue comprising applying to the site of the tissue to be secured a non-toxic water-polymerizable liquid monomer adhesive composition comprising methyl cyanoacrylate monomer and allowing the adhesive to set upon the tissue while severed areas are being held together.

3,223,084
PEDIATRIC IMMOBILIZER
Robert T. Kolar, 1022 N. Laguna St., and Robert D. Reid, 701 Northgate Lane, both of Anaheim, Calif.
Filed Jan. 21, 1963, Ser. No. 252,867
11 Claims. (Cl. 128—134)



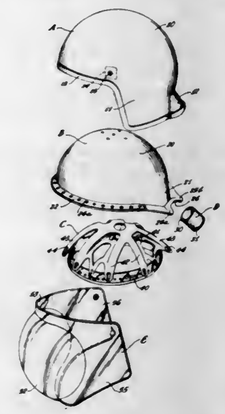
1. An immobilizer for a body comprising:
a body-receiving platform for supporting said body in a prone position;
a post attached to and upstanding from said platform; and
adjustable restraining means mounted on said post for restraining against movement the pelvis of said body by holding firmly against said platform, said adjustable restraining means being vertically adjustable on said post and substantially vertical baffle means attached to said platform on each side of said post laterally positioned from the projection of said restraining means and cooperative with said post and said adjustable restraining means to lock the pelvis of said body beneath said restraining means and each of the upper leg members of said body between said post and one of said baffle means.

3,223,085
MOUTHGUARD
Kenneth W. Gores, 9831 NE. 16th St., and Patrick D. Kennar, 9849 NE. 21st Place, both of Bellevue, Wash.
Filed Dec. 2, 1963, Ser. No. 327,451
6 Claims. (Cl. 128—136)



1. In an intra-oral protective device formed in U-shape of a molded resilient material and including a U-shaped base adapted to be disposed between the upper and lower teeth and having upstanding inner and outer walls along the peripheral edges of the base and forming a trough in which the upper teeth and/or lower teeth are enclosed, the improvement comprising: said outerwall having a slit-pocket in the anterior area; a vertically rigid, arcuate, metallic plate disposed in said slit-pocket; and means sealing the mouth of said pocket and restraining said plate from upward displacement therefrom.

3,223,086
AIR-CONDITIONED HELMET
Robert F. Denton, Los Angeles, Calif., assignor, by mesne assignments, to Arthur R. Adams, Glendale, Calif.
Continuation of application Ser. No. 37,668, June 21, 1960. This application Aug. 5, 1963, Ser. No. 302,229
2 Claims. (Cl. 128—142)

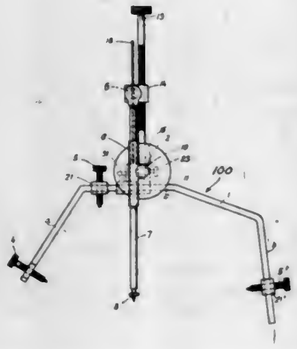


1. An air-conditioned helmet comprising, in combination:
an unbroken approximately semi-spherical helmet shell;
an approximately semi-spherical air distributing helmet liner supported within said shell and peripherally engaging said shell to provide an air chamber between the shell and liner for retaining air under pressure, said liner having a plurality of restricted flow openings therein for releasing air at various points about the head of the wearer;
air inlet means adapted to be connected to a source

of air under pressure and for delivering air to the interior of said chamber, said air inlet means including a short pipe section fastened between the lower rearward portions of said shell and liner, and being so directed as to discharge entering air against said liner at a point removed with respect to said restricted flow openings;

and means within the liner for supporting said liner upon, around and spaced from the head of a wearer, whereby air directed into the air chamber and discharged through said restricted openings can flow down, over and around the wearer's head and from beneath the liner for airing and breathing purposes.

3,223,087
STEREOTAXIC DEVICE
Vilibald Vladyka and Panel Ježek, both of Prague, Czechoslovakia, assignors to Chirana Praha, národní podnik, Prague, Czechoslovakia, a corporation of Czechoslovakia
Filed June 15, 1961, Ser. No. 133,004
Claims priority, application Czechoslovakia, June 18, 1960, 3,937/60
2 Claims. (Cl. 128—303.13)



1. A stereotaxic apparatus for surgical treatment of the human brain, comprising:

(a) an open partially polygonal planar yoke having respective first and second end portions and an intermediate portion;

(b) a first pointed bolt engaging said first end portion near its end for application to the front of the skull;

(c) a second pointed bolt engaging said second end portion near its end for application to the rear of the skull;

(d) at least one sleeve slidably mounted on said yoke and adapted to be adjustably moved along said intermediate portion of the yoke;

(e) a third pointed bolt engaging said sleeve for application to the top of the skull;

(f) a support slidably mounted on said intermediate portion of the yoke;

(g) a crossbar held by said support and rotatable therein;

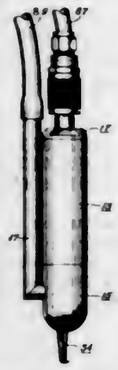
(h) a U-shaped planar frame comprising a pair of vertical sidebars and a horizontal base connected to each of said sidebars, said sidebars constituting a vertical frame of reference, and the ends of said sidebars being pointed for application to the skull to serve as reference points, each of said sidebars being slidably mounted on the crossbar, said base being substantially parallel to said crossbar;

(i) arresting means connecting said yoke and said frame for fixing the disposition of said frame relative to said yoke;

(j) an electrode holder slidably mounted on said horizontal crossbar; and

(k) an electrode slidably mounted in said holder so as to be displaceable vertically in the vertical plane defined by said sidebars.

3,223,088
BONE CUTTING APPARATUS
Forest C. Barber and James Ronald Smith, Fort Worth, Tex., assignors to S. B. Power Surgical Tools Company, Fort Worth, Tex., a corporation of Texas
Filed Apr. 8, 1963, Ser. No. 271,247
6 Claims. (Cl. 128—310)



1. In a trepanning apparatus of a type including a body portion having a longitudinal axis; drive means including a rotor journaled therein and having an output shaft; means for rotating said drive means at speeds in excess of 20,000 r.p.m.; chuck means attached to said shaft; a cutter element inserted and retained in said chuck means and comprising a shank portion and a uniformly tapering blade portion, there being in said blade portion a flute having a rake angle selected from the range of four degrees forward to two degrees backward; a strut fixed to said main body and lying in a plane containing said axis, with a guide foot fixed to the end of said strut so as to be in spaced apart relation to the end of said cutter element; that improvement which comprises: said flute forming a single cutting edge having a radial relief selected from a range of eight thousandths of an inch to sixteen thousandths of an inch, with said cutter element being driven at speeds in excess of 20,000 r.p.m.; and strut having an isosceles trapezoidal cross sectional form and disposed with the larger parallel side parallel to and spaced from said cutting edge.

3,223,089
GIRDLE
Bette Kaupp Schonberg, Scotch Plains, N.J., assignor to Maidenform, Inc., New York, N.Y., a corporation of New York
Filed Mar. 20, 1964, Ser. No. 353,342
1 Claim. (Cl. 128—541)



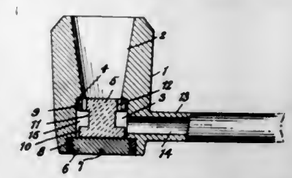
A girdle comprising a front construction having a vertical stretch panel, having at each of its sides and joined thereto a relatively narrow two-way stretch band, which bands are secured together below said vertical stretch panel, the lower areas of said bands being curved inwardly to said jointure thereof, a two-way stretch material constituting the major back area of the girdle and secured at their upper side edge portions to said bands, and two V-shaped panels with the V inverted, each V-shaped panel being of relatively heavy horizontal stretch material, each V-shaped panel extending upwardly from the base of the girdle a distance at least to the longitudinal center line of the girdle and extending to the front of the girdle and to the back of the girdle, the extension thereof at the front of the girdle being for a lesser distance than to the back of the girdle, said horizontal stretch panels being seamed to the two-way stretch major back area of the girdle and to said front two-way stretch relatively narrow bands.

3,223,090
RECONSTITUTED TOBACCO PRODUCTS AND METHOD OF MAKING SAME
David G. Strubel, Jeffersontown, and Charles J. Moll, Jr., Louisville, Ky., assignors to Brown & Williamson Tobacco Corporation, Louisville, Ky., a corporation of Delaware
Filed Sept. 11, 1963, Ser. No. 308,184
6 Claims. (Cl. 131—140)

1. A process for making reconstituted tobacco and reconstituted smoking tobacco products which comprises: preparing a mixture of a major portion of water and a minor portion of finely comminuted tobacco, forming said mixture into a predetermined configuration, flash freezing said formed configuration by subjecting it to a temperature substantially lower than the freezing point of water so that said configuration is rapidly set and then freeze drying said set configuration by subjecting it to a temperature below the freezing point of said mixture and at a reduced pressure of less than approximately 5 mm. absolute in which the vapor and solid phases of said water substantially exist simultaneously so that the water is sublimed therefrom.

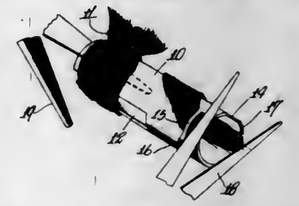
3,223,091
FILTER PIPE
Frederick A. Fassbender, West Orange, N.J., assignor to S. M. Frank & Co., Inc., New York, N.Y., a corporation of New York
Original application Mar. 23, 1961, Ser. No. 97,839, now Patent No. 3,079,927, dated Mar. 5, 1963. Divided and this application Nov. 13, 1962, Ser. No. 236,878
1 Claim. (Cl. 131—206)

A filter adapted to be fitted within a tobacco chamber in a pipe and which pipe has an annular downwardly-facing shoulder at its lower end and a plug closure at the bottom of the bowl, with such shoulder and plug closure defining a filter-holding chamber between them, the improvements consisting in a spool-shaped porous filter confined in the filter-holding chamber and below the shoulder, said filter having a central, solid and imperforate cylindrical neck defining an annular space between it and the interior of the bowl, the filter having disks of larger diameter than the neck at the opposite ends of the neck, said disks each having a marginal edge portion projecting beyond the periphery of the neck, the upper one of said disks having a plurality of holes extending through its marginal edge portion beyond the periphery of the neck,



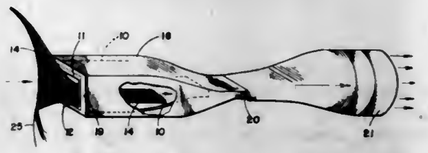
said holes constituting smoke passages which establish direct communication between the interior of the pipe bowl and the annular chamber located around the neck of the filter the upper surface of said upper disk adapted to contact and support a charge of tobacco located within the tobacco chamber.

3,223,092
MEANS FOR AND METHOD OF CUTTING HAIR
Vincent J. Marsico, 1806 N. Carnegie, Niles, Ohio
Filed Aug. 21, 1962, Ser. No. 218,362
3 Claims. (Cl. 132—7)



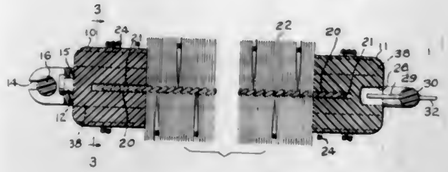
1. A method of cutting hair, comprising winding strands of hair on a tubular form in a selected number of revolutions, securing the end portion of said hair to an end portion of said form with the extremity of the secured hair overhanging said form end portion, utilizing the latter as a cutting guide for a cutting tool, and cutting the hair overhanging said form end portion.

3,223,093
VACUUM HAIR CURLER
Charles E. Winters, 9430 Jamaica Ridge, Miami, Fla.
Filed Jan. 17, 1963, Ser. No. 252,146
2 Claims. (Cl. 132—38)



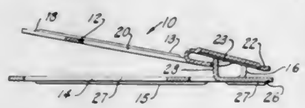
1. Apparatus for fixing hair in set positions in the presence of a hair treating chemical including a flexible self-coiling elongated hair strand container, a rigid elongated outer container surrounding and receiving said flexible self coiling hair strand container, and vacuum means operatively associated with the rigid container adapted to create a suction therein strong enough to uncoil the flexible self-coiled hair strand container and draw it into the rigid container and into an extended and substantially straight position, and simultaneously draw a strand of hair into a substantially straight position within the flexible container.

3,223,094
BRUSH ROLLER HAVING A PIVOTED AND ROTATABLE CLAMPING BAIL
George Noel Bolinger, Shelbyville, Ill., assignor to Sta-Rite Ginnie Lou, Inc., Shelbyville, Ill., a corporation of Delaware
Filed Oct. 17, 1962, Ser. No. 231,094
3 Claims. (Cl. 132—41)



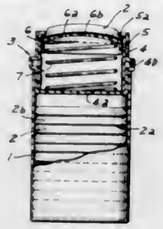
1. A hair curler comprising a pair of coaxial spaced ferrules, a brush element between said ferrules having bristles with an axial body with ends projecting beyond said bristles at opposite ends of said brush element, each ferrule being provided with an axial opening frictionally receiving a projecting end of said axial body to fix said brush element and said ferrules together with the remote ends of said ferrules a predetermined distance apart, a coil spring coaxial with said brush and of smaller diameter than said bristles so that the end of said bristles project through and beyond the coils of said spring, the ends of said coil spring extending longitudinally beyond said bristles and loosely surrounding said ferrules, whereby said coil spring is maintained in position longitudinally of the curler solely by engagement of said bristles with the coils of said spring, a bail having side arms and cross members at the ends thereof, and bail supporting means carried by one of said ferrules axially outwardly thereof, one of said cross members being pivotally connected to said bail supporting means and the other cross member being detachably connected to the other ferrule.

3,223,095
PIN CURL CLIP
Charles D. Seekings, Youngsville, and Thomas E. Gannoe, Warren, Pa., assignors to Sylvania Electric Products Inc., a corporation of Delaware
Filed Mar. 8, 1963, Ser. No. 263,857
2 Claims. (Cl. 132—46)



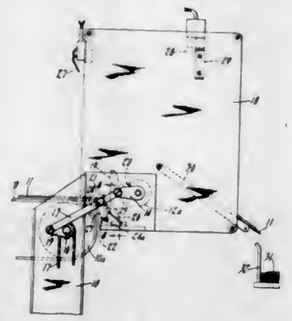
1. A pin curl clip formed from a single strip of resilient material comprising cooperating upper and lower hair gripping leaves having a longitudinal axis, a bifurcated, substantially U-shaped hinge joining said leaves at their respective rear ends to allow flexing movement thereof, said bifurcation having a given width, a first tab having a width less than said given width projecting from the upper one of said leaves from a position forward of said hinge and formed to extend rearwardly of said hinge along said longitudinal axis, a second tab projecting from the lower one of said leaves and extending rearwardly therefrom beyond said hinge, and a fulcrum having a width less than said given width of said bifurcation positioned forward of said hinge transverse to said longitudinal axis on said lower leaf and projecting upwardly therefrom through said bifurcation for engagement with said first tab during flexing movement.

3,223,096
APPLICATOR FOR COSMETICS
Julius W. Goldberg, MacArthur Lane, Stamford, Conn., and Horace Peck, 165 Bennett Ave., New York 40, N.Y.
Filed Sept. 17, 1962, Ser. No. 223,908
8 Claims. (Cl. 132—79)



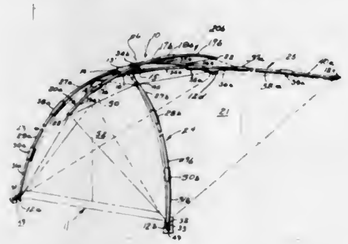
1. An applicator for applying cosmetics, said applicator comprising a reversible tubular holder closed at one end and open at the other end, said open end having an inwardly protruding portion at said other end to define a central opening at said end, a pressure member slidably fitted into said holder and closing the open end thereof, said pressure member having a peripheral outline greater than the inner peripheral outline of the opening as defined by said protruding portion, an applicator pad, yieldable means within said holder abutting against the closed end of the holder and said pressure member to urge the latter toward said protruding member and to clamp said applicator pad releasably between said pressure member and said protruding portion, and a tubular casing open at one end for receiving a supply of said applicator pads, said holder being inserted into the open end of the casing to expose the clamped applicator pad in said opening in one position of insertion of the holder and to form a cover for the casing in the reverse position of insertion in which the closed end of the holder faces outwardly.

3,223,097
TRAY DUMPER AND WASHER
Harold Ernest Spaulding, Palmer Township, Easton, Pa., assignor to American Can Company, New York, N.Y., a corporation of New Jersey
Filed Jan. 31, 1964, Ser. No. 341,683
7 Claims. (Cl. 134—46)



1. A mechanism for dumping trays being carried on a conveyor which comprises in combination:
conveyor means for carrying a plurality of trays in processional order along a substantially horizontal path of travel;
flipper means spaced from the forward end of said conveyor means for grasping the leading edge of a tray running off said forward end;
means for oscillating said flipper means in a vertical plane whereby said grasped tray is oscillated upwardly substantially about its grasped edge from its horizontal position through an arc of at least 90° to permit matter thereon to become dislodged therefrom by the force of gravity; and
trigger means interposed between said forward end of said conveyor means and said flipper means and being oscillatable in a generally horizontal direction under the impetus of the leading edge of a succeeding tray and oscillatable in a generally vertical direction out of the path of said succeeding tray under the impetus of said flipper means when said flipper means is in a position to receive said succeeding tray.

3,223,098
COLLAPSIBLE SHELTER CONSTRUCTION
Charles M. Dole, Jr., Greenwich, Conn.
(288 Lexington Ave., New York 16, N.Y.)
Filed Sept. 12, 1963, Ser. No. 308,522
2 Claims. (Cl. 135—4)



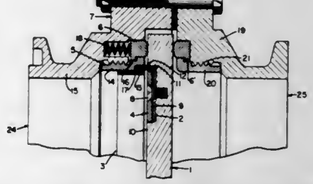
1. A collapsible tent construction comprising a pliable shelter member adapted, when in an erected position, to provide a cover for a predetermined base area, and a frame engaging said shelter member and supporting same in said erected position, said frame being disposed exteriorly of said erected shelter member; said frame including a plurality of collapsible legs, said legs when in operative condition depending angularly from a common member disposed above said erected shelter member, the lower ends of said legs resiliently engaging interconnected portions of said shelter member delimiting said base area whereby said legs assume outwardly bowed configurations; each leg being formed of a plurality of complemental tubular sections disposed in endwise interlocking engagement, when said leg is in said operative condition, and a resilient, extensible element connected to and extending through all sections of a leg whether the latter be in a collapsed or operative condition, said element having a portion thereof in continuous connection with said common member; at least said one resilient extensible element extending through said common member and the sections of two legs.

3,223,099
WALKING CANE
Cecil C. Hagood, Sr., 310 Liberty Hill Drive, Evergreen, Ala.
Filed Apr. 22, 1964, Ser. No. 361,703
1 Claim. (Cl. 135—47)

A walking cane comprising a shaft having a handle at one end and a surface engaging opposite end, and second shaft having a pair of members secured to one end thereof and definig a fork, a wheel rotatably mounted between the outer ends of said members, a hinge connecting said second shaft to the first in a manner that said second shaft and wheel may be extended beyond the end of the first shaft, and means for fastening said second shaft in position with said second shaft extending beyond the end of the first shaft to locate said wheel as an extension of the said first shaft, said fastening means including resilient clip means for securing the wheel carrying shaft with the wheel selectively in extended and inoperative positions.

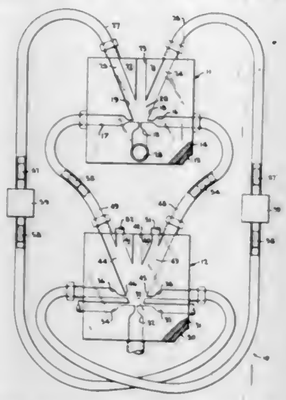


3,223,100
SHEARABLE SEALING MECHANISM FOR A PIVOTED GATE VALVE
Roy C. Koenig and Donald A. Ruscio, Denver, Colo., assignors to The Martin Marietta Corporation, Baltimore, Md., a corporation of Maryland
Filed May 11, 1962, Ser. No. 194,037
1 Claim. (Cl. 137—68)



A sealed pre-use fluid storage valve comprising: a valve body; a blade valve member mounted for rotary movement about an axis extending in the longitudinal direction of the valve body for opening and closing the valve; a diaphragm sealing member having a base portion fixed to the upstream side of the blade valve member in a pre-use storage closed position and an annular lip portion extending from the base portion in a direction longitudinally of the valve body and being provided with an annular weakened region; an annular retainer mounted on the upstream side of said valve body having a flange engaging the outer surface of said annular lip; an annular cutter member mounted within said retainer and engaging the inner surface of said lip adjacent said weakened region of said annular lip portion of the diaphragm sealing member for cleanly shearing the lip portion upon actuation of the blade valve member, said lip being secured in sealing relationship between said retainer flange and said cutter member; a separate annular sealing member mounted in the valve body on the upstream side of the blade valve member outwardly of said annular retainer and means urging said annular sealing member into fluid sealing relationship with the blade valve member for resealing the valve against fluid leakage after shearing of the diaphragm sealing member, said annular sealing member being held in position by said retainer flange.

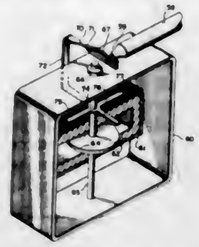
3,223,101
BINARY STAGE
Romald E. Bowles, Silver Spring, Md., assignor to the United States of America as represented by the Secretary of the Army
Filed May 28, 1963, Ser. No. 284,296
3 Claims. (Cl. 137—81.5)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A pure fluid binary stage for counting fluid pulses comprising:
(a) first and second bistable fluid amplifiers;
(b) each of said amplifiers having a power nozzle for issuing a power stream into an interaction chamber, first and second output passages downstream of said chamber, and first and second control nozzles for issuing control streams into said chamber to effect displacement of said power stream into said first and second output passages, respectively;
(c) said power nozzle of said first amplifier being connected to a source of fluid power;
(d) said power nozzle of said second amplifier being connected to a source of said fluid pulses to be counted;
(e) conduit means connecting said first and second output passages of said first amplifier to said second and first control nozzles, respectively, of said second amplifier;
(f) conduit means connecting said first and second output passages of said second amplifier to said first and second control nozzles, respectively, of said first amplifier;
(g) biasing means maintaining said power stream of said first amplifier in one of said output passages thereof in the absence of a fluid pulse being presented to said power nozzle of said second amplifier; and
(h) said power stream of said first amplifier being displaced into the other of said output passages thereof in response to a fluid pulse being presented to said power nozzle of said second amplifier; whereby
(i) the state of said first amplifier changes each time said second amplifier receives a fluid pulse.

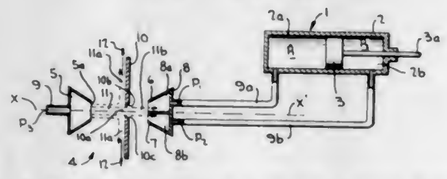
3,223,102
ELECTRO-PNEUMATIC TRANSDUCER
Joseph S. Kies, Goshen, Ind., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
Filed Sept. 10, 1962, Ser. No. 222,435
8 Claims. (Cl. 137—82)

5. A galvanometer comprising support means, a magnet having opposed poles on said support means, means movable between the poles in response to electric current in said means, a shaft for supporting said means, said means including the said shaft, and a valve arm directly secured to said shaft, said arm being of a predetermined configuration to form a leakport valve surface connected



to a portion thereof and extending from the same for movement to and from a leakport of a pneumatic relay mounted adajacent thereto.

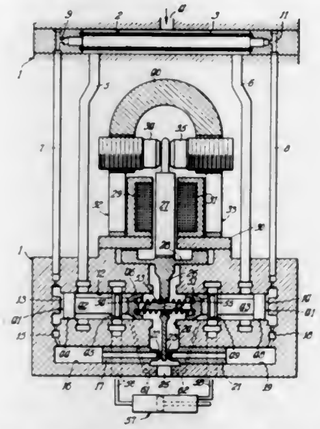
3,223,103
REGULATING DEVICE INCLUDING A DISTRIBUTOR HAVING DOUBLE-ACTING KNIFE-EDGES
Alfred Trinkler, Dammarie-les-Lys, France, assignor to Societe Nationale d'Etude et de Construction de Moteurs d'Aviation, Paris, Seine, France, a company of France
Filed Mar. 14, 1963, Ser. No. 265,158
Claims priority, application France, Mar. 17, 1962, 891,417
2 Claims. (Cl. 137—83)



1. A servo-valve comprising a stationary nozzle which is fed with pressurized fluid to produce a jet; a jet receiver means spaced from the nozzle and defining a pair of pressure chambers each having a receiving orifice facing the nozzle, the receiving orifices being arranged symmetrically to the nozzle axis; a jet deflector device comprising a double-acting deflector member having two sharp edges facing each other in position to intercept the jet between the nozzle and said jet receiver means, a lever member extending substantially parallel to the nozzle axis for supporting said deflector member, said lever member being pivotally mounted by friction-free pivotal means spaced a distance from the deflector member, said pivotal means including a diaphragm having a peripheral corrugation formed therein, said diaphragm being fastened to a stationary part around the corrugation, and means engaging the lever member through a central portion of the diaphragm, and actuating means responsive to an input signal for pivoting the supporting lever and deflector member around said pivotal means to deflect the jet selectively towards either of said receiving orifices to produce a pressure differential output signal between the chambers.

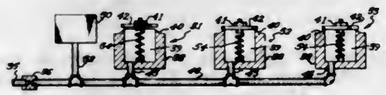
3,223,104
ELECTRO-HYDRAULIC SERVO VALVE
Robert M. Cox and Ray F. Griswold, Northridge, Calif., assignors to Weston Hydraulics, Ltd., Van Nuys, Calif., a corporation of California
Continuation of application Ser. No. 836,967, Aug. 31, 1959. This application Oct. 26, 1962, Ser. No. 237,421
10 Claims. (Cl. 137—85)

1. In a transfer valve, an electro responsive torque motor, an elongated flapper operated by said torque motor, a body, means defining an elongated opening in said body, shuttle means in said elongated opening adapted for reciprocable movement therein, a flexible seal sealably connected to said flapper and said body and disposed between said torque motor and said shuttle means effective to isolate said torque motor from fluid, mechanical means operated by movement of said shuttle means to exert a feedback force on said flapper at a point intermediate the ends thereof, a pair of nozzles adapted for fluid flow therethrough respectively positioned at opposite sides of that extremity of said elongated flapper which is spaced from said torque motor and positioned immedi-



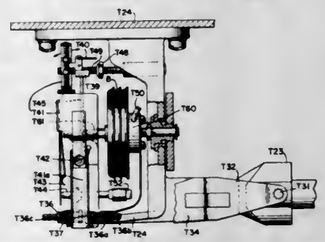
ately adjacent said flapper whereby movement of said flapper by said torque motor simultaneously and inversely varies the flow of fluid through said nozzles; and fluid passage means in said body including passages adapted to supply high pressure fluid to spaced portions of said elongated opening, including passages adapted to supply lower pressure fluid to opposite end portions of said elongated opening and to said nozzles, and including passages adapted to supply high pressure fluid from said elongated opening to a controlled device external of the transfer valve and vice versa upon movement of said shuttle means in said elongated opening.

3,223,105
PNEUMATIC CONTROL APPARATUS
Joseph E. Hogel, River Grove, Ill., assignor to Honeywell Inc., a corporation of Delaware
Filed June 13, 1963, Ser. No. 287,710
6 Claims. (Cl. 137—85)



1. A pneumatic control system comprising in combination, a pneumatic pressure source, conduit means connected to said pneumatic pressure source and including a restriction, a control device to be operated from said source, a branch line conduit connected to said first named conduit beyond said restriction and to said control device to be actuated from said pneumatic pressure source under varying pressure conditions, a plurality of bleed type controllers connected in series circuit with said first named conduit, each of said controllers having a bleed type nozzle flapper means directly connected to said conduit and with a large area nozzle compared to the area of said restriction to effect a force balance type of operation at each controller, each of said controllers being set for a different range of operation so that under operating circumstances all except one controller will be sealed at its nozzle flapper means, said remaining controllers being so adjusted as to open at predetermined conditions to take over control from said one controller to cause pressure to decrease to said control device and effect control of the pressure in said conduit to said control device.

3,223,106
CONTROLLER
Charles P. Rohmann, Hatboro, William F. Stahl, Warminster, and Robert B. Watrous and Joseph H. Wiseman, Jr., Philadelphia, Pa., assignors to Honeywell Inc., a corporation of Delaware
Filed Aug. 31, 1961, Ser. No. 135,373
5 Claims. (Cl. 137—86)

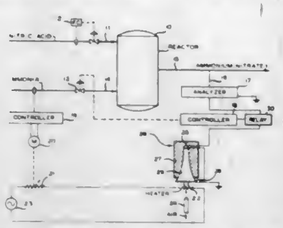


1. In an air-pressure-operated automatically or manually-actuated mechanism for operating a final control element, means for shifting between automatic actuation and manual actuation without disturbing the pressure of the air being impressed on the final control element at the time of shift, said manual-to-automatic shifting means including an air-pressure-operated controller adapted to produce a variable air pressure, an indicator-transmitter having a unitary distensible member, a lever in said indicator-transmitter having a pointer at one end operably connected for movement with the distensible member to indicate the magnitude of an input pressure being transmitted to the distensible member while said indicator-transmitter is operated as a receiver, a flapper-nozzle valve mechanically connected for movement with the non-pointer end of the lever to vary the pressure of a supply of air under pressure forming the output signal of said indicator-transmitter when the indicator-transmitter is operated as a transmitter, means to apply the output signal as a feedback pressure to the distensible member when the indicator is operated as a transmitter, a transfer switch to connect said controller or said indicator-transmitter to a final control element so as to actuate the final control element automatically or manually, the transfer switch having a manifold containing a plurality of stationary ports and a rotatable disc having a plurality of ports cooperating with said stationary ports to open and close communication therebetween, and a rotatable manually-operable means connected to said transfer switch for effecting continuous movement of the transfer switch from the manually-operated first transmitting position through a receiving position to an automatically-operated second transmitting position.

3,223,107
ANALOG PROCESS CONTROL APPARATUS
Louis D. Kleiss, Borger, Tex., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Sept. 29, 1961, Ser. No. 141,878
3 Claims. (Cl. 137—93)

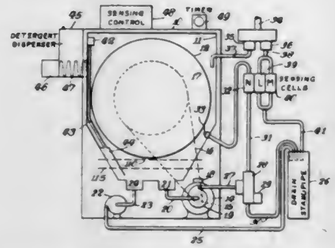
3. In an apparatus for use in controlling a process wherein changes in a second variable result in changes in a first variable after a time lag and wherein said second variable is controlled responsive to a first signal representative of said changes in said first variable, the im-

provement which comprises means for compensating said first signal so as to avoid said time lag in operative combination therewith a means to establish a second signal representative of a change in said second variable, first and second temperature-sensitive elements which establish third and fourth signals, respectively, representative of the temperatures of said elements, a member of heat-



conductive material extending between said first and second elements, means to change the temperature of said member adjacent said second element in response to a change in said second variable, means to establish a control signal representative of the sum of said first and fourth signals minus said third signal and means responsive to said control signal to adjust said second variable.

3,223,108
CONTROL FOR LAUNDRY APPARATUS
Arthur F. Martz, Jr., Princeton, N.J., assignor to Whirlpool Corporation, a corporation of Delaware
Filed Aug. 21, 1962, Ser. No. 218,247
9 Claims. (Cl. 137—93)



1. In a fabric cleaning device, apparatus for controlling the concentration of a cleaning material in a fabric treating fluid therein, comprising: a first circuit means including first sensing means for measuring the conductivity of said fluid without said material; a second circuit means including trigger means for changing the concentration of said material in said fluid; second sensing means for measuring the conductivity of said fluid with said material therein; and third circuit means responsive to said second sensing means for controlling said trigger means to bring the concentration selectively to a maximum preselected level and to a minimum preselected level, said third circuit means being further responsive to said first circuit means to adjust said preselected concentration level automatically in accordance with the conductivity of the fluid without the material.

3,223,109
GAS LIFT VALVE
Leslie L. Cummings, 4018 W. Alabama, Houston, Tex.
Filed May 16, 1962, Ser. No. 195,099
22 Claims. (Cl. 137—155)

1. A valve including: means providing an internal flow passage and having an intake port means for permitting flow of fluid into said passage from a first region exteriorly of said valve and a discharge port means spaced from said intake port means for permitting flow of fluid from said passage to a second region spaced from said first region; means for preventing flow of fluid from said passage to said first region through said intake port means; first valve means in said passage and biased toward closed position preventing flow of fluids through said passage, said first valve means being responsive to the pressure at said first region for opening and closing said intake port means; second valve means in said passage downstream of said first valve means and said flow preventing means and biased toward open position; said second valve means in-

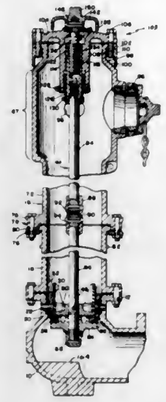


cluding fluid pressure responsive means comprising a closed chamber operatively associated with said second valve means arranged to receive fluid pressure to urge said second valve means toward closing position; and conduit means through said means providing said flow passage directly connecting said first region with said chamber of said fluid pressure responsive means for urging said second valve means toward closing position in response to the pressure differential between the pressures of said first and second regions for opening and closing said discharge port means, said second valve means being urged toward open position by fluid pressure from said second region.

3,223,110
FIRE HYDRANT WITH SELF-CONTAINED DETACHABLE OPERATING ASSEMBLY WITH LUBRICANT RESERVOIR
Frank H. Mueller and John J. Smith, both of Decatur, Ill., assignors to Mueller Co., Decatur, Ill., a corporation of Illinois
Continuation of application Ser. No. 160,538, Dec. 19, 1961. This application Dec. 28, 1964, Ser. No. 425,662
18 Claims. (Cl. 137—298)

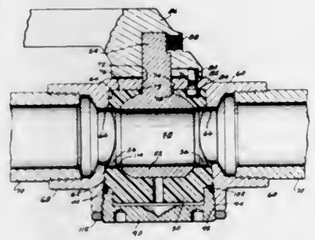
1. A fire hydrant comprising: a barrel; main hydrant valve means at the lower end of said barrel; a reciprocating valve stem connected to said valve means and extending upwardly through said barrel; means engaged between said barrel and said stem for restraining the latter against rotation; an assembly for closing the upper end of said barrel and operating said valve stem, including plate means closing and detachably connected to the upper end of said barrel, a pair of threadedly-engaged stem-operating members aligned with said stem, one swivelly mounted to said plate means and projecting thereabove and the other mounted to said plate means for reciprocation but against rotation and projecting below said plate means, whereby rotation of said

one member reciprocates said other member, and means effecting a liquid-tight seal between said other member and said plate means; and means threadedly connecting



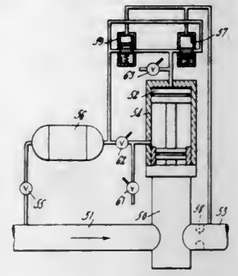
said other member to said stem, whereby said assembly can be disconnected as a unit from said stem by rotation of said plate means after detachment thereof from said barrel.

3,223,111
INTEGRAL VALVE AND SEAT UNIT
Clifford E. Anderson, Houston, Tex., assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed Sept. 27, 1963, Ser. No. 312,233
7 Claims. (Cl. 137—454.6)



1. An integral valve and seat unit for a rotatable plug valve having a valve chamber formed therein, said unit comprising: an integral seat member formed of moldable resilient plastic material having a generally spherical cavity formed therein and flow passages communicating with said cavity, a rotatable valve member having a generally spherical exterior surface positioned within said cavity for rotation therein, said valve member having a through passage alignable with said flow passages in the open position of said valve and means blocking said flow passages in the closed position of said valve, cam surfaces formed on said plug member at the intersection of said through passage with said spherical surface, a pair of lips disposed one about each of said flow passages, said lips being integral with said seat member, said lips having valve engaging surfaces of the same shape as the shape of said cam surfaces and sealingly engaging said valve at all positions thereof, said lip means engaging said valve member with greater sealing pressure at the closed position of the valve than at the open position.

3,223,112
AUTOMATIC CONTROL SYSTEM FOR A PISTON OPERATED VALVE
Clifford L. Ashbrook, 5027 Cheena St., and Wilson G. Wing, 33 E. Rivercrest Drive, both of Houston, Tex.
Filed Apr. 26, 1960, Ser. No. 24,787
2 Claims. (Cl. 137—458)



1. The combination of a fluid pressure operated valve and a control system for closing said valve in response to a pressure change above a preselected high or below a preselected low in a pipeline in which said valve is inserted,

said valve having a piston and adapted to be closed by the application of a predetermined fluid pressure to a selected face of said piston portion,

said control system comprising

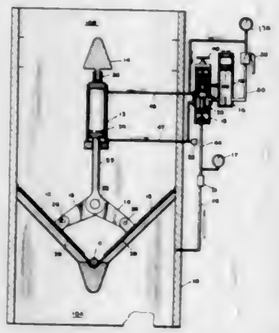
a fluid pressure accumulator continuously fed by said pipeline and connected to deliver through control valves against said selected face said predetermined fluid pressure,

and two control valves connected in parallel hydraulic circuitry between said accumulator and said selected face, each of said control valves comprising a housing containing a piston, means for biasing said piston against pipeline pressure, said housing having first and second openings, said piston slidably engaging the inner surface of said housing and adapted to be moved through a range of positions relative to said housing, said piston having a transverse passage so arranged and constructed as to be in simultaneous communication with both of said openings when said piston is in at least one of said positions, and to be out of communication with at least one of said openings when said piston is in other of said positions, means connecting said first opening to said accumulator, means connecting said second opening to communicate with said preselected face, each of said control valves thereby adapted to assume an open position in which said openings communicate with each other through said transverse passage and said accumulator is in communication through said open valve with said selected face and delivers said predetermined fluid pressure against said face, each of said valves also having a closed position in which said openings are sealed from each other by said piston and said accumulator is sealed off from said selected face,

each of said control valves having an additional connection to said pipeline, said additional connection adapted to deliver fluid pressure against each of said pistons to oppose said biasing means, the biasing means in one of said control valves adjusted so that said one valve remains in its closed position when the pipeline pressure is below said preselected high and moves, under the force of said fluid pressure opposing said biasing means, to its open position when the pipeline pressure rises above said preselected high, the biasing means in the other of said control valves adjusted so that the other valve remains in

its closed position when the pipeline pressure is above said preselected low and moves, under the force of said biasing means, to its open position when the pipeline pressure falls below said preselected low.

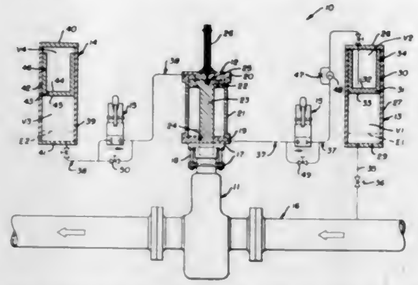
3,223,113
VALVE AND CONTROL MEMBER THEREFOR
Arthur J. Hopper, 1408 W. Grandview Blvd., Erie, Pa.
Filed Jan. 29, 1962, Ser. No. 169,198
3 Claims. (Cl. 137—467)



1. A main valve and control therefor comprising
a hollow cylindrical body defining a passage therethrough,
a support in said body extending diametrically thereof,
vanes generally semi-elliptical in shape attached to said support and swingable thereon to open or close said passage,
flow through said cylindrical body tending to swing said vanes to the open position,
a piston having a connected piston rod,
means connecting said piston rod to said vanes,
a hydraulic cylinder closed at its ends in said hollow cylindrical body having its longitudinal axis parallel to the axis of said cylindrical body,
means supporting said hydraulic cylinder in said cylindrical body,
said piston being arranged for reciprocation in said hydraulic cylinder so that application of fluid pressure to one side thereof will tend to effect movement of said vanes to closed position in opposition to said tendency to be opened by flow through of fluid through said body,
pipe means including a second cylinder establishing communication between opposite sides of said piston,
said pipe means being completely filled with hydraulic control fluid,
means associated with said second cylinder to permit equalization of the hydraulic control fluid pressure on opposite sides of said piston or to block communication through said pipe means,
means to effect a differential in pressure on opposite sides of said piston in a direction to effect opening or closing of said passage.

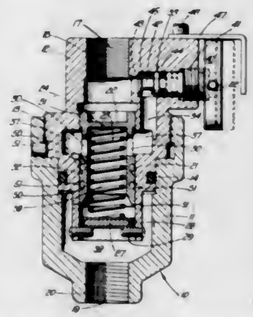
3,223,114
AUTOMATIC SHUT-OFF FOR PIPELINE
Homer J. Shafer, P.O. Box 83, Mansfield, Ohio
Filed Mar. 19, 1963, Ser. No. 266,330
2 Claims. (Cl. 137—494)

1. An automatic shut-off system for a liquid transporting pipeline comprising, a valve mounted on said pipeline, a hydraulic piston motor operatively connected to said valve for selectively controlling the flow of liquid in said pipeline, a pressure sensing cylinder having a piston therein, a conduit connecting said pressure sensing cylinder and said pipeline at a point upstream of said valve, a second conduit connecting said pressure sensing cylinder and said hydraulic piston motor, a hydraulic reservoir cylinder having a piston therein, a conduit connecting said hydraulic reservoir cylinder



and said hydraulic piston motor, and a sealed compartment formed by said piston in said hydraulic reservoir cylinder containing a cushioning head of gas to maintain a pressure differential within the system, whereby said valve is slowly moved to prevent water hammer when the liquid flow is arrested.

3,223,115
FLOW REGULATING APPARATUS
Willard A. Kates, Deerfield, Ill., assignor to The W. A. Kates Company, a corporation of Illinois
Filed Jan. 4, 1963, Ser. No. 249,379
2 Claims. (Cl. 137—501)

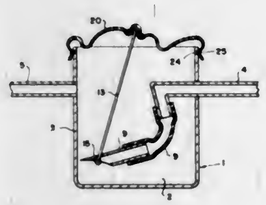


1. In a fluid flow regulating device including a generally cylindrical fluid passage and a generally cylindrical free piston valving member axially reciprocal therein responsive to presure differences at the two ends of said piston for regulating rate of fluid flow through said device, reciprocal sliding surfaces of said piston and cylinder being lubricated by a film of the fluid flowing through said passage and wherein sensitivity of said device depends upon free floating action of said piston, said piston being generally coaxially reciprocal within said cylinder with said piston sufficiently loose fitted within said cylinder to cant slightly therein, the improvement in said piston which comprises a short taper at each piston edge normally tending to scrape the film of fluid from the cylinder wall during canted reciprocation thereof, each of said tapers defining a circumferential angular surface on said piston between each such edge and the cylinder wall sufficient to draw and retain fluid between the reciprocally sliding surfaces and prevent sticking of the piston in the cylinder in sufficient in length to appreciably change other characteristics of said piston and cylinder, said piston retaining generally coaxial reciprocation within said cylinder, the angle of each of said tapers with reference to the cylindrical plane including the circumferential piston, being an angle greater than the angle having the tangent:

$$\frac{C}{L-e}$$

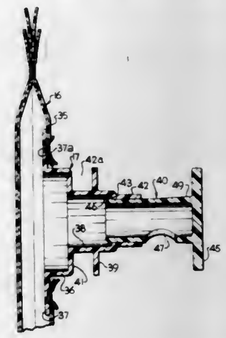
wherein:
L is the length of the piston
C is the distance of one end of the piston, in the absence of such taper, from the cylinder wall in the radial plane of the cylinder including the point of contact of the tapered other end with the cylinder wall with the piston at maximum cant within the cylinder, and
e is the perpendicular distance from said point of contact of said tapered other end,
and wherein said angle is insufficient to scrape said lubricating film of fluid from the cylinder wall by reciprocal travel of the piston, said edges including edges adjacent a plurality of circumferential grooves in the cylindrical surface of sufficient number and dimension to maintain a substantially linear overall pressure gradient between said piston and cylinder and from one end of said piston to the other, thereby minimizing cocking of the piston in the cylinder.

3,223,116
PRESSURE REGULATOR HAVING A CRIMPABLE VALVE ELEMENT
Ernest E. Criddle, Ottawa, Ontario, Canada, assignor to Her Majesty the Queen in right of Canada as represented by the Minister of National Defence
Filed Apr. 26, 1963, Ser. No. 276,045
Claims priority, application Canada, Apr. 30, 1962, 847,860
5 Claims. (Cl. 137—505.13)



2. A fluid pressure control valve mechanism comprising a casing; a diaphragm associated with said casing, said diaphragm being moveable between a first and a second position in response to a change in fluid pressure on said diaphragm, said casing in conjunction with said diaphragm providing a fluidtight valve chamber; a fluid inlet duct for admitting fluid into said valve chamber and a fluid outlet duct for discharging fluid from said chamber; a crimpable tubular valve secured within said chamber, said valve having two ends, one end being secured to one of said ducts to control fluid flow therethrough and the other end of said valve being free to move and to discharge fluid directly into said chamber; said free end being moveable to bend said valve repeatedly between an uncrimped open position and a crimped closed position; and means interconnecting said diaphragm and said free end of said valve so that fluid pressure initiated movement of said diaphragm towards its first position causes said valve to move towards its open position and fluid pressure initiated movement of said diaphragm towards its second position causes said valve to move towards its closed position.

3,223,117
DISPENSING VALVE
Robert J. Curie and Robert S. Hamilton, Columbus, Ohio, assignors to The Corrugated Container Company, Columbus, Ohio, a corporation of Ohio
Original application Mar. 4, 1964, Ser. No. 349,391, now Patent No. 3,173,579, dated Mar. 16, 1965. Divided and this application Feb. 12, 1965, Ser. No. 432,245
1 Claim. (Cl. 137—556.6)

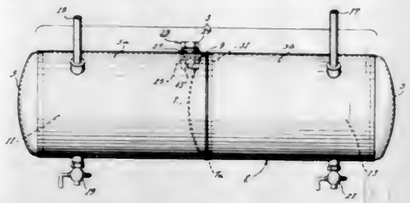


A dispensing valve comprising a tubular guide portion of annular cross section having an inner open end and an outer open end, a hollow tubular stem of annular cross section mounted rotatably and slidably in said guide portion having an open inner end and a closed outer end, said valve having a pair of axially spaced annular stop flanges projecting radially outwardly therefrom to provide an outwardly opening annular locking space therebetween to receive locking means for holding the tubular guide portion axially in place while said stem is slidably moved axially therein, said stem having an annular stop shoulder at its inner end which projects radially outwardly beyond the periphery of the inner end of said tubular guide portion so as to contact therewith upon axial outward sliding movement of the stem in said tubular guide portion to limit said outward movement, said guide portion having on its outer end a button that projects radially outwardly beyond the periphery of the outer end of the guide portion so as to provide a stop shoulder which contacts with said outer end upon inward axial sliding movement of the stem to limit said inward movement, said hollow stem having a dispensing opening leading radially outwardly through the periphery thereof at a location which is axially within said tubular guide portion when the button is in contact with the outer end thereof and which is axially outwardly beyond the outer end of said tubular guide portion when the annular shoulder at the inner end of said guide portion is in contact with the inner end of said guide portion, said button having a finger-grip portion thereon of non-circular outline which can be engaged by the fingers to facilitate rotation of the stem in the guide portion to properly locate the radially directed dispensing opening angularly relative to the tubular guide portion and having an index pointing means thereon which extends radially in the same direction as said opening to indicate the position of said dispensing opening angularly in said guide portion.

3,223,118
AIR BRAKE TANKS
Joseph V. Hutelmyer, Meadowbrook, Pa., assignor to Cutler Meat Products Company, Camden, N.J., a corporation of New Jersey
Filed Aug. 30, 1963, Ser. No. 305,620
12 Claims. (Cl. 137—572)

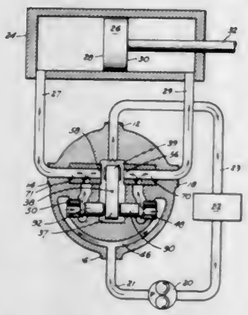
1. A compressed air tank structure comprising an air tight tank having a shell, a partition in said tank in air

tight relation with said shell dividing said tank into two compartments, a valve having a body mounted in part on said shell in air tight relation therewith and in part on said partition and extending into one of said compartments, said valve body having a chamber therein and a pair of ports in communication with said chamber, a first of said ports opening into a first of said compartments and the other of said ports opening into the other



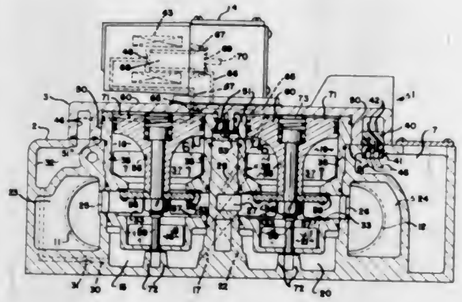
of said compartments through said partition whereby to establish communication between said compartments through said chamber, one of said ports having a valve seat, and a pressure responsive valve member in said chamber for cooperation with said seat, said valve member being displaceable from said seat to establish said communication between said compartments and being seatable against said seat to cut off said communication between said compartments.

3,223,119
POWER AMPLIFIER
Charles M. Barnes, St. Joseph, Mich., assignor to The Bendix Corporation, St. Joseph, Mich., a corporation of Delaware
Filed Dec. 6, 1962, Ser. No. 242,874
4 Claims. (Cl. 137—596)



1. A valve comprising: a housing having an inlet, an outlet, and two working ports; a return chamber communicated with said outlet; first passage means connecting said inlet with said return chamber and one of said working ports; second passage means connecting said inlet with said return chamber and the other of said working ports; each passage means having an inlet orifice and an outlet orifice; each inlet orifice being located between its respective outlet orifice and said inlet and each outlet orifice being located between its respective inlet orifice and said return chamber; each of said working ports being connected to its respective passage means between its respective inlet orifice and its respective outlet orifice; each outlet orifice opening into said return chamber; a rotatable flapper valve member located in said return chamber and having one end located between said inlet orifices and its other end located between said outlet orifices; a pair of slidable pins on opposite sides of said one end of said flapper valve member; each of said pins having one end extending into said return chamber for engaging said one end of said flapper valve member and its other end extending into a respective one of said passage means adjacent the downstream side of a respective one of said inlet orifices for impeding flow therethrough when said one end of said flapper valve member is rotated towards a respective one of said inlet orifices, said other end of said flapper valve member having means coacting with the downstream side of said outlet orifices for impeding flow therethrough from a respective one of said passage means to said return chamber when said other end of said flapper valve member is rotated towards a respective one of said outlet orifices; whereby upon rotation of said flapper valve member in one direction, flow through the inlet orifice of said first passage means and flow through the outlet orifice of the second passage means will be impeded resulting in increased pressure at said second passage means, and when said flapper valve member is rotated in the opposite direction, flow through the inlet orifice of said second passage means and flow through the outlet orifice of said first passage means is impeded resulting in increased pressure at said first passage means.

3,223,120
SOLENOID OPERATED VALVE ASSEMBLY
Zdenek J. Lansky, Winnetka, and Joseph D. Wenghofer, Des Plaines, Ill., assignors to Parker-Hannifin Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Aug. 7, 1963, Ser. No. 300,441
18 Claims. (Cl. 137—596.16)



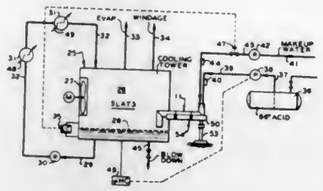
1. A valve assembly comprising a distributing block having an inlet port for connection with a fluid pressure source, a motor port for connection with a fluid motor, and an exhaust port; said distributing block having a recess in one face thereof with openings communicating with the respective ports; a valve cartridge in said recess; and a cover detachably secured to said distributing block in overlying relation to said recess to retain said cartridge therein; said cartridge comprising a tubular valve body having passage means registering with such openings in said recess leading to said inlet, exhaust and motor ports as aforesaid, and having spaced apart seats; and a valve means movable in said body alternately into and out of engagement with said seats to establish fluid communication between said inlet and motor ports and between said motor and exhaust ports for actuating a fluid motor adapted to be connected with said motor port.

3,223,121
ACID-WATER MIXING DEVICE
Chester E. Lee, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Apr. 23, 1962, Ser. No. 189,328
6 Claims. (Cl. 137—604)

1. An apparatus for mixing liquids comprising a pipe adapted to be positioned in a generally horizontal position; a plurality of baffles positioned in spaced-apart relation along the axis of said pipe and transversely thereto,

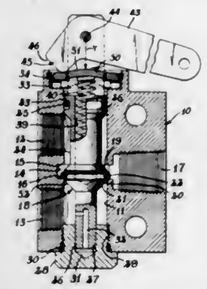
each of said baffles being approximately a semi-circle the curved edge of which engages a lower wall section of said pipe, the straight line edge of which is oblique, alternate baffles being positioned with their straight edges in corresponding slope, the remaining baffles being positioned reversely as to slope.

5. A cooling tower system comprising, in combination,



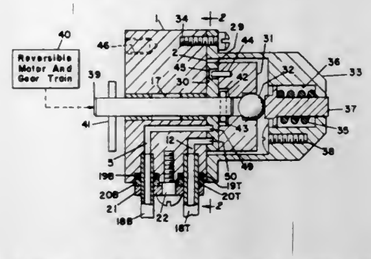
a cooling tower adapted for cooling water having means for adding make-up water and acid to the water in said tower comprising an apparatus constructed substantially in accordance with the apparatus of claim 1, one end of said pipe being positioned inside of said tower near a water level therein and the other end outside thereof; and means for introducing water and acid to the outer end of said pipe.

3,223,122
SELECTOR VALVE
Oscar H. Banker, % Bay Products Development Co., P.O. Box 9732, Bay Village, Ohio
Filed Aug. 21, 1963, Ser. No. 303,618
10 Claims. (Cl. 137—625.4)



1. A selector valve comprising a valve body having a longitudinal bore therein, axially spaced bores connected to the longitudinal bore, a transverse bore disposed between the axially spaced bores, a valve element axially movable in the longitudinal bore and adapted to connect the transverse bore selectively to one or the other of said axially spaced bores, axially spaced fixed abutments on the valve body, an axially movable abutment disposed between said fixed abutments, resilient means compressed between one of said fixed abutments and said movable abutment, axially spaced fixed abutments on the valve element, other resilient means compressed between a fixed abutment on the valve element and the movable abutment, and cam means interposed between and in contact with the other fixed abutment on the valve element and the movable abutment to shift the movable abutment relative to the fixed abutments on the valve element against the action of said other resilient means, whereby to shift the valve element in its longitudinal bore.

3,223,123
MULTIFUNCTION VALVE FOR CHROMATOGRAPHY
Einar T. Young, Newtown Square, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey
Filed May 27, 1963, Ser. No. 283,425
3 Claims. (Cl. 137—625.46)

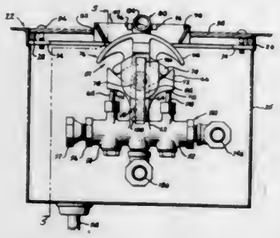


1. In a valve, a valve body having a planar face and having therein a plurality of fluid passages terminating at their inner ends in a generally circular array on said face, the passage terminations being arranged in two separate and independent groups each made up of a plurality of passage terminations, the arcuate distance between adjacent terminations within each single group being less than the arcuate distance between the end termination of one group and the adjacent end termination of the other group; a disc member positioned in engagement with said face and mounted for rotation with respect thereto, said disc member having therein, on the side thereof adjacent said face, a plurality of shallow channels each arranged to couple together a particular pair of passages in a corresponding single one of said groups, the particular pair of passages so coupled together by each channel depending upon the rotational position of said disc with respect to said face; the passage terminations on said face being distributed around the circumferences of two concentric circles centered on the axis of rotation of said disc member with each of said groups including one termination on one of said two circles and also one termination on the other of said two circles, both of said arcuate distances being measured along a single one of said two circles; and means for rotating said disc, with respect to said face, back and forth between a pair of pre-established rotational positions, the angular separation between said pair of positions being such that each channel travels through an arc whose length is less than the second-mentioned arcuate distance, whereby each channel moves within only a corresponding single group of fluid passage terminations as said disc rotates back and forth.

3,223,124
LIFT INSTALLATION
Ion V. K. Hott, Dayton, Ohio, assignor to The Joyce-Cridland Company, Dayton, Ohio, a corporation of Ohio
Filed June 8, 1962, Ser. No. 201,151
1 Claim. (Cl. 137—636.1)

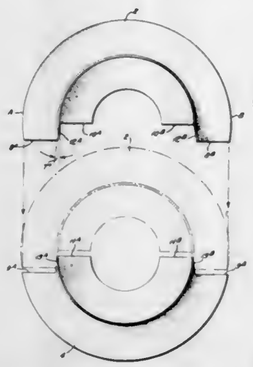
In a vehicle lift control structure, the combination comprising: a housing; an aperture cover plate mounted on said housing; a fluid valve mounted within said housing, said valve having an inlet section and an outlet section and including a pair of valve actuating plungers, one for each section; valve operating means including a valve stem rocker arm mounted upon said valve for pivotal movement about a horizontal axis adjacent said plungers, said rocker arm having surfaces adapted to engage and actuate said plungers upon pivotal movement thereof, a treadle mounted for pivotal movement upon said valve about a horizontal axis parallel to the axis of rotation

of said rocker arm, said treadle having a pair of opposed arms adapted to engage and pivot said rocker arm and further having a bore extending therethrough along an axis extending at an inclined angle to the horizontal, a treadle control handle having an elongate rod portion mounted for slidable movement within said bore and a knob portion connected to the top of said rod portion, whereby said control handle may be raised for manual



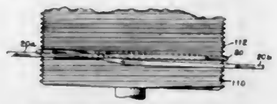
operation to pivot said treadle or be lowered to a position wherein said knob portion lies closely adjacent the plane of the top of said cover plate and said elongate rod portion depends into said housing; and lock means connected to said cover plate extending in the path of said control handle and engaging said knob portion when said handle is lowered to releasably lock said handle in a predetermined position whereby accidental operation of said control handle is prevented.

3,223,125
DEVICE FOR FORMING ANNULAR BODY
Jack A. Melander, Ballston Spa, N.Y.
Filed Mar. 8, 1961, Ser. No. 94,376
5 Claims. (Cl. 138—157)



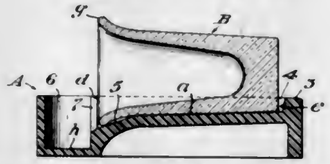
1. A preformed pipe insulation annular body of rigid foamed synthetic organic plastic material, said body comprising at least two sections abutting in two plane surfaces which are substantially parallel to each other but mutually offset, complementary abutting surfaces extending between said substantially parallel surfaces at an angle of about five to nine degrees, whereby upon engagement of said sections the material at said abutting surfaces is slightly stressed in compression and the resiliency and frictional qualities thereof retain the sections securely in an interference fit, said plastic material being a resin having a modulus of rigidity between 1000 and 1500 pounds per square inch and a flexural strength between 15 and 40 pounds per square inch.

3,223,126
TENSIONING DEVICE
Louis J. Zerbee, 301 Chillicothe Ave., Bellefontaine, Ohio
Filed Oct. 29, 1963, Ser. No. 319,779
6 Claims. (Cl. 140—3)



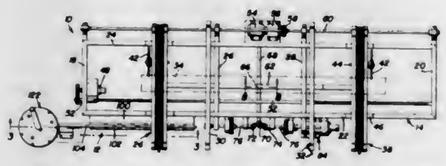
1. In a wire tensioning device, the combination of a cylindrical drum provided with a helical groove surrounding the outer surface thereof, said groove having inclined walls supporting a wire to be tensioned, the maximum width of the groove being substantially equal to the diameter of the wire, with means for driving the drum for feeding the wire.

3,223,127
MEASURING GLASS DRAINAGE TRAY
Lewis A. Sidebottom, 1312 W. 103rd St., Los Angeles, Calif.
Filed Nov. 13, 1963, Ser. No. 323,457
2 Claims. (Cl. 141—364)



1. A holder for supporting a measuring glass to drain liquor therefrom comprising a tray embodying an upper side having an elongated recess having a bottom wall bordered by upstanding opposing side walls and opposed front and rear end walls substantially conformable to the sides and ends of a measuring glass disposed side-ways in said recess and resting on the bottom wall thereof with the open end of the glass presented to said front end wall, and an open topped well in said tray leading down from said upper side contiguous the front end wall of said recess and extending below said bottom wall; said front end wall having a passage leading between and communicating said recess and well having a bottom leading in continuation of the bottom wall of said recess.

3,223,128
ADJUSTABLE SAW BLADE CONTROL SYSTEM FOR END TRIMMER APPARATUS
William H. Stallings, Rte. 4, Box 96, Louisburg, N.C.
Filed Nov. 24, 1961, Ser. No. 154,784
7 Claims. (Cl. 143—37)



1. A position selector for lumber trimming apparatus having a movable saw assembly comprising, position control means mounted on said movable saw assembly, fixedly mounted position defining means having position defining formations to stop repositioning movement of the movable saw assembly between position limits at a plurality of predetermined spaced trimming positions, selectively operable means having alignment formations and

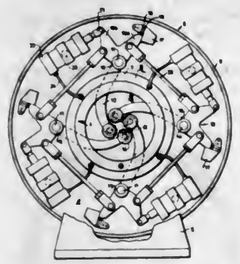
movably mounted by the position defining means for displacement to a plurality of alignment positions between selector limits substantially closer than the said position limits to selectively align one of said alignment formations with one of said position defining formations at only one of said spaced trimming positions and directional control means engageable by one of said alignment formations to directionally control and start repositioning movement of the movable saw assembly in response to displacement of the selectively operable means between said alignment positions thereof.

3,223,129
LOG BARKER-CHIPPERS
Thomas W. Nicholson, 2525 A St. SE., Auburn, Wash.
Filed Oct. 8, 1962, Ser. No. 229,064
6 Claims. (Cl. 144—1)



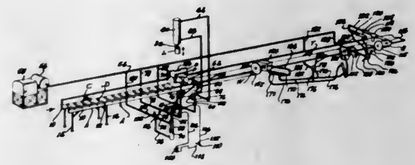
1. A mobile log barker-chipper comprising a chassis, a rotary ring barker mounted on said chassis with its rotative axis extending lengthwise of the chassis, a drum chipper mounted on said chassis close to said barker and having a drum rotatable about an axis extending generally perpendicular to the axis of rotation of said barker ring, said drum having a V-groove in its periphery with its bottom apex disposed in the vertical plane substantially in which the axis of the rotary ring log barker lies, and log-feed means between said barker and said chipper operable to move a log axially through the ring of said barker and press its end into the V-groove in the drum of said chipper.

3,223,130
MACHINE FOR DEBRANCHING FELLED TREES
Per Gunnar Brundell, Tolffors, Gavle, Sweden, and Karl-Erik Arnold Jonsson, Brunnsgatan 63C, Gavle, Sweden
Filed Nov. 26, 1963, Ser. No. 326,137
Claims priority, application Sweden, Dec. 21, 1962, 13,871/62
2 Claims. (Cl. 144—2)



1. A machine for debranching felled trees, comprising a hollow stator, a hollow rotor journalled on the stator, a plurality of arms mounted on the rotor for swinging movement toward and away from the central axis of the rotor about pivots substantially parallel to said axis, cutting members mounted on the arms to engage the branches of a tree passing axially through the rotor, a weight secured to the pivoted end of each arm radially outside the pivot in question, said weight being adapted, when the rotor is rotated, to be acted upon by the centrifugal force so as to swing the arm inwardly, and links connecting each such weight to adjacent weights in the peripheral row of weights, so that a cutting member engaging a tree will be actuated by forces derived from the total mass of all said weights.

3,223,131
APPARATUS FOR FORMING TRANSVERSELY REINFORCED WOOD PLANKS
Roy M. Hovermale, 5913 Los Feliz Drive, Buena Park, Calif.
Filed Mar. 17, 1961, Ser. No. 96,423
4 Claims. (Cl. 144—3)

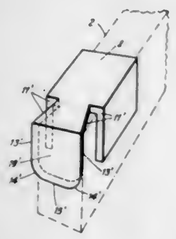


1. A device for use in transforming stock wood planks of excess length into scaffolding platform planks of predetermined length having tapered corners, which transformed planks are reinforced at their ends by rods that extend transversely therethrough, comprising:

(a) a substantially horizontal conveyor having at least one opening formed therein;
(b) a vertically reciprocable hammer disposed above said conveyor and aligned with said opening;
(c) a vertically movable drill of lesser transverse cross section than that of one of said rods located below said conveyor and aligned with said opening;
(d) first power means for reciprocating said hammer;
(e) second power means for rotating said drill;
(f) third power means for moving said drill to form first and second bores in first and second end portions of one of said stock planks when said plank is resting on one of the longitudinal edges thereof on said conveyor;
(g) a back board;
(h) means for supporting said back board in an upwardly extending rigid position rearwardly from said opening in said conveyor;
(i) a pressure plate disposed parallel to the forward face of said back board;
(j) power means for moving said pressure plate toward and away from said back board to permit said first and second end portions of said stock plank on said conveyor to be sequentially gripped while said first and second bores are drilled therein and said first and second rods driven into said first and second bores, with said hammer when not reciprocating being disposed above said back board and pressure plate, and with at least the portions of said back board and pressure plate directly under said hammer being shorter in height than the width of one of said stock planks to permit said hammer to impact not only against one of said rods as it is driven into said plank but the upper edge surface of said plank as well during the final stage of the driving operation;
(k) means for controlling the reciprocation of said hammer to permit said hammer to drive said first and second rods into said first and second bores to positions where the ends of said rods are disposed substantially equidistant inwardly from said longitudinal edges of said stock plank;
(l) a first movable saw positioned above said conveyor for moving across said conveyor in a direction normal relative thereto;

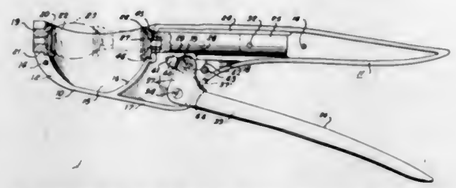
(m) fourth power means for driving said first saw;
(n) fifth power means for moving said first saw across said conveyor when said stock plank is moved into an appropriate position thereon to cut excess material from said first end portion and form said stock plank into one of predetermined length;
(o) a stationary table that is shorter in length than one of said planks when cut to said predetermined length, which table is longitudinally disposed in a fixed position relative to said conveyor and sufficiently close thereto as to receive and support one of said planks of predetermined length on one of the longitudinal sides thereof when the same is slid transversely from said conveyor;
(p) stop means on said table for holding said plank of predetermined length at a fixed longitudinal position on said table, with said first and second end portions of said plank projecting over the ends of said table;
(q) second and third longitudinally spaced saws disposed adjacent said table;
(r) sixth power means for concurrently driving said second and third saws; and
(s) seventh power means for concurrently moving said second and third saws in paths disposed in substantially 90° relationship to sever triangular segments from the end corners of said plank when said plank rests in turn on first and second longitudinal sides thereof on said table.

3,223,132
TEMPLATE FOR MAKING TENON JOINTS
Josef Erne, Laufenburg, Switzerland
Filed June 2, 1961, Ser. No. 114,371
Claims priority, application Switzerland, June 3, 1960, 6,428/60
1 Claim. (Cl. 144—87)



A male guide template for the producing a tenon for association with a mortise of complemental configuration, by means of an angle groove milling cutter which at the head of its shaft is provided with a depth limitation flange and a cylindrical guide part forming the transition to the milling head, said template being composed of a first plate with a lateral guide leg at each side forming a U-shaped frame for placement on a beam with the distance between the guide legs corresponding to the width of the beam on which the tenon is to be formed, a second plate coextensive with the first plate and being cut away at opposite sides to trapezoidal shape with the shorter side at the forward end of the first plate and centrally thereof and a third plate depending from the wider outer end of the second plate at right angles thereto and the same width as the wide end of said second plate and overlying and contacting the end of the beam on which the template is placed and having merging marginal edges upon the sides and bottom thereof constituting guides for the milling cutter.

3,223,133
NUTCRACKER
Andrew C. Brookey, Rte. 2, Box 368, New Braunfels, Tex.
Filed Aug. 16, 1963, Ser. No. 302,496
1 Claim. (Cl. 146—16)



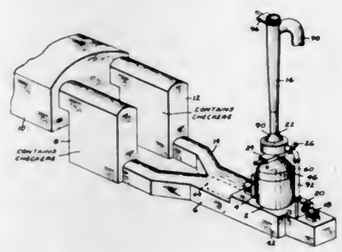
A nutcracker including a frame member, an elongate rigid handle extending from the frame member, the frame member having a concave cup-like recess of such dimensions as to receive almost totally a nut such as a pecan, a first nutcracker jaw carried by the frame member in the recess and facing the handle, an elongate plunger telescoping the handle, a second nutcracker jaw carried on the plunger and disposed in the recess facing the first nutcracker jaw, a multiplicity of small closely-spaced ratchet teeth on the plunger, a bell crank lever pivotally mounted in the frame member having a long handle-forming leg extending from the frame member contiguous the handle and a short leg in the frame member extending toward the ratchet teeth on the plunger, a ratchet pivotally mounted on the short leg and having a plurality of ratchet teeth, spring means constantly urging the ratchet teeth of the ratchet toward the ratchet teeth of the plunger, the long leg of the bell crank lever being swingable away from and toward the handle, cam means on the ratchet, and stop means in the frame member for engaging the ratchet cam means and swinging the ratchet teeth of the ratchet away from the ratchet teeth of the plunger when the long leg of the bell crank lever is swung away from the handle, the ratchet being pivotally mounted intermediate its ends on the short leg of the bell crank lever, one end of the ratchet carrying the ratchet teeth and the other end of the ratchet carrying the cam means, the cam means being an angularly-inclined face on said other end of the ratchet, and the stop means being a pin extending transversely interiorly of the frame member.

3,223,134
HIGH SPEED TUBELESS TIRE
Charles M. Hofmann, Akron, Ohio, assignor to The General Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed Oct. 10, 1961, Ser. No. 144,137
15 Claims. (Cl. 152—330)



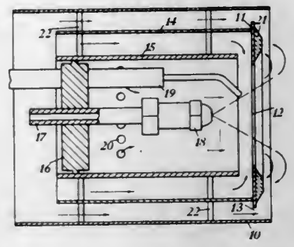
1. In a pneumatic rubber tire having a tread formed of a butadiene-styrene rubber composition, the improvement which comprises a carcass having tire cords embedded in at least one layer of substantial thickness formed of a butadiene-styrene carcass composition, said carcass composition in the uncured state having a raw Mooney viscosity of about 30 to 50 and consisting essentially of 100 parts by weight of butadiene-styrene copolymers having a Mooney viscosity of M, M being about 120 to 180, Y parts of compatible resins that are tackifiers for rubber that are soluble in benzene and that have a melting point of about 60° to 100° C., Y being about $(M/3-5)$ to $(M/2-10)$, about 0.3 $(100+Y)$ to 0.6 $(100+Y)$ parts of carbon black, about 10 to $(Y/2+5)$ parts of compatible plasticizing oils, and up to 20 parts of other compounding ingredients including a vulcanizing agent and an accelerator, said carcass composition containing at least 40 parts of said compatible resins per 100 parts of butadiene-styrene rubber polymers.

3,223,135
COMBUSTION AIR HEATER FOR REGENERATIVE FURNACE
John J. Webber, Holden, Mass., assignor to Morgan Construction Company, Worcester, Mass., a corporation of Massachusetts
Continuation of application Ser. No. 178,051, Mar. 7, 1962. This application Sept. 22, 1964, Ser. No. 400,628
1 Claim. (Cl. 158—4.5)



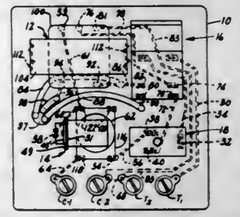
The combination of a rotary preheater and a furnace comprising a pair of ducts leading from said furnace to said preheater, at least one checker interposed in each of said ducts between said preheater and said furnace, said ducts terminating under said preheater at one end and separated by a common wall whereby one duct is accessible to one half of said preheater and the other duct is accessible to the other half of said preheater, a casing surrounding said preheater, said casing having a cover and providing a closed space above said preheater, a wall dividing said space into two chambers, said wall having its lower edge in close proximity to the top of said preheater, said wall arranged parallel to the common wall of said ducts, independent discharge ports from each of said chambers leading into a common enclosed space thereabove, said enclosed space having a single upper exhaust opening, a stack connected to said single exhaust opening, said single exhaust opening surrounded by an annular ejector passage, means for supplying air under pressure to flow through said annular passage into said stack to draw exhaust gas upwardly through said single exhaust opening into said stack, first valve means carried by said casing for opening and closing said independent discharge ports, blower means in communication with said chambers for supplying combustion air thereto, second valve means carried by said casing and connected intermediate said blower means and said chambers for selectively controlling the flow of combustion air into one or the other of said chambers, said first and second valve means operable in such a manner that when combustion air is fed to one of said chambers, the discharge port in said one chamber will be closed and the discharge port in the other said chamber will be open.

3,223,136
FLUID FUEL COMBUSTION APPARATUS
Paul Albert Mutchler, Rock Island, Ill., assignor to The Nu-Way Corporation, Rock Island, Ill.
Filed July 13, 1962, Ser. No. 209,528
8 Claims. (Cl. 158—11)



1. Apparatus for burning fluid fuel to provide a stable, nonpulsating flame of relatively short length comprising a duct having inlet and outlet ends with said inlet end being adapted to be connected to a source of combustion air, a sleeve mounted within and spaced from said duct and having a thermal end located upstream of said outlet end for providing a flow path for combustion air between the sleeve and the duct, a baffle member carried by said terminal end of the sleeve arranged transversely with respect to said sleeve, said baffle member having a central aperture therein and a peripheral edge projecting into the air flow path between the sleeve and the duct with such peripheral edge providing a continuous gap of constant width between the baffle member and the opposed surface of the duct, at least one fuel nozzle mounted within said sleeve for directing fluid fuel through said central aperture to the downstream side of said baffle member, means for directing air upstream of said baffle member for passage through said central aperture, and the outlet end of said duct being straight and extending beyond said baffle member a distance substantially equal to the width of said gap whereby the air pressure between the sleeve and duct will temporarily increase due to the projecting peripheral edge and after passing such edge will expand and be directed inwardly with the air flow and fuel passing through the central aperture and due to the low pressure area on the downstream side of the baffle member, the fuel will be directed to the low pressure area and maintained in such area by the inwardly flowing air and the air passing through the central aperture.

3,223,137
OIL BURNER CONTROL
Darwin R. Grahl, Lincoln Park, Mich., assignor to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware
Filed Jan. 28, 1963, Ser. No. 254,134
4 Claims. (Cl. 158—28)

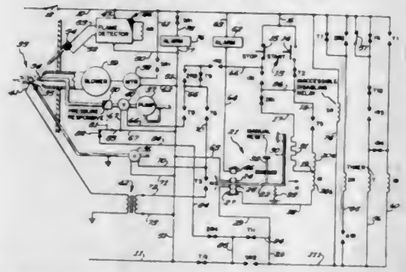


1. A burner control comprising a step down transformer having a primary circuit connected with the burner and a secondary circuit comprising a room thermostat, a flame-responsive control device, a manual reset switch

and heater therefor, a burner-energizer relay, a second relay energized by the flame-responsive control device, and circuit connections operatively arranged so that initial energization of the room thermostat serves to energize the burner-energizer relay through the reset switch and heater, and establishment of a burner flame causes the second relay to de-energize the heater without de-energizing the burner-energizer relay or reset switch, and the absence of flame causes the second relay to energize the heater and thereby open the reset switch;

each of said transformer, relays, switches, and heater being disposed on one face of a dielectric panel with terminals thereof projecting through the panel; said terminals being operatively connected by means of printed circuit lines on the other face of the panel; said thermostat and flame-responsive control device being located remote from the panel and being connected into the control circuit by means of terminals mounted on the panel in direct connection with the printed circuit lines.

3,223,138
BURNER CONTROL APPARATUS
Richard W. Brown, Excelsior, Minn., assignor to Honeywell Inc., a corporation of Delaware
Filed Jan. 2, 1964, Ser. No. 335,106
17 Claims. (Cl. 158—28)



15. In a fuel burner control system of the type having combustion sensing means, a timer providing a sequence of operations including an ignition period, a run period, and at least one purge period, and manually resettable safety lockout means rendered effective by said timer and said combustion sensing means to disable the system upon failure of the combustion sensing means to indicate the presence of combustion during the run period, the improvement comprising: inaccessible system disabling means operable to disable the system and to prevent restarting thereof; fuel pressure responsive means for operating said system disabling means when fuel is supplied to the burner; means operable by said combustion sensing means for operating said disabling means when said combustion sensing means indicates the presence of combustion; and means operable by said timer and rendering said disabling means operable only during said purge period.

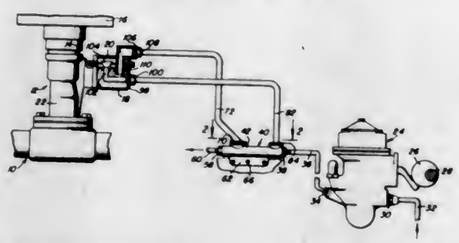
3,223,139
TORCH ATTACHMENT
James Donald Smith and Richard Thomas Davies, Stroudsburg, Pa., assignors to Ronson Corporation, Woodbridge, N.J.
Filed Dec. 5, 1962, Ser. No. 242,517
5 Claims. (Cl. 158—33)

1. In combination, a cylindrical container having a top face with an annular rim with a recessed top face portion, said rim defining a projection extending into said recessed top face portion, a nozzle actuatable to release fluid from said container and centered in said face portion including an upright member for the discharge of gas from the container, an attachment comprising a cap having a flat disc portion adapted to close the end of said container over said rim and a plurality of inwardly extending resilient members adapted to engage around the projecting portion of the rim, a tubular portion extending upwardly from said flat disc portion and surrounding the nozzle of the



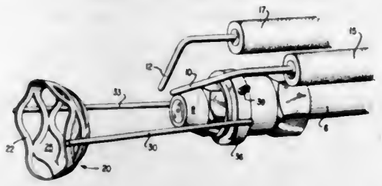
container, means in said tubular portion for engaging the nozzle to actuate the latter for the discharge of gas from the container, a tubular angled extension connected into said tubular portion and having a hollow bore aligned with the bore of the tubular portion for receiving gases from the container and, a burner member connected to the outer end of said tubular extension.

3,223,140
SELF-CONTROLLED FUEL SYSTEM
Oliver R. Jones, 903 Donald Drive, Longview, Tex.
Filed Jan. 16, 1964, Ser. No. 338,200
11 Claims. (Cl. 158—36.4)



1. A self controlled fuel system for supplying fuel to a carburetor reservoir and for maintaining a constant level of liquid fuel in said reservoir, said fuel system comprising a carburetor of an internal combustion engine including a reservoir having an inlet and an outlet, a fuel supply line having a fuel pump disposed therein and including an inlet end adapted to be connected to a fuel tank outlet and an outlet end, an eductor defining a vacuum chamber, a nozzle type inlet opening into said chamber, said supply line outlet end being in communication with said nozzle-type inlet, an outlet in alignment with the discharge of said inlet, and a vacuum inlet opening into said chamber, a return line communicating said reservoir outlet with said vacuum inlet, by-pass line means, said eductor outlet defining the inlet end of said by-pass line means, said by-pass line means being adapted to have its outlet end communicated with said tank, delivery line means including an inlet end communicated with said by-pass line means adjacent but downstream of said eductor outlet, and an outlet end communicated with said reservoir inlet, said reservoir outlet opening inwardly of said reservoir at a level therein defining a preferred fuel supply level.

3,223,141
LIQUID FUEL BURNER WITH COMBUSTION AID
Donald E. Safford, Park Forest, Ill., assignor to Sinclair Research, Inc., Wilmington, Del., a corporation of Delaware
Filed Oct. 8, 1962, Ser. No. 228,954
2 Claims. (Cl. 158—73)



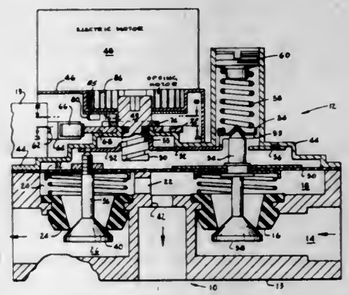
1. In a gun-type liquid fuel burner having a nozzle and ignition means adjacent said nozzle, said nozzle being adapted to spray fuel into a mixing zone containing a combustion-supporting gas, the improvement which comprises a member in the path of the fuel flow downstream of said nozzle and said ignition means, said member having a discontinuous convex surface facing such nozzle and comprising a net-work of flat strips which intersect each other to form said surface and leave voids forming said discontinuities, said discontinuities being bounded by curved lines, and support means for attachment of said member to said nozzle.

3,223,142
AUTOMATIC GAS BURNER WITH VARIABLE FLAME PORT AREA
James A. Harrison, 24450 Telegraph Road, Southfield, Mich.
Continuation of abandoned application Ser. No. 798,186, Mar. 9, 1959. This application Nov. 19, 1962, Ser. No. 239,103
15 Claims. (Cl. 158—117)



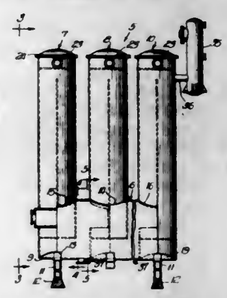
1. In a fuel gas heater, an elongate gas manifold, a gas inlet for the manifold, said manifold provided with side opening aperture means arranged longitudinally along the manifold from the inlet and through which gas may escape from the manifold, a plurality of burners with each communicating in gas-receiving relation with a portion of the length of said aperture means along the manifold, a reciprocable piston valve element slidably supported in the manifold and yieldingly biased toward the inlet and responsive to an increase in gas pressure within the manifold to shift away from the inlet and increase the effective length of said aperture means exposed to the gas to maintain a constant gas pressure in the manifold and responsive to a decrease in the gas pressure to shift toward the inlet and reduce the effective length of said aperture means exposed to the gas whereby the number of operative burners is a function of the rate at which gas enters the manifold through said inlet, and valve means connected in gas discharge communication with said inlet to regulate the rate at which gas enters the manifold.

3,223,143
MOTOR DRIVEN STEP OPENING GAS SUPPLY UNIT
Thomas E. Noakes, Detroit, Maynard E. Anderson, Birmingham, and Melvin W. Polkinghorn, Livonia, Mich., assignors to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware
Filed June 14, 1962, Ser. No. 202,464
13 Claims. (Cl. 158—125)



8. In a fuel supply unit for a gas burner: a valve housing having a first valve means operable to admit gas to a burner, and pressure regulator means including a second valve means movable back-and-forth for regulating the pressure of the gas flowing through the first valve means; an electrical control means carried on the valve housing, including a single rotary electrical motor having a disengageable connection with the pressure regulator valve means whereby energization of the motor is effective to permit the regulator element to assume its regulating range of movement, and de-energization of the motor is effective to close the pressure regulator means to gas flow therethrough.

3,223,144
EVAPORATOR APPARATUS
William G. Dedert, Crete, Ill., assignor to Whiting Corporation, a corporation of Illinois
Filed May 17, 1962, Ser. No. 195,529
7 Claims. (Cl. 159—13)



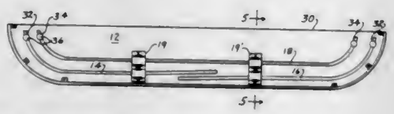
1. Heat transfer apparatus comprising a generally horizontal header tube and a plurality of individual evaporators oriented uprightly of said header tube with corresponding lower ends of said individual evaporators projecting into said header tube from the upper side to the bottom side in sealed-off relationship therewith, each of said evaporators having an outer shell and an internal heat

exchanger of the type having open-ended tubes extending between inner upper and lower tube sheets, disposed inwardly of the opposite ends of each shell with one of said tube sheets being disposed within said header tube, a portion of the side wall of the outer shell lying below the lower tube sheet of each evaporator end projecting within said header tube being omitted so as to provide free communication between the interiors of the adjacent ends of said open-ended tubes and the interior of said header tube, with the remainder portion of the inwardly projecting end of each outer shell forming at least a substantial part of a bulkhead which partitions off the interior of said header tube and blocks vapor flow through said header tube between adjacent evaporators each of said inwardly extending evaporator ends having an entrance window formed in its outer shell above the lower tube sheet to permit vapor discharge into said header tube from the adjacent upstream evaporator with regard to vapor flow to enter said window and the vapor space surrounding the tubes of the associated internal heat exchanger.

3,223,145
EVAPORATIVE CONCENTRATION OF AQUEOUS UREA
Hugh E. Templeton, Kamakura-shi, Japan, and Robert N. Summerville, Cranford, N.J., assignors, by mesne assignments, to Allied Chemical Corporation, New York, N.Y., a corporation of New York
Filed May 20, 1964, Ser. No. 368,931
18 Claims. (Cl. 159—47)

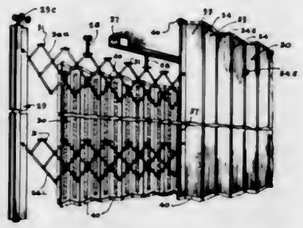
1. In the manufacture of urea prills wherein a urea melt is dehydrated and then fed to a prilling tower to form urea prills, the dehydration step consisting essentially of subjecting a urea melt containing about 5 percent to 30 percent by weight of water, the remainder being essentially urea, and having a temperature of from about 200° F. to 290° F., to evaporation at a pressure of from 4 to 19.7 p.s.i.a. while flowing countercurrent to a stream of inert gas to provide a partially dehydrated urea containing not more than 1.5 percent by weight of water and having a temperature within the range from 270° F. to 310° F.; said evaporation being characterized by evaporating the urea melt at said conditions and in such manner that the vapor pressure of water over the urea melt is greater than the water vapor pressure which would be in equilibrium with the urea melt at its crystallization temperature as evaporation progresses but not more than 20 mm. of mercury greater than the said equilibrium water-vapor pressure when the water concentration in the melt is less than 10% by weight, thereby minimizing biuret formation in the urea melt thus evaporated while at the same time avoiding the formation of urea crystals during the evaporation.

3,223,146
COMBINATION VALANCE AND SUPPORT FOR WINDOW HANGINGS
Diana A. Wessels and Goodsell H. Renner, both of 1516 Plainfield Drive, Elkhart, Ind.
Filed Oct. 2, 1961, Ser. No. 142,135
6 Claims. (Cl. 160—38)



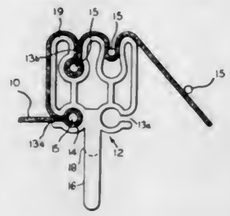
6. In a combination drapery and valance fixture: a horizontal elongated panel having slots extending therethrough, fixtures extending through said slots for supporting the drapery, a skirt extending along the front of and projecting above said panel, a track-like means on the rear side of said skirt, and a plurality of clamps on the rear side of said skirt slidable to various predetermined positions along said track-like means.

3,223,147
ACOUSTIC TYPE FOLDING DOOR
Don C. Holloway, Janesville, Wis., assignor to Hough Manufacturing Corporation, a corporation of Connecticut
Filed Dec. 17, 1964, Ser. No. 421,747
7 Claims. (Cl. 160—84)



1. In an accordion type folding door having a pair of end posts that define opposite vertical end edges of the door, upper and lower extensible and collapsible lazytongs connecting said posts, foldable cover means disposed along opposite sides of said lazytongs and connected at opposite ends to the respective posts, flexible sealing skirts attached to and projecting from the upper and lower edges of the cover means, each cover means including a plurality of vertically elongated closely side-by-side disposed relatively wide and relatively narrow slats alternately arranged and pivoted together by means including inner and outer flexible sheets adhered to opposite faces of each of the slats, means securing every other one of said narrow slats to intermediate points of each lazytongs, each of said wide slats being a substantially flat sheet-like structure, and vertically extended pads of low density resiliently compressible fibrous sound insulating material mounted exteriorly in full surfaced flush contacting relation against the inner cover sheets at locations overlying and substantially masking the wide slats, said pads being of a thickness somewhat greater than one half the width of the narrow slats to increase the frequency sound isolating characteristics of the door by at least 4 db and to undergo yieldable compression when the door is folded to maintain substantially the same stacking ratio.

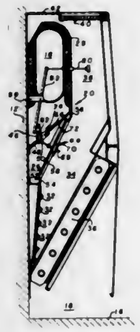
3,223,148
PLEAT FORMING APPARATUS
John J. Potye, 1245 Marengo, Forest Park, Ill.
Filed Apr. 8, 1963, Ser. No. 271,387
2 Claims. (Cl. 160—348)



1. Pleat forming apparatus including an elongated support having an outward appearance coresponding generally to the appearance of drapery pleats, said support having a cross section which is essentially rectangular, said support having spaced recesses therein extending

longitudinally of said support and generally parallel to one another, said recesses being of narrow width at the outer portions of said support and being enlarged at their inner extremities within said support, said recesses being spaced in accordance with the spacing of folds defining pleats in drapery fabric and positioned at opposite inner corners of said support and in the outwardly facing side of said support, and drapery fabric positioned over said support and positioned within said recesses thereby preesnting folded pleat portions for said fabric, and elongated pins positioned in said enlarged portions of said recesses and holding the fabric between said pins and the material of said support, the outer portions of said recesses having widths such that said fabric substantially fills said outer portions and thus masks said pins from view.

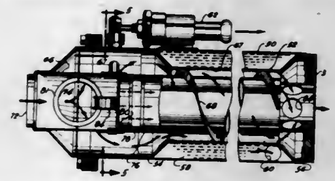
3,223,149
INDUCTION UNIT PRIMARY AIR CONTROL
Robert G. Miner, La Crosse, Wis., assignor to The Trane Company, La Crosse, Wis., a corporation of Wisconsin
Filed July 9, 1962, Ser. No. 208,238
9 Claims. (Cl. 165—33)



1. An air conditioning unit adapted to be mounted in a conditioned space comprising: a casing, means forming a discharge opening in said casing, means forming a recirculated air opening in said casing, passage means in said casing connecting said recirculated air opening and said discharge opening a heat exchanger in said passage means between said recirculated air opening and said discharge opening, enclosing wall means forming a primary air plenum chamber in said casing, means supplying air under pressure to said primary air plenum chamber, nozzle means connected to said primary air plenum chamber and receiving air under pressure therefrom to induce a flow of recirculated air through said heat exchanger, and automatic pressure responsive means in said primary air plenum chamber to maintain a substantially constant pressure at said nozzle means regardless of the fluctuations in the pressure being supplied to said primary air plenum chamber, said automatic pressure responsive means having a pressure responsive member which forms a substantial portion of said enclosing wall means.

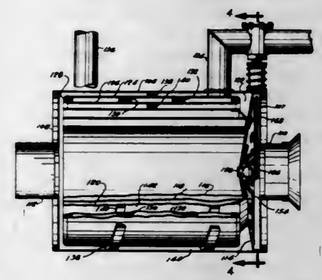
3,223,150
HEAT EXCHANGER
Vernon N. Tramontini, Indianapolis, Ind., assignor to Stewart-Warner Corporation, Chicago, Ill., a corporation of Virginia
Original application June 2, 1961, Ser. No. 114,501. Divided and this application Mar. 19, 1962, Ser. No. 181,237
1 Claim. (Cl. 165—34)

A heat exchanger comprising a cylindrical housing, a substantially spool-shaped hollow member concentrically disposed within said housing having circumferential end portions in sealing engagement with the inside wall of said housing to form an annular chamber between said spool-shaped member and said housing, a substantially tubular member extending concentrically through said housing and radially spaced from said annular chamber, a spiral baffle in the interstice between the annular chamber and the tubular member, means defining a valve seat around an aperture in the wall of said tubular member adjacent one end thereof, a second tubular member concentrically extending within and spaced from said first tubular member and having one end terminating adjacent



said aperture, a flange defining a valve seat across the end of said second tubular member, a valve head, lever means loosely mounting said valve head for positioning said valve head in engagement with either of said valve seats, means for flowing a first fluid through said annular chamber, means for flowing a second fluid into said one end of the first tubular member, means for flowing a second fluid out of said interstice and the other end of said tubular member and thermostatic means connected to said lever means for positioning said valve in engagement with one or the other of said valve seats responsive to the outlet temperature of fluid in said annular chamber.

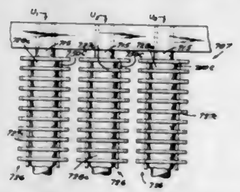
3,223,151
THERMOSTATICALLY CONTROLLED HEAT EXCHANGER
Vernon N. Tramontini, Indianapolis, Ind., assignor to Stewart-Warner Corporation, Chicago, Ill., a corporation of Virginia
Application Mar. 19, 1962, Ser. No. 181,237, which is a division of application Ser. No. 114,501, June 2, 1961. Divided and this application Jan. 8, 1965, Ser. No. 424,334
3 Claims. (Cl. 165—39)



1. A heat exchanger comprising a cylindrical housing, a conical baffle transversely fixed across the interior of said housing adjacent one end thereof, a tubular element having one end sealed to said conical baffle and concentrically extending to a position adjacent the other end of said housing to form an annular chamber with the inner wall of said housing, a thermal shield between said annular chamber and the interior passage of said tubular element, said conical baffle having a first plurality of angularly spaced apertures in communication with said annular chamber and a second plurality of angularly spaced apertures in communication with the interior

passage of said tubular element, a second conical baffle in telescopic engagement with said first conical baffle and rotatably mounted at its axis, said second conical baffle having a first plurality of angularly spaced apertures alignable with the first plurality of apertures in said first conical baffle in at least one rotational position and a second plurality of angularly spaced apertures alignable with the second plurality of apertures in said first conical baffle in at least one other rotational position, linking means secured to said second conical baffle, spiral conduit means within said annular chamber, means for flowing a first fluid through said conduit means, thermostatic means connected to said linking means and said conduit means, operable responsive to the outlet temperature of said first fluid for rotating said second conduit baffle, inlet means for a second fluid at the one end of said housing adjacent said conical baffle, and outlet means for said second fluid in the other end of said housing in communication with said chamber and the interior passage of said tubular element.

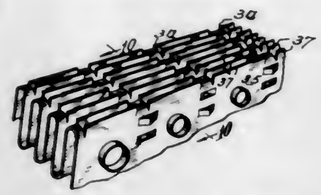
3,223,152
SURFACE CONDENSER
Franz Schulenberg, Bochum, Germany, assignor to Gea-Luftkuhler-Gesellschaft m.b.H., Bochum, Germany
Filed Dec. 27, 1962, Ser. No. 250,729
11 Claims. (Cl. 165—146)



1. In a surface condenser, in combination, means for producing a directed current of coolant; a source of vaporous medium whose temperature is higher than the temperature of coolant so that the medium yields condensate in response to exchange of heat with the coolant; and a condenser unit including a pair of tubular conductors each having an intake end connected with said source and a condensate-discharging second end, said conductors being disposed in the path of and substantially transversely to the direction of the flow of coolant so that coolant brushing said conductors tends to form around said conductors a stagnant boundary layer which hinders the exchange of heat between the medium and the flowing coolant, one of said conductors being located upstream of the other conductor as seen in the direction of flow of the coolant so that coolant brushing said one conductor is heated and its cooling capacity decreases prior to brushing said other conductor, said other conductor comprising means for reducing the effect of the boundary layer sufficiently to insure that the heat exchanging capacity of said other conductor is superior to the heat exchanging capacity of said one conductor proportionally with the drop in cooling capacity of the coolant whereby the temperature of condensate at both said second ends is at least nearly the same.

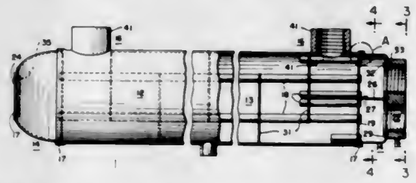
3,223,153
FIN AND TUBE TYPE HEAT EXCHANGER
Clyde S. Simpelaar, Racine, Wis., assignor to Modine Manufacturing Company, a corporation of Wisconsin
Filed May 21, 1962, Ser. No. 196,114
5 Claims. (Cl. 165—152)

1. A fin and tube heat exchanger, comprising: a sinuous continuous metal sheet arranged in adjacent pleats constituting fins connected in series by side fold areas, said sheet having means forming elongated openings substantially along said fold areas for permitting high volume flow of fluid through said openings and between said



fins; means forming aligned fin openings; and a plurality of tubes in said fin openings in heat transfer relationship with said fins.

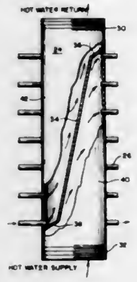
3,223,154
SHELL-AND-TUBE HEAT-EXCHANGER
Clarence J. Goebel, Racine, Wis., assignor to Young Radiator Company, Racine, Wis., a corporation of Wisconsin
Filed Jan. 25, 1962, Ser. No. 168,765
4 Claims. (Cl. 165—158)



1. A shell-and-tube heat exchanger comprising,
(a) a cylindrical single piece shell
formed of sheet metal with open ends,
(b) a core unit formed of
a bundle of tubes spanning and supporting
a pair of circular headers each of sheet metal and having an integral perimetrical flange telescopically seated in and bonded to one end of the shell,
(c) a pair of circular bonnets each
dish-shaped
formed of stamped sheet metal
having its open permieter telescopically seated in and bonded to a header flange, and
(d) fittings
standard threaded
bonded in the ends of the respective bonnets ,and to the shell inwardly of the core-unit headers
for connection of the conduits leading from and to fluid sources
to effect a fluid flow, respectively, through the core unit and the labyrinth around the core unit.

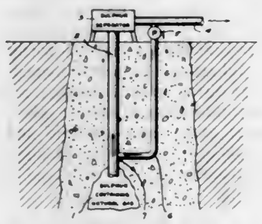
3,223,155
HEADER CONSTRUCTION FOR UNIT HEATER COIL
Arthur F. Hubbard, Moline, Ill., assignor to American Air Filter Company, Inc., Louisville, Ky., a corporation of Delaware
Filed Apr. 22, 1963, Ser. No. 274,656
1 Claim. (Cl. 165—176)

A heat exchanger construction for a unit heater comprising a longitudinally-extending tubular header element having oppositely spaced axially aligned supply inlet and return outlet means; a plurality of looped heat exchange tubes arranged in spaced relationship to each other with corresponding opposite ends thereof communicably connected to said header element wall in longitudinally-extending spaced first and second rows; partition means extending generally longitudinally in said header element with the peripheral edges thereof sealed against the interior face of said header element to divide said header element into a separate supply chamber communicating with said supply inlet means and said first row of corresponding ends of said looped heat exchange tubes and a separate return chamber communicating with said return outlet means and said second row of corresponding ends of said looped heat exchange tubes, said partition means being sized to span a distance within said header



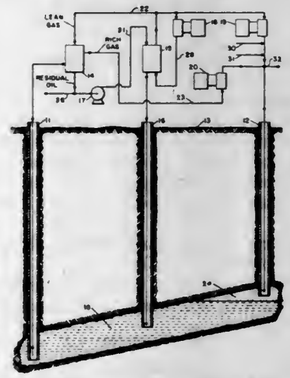
element slightly greater than the distance between diametrically opposite extremities of said first and second spaced rows of corresponding heat exchange tube ends to minimize pockets adjacent said row extremities, the major portion of said partition means extends generally diagonally in said header element so that each of said chambers is generally tapered in the direction of heating medium flow in said chambers with said partition means having end portions which are angled to engage the interior face of said header element immediately adjacent the diametrically opposed extremities of said first and second rows.

3,223,156
METHOD FOR THE PREVENTION OF SULFUR DEPOSIT IN THE RISER PIPES IN THE EXTRACTION OF NATURAL GASES LADEN WITH HYDROGEN SULFIDE WHEN ELEMENTARY SULFUR IS PRESENT IN THE DEPOSIT
Siegfried Peter, Hannover-Buchholz, Germany, assignor to Gewerkschaft Elwerath, Hannover, Germany
Filed Apr. 3, 1963, Ser. No. 270,190
Claims priority, application Germany, Apr. 6, 1962, G 34,656
3 Claims. (Cl. 166—6)



1. Method of preventing the formation of deposits of polymeric sulfur in riser pipes of natural gas borings which deliver gases from deposits containing elementary sulfur to the upper ends of said pipes, the temperature of the gases in the vicinity of the head of said deposits being higher than the melting temperature of sulfur and the temperature of the gases when the same reach the upper ends of said pipes being below the melting point of sulfur, which gases contain elementary sulfur dissolved therein in such a concentration that the temperature at which said dissolved sulfur would precipitate from the gases upon cooling would be higher than the melting point of sulfur, the temperature of the gases at which the same reach the upper ends of said pipes being less than said melting point, comprising the step of introducing into the rising gases, at a point where said sulfur is still in solution; a gas capable of dissolving sulfur, but unsaturated with sulfur, in such a quantity that the temperature at which the sulfur will precipitate is reduced to below the melting temperature of sulfur and above said temperature at which said gases reach the upper ends of said pipes, so that only crystalline sulfur will precipitate from the rising gases.

3,223,157
OIL RECOVERY PROCESS
James W. Lacey, Edmonton, Alberta, and Roland Horsfield and Robert V. Welch, Calgary, Alberta, Canada, assignors, by mesne assignments, to Esso Products Research Company, a corporation of Delaware
Filed Apr. 9, 1963, Ser. No. 271,649
20 Claims. (Cl. 166—7)



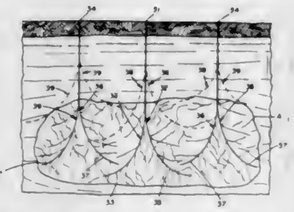
16. In a method of producing oil from an underground reservoir by a gas-propelled, slug-type miscible displacement process wherein said slug comprises hydrocarbons which are normally gaseous but liquefiable at atmospheric temperature, the improvement which comprises starting said process by producing oil from said reservoir through an output well, separating a mixture of said hydrocarbons from said produced oil such that said mixture will form a single fluid phase with said reservoir oil at the temperature and pressure of said reservoir, injecting said mixture into said reservoir through an input well spaced from said output well so as to form a bank of said mixture in said reservoir in the vicinity of said input well, injecting at least a portion of the remainder of said produced oil into said reservoir and also injecting such additional pressurizing fluid into said reservoir as may be necessary during the injection of said mixture and said produced oil to maintain said reservoir pressure.

3,223,158
IN SITU RETORTING OF OIL SHALE
Charles Ovid Baker, Garland, Tex., assignor to Socony Mobil Oil Company, Inc., a corporation of New York
Filed Dec. 10, 1962, Ser. No. 243,301
2 Claims. (Cl. 166—11)

1. The process for recovering hydrocarbons from massive underground formations of oil shale comprising the steps of:
(a) providing a borehole extending from the earth's surface downwardly into the oil shale, and directionally drilling from the borehole at spaced levels within the oil shale a plurality of first borehole extensions

each having a lower portion diverging from the vertical toward the horizontal at different horizons in the shale from which oil is to be recovered;

(b) directionally drilling from a borehole which extends from the earth's surface downwardly into the oil shale a plurality of second borehole extensions each having a lower portion diverging toward the horizontal from the vertical at different horizons within the oil shale, said second borehole extensions being positioned in spaced relationship to respective ones of said first borehole extensions by a distance permitting the intervening oil shale to be extensively fractured by conventional fracturing means;



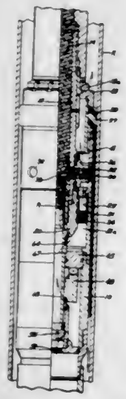
(c) fracturing the formation adjacent to and intermediate at least one pair of the first and second borehole extensions;

(d) injecting a heat-creating gas through a first borehole extension located within the fractured oil shale of step (c) to heat the shale progressively outwardly to a temperature sufficient to drive the hydrocarbons in the shale to the respective second borehole extension;

(e) removing the recovered hydrocarbons from such second borehole extension; and

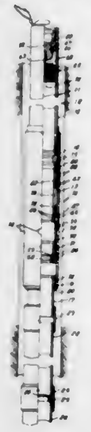
(f) repeating steps (c), (d) and (e) with other of the respective first and second borehole extensions.

3,223,159
LINER CEMENTING METHOD
Cicero C. Brown, % Brown Oil Tools, Inc., P.O. Box 19236, Houston, Tex.
Filed Sept. 9, 1963, Ser. No. 307,659
4 Claims. (Cl. 166—21)



1. In the method of cementing a liner in a well bore, the improvements which comprise, sealing-off the annular space between a liner and the well bore wall at a point adjacent the upper end of the liner, introducing a stream of cementing fluid into said annular space by flowing it downwardly about the liner from a point near the upper end thereof below the point of said sealing-off and thence upwardly through the bore of the liner, and after placing the cement closing-off the bore of the liner, whereby said sealing-off of said annular space and said closing-off of the liner bore will be effective to relieve the cement from the hydrostatic head of overlying fluids in the well bore.

3,223,160
CEMENTING APPARATUS
Eugene E. Baker, Duncan, Okla., assignor to Halliburton Company, Duncan, Okla., a corporation of Delaware
Filed Oct. 20, 1960, Ser. No. 63,776
22 Claims. (Cl. 166—27)

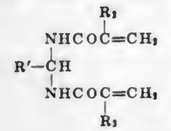


1. In combination: a cementing device including a housing having a longitudinal flow passage and a lateral port formed therein communicating with said flow passage; first and second valve means for opening and closing said lateral port and each having a bore communicating with said flow passage of said housing, said first valve means initially closing said lateral port; first actuating means insertable in one direction into said housing and engageable with said first valve means to close the bore of said first valve means whereby fluid pressure introduced into said flow passage of said housing is effective to move said first valve means to open said lateral port of said housing; second actuating means insertable in said one direction in said housing to engage and be supported by said first actuating means and slidably engageable with said second valve means to close said bore of said second valve means whereby fluid pressure introduced into said flow passage of said housing is effective to move said second valve means to close said lateral port of said housing; means on said first actuating means and said second actuating means coengageable upon movement of said second actuating means in a direction opposite said one direction for limiting longitudinal movement of said second actuating means relative to said first actuating means; and means on said second actuating means engageable by a removing means whereby both said actuating means may be removed simultaneously from said housing.

3,223,161
METHOD FOR CONSOLIDATING LOOSE SANDY MATERIAL
Leonard L. Burge, Tulsa, Okla., assignor to Sinclair Research, Inc., a corporation of Delaware
No Drawing. Filed Aug. 22, 1961, Ser. No. 133,062
12 Claims. (Cl. 166—33)

1. A method for consolidating loose, sandy material to provide a permeable consolidated mass, the steps comprising placing an aqueous solution consisting essentially

of a mixture of (a) about 1 to 25 weight percent of a monomeric alkylidene bisacrylamide of the formula



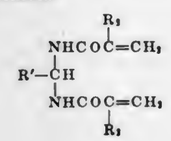
in which



is a hydrocarbon residue of an aldehyde containing from about 1 to 10 carbon atoms and R_2 is of the group consisting of hydrogen and methyl, and (b) about 75 to 99 weight percent of another ethylenic monomer copolymerizable with (a), into the loose sandy material in amounts sufficient to wet the surface of the particles, conducting an inert gas through the sandy material containing the resin-forming mixture to remove excess amounts of the resin-forming material while leaving the surfaces of the particles wet with said material, and contacting the loose, sandy material with a catalyst consisting essentially of vaporous catalytic amounts of sulfur dioxide to polymerize the resin-forming material, consolidate the sandy material and provide a permeable consolidated mass.

3,223,162
POLYMERIZATION METHOD
Leonard L. Burge, Tulsa, Okla., assignor to Sinclair Research, Inc., a corporation of Delaware
Filed Aug. 22, 1961, Ser. No. 133,098
16 Claims. (Cl. 166—33)

7. A method for decreasing the permeability of a permeable area in a well, the steps comprising introducing an aqueous solution containing a mixture of (a) about 1 to 25 weight percent of a monomeric alkylidene bisacrylamide of the formula



in which

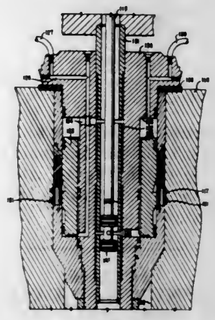


is a hydrocarbon residue of an aldehyde containing from about 1 to 10 carbon atoms and R_2 is of the group consisting of hydrogen and methyl, and (b) about 75 to 99 weight percent of another ethylenic monomer copolymerizable with (a) into a permeable area, contacting the aqueous mixture with a catalyst consisting essentially of a catalytic amount of sulfur dioxide in the presence of polymerization expediting amounts sufficient to enhance the polymerization rate of the said monomers of a Group I to III metal halide to solidify the aqueous mixture therein and decrease the permeability of the well area.

3,223,163
COMPOSITION AND METHOD FOR STABILIZATION OF SOIL
Ronney R. Koch, Joseph Ramos, and Homer C. McLaughlin, Duncan, Okla., assignors to Halliburton Company, Duncan, Okla., a corporation of Delaware
No Drawing. Filed Apr. 16, 1962, Ser. No. 187,951
21 Claims. (Cl. 166—33)

1. A method of stabilizing earth formation which comprises injecting into the formation, an aqueous solution of a gelling material selected from the group consisting of water-soluble polymerizable materials and chrome lignin materials and finely divided inert solids selected from the group consisting of gilsonite, asphaltic pyrobitumens, silica flour, barite, bauxite, talc, scoria and calcium carbonate suspended therein, said solids being of a particle size of from about 10 microns to about 180 microns and being present in an amount of from about .25 absolute gallons to about 1.25 absolute gallons per gallon of solution.

3,223,164
METHOD OF ACTUATING FLUID PRESSURE OPERATED MECHANISM OF UNDERWATER WELL INSTALLATION
Lloyd G. Otteman, Metairie, La.
Original application Nov. 9, 1962, Ser. No. 236,645. Divided and this application Dec. 14, 1964, Ser. No. 425,655
6 Claims. (Cl. 166—35)



1. A method for remotely imparting secondary fluid-actuating pressure to a primary fluid pressure system of a fluid-pressure-actuated mechanism secured to a conduit outwardly thereof and out of fluid communication therewith on an underwater well installation, said method comprising:

lowering a pipe-cutting tool through said conduit to a point adjacent said primary fluid pressure system,

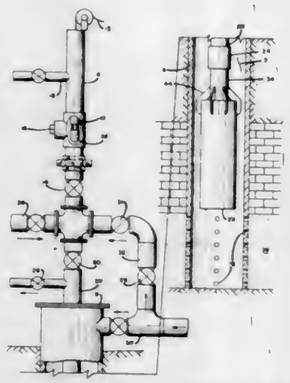
actuating said pipe-cutting tool within said conduit to to form an opening through a section of the conduit to establish fluid communication between the interior of the conduit and at least a portion of the primary fluid pressure system of the mechanism, and

applying an actuating pressure fluid down through said conduit and through the opening cut therein to the primary fluid pressure system.

3,223,165
METHOD FOR HEATING OR IGNITING WELL FORMATIONS WITH PYROPHORIC MATERIALS
Karol L. Hujsak, Tulsa, Okla., assignor to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware
Filed Apr. 8, 1963, Ser. No. 271,262
10 Claims. (Cl. 166—38)

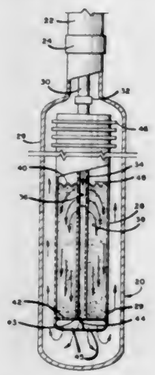
7. A method for supplying heat to an underground formation penetrated by a well, comprising lowering a pyrophoric material in an open container down said well by means controlled from the ground surface via a first conduit and in the presence of a combustible gas inert with respect to said material, said first conduit extending down to a level substantially opposite said formation, injecting an oxygen-containing gas down said well via a second conduit to a level substantially opposite said formation, thereby forming a noncombustible oxygen-containing atmosphere in the vicinity of said formation, thereafter lowering said container in said first conduit until said container is substantially opposite said formation whereby

said material is brought into contact with said oxygen-containing atmosphere and ignited, immediately thereafter injecting said combustible gas down said first conduit while injecting said oxygen-containing gas down said second conduit at respective injection rates sufficient



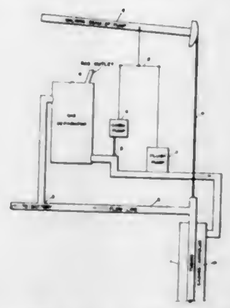
to produce a combustible mixture which is ignited by the burning pyrophoric material, and maintaining this combustion process by continuing to introduce said combustible and oxygen-containing gases into said well in the above-described manner.

3,223,166
METHOD OF CONTROLLED CATALYTIC HEATING OF A SUBSURFACE FORMATION
Elton B. Hunt and Howard Grekel, Tulsa, Okla., assignors to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware
Filed May 27, 1963, Ser. No. 283,155
4 Claims. (Cl. 166—38)



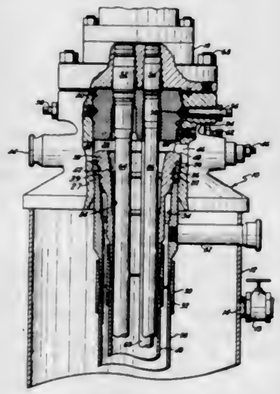
1. A method for heating a subsurface formation containing a combustible material, said formation being penetrated by a well wherein a body of an oxidation catalyst is placed in said well and at the appropriate level of said formation, and conducting a nonexplosive, fuel-oxygen containing gas mixture through said catalyst to produce hot products of combustion which pass in heat exchange relation with said formation, the improvement which comprises controlling the temperature of said products by bypassing a regulated portion of said fuel-oxygen containing gas mixture around said catalyst, the volume of said mixture bypassed around said catalyst varying directly with the temperature of said products, and thereafter combining said portion with said products.

3,223,167
WELL DEVICE
John L. Hampton, Midland, Tex., assignor to Petrolite Corporation, Wilmington, Del., a corporation of Delaware
Filed Mar. 29, 1962, Ser. No. 183,498
1 Claim. (Cl. 166—75)



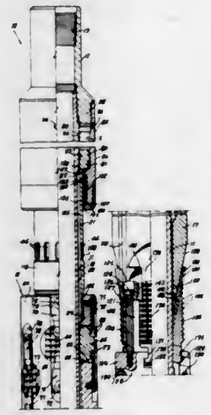
In combination with an oil pump having a walking beam, an apparatus for chemically injecting and flushing an oil well with treating chemical agent comprising, in combination, a gas separator having an inlet for gas-containing petroleum fluids and an exit for gas-separated petroleum fluids, flush pump means for mixing well treating chemical agent and gas-separated petroleum fluids and for injecting a mixture of said well treating chemical agent and said gas-separated petroleum fluids into the oil well, means for transporting said gas-separated petroleum fluids from said exit to said flush pump means, chemical pump means between said exit and said flush pump means for adding chemical treating agent to said gas-separated petroleum liquids while passing through said transport means from said exit to said flush pump means, said chemical pump means and said flush pump means being powered by said walking beam of said oil pump, whereby operation of said respective pump means occurs only when the oil well is pumping, thereby stopping chemical agent addition and flushing when oil production stops.

3,223,168
WELL HEAD APPARATUS
Virgil D. Stone, Morgan City, La., assignor to Gulf Oil Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 28, 1960, Ser. No. 17,847
1 Claim. (Cl. 166—89)



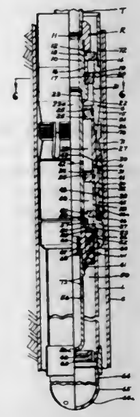
A wellhead structure comprising a unitary casing head having a bore extending downwardly therethrough, said bore comprising a lower portion, an intermediate portion, and an upper portion, said upper, intermediate, and lower portions having successively smaller diameters, an upwardly opening upper landing surface between the upper and intermediate portions of the bore, an upwardly opening lower landing surface between the intermediate and lower portions of the bore, a first casing hanger having casing secured thereto and extending downwardly therefrom suspended in the lower landing surface, said first casing hanger having an upwardly opening interior seating surface, a second casing hanger having casing secured thereto and extending downwardly therefrom supported in said seating surface, said second casing hanger having an upwardly opening interior seating surface, wedging means extending inwardly from the casing head and engaging the upper end of the second casing hanger and forcing said second casing hanger downward against the first casing hanger, a parent hanger suspended in the upper landing surface, the upper end of the first and second casing hangers being spaced below the lower end of the parent hanger, a port extending laterally through said casing head between the upper and lower landing surfaces and opening into the intermediate portion of the bore above the upper end of the first casing hanger to provide communication with the casing secured to the second casing hanger, a tubing hanger suspended in said parent hanger and having tubing extending downwardly therefrom, and a tubing bonnet secured to the upper end of the casing head in sealing engagement with the upper end of said tubing hanger.

3,223,169
RETRIEVABLE WELL PACKER
James T. Roark, Houston, Tex., assignor to Otis Engineering Corporation, Dallas, Tex., a corporation of Delaware
Filed Aug. 6, 1962, Ser. No. 215,035
14 Claims. (Cl. 166—120)



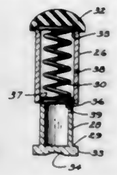
13. A well packer for use in a well casing and including: an elongate tubular mandrel; an outer tubular member disposed about said mandrel and having sealing means and gripping means thereon movable into sealing and gripping engagement with a well casing; means providing a bypass flow passage between said mandrel and said outer tubular member having openings above and below said sealing means for conducting fluid past said sealing means; means initially closing said bypass flow passage at its lower end and movable to open position upon movement of said sealing means and gripping means of said packer to sealing and gripping positions to open said bypass; means on said mandrel engageable with said means initially closing said bypass passage to move said closing means to open position upon movement of said gripping means to gripping position; and means on said mandrel movable with said mandrel to close the upper end of said bypass flow passage, after said lower end has been opened, to prevent flow of fluid upwardly through the lateral opening at the upper end of said bypass flow passage.

3,223,170
HYDRAULIC PRESSURE-SET LINER HANGER
James D. Mott, Houston, Tex., assignor to Cicero C. Brown, Houston, Tex.
Filed Nov. 28, 1962, Ser. No. 240,673
11 Claims. (Cl. 166—208)



1. In a hydraulic pressure-set liner hanger, an anchor assembly comprising a tubular mandrel connectible to a liner to be run inside a well casing, a slip expander mounted on the mandrel, anchor slips slidably supported on the mandrel below the slip expander for movement upwardly relative thereto to engage the well casing, a running assembly comprising a tubular body connectible to a tubular operating string and including means forming a releasable connection between the running assembly and the anchor assembly actuatable by relative rotation between the tubular body and the anchor assembly to release the running assembly from the anchor assembly, slip-actuating means comprising a cylinder sleeve connected to the slips and slidably disposed about the exterior of the mandrel, longitudinally spaced upper and lower annular pistons carried by said sleeve in slidable sealing engagement with the exterior of the mandrel, the lower piston having greater pressure-actuatable area than the upper piston, barrier means extending from the mandrel into said sleeve forming a partition in said sleeve defining upper and lower pressure chambers for the respective pistons, conduit means including longitudinally spaced upper and lower port means in said mandrel arranged to direct pressure fluid from the interior thereof separately to the respective pressure chambers, the greater pressure-actuatable area of said lower piston being operative to urge said slips downwardly to non-actuated position relative to the slip expander, and plugging means insertable in said mandrel to close off the bore of the mandrel between said port means whereby to direct pressure fluid solely to said upper piston to actuate the anchor slips.

3,223,171
FIRE SPRINKLER HEAD CLOSURE PLUG
Walter R. De Groot, Arlington, and Stanley Lazerus, Alexandria, Va., assignors to Atlantic Research Corporation, Fairfax, Va., a corporation of Virginia
Filed Jan. 9, 1964, Ser. No. 336,833
4 Claims. (Cl. 169—1)



4. For use in terminating flow through a fire sprinkler head of the type having a nipple in fluid-flow relationship with a fluid supply and a spray plate spaced from but attached to said nipple, a closure plug solely contained between said nipple and said spray plate with the extended length of said plug, when in use, being equal to the distance between said nipple and said spray plate, said plug comprising,

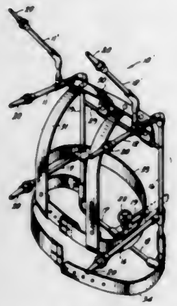
(a) a first tubular member including a resilient valve portion, said valve portion being adapted to engage said nipple to prevent fluid flow therethrough,

(b) a second member arranged in telescoping relationship with said first tubular member, said second member having one end wall having an indentation on the outer surface thereof adapted to receive a projection extending from a support means, said indentation being adapted to center said plug in said sprinkler head,

(c) a spring mounted within said first tubular member and engaging said first and second members urging said first and second members in opposed directions, and

(d) restraining means for normally maintaining said plug in a contracted position, said restraining means comprising a pin adapted to be receiving by a first hole in said first tubular member and a second hole in said second member, said first and second holes being aligned when said plug is in said contracted position whereby extraction of said pin permits said spring to effect extension of said plug.

3,223,172
FIREFIGHTING APPARATUS
James M. Moss, 356 Broad St., Waverly, N.Y.
Filed Sept. 25, 1964, Ser. No. 399,260
5 Claims. (Cl. 169—1)



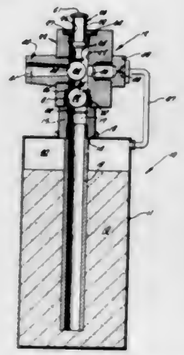
1. A firefighting apparatus adapted to be carried on the body of a fireman comprising in combination,

(a) a harness assembly for fixedly securing said apparatus to the upper torso of a fireman,

(b) conduit means including, a connecter for coupling to a line source of pressurized firefighting fluid, an upright section, and a plurality of pipes connected to spaced points on said upright section, at least one of said pipes extending horizontally above shoulder level and another extending horizontally at about waist level when said apparatus is attached to the body, and

(c) a plurality of fog-forming nozzles each connected to a termination of said plurality of pipes in an arrangement whereby the fluid emergent from said nozzles is directed in a generally forward direction onto a fire target and also forms a protective fog-screen of cool moist air in front of said fireman.

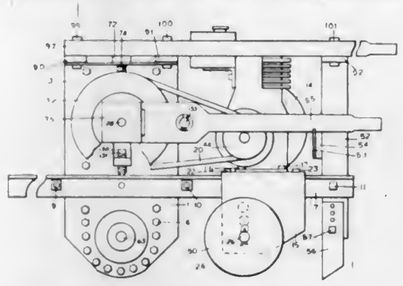
3,223,173
SELF-CLEANING VALVE MECHANISM
Herman L. Paul, Jr., Wayne, N.Y., assignor to Consolidated Electrodynamics Corporation, Pasadena, Calif., a corporation of California
Filed Sept. 16, 1963, Ser. No. 309,065
4 Claims. (Cl. 169—31)



1. A valve for controlling the discharge under pressure of flowable material from a container having a quantity of gas therein under pressure for charging the container, the valve comprising: a housing defining a passage therethrough, the housing being adapted for connection to the container so that one end of the passage communicates with the interior of the container; first and second valve seats positioned across the passage at spaced apart locations along the passage; first and second movable valve members disposed in the passage engageable in closure relation with the first and second valve seats, respectively; the valve members being disposed toward said one end of the passage from their respective seats, the second valve member being more remote from said one end of the passage than the first valve member; selectively operable means operable in one direction for moving the first and second valve members from closure relation with their seats and operable in a reverse direction to engage first the first valve member and then the second valve member with their respective seats; and charging gas duct means communicating with the passage adjacent the second valve seat and adapted remotely from the passage for gas flow communication with the interior of the container.

3,223,174
POWER DRIVEN EARTH WORKING TILLERS AND TRACTORS AND THE LIKE
Charles W. Bergman, R.R. 2, Grand Rapids, Mich.
Filed Apr. 14, 1964, Ser. No. 359,750
1 Claim. (Cl. 172—43)

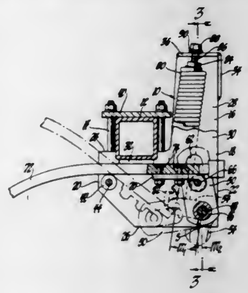
A power driven earth working tiller comprising, a frame having a pair of laterally spaced longitudinal frame members, said frame members having flat inside opposed faces, a narrow flat sided substantially vertical transmission housing located between said frame members, means mounting said housing on said frame members so that the housing can be tilted forwardly or rearwardly about a transverse pivot axis, the upper part of said drive housing extending above said pair of frame members, sprocket and chain drive means located within said housing, the top of said housing having an opening sufficient in size so that the sprocket and chain drive means can be inspected and removed, the lower end of said housing depending below said pair of frame members, a transversely extending shaft journaled in the lower end of said housing, a transverse drive shaft journaled in the upper end of said housing, said sprocket and chain drive means drivingly interconnecting said shafts, a manually operable safety release clutch means mounted on said upper shaft adjacent said housing, spring means in said clutch means operable to release said clutch on overload, means for adjusting said spring means rotatably mounted on the end of said upper shaft, a power unit mounted rearwardly of said housing on said pair



of frame members, reduction drive means for transmitting power at a reduced speed from said power unit to said clutch means, manually operable means including a handle pivotally mounted on said housing for actuating said clutch means, detent means on said frame to locate said handle in both operative and inoperative position, earth working tiller tines mounted on said lower shaft on opposite sides of said housing, adjustable means in the upper end of said housing to position said upper shaft so as to tension said chain means, said adjustable means comprising a pair of flanges rotatably mounting said upper shaft, screw means extending through the upper portion of said housing adjacent said opening and extending downwardly into said flanges, bolt and slot means adjustably mounting said flanges on said housing, ground engaging wheels mounted on the rearward portion of said frame, means for adjustably mounting said wheels, handle means mounted on said frame and extending rearwardly of said frame, brake tooth means adjustably mounted on the frame rearwardly of said wheels, said tooth means extending rearwardly and downwardly and adapted to be urged in the ground by downward pressure on the handle means.

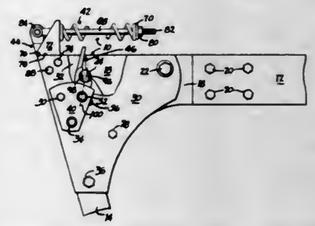
3,223,175
CULTIVATOR SPRING TRIP MOUNTED ASSEMBLY
William Harold Twidale, Islington, Ontario, Canada, assignor to Massey-Ferguson Limited, Ontario, Canada
Filed Oct. 19, 1964, Ser. No. 404,694
10 Claims. (Cl. 172—264)

1. A spring trip assembly including a bracket, a cultivator shank pivotally mounted on the bracket for movement between an operative, earthworking position and an inoperative tripped position with respect to said bracket, and a spring connected between said bracket and said shank operative to resiliently restrain said shank against movement from its operative position and to resiliently urge the shank to return to the operative position from the tripped position characterized by having means interconnecting said shank and said spring operable to progressively decrease and increase the force of the spring acting on said shank as the shank respectively moves from and returns to its operative position, said interconnecting means comprises a shaft rotatably mounted on said bracket and having a pair of radially projecting arms, and means pivotally and slideably connecting said shank



with one of said arms to rotate said shaft upon movement of the shank between its operative and tripped positions, and movable away from and toward the axis of said shaft as the shank moves from and returns to the operative position, respectively, said spring being connected with the other of said arms to resist movement of the shank from its operative position, said other arm moving the line of action of the spring toward and away from said shaft as the shank moves from and returns toward its operative position, respectively.

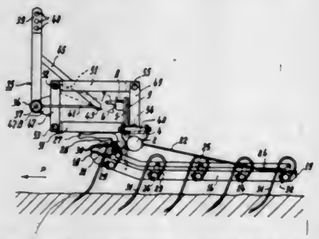
3,223,176
SUPPORT MECHANISM FOR A DISPLACEABLE EARTH MOVING TOOL
Emil F. Carra, Jr., and Philip D. Wenzel, Rockford, Ill., assignors to J. I. Case Company, Racine, Wis., a corporation of Wisconsin
Filed Oct. 5, 1964, Ser. No. 401,385
9 Claims. (Cl. 172—265)



1. In a breakback support mechanism interposed between an earth working tool and plow beam comprising stationary means attached to the plow beam and rotatable breakback means to which the tool is rigidly attached and which is rotatably coupled to said stationary means at a common pivot point, said rotatable breakback means and tool being rotationally displaceable about said pivot point from a ground working position to an idle position by the tool striking an immoveable obstacle, the improvement comprising kinematic means interposed between the stationary and rotatable breakback means for transmitting force from the rotatable breakback means to the stationary means upon the tool striking an obstacle including rocker means carried by the rotatable breakback means and moveable solely by rotation about one fixed pivot axis, latch means extending from the rocker means so as

to be releasably urged against the stationary means, selectively settable resilient bias means mounted upon the rotatable breakback means, and pivotable link means interconnecting the selectively settable resilient bias means and the rocker means, said selectively settable resilient bias means being biased to exert a moment of predetermined magnitude in a direction opposite to the rotational displacement of the tool and rotatable breakback means between the working and the idle positions for precisely determining the magnitude of obstacle-induced force required for full tripping and for restoration of the tool to the working position when only partial tripping of the rotatable breakback means and the tool occurs.

3,223,177
SWAY LIMITING MEANS FOR A TOOL MOUNTED ON A MAST TYPE HITCH
Cornelis van der Lely, Zug, Switzerland, assignor to Patent Concern N.V., Willemstad, Curacao, Switzerland, a limited-liability company of the Netherlands Antilles
Filed July 18, 1961, Ser. No. 124,891
Claims priority, application Netherlands, July 28, 1960, 254,315
13 Claims. (Cl. 172—449)



1. A soil-tilling implement comprising a three-point hitch and supporting portion adapted to be connected to the conventional three-point linkage of a prime mover in raised transport position and lowest earth-working positions, a soil tilling portion laterally spaced, vertically disposed pairs of substantially parallel links pivotally connected to the hitch portion on a substantially horizontal transverse axis, said links extending rearwardly from the hitch portion and pivotally connected to the tilling portion on a substantially horizontal transverse axis, said links being constructed of flexible strip elements and connecting the tilling portion with the hitch portion, whereby said link and tilling portion are laterally movable during the lowered earth-working position, stabilizing rod means connected to said hitch portion and defining a pair of opposed contact surfaces extending downwardly and diverging outwardly between said laterally spaced links, said contact surfaces providing abutments engaging at least one link of each of said pair for limiting the lateral movement of the links and tilling portion in the raised transport position.

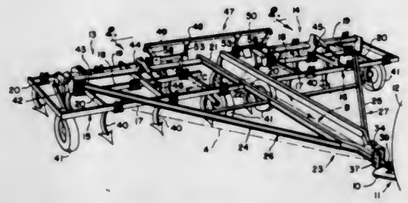
3,223,178
DISC HARROW
Peter J. Clifford and Robert E. Jones, Fresno, Calif., assignors to Massey-Ferguson Inc., Detroit, Mich.
Filed June 3, 1964, Ser. No. 372,280
9 Claims. (Cl. 172—582)

1. In a disc harrow, a carrier frame including a pair of frame members having opposed vertical flanges disposed in spaced, parallel relationship to define a guide slot therebetween, a guide bracket mounted on said vertical flanges for sliding movement along said guide slot, a disc gang support bracket connected with said guide bracket on the opposite side of said frame members from said guide bracket, fastening means for permitting limited pivotal movement about a vertical axis relative to said guide member and for locking said guide bracket and support bracket against movement along said guide slot,



and a disc gang mounted on said support bracket for limited pivotal movement relative to said support bracket about a horizontal axis.

3,223,179
AGRICULTURAL IMPLEMENT
Hugh John MacKenzie, Ancaster, Ontario, Canada, assignor to International Harvester Company, Chicago, Ill., a corporation of New Jersey
Filed Mar. 23, 1964, Ser. No. 353,985
11 Claims. (Cl. 172—624)

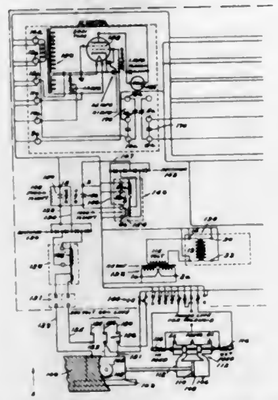


1. In a tractor drawn implement having transversely aligned earthworking units and hitch means for connecting the implement to the tractor in draft receiving relation, each unit including a tool-carrying frame operatively connected to the tractor for independent vertical floating movement relative to the other tool-carrying frame to accommodate the implement to changes in ground contour, the combination of stabilizer means connecting said frames, comprising a transverse rigid member vertically spaced from said frames, and spaced link means extending generally vertically from and pivotally connected to said rigid member and to the respective inner ends of said frames to maintain a substantially uniform operating depth for each of said earthworking units.

3,223,180
AUTOMATIC WORK PRESSURE CONTROL SYSTEM
Welling T. Akin and Ivan Van Schoick, Birmingham, Mich., assignors to The B/W Controller Corporation, Birmingham, Mich., a corporation of Michigan
Filed Aug. 7, 1961, Ser. No. 139,564
6 Claims. (Cl. 173—7)

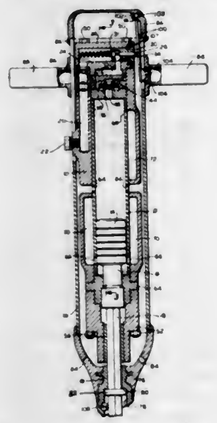
2. A system for controlling the working pressure between a workpiece and a tool, one of which is driven by an electric motor whose current varies as the working pressure and one of which is shiftable by reversible feed means toward or away from the other to maintain a preselected working pressure, comprising: first means

for sensing variations in the motor current and generating a D.C. output voltage fluctuating directly proportional to the current fluctuations throughout the running current range of the motor, second means for providing a preselected D.C. reference voltage, and means coupled with the first and second means and adapted to be coupled with the feeding means and including circuits responsive to the generated D.C. voltage from such first means exceeding the D.C. reference voltage of the second means to cause said feeding means to reverse the direction



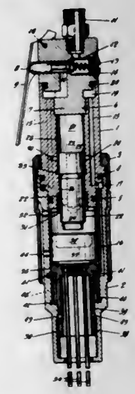
of feed to maintain a constant relationship between the generated D.C. voltage and the reference voltage thereby maintaining substantially constant working pressure between the tool and workpiece, and responsive to the generating D.C. voltage of the first means being less than the D.C. reference voltage of the second means to cause said feeding means to again reverse the direction of feed to maintain a constant relationship between the generated D.C. voltage and the reference voltage thereby maintaining substantially constant the working pressure between the tool and workpiece.

3,223,181
VIBRATIONLESS AIR HAMMER ASSEMBLY
Vernon L. Price, 1202 University Ave., San Jose, Calif.
Filed Mar. 27, 1962, Ser. No. 182,888
11 Claims. (Cl. 173—18)



11. A pavement breaker comprising a percussion tool bit and an air motor mounted on said bit and having an elongated bore therein, a rigid muffler casing fully enclosing said motor at the top of said motor and over substantially all of the side area of said motor with said muffler casing and said tool bit cooperatively enclosing said air motor at the bottom of said air motor, a piston reciprocable in said bore in axial alignment with said bit for delivering blows to said bit, upper and lower ports in said bore, an air supply passageway in said motor having a selectively operable valve therein, an alternator valve in said motor for connecting said air supply passageway alternately to said upper and lower ports to reciprocate said piston when said selectively operable valve is open, valve actuating means connected to said selectively operable valve and movable between on and off positions to maintain said selectively operable valve opened and closed respectively, an air exhaust port leading from said air motor into said casing, and an air discharge port leading from said casing at a position remote from said exhaust port.

3,223,182
POWERED IMPACT TOOLS
Toshio Mikiya, Tokyo, Japan, assignor to Nitto Kohki Co., Ltd., Tokyo, Japan, a corporation of Japan
Filed Mar. 26, 1965, Ser. No. 444,510
Claims priority, application Japan, Aug. 7, 1962, 37/32,572
4 Claims. (Cl. 173—114)



1. A powered impact tool to be activated by compressed air, which comprises:
(a) an air cylinder comprising first and second cylindrical segments coupled to one another;
(b) air conduits formed in the walls of said air cylinder and extending longitudinally thereof;
(c) valve means connected to said air conduits for controlling the flow of compressed air thereto;
(d) a hammer-piston slidably mounted in said first cylindrical segment;
(e) means for introducing compressed air from said air conduits peripherally of said piston and means for exhausting air from behind said piston when the piston is disposed in a first position, to effect movement thereof to a second position;
(f) means for introducing compressed air from said air conduits behind said piston when it is disposed in said second position, to return the piston to said first position;
(g) a tool holder slidably mounted in said second cylindrical segment;
(h) a chamber, formed in and extending longitudinally of said tool holder;
(i) means for introducing compressed air from said air conduits into said chamber to move the tool holder from a first position to a second position;
(j) means for interrupting the flow of compressed air

from said air conduits into said chamber when the tool holder is disposed intermediate the first and second positions thereof;

(k) means for exhausting the air from said chamber when the tool holder is disposed at said second position;

(l) a plurality of tool elements slidably received in said tool holder and extending longitudinally of and protruding from said air cylinder, said elements being movable from a first position seated in the tool holder, when it is disposed in its first position, to a second position out of seating engagement with said tool holder, and being movable from said second position back to said first position;

(m) an anvil slidably mounted in said second cylindrical segment intermediate the hammer-piston and the tool holder, said anvil being movable by said tool elements from a first position abutting said tool holder to a second position spaced therefrom, and being movable from the second position to said first position by said hammer-piston; said anvil, during movement from its second to its first position, striking said tool elements and projecting them longitudinally relative to said tool holder.

3,223,183
WELL DRILLING APPARATUS
Justin A. Varney, 7326 Ogelsby Ave., Los Angeles 45, Calif.
Filed Aug. 7, 1963, Ser. No. 300,477
21 Claims. (Cl. 175—27)



20. In a structure forming a passage confining a fluid stream, the combination of:

two sections of the structure telescoped together for longitudinal movement relative to each other;

a restriction in the passage carried by one of the two sections;

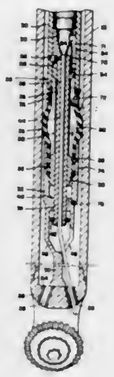
a choke head carried by the other section and normally spaced from the restriction longitudinally of the passage;

means to sense a condition;

means responsive to said sensing means to cause longitudinal movement between the two sections thereby to cause relative movement of the restriction and the choke head towards each other to create a signaling pressure rise in the stream by progressively restricting the stream with progressive increase in the local velocity of the stream;

and means to accelerate the relative movement between the choke head and the restriction in response to the rise in velocity thereby to increase the rate of pressure rise.

3,223,184
BORE HOLE LOGGING APPARATUS
Jack Weir Jones and John D. Bennett, Richardson, Tex., assignors to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey
Filed May 31, 1961, Ser. No. 113,805
15 Claims. (Cl. 175—41)



14. In apparatus for the logging of bore holes, the combination comprising a housing adapted to be lowered through a drill stem in a bore hole, logging apparatus contained within said housing, and means secured to said housing for movement therewith for landing said logging apparatus and housing at the bottom of the drill stem and for initiating arming of said logging apparatus in response to the landing of said logging apparatus, said landing and arming means including means for blocking the flow of fluid through the drill stem in response to the landing of said housing at the bottom of the drill stem and means responsive to the fluid pressure of the blocked fluid for initiating arming of said logging apparatus.

3,223,185
METHOD OF DRILLING IN PERMEABLE FORMATIONS
Lodewijk Johannes Schmit Jongbloed and Nicolaas Henk Van Lingen, Rijswijk, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Dec. 7, 1961, Ser. No. 157,814
Claims priority, application Netherlands, Jan. 18, 1961, 260,171
11 Claims. (Cl. 175—65)

1. A method of drilling wells formed by a drill bit at the lower end of a drill string while employing a drilling fluid, said method comprises

(a) rotating said drill string with the drill bit bearing against the face of the formation being drilled,

(b) pumping a drilling fluid down the drill string,

(c) discharging the drilling fluid through the bit at the bottom of the rotating drill string and against the bottom of the well,

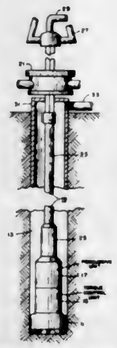
(d) circulating the drilling fluid up the well outside the rotating drill string at a rate sufficient to maintain the face of permeable formations traversed by the bit in a fluid-permeable condition, and

(e) substantially reducing the permeability of said formation at a point in the formation at least substantially at chip depth, thereby maintaining a pressure-drop at said point to reduce the hold-down force of the circulating column of fluid exerted against chips being formed by the bit.

3,223,186
METHOD OF DRILLING WITH AIR OR GAS
James L. Lummus and Billy V. Randall, Tulsa, Okla., assignors to Pan American Corporation, Tulsa, Okla., a corporation of Delaware
Filed May 23, 1962, Ser. No. 198,415
2 Claims. (Cl. 175—71)

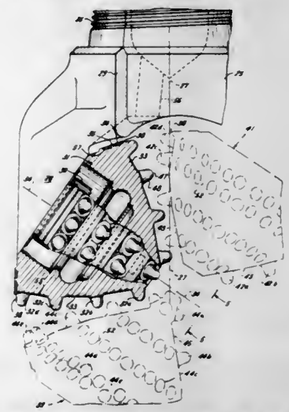
1. In a method of drilling a well in which gas is used as the circulation fluid and wherein the rate of influx of aqueous formation fluid selected from the group consisting of fresh water and salt water brine is sufficiently high to interfere with the effective removal of cuttings from said well during the drilling thereof, the improvement which comprises adding to the well bore liquid a sufficient quantity of a foaming agent to produce a mixture having a foam index in said brine of at least about 200 to 230, said agent being a condensation product obtained by reacting approximately 2 mols of diethanolamine with about 1 mol of a C_{12} to C_{14} fatty acid and neutralizing the excess amine, and a solubilizing agent for said product selected from the group consisting of alkali and alkaline earth metal salts of sulfate esters of alkylated phenols having from about 4 to about 40 ethylene oxide groups linked to the oxygen atom of the phenol group and from about 8 to 18 carbon atoms in the alkyl side chain, nonylphenoxypoly (ethyleneoxy) ethanol, about 88 weight percent of which is ethylene oxide, and a condensate of ethylene oxide with a hydrophobic base formed by condensing propylene oxide with propylene glycol and having a molecular weight of about 8,000 in which said solubilizing agent is present in a concentration of from about 25 to about 50 weight percent of the total mixture, and thereafter removing said formation fluid from the well bore in the form of a foam.

3,223,187
MEANS FOR CONTROLLING DRILL BIT TORQUE IN ROTARY PERCUSSIVE DRILLING
James M. Cleary, Dallas, Tex., assignor to The Atlantic Refining Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Nov. 7, 1962, Ser. No. 236,006
8 Claims. (Cl. 175—320)



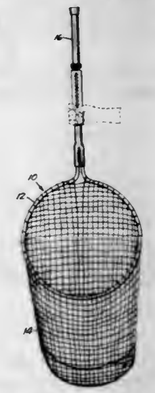
5. A rotary percussive drilling system comprising in combination earth drilling means, percussive means adapted to impart a longitudinal force at time separated intervals to said drilling means, rotary drive means adapted to rotate said drilling means and said percussive means, torque control means between said drilling means and said rotary drive means and adapted to allow limited rotational movement of every component of said drilling system above said torque control means relative to said drilling means during said intervals when said longitudinal force is imparted to said drilling means therefor, said limited rotational movement being greater than the angle that said drilling means would normally rotate during a period equal to said interval of application of said longitudinal force and less than the angle that said drilling means would normally rotate during the period between applications of said longitudinal force, and said torque control means adapted to cause said drilling means to recover its position relative to every component of said drilling system above said torque control means during the period between applications of said longitudinal force.

3,223,188
ROLLER CONE ROCK BIT
John B. Coulter, Jr., and James B. Steen, Fort Worth, Tex., assignors to Chicago Pneumatic Tool Company, New York, N.Y., a corporation of New Jersey
Filed Oct. 26, 1962, Ser. No. 233,219
7 Claims. (Cl. 175—341)



1. A rock bit comprising a bit head having a plurality of roller cones mounted thereon for rotation about individual axes extending downwardly and inwardly, said cones having teeth arranged in circumferential rows and said teeth having conically shaped root portions projecting from the roller cone surface, and having hemispherical tips merging with said root portions.

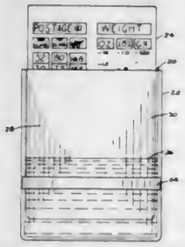
3,223,189
WEIGH SCALE FOR FISH LANDING NETS
Roy F. Robbins, St. Paul, Minn., assignor to Louis G. Ernster, doing business as Erneo Enterprises, South St. Paul, Minn.
Filed Feb. 20, 1964, Ser. No. 346,286
5 Claims. (Cl. 177—149)



1. A weigh scale comprising an elongate bar for holding a load to be weighed, a cylinder axially movably

journalled on said bar with said bar extending completely through said cylinder, an annular chamber being defined within said cylinder about said bar, a cylindrical coil spring positioned in said chamber about said bar, a first spring stop fixed to said cylinder at one end of said spring, a second spring stop affixed to said bar at the other end of said spring, said second stop being axially movable with respect to said cylinder, means on said cylinder for adjustably limiting the movement of said second stop in response to normal urging of said spring.

3,223,190
POSTAGE SCALE WEIGHT AND VOLUME MEASURE
Fred R. Tietge, 3963 Mount Blackburn Ave., San Diego, Calif.
Filed June 16, 1964, Ser. No. 375,618
1 Claim. (Cl. 177—207)



A hydrostatic weighing scale, comprising in combination:

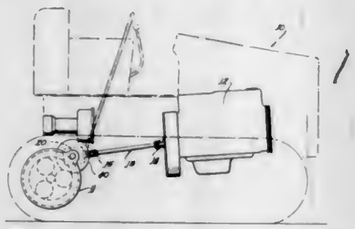
(A) An integral open top container element for a liquid, such as water;

(B) an integral floating element in the container element capable of floating within the liquid in the container element,

(1) said container having an arcuately shaped surface defined by at least one vertical axis and the floating element having a dissimilar shaped horizontal cross section and including at least three vertically extending surfaces juxtaposed the said arcuate surface and forming means for guiding said floating element throughout the length of its vertical movement,

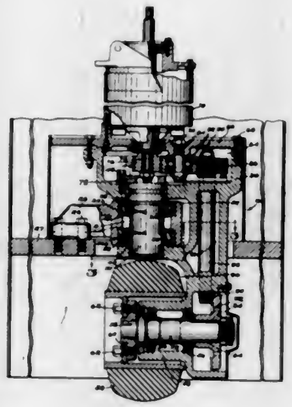
(2) said floating element having horizontally extending indicia thereon, said indicia being spaced vertically of one another.

3,223,191
FINAL DRIVE FOR CRAWLER TYPE TRACTOR
John Frederick Swift, Chicago, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of New Jersey
Filed June 14, 1962, Ser. No. 202,418
9 Claims. (Cl. 180—6.48)



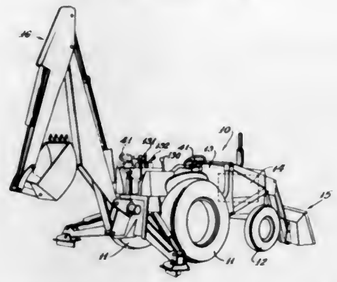
1. In a crawler tractor of the type having track laying means on each side thereof, the improvement therein which comprises: a final drive for said track laying means including; a gearbox between said track laying means; a hydromechanical transmission for each track laying means, having an input and an output shaft, in which the input power is split into a hydraulic power path and a mechanical power path, said power paths being combined forming the output power of said transmissions, said hydromechanical transmissions permitting the transmission of power simultaneously over both paths wherein infinitely variable speed ratios are available and alternately transmission of power solely through the mechanical power path when the input and output shafts rotate in the same direction and at equal speeds; motion transmitting means for conveying rotary motion from said gearbox to said input shafts of said hydromechanical transmissions; and motion transmitting means connecting each of said output shafts to one of said track laying means.

3,223,192
STEERABLE POWER OPERATED TRACTION WHEEL UNIT
Francis W. Dorion, South Boston, and Bernard B. Becker, Belmont, Mass., assignors to Lewis-Shepard Company, Watertown, Mass., a corporation of Massachusetts
Filed Aug. 16, 1963, Ser. No. 302,574
3 Claims. (Cl. 180—13)



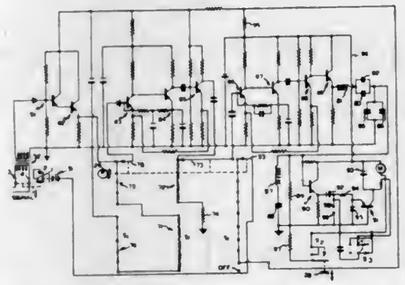
1. A steerable power operated traction wheel unit for use with a material handling truck comprising the combination of: a cantilever member extending outwardly from said truck, said cantilever member having a passageway extending vertically through the unsupported distal end thereof; annular bearing means positioned within said passageway; a support strut having an intermediate section with a gear chamber at its upper end and a laterally disposed tubular extension at its lower end, said gear chamber connected to said tubular extension by a fully enclosed passageway extending vertically through said intermediate section; a pivot pin fixed relative to said support strut, said pivot pin journaled for rotation within said bearing means in order to pivotally connect said support strut to said cantilever member; a traction motor carried by the upper end of said support strut; an axle journaled for rotation within said tubular extension; a traction wheel fixed to one end of said axle; a vertically disposed drive shaft journaled for rotation within the fully enclosed passageway in said intermediate section; gear means connecting the lower end of said drive shaft to the other end of said axle; and, a horizontally aligned gear train contained within said gear chamber, said gear train being operative to connect the traction motor to the upper end of said drive shaft.

3,223,193
VEHICLE WITH REVERSIBLE CONTROLS
John F. Reynolds, La Grange, Tommy A. Middlesworth, Hinsdale, and Richard R. Steingas, Naperville, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of New Jersey
Filed Mar. 2, 1964, Ser. No. 348,739
10 Claims. (Cl. 180—77)



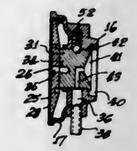
1. In a hydraulically powered and controlled vehicle having traction and steerable wheels with mechanism for steering the latter, and an operator's control station with a floor therein, the combination, comprising: an operator's seat; said seat being pivotally supported on said floor substantially midway fore-and-aft of said operator's station and rotatable about a vertical axis so as to selectively face forwardly or rearwardly; steering control mechanism including control valve means, fluid-carrying conduits adapted for communicatively connecting said valve means to a source of fluid pressure and to the mechanism for steering said steerable wheels, and an operator's steering wheel operable for actuating said valve means; means mounting said steering control mechanism for positioning of said steering wheel adjacent said seat; said steering control mechanism being swingable in a vertical fore-and-aft extending plane for positionable use with each position of said seat; a plurality of food operated controls; means connecting said latter controls with the instrumentalities to be operated thereby, whereby one of the foot controls, whether facing in one direction or the other, is operated by the same foot of an operator, and whereby another of the foot controls is operated transposed between a forwardly and a rearwardly facing position of an operator.

3,223,194
SONIC VIBRATION LOCATOR AND INDICATOR
Paul L. Michael, 667 Franklin St., State College, Pa.
Filed Nov. 23, 1962, Ser. No. 239,575
2 Claims. (Cl. 181—.5)



1. An instrument for indicating the intensity of sonic vibrations comprising, first and second amplifier stages, an input circuit having an input and an output, transducer means for supplying a signal representative of a sonic vibration frequency to the input of said input circuit, a first voltage divider connected to the output of said input circuit and a second voltage divider connected to the output of said first amplifier stage, a ground circuit, first switching means connected to the input of said first amplifier stage movable between said ground circuit and the output of said input circuit, and second switching means movable with said first switching means connected to the input of said second amplifier stage movable between said first and second voltage dividers, said second switching means connecting only said second amplifier stage with the output of said input circuit when said first switching means is connected to said ground circuit, and said first and second amplifying stages connected in series with the output of said input circuit by said first and second switching means when said second switching means is connected to the second voltage divider, a meter for rendering an indication of the signal representative of the sonic vibration, and a bandpass filter for passing signals within a predetermined range of sonic vibration frequencies connecting said meter to the output of said second amplifier stage.

3,223,195
STETHOSCOPE WITH CONVERTIBLE RECEIVER
Derek R. Allen, Downey, Calif., assignor to Allen Medical Instrument Corporation, Glendale, Calif., a corporation of California
Filed Dec. 31, 1962, Ser. No. 248,494
5 Claims. (Cl. 181—24)

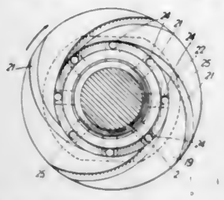


1. A stethoscope receiver comprising: a housing embodying a small bell at one end, means defining a central cylindrical valve bore coaxial with said bell, and a radial communication port intersecting said bore; a core comprising a diaphragm at one end and a valve plug having a small bell receiving face at its other end, said valve plug having a first valve passage communicating with the center of the diaphragm and having in its lateral wall a mouth positioned to register with said communication port, said valve plug having a second valve passage communicating with said small bell receiving face and having in its lateral wall a mouth angularly displaced from the mouth of said first valve passage and adapted to register with said communication port upon rotation of said core said housing having a large bell at its other end, and said core being axially shiftable to position said diaphragm selectively in the plane of the rim of said large bell, for diaphragm reception of sounds, and at the bottom of said large bell, to provide a large-bell chamber for air-transmission of sounds.

3,223,196
MOTOR VEHICLE GEARBOX AND PUMP
Thomas Charles Felix Stott, Harpenden, England, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 21, 1962, Ser. No. 246,401
Claims priority, application Great Britain, Jan. 8, 1962, 656/62
15 Claims. (Cl. 184—6)

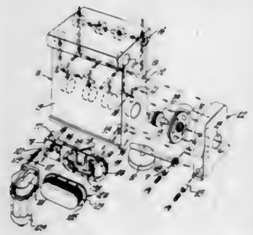
9. An oil pump comprising a rotary drive shaft, an impeller disc which is fixed to the drive shaft and has in one face grooves extending with an inward component from the outer edge toward the center of the impeller disc and a circumferential component in the opposite direction

to the normal direction of rotation of the drive shaft, a stationary oil sump into which part of the outer edge of the impeller disc extends, and a plane stationary surface disposed adjacent the grooved face of the impeller disc



such that, as the impeller disc rotates, oil scooped into the outer ends of the grooves is moved inwardly along the grooves and means to conduct oil from the grooves to a point requiring lubrication.

3,223,197
OIL PUMP AND COOLER ASSEMBLY FOR AN INTERNAL COMBUSTION ENGINE
George W. Conover and Kenneth L. Hulsing, Plymouth, and Joseph G. Koehler, Farmington, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Original application June 8, 1960, Ser. No. 34,728, now Patent No. 3,094,190, dated June 18, 1963. Divided and this application June 17, 1963, Ser. No. 288,377
2 Claims. (Cl. 184—6)



2. An oil pump, filter and cooler assembly for an internal combustion engine and comprising;

a cylinder block having an end wall and a pair of side walls, said cylinder block having oil distribution passages therein;

separate oil passage means in said cylinder block and extending from each of said side walls through said end wall;

a cover, carrying an engine driven pump and having passages formed therein, each of said passages including ports opening to said end wall, certain of said ports communicating with said oil passage means and others of said ports communicating with said oil distribution passages;

an adapter plate secured to one of said side walls, said adapter plate having passage means formed therein and communicating with certain of said cylinder block oil passage means;

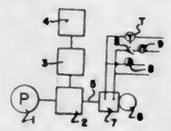
an oil filter mounted on said adapter plate having inlet and outlet passages formed therein communicating with said adapter plate passage means said oil filter being alternatively mountable on said adapter plate in any one of a plurality of positions;

and an oil cooler mounted on said adapter plate, said oil cooler having inlet and outlet passages formed therein and in communication with said adapter plate passage means;

whereby said oil cooler and said oil filter communicate with said pump and said oil distribution through said certain oil passage means;

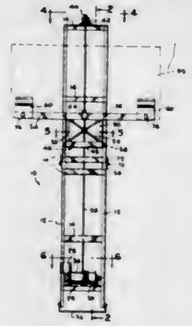
said adapter plate being alternatively mountable on said other side wall whereby to communicate said adapter plate passage means with other of said oil passage means and to communicate said oil cooler and said oil filter with said pump and said oil distribution passages through said other oil passage means rather than through said certain oil passage means.

3,223,198
FLUID PRESSURE LUBRICATING SYSTEM INDICATOR MEANS
Thomas J. Gruber, Chagrin Falls, Ohio, assignor to Eaton Manufacturing Company, Cleveland, Ohio, a corporation of Ohio
Filed Apr. 17, 1963, Ser. No. 273,699
13 Claims. (Cl. 184—7)



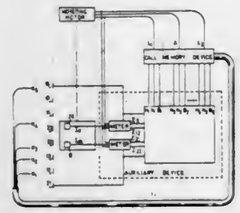
1. In combination, a lubricating pump, a metering valve and a bearing adapted to be lubricated thereby, cycling flow indicator means between said metering valve and such bearing operative to cycle completely in response to the flow of a measured amount of lubricant from such metering valve to such bearing, and signal means operative in response to completion of such cycle to signal the proper lubricant flow to such bearing.

3,223,199
SCAFFOLDING HOIST
Leo C. Schwehr, 33 Marshall Drive, Billings, Mont.
Filed Dec. 14, 1962, Ser. No. 244,720
1 Claim. (Cl. 187—2)



A portable hoist structure adapted to be attached to scaffolding of the type comprising tubular structural members, said hoist structure comprising a generally rectangular supporting frame which includes a pair of vertical members defining a pair of inwardly facing channels forming tracks, outwardly extending means located adjacent the top and bottom of said frame, means on said extending means for securing the frame to said tubular structural members of said scaffolding, the lowermost of said extending means being wider than said upper extending means whereby said frame is inclined upwardly toward said scaffolding when secured thereto, a carriage vertically movable along said frame, said carriage comprising a rectangular structure dimensioned to be received within said vertical members whereby said carriage and said vertical members are substantially coplanar, wheels mounted on said carriage, said wheels extending laterally into said channels and being positioned at the four corners of said carriage, said carriage including a cross bar extending for a substantial distance outwardly of said vertical members on opposite sides of said hoist, said cross bar having means for receiving articles to be carried by said hoist, and means for moving said carriage upwardly and downwardly relative to said frame comprising a reversible motor, a worm gear driven by said motor, a winch operatively connected to said gear, a pulley mounted at the top of said frame, a cable extending from said winch over said pulley and being connected to said carriage whereby the cable is adapted to be wound and unwound by said winch, said motor and worm gear providing automatic brake means for said carriage when the carriage is at rest on said frame, and wherein said lowermost extending means comprises a platform and wherein said motor is supported on said platform.

3,223,200
ELEVATOR CONTROL SYSTEM EMPLOYING LOGICAL ELEMENTS
André Lejeune, Mont-sur-Marchienne, Belgium, assignor to Ateliers de Constructions Electriques de Charleroi (ACEC), Brussels, Belgium
Filed Jan. 21, 1963, Ser. No. 252,879
Claims priority, application France, Jan. 23, 1962, 885,640
3 Claims. (Cl. 187—29)



1. An elevator control for an elevator system formed of an elevator car, a shaft and a hoisting motor for moving said car in said shaft, a stop device for stopping said car when ascending and a stop device for stopping said car when descending, said elevator control comprising:

(a) at least one first series of locating elements (**12, 13, 14, 15**) in said system for indicating the locations where said stop device for an ascending car must be controlled;

(b) a first passage detector (**10**) in said system displaceable at the speed of the car in relation to the locating elements of said first series; said first passage detector cooperating with the locating elements of said first series;

(c) at least one second series of locating elements (**21, 22, 23, 24**) in said system for indicating the locations where said stop device for a descending car must be controlled;

(d) a second passage detector (**20**) in said system displaceable at the speed of the car in relation to the locating elements of said second series; said second passage detector cooperating with the locating elements of said second series;

(e) a device for emitting auxiliary control signals:

for each floor, except the bottom floor, at least one signal (B) indicating if the car is below the location where said stop device for an ascending car is actuated;

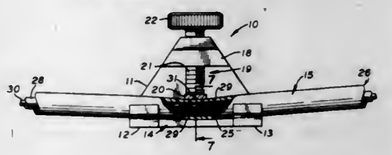
for each floor, except the top floor, at least one signal (H) indicating if the car is above the location where said stop device for a descending car is to be actuated, and

at least one signal (N) indicating if the car is between the above two locations;

(f) said auxiliary control signal emitting device formed by logical circuits sensitive to the signals emitted by the passage detectors I_m and I_d and to a signal (S) indicating the direction of rotation of said hoisting motor;

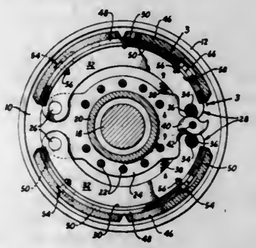
(g) a call memory device, in said assembly, to which said auxiliary control signals and call control signals ($K_1K_2K_3K_4K_5$) are applied; said call memory device emitting a hoisting signal (S), a lowering signal (S′) and a stop signal for said hoisting motor.

3,223,201
BRAKE FOR A PUSH-PULL CONTROL CABLE
Donald W. Waner, Cuyahoga Falls, Ohio, assignor to The Morse Instrument Co., Hudson, Ohio, a corporation of Ohio
Filed May 4, 1964, Ser. No. 364,737
4 Claims. (Cl. 188—67)



1. A brake in combination with a push-pull control cable having a casing formed of wires laid in substantially side-by-side relation in a long pitched helix with a reciprocally slidable core member received therein, said brake comprising, an anvil having a split portion for supporting said cable casing thereacross, a plunger, depressor means actuated by said plunger, said plunger oriented transversely and medially of said split portion, a means selectively to drive said plunger toward and away from said split portion to engage said casing, whereby the wires of said casing are rearranged so that said casing frictionally engages the core member.

3,223,202
METHOD AND MEANS FOR RELINING BRAKES IN TRUCK AND TRAILER BRAKE SYSTEMS
Nicklas R. De Witt, 1316 67th St., Emeryville, Calif.
Filed Feb. 11, 1963, Ser. No. 257,380
4 Claims. (Cl. 188—78)



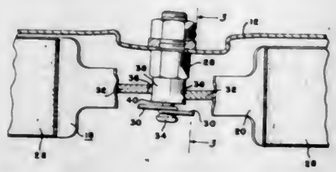
1. In a brake system of the type employed for trucks and trailers, said brake system including a wheel-borne brake drum, a pair of pivotally mounted brake shoes having flanges extending axially relative to said drum, a metal strap attached to each flange, a brake lining attached to each strap, with said drum defining therein a generally hand-accessible space including a station at which a metal strap and lining attached thereto may be axially moved into and out of said drum, and means normally maintaining said linings in radially inwardly spaced

relation with respect to said drum: the improvement enabling removal and replacement of said attached strap and lining elements without the removal of said drum from its laterally surrounding position with respect to said brake shoes, said improvement comprising aligned elongated slots formed in said flanges and straps, beaded bolts extending through said slots, elongated recesses formed in the radially inwardly directed sides of said linings adapted to accommodate the heads of said bolts, the slots in said straps having reduced portions through which said heads cannot pass and having enlarged portions through which said heads can pass, nuts on the radially inwardly directed ends of said bolts adapted when tightened to maintain said bolts in the reduced portions of said strap slots and adapted when loosened to enable said bolts to be moved arcuately to the enlarged portions of said strap slots to thereby condition said attached strap and lining elements for radial movement outwardly from said flanges for subsequent movement arcuately to said station and for subsequent movement axially out of said drum at said station.

3,223,203
SELF-ADJUSTING BRAKE MECHANISM

Edward L. Nash, Farmington, and Vernon F. Fishtahler, Lathrup Village, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Oct. 24, 1963, Ser. No. 318,657
4 Claims. (Cl. 188—78)



1. A brake assembly comprising; a brake drum, a backing plate normally rigid but deflectable during violent brake actuation, a plurality of brake shoes mounted on said backing plate in proximate relationship to an inside periphery of said brake drum and adapted to move into firmer engagement with the brake drum by a servo action during actuation thereof, brake shoe anchoring means mounted on said backing plate perpendicular to the operative surfaces of said brake shoes, and shoe retraction means arranged to urge said brake shoes towards said anchoring means, said anchoring means having integral portions adapted to retain said brake shoes in lateral engagement with said anchoring means as the anchoring means is deflected by the servo action of the brake shoes during actuation thereof.

3,223,204
ADJUSTING MEANS FOR INTERNAL SHOE DRUM BRAKES

Leslie Cyril Chouings, Leamington Spa, England, assignor to Automotive Products Company Limited, Leamington Spa, England

Filed Mar. 12, 1964, Ser. No. 351,310
Claims priority, application Great Britain, Mar. 13, 1963, 10,008/63
7 Claims. (Cl. 188—79.5)

1. An automatic adjusting device for a brake comprising a brake plate, a brake web with a brake shoe carried by said plate, reciprocating means for moving said web and shoe in one direction during a braking operation, retraction means for retracting said web and shoe when releasing a braking action, a brake shoe adjustment lever extending circumferentially of said web, one end of said lever being pivotally connected to said web, friction means disposed adjacent said lever, including a dished washer mounted on a bolt extending through said web and lever, to maintain the opposite lever end in frictional engagement with said web, said lever being disposed on one side only of said web and between said web and back plate, said friction means and said lever being two separate members, slot means in said lever, a pin fixed on said back

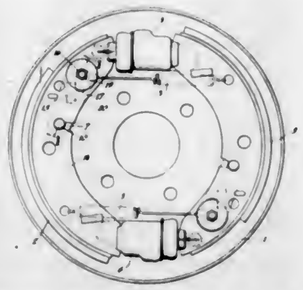
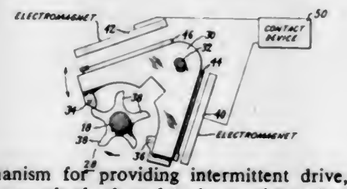


plate and extending into said slot means only, the width of said slot means being of substantially larger dimension than the diameter of said pin to permit swinging pivotal movement of said lever to adjust for excessive movement of said brake shoe due to wear and said web having a hole therein adjacent the opposite lever end and a dimple disposed in said hole.

3,223,205
MECHANISM PROVIDING INTERMITTENT DRIVE

Dudley P. McCurdy, York Harbor, Maine, assignor to General Electric Company, a corporation of New York

Filed May 31, 1963, Ser. No. 284,685
1 Claim. (Cl. 188—85)



A mechanism for providing intermittent drive, comprising, a star wheel adapted to be continuously driven, said star wheel having tooth members separated by substantially 72°, an unitary escapement device having opposing tooth members, said opposing tooth members movable into and out of blocking relation with said tooth members on said star wheel, a pair of opposed electromagnet means energizable by an electrical pulse, said opposed electromagnet means when energized operating on said escapement to move said opposing tooth members alternately into and out of blocking relation with said tooth members on said star wheel whereby said star wheel may be driven through an arc of substantially 36° before being blocked by one of said opposing tooth members.
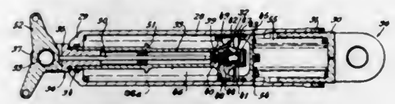
3,223,206
HYDRAULIC LOCKING MECHANISMS

Wilfred Nicholas Bainbridge, Leamington Spa, and Frederick James Bradbury, Chester, England, assignors to Automotive Products Company Limited, Leamington Spa, England

Filed Aug. 15, 1963, Ser. No. 304,716
1 Claim. (Cl. 188—96)

A hydraulic locking mechanism for a seat and the like comprising a cylinder with a first piston therein having a hollow piston rod extending out one end of the cylinder,

port means in said first piston for permitting liquid to flow from one side of said first piston to its opposite side including an axial passage forming a valve seat, a valve for seating on said valve seat to close off said axial passage, a passage in said piston in communication with one side of said first piston and one side of said valve, and a second passage in communication with the opposite side of said first piston and in communication with the interior of said hollow piston rod and the oposite side of said valve, a valve disposed to seat on said valve seat to close off said axial passage, a first piston spring means disposed in said cylinder adjacent said one end normally urging said first piston toward the opposite end of said cylinder so said piston rod is in a retracted position with

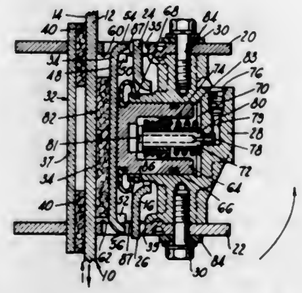


respect to said cylinder, a second piston in said cylinder disposed adjacent the side of said first piston opposite said piston rod, a second piston spring means normally urging said second piston in a direction toward said first piston, a tappet member extending through said hollow piston rod and out said one end of the cylinder, said tappet member having its inner end adapted to manually open said valve to permit liquid to flow through said axial passage to the spaces in the cylinder on opposite sides of the first piston, said valve being constructed to be opened by said tappet member, and a cam lever outside said cylinder operatively connected to said tappet member to move said tappet member axially of said cylinder to open said valve, and coupling means for connecting said mechanism to a seat.

3,223,207
DISK BRAKE FLUID INLET AND BLEEDING ARRANGEMENT

Richard T. Burnett and James J. Powlas, South Bend, Ind., assignors to The Bendix Corporation, South Bend, Ind., a corporation of Delaware

Original application Nov. 21, 1960, Ser. No. 70,640, now Patent No. 3,166,156, dated Jan. 19, 1965. Divided and this application Nov. 30, 1964, Ser. No. 414,704
4 Claims. (Cl. 188—152)

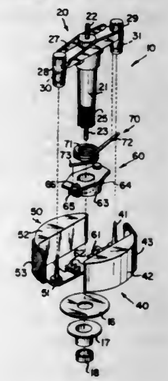


1. In a brake: a cylinder housing having a bore closed at the rear end thereof, and open at the front end thereof, a piston slidable in said bore, a recess in said piston open at the rear end thereof, said recess and said bore together defining a fluid chamber, a member secured at the rear end thereof to said closed end of said bore and extending forwardly therefrom into said recess, automatic adjusting means surrounding said member and operatively connected thereto and to said piston for adjusting the released position of said piston, said automatic adjusting means separating said fluid chamber into a front portion which is entirely within said piston recess and a rearward portion, passage means communicating said front portion of said fluid chamber with said rear portion of said fluid chamber, and fluid inlet passage means located in the closed end of said bore and within said member opening into said front portion of said fluid chamber.

3,223,208
GOVERNOR

John W. Ryan, Bel Air, Manning Citron, Los Angeles, and Berne Danielsen, Pacific Palisades, Calif., assignors to Mattel, Inc., Hawthorne, Calif., a corporation of California

Filed Dec. 12, 1963, Ser. No. 330,114
5 Claims. (Cl. 188—184)

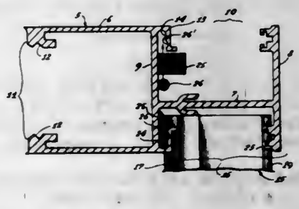


5. An inexpensive, easily constructed centrifugal governor adapted to eliminate vibration therein irrespective of the orientation or acceleration of the governor, comprising:
(a) a rotatably mounted rotor;
(b) two weights rotatably mounted on said rotor;
(c) idler means interlocking said weights for equalizing the forces exerted thereon; and
(d) spring means connecting said idler means to said rotor for biasing said weights inwardly.

3,223,209
SEALED FRAME CROSS JOINT

Stephen A. E. Skromeda, Torrance, Calif., assignor to Pacific Curtainwall, Inc., Long Beach, Calif., a corporation of California

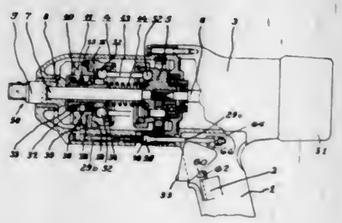
Filed Apr. 16, 1963, Ser. No. 273,476
2 Claims. (Cl. 189—36)



1. A sealed joint in a wall structure comprising:
(a) an extruded vertical member formed of an exteriorly disposed tubular box section joined by an integral web to a rear wall, recesses being defined on each side of said web between said box section and rear wall to retain the side edges of wall panels to be supported therein,

(b) flange means integrally formed on the rear side of said box section on each side of said web adjacent said recesses defining with said rear side of said box section U-shaped channels retaining a seal,
(c) a slot provided in each flange means communicating with each channel,
(d) an extruded T-shaped horizontal member defined by a panel supporting web and a cross bar at one end thereof having a cross-section substantially identical to the configuration of said slot, said horizontal member being disposed normal to said vertical member with one end thereof extending into the adjacent recess of said vertical member with said cross bar positioned snugly in said slot to form said joint,
(e) and a compressible-expandable seal retained in said channel, a portion of said seal extending through said slot and exerting pressure against said cross bar and thereby forming a tight, sealed joint between said vertical and horizontal members.

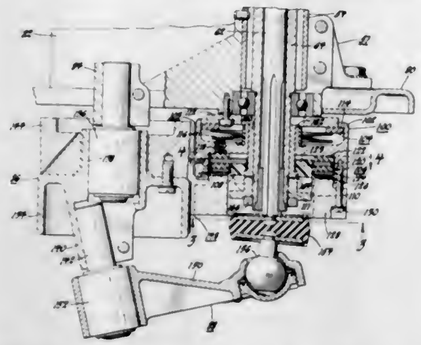
3,223,210
PERCUSSION OR IMPACT DEVICE
Benno Schweizer, Stuttgart, Germany, assignor to Firma C. & E. Fein, Stuttgart, Germany
Filed June 20, 1960, Ser. No. 37,454
Claims priority, application Germany, June 20, 1959, F 28,739
7 Claims. (Cl. 192—.02)



2. A rotary impact hand tool comprising a rotatable shaft, an electric motor connected to said shaft to rotate said shaft, a tool spindle, a first clutch element connected to said tool spindle and rotatable therewith, a second clutch element connected to said shaft, said first and second clutch elements having engaged faces with at least a portion disposed obliquely to the axis of rotation, means to bias said second clutch element into engagement with said first clutch element to drive said tool spindle, a switch connected to said electric motor for turning said electric motor on and off and having a displaceable actuating contact disposed in the path of said second clutch element and displaceable thereby to deactivate said electric motor when said clutch elements are displaced relatively by the transmission of a torque greater than said biasing means.

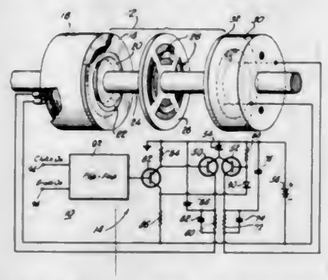
3,223,211
MOTOR CLUTCH AND BRAKE CONTROL FOR DOMESTIC APPLIANCE
John R. Fosler, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Aug. 20, 1963, Ser. No. 303,447
6 Claims. (Cl. 192—.044)

6. In combination, a washing machine having a spin tub, and a roller drive mechanism for rotating said tub, said mechanism comprising a support means, a reversible powershaft supported by said support means, spin shaft means connected to said tub and carried by said support means, a spin drive assembly supported on said spin shaft means including a spin drum and an inertia device, said inertia device being interposed between said spin drum in said spin shaft means for providing a selective driving connection therebetween, and a spin roller rotatably and relatively movably supported adjacent said spin drum for self-energizingly positioning itself in power transmitting relationship between said powershaft and said spin drum when said powershaft is operating in one direction and in lightly scuffing, non-driving engagement with said spin drum when the powershaft is operating in the reverse direction, said spin roller having a resilient tire thereon subjected to irregular wear at the surface thereof when said powershaft is operating in said reverse direction



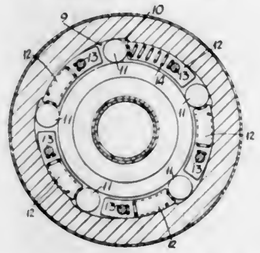
by the scuffing engagement of said tire with said spin drum, said inertia device including means connected for movement relative to the spin drum for controlling the selective driving connection between said spin drum and said spin shaft means and having sufficient mass to overcome the effects of said irregular tire wear on the transmission of power from said spin roller to said spin drum thereby to provide constant rate acceleration of said spin tub when said power shaft is operating in said one direction.

3,223,212
ELECTROMAGNETIC CLUTCH-BRAKE SYSTEM
Francis H. Shepard, Jr., Lee Lane, Berkeley Heights, N.J.
Filed Aug. 21, 1961, Ser. No. 132,684
6 Claims. (Cl. 192—18)



1. An improved electromagnet dual drive arrangement comprising a first electromagnet and a second electromagnet spaced closely apart, an element movable against one then the other electromagnet into one then another drive condition, said element having a ferromagnetic part which is magnetizable and engageable in intimate zero air-gap contact by either electromagnet, and circuit means to energize said electromagnets with currents to move said element on command into engagement with either one of said electromagnets, said circuit including first switch means to energize one electromagnet with current and second switch means to simultaneously de-energize the other electromagnet for a time long enough to permit said element to shift toward said energized electromagnet, and vice versa, first capacitor means shunting said first switch means to provide a reverse path for discharge of current from said first electromagnet, and second capacitor means shunting said second switch means to provide a reverse path for discharge of current from said second electromagnet, said switch means being simultaneously controllable in opposite phases by an electric signal, whereby the time of shifting said element from one electromagnet to the other is very short and the magnetic holding and shifting forces acting on said element are very high.

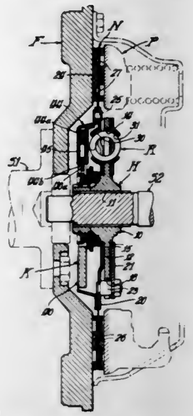
3,223,213
ONE WAY ROLLER CLUTCH WITH FREEING SHOES
Roy Price Bowcott, Solihull, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England
Filed Apr. 6, 1964, Ser. No. 357,546
Claims priority, application Great Britain, Apr. 10, 1963, 14,282/63
1 Claim. (Cl. 192—45)



A unidirectional clutch comprising in combination a pair of concentric clutch members defining therebetween a substantially annular gap, the adjacent peripheries of said pair of clutch members being shaped to divide said substantially annular gap into a plurality of sections each having a relatively wide end and a relatively narrow end, a plurality of rollers located in the plurality of sections respectively, relative angular movement of said clutch members in one direction moving said rollers to said relatively wide ends of said sections so that no drive is imparted from one clutch member to the other, and relative angular movement of said clutch members in the opposite direction moving said rollers to said relatively narrow ends of said sections so that drive is imparted from one clutch member to the other, a number of arcuate shoes positioned in said substantially annular gap, there being one less shoe than roller and said shoes extending between the pairs of rollers, a plurality of stops on one of said clutch members, and a plurality of springs acting respectively between the plurality of stops and the rollers in a direction to urge the rollers towards said relatively narrow ends of said sections, each of said shoes having an arcuate length such that there is only a small clearance between a roller and the adjacent end of the shoe when the shoe is in contact with the next roller.

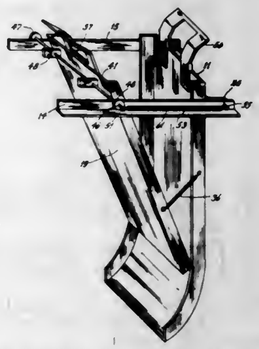
3,223,214
TORSIONAL VIBRATION DAMPENER ASSEMBLY
William L. Kuivinen, Mount Prospect, Ill., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Dec. 16, 1963, Ser. No. 330,790
8 Claims. (Cl. 192—107)

1. A torsional vibration dampener comprising:
a first rotatable member;
a second rotatable member;
first resilient means interposed between said first rotatable member and said second rotatable member and arranged to transmit torque from one of said members to the other while allowing limited relative rotational movement therebetween;
second resilient means having a first portion rigidly connected to one of said rotatable members and a second portion elastically movable with respect to said first portion; and
means establishing a frictional connection between said second portion of said second resilient means and



the other of said rotatable members, said means including additional resilient means providing a normal force directed generally parallel to the axes of rotation of said rotatable members, whereby the resultant friction force is substantially independent of the relative direction of rotation.

3,223,215
GRAVITY CONVEYORS
Aloysius N. Budjinski, Roselle, and James D. Georgia, Jersey City, N.J., assignors to the United States of America as represented by the Secretary of the Navy
Original application Aug. 10, 1962, Ser. No. 216,709. Divided and this application Jan. 26, 1965, Ser. No. 428,277
2 Claims. (Cl. 193—32)
(Granted under Title 35, U.S. Code (1952), sec. 266)

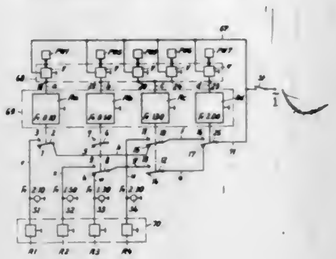


1. A gravity conveyor comprising, in combination:
dual aligned frame members having longitudinal raceways,
a chute having a channel-like bed mounted between said frame members,
a pressure shoe having an upper portion movably mounted on said raceways,
a tensioning means maintaining the lower portion of said shoe in pressed relationship with the lower portion of said chute.

3,223,216
PROGRAMME SELECTION CIRCUITS WITH COIN SLOT MACHINES FOR SELF-SERVICE LAUNDERETTES

Jakob Rub, Zurich, Switzerland, assignor to Maschinenfabrik Ad. Schulthess & Co. AG., Zurich, Switzerland

Filed Apr. 30, 1964, Ser. No. 363,936
Claims priority, application Switzerland, Nov. 25, 1963, 14,392/63
5 Claims. (Cl. 194—1)



4. A program selection circuit changing device for self-service automatic laundry machines having coin relays and programming relays for operation at predetermined coin values, each of said programming relays being adapted to control the cycle of washing operations and also being capable of energizing the machine upon the deposit of coins in said machine of a value equal to the value required for a predetermined program, comprising a terminal bar having a longitudinal slot, contact members mounted in said slot, certain of said contact members being electrically connected to said coin relays and other contact members being electrically connected to said programming relays, an insulating plate one of the edges of which is adapted to be removably mounted in the slot in said terminal bar, printed circuit conductors on the front and rear of said plate with the conductors on one side of the plate crossing the conductors on the other side of the plate, and forming spaced crossing points. Contact members on opposite sides of said plate along said one edge spaced to correspond to the spacing of said contact members whereby insertion of said plate in said terminal bar will establish electrical connections with the printed conductors on opposite sides of said plate and connectors extending through said plate at certain of said crossing points to electrically connect certain of the printed conductors on one side of the plate with certain of the conductors on the other side of the plate.

3,223,217
MECHANICAL MULTIPLE COIN COUNTING AND CONTROL MECHANISM FOR VENDING MACHINES

Francis C. Du Grenier, North Conway, N.H., assignor to The Seeburg Corporation, Chicago, Ill., a corporation of Delaware

Filed Feb. 14, 1964, Ser. No. 344,919
18 Claims. (Cl. 194—39)

1. Mechanical coin counting mechanism for coin operated vending machines comprising

coin sorting means adapted to accept coins of a plurality of kinds one by one in random order and to separate such coins according to kind.

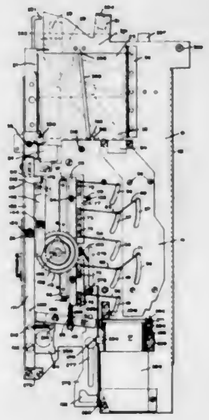
coin receiving means adapted to receive such coins and to hold the same until released therefrom by the operation of said vending machine,

coin delivery means including a substantially vertical coin chute for each kind of coin, said means adapted to receive such coins from said coin sorting means and to deliver such coins to said coin receiving means,

coin counting means including a pawl and associated ratchet wheel and a plurality of coin detecting fingers, said fingers adapted to be deflected by coins passing down said chutes, and when deflected to actuate said pawl,

each said coin delivery chute being provided with associated coin detecting fingers in such manner that a coin passing down such chute deflects that number of said fingers proportional to the value of such coin,

said fingers being arranged (where more than one such finger is required for a particular chute) an such manner that a coin passing down said chute



contacts each such finger associated therewith successively,

vending machine unlocking means including a cam wheel assembly associated with said ratchet wheel, a cam following lever assembly associated with said cam wheel assembly, and a lock bar assembly associated with the vending means of said vending machine, said means adapted to unlock said vending means when a sufficient value of coins has been inserted in such machine,

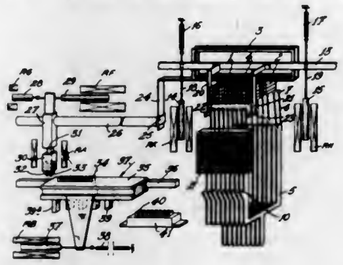
and reset means associated with said vending means to reset said coin counting means and to release for retention coins retained in said coin receiving means.

3,223,218
STAMPING DEVICE FOR EMBOSSING CHARACTERS ON PLATES

Rene Edgard Terzariol, Villers Cotterets, Aisne, France, assignor to l'Adressopresse, Société Anonyme des Anciens Etablissements Kléné & Cie, Courbevoie, France

Filed Nov. 1, 1963, Ser. No. 320,652
9 Claims. (Cl. 197—6)

1. In a stamping device for embossing characters on plates, in combination, a pair of spaced stationary boxes, a plurality of character holders slidably supported in rows and columns in said boxes, and arranged to slide in pairs constituting respective complementary male and female dies separated by a channel, a plurality of pairs of strikers equal in number to the number of said columns, each pair of strikers being externally disposed with respect to said boxes for association with the character holders in a single column, means for displacing each of a selected pair of said strikers in front of each of a selected pair of dies in a particular row of a corresponding column, latching means for said pairs of strikers for arresting selected of said pairs of strikers in front of a selected pair of dies pertaining to one of said rows, a plate-holder adapted for containing a removably disposed plate therein, said plate-holder having opened sides facing each box, said plate-holder being mounted for movement in its plane in said channel, primary displacement means for said plate-holder to move the same in said channel parallel to said rows and columns of character holders, in correspondence to the selections and motions of said strikers, secondary displacement means for said plate-holder for adding to the aforesaid motions two amplitudes corresponding one to a predetermined line of embossings on said plate and

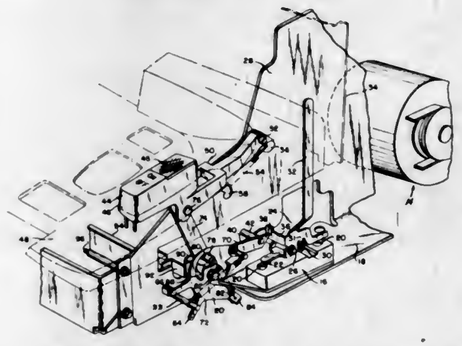


the second to a computing of the embossings and spacing actions previously effected on said predetermined line, locking means for locking said plate-holder in a position of embossing by a selected pair of dies, clamping means temporarily acting on said strikers in the direction of said channel, control means corresponding to each of said character holders, spaces and selection of lines, and ordinating means controlling, from the actuating of one of said control means, the sequential execution of said selections and motions of said pairs of strikers, of corresponding latching actions, of said plate-holder and corresponding computing and locking actions, and thereafter, of said clamping action.

3,223,219
ON-OFF SWITCH WITH COVER INTERLOCK AND OVERRIDING MEANS FOR TYPEWRITER

Samuel D. Cappotto and Everest C. Hunter, Syracuse, N.Y., assignors to SCM Corporation, a corporation of New York

Filed Apr. 5, 1962, Ser. No. 185,408
13 Claims. (Cl. 197—12)



1. On-off mechanism for a keyboard equipped power actuated office machine having a motor and a plurality of key activated instrumentalities comprising:

(a) a manipulatable on-off element;

(b) a switch adapted to be electrically connected to said motor;

(c) a member movable between first and second positions to activate and deactivate said motor by closing and opening said switch;

(d) means biasing said member to said first position;

(e) a transfer device operatively connected to said on-off element and comprising a lever movable alternately between first and second limit positions by successive like movements of the on-off element, said lever being engageable with said movable member as said lever moves from its first limit position to its second limit position to move said member from its first position to its second position against the force exerted on said member by said biasing means and effective in said second limit position to maintain said member in its second position and said lever being spaced from said member in its first limit position to allow said biasing means to move said member to its first position and close said switch;

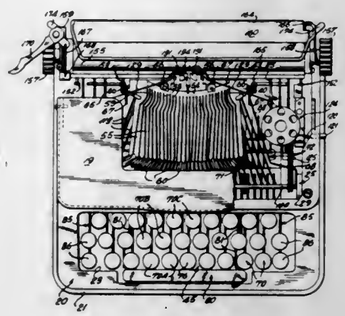
(f) a machine cover having a portion movable between closed and open positions; and

(g) means responsive to opening movement of said movable cover portion for moving said member to its second position against the force exerted by said biasing means to thereby open said switch, said last-named means operating independently of the manipulation of the on-off element.

3,223,220
TYPEWRITER HAVING SLIDING UNIVERSAL MEMBER

Willis E. Rexford, Girard, Pa., assignor to Louis Marx & Co., Inc., New York, N.Y., a corporation of New York

Filed Mar. 13, 1963, Ser. No. 264,843
6 Claims. (Cl. 197—22)



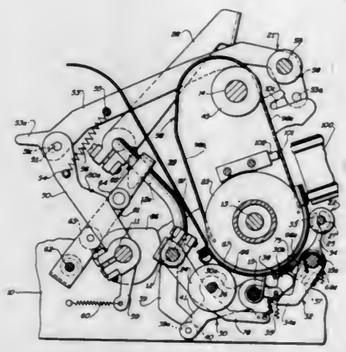
1. A typewriter comprising, in combination, a support base; a keyboard including typing key levers; a type bar basket; pivotally mounted bell cranks connecting respective typing key levers to respective type bars of said type bar basket; and guiding and spacing means for said typing key levers and said bell cranks; said guiding means including a comb extending transversely of said base, rearwardly of said keyboard; said base comprising a sheet of metal bent to form a forward wall extending upwardly of said base, a top wall extending substantially parallel to said base, and a rear wall extending downwardly from said top wall to said base; said front and top walls being formed with a plurality of slots equal in number to the number of typing key levers and to the number of associated bell cranks, said slots being closed end slots and extending upwardly in said front wall and rearwardly into said top wall; the portions of said slots in said front wall being wider than the portions thereof in said top wall; the portions of said slots in said front wall each receiving a typing key lever and one arm of its associated

bell crank, with clearance; the portion of each slot in said top wall receiving, with clearance, the normally upwardly extending arm of a bell crank; said bell cranks being pivotally mounted on a shaft extending longitudinally through said comb and mounted in walls extending upwardly from the base at opposite ends of said comb, said walls at opposite ends of said comb being parallel to each other and each formed with a substantially horizontal slot, with the two slots being aligned; a rod extending longitudinally of said comb top wall and having its ends engaged through said slots, said rod being engaged with that arm of each bell crank which is connected to a type bar; whereby, upon operation of a typing key lever, said rod will be displaced bodily along said slots while extending parallel to its original position; a carriage moveably mounted transversely of said base; escapement mechanism controlling movement of said carriage in one direction transversely of said base; and linkage means inter-connecting both ends of said rod and said escapement mechanism; said linkage means including a transversely pivoted elongated crank proximate to said escapement mechanism and cooperating therewith, and a pair of links, each being connected, at opposite ends, to one end of said elongated crank and a corresponding end of said rod extending longitudinally of said comb.

3,223,221
PAPER HANDLING MECHANISM

Ronald H. Arthur, West Hartford, Conn., assignor, by mesne assignments, to Royal Typewriter Company, Inc., New York, N.Y., a corporation of Delaware

Filed Mar. 13, 1963, Ser. No. 264,834
21 Claims. (Cl. 197—127)



1. In a typewriter having a movable printing position, the combination of

lower and upper closable and openable paper feeding mechanisms serially closable to grip and feed a sheet of paper and located below and above the movable printing position,

power means to drive said upper and lower paper feeding mechanisms,

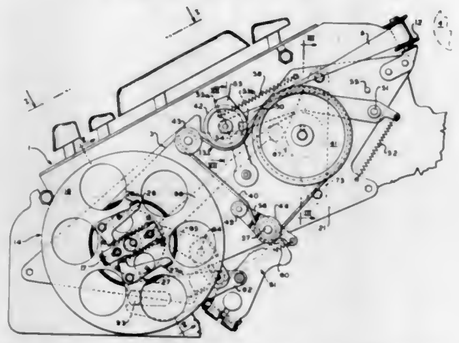
means responsive to passage of the trailing edge of the sheet through said lower mechanism for causing said lower mechanism to open and the upper mechanism to close thereby positively to effect feed of the trailing edge of the sheet past the movable printing position, and

means operated by said upper mechanism upon closing thereof for indicating the space on the sheet between its trailing edge and the movable printing position.

3,223,222
RIBBON FEEDING MECHANISM

Charles A. Parker, East Orange, N.J., assignor to Monroe International Corporation, a corporation of Delaware

Filed Mar. 31, 1961, Ser. No. 99,869
7 Claims. (Cl. 197—151)



1. In a business machine having printing mechanism including an inked printing ribbon adapted to be fed to present successive portions thereof for use, and means for feeding said inked ribbon, said feeding means including:

at least two feeding members presenting to each other opposed, parallel, cooperating gripping surfaces of substantial length in the direction of ribbon feeding movement between which surfaces said ribbon is gripped throughout said length;

said members being mounted for feeding movement during which movement said cooperating gripping surfaces and said ribbon gripped therebetween do not move relative to one another;

one of said feeding members comprising a belt;

the other of said feeding members comprising a wheel;

said belt being wrapped around at least a portion of the gripping surface of said wheel;

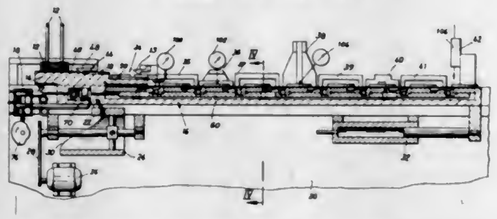
said ribbon being gripped between said wheel and said belt; and

drive means for effecting feeding movement of said feeding members.

3,223,223
APPARATUS FOR AUTOMATICALLY INSPECTING SPLIT RINGS

Ernst Fuhrmann, Burscheid, Germany, assignor to Goetzewerke Friedrich Goetze A.-G., Burscheid, Germany

Filed Oct. 19, 1964, Ser. No. 404,898
10 Claims. (Cl. 198—19)

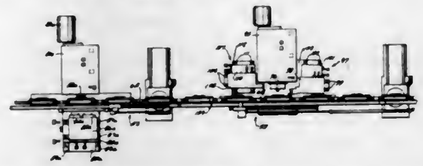


1. A conveyor apparatus for automatically moving split piston rings over a plurality of inspection stations which are serially arranged over the length of said apparatus comprising; support means, a common magazine from which said rings are sequentially passed through to said stations, and reciprocating slide means having means for withdrawing rings from said magazine and also having pusher means operatively connected therewith for intermittently engaging and moving said rings successively from station to station, said slide means comprising a main slide means having said pusher means thereon which are movable from an inoperative position wherein they do not engage the rings, to an operative position wherein they do engage and move said rings, and an auxiliary slide means having caming surfaces thereon in operative engagement with said pusher means for moving said pusher means into said operative positions upon the forward movement of said main slide means and for moving said pusher elements into said inoperative position upon the rearward movement of said main slide means.

3,223,224
MACHINE TOOL

Arthur H. Fotsch, Wauwatosa, Gilbert W. Ross, Brookfield, and Richard F. Fischer, Santa Rosa, Wis., assignors to Kearney & Trecker Corporation, West Allis, Wis., a corporation of Wisconsin

Application Nov. 29, 1961, Ser. No. 155,630, now Patent No. 3,189,154, dated June 15, 1965, which is a division of application Ser. No. 817,108, June 1, 1959, now Patent No. 3,118,332, dated Jan. 21, 1964. Divided and this application Feb. 15, 1965, Ser. No. 432,468
15 Claims. (Cl. 198—19)



1. In a transfer and handling apparatus for circular edge supported workpieces requiring continuous support to prevent lateral tipping in either direction:

a longitudinally extending guideway comprising a plurality of longitudinally spaced apart upper and lower guide rails constituting a transfer pathway for supporting and guiding a circular workpiece on edge in an upright position for movement therealong;

a station along said transfer pathway at which a workpiece may be removed or inserted out of or into said transfer pathway selectively, said station comprising a laterally movable frame member;

a pair of longitudinally spaced apart rotatable support rollers carried by said frame and disposed in alignment with said lower guide rail to cooperate with said lower guide rail to provide a continuous pathway, said support rollers being further operable to support a circular workpiece on edge in an upright position in a manner that the workpiece may be rotated about its own axis;

lateral guide means carried by said frame and operable to prevent lateral tipping movement in either direction of a circular workpiece supported on edge on said supporting rollers;

a clamping member carried by said frame for engagement with a workpiece supported on said rollers, said clamping member in cooperation with said support rollers being operable to securely clamp a workpiece therebetween;

power means connected to actuate said clamping member in a clamping or releasing action selectively;

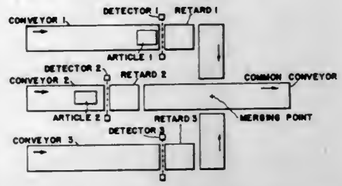
a power driven transfer mechanism operable to engage and advance edge supported circular workpieces along said transfer pathway into position on said supporting rollers; and,

second power means connected to move said frame member with a workpiece secured thereto laterally out of said transfer pathway.

3,223,225
COLLISION PREVENTION SYSTEM

David B. Clark and Lawrence W. Langley, Waynesboro, Va., assignors to General Electric Company, a corporation of New York

Filed Sept. 25, 1962, Ser. No. 226,087
6 Claims. (Cl. 198—37)

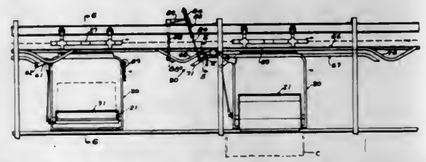


1. In a system for supplying articles to a common point by means of a plurality of conveying means each moving at a respective speed, the improvement comprising article detecting means associated with each of said conveying means for indicating the presence of an article at predetermined distances ahead of said common point, the respective ratios of said distances to said speeds being equal, means coupled to said article detecting means for indicating the simultaneous detection of a plurality of said articles, and means coupled to said indicating means for retarding all but the first of said detected articles only in response to said simultaneous detection of articles.

3,223,226
DUMPING CONVEYOR SYSTEM

Leonard J. Bishop, Birmingham, Mich., assignor to Mechanical Handling Systems Inc., Detroit, Mich., a corporation of Michigan

Filed Jan. 31, 1963, Ser. No. 255,268
10 Claims. (Cl. 198—38)



1. In a dumping conveyor system, the combination comprising

a series of carriers,

each said carrier having a support thereon for supporting a load,

said support being movable about an axis parallel to the axis of the carrier from a load supporting position to a load dumping position,

means for guiding said carriers in a predetermined path,

a cam track positioned at longitudinally spaced points along said path,

an actuator pivotally mounted on each said carrier about an axis transverse to the axis of the carrier,

said actuator being adapted to selectively engage said cam track and be positively guided thereby,

linkage means mechanically operatively connecting said actuator to said support,

the shape of said cam track being such that when said actuator engages said cam track said support is moved in a predetermined controlled manner from a load supporting to a load dumping position and back to a load supporting position,

a portion of said cam track being movable into and out of the path of said actuator,

control means associated with said cam track for said movable portion of said cam track,

and means on each said carrier for selectively controlling said control means.

3,223,227
AUTOMATIC FEEDER
Fred Dudte, Newton, Kans., assignor, by mesne assignments, to Harper and Saunder, Inc., Eureka, Ill., a corporation of Illinois
Filed Jan. 28, 1963, Ser. No. 254,122
11 Claims. (Cl. 198—64)



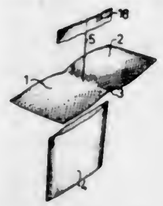
1. A material distributor comprising:
a material trough having an elongated, substantially horizontal bottom provided with a pair of spaced openings disposed for gravitational flow of material therethrough;
a primary screw conveyor in the trough for moving the material along the latter longitudinally of said bottom toward one one end of the trough whereby to feed the material through said openings;
an elongated loop for each opening respectively, said loop having a bight longitudinally parallel with and spaced below said bottom and provided with a pair of spaced, opposed end edges extending upwardly toward said bottom to define open ends therefor, each loop being aligned with a corresponding opening for receiving material from the trough;
a rotatable secondary screw conveyor substantially parallel with the primary conveyor and extending through the open ends of said loops for moving the material along the latter longitudinally of said bights and discharging the same through one of the ends of each of the loops when the secondary screw conveyor rotates in one direction and discharging the material through the other end of each of the loops when the secondary screw conveyor rotates in the opposite direction; and
reversible power means for alternately rotating said secondary screw conveyor in opposed directions.

3,223,228
ANIMAL FEEDER
Robert G. Ferris, Gerald W. Berryhill, Loren Boppart, and Jan W. Ratajczak, Harvard, Ill., assignors to Starline, Inc., a corporation of Illinois
Filed Mar. 6, 1963, Ser. No. 263,309
7 Claims. (Cl. 198—204)



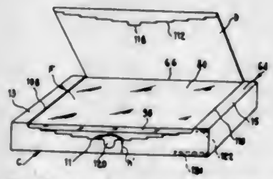
1. A device for conveying particulate material comprising: a support structure including a plurality of spaced standards; an elongated tubular member including a plurality of sections adapted to receive the flow of material therethrough, said sections having flanges connected with one another and having generally cylindrical portions; openings in said sections for discharging material therefrom; rotatable feed means extending through said sections; rotatable means suspended from said support structure standards; and flexible suspension means looped over the rotatable means and looped beneath said cylindrical portions at spaced points to provide the sole means to suspend the tubular member for free and ready rotation thereof in the support structure through 360° and to compensate for misalignment.

3,223,229
PACKAGE FOR BREWING A BEVERAGE
Guy John Olof Welin-Berger, Box 228, Nacka, Sweden
Filed Mar. 16, 1964, Ser. No. 352,210
Claims priority, application Sweden, Mar. 18, 1963, 2,920/63
1 Claim. (Cl. 206—0.5)



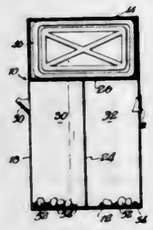
A package including an envelope, a bag for material for brewing a beverage enclosed in the envelope, and a string connecting said bag and a part of the envelope adapted to be separated from the remainder thereof to allow the removal of the bag from the envelope, said part comprising opposite interconnected wall portions of the envelope, the bag and the envelope being rectangular, the edges of the bag being parallel to the adjacent edges of the envelope, the string having a substantial length of slack between its point of attachment to the envelope and its point of attachment to the bag, said point of attachment of the string to the bag being disposed on the side of the bag opposite the point of attachment of the string to the envelope, said bag being folded double along a septum which divides said bag into two commodity-receiving compartments with the fold remote from and parallel to the edge of the envelope to which the string is attached, the string being disposed between the folded halves of the bag.

3,223,230
BOX CONSTITUTED OF AN OUTER FOLDED CARTON AND AN AIRTIGHT INNER CASING
Filippo Bianchi, Milan, Italy, assignor to Cartotecnica Poligrafica A. & G. Fratelli Bianchi S.p.A., Milan, Italy, an Italian joint-stock company
Filed Sept. 18, 1963, Ser. No. 309,663
Claims priority, application Italy, Sept. 22, 1962, 18,786/62, Patent 675,055
2 Claims. (Cl. 206—45.31)



1. An article of manufacture comprising a box including an outer folded carton and an airtight inner casing secured to said outer carton, said carton being a one-piece body including a bottom, a top wall, side walls and end walls, said side walls and end walls being foldably joined to said bottom and top walls, said carton further including a lid detachably joined to the top wall and one end wall and foldably connected to another end wall, said casing being a one-piece member constituted of flexible and air impermeable material, the latter material being adhesively secured in limited zones to the said bottom, top wall, end walls and side walls to form a completely closed and sealed casing when the carton is erected, said lid being free of the casing to permit opening of the said lid without disturbing the closure of the inner casing, said casing material being adhesively secured to the side walls of the carton such that the carton can be sequentially erected to leave one side wall open to enable introduction of material into the inner casing whereafter upon completion of the erection of the carton the casing is completely closed with the material within said casing, said side walls being constituted by overlapped and adherently secured side lugs respectively attached to the top wall and the bottom at opposite sides thereof, said flexible material being secured to each of said side lugs along relatively thin diagonal zones, such that at least one thickness of said flexible material is sandwiched between the side lugs of each side wall, said one end wall being constituted of two overlapped wall portions respectively joined to said bottom and said top wall, said wall portions being adherently secured together with the wall portion on said top wall outside the wall portion on the bottom, said wall portion joined to said top wall being provided with a plurality of notches, said top wall having a line of perforations extending from said notches to the fold line joining the top wall with the other end wall, said lid being detachable from said top wall along said line of perforations and from said wall portion connected to said top wall by said notches, said wall portion on the bottom having a notch for receiving and securing the lid thereto after the carton is opened.

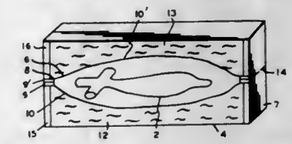
3,223,231
RODENTICIDE AND FEEDING TRAY PACKAGE
Patrick J. Connolly, Bayshore, N.Y., assignor to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware
Filed May 13, 1963, Ser. No. 279,886
1 Claim. (Cl. 206—47)



In combination, a rodenticide and a hemetically sealed carton for containing said rodenticide, said carton comprising a plurality of feeding compartments, said rodenticide being in the form of a mixture of solid flavored chunks and crumbs containing a feedstuff together with a delayed action poison, each of said feeding compartments containing a portion of said rodenticide, said rodenticide in each of said feeding compartments being of a different flavor than the rodenticide in the other of said feeding compartments, a tray compartment being in said carton, and said tray compartment containing at least one feeding tray.

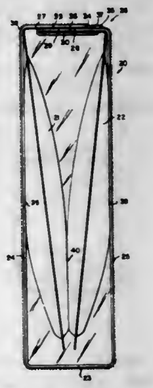
3,223,232
PACKAGE OF FRAGILE ARTICLES
Richard A. Coen, Fords, N.J., assignor to Nopco Chemical Company, Newark, N.J., a corporation of New Jersey
Filed Dec. 20, 1961, Ser. No. 160,843
6 Claims. (Cl. 206—65)

1. An easily rupturable package for packaging potentially damageable articles comprising a container having an outside and inside surface, said container having at least one substantially continuous designated line extending substantially around said outside surface of said container, at least one protective envelope positioned in said container, said envelope comprising two sheets and a rigid frame member supporting said sheets only at the peripheries thereof, said frame member having connecting sides, top and bottom, said sides being adapted upon cutting to separate, said frame member being positioned in said container substantially coextensive with said continuous line, said top side of said frame being above said line and said bottom side of said frame being below said line, one of said sheets connected to the bottom side of said frame member and the other of said sheets connected to



the top side of said frame member so as to define a completely enclosed space, said sheets being positioned out of contact with each other in said top and bottom members of said frame, said articles being enclosed within said enclosed space, a plurality of solid supporting means positioning said frame member substantially coextensive with said continuous line, a mass of cellular plastic material supporting said bottom side of said envelope within said container in said desired position and a separate mass of cellular plastic material supporting said top side of said envelope within said container in said desired position.

3,223,233
CONTAINER CONSTRUCTIONS AND BLANKS FOR MAKING THE SAME OR THE LIKE
William C. Becker, Henrico County, and Ronald M. Ayer, Chesterfield County, Va., assignors to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed May 8, 1963, Ser. No. 278,827
22 Claims. (Cl. 206—65)

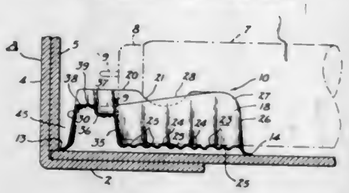


16. In combination, a container having a pair of opposed side walls interconnected together at their top and bottom edges by top wall means and bottom wall means to define a substantially rectangular container having opposed opened end walls, said top wall means including a pair of overlapping flap means temporarily secured together, and a pair of product containing pouches having upper ends respectively secured to said flap means whereby said pouches are suspended in said container, each of said pouch means having a sealable interior surface means that seals closed said pouch means, said sealable interior surface means also securing said pouch means to said flap means.

3,223,234
END SUPPORT FOR FRAGILE TUBULAR ARTICLES

Hugh R. Weiss, Montclair, N.J., assignor to The Pantasota Company, Passaic, N.J., a corporation of New Jersey

Filed Feb. 1, 1965, Ser. No. 429,420
12 Claims. (Cl. 206—65)

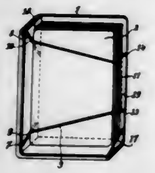


1. An end pad for locating and protecting fluorescent tubes in a shipping carton comprising an elongated one-piece receptacle formed of a thin generally rectangular sheet of thermoplastic material and having a row of tube-end-receiving recesses defined by a series of regularly spaced narrow transverse partitions, each partition having diverging side walls with corrugations spaced along its length for engaging the cylindrical outer surface of a fluorescent tube and an upright end wall at one side of said pad for engaging the end of the tube, one end of each recess being open at said one side and the other end being closed by an upright end wall spaced a small fraction of an inch from the other side of said pad, and resilient cushioning means for yieldably centering the fluorescent tubes in the carton comprising an inclined side wall at said other side of said pad with vertical corrugations spaced apart along the length of said pad and having a height at least about equal to that of the tube-receiving recesses and having a length many times its height.

3,223,235
HOLDER FOR STORING SHEET MATERIAL

Dirk Cornelis Jan Knip, Delft, Netherlands, assignor to Aerojet Delft Corporation, Long Island, N.Y.

Filed Oct. 19, 1962, Ser. No. 231,702
Claims priority, application Netherlands, Oct. 24, 1961, 270,580
10 Claims. (Cl. 206—74)

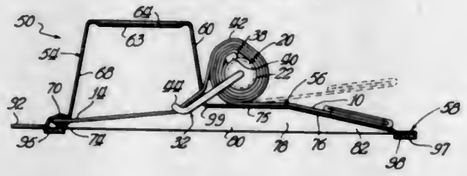


1. A holder for storing sheet material comprising a tray for receiving sheet material, said tray having a rigid plate provided with a surface against which sheet material is to be disposed in stacked juxtaposed relation and at least two rigid walls adjacent to each other and extending outwardly from the same surface of said plate against which the sheet material is to be disposed so as to be adapted to overlie respective edges of the sheet material, and elastic means having movable application points on at least one of said walls with said application points being movable in the direction in which the sheet material is to be piled and said elastic means extending across said surface of said plate against which sheet material is to be disposed so as to be drawn taut over the sheet material for pressing the sheet material against said surface of said plate, said application points of said elastic means comprising points at which the tensile force of the elastic means is applied to said at least one of said walls and being adjustable to the height of the pile of sheet material disposed against said surface of said plate by the movement of said application points in the direction in which the sheet material is to be piled.

3,223,236
SEAT BELT DEMONSTRATOR

Harry P. Troendly, La Grange Park, Ill., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois

Filed Jan. 2, 1964, Ser. No. 335,027
5 Claims. (Cl. 206—82)

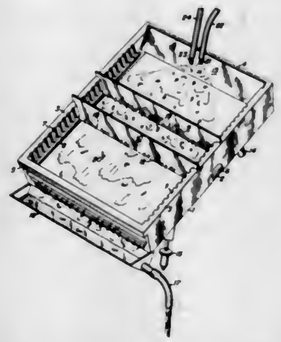


2. A stand adapted to support a demonstrator sample of a vehicle seat belt having forward and rearward terminal portions and rollable into a coil by an attached belt retractor mechanism, said stand including interconnected rear upright and forward plateau portions, said upright portion having a generally vertical wall simulating a vehicle back rest and said plateau portion having a generally horizontal belt receiving wall below the level of the vertical wall and simulating a vehicle seat, said stand being provided with a belt receiving aperture, the aperture being adapted to receive part of the rear terminal portion of the seat belt therethrough and being smaller than the retractor mechanism to prevent passage of the mechanism and coil through the aperture.

3,223,237
SLOT TYPE SEPARATOR

Edgar B. Harrod, Jr., Frederick, and Edgar T. Stevens, Myersville, Md., assignors to the United States of America as represented by the Secretary of the Army

Filed Jan. 18, 1962, Ser. No. 167,203
2 Claims. (Cl. 209—2)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A device for the separation of pupae of live waterborne insects comprising a container having an inclined bottom, side walls, an upper end wall and a lower end wall; said side walls each having a complementary first guide means positioned lengthwise along its interior; said first guide means being biased toward the container bottom from the upper to lower end along the entire length thereof; said side walls each having a plurality of complementary second guide means along its interior and positioned substantially normal to said first guide means and in manifold contact therewith; baffle means extending the width of the container and slidably positionable in any of the complementary pairs of second guide means and in abutting contact with said first guide means; whereby the distance between the bottom edge of the baffle means and the container bottom is varied as the baffle means is positioned in the different complementary pairs of second guide means; means for uniformly flowing pupae-containing water onto the bottom of the container above the baffle means, and collecting means attached to the bottom of the container at the lower end thereof.

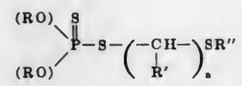
3,223,238
FLOTATION OF SULFIDE ORES

Norbert M. Bikales, Livingston, N.J., and Robert Ben Booth, Stamford, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Jan. 2, 1963, Ser. No. 248,890
6 Claims. (Cl. 209—166)

1. In the process of beneficiating sulfide ores by froth flotation of an ore pulp in the presence of a chemical flotation promoter to recover metal values in said ore,

the improvement wherein the flotation promoter is a compound of the formula:

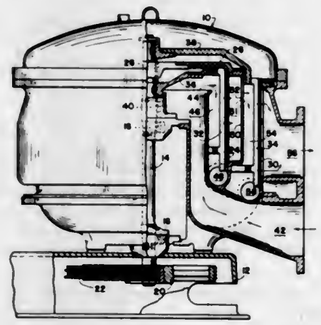


wherein each R is an alkyl radical of less than six carbon atoms; R′ is a member selected from the group consisting of hydrogen and methyl; R″ is a member selected from the group consisting of lower alkyl, lower alkenyl and carbocyclic aryl of less than three 6-membered rings; and *n* is a positive integer less than 3.

3,223,239
PRESSURE TYPE SCREENING DEVICES

George M. Dick, Sherbrooke, Quebec, Canada, assignor to Bird Machine Company, South Walpole, Mass., a corporation of Massachusetts

Filed May 11, 1962, Ser. No. 193,962
6 Claims. (Cl. 209—270)



1. A plural stage pressure type screening device for screening a pressurized liquid suspension, said device comprising

an inlet for the liquid suspension,

a first stage generally cylindrical screen for passing a first stage screened portion of said suspension,

a second stage generally cylindrical screen disposed generally concentrically with said first stage screen for accepting said first stage screened portion and passing a second stage screened portion,

a first stage cleaning means disposed adjacent said first stage screen for removing clogging particles therefrom,

a second stage cleaning means disposed adjacent said second stage screen for removing clogging particles therefrom,

a first stage generally cylindrical baffle generally concentric with and spaced from said first stage screen and positioned adjacent said inlet and said first stage screen to form a first annular chamber for receiving adjacent one end thereof said liquid suspension from said inlet,

a second stage generally cylindrical baffle disposed between and generally concentrically with said first and second stage screens for forming with said first stage screen a second annular chamber closed at one end for receiving said first stage screened portion, said second chamber being opened adjacent its other end to permit flow of said first stage screened portion to said second screen, said second baffle forming with said second stage screen a third annular chamber for receiving adjacent one end said first stage screened portion from the open end of said second chamber,

first stage reject means communicating with said first chamber at the end remote from the inlet for accepting portions of said liquid suspension rejected by said first stage screen,

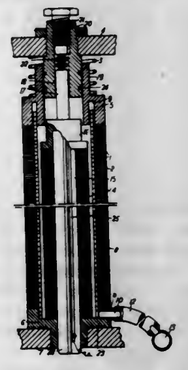
second stage reject means communicating with said third chamber at the end remote from said one end for accepting portions of the liquid suspension rejected by said second stage screen,

drive means operatively associated with said first and second stage screens and said first and second stage cleaning means for causing relative rotary movement between said screens and said cleaning means, and means enclosing said screening device for maintaining said liquid suspension under pressure during its passage therethrough.

3,223,240
FILTER CARTRIDGE FOR SEPARATOR

Jacques Muller, La Garenne-Colombes, Seine, France, assignor to Rellumit Inter, S.a.r.L., La Garenne-Colombes, France, a corporation of France

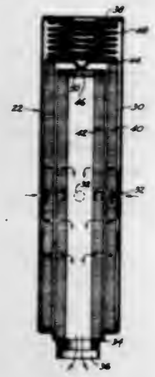
Filed Dec. 19, 1961, Ser. No. 160,469
Claims priority, application France, Dec. 20, 1960, 847,435
1 Claim. (Cl. 210—96)



A two-stage filter cartridge for separating water from fuel oil, comprising supporting structure, a first stage outer filter column built up of rings of hydrophobic ma-

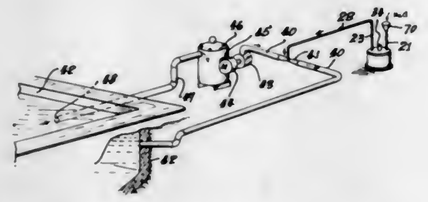
terial through which the fuel oil and water are passed from the outside and in which the water is coalesced into vesicular droplets, said rings being treated with silicones and assembled on a perforated tubular support, a second stage inner column of smaller diameter built up of rings of water-absorbent sheet material assembled on a central support, a base member mounted on said supporting structure, said outer column resting upon said base member and said inner column being inside said outer column resting on said base member with an annular space between the two columns, a duct in said base member communicating with said annular space for conducting separated water away from the cartridge, an abutment member on the upper end of said first column and first spring means acting upon said abutment member to keep the rings constituting said outer column in close contact with each other, an end block resting on the upper end of said inner column, said end block having an upwardly projecting stem and second spring means acting on said end block to apply pressure to said second column to keep the rings thereof firmly in contact with each other, an upper member supported in said supporting structure, said upper member having a central bore in which said stem is slidably engaged, said second spring means being contained in the bore above said stem, and comprising adjusting means including a screw engaged in the upper member acting downwardly upon said spring means, said abutment member being formed to slide axially of the cartridge on said upper member, and fluid sealing means between said abutment member and said upper member to prevent leakage of fluid therebetween.

3,223,241
FUEL QUALITY TESTING DEVICE
Walter Kasten, Madison Heights, Mich., assignor to The Bendix Corporation, Madison Heights, Mich., a corporation of Delaware
Filed July 16, 1962, Ser. No. 210,070
5 Claims. (Cl. 210—96)



1. A fuse assembly for a contamination sensitive shut-off device used in checking fuel cleanliness by passing fuel therethrough from outside said fuse assembly to inside said fuse assembly comprising a tube, a ferrule located at one end of said tube, said ferrule having an outlet port therein, retaining means located at the other end of said tube, washer-type contamination sensitive means having radially extending pores formed between the washers thereof for permitting flow of fuel therethrough, said washer-type means having one end thereof in abutment with said ferrule and including at least one washer formed of a hygroscopic material adjacent said pores capable of swelling upon contact with water and closing off said pores to thereby prevent further flow therethrough, end-cap means for closing off the other end of said contamination sensitive means, spring means confined within said tube between said retaining means and said end-cap means for maintaining said contamination sensitive means under compression, and a plurality of relatively small inlet ports located around the periphery of said tube, the number and size of said ports being so constructed as to increase the velocity of fuel flow to thereby disperse any relatively large globules of water into smaller globules prior to passage of said fuel through said washer-type contamination sensitive means, said inlet ports being arranged so that most of the fuel passing therethrough must pass along the surface of said contamination sensitive means before passing through said last named means.

3,223,242
WATER TREATING DEVICE AND ELECTROLYTIC CELLS FOR USE THEREWITH
William Bruce Murray, 4523 Fairway Drive, Lakewood, Calif.
Filed Dec. 23, 1960, Ser. No. 77,991
9 Claims. (Cl. 210—139)



1. A water sterilizing apparatus in combination with a swimming pool having a water recirculation system that includes a pump, a suction line extending from the interior of said pool to said pump, an electric motor which drives said pump, and a discharge line that returns water from said pump to said pool, which apparatus comprises:

(a) an eductor on said discharge line, which eductor has a restricted throat of such transverse cross section that a substantial negative pressure is formed therein as said water discharges therethrough;

(b) an electrolytic cell that generates chlorine gas only in a confined space therein at a predetermined rate, which confined space is in communication with the ambient atmosphere;

(c) conduit means for conducting chlorine from said confined space to said throat, with the differential in pressure between said negative pressure and the pressure in said confined space being such as to cause air from the ambient atmosphere and chlorine gas at said predetermined rate to flow from said confined space to said throat, which chlorine gas dissolves in said water discharging through said throat, with said air flowing to said throat mixing with said water flowing through said throat and escaping therefrom into the ambient atmosphere after said water with which it is mixed is discharged into said pool;

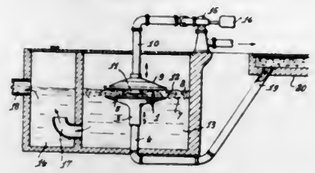
(d) a first normally open electrical circuit capable of supplying electrical energy to said motor when closed;

(e) a timer that periodically closes said first circuit;

(f) a second normally open electrical circuit capable of supplying electrical energy to said cell to cause the same to generate chlorine gas at said predetermined rate when said second circuit is closed; and

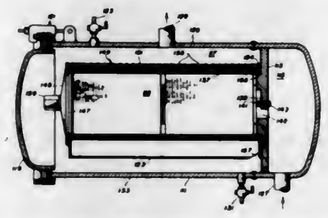
(g) means for concurrently closing said second circuit with the closing of said first circuit.

3,223,243
FLOATING SEPARATOR
Jacques Muller, 123 Ave. du General de Gaulle, La Garenne-Colombes, France
Filed June 14, 1962, Ser. No. 202,512
Claims priority, application France, Aug. 22, 1961, 871,271
3 Claims. (Cl. 210—242)



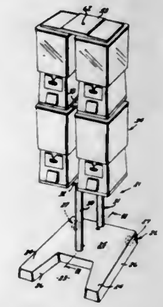
1. Equipment for separating two fluids of different density, the lighter of which floats on the surface of the heavier, comprising a diffuser member having float means associated therewith, said float means being so constructed and arranged as to support said diffuser member in such fluids with the upper surface of said diffuser member positioned in the plane substantially aligned with the undersurface of the lighter layer of fluid, a fixed vertical pipe, said diffuser having a depending inlet pipe slidably mounted on said fixed vertical pipe, said mixture of fluids being forced through said associated pipes into the diffuser, a suction bell positioned over the diffuser member having a second float means associated therewith, said second float means being so constructed and arranged as to support said suction bell in such fluids with the undersurface of said suction bell positioned in a plane substantially aligned with the upper surface of the lighter layer of fluid, a vertical suction pipe secured at one end to said suction bell and rising therefrom, a ball joint connected to said vertical suction pipe to permit vertical movement of said suction bell, a counterweight to balance said suction bell and said vertical pipe about said ball joint, whereby said diffuser and suction bell may rise and fall independently of each other with changes in the thickness of said lighter layer of fluid.

3,223,244
FILTER AND DEHYDRATOR
George J. Topol, Hamilton, Ontario, and Leslie B. Baranowski, Burlington, Ontario, Canada, assignors to Bowser, Inc., Fort Wayne, Ind., a corporation of Indiana
Original application Mar. 1, 1955, Ser. No. 491,434, now Patent No. 2,953,249, dated Sept. 20, 1960. Divided and this application Dec. 29, 1959, Ser. No. 470
2 Claims. (Cl. 210—247)



1. In a fuel and water separator comprising a horizontal disposed tank, a vertical partition having an opening and mounted within the tank adjacent one end to separate the tank into first and second chambers, means for positioning within the tank a filter-separator unit including a coalescer element mounted horizontally with respect to the partition with its interior connected for fuel flow with the opening in said vertical partition, said positioning means including a cylinder having an upper screen portion pervious to oil and nonpervious to water surrounding and spaced from the coalescer element, said cylinder having a lower nonpervious solid portion with an opening at one end for forming a trough to convey the separated water to a predetermined area in the second chamber, an inlet means communicating with the first chamber, a fuel outlet means communicating with the upper portion of the second chamber, and a water drain connected to the lower portion of said second chamber.

3,223,245
MOUNTING AND DISPLAY STAND FOR A PLURALITY OF VENDING MACHINES
Norman G. Weltzman, 16401 Knapp St., Sepulveda, Calif.
Filed July 10, 1964, Ser. No. 381,649
12 Claims. (Cl. 211—4)



1. A mounting and display stand for a plurality of vending machines, comprising: a base member; a main vertical support member extending upwardldy from said base member and secured thereto at its lower extremity; at least two vertically superimposed and vertically spaced substantially horizontal shelf members for a plurality of vending machines including a lower shelf member for a plurality of vending machines, and secured to said vertical support member at a lower location, and an upper shelf member vertically spaced above and superimposed with respect to said lower shelf member and releasably and vertically adjustably secured to said main vertical support member at an upper location; a cover member adapted to be positioned in top abutment with a plurality of vending machines when their bottoms are supported on said upper shelf member; and vertical tie rod means having a buttom end portion secured to said lowermost shelf member and having a top end portion lockably securable to said cover member for locking a plurality of vending machines between said cover member and said upper shelf member and between said upper shelf member and said lower shelf member in a non-removable manner; said lower shelf member being provided with at least one upwardly facing positioning and registration engagement element for each vending machine adapted to be received thereover and engagingly cooperable with a corresponding positioning and registration engagement element adapted to be carried by a bottom portion of a vending machine when engaged therewith for positive positioning and registration purposes; said upper shelf member being provided with at least one upwardly and downwardly facing positioning and registration engagement element for each pair of vending machines adapted to be received in vertically superimposed relationship thereover and thereunder by said upper shelf member and on said lower shelf member, respectively, and engagingly cooperable with a corresponding positioning and registration engagement element

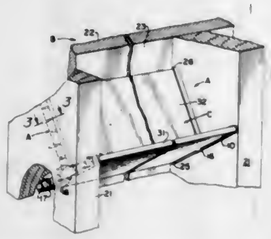
adapted to be carried by the corresponding bottom and top portions of the corresponding upper and lower vertically superimposed vending machines and in vertical engagement therewith for positive positioning and registration purposes; said cover member being provided with at least one downwardly facing positioning and registration engagement element for each vending machine adapted to be positioned thereunder and carried by said upper shelf member and engagingly cooperable with a corresponding positioning and registration engagement element adapted to be carried by a top portion of a vending machine in underlying engagement therewith for positive positioning and registration purposes, each engageable pair of said positioning and registration engagement elements comprising means for positively positioning and maintaining registration of the plurality of vending machines in certain predetermined relationships with respect to said lower shelf member, said upper shelf member, and said cover member.

3,223,246

SHELVING APPARATUS AND INSTALLATION THEREOF BETWEEN WALL STUDS

Maurice L. Daitch, 11660 Gateway Blvd., West Los Angeles, Calif.

Filed June 22, 1964, Ser. No. 376,790
6 Claims. (Cl. 211—134)



1. Shelving comprising, in combination: a pair of laterally spaced building studs and a vertical back wall secured to and extending between said studs; a pair of brackets secured respectively to opposed faces of said studs, each bracket having a shelf slot inclined downwardly toward said back wall and a back panel slot inclined upwardly toward said back wall; a shelf panel having its ends received and supported in said shelf slots; and a back panel having its ends received and supported in said back panel slots, said panels cooperatively defining a V-trough-shaped seat for a row of containers each having its bottom seated against said shelf panel and a rear side reclining against said back panel, said back panel having its upper margin in close adjacency to said back wall, each of said brackets comprising respective arms of stamped sheet metal and of channel section defining said shelf slot and said back panel slot respectively, and having integral fastener-points for penetration of said studs, said points being struck out from the back webs of said channel sections.

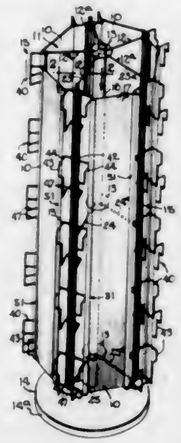
3,223,247

REVOLVING DISPLAY RACK

Theodore M. Bleed, Rockford, Ill., assignor to Commercial Wire Products Co., Rockford, Ill., a corporation of Illinois

Filed July 30, 1964, Ser. No. 386,252
10 Claims. (Cl. 211—163)

1. A revolving display rack having, in combination, a base, a hub journaled on said base to turn about an upright axis, a plurality of generally rectangular wings radiating outwardly from said hub, means coupling the inner edges of said wings to said hub for relative movement of said wings between a collapsed position and an expanded position in which the wings are angularly spaced apart around said axis, said wings when in said collapsed position forming a relatively flat package with adjacent ones of the wings lying substantially face to face, a plurality of elongated and rigid box-like frames constituting pocket assemblies and each extending along and detachably secured to the outer upright edge of one



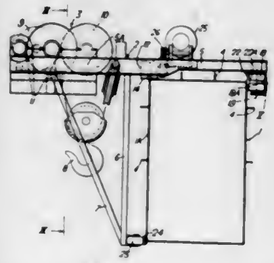
of said wings, each pocket assembly providing along its outer vertical edge a plurality of vertically spaced pockets for receiving and supporting articles to be displayed, a rigid rectangular display panel between the adjacent sides of each pair of adjacent frames, means detachably and rigidly joining the edges of the adjacent panels to the sides of said pocket assemblies whereby to join said wings, the pocket assemblies and said panels into a rigid unit revolvable about said axis while permitting disconnection of said panels from said pocket assemblies and the latter from said collapsible wings for compacting the parts for low cost shipment.

3,223,248

OVERHEAD TRAVELLING CRANE

William G. Cowan, East Kilbride, Scotland, assignor to J. H. Carruthers & Company Limited, East Kilbride, Scotland, Great Britain, a British company

Filed July 12, 1963, Ser. No. 294,700
Claims priority, application Great Britain, July 12, 1962, 26,790/62
1 Claim. (Cl. 212—17)



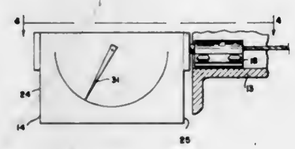
In an overhead travelling crane comprising a single box-section overhead beam, trolley means on the beam including a framework adjacent to the top and one side of the beam, wheel assemblies mounted on the framework, tracks on the beam cooperating with the wheel assemblies to enable traversing of the beam by the framework, and hoisting gear mounted on the framework so as to overhang said one side of the beam, the wheel assemblies and their tracks consisting of a plurality of longitudinally spaced load-bearing wheel assemblies having upright wheels engaging an upper said track on top of the beam at the beam corner adjacent to the hoisting gear so as to load the beam torsionally, a plurality of longitudinally spaced reaction-wheel assemblies located at a lower portion of said side of the beam and having horizontal bottom reaction wheels engaging a lower said track on said lower portion, and a plurality of longitudinally spaced reaction-wheel assemblies located at an upper portion of the other side of the beam and having horizontal top reaction wheels engaging an upper track on said upper portion; the improvement comprising each of the load-bearing wheel assemblies and of the upper reaction-wheel assemblies comprising an axle carried by the framework, a cylindrical sleeve rotatably mounted on and slidably reciprocable along the axle, and resiliently compressible tire means on the sleeve presenting a peripheral groove intermediate the axial length of the tire means, the upper tracks for said load-bearing and upper reaction-wheel assemblies having longitudinal ribs engaging in the peripheral grooves presented by the tire means to guide the sleeves along the tracks, each of the lower reaction-wheel assemblies comprising a lower reaction wheel presenting a relatively hard transversely convex tread surface, and the lower track presenting a flat surface which cooperates with the convex tread surface of the lower reaction wheels to permit vertical sliding movement and lateral rocking movement as well as the usual rolling movement of the lower reaction wheels whereby the framework is free to move up and down and to tilt laterally about the line of contact of the lower reaction wheels with the lower track, and on tilting moves the axles of the load-bearing and upper reaction-wheel assemblies substantially horizontally and vertically relative to their respective said sleeves so that distortion of the tire means of said assemblies is minimized.

3,223,249

INDICATOR FOR DETERMINING THE BOOM ANGULARITY OF A CRANE

Ivan E. Cady, 117 Iroquois St., Lancaster, N.Y.

Filed Dec. 6, 1963, Ser. No. 328,739
6 Claims. (Cl. 212—39)



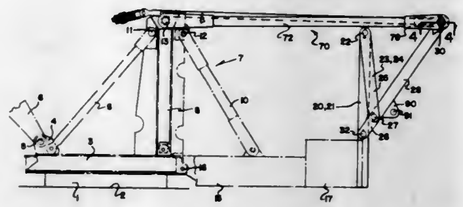
1. Structure for visual determination of the angularity of the boom on a crane or the like comprising an indicator unit, means mounting said unit for pendulum-like movement on said boom, said means locating said unit for direct viewing by the crane operator, a pointer mounted adjacent one face of said unit and adapted to be moved over graduated markings on said face, and drive means operatively connecting said pointer with said mounting means whereby changes in boom angularity will translate to said pointer.

3,223,250

FOLDING BACK-HITCH GANTRY

George C. Noll, Elyria, and John D. Nielsen, Lorain, Ohio, assignors, by mesne assignments, to Koehring Company, Milwaukee, Wis., a corporation of Wisconsin

Filed Dec. 20, 1962, Ser. No. 246,206
5 Claims. (Cl. 212—59)



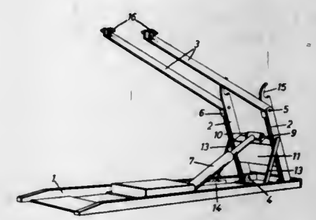
1. A back-hitch gantry for cranes and the like having an A-frame superstructure comprising, a frame pivoted to the peak of said A-frame, a gantry pin at the distal end of said frame, a vertically extending strut at the back of said superstructure, a folding linkage interconnecting the top of said strut and said gantry pin, said folding linkage including a first link pivoted to said pin, a second link pivoted to said first link and to the top of said strut, said second link including a relatively short offset portion extending beyond the pivotal connection of said first and second links, and means to lock said offset portion to said strut to hold said linkage in folded condition and said gantry pin in lowered position with said offset portion in alignment with said first link.

3,223,251

DISPLACEABLE JACK FOR AUTOMOTIVE VEHICLES

Arthur Rothe and Alfred Moravec, Bremen, Germany, assignors to Vereinigte Flugtechnische Werke Gesellschaft mit beschraenkter Haftung frueher "Weser" Flugzeugbau/Focke-Wulf/Heinkel-Flugzeugbau, Bremen-Flughafen, Germany

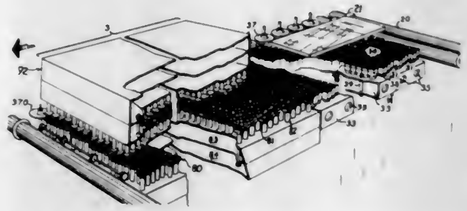
Filed Apr. 30, 1962, Ser. No. 191,134
Claims priority, application Germany, Apr. 11, 1962, F 36,521
4 Claims. (Cl. 214—1)



1. A mobile lift for lifting and inclining an automotive vehicle comprising a frame, a first pair of load arms pivotally mounted in spaced opposed relation on the frame, a second load arm pivotally mounted on each of said first load arms, means on each of said first load arms for limiting the pivoting movement of the second load arm relative to the first about said second mentioned pivotal mounting as the first load arms pivot away from the frame, and means pivotally mounted on the frame and pivotally connected to the first load arms for pivoting the first load arms about the respective pivots on the frame, said means for pivoting the first load arms comprises a pressure ram means and the pivotal connection to the first load arms comprises a box structure secured between and to said arms, said box structure being of a depth

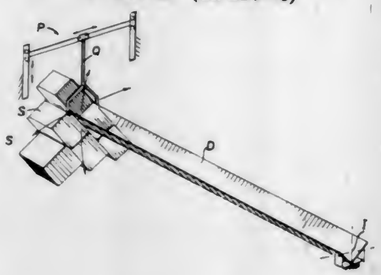
equal to the depth of the arms and extending a substantial distance along the length thereof a pedestal bearing secured to the box structure and pin means mounted in the bearing and pressure ram means.

3,223,252
TREATMENT OF GLASS
Clifford A. Mikus, Pittsburgh, Pa., assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 31, 1962, Ser. No. 234,475
15 Claims. (Cl. 214—1)



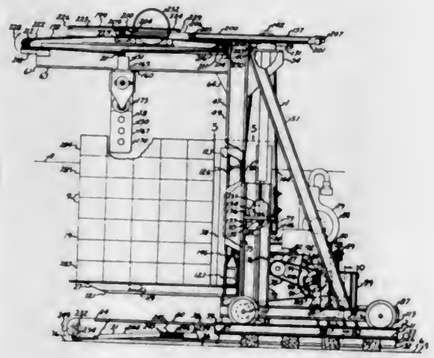
1. In a method of transporting sheets of material along a predetermined path, the steps comprising:
(a) supporting said sheets for movement along said path on a fluid,
(b) moving said sheets along said path while supported by said fluid,
(c) providing a component of force tending to move said sheets transversely of said path, and
(d) allowing movement of selected sheets transversely and out of said path by removing the component of force tending to so move the selected sheets while preventing such movement of others of said sheets,
(e) whereby selected sheets being transported along said path may be diverted from the remainder of the sheets moving along said path.

3,223,253
BALE STOOKING MACHINES
Ewald Gustav Garbe, 1032 Bellevue Ave. SE., and Arthur Likei, 521 11th Ave. SE., both of Calgary, Alberta, Canada
Filed Feb. 7, 1962, Ser. No. 171,714
12 Claims. (Cl. 214—6)



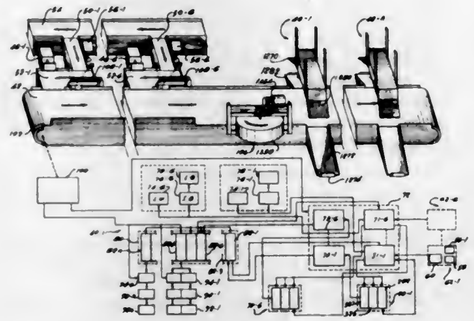
1. Apparatus for stacking a group of articles in prismatic stack relation comprising a stack support, a conveyor for receiving articles at intervals of a predetermined length and having a delivery end, means for detecting receipt of an article upon said conveyor, means responsive to said detector for initiating movement of said article toward said delivery end, an indexing mechanism having a stored program of conveyor delivery positions, conveyor positioning means controlled by said indexing mechanism for directing delivery of each article received into consecutive horizontally adjacent stack positions in each tier commencing with an end position of the bottom tier and terminating with the delivery of an article to a terminal position of a top tier of said stack, said positioning means comprising drive means operable in response to said detecting means to position said conveyor within said interval and following delivery of the detected article, said drive means being disabled under control of said indexing mechanism upon completion of each positioning operation, and means for advancing said indexing mechanism concurrently with operation of said positioning means.

3,223,254
CROSS TIE UNLOADER
Gordie Stewart, % General Offices, Florida East Coast Railroad, St. Augustine, Fla.
Filed Nov. 1, 1961, Ser. No. 149,308
5 Claims. (Cl. 214—8.5)



1. A crosstie handling apparatus comprising a wheeled vehicle adapted to travel along a trackway having spaced parallel rails, said vehicle having a front frame portion adapted to fit in the space between and below the upper face of the rails, said frame portion including opposite side forming members spaced from each other, a pair of vertically movable forks carried by said vehicle adapted to fit in the space between said side forming members, means for propelling said vehicle along the trackway to move said side forming members and said pair of forks beneath a pile of ties extending crosswise of the rails and stacked uniformly thereon in vertical and horizontal rows, means for elevating said forks above said front portion to lift the pile to an elevated position thereabove, carriage means carried by said vehicle and rearwardly and forwardly movable in a horizontal plane above said frame portion and above said forks, tie engaging means suspended from and movable with said carriage means, said tie engaging means being inwardly and horizontally movable from a position laterally of and above said frame portion and being adapted to engage the end of a tie in the top row of the pile at said elevated position, means for moving said carriage means to position said tie engaging means adjacent the end of a selected tie in the top row of the pile at the elevated position, means for forcefully moving said tie engaging means inwardly of the lateral position to forcefully engage the end of the selected tie and to discharge the selected tie from the pile, means pivotally connected to said front frame portion and movable into engagement with a surface exteriorly of the vehicle and between the rails to stabilize said apparatus against forward tilting on the trackway under the load of the pile of ties on the forks at the elevated position, and hydraulic means for moving the pivotally connected means into such surface engagement.

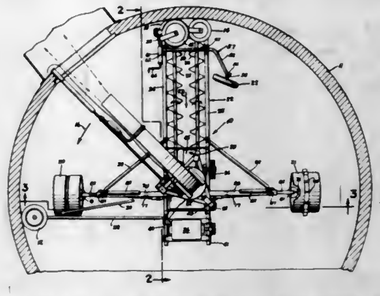
3,223,255
SEMI-AUTOMATIC CONVEYOR CONTROL SYSTEM
Warren E. Graybeal, 206 W. Elm St., Stillwater, Minn., and William C. Smith, 377 Fairview, Elmhurst, Ill.
Filed Nov. 4, 1960, Ser. No. 67,330
7 Claims. (Cl. 214—11)



1. In a conveyor system of the type in which a main belt transports packages loaded thereon toward discharge stations along its path, in which transfer mechanisms are provided at the stations for removing packages from the belt, and in which an electrical control system having a manually operated keyboard producing coded routing information for each package loaded on the belt is controlled by the information to selectively operate the transfer mechanisms for removing the packages at selected discharge stations, in combination therewith a package load mechanism adjacent the belt path, a storage belt on which packages are manually loaded and a load belt, said load belt operable in a direction opposite to said main belt, a buffer memory interposed between the keyboard and the control system receiving and storing routing information for each package incident to the operation of the keyboard, means moving the storage and load belt in steps to advance the packages to a load position at which the lagging edge thereof on the load belt is stopped at a predetermined point adjacent the load mechanism for transfer to the main belt, means advancing the routing information in the buffer memory coincident with the movement of the packages on the storage and load belts, and circuit means initiating the operation of the load mechanism and transferring routing information of transferred packages from the buffer memory to the control system.

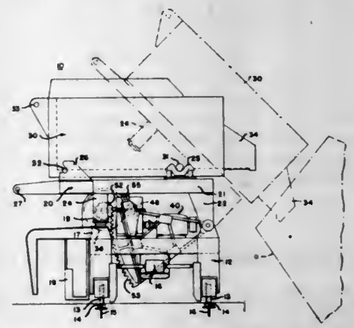
3,223,256
SILO UNLOADER STRUCTURE
Floyd E. Buschbom, Albert Lea, Minn., assignor to Vandale Corporation, Long Lake, Minn., a corporation of Minnesota
Filed Dec. 24, 1958, Ser. No. 782,756
16 Claims. (Cl. 214—17)

1. A silo unloader including a plurality of augers positioned in parallel providing an inboard end and an outboard end, wall engaging wheel means for positioning the outboard end thereof with respect to a silo wall, a pair of drive hubs positioned one on either side of said inboard end and providing outrigger drive means for said silo unloader, one of said drive hubs being provided with a plurality of cleat means for engaging the surface of the ensilage, a well engaging wheel positioned adjacent one of said hubs for engaging the wall of the silo, extending shaft means between each of said hubs and said unloader, and extending supporting members between



each of said hubs and said unloader, and means whereby each of said hubs may be extended or retracted with reference to said unloader.

3,223,257
CHARGING DEVICE FOR CONVERTERS
Edward J. Kinkopf, Alliance, Ohio, assignor to The Alliance Machine Company, a corporation of Ohio
Filed Aug. 13, 1964, Ser. No. 389,273
4 Claims. (Cl. 214—18)



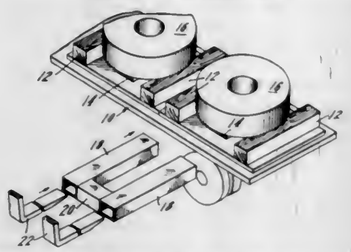
1. An improved charging device for converters and the like comprising a traveling carrier movable from a feed material receiving station to a feed material charging station, a pair of lever means swingably mounted on said carrier, a pair of feed material boxes disposed on said carrier, each box being selectively engaged thereon with a respective lever means, single reversible motor means operable to swing each of said lever means and the box associated therewith independently of the other lever means into a discharging position and back again, said motor means having clutch means adapted to operatively connect in positive engagement said motor means with each of said lever means such that when said motor means is positively engaged with one of said lever means it is positively disengaged with the other of said lever means, said clutch means comprising a pair of clutch members each axially slidably mounted toward opposite ends of drive shaft means driven by said single reversible motor means, said clutch members being keyed to said drive shaft means for rotation therewith, said clutch members each being engageable with a respective lever means, said clutch members being connected in a constant spaced relationship whereby they move together along said drive shaft means, said constant spacing being such that only one clutch member at a time may engage its respective lever means and both clutch members may be disengaged at the same time.

3,223,258
EQUIPMENT FOR EXPEDITING THE TRANSPORTATION OF CONTAINERS ON RAIL-BORNE AND ROAD VEHICLES
Engelbert Ewers, Kirchborchen 1, near Paderborn, Germany
Original application Apr. 10, 1961, Ser. No. 101,922. Divided and this application Apr. 19, 1962, Ser. No. 188,763
Claims priority, application Germany, Apr. 22, 1960, E 19,245
6 Claims. (Cl. 214—38)



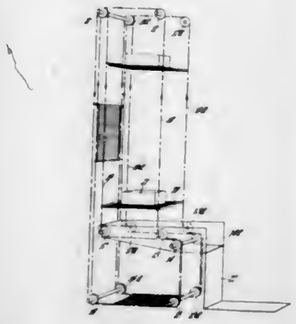
1. Equipment for simultaneously transferring containers onto and from a plurality of container cars coupled together by extensible couplings to form a container car train comprising, in combination, a plurality of platform cars connected to each other by extensible couplings to form a platform car train movable on tracks of a station along a loading platform and along said container car train; transfer means on each platform car for transferring containers for said loading platform to said platform cars of said platform car train and from the latter to said cars of said container car train and vice versa; while said container car train is standing still; and cooperating aligning means on each of said container cars of said container car train and on each of said platform cars of said platform car train for automatically aligning said transfer means on said platform car with said container cars, respectively, so as to make possible simultaneous transfer of containers from a plurality of container cars onto a plurality of platform cars and vice versa regardless of variations of the distances between the coupled container cars of ths container car train resulting from different extensions of the extensible couplings.

3,223,259
LOAD HANDLING METHOD AND APPARATUS THEREFOR
Samuel Stevenson Nicholson, River Edge, N.J., assignor to American Can Company, New York, N.Y., a corporation of New Jersey
Continuation of application Ser. No. 232,988, Oct. 25, 1962. This application May 6, 1964, Ser. No. 366,224
7 Claims. (Cl. 214—38)



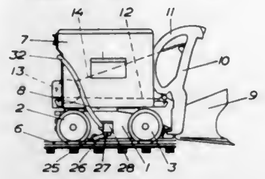
1. Apparatus for handling a relatively heavy load comprising:
- spaced parallel supports for the load, one of said supports being shorter than the supports on either side thereof,
- a lift-type carrier having a pair of parallel fork members insertable between said spaced supports and under the load disposed on said supports, and
- a U-shaped supporting unit formed by a pair of parallel rigid sleeves and a rigid member cross-connecting said sleeves at one end thereof,
- the upper surface of each of said sleeves and said cross member being disposed in a common plane,
- the maximum vertical dimension of said U-shaped supporting unit being less than the vertical dimension of said parallel supports so that said sleeves are insertable between said parallel supports and under the load disposed thereon,
- said fork members of said lift-type carrier being freely receivable within said sleeves,
- one end of said shorter support being spaced inwardly from the ends of the adjacent supports on either side thereof to accommodate said cross member when said sleeves are inserted between said spaced supports to position said sleeves and said cross member under the load so that said U-shaped supporting unit may be lifted by said lift-type carrier into engagement with the load and said load may be lifted from said spaced supports.

3,223,260
INDUSTRIAL TRUCKS
John Bright, Barnt Green, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England
Filed June 2, 1964, Ser. No. 371,961
Claims priority, application Great Britain, June 27, 1963, 25,575/63
8 Claims. (Cl. 214—83.1)



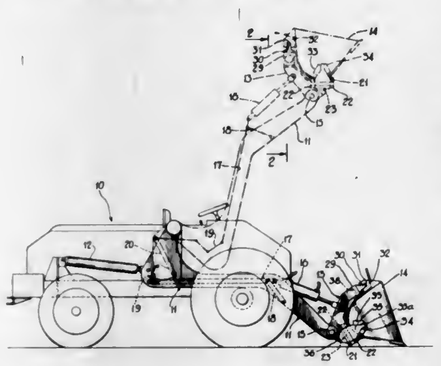
4. An industrial truck comprising in combination a chassis, an operator's platform vertically movable on said chassis, an elevator for feeding articles to an overhead conveyor, and means supporting said elevator for vertical movement relative to said chassis, said elevator comprising first and second endless flexible members, means supporting said members for movement in parallel paths having an upward run and a downward run, third and fourth endless flexible members, means supporting the third and fourth flexible members for movement in parallel paths having upward runs parallel to and spaced from the upward runs of the first and second members by a predetermined distance, and downward runs parallel to the downward runs of the first and second members and spaced therefrom by a distance smaller than said predetermined distance, and a flexible article support secured to the four members, the arrangement being such that on the upward run said support will be substantially horizontal, but on the downward run said support will be inclined to the horizontal, and said elevator including parts movable vertically with said platform and around which the flexible members move, so that although the lengths of the flexible members are fixed, the position at which the supports become horizontal at the commencement of said upward run varies with, and is adjacent to, the operator's platform.

3,223,261
MEANS FOR PREVENTING SHOVEL LOADERS FROM TIPPING
Heikki Jalmari Ylinen, Lovskogen, Stallberg, Sweden
Filed Oct. 14, 1963, Ser. No. 315,812
Claims priority, application Sweden, Oct. 19, 1962, 11,210/62
7 Claims. (Cl. 214—132)



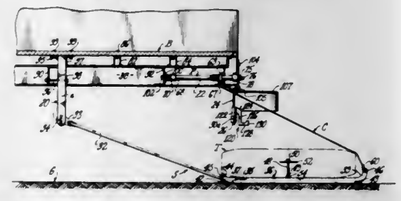
1. In apparatus of the character described for preventing the tipping of a shovel loader because of improper loading of the shovel thereon and having a shovel loader disposed upon four wheels for the transportation thereof from place to place with a shovel disposed thereon movable from a digging to a discharge position and vice versa, and a source of power, the combination which comprises a shovel operating motor connected to said source of power and said shovel for the movement of said shovel from said digging position to said discharge position and vice versa, connecting means providing connection between said source and said motor, a feeler arm pivotally disposed on said loader on one side between a forward and a rear wheel thereof, said feeler arm having ground engaging means disposed thereon forming a feeler for engaging the ground between said forward and rear wheels and for pivotal movement on said arm toward the ground upon the raising of one or more said adjacent wheels from the ground, and means in said connecting means and connected to said feeler arm responsive to the pivoting action thereof for interrupting connection between said source and said motor upon the raising of said wheels from the ground and for reinstating connection upon return of said wheels to the ground.

3,223,262
SIDE DUMP TRACTOR LOADER
Herbert L. Orwig, Rochester, N.Y., assignor, by mesne assignments, to Yale & Towne Inc., New York, N.Y., a company of Ohio
Filed July 10, 1963, Ser. No. 293,972
5 Claims. (Cl. 214—140)



1. In a loader of the class described, a bucket carrier, a bucket having a front digging side, means pivoting one end of said bucket on said carrier for pivotal movement about a pivot axis extending longitudinally of said loader whereby the bucket may be tipped sideways, a ram extending between said bucket and carrier for tipping said bucket about said pivot axis, tongue and groove guide means along the rear side of said bucket and carrier remote from the front digging side and also on the end of said bucket and carrier remote from said pivot axis which interengage with the tongue extending into the groove when said bucket is in a normal untipped position relatively to said carrier, said tongue and groove guide means extending in a direction substantially perpendicular to said pivot axis whereby when said tongue and groove means are interengaged they accept all stresses and forces acting on said bucket during normal forward and digging operations except those forces which are in a purely side tipping direction.

3,223,263
UNDERBODY SPARE TIRE AND WHEEL CARRIER
Robert L. Fielding, 1455 W. 120th St., Los Angeles, Calif.
Filed Mar. 10, 1964, Ser. No. 347,414
5 Claims. (Cl. 214—454)

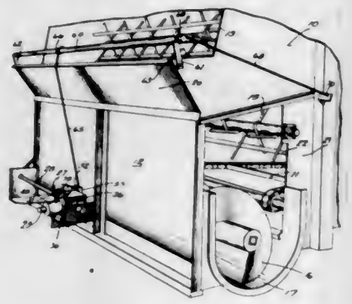


1. A carrier assembly of the character described, adapted to selectively retain and to deliver from beneath a vehicle body and the like to a pick-up position beyond the periphery of said body, a spare tire and/or vehicle wheel in generally horizontal position, and comprising in combination: a dependent, generally horizontally disposable, support unit having an elongated portion terminally pivoted at its inner end for arcuate vertical movement of its length so as to dispose its outer end toward and away from the ground, and a slidable portion extending along said elongated portion and having its inner end hingedly connected to said elongated portion and also longitudinally slidable therealong, without terminal separation, whereby upon longitudinal extension it may project beyond the periphery of said vehicle body substantially parallel to the ground, said slidable portion carrying clamp means for holding a wheel after the latter is placed flat thereupon, the elongated portion having its inner pivoted end coupled to bracket means for dependent attachment beneath said vehicle body, whereby the outer end of the said support unit may be raised and lowered generally vertically toward and away from the body, and the slidable portion is extensible lengthwise therealong to project beyond the outer margin of said undercarriage from whence said tire and/or wheel may be placed thereon and lifted off; and operative means carried by said vehicle body and adapted to move the support unit between lowered-projected and elevated-retracted positions.

3,223,264
FORAGE WAGON WITH ROTATING KEY CLUTCH
Delbert D. Towne, Rochester, Minn., assignor to Kasten Mfg. Corp., Allenton, Wis., a corporation of Wisconsin
Filed Dec. 5, 1962, Ser. No. 242,415
6 Claims. (Cl. 214—519)

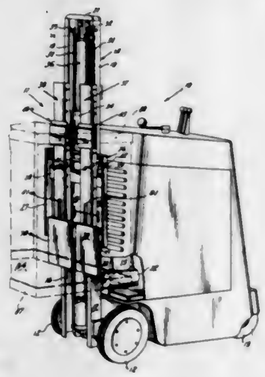
1. A forage wagon comprising at least one component adapted to be power driven, power transmission means connected to said component and including a clutch comprising a rotatable first member having a recess therein,

a second member mounted for coaxial rotation with said first member, a pin having a main part and a relieved end part, means mounting said main part of said pin in said second member for rotation therewith and for rotation relative thereto between a first position locating said relieved end part clear of said recess whereby, said first and second members are disengaged, and a second position locating said relieved end part in engagement with said recess, whereby said first and second members are in driving engagement, and a finger extending rigidly from said pin beyond said second member, a trip member mounted on said forage wagon for movement rela-



tive to a position engageable with said finger to shift said pin to said first position when said pin is in said second position and said first member is rotating, means connected to said trip member and to said forage wagon for biasing said trip member away from its said position, and flexible means connected to said forage wagon and to said trip member and extending adjacent to said component in readily accessible location to an operator for affording movement of said trip member against said biasing means to its said position and consequent shifting of said pin to its first position.

3,223,265
CARTON GRAB ASSEMBLY FOR LIFT VEHICLES
Elmer K. Hansen, 126 Cecilia St., Sioux City, Iowa
Filed Sept. 3, 1963, Ser. No. 306,180
9 Claims. (Cl. 214—650)



8. A grab assembly for use with an elevatable structure comprising:

(a) a base plate mounted on said elevatable structure having fulcrum means secured to one side and adjacent a lower section thereof,

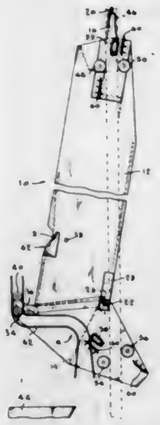
(b) laterally extended tongue means secured to the other side of said base plate,

(c) first jaw means having a mid-section and a bottom section, said bottom section pivotally connected to said base plate,

(d) second jaw means having a bottom portion and a top portion, said bottom portion pivotally movable relative to said fulcrum means, and

(e) said second jaw means pivotally connected to said first jaw means whereby pivotal movement of said first jaw means away from the base plate moves the top portion of said second jaw means toward said first jaw means in a clamping action.

3,223,266
SKIP BUCKET
James W. Clark, Iron Mountain, Mich., assignor to Lake Shore, Inc., Iron Mountain, Mich., a corporation of Michigan
Filed June 17, 1963, Ser. No. 288,166
5 Claims. (Cl. 214—707)

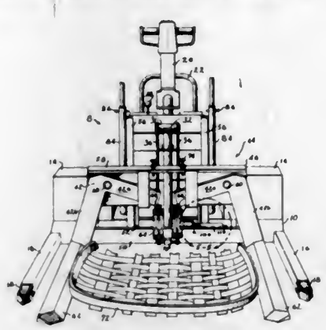


3. A skip including, a body member, a door member at the lower end of the body member, a pivot connection at the lower rear of the body member and including means permitting limited translational movement of the pivot, means for guiding the skip in transit, means for swinging the lower portion of the body member outwardly into a dump position, a roller on one of the members, a cam surface on the other member, the cam surface and roller forcing translational movement of the pivot in the final closing action of the door member whereby the door is moved bodily against the body member as opposed to purely rotational closure of the door member.

3,223,267
LIFT TRUCK
Harold A. Stammen, New Bremen, Ohio, assignor to Crown Controls Corporation, New Bremen, Ohio, a corporation of Ohio
Filed Sept. 30, 1964, Ser. No. 400,463
5 Claims. (Cl. 214—730)

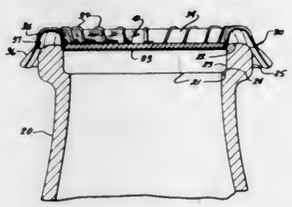
1. In a lift truck, the combination comprising: a base, a carriage mounted for vertical movement relative to said base, a pair of brackets mounted on said carriage for pivotal movement about generally parallel, horizontal axes, a pair of load engaging tines, one connected to each

bracket and movable therewith, power operated lift means mounted on said base and connected to said brackets pivoting said brackets about said axes, and a stop surface fixed relative to said carriage preventing pivotal movement



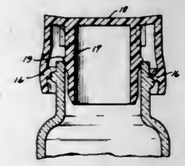
of said tines and said brackets beyond a predetermined position, said tines pivoting about said axes upon initial operation of said lift means and said carriage raising upon continued operation of said lift means.

3,223,268
BOTTLE CAP AND METHOD OF APPLYING
William E. Whitchurch, Belvidere, Ill., assignor to Champion Papers Inc., Hamilton, Ohio, a corporation of Ohio
Filed Nov. 2, 1964, Ser. No. 408,039
7 Claims. (Cl. 215—38)



1. A bottle cap for bottles of the type having an annular internal sealing wall defining a mouth, a top lip, and an outer peripheral neck ring; said cap preformed from a substantially circular blank comprising an outer layer of metal foil, an inner layer of paper, means for securing said inner layer to said outer layer, and means for impregnating the exposed surface of said inner layer with paraffin to render it relatively impervious to moisture, said cap comprising a generally planar mouth-spanning portion; a generally frusto-conical inner wall rising upwardly from, and extending around said mouth-spanning portion; a rim having a top wall extending outwardly from said inner wall; an outer wall disposed from said top wall in a smooth arc and flowing outwardly and downwardly to a level substantially adjacent to the level of the mouth-spanning portion; a skirt on the lower end of the outer wall, said skirt flowing outwardly at a wider angle than said outer wall; said inner wall culminating in a well-defined juncture with said rim and said outer wall of the rim having a well-defined juncture with said skirt; said inner wall, rim, and skirt being gathered in a plurality of circumferentially spaced folds extending outwardly from the mouth-spanning portion; said folds in the inner wall and rim being compacted into ribs projecting outwardly from the outer foil side of the cap to provide a generally smooth sealing surface at the underside of the inner wall and rim; a relatively stiff disk disposed inside said inner wall, means for securing said disk to the foil side of the mouth-spanning portion, said disk having an outer diameter approximately equal to the inside diameter of the inner wall at the juncture with said mouth-spanning portion to press the lower edge of the inner wall firmly against said sealing wall when the disk and mouth spanning portion are pressed into the mouth of the bottle, and thus effectuating a first seal; said inner wall being inclined outwardly at an angle whereby the lower portion of said inner wall is adapted to be cammed inwardly as it enters the mouth of the bottle; and said rim and skirt being adapted to be reformed around said lip and neck ring of the bottle to effectuate a second seal.

3,223,269
SNAP-ON CLOSURE
Harold W. Williams, Pawling, N.Y., assignor to Owens-Illinois Glass Company, a corporation of Ohio
Filed Dec. 21, 1964, Ser. No. 420,026
7 Claims. (Cl. 215—43)



1. A screw cap closure for bottles having a cylindrical neck with a screw thread, said screw cap being characterized by having:

(a) a top wall,

(b) an inner tubular plug member depending from the inner face of said top wall serving as means to close the mouth of a bottle having a cylindrical neck, said tubular member being relatively thin walled and resilient to conform to irregularities in the neck of said bottle,

(c) an outer tubular skirt member concentric with said inner tubular plug member having a screw thread on its inner wall and being relatively thin and resilient so as to deform sufficiently to allow the screw thread to pass over screw threads on the neck of a bottle when downward pressure is applied to said screw cap thus permitting the inner tubular member to enter the mouth of a bottle and seal the same, and

(d) an abutment in the upper part of the annular space between the inner tubular plug member and the inner wall of the outer tubular skirt adapted to lodge against the top of a bottle into which the plug member is inserted to prevent entry of the inner plug member over its full length into the neck of a bottle into which the plug is pushed, said abutment being unattached to at least one of the walls of the cylindrical plug and outer skirt so as not to hinder lateral movement of said wall as it is deformed by irregularities in the surface over which it passes when the closure is placed in position.

3,223,270
BULK CONTAINER
Curtis P. Lindley, Portland, Oreg., assignor to Centennial Mills Inc., Portland, Oreg., a corporation of Oregon
Filed Apr. 9, 1963, Ser. No. 271,796
1 Claim. (Cl. 217—16)

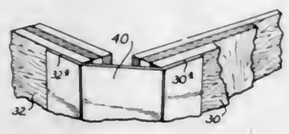
In the handling of bulk material such as flour and the like, a container for holding such material comprising, in operative position,

a central shell portion comprising four substantially vertical panels, disposed with a pair of the panels in substantially parallel and oppositely disposed relation, and with the remaining two panels between the first-mentioned pair and disposed opposite each other in substantially parallel relation, the four panels thus forming a hollow four cornered box open at top and bottom ends with adjacent panels coming together at substantially right angles at the corners of the box;

elongated, substantially continuous, flexible strip means, connecting together adjacent vertical edges of an adjacent pair of panels at each corner of the box, through joinder to each panel substantially continuously throughout the length of the strip means, and forming a hinge between the pair of panels with such hinge extending between adjacent the top and bottom of the panels;

each of said panels comprising plural cross bonded veneer layers, odd in number, and having veneer layers over opposite outer faces of the panels with grain extending in a horizontal direction between the vertical edges of the panel,

said strip means at each corner forming columnar structure at each corner of the shell portion extending transversely of the grain in the inner and outer

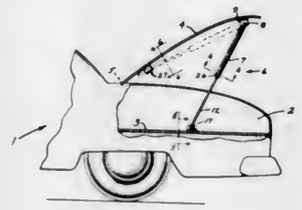


faces of the panels forming the corner, which by joinder of the strip means substantially throughout its length to one of the panels forming the corner imparts the rigidity of this panel, in directions paralleling the plane of the panel, to the other panel forming the corner, the latter being substantially at right angles to the first-mentioned panel and also joined to the strip means substantially throughout the length of the strip means, said veneer layers in a cross-bonded panel which extend over opposite outer faces of the panel and because of their grain extending in a horizontal direction between the vertical edges of the panel resisting bowing of the panel about generally vertical axes, and

means detachable from the shell portion closing off the opening at the bottom thereof; said means comprising a bottom cap including a base of rectangular outline, and an elongated margin extending along each side edge of the base and projecting upwardly therefrom; said shell portion being mounted on and within said bottom cap with each of its panels extending snugly along the inside of one of the margins of said bottom cap and with the grain in the opposite faces of the panel generally paralleling the length of the margin in the bottom cap.

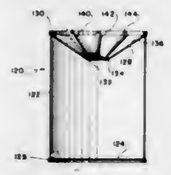
3,223,271
ADJUSTABLE LENGTH PROP APPARATUS
Eugene L. Moody, deceased, late of Saginaw, Mich., by Avis E. Moody, widow and representative, 1523 Owen, Saginaw, Mich.
Filed Apr. 30, 1962, Ser. No. 191,375
3 Claims. (Cl. 217—60)

2. In combination with a vehicle having a trunk compartment including a trunk lid, hinged at its front end to the vehicle body and raisable from a closed to an open position, and a trunk floor wall; a generally vertically extending prop assembly comprising first elongated stiff tube means pivotally connected at one end to the underside of said lid, and second elongated stiff tube means in telescoping relation therewith; a mounting member on said floor wall; said second tube means being detachably connected to said mounting member; means for releasably securing said second tube means at its lower end to said mounting member; clamp means exerting a radial clamping force on said telescoped first and second tube means for securing said first and second tube means



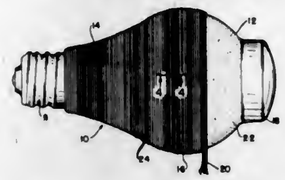
in various relative longitudinal positions to form a stiff prop assembly holding said lid fixed in various open positions; and resilient clamp means in position on the underside of said lid, for receiving said prop assembly when the second tube means has been released from said mounting member and said assembly has been swung upwardly to the underside of said lid, holding said prop assembly on the underside of said lid when it is not in use.

3,223,272
CAN FOR FLUX
Everett L. Vernon, Gypsum, Kans.
Filed Oct. 1, 1963, Ser. No. 312,982
4 Claims. (Cl. 220—1)



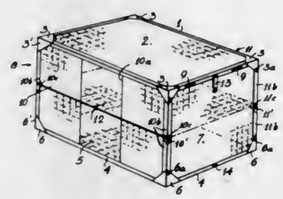
3. In a container including a wall, the improvement comprising said wall having an external surface that is generally frusto-conical in configuration about an axis that passes through the interior of the container, said external surface being concave toward the exterior of the container and being of at least such an extent in area that the area of a projection of such surface upon a plane normal to said axis constitutes a major proportion of the area of projection of the entire container upon said plane, said wall having an access opening therethrough at a position such that said axis extends through the opening, said external surface being provided with a plurality of guides extending radially from positions spaced about the periphery of the access opening, and essentially the entire extent of said external surface about said access opening being sloped toward the opening and the interior of the container to constitute a means for slidingly and cammingly directing an end of an object urged against such surface by a force generally parallel to the axis toward and into said access opening, with said guides tending to confine the position of engagement of the external surface with an object to an angular segment of the external surface defined by adjacent guides.

3,223,273
REINFORCED ENVELOPE FOR LIGHT SOURCE AND METHOD OF MAKING
Luke Thorington, Berkeley Heights, N.J., assignor to Duro-Test Corporation, North Bergen, N.J., a corporation of New York
Filed Sept. 7, 1962, Ser. No. 221,954
17 Claims. (Cl. 220—2.1)



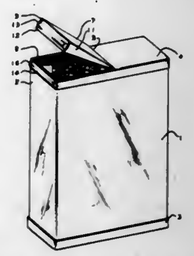
12. An electric light source including an evacuated glass envelope, a continuous surface covering of light transmitting yarn on said envelope, and an adhesive resin having substantially the same index of refraction as said envelope and forming a resin-to-glass bond between said yarn and envelope.

3,223,274
COLLAPSIBLE CONTAINER
Daniel Tolnai, Beersheva, Israel, assignor of one-half to Mifalei Matchet "Negev" Ltd., Beersheva, Israel, a limited liability company of Israel
Filed Nov. 26, 1962, Ser. No. 239,918
4 Claims. (Cl. 220—7)



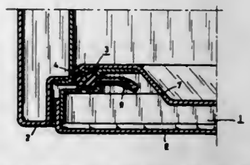
1. An easily collapsible and erectable container having an upper and a lower end, comprising: an upper horizontal wall serving as the top wall of the container when the container is in its erect position; a pair of opposed vertical side walls each having an upper and a lower end; each of said side walls being pivotably mounted at its upper and lower ends to the upper and lower ends of the container, respectively; each of said pair of side walls being divided into two sections; means hinging the two sections together permitting them to fold along a horizontal longitudinal line; a pair of opposed vertical end walls each having an upper and a lower end; each of said end walls being pivotally mounted at its upper end to the upper end of the container and free at its lower end; a lower horizontal wall; and means for mounting said lower horizontal wall; said latter means consisting of mounting elements which mount the lower horizontal wall so that it is supported in position spaced below the upper horizontal wall and in engagement with the side and end walls when the container is erect but is unsupported when the container is inverted, and which permit the pivoting of the side and end walls so that only said lower horizontal wall when so positioned locks said side and end walls against collapse, whereby merely inverting the container causes the lower horizontal wall to drop on top of the upper horizontal wall by gravity, and thereby frees the side and end walls to collapse thereon also by gravity, the container being erectable by merely re-inverting it and pulling up on the top wall until the lower horizontal wall locks the side and end walls in position.

3,223,275
CIGARETTE BOX
Frederic L. Rice, Jr., Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Jan. 2, 1964, Ser. No. 335,338
1 Claim. (Cl. 220—31)



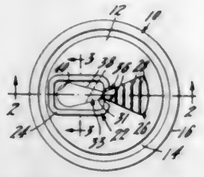
A flat oblong box for cigarettes or the like, comprising a body formed by two side wall panels and two edge wall panels, a bottom attached to the lower end of said body, a plastic cap provided with depending wall panels and having a rectangular opening in the top thereof over to one side thereof through which the contents of said box can be removed, a plastic reclosable rectangular closure flap integral at its back edge with said cap and pivotally hinged at said back edge with said cap and pivotally hinged at said back edge thereto, said closure flap having a depending front wall and two depending side walls each of which has a taper increasing in width from said back edge to the lower edge of said front wall, and being adapted to overlap the adjacent depending wall panels of said cap in order to close said opening, and releasable latch means to maintain said flap in its closed position, said latch means comprising a recess extending across at least a portion of the inside of said front wall of said flap and a complementary projection on the outside of said front wall of said cap.

3,223,276
DOOR SEAL FOR HOUSEHOLD APPLIANCES
Wilhelm Gebhardt, Munich, and Heinrich Gibbels, Chieming, Germany, assignors to Siemens-Electrogeräte Aktiengesellschaft, Berlin, Germany, a corporation of Germany
Filed July 30, 1962, Ser. No. 213,360
Claims priority, application Germany, Aug. 18, 1961, S 75,347
9 Claims. (Cl. 220—46)



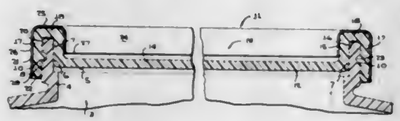
1. Door for household appliances operating with a fluid pressure system, said door comprising a door-frame structure forming a door opening, a door structure hinged to said frame structure for covering said opening, a hollow gasket member mounted on one of said structures around said openings and disposed between said two structures, a fluid medium in said hollow gasket member, and pressure control means for operating the fluid pressure system of the household appliance, said pressure control means communicating with the interior of said gasket member for simultaneously changing the volume of said gasket member by changing the pressure of said medium to thereby seal said opening when the door is closed.

3,223,277
CONTAINER CLOSURE
Arthur Philip Zundel, Cary, Ill., assignor to American Can Company, New York, N.Y., a corporation of New Jersey
Filed Dec. 10, 1963, Ser. No. 329,440
15 Claims. (Cl. 220—53)



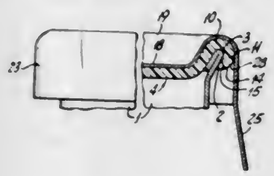
1. An end closure for a tubular can body comprising:
a substantially flat panel;
an aperture in said panel; and
a one-piece thin metal plug sealingly engaged with the portion of said panel surrounding said aperture to close said aperture;
said plug comprising:
a pull tab extending away from said aperture in substantial parallelism with said panel;
an imperforate end wall extending across said aperture and substantially closing the same;
a pair of score lines extending from the innermost side edges of said tab and continuing at least partially across said end wall; and
a rib in said end wall adjacent the juncture of said score lines and said tab side edges extending across said score lines whereby upon manual lifting and pulling of said tab the portion of said end wall defined by said score lines is torn out providing a dispensing opening in said closure.

3,223,278
SNAP RING CLOSURE SEAL FOR PLASTIC CONTAINERS
Richard C. Allen, Glen Ellyn, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Jan. 24, 1963, Ser. No. 253,570
1 Claim. (Cl. 220—60)



The combination of a wide mouth plastic container having an upstanding neck provided with a peripheral locking slot in an external portion thereof, said locking slot defining a peripherally weakened area of said neck having a thickness less than the thickness of the major portion of said neck, a removable snap ring closure secured upon said neck, said snap ring closure including a plastic closure having a depending peripheral skirt and an integral coaxial annular wall spaced from said peripheral skirt, said neck being sealingly received in the space between said skirt and said annular wall, said skirt including an integral peripheral radially inwardly directed locking lug received in sealing engagement in the peripheral locking slot of the container neck, the annular wall terminating internally of the neck in a planar end panel lying in a plane common to a plane through the locking slot and locking lug, said peripheral skirt terminating in a terminal edge axially spaced from both said peripheral locking lug and the end panel, a bight portion integrally joining the annular wall to the peripheral skirt, said peripheral skirt, bight portion and annular wall defining a generally inverted U-shaped portion of the plastic closure, a removable locking ring press forced upon said closure tending to deform the skirt and the neck of the container radially inwardly at the peripherally weakened area of the neck, said locking ring being formed of metallic material and being of a generally inverted U-shaped configuration in transverse section, and leg and bight portions of said locking ring overlyingly engaging the respective peripheral skirt, annular wall, and bight portion of said closure.

3,223,279
SNAP-ON CLOSURE ASSEMBLY
Herbert F. Wheaton, Summit, N.J., assignor to American Flange & Manufacturing Co. Inc., New York, N.Y., a corporation of Delaware
Filed May 4, 1964, Ser. No. 364,577
9 Claims. (Cl. 220—60)

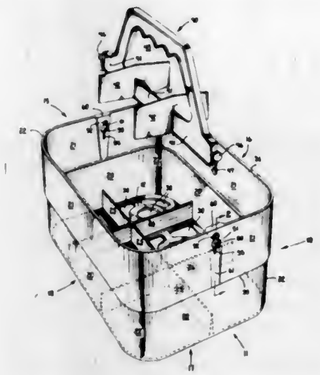


1. A closure assembly comprising a resilient snap-on closure lid and a metal sealing member overlying the same, said closure being formed of synthetic plastic material and having a top, an annular peripheral wall bordering said top extending downwardly and inwardly from said top, said wall joining said top in a rounded edge portion and terminating in a lower free end portion, said metal sealing member being formed to seal said closure in place having an annular peripheral portion including a substantially vertically downwardly extending skirt, said skirt terminating in a free edge at a position substantially below said lower free end portion of said wall, said skirt forming a friction fit engagement with said rounded edge portion, said lower free end portion of said wall being spaced radially inwardly of said skirt, a tear strip formed in said sealing member extending across said skirt; and finger grip tearing means formed integrally with said tear strip so that said sealing member can be destructively removed from said snap-on closure by tearing away said tear strip.

3,223,280
MOLDED BEVERAGE CARRIER
Julian C. Kazimier, Edinburg, Ind., assignor to Amos-Thompson Corporation, Edinburg, Ind., a corporation of Indiana
Filed July 29, 1964, Ser. No. 385,899
2 Claims. (Cl. 220—102)

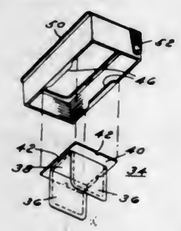
1. A bottle carrier comprising a generally rectangular receptacle having a bottom and four upright sides with an open top, said sides including an upwardly and outwardly tapering lower portion and an outwardly stepped upper edge portion configured for reception of the lower portion of an identical carrier, said receptacle having formed integrally therein within said lower portion separators for the bottles, a handle for said receptacle, said handle having a hand opening therethrough centrally thereof and a further plurality of separators for the bottles formed integrally therewith, said handle having a pair of studs formed on the opposite ends thereof, said studs tapering from a larger distal end portion to a smaller proximal

end portion and each having a depending fin integral therewith and integral with said handle, an opposite pair of said sides each having a first opening sufficiently large to easily pass a respective stud, each of said sides also having a second and third further openings in communication with said first opening with said second opening above said first opening and having a shape complementary to a respective stud, each of said third openings having a shape complementary to a respective fin with the total top to bottom length of a respective group of first, second



and third openings being approximately equal to the length of a stud with its fin, said carrier and handle being formed of resilient flexible material permitting insertion of said stud and fin in a respective group of first, second and third openings, each of said first and second openings being joined by a neck which is sufficiently narrow to provide a certain amount of resistance to a respective stud moving therebetween but is sufficiently wide to pass the stud.

3,223,281
CARRIER FOR TISSUE CONTAINING DISPENSING BOX
Daniel C. Larkin, 3134 Woodstock, Detroit, Mich.
Filed Aug. 13, 1963, Ser. No. 301,817
2 Claims. (Cl. 221—46)



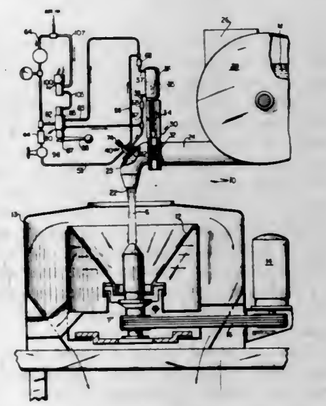
1. A dispensing container for a rectangular tissue containing box comprising, in combination, an enclosure having two opposed side walls and two opposed end walls adapted to receive and surround said tissue containing box and having an opening through its top wall to permit wthdrawal of tissues from the box, and having an opening through its bottom wall to permit insertion into and removal of the box from the enclosure, a saddle pad assembly having an intermediate portion connected to the enclosure and having weighted opposite end portions swingably connected with the intermediate portion to hang downwardly from the enclosure, said enclosure characterized in that a lid is provided swingably connected with opposite ends of the enclosure by having arms secured thereto and overlapping the opposite ends of the enclosure, said ends provided with outwardly projecting pivot pins each provided with a radial lug, said arms of the lid each having an aperture to be received over one of said pivot pins, said apertures having radial extensions adapted in one open position of the lid to register with the lugs of the pivot pins.

3,223,282
PRECISION MEASURING SYRINGE
Garth A. Kloehn, 2330 El Rancho Drive, Whittier, Calif.
Filed Mar. 9, 1964, Ser. No. 350,165
13 Claims. (Cl. 222—41)



1. A high-precision micro measuring syringe comprising a thick-walled transparent barrel with a bore of uniform cross-section therethrough and having a graduated scale extending lengthwise of its exterior, hollow needle means having a shank end fitting snugly and in a fluidtight manner in one end of said bore with its inner end terminating opposite a predetermined graduation line of said scale, means for releasably clamping said needle in assembled position in said barrel bore in a leakproof manner, and means reciprocably supporting a fluid dispensing plunger in the other end of said bore and operable as said plunger is depressed to dispense a precise quantity of fluid from said bore and through said hollow needle under pressure of at least several pounds per square inch.

3,223,283
FLOW CONTROL SYSTEM FOR CONTINUOUSLY DELIVERING MASSECUITE OR THE LIKE
Ralph C. Goodwin, Hamilton, Ohio, assignor to The Western States Machine Company, Hamilton, Ohio, a corporation of Utah
Filed July 25, 1963, Ser. No. 297,547
8 Claims. (Cl. 222—56)



1. Apparatus for delivering viscous liquid material in a stream pouring at a substantially constant rate from a supply source wherein the head pressure of the material is subject to variations, comprising:
a spout for conducting the material from said source under the head pressure of the supply therein, said spout having at its outlet end an orifice that forms

a pouring stream of the material of the required size, and defining upstream of said orifice a head chamber of substantially greater cross sectional area than said orifice,

a displaceable gate in said spout at the upstream side of said chamber for continuously constricting the flow of the material into said head chamber so as to maintain the pressure of the material in said chamber below said head pressure,

means outside said spout and insensitive to the velocity of said flow for positioning said gate, and normally holding said gate sufficiently open to keep said chamber full of the material under pressure,

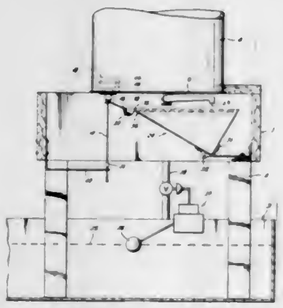
and means operative in response to a variation of said head pressure for actuating said positioning means and causing the same to vary correspondingly the extent of opening of said gate so as to keep the pressure of the material in said chamber and thereby the velocity of said stream substantially constant.

3,223,284

APPARATUS FOR DISPENSING PROPORTIONED AMOUNTS OF SOLIDS AND LIQUIDS

James D. Fann, P.O. Box 6101, Houston 6, Tex.

Filed Dec. 24, 1963, Ser. No. 333,135
12 Claims. (Cl. 222—57)



1. An apparatus for discharging proportioned amounts of liquid and granular material into a vessel comprising:

means for storing the granular material;

a tubular member with a chamber therein which communicates at opposite ends with the interior and exterior of the storage means, the longitudinal axis of said tubular member being disposed generally perpendicular to the bottom of said storage means;

a plunger reciprocally carried in the chamber, the plunger being smaller in cross-section than the chamber for forming a compartment into which granular material from the storage means may flow;

seal means for preventing granular material from gravitating around the plunger when it assumes its upper position;

a pivotally mounted bucket adapted to trip upon being filled with a fluid and after discharging its contents return to its normally upright position;

means for communicating a fluid to the bucket;

means for urging the plunger down to discharge granular material from the compartment upon tripping of the bucket; and,

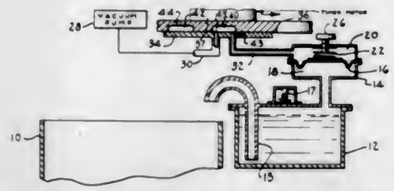
means for returning said bucket to its normally upright position whereupon said plunger is returned to its upper position to receive another charge of said granular material.

3,223,285

AIR-CONTROLLED LIQUID DISPENSING MECHANISM FOR WASHING MACHINES

Maynard E. Anderson, Birmingham, Mich., assignor to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware

Filed Mar. 15, 1962, Ser. No. 179,942
5 Claims. (Cl. 222—70)



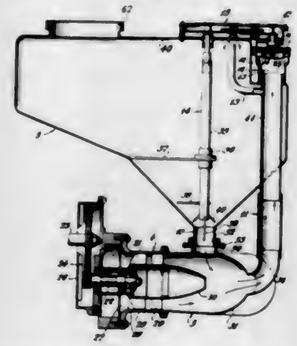
1. In a washing machine having a washing receptacle: the combination comprising a washing machine liquid additive reservoir; a vacuum-operated means for dispensing reservoir liquid to the washing receptacle; a vacuum pump connected with the vacuum-operated means; and timer-operated valve means for permitting and halting the transfer of air from the vacuum-operated means to the pump at predetermined times in the washing machine cycle; said vacuum-operated means comprising a casing having a movable wall thereon forming a ventable vacuum chamber, and a spring operating to move the movable wall in a direction to expand the vacuum chamber when said chamber is vented to the atmosphere; said valve means comprising a traveling valve member and a co-operative fixed seal structure; said seal structure having ports communicating with the pump and vacuum chamber; and said valve member having two recesses, one of which is blind and the other of which is vented to the atmosphere; whereby movement of the valve member to locate the blind recess in registry with the ports permits the pump to evacuate the vacuum chamber, and movement of the valve member to locate the vented recess in registry with the two ports causes the vacuum chamber to be vented to the atmosphere.

3,223,286

PORTABLE SPRAYER WITH AIR OPERATED MIXING MEANS

James G. Sawyer, Snyder, N.Y., assignor to General Turbine Corp., Buffalo, N.Y.

Filed Aug. 16, 1961, Ser. No. 131,768
14 Claims. (Cl. 222—175)



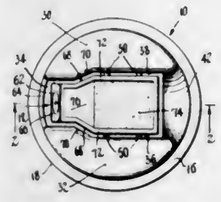
8. A portable sprayer adapted to be carried on the back of the user and comprising a supporting frame, means for mounting said frame on the back of the user, a blower mounted on said frame and having an outlet directed laterally of said frame, a duct connected to said outlet to receive air discharged from said blower and including an elbow directed at substantially a right angle to said blower outlet, a flexible hose connected to said elbow to extend forwardly therefrom beside the user, and a nozzle connected to said flexible hose, a hopper superposed above said blower and said elbow, said hopper having an opening communicating with said elbow, a mixing device in said hopper, a turbine mounted on said hopper and connected to said mixing device to drive the same, and a conduit communicating at one end with said elbow and at its other end with said turbine for diverting a portion of the air discharged from said blower to said turbine for driving the same.

3,223,287

MOLDED ONE-PIECE ACTUATOR CAP FOR AEROSOL DEVICES

Philip H. Sagarin, Bridgeport, Conn., assignor to Valve Corporation of America, Bridgeport, Conn., a corporation of Delaware

Filed Nov. 12, 1963, Ser. No. 322,815
5 Claims. (Cl. 222—182)



1. An aerosol actuator comprising, in combination:

(a) a stationary cap body having an outer tubular peripheral wall,

(b) said body having an expansive top wall provided with a centered opening,

(c) said top wall having flanges depending from opposite edges of the top opening,

(d) a depress button disposed in said centered opening and having means engageable with a movable valve stem of an aerosol container to actuate the stem, and

(e) integral frangible tie webs extending between and joining the said button and depending flanges, temporarily supporting the button centralized in the top opening,

(f) said webs becoming severed when the button is depressed to actuate the valve stem, and thereafter the button being wholly free of the cap body.

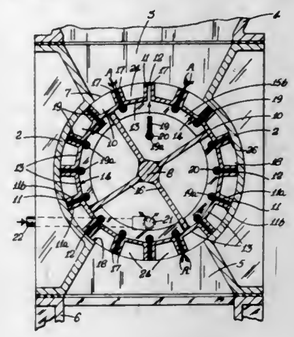
3,223,288

HANDLING OF GRANULAR MATERIAL

Hans Stern, 17 Morris Crescent, Selection Park, Springs, Transvaal, Republic of South Africa

Filed June 16, 1964, Ser. No. 375,579
Claims priority, application Republic of South Africa, June 26, 1963, 63/2,864
4 Claims. (Cl. 222—194)

1. Apparatus for handling granular material comprising a casing; a material inlet into the casing; a material outlet from the casing spaced from the inlet; a rotor rotatably located within the casing, the rotor comprising a hollow reservoir for fluid under pressure, a fluid inlet into the reservoir, a plurality of circumferentially spaced vanes extending radially from the reservoir towards said casing with each pair of adjacent vanes forming a pocket for transferring material from the inlet to the outlet, each vane presenting a tip surface disposed in opposed spaced relationship to an inner surface of the casing, a fluid passage in each vane in permanent communication with the interior of the reservoir and with an outlet located sub-



stantially centrally in the tip surface in a transverse direction and extending substantially the whole length of the tip surface, and a fluid pervious packing in each fluid passage at and along the outlet.

3,223,289

DISPENSING DEVICES

Bernard Bouet, 65 Rue La Boetie, Paris, France

Filed Apr. 30, 1962, Ser. No. 191,693
Claims priority, application France, Nov. 24, 1961, 880,033
2 Claims. (Cl. 222—209)



1. A dispensing assembly comprising a container; a deformable wall within the container defining two separate spaces therein, one of said spaces being fillable with said material; a dispensing aperture connecting said one space with the exterior; means operable from the exterior of said assembly for deforming said deformable wall; first and second vents connecting the other space with the exterior; a check valve associated with the first vent to oppose outward air flow therethrough and a check valve associated with the second vent to oppose inward air flow therethrough; and means selectively operable to disable said first vent whereupon operation of said wall deforming means will permit the dispensing of material from the exterior into said one space, and to disable said second vent whereupon operation of said wall deforming means will permit the dispensing of material from said one space to the exterior.

3,223,290

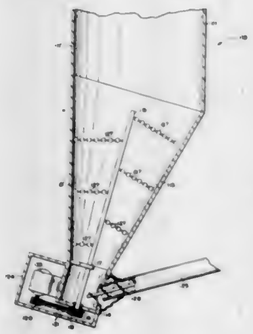
BOTTOM DISCHARGE CONTAINER WITH AGITATOR

Leo Alois Schuld, Rte. 4, Mosinee, Wis.

Filed Dec. 23, 1963, Ser. No. 333,798
9 Claims. (Cl. 222—228)

1. A device for use within a bulk storage hopper for loosening materials stored in said hopper comprising in combination a rotatable shaft within said hopper, drive means for rotating said shaft, a plurality of non-rigid substantially uniform elongated members each affixed at

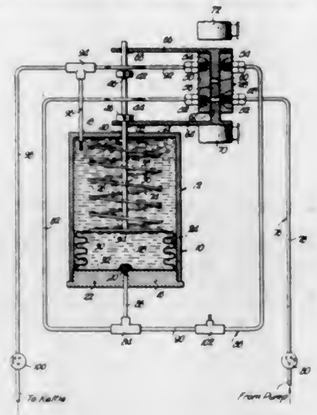
only its upper end extremity to said shaft, said elongated members each being disposed at a different height on said shaft and being enabled to swing outwardly and upwardly in response to centrifugal force when said shaft is rotated, each member being longer than the member attached to the shaft below it, said members disposed to extend outward in response to centrifugal force when said shaft is rotated, and to depend downward when said shaft is not rotated, each of said elongated members being slightly shorter than the distance from said shaft to the sides of said enclosure at the elevation at which each of said members is affixed to said shaft, said elongated members causing bulk materials to become free flowing



and non-compacted when passed therethrough in bulk storage hopper, wherein said hopper comprises an upper cylindrical portion having a relatively great uniform diameter and a lower portion tapering inwardly and downwardly to a smaller diameter and wherein said members are located entirely within said tapering portion and said shaft extends substantially principally only in said tapering portion, and wherein said shaft is devoid of auger blades and extends only within said tapering portion, and wherein said tapering portion extends as a cone having an axis which is at an angle to the axis of the said cylindrical portion so that said tapering portion extends downwardly and to one side.

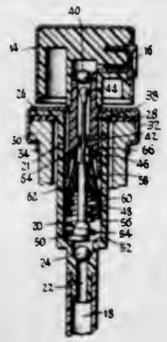
3,223,291
MEASURED CHARGE DISPENSER
Frank J. Thomas, Overland Park, Kans., assignor to Manley, Inc., Kansas City, Mo., a corporation of Missouri
Filed Aug. 7, 1964, Ser. No. 388,184
16 Claims. (Cl. 222—249)

1. Fluid control apparatus comprising:
a closed receptacle having a pair of spaced openings therethrough;
a member mounted within said receptacle between said openings for movement alternately toward the latter and disposed for dividing the receptacle into a pair of compartments;
first conduit means for coupling one of said openings to a source of fluid under pressure to thereby permit fluid to be directed into the compartment communicating with said one opening;
second conduit means placing said compartments in fluid communication with each other;
valve means coupled with said first conduit means and said second conduit means for alternately blocking the flow of fluid through the second conduit means as fluid flows through said first conduit means and into the compartment communicating with said one opening when said valve means is in a first operative condition and blocking the flow of fluid through said first conduit means as fluid flows through said second conduit means when said valve means is in a second operative condition; and
means responsive to the movement of said member for changing the operation of said valve means from one of said conditions to the other condition, where-



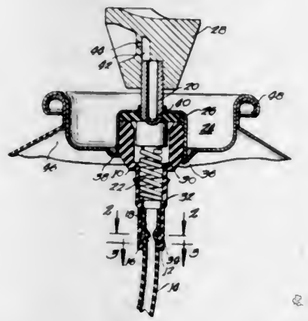
by fluid is forced out of the other of said openings from the compartment communicating therewith when said valve means is in said one condition and fluid may be forced into the last-mentioned compartment from the compartment communicating with said one opening when said valve means is in said second condition.

3,223,292
PUMP CONSTRUCTION FOR HAND-OPERATED DISPENSER
Allen J. Keeney, Huntington, and Wolf Stelman, Fairfield, Conn., assignors to Valve Corporation of America, Bridgeport, Conn., a corporation of Delaware
Filed Sept. 30, 1964, Ser. No. 400,350
4 Claims. (Cl. 222—321)



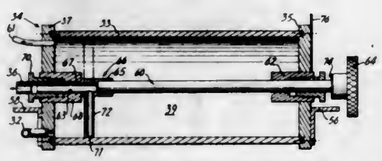
1. In a hand-operated dispenser, a pump construction comprising, in combination:
(a) a cylinder,
(b) a pair of nested and assembled upper and lower piston cups in a cylinder, both facing in the same direction and each cup constituting a molded resilient plastic piece separate from the other, said cups being closely spaced,
(c) a piston stem on which the cups are mounted, said stem passing out through one end of the cylinder,
(d) means providing a discharge passage through said piston cups and piston stem, and
(e) means maintaining the piston cups in assembled relation.

3,223,293
AEROSOL VALVE WITH SECURE ATTACHING MEANS FOR DIP TUBE
Nels W. Seaquist, Crystal Lake, Ill., assignor, by mesne assignments, to Seaquist Valve Company, Division of Pittsburgh Railways Company, Cary, Ill., a corporation of Pennsylvania
Filed Sept. 3, 1963, Ser. No. 306,100
1 Claim. (Cl. 222—394)



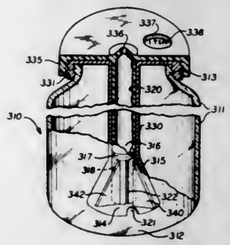
A valve for use upon an aerosol can, said valve having a dip tube not subject to blow out or turning when said can is pressure-filled comprising a tubular valve body with a capillary tubular dip tube attachment tail and a dip tube affixed thereto by a force fit of said tube into the cavity of said tubular tail, said tail having dip tube anchoring means on its inner surface and a non-circular tubular cavity with one transverse dimension greater than another transverse dimension wherein said tube is firmly anchored to said tail and prevented from turning during pressure filling of the can, passage means within said valve body for dispensing material from said can, sealing means for said passage means and means whereby said valve is normally maintained in closed condition.

3,223,294
PRINTING PRESS WATER SOLUTION MIXING AND DISTRIBUTING MECHANISM
Harold W. Gegenheimer, Darien, Conn., Andrew N. Stad, Syosset, N.Y., and Philip E. Tobias, Abington, Pa., assignors to Baldwin-Gegenheimer Corporation, Brooklyn, N.Y., a corporation of New York
Original application Nov. 14, 1961, Ser. No. 152,205, now Patent No. 3,166,095, dated Jan. 19, 1965. Divided and this application July 22, 1964, Ser. No. 384,315
1 Claim. (Cl. 222—434)



A metering device comprising a cylindrical housing, end plates for said housing forming an enclosed chamber therein, means mounting said housing with the central axis of said housing in a generally horizontal plane, inlet means at one end of said chamber for supplying fluid to said chamber, a shaft rotatably mounted axially in said chamber and extending through one of said end plates, an actuating member for rotating said shaft mounted at one end of said shaft, said actuating member being disposed outside one of said end plates, a hollow sleeve member attached at one end of said shaft having the other end disposed outside of the other of said end plates, a tubular element secured at one end transversely to said sleeve with the free end of said tubular element disposed for travel adjacent the periphery of said chamber to a selected position in said chamber, an outlet line communicating with said tubular element, means in said outlet line for withdrawing fluid from said chamber through said tubular element and means for replacing said withdrawn fluid.

3,223,295
METERED FLUID DISPENSER
Jack Falerni, 2555 Cruger Ave., and Dorothy Arbitman, 2150 Wallace Ave., both of Bronx, N.Y.
Filed July 9, 1963, Ser. No. 293,793
4 Claims. (Cl. 222—438)

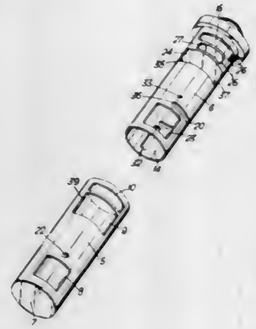


1. A fluid dispensing assembly for dispensing a desired metered quantity of fluid from a container said dispensing assembly comprising: a metering chamber in fluid communication with the fluid in said container, said chamber having an outlet above the bottom of the chamber and an inlet formed between the bottom of the chamber and a lowermost part of the container; a valve seat adjacent said outlet; a fixed baffle wall and a movable baffle wall in said chamber on opposite sides of said outlet; a valve member of a density such as to float in the fluid arranged within said chamber; a guide surface on said chamber guiding said valve member into said seat to close off said outlet when a given quantity of fluid has been admitted to said chamber from said container; a discharge conduit leading from the chamber outlet and a pouring orifice on the container in fluid communication with said chamber to permit the dispensing of the fluid metered in said chamber.

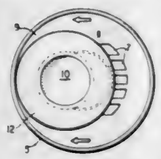
3,223,296
LIQUID HANDLING DEVICES
Rogor Strange Waddington, Putney, London, and Bruce Duval, Woldingham, England, assignors to Waddington & Duval (Holdings) Limited, a company of England
Filed June 17, 1963, Ser. No. 288,413
Claims priority, application Great Britain, June 19, 1962, 23,609/62
2 Claims. (Cl. 222—442)

1. A device for withdrawing a liquid from a closed container which device comprises a barrel formed with a liquid entrance and an exit aperture mutually spaced apart along one side thereof and with an air exit on the opposite side thereof, and within the barrel a hollow rotary valve member formed along one side thereof with a liquid entry port, a liquid exit port and an air entry port, the liquid entry port being positioned to correspond in the axial direction of the barrel with the liquid entrance, and

the liquid exit port and the air entry port being positioned to correspond in the axial direction of the barrel with the exit aperture, and along the opposite side thereof with an air exit port positioned to correspond in the axial direction of the barrel with the air exit and with a liquid filling aperture positioned to correspond in the axial direction of the barrel with the liquid entrance, an air chamber within the rotary valve member communicating between the air entry port and the air exit port, said exit aperture and said liquid exit port being circumferentially wider than said liquid entrance and said liquid entry port, rotation of the valve member within the barrel giving firstly a position in which the liquid filling aperture registers with the liquid entrance whilst the liquid exit port and the air entry port are out of register with the exit aperture and the liquid entry port is out of register with the liquid entrance, secondly a position in which the liquid filling aperture and the liquid entry port are out of register with the exit aperture and a part of the liquid exit port is in register with the exit aperture, and thirdly a position in which the liquid entry port is in register with the liquid entrance, the liquid exit port and the air entry port are both in register with the exit aperture and the air exit port is in register with the air exit.

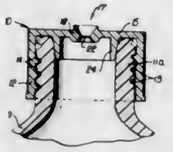


3,223,297
SNAP ACTING SLIDE LOCK TOP CLOSURE
Robert Nyden, Manhasset, N.Y., assignor to Waterbury Companies, Inc., Waterbury, Conn., a corporation of Connecticut
Filed June 3, 1964, Ser. No. 372,144
9 Claims. (Cl. 222—485)



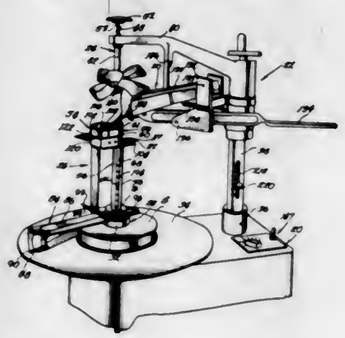
6. A closure for containers comprising the combination with a container neck providing access to the container interior of a cap member having a bore therethrough, means for holding the cap to the container neck, other means in said cap in communication with said container interior, a top slidably mounted on said cap to cover and uncover said other means and still other means on said cap and top for locking same against upward vertical relative movement and releasably locking same in predetermined relationship, the means on said cap and top for locking same against vertical relative movement comprising a depending top wall portion, an inwardly extending slanted cap surface in engagement therewith and an enlarged lower end on said wall whereby pull on the top causes a leveling of the slanted cap surface and amplifies the engagement of the said surface and the depending top wall portion.

3,223,298
BOTTLE CAP
Robert C. Roberson, Lynwood, and Francis E. Flynn, Jr., Hermosa Beach, Calif., assignors to Purex Corporation, Ltd., Lakewood, Calif., a corporation of California
Filed Apr. 6, 1962, Ser. No. 185,680
3 Claims. (Cl. 222—541)



1. A liquid dispensing cap for a liquid-containing bottle the sides of which are deflectable to project the liquid out through the cap, said cap having an outer annular portion applicable to the bottle neck and having an annular end wall the outer surface of which is essentially flat, said end wall having a centrally thickened outwardly projecting portion forming a small diameter orifice the walls of which are essentially venturi-shaped to form an outwardly flared discharge extent projecting axially from said outer surface of the cap, the venturi shaped walls of the orifice also forming inlet extent tapering toward the orifice throat, and a diaphragm normally extending across and closing said orifice, said diaphragm being rupturable to permit said liquid projection through the cap in a restricted stream, said flare extending from a point proximate the venturi orifice throat and being widely divergent in relation to the size of said throat, said orifice with said outwardly flared discharge extent providing means for substantially freeing the cap surface immediately outside the flare from an overflow of residue liquid accompanying the dispensing operation.

3,223,299
BOW-FORMING MACHINE
James E. Kerrigan, Arlington Heights, and Raimonds Grikis, Chicago, Ill., assignors to Chicago Printed String Company, Chicago, Ill., a corporation of Delaware
Filed Sept. 21, 1962, Ser. No. 225,224
10 Claims. (Cl. 223—46)



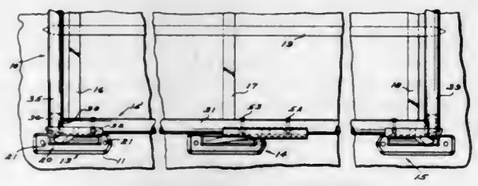
1. In a machine adapted for forming bows from ribbon, holding means for engaging and holding ribbon fed thereto, reciprocable feed means engageable with said holding means upon reciprocation for feeding successive lengths of ribbon to said holding means, said reciprocable feed means being rotatable about the locus of its reciprocation whereby successive lengths of ribbon may be twisted as they are fed to said holding means by said feed means, support means for supporting a ribbon spool for independent rotation about the axis of rotation of said feed means, and drive means for reciprocating and rotating said feed means to withdraw successive lengths of ribbon from a ribbon supply on said support means, twist such lengths and engage such twisted lengths on said holding means to form the loops of a bow.

3,223,300
COMBINATION KNAPSACK FRAME
Martin E. Moore and Earl E. Moore, both of 1232 N. Euclid Ave., Upland, Calif.
Filed Apr. 7, 1964, Ser. No. 357,873
5 Claims. (Cl. 224—25)



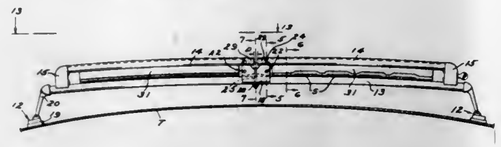
1. An expandable knapsack carrier frame and the like comprising a pair of spaced apart elongated hollow side tubes, the tubes at one end having curved portions with telescoping sections to form a shelf-like structure when the frame is upright, telescoping cross-members having their outer ends fixed to their respective side tubes in spaced apart positions on the side of the tubes wherefrom the shelf-like structure projects; and a plurality of spaced apart webbing strips having their ends fixed to the side tubes on the opposite side to which the cross-members are fixed, and means releasably holding each webbing strip in folded condition when the frame is in contracted form.

3,223,301
CAR TOP CARRIER
Frederick A. Helm, Detroit, Mich., assignor to Helm Accessories, Inc., Detroit, Mich., a corporation of Michigan
Filed May 24, 1962, Ser. No. 197,403
12 Claims. (Cl. 224—42.1)



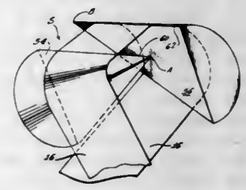
1. In a car top carrier, the combination comprising a plurality of stanchions adapted to be mounted on a car top at longitudinally spaced points along the sides thereof, each said stanchion having a base and an upright extending upwardly from said base, the upper end of each said upright including an arcuate open sided seat extending longitudinally of said stanchion and facing inwardly, a hollow tubular side rail positioned along each side of said car top and engaging the seats of successive stanchions, a hollow tubular end rail at each end of the carrier engaging and extending between the ends of said side rails.

3,223,302
CAR TOP SKI RACK
Frederick A. Helm, Detroit, Mich., assignor to Helm Accessories, Inc., Detroit, Mich., a corporation of Michigan
Filed Nov. 1, 1962, Ser. No. 234,619
9 Claims. (Cl. 224—42.1)



1. In a car top ski rack, the combination comprising at least two pairs of opposed stanchions adapted to be mounted on a car top at longitudinally spaced points along the sides thereof,
each said stanchion comprising a base and an upright extending upwardly from said base,
each said base having a seat into which the lower end of each said upright extends,
means for locking the lower end of each said upright with respect to said seat,
said means being such that the upright can only be removed relative to the base by an arcuate movement longitudinally of the car top about a generally transverse axis,
a cross rail extending between the upper ends of each pair of said uprights,
an arm hinged to each said cross rail about one end thereof,
means for locking the other end of each said arm with respect to its cross rail to clamp skis laid on the cross rails,
said stanchions being so positioned that the uprights in one opposed pair of stanchions can only be removed by an upward and rearward swinging movement while the uprights in other opposed pairs of stanchions can only be removed by an upward and forward swinging movement.

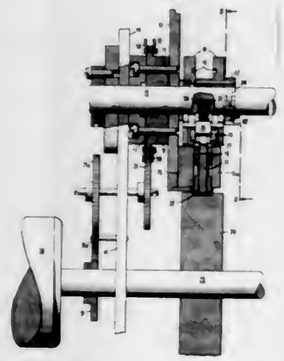
3,223,303
TAPE GUIDE FOR MAGNETIC RECORDERS
Jonathan Hunter, Los Angeles, Calif., assignor to Litton Systems, Inc., Beverly Hills, Calif.
Filed May 21, 1962, Ser. No. 196,326
8 Claims. (Cl. 226—197)



1. A tape-handling apparatus comprising:
a substantially biconical tape guide;
means for directing a tape toward said guide along a first line in a predetermined direction; and
means for pulling the tape from the guide along a second line in a different direction;
said biconical tape guide having at least some portions of its surface rotated from perpendicularity with respect to the plane which both passes through the second line and is parallel to the first line;
said tape guide further constituting a continuous, developable surface, composed of the surfaces of two

cones merging into one another in engagement with the tape, which is smoothly curved and has the same length of contact with the tape in the direction of tape movement at both edges of the tape and across the entire area of engagement of the tape and tape guide.

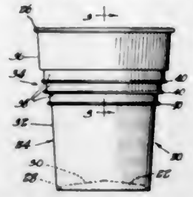
3,223,304
ROTARY STAPLER
Mack R. Chaffee, Candor, and David W. Leach, Endwell, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Mar. 8, 1963, Ser. No. 263,995
7 Claims. (Cl. 227—81)



1. A high-speed rotary stapler, comprising:
a stationary shaft;
a rotatable disc mounted on said shaft;
stationary cam surface means mounted on said shaft adjacent to said disc;
means for rotating said disc;
staple driving means slidably mounted on said disc and having means to engage said cam surface means whereby said driving means is reciprocated radially in and out with respect to said disc as said disc rotates;
staple forming means releasably connected to and reciprocably slidable on said staple driving means to reciprocate therewith;
a forming anvil slidably mounted on said disc and connected to said staple driving means to move in and out of the path of said staple forming means whereby said forming anvil is in the path of said staple forming means as said staple forming means is moved toward said forming anvil by said staple driving means to form a staple around said forming anvil;
spring-biased hammer means mounted on said shaft to contact said staple driving means and provide an impact force to move said staple driving means outwardly in a staple driving stroke; and
cocking cam means mounted on said rotatable disc to engage and cock said spring-biased hammer means.

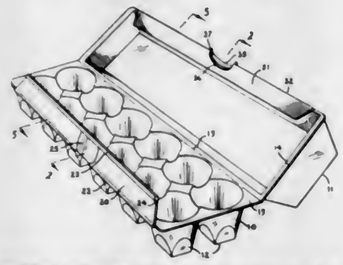
3,223,305
PLASTIC CUP WITH FINS
Bryant Edwards, Clarendon Hills, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Filed Dec. 14, 1962, Ser. No. 244,615
10 Claims. (Cl. 229—1.5)

1. A thin-wall plastic cup of integral one-piece construction comprising a bottom and a sidewall integral therewith and extending up to an open upper end, said sidewall having a plurality of integral fins projecting therefrom spaced apart a distance for a plurality of such fins to be engaged by the fingers of a user, each fin being of



double wall re-entrant construction, the two walls of each fin being integrally joined only at the radial outer and inner limit extremities.

3,223,306
CARTON WITH DUAL LOCKING FLAPS
Eugene M. Alsman, 5104 SE. Long St., Portland, Oreg.
Filed Apr. 20, 1964, Ser. No. 361,040
3 Claims. (Cl. 229—2.5)

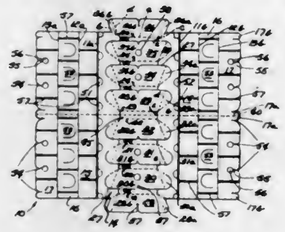


1. A molded pulp egg carton comprising a bottom section having egg pockets to receive the lower portions of eggs, an upstanding locking flap hinged to the upper edge of one side of said bottom section, said flap being molded with a thickened upper edge having a downwardly facing shoulder surface forming a catch abutment extending along the outer side of said upper edge, a cover having sufficient depth to receive the upper portions of eggs in said pockets, a locking flap hinged to the lower edge of said one side of said cover and adapted to be folded back in upstanding position within the cover for engagement of its upper edge under said catch abutment when the cover is closed on the bottom section, said lower edge of the cover seating on said upper edge of the bottom section when the cover is closed whereby the hinge lines of the two flaps are adjacent to each other and the flaps extend parallel to each other in face to face relation, said last flap and cover having registering openings adjacent the hinge of the last flap to admit an operator's finger between the flaps for disengaging the flaps from each other to unlock the cover, said first flap having a recess behind said registering openings to guide the operator's finger upwardly between said flaps, and means for securing the opposite side of the cover to the opposite side of the bottom section.

3,223,307
CARTON CONSTRUCTION
Roy M. Kuhlman, Crown Point, Ind., assignor, by mesne assignments, to PKG. Corporation, Evanston, Ill., a corporation of Delaware
Filed July 25, 1963, Ser. No. 297,515
11 Claims. (Cl. 229—28)

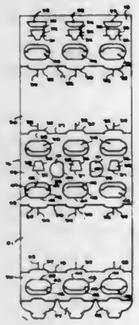
1. An elongated foldable carton for eggs and the like, comprising a pair of elongated side panels arranged in spaced substantially coextensive relation, bottom panels extending angularly from the lower marginal portions of said side panels, elongated partitioning means disposed intermediate said side panels and extending upwardly from said bottom panels, a plurality of bridging elements

arranged in spaced substantially parallel relation and interconnecting corresponding segments of the upper marginal portions of said side panels, and a plurality of divider panels depending from said bridging elements and cooperating with said side and bottom panels and said partitioning means to form rows of egg-accommodating pockets, peripheral end portions of each divider panel being in interlocking engagement with portions of the respective bridging elements and said partitioning means and retaining said divider panels in depending relation with respect to said bridging elements; one of said bridging elements intermediate the end bridging elements



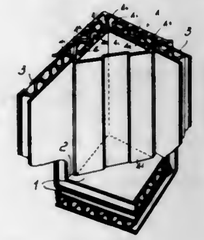
being provided with a pair of spaced substantially parallel divider panels, said one bridging element and the portions of said side and bottom panels and the partitioning means disposed intermediate the planes of said pair of divider panels being provided with means whereby said carton is separable into complemental carton sections and each divider panel of the separated pair of divider panels has the peripheral end portions thereof in interlocking engagement with portions of the separated bridging element and becomes an end face of a complemental carton section.

3,223,308
CAN CARRIER WITH REINFORCING MEANS
Arthur J. Weiss, Bergenfield, N.J., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Sept. 27, 1962, Ser. No. 226,704
12 Claims. (Cl. 229—40)



1. A blank for a can carrier of the wrap-around type, said blank being of an elongated rectangular outline and being divided into panels by transverse fold lines, said panels including terminal bottom forming panels, side wall panels and a central top wall panel, cooperating tabs and slots on said bottom forming panels, each of said fold lines being interrupted by a plurality of opening defining cuts in a respective one of said side wall panels to define can receiving openings in said side wall panels, and cut and fold lines on at least one of said top wall panel and bottom forming panels in alignment with at least certain of said opening defining cuts defining flaps foldable to positions overlying said fold lines at the ends of certain of the side wall openings defined by said opening defining cuts to reinforce the erected can carrier along said fold lines, and flap locking means on said side walls for temporary interlocking engagement with said flaps to retain said flaps in folded overlying relation to the respective opening defining cuts during the application of the blank.

3,223,309
COMPOSABLE CONTAINER STRUCTURE CONSISTING OF SHEET-LIKE MATERIAL
Bartolomeo Chiorri, Via XX Settembre 5, Monza, Milan, Italy
Filed Mar. 20, 1964, Ser. No. 353,423
2 Claims. (Cl. 229—49)

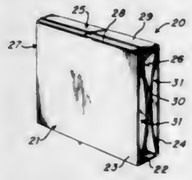


1. In a cardboard container having two rectangular cardboard panels with superposed rectangular central portions forming the bottom of the container, said panels being arranged crosswise to each other, each of the cardboard panels having folded-up opposite end portions forming respective side walls of the cardboard container, in combination, a connecting structure for joining adjacent ends of the meeting side walls of the container one to another, comprising, for each of the four corners of the container: two spaced apart angle members one of which being the outer angle member and the other being the inner angle member, each of the angle members having wings meeting at 90° angles and forming a gap between the angle members receiving the meeting ends of the side walls of the cardboard container, a web member joining together at their vertices the two angle members, said web member bisecting the outer of said spaced apart angle members, the cardboard of said meeting ends including a sheet of corrugated cardboard therebetween having undulations the generatrix of which extending parallel to said web member, said wings having on their inner surfaces facing one another teeth in the form of continuous ribs extending parallel to said web member and projecting from said inner surface of the wings in a direction inclined towards said web member and embedded in said cardboard received in said gap and engaging said undulations to fix said cardboard within said gap, and a stiffening plate rigidly connecting the ends of the wings of said inner angular member.

3,223,310
CONTAINER STRUCTURE
William C. Becker, Henrico County, and Ronald M. Ayer, Chesterfield County, Va., assignors to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed Oct. 9, 1963, Ser. No. 314,916
5 Claims. (Cl. 229—56)

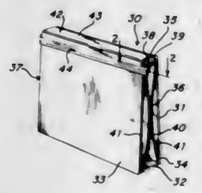
1. A container construction comprising a rigid board means having opposed end edges and opposed side edges and having opposed sides, said board means being transversely foldable to define a pair of opposed top flaps which

include said end edges, a pair of opposed side walls and a bottom wall, and a flexible liner means disposed adjacent one side of said board means and being wider than said board means, said liner means having peripheral edges secured to said side and end edges of said board means, said liner means having a transverse portion secured across substantially the middle of said board means to said bottom wall of said board means to define two separate opposed sealed closed product-containing pouch means each having the interior thereof defined partly by said liner means and partly by said one side of said board means, said board means and said liner means being folded



to define a container construction having top wall means defined by said top flaps of said board means being secured together in overlapping relation with said liner means therebetween and being folded at right angles to said side walls of said board means, opposed side wall means defined by said side walls and bottom wall means defined by said bottom wall so that the other side of said board means forms the exterior of said container construction and said liner means is disposed inside said container construction whereby said container construction has opposed opened end walls.

3,223,311
CONTAINER STRUCTURE AND CLOSURE MEANS
William C. Becker, Henrico County, Ronald M. Ayer, Chesterfield County, and Richard M. Watts, Henrico County, Va., assignors to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed Oct. 11, 1963, Ser. No. 315,590
2 Claims. (Cl. 229—56)



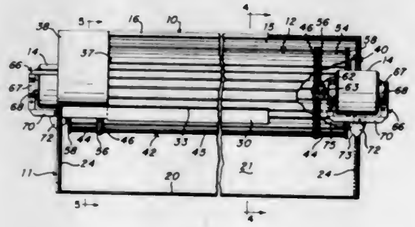
1. A container comprising a relatively rigid board means forming top, bottom and opposed side wall means of said container, said top wall means including two flaps respectively interconnected to said side wall means and disposed in overlapping relation to close said container, a relatively flexible sheet means disposed in said container and at least partly defining initially sealed closed product containing pouch means in said container, and a tape means having one edge means secured to the outer overlapping top flap and having an opposed edge means folded around one of said side wall means to hold said top wall means in its closed position, said tape means being unfoldable from around said one side wall means to permit opening of said top wall means to provide access for initially opening said pouch means, said tape means, thereafter, being adapted to be again folded around said one side wall means to not only reclose said top wall means but also to reclose said pouch means, said opposed edge means of said tape means being reinforced by a flexible metal member.

3,223,312
FLIP-FOLD MAIL
Milton Caine, 83—35 139th St., Kew Gardens, N.Y.
Filed Mar. 24, 1964, Ser. No. 354,308
1 Claim. (Cl. 229—92.8)



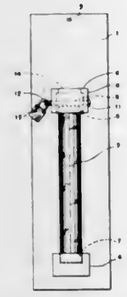
A mailing card comprising a rectangular body of cardboard having transverse fold lines dividing the body into a plurality of end panels and a plurality of intermediate panels, the line dividing one end panel from the adjacent intermediate panel being also a score line, said one end panel having indicia imprinted thereon for insertion of identification data by a recipient of the card, the other end panel having its surface adjacent the ends thereof coated with adhesive for sealing said other end panel to an intermediate panel, means for holding the panels in folded condition for mailing including tabs extending laterally of said other end panel, said tabs having adhesive on one surface thereof forming continuations of the adhesive on said other end panel, said tabs adapted to extend across the ends of the panels and be fastened to the outer surfaces of one of the outer folded panels, said one end panel having closed slots cut therein representing code indicia, said one end panel having a notch in the end edge thereof intersecting the adjacent fold and score line for facilitating folding of the one end panel, said other end panel being one-half the width of the other panels whereby the tabs extend across the ends of the panels midway the width of the panels.

3,223,313
AIR MOVING DEVICE
Donald D. Kinsworthy, Dayton, Ohio, assignor to The Lau Blower Company, Dayton, Ohio, a corporation of Ohio
Filed Feb. 4, 1964, Ser. No. 342,429
5 Claims. (Cl. 230—117)



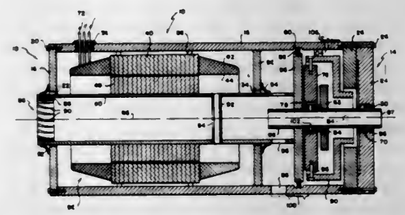
1. A blower assembly of the character described comprising, an elongated volute shaped housing having end walls at opposite ends thereof, an elongated blower wheel mounted in said housing and having a plurality of spaced parallel blade means, end rings at the ends of said blower wheel, two spaced radial partitions in said blower wheel separating the interior of said blower wheel into centrifugal sections between said end rings and partitions and a tangential section between said partitions, said partitions being imperforate so that they block any direct blow of air between said centrifugal and tangential sections, said end rings defining inlets in the ends of said blower wheel for air flow into said centrifugal sections, means in said housing defining a radial air inlet opening substantially coextensive with the axial length of said tangential section so that air flows into said tangential section between the portions of said blade means which define the sides of said tangential section, means defining an elongated outlet duct from said housing coextensive with said blower wheel for receiving air flow from said centrifugal and tangential sections along the entire length of said blade means, said volute shaped housing extending entirely around the portions of said blower wheel which defines said centrifugal sections except for said outlet duct to increase the efficiency of centrifugal sections of said blower wheel, means defining axial air inlet openings in said end walls in alignment with said inlets to said centrifugal sections, and drive means for rotating said blower wheel at high speed so that air is drawn into said tangential section of said blower wheel through said radial air inlet opening and expelled into the central portion of said outlet duct and so that air is drawn into said centrifugal sections through said axial air openings and expelled into said outlet duct at opposite ends of said tangential section along said end walls to create uniform stable air flow across the width of said outlet duct.

3,223,314
MOUNTING ARRANGEMENT FOR COIN TUBES AND THE LIKE
Montgomery J. Shoemaker, 130 W. River Road, Olean, N.Y.
Filed Mar. 4, 1963, Ser. No. 262,674
2 Claims. (Cl. 232—5)



1. A coin bank comprising, a normally generally upright base, a pair of mounting blocks carried by said base in vertically spaced relation, the lower one of said blocks having an upwardly opening recess therein, a coin tube slip-fitting at its lower end into said upwardly opening recess for being vertically supported by said lower block, the upper one of said blocks having a downwardly opening recess therein, the upper end of said tube slip-fitting into said downwardly opening recess when said lower tube end is slip-fitted into said upwardly opening recess whereby said upper tube end is laterally supported by said upper block, said tube being movable upwardly in said downwardly opening recess to a release position wherein said lower tube end is removed from said upwardly opening recess, said upper block loosely confining said upper tube end enabling said lower tube end to be swung clear of said lower block when said tube is in said release position, said tube thereupon being movable out of and into said downwardly opening recess, said upper block having a top wall with an elongated slot therethrough into said downwardly opening recess, said slot being alined generally centrally of said tube in plan view, a removable lock pin extending through said upper block and said downwardly opening recess across said upper tube end, said lock pin being laterally offset from said slot in generally parallel relation thereto and blocking movement of said tube into said release position, and releasable lock means preventing removal of said pin from blocking position relative to said tube.

3,223,315
UNITIZED CENTRIFUGAL SEPARATOR
Watt V. Smith, 315 Old County Road, Severna Park, Md.
Filed Jan. 22, 1963, Ser. No. 253,233
9 Claims. (Cl. 233—24)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A centrifugal separator for separating constituents of different densities in a fluid stream which passes through said separator, and for discharging said separated constituents from distinct points, said separator comprising, in combination:

a hollow casing member having closed end portions each provided with a central aperture one of which serves as an inlet and the other of which serves as an outlet, said inlet and outlet being axially aligned along the central axis of the casing member which also serves as the axis of rotation for the separator;

dividing means within said casing member having a central aperture in axial alignment with said inlet and outlet and dividing said casing into two separate chambers, the chamber between said inlet and said dividing means comprising a motor housing and the chamber between said outlet and said dividing means defining a thrust bearing housing;

motor means located within said motor housing and including rotor and stator means concentrically arranged about said axis of rotation with a small annular space between the rotor and stator mating surfaces, said stator means being secured in said motor housing against relative rotation therebetween;

a separating tube affixed to and extending through said rotor means with the axis of said tube being coaxial with said axis of rotation, the inlet end of said separating tube extending through said casing inlet and the discharge end of said separating tube extending through the central aperture in said dividing means;

a discharge tube coaxial with and diametrically smaller than said separating tube, having its inlet end extending within the discharge end of said separating tube, and having its discharge end extending through said casing outlet;

a pair of spaced thrust runners located within said thrust bearing housing and affixed to said discharge tube with at least one of said thrust runners affixed to the discharge end of said separating tube whereby rotor rotation causes said separating tube, said discharge tube, and said thrust runners to rotate in unison therewith;

a thrust shoe located in said thrust bearing housing between said spaced thrust runners and mounted in nonrotatable mounting means whereby relative rotation can occur between said thrust shoe and said thrust runners, said thrust shoe and thrust runners defining a thrust bearing;

impeller means mounted on the inlet end of said end of said separating tube to draw fluid axially into said tube;

power supply means to energize said motor means to rotate said rotor about the axis of rotation;

said rotor rotation causing a centrifugal force to be exerted upon the fluid contained within said separating tube to separate said fluid with the portion of the fluid having the greater density moving away from the axis of rotation and toward the walls of said separating tube and the portion of the fluid having the lesser density remaining in the axial region of said separating tube and subsequently flowing into said discharge tube;

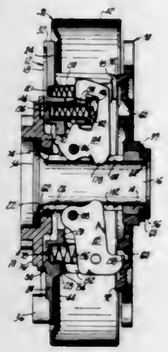
means in said separating tube for supplying fluid from the axial portion of that tube to the annular space between said rotor and stator means wherein due to relative rotation between said rotor and stator, the fluid creates a hydrodynamic film which totally radially supports said rotor means during rotation thereof; and

means in said discharge tube for supplying fluid from that tube to said thrust bearing wherein, due to relative rotation between said thrust runners and said thrust shoe, the fluid creates a hydrodynamic film which absorbs axial thrust developed by said separator.

3,223,316
COUNTER WHEEL ASSEMBLY

Leland E. Coulter, West Hartford, Edward C. Ambler, Newington, Bradley L. Batson, Hebron, Norman R. Behm, South Glastonbury, and John J. Anthony, Hartford, Conn., and Richard B. Hamlin, Altoona, Pa., assignors to Veeder-Root Incorporated, Hartford, Conn., a corporation of Connecticut

Filed May 5, 1964, Ser. No. 365,087
6 Claims. (Cl. 235—1)

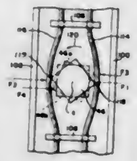


1. A counter wheel assembly comprising a cast hub having a central axially extending tubular portion adapted for receiving a counter reset shaft and a radial flange portion spaced axially inwardly of but adjacent to one axial end of the tubular portion, a sheet metal rim secured to the flange portion having a generally cylindrical indicia bearing surface, the tubular portion of the hub having reduced axial ends, a pair of sleeves mounted on the reduced axial ends of the tubular portion, said sleeves being retained on the hub by outwardly flanged edges of the tubular portion, a reset gear rotatably mounted at said one axial end of the tubular portion, a drive gear rotatably mounted at the other axial end of the tubular portion, said flange portion having a plurality of angularly spaced axially projecting bosses and said gears having axially facing annular bearing surfaces engageable by the bosses for supporting the gears against inward axial movement, said sleeves having radial shoulders for supporting the gears against outward axial movement, and means mounted on the hub operable by the reset shaft for selectively locking the hub with the drive and reset gears.

3,223,317
DETENT POINTER CHANNEL

Afton V. Martin and Anthony T. Galbato, Jamestown, N.Y., assignors, by mesne assignments, to Automatic Voting Machine Corporation, Jamestown, N.Y., a corporation of New York

Filed July 16, 1963, Ser. No. 295,336
7 Claims. (Cl. 235—54)

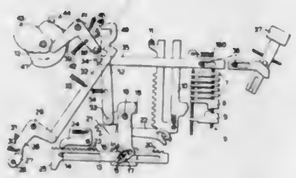


1. In a voting machine: a row of voting levers; resilient biasing means including at least one pair of independent members extending a substantial portion of the length of said row for moving selected levers from unvoted to voted positions upon voter-initiated movement of the selected levers toward their voted positions; a housing at least partially surrounding and extending at substantially the length of said members; and means comprising a single flange integral with said housing between each pair of adjacent levers for controlling the lever-moving effect of said members on said adjacent levers.

3,223,318
AUTOMATIC MULTIPLICATION DEVICE FOR A TEN KEY CALCULATING MACHINE

Teresio Gassino, Ivrea, Italy, assignor to Ing. C. Olivetti & C., S.p.A., Ivrea, Italy, a corporation of Italy

Filed Apr. 5, 1965, Ser. No. 445,454
Claims priority, application Italy, Apr. 7, 1964, 7,517/64
9 Claims. (Cl. 235—60)



1. An automatic multiplication device for a ten key calculating machine having a set of actuators, a transversely traveling set up carriage adapted to store a multiplicand, and a multiorder storing device adapted to store a multiplier, comprising in combination:

(a) a cycle counting member for sequentially cooperating with the various orders of said storing device,

(b) a locking member transversely movable according to the number of orders of said multiplicand,

(c) means for causing said locking member to sense said storing device to prevent the machine from effecting a multiplication when the sum of the number of orders of said multiplicand and said multiplier is higher than the number of said actuators,

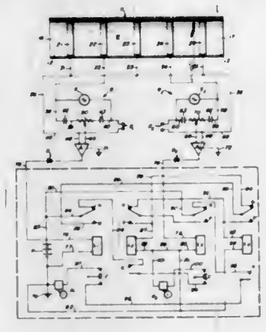
(d) moving means connected to said carriage for concomitant movement,

(e) and multiplication control means for causing said moving means to alternately move said locking member and said counting member.

3,223,319
MULTIPLE ELECTRODE DETECTOR

George M. Lucich and Julius Rockwell, Jr., Washington, D.C., and Robert E. Bergstrom, Seattle, Wash., assignors to the United States of America as represented by the Secretary of the Interior

Filed Nov. 18, 1964, Ser. No. 412,269
4 Claims. (Cl. 235—98)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. In an electrical apparatus for measuring a representative characteristic of a conductive substance moving in a confined space, a detecting circuit, and a sensing means comprising a non-conductive conduit device having openings at its opposite ends between which is defined said confined space, a plurality of electrically conductive ribbons spacially arranged on non-contiguous areas on the inner surface of said conduit device, a plurality of electrical conductors providing electrical connections between said conductive ribbons and said detecting circuit wherein at least two of said electrical conductors are joined to establish a common conductive path in which electrical current from at least two of said conductive ribbons flows directly to said detecting device, and another of said electrical conductors provides a singular path in which electrical current from another of said plurality of conductive ribbons flows directly to said detecting circuit.

3,223,320
CYCLIC INCREMENTAL DISPLAY DEVICE

Emanuel E. Beer, White Plains, and Arvid W. Jacobson, Millwood, N.Y., assignors to General Precision Inc., Little Falls, N.J., a corporation of Delaware

Filed Sept. 25, 1964, Ser. No. 399,253
7 Claims. (Cl. 235—108)

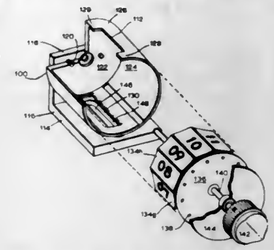
1. An angle counter, comprising in combination:

a housing with an inner cylindrical wall with a display window in said wall extending axially partially across the wall;

circular mounting means disposed adjacent said window;

prism members having equi-angular ends and rectangular faces mounted for free axial rotation around said mounting means sliding along said wall, the prism axes being parallel to the wall cylindrical axis, the rectangular prism faces being displayed in said window during rotation of said mounting means, a set of digits in each of said prism faces, arranged for cyclic incrementation; and,

a turning station in said housing including a chamber

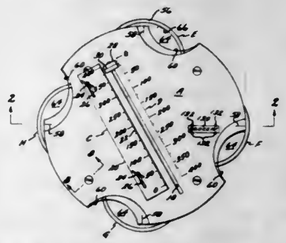


along said wall which the prisms can at least partially enter, at least one inwardly projecting knife edge at one side of the chamber and at least one recess in said wall spaced from the knife edge, said knife edge causing the tilting of each prism as it passes thereover displaying a different set of digits each time a prism face is displayed in said window.

3,223,321
PORTABLE HOUSEHOLD BUDGET COMPUTER

Walter Baumgartner, 156 Westchester St., Anaheim, Calif.

Filed Mar. 16, 1965, Ser. No. 440,188
7 Claims. (Cl. 235—114)



1. A portable household budget computer, including:

(a) first and second spaced parallel plates;

(b) first means for holding said first and second plates in spaced relationship;

(c) a first graduated scale on said first plate that is used to indicate the unspent portion of said budget;

(d) a second graduated scale on said first plate that is used to indicate the expended portion of said budget;

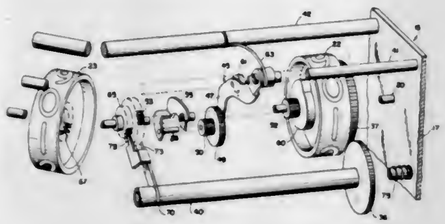
(e) a plurality of graduated toothed circular plates, at least the major portions of which are disposed between said first and second plates, with each of said circular plates being rotatable and in circumferentially spaced relationship and radially movable relative to said first and second plates, each of which circular plates are identified with a particular major expense of said budget, and when rotated relative to one of a number of reference lines on said first plate indicate the portion of one of said major expenses that has been spent;

(f) second means for supporting each of said circular plates for both rotational and radial movement relative to said first and second plates;

(g) third means movably supported from at least one of said first and second plates for moving relative to said first and second scales to visually indicate the unspent and spent portions of the total budget; and

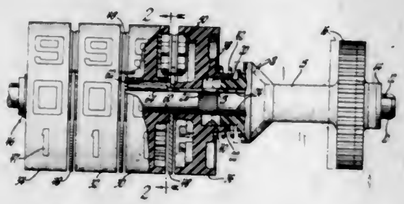
(h) fourth means operatively associated with said third means to move the latter when any one of said toothed plates is moved inwardly relative to said first and second plates and rotated, which fourth means includes teeth that engage any one of said toothed circular plates when the latter is moved inwardly relative to said first and second plates and rotated.

3,223,322
TRANSFER COUNTER
Gotfred O. Hoffmann, Cheshire, Conn., assignor to Tri-Tech, Inc., a corporation of Connecticut
Filed Aug. 7, 1964, Ser. No. 388,074
22 Claims. (Cl. 235—117)



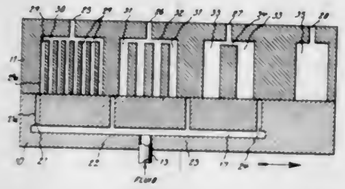
1. In a transfer counter, in combination, a plurality of indicia bearing counting elements including a lower order element and a higher order element, means for operating said lower order element, resiliently biased transfer means interconnecting said lower order element with said higher order element for operating said higher order element in response to operation of said lower order element and in predetermined relationship therewith, and reset means for moving said transfer means against its resilient bias, said transfer means thereupon acting on said lower order element to reset the same to an initial position.

3,223,323
MAGNETIC RESET COUNTER MECHANISM
Norman D. Lawless, Flint, and Harold R. Mertz, Grand Blanc, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 4, 1963, Ser. No. 314,022
7 Claims. (Cl. 235—144)



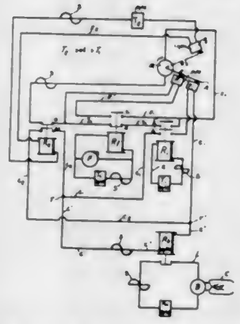
1. A counter mechanism having a drive shaft and a series of non-magnetic counter wheels rotatably mounted on said shaft, means for imparting rotation of said shaft in one direction to one of said wheels and then to the others of said wheels in succession, opposing journal surfaces of said shaft and other wheels having grooves therein extending parallel with said shaft, one of said grooves being in said shaft and being shallow, one other of said grooves being in one of said wheels and being deep, a permanently magnetized cylindrical pin at least partially retained in said deep groove and drawn toward said shaft by magnetic attraction, said shaft groove and one other groove having two surfaces arranged to engage and hold said pin when said one wheel is rotated in one direction relative to said shaft, and a cam surface in said shaft groove arranged to force said pin into said deep groove when said one wheel is rotated in the other direction relative to said shaft.

3,223,324
ANALOG TO DIGITAL CONVERTER AND COUNTER FOR FLUID APPLICATION
Richard Franklin, Norwalk, Conn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 24, 1962, Ser. No. 232,715
1 Claim. (Cl. 235—201)



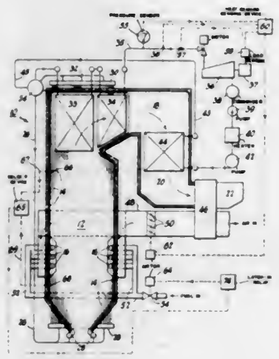
A fluid device, comprising in combination, first and second blocks having abutting surfaces, a source of pressure, said first block comprising N conduits equispaced and of equal width, each of said N conduits communicating between said source of pressure and said abutting surface of said first block, said second block including N output channels, said second block comprising a group of conduits for each of said N conduits of said first block, each of said conduits within a group communicating between one of said N output channels and said abutting surface of said second block, each of said conduits in said first block having a width D, each of said conduits within a group in said second block having a width given by the expression $2^{X-1}D$ wherein X represents the particular group from 1 to N, the number of said conduits within a group being given by the expression 2^{N-X} wherein X represents the particular group from 1 to N, whereby when said first block is displaced in position relative to said second block in increments or multiples of D a binary expression of said position is provided at said N output channels.

3,223,325
DOMESTIC HEATING SYSTEM
Jacques Letourneau, 20 Ave. Beaumont, Quebec, Quebec, Canada
Filed Feb. 20, 1964, Ser. No. 346,190
20 Claims. (Cl. 236—9)



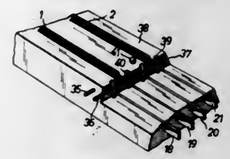
1. A heating system comprising a furnace having input and output ducts enabling air interchange between said furnace and at least a pair of discrete zones of a dwelling; each said zone having corresponding baffles interposed between itself and said furnace, baffle operating means for selectively establishing or preventing said air interchange between any of said zones and said furnace, control means for said baffle operating means comprising a thermostatic sensor loop for each zone, a zone relay responsive to said sensor loop, a motoring loop for each baffle operating means to drive same in response to energization of the respective zone-relay, a holding loop for maintaining said motoring loop after de-energization of said zone-relay, and delay means to break said holding loop after shutdown of said furnace, said means responsive to cooling of said furnace.

3,223,326
METHOD AND APPARATUS FOR CONTROLLING COMBUSTION
William L. Livingston, Bloomfield, Conn., assignor to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware
Filed Dec. 20, 1961, Ser. No. 160,875
6 Claims. (Cl. 236—14)



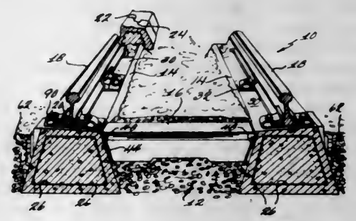
2. The method of controlling the supply of combustion elements to a steam boiler having a combustion chamber for generating heat, and in response to a varying heat demand, comprising the steps of (1) supplying combustion elements to said chamber in the form of oxygen and fuel; (2) burning said fuel and producing a flame and combustion gases in a combustion zone; (3) continually removing said combustion gases from said chamber; (4) sensing changes in the heat demanded from said combustion chamber; (5) controlling the amount of one of said combustion elements supplied to said chamber in response to said heat demand; (6) sensing changes in differential of static pressure prevailing in said chamber at two points therein spaced from each other in the gas travel sense with one point being located within said chamber upstream of said flame and the other downstream of at least a portion thereof and the space between said points being unobstructed with respect to gas flow; and (7) increasing or decreasing the amount of the other said combustion elements supplied to said chamber in response to a rising static pressure differential and reversing said increase or decrease of supply of said other combustion element in response to a falling static pressure differential to obtain optimum combustion efficiency with varying heat demand.

3,223,327
RAIL SECTION FOR TOY AND MODEL RAILROADS
Adolf Opfermann, Hauptstrasse 1–9, Bergisch-Gladbach, Germany
Filed Jan. 18, 1960, Ser. No. 2,965
Claims priority, application Germany, Jan. 17, 1959, O 6,560
22 Claims. (Cl. 238—10)



20. A base structure for supporting a miniature railroad track made of detachable lengthwise sections which can be assembled in a plurality of formations and to afford electric power outlets therealong for connection to accessories, comprising a plurality of base members set end to end in successive extension; the shape of each base member conforming with that of the track section it shall carry, sets of electrical conductors, one such set of conductors carried insulated from each other on each base member along each track member respectively, means on each base member automatically electrically connecting corresponding conductors on adjacent base members when such base members are associated in extension of each other, means on each of the base members for physically connecting them in successive extension and a set of electrically-conductive terminal elements on at least some of the base members, respectively electrically connected to the conductors carried by the base section they are on; such terminals being accessible for making connections thereto respectively and positioned that such connections permit passage of a train along the track.

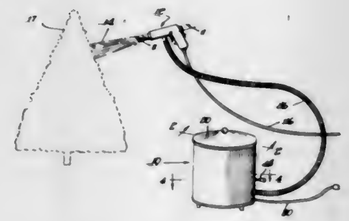
3,223,328
TRACK STRUCTURE FOR RAILROADS AND THE LIKE
Nelson K. Moses, Ashtabula, Ohio, and Robert A. McClung, West Palm Beach, Fla., assignors to Railroad Permanent Way Products Corp., Ashtabula, Ohio, a corporation of Ohio
Filed Apr. 15, 1963, Ser. No. 273,135
13 Claims. (Cl. 238—25)



1. In a rail track construction for supporting traction rails on a road bed, the combination comprising: spaced rows of elongated precast reinforced concrete beams supported on the road bed, each of the rows having the elongated beams therein arranged in abutting end-to-end relationship, said elongated beams having interengaging male and female ends for preventing sidewise movement of one beam with respect to another, each of said elongated beams having an upper surface, a bottom surface resting on said road bed, and flat inside wall portions that slope downwardly and outwardly; a plurality of precast con-

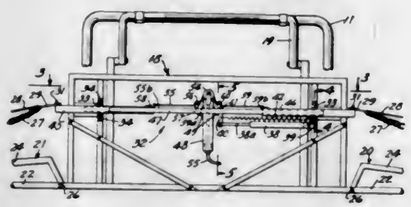
crete cross beams, each of the cross beams having a top surface, a bottom surface, and oppositely disposed ends which are continuous between the top and bottom surfaces of the cross beams, said ends sloping inwardly complementary in slope to the downwardly and outwardly sloping inside wall portions of the elongated beams, said cross beams being spaced from each other and each extending between oppositely disposed downwardly and outwardly sloping inside wall portions of oppositely disposed elongated beams in the spaced rows of elongated beams, means for connecting each cross beam to said downwardly and outwardly sloping inside wall portions of said oppositely disposed elongated beams in said spaced rows such that said cross beam ends abut against said inside wall portions, and means for anchoring a traction rail along the upper surface of the elongated concrete beams of each row.

3,223,329
FLOCKING APPARATUS
Ronald A. Ross, Adolph W. Ross, and Marie Eva Ross, all of Box 676, Antioch, Ill.
Filed Jan. 16, 1962, Ser. No. 166,480
10 Claims. (Cl. 239—142)



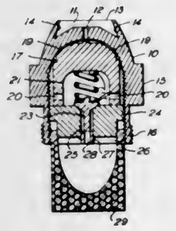
1. Apparatus for flocking trees and the like with light, random fibrous flock; comprising a flock supply hopper shaped to contain loose fibrous flock in a dry state and having a circular and generally flat bottom and a generally circular sidewall extending upwardly from said bottom, a rotary agitator supported for rotation about an axis generally concentric with said hopper bottom, said agitator being disposed in overyling proximate relation to said hopper bottom and being shaped to move upon rotation in a circular path located axially in proximate relation to said hopper bottom and extending radially into proximate relation to said hopper sidewall, power drive means connected to rotate said agitator, a blower mounted in underlying relation to said hopper and having a power driven rotary impeller rotatable about a generally vertical axis, intake means forming a blower intake opening upwardly from the center of said impeller and extending upwardly into coacting relation to said hopper bottom to cause said blower to suck flock and intake air from a zone immediately adjacent said hopper bottom, said hopper bottom including means for discharging flock downwardly to be sucked with intake air from a zone adjacent the hopper downwardly through the intake means into the blower, means for controlling the rate at which flock is supplied from said hopper into said intake means, a flexible conduit for air and air entrained flock, said flexible conduit having an inlet end connectable with the outlet of said blower, a movable flock discharge and wetting assembly connectable within the outlet end of said flexible conduit, said assembly including means defining an air and dry flock flow chamber and means for directing air and entrained dry flock from said flexible conduit into said chamber through an inlet into the chamber for flow through the chamber, a baffle disposed in said inlet and having a helical twist which causes air and flock to enter said flow chamber with a swirling motion, said flow chamber defining means including air nozzle means forming a generally circular outlet opening from the chamber, liquid atomizing nozzle means disposed in said flow chamber outlet in generally coaxial relation thereto to form in cooperation with said air nozzle means an annular air and dry flock discharge nozzle opening outwardly in encircling relation to said atomizing nozzle means to discharge air and flock in a trajectory that begins in coaxial encircling relation to the atomizing nozzle means, a flexible liquid supply conduit, said assembly including a liquid supply pipe interconnectable with said flexible liquid supply conduit, said liquid supply pipe cantilevering through said flow chamber in the assembly to support said atomizing nozzle means and to supply flock wetting liquid thereto, said inlet into said chamber for air and flock entering the chamber between said flock discharge nozzle and the position where said supply pipe enters the chamber, said atomizing nozzle means including channel defining means through which fluid flows in a plurality of streams that are directed into intersecting relation to each other to effect a high order of atomization of the liquid flowing through the nozzle means, said nozzle means having liquid outlet means through which liquid that is atomized by the nozzle means issues in a circular flow pattern that diverges away from the nozzle means to effect wetting of the flock entrained in the trajectory of air and flock moving beyond said liquid outlet means from said air and flock discharge nozzle, said liquid outlet means being located axially outward beyond all other structure of said assembly to preclude wetting of any structure of the assembly by atomized liquid issuing from the nozzle means, and means for controlling the flow of liquid through said pipe to said atomizing nozzle means.

3,223,330
SPRAY BOOM LEVELER APPARATUS
Oscar W. La Plante, Stewart, Minn.
Filed June 25, 1964, Ser. No. 377,888
7 Claims. (Cl. 239—168)



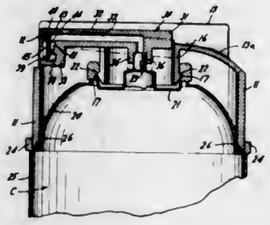
1. Field crop spray apparatus comprising:
a mobile ground supported frame for traversing the field in non-interfering relation with crop thereon,
a pair of elongate spray booms respectively extending in opposite directions traversely outwardly from the frame and having liquid discharging spray means to apply spray to the vegetation in the field, means pivotally connecting said spray booms to the frame to facilitate swinging of said booms upwardly and downwardly,
means including flexible conduits connected with said spray booms and supplying liquid for spraying thereto,
a generally horizontal slide disposed above said pivot means,
means connecting and slidably guiding said slide to the frame for substantailly horizontal movement in a direction transversely of the frame,
controllable operating means connected between said frame and said slide and controllably moving said slide to a desired position,
and a pair of elongate connecting and supporting elements each connected with a respective spray boom in spaced relation with said pivot means and extending diagonally upwardly to said slide, said connecting elements being secured to said slide, whereby movement of said slide produces swinging of said spray booms in opposite directions upwardly and downwardly to facilitate maintenance of said booms in substantially parallel relation with the ground contour in the event that irregular ground contour produces tipping of said frame.

3,223,331
OIL BURNER NOZZLES
Clarence P. Baker, 3116 NE. Everett St., Portland, Oreg.
Filed Aug. 21, 1962, Ser. No. 218,369
5 Claims. (Cl. 239—464)



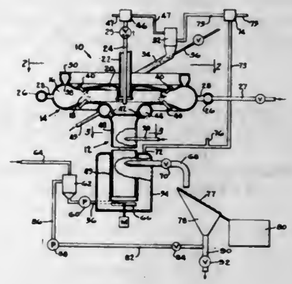
1. An oil burner nozzle consisting of: a nozzle head having an orifice through one end thereof; a lip circumscribing the orifice end of said nozzle head, said lip extending forwardly and rearwardly from said orifice a substantial distance and having a greater inner diameter at its rearward end than at its forward end, thereby forming an exterior reservoir on said nozzle head; a core, recessed at its rearward end, disposed within said nozzle head, said core being provided with fuel passing means communicating its recessed interior with said nozzle orifice; core retaining means engaging with said nozzle head and the recessed end of said core, retaining said core within said nozzle, said retaining means having a passageway therethrough; a valve seated at said passageway through said core retaining means; and a spring positioned within said core engaging with and tensioning said valve.

3,223,332
DISPENSING CAP FOR AEROSOL CONTAINERS
Robert Nyden, Manhasset, N.Y., assignor, by mesne assignments, to The Heekin Can Company, a corporation of Delaware
Filed Nov. 2, 1964, Ser. No. 408,260
8 Claims. (Cl. 239—492)



1. A dispensing cap for aerosol containers having fluids therein under superatmospheric pressure and having a depressably actuable valve stem provided with a discharge vent therein for releasing the fluid from the container, said cap comprising a substantially upstanding peripheral wall having a bottom portion engageable with an aerosol container, a top wall having an opening therein, a valve operating lever located within and conforming to the shape of said top wall opening and sized substantially smaller than said opening so as to be laterally and longitudinally movable therein and being provided with a dispensing opening therein, a pair of flexible members of relatively small cross-sectional area integral with said valve operating lever and said top wall for connecting said valve operating lever to said top wall for pivotal and lateral and longitudinal movement within said top wall opening, and a hub projecting downwardly from the underside of said operating lever, said hub having a chamber therein open at the bottom and forming a socket for the reception of a valve stem from an associated aerosol container, said valve operating lever being further provided with a continuous passage communicating with the dispensing opening and the chamber in the hub, whereby depression of said valve operating lever operates an associated valve stem for the discharge of the contents of the container through the dispensing opening of the cap.

3,223,333
METHOD FOR PREPARING LIQUID SLURRIES AND FOR DISPERSEMENT THEREOF IN POLYMERIC SUBSTANCES
Nicholas N. Stephanoff, Haverford, Pa., assignor to Fluid Energy Processing and Equipment Company, Lansdale, Pa., a corporation of Pennsylvania
Filed Sept. 24, 1963, Ser. No. 311,025
13 Claims. (Cl. 241—5)

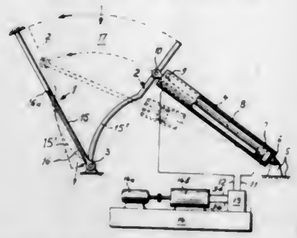


1. A method of preparing a liquid suspension of finely subdivided solid particles which comprises passing particles of solid material into a first area comprising a vortex of gaseous fluid at a temperature substantially higher than the temperature of condensation of said fluid whereby the particles of said solid material impact each other at velocities sufficient to cause pulverization thereof into fines and larger particles, passing the resulting fines and entraining fluid, while in a radially inwardly tending spiral circulation maintaining said vortex, through a precooling area while maintaining the larger particles of pulverization in the first area subject to further pulverization, said fines and entraining fluid being pre-cooled to a temperature just above the temperature of condensation of said fluid, then passing said fines and entraining fluid, while in said inwardly tending spiral circulation, into a condensation area and contacting them with a liquid at a temperature sufficient to condense said entraining fluid.

3,223,334
APPARATUS FOR THE SIZE REDUCTION OF REFUSE

Fritz Wüthrich, Zollikerberg, Switzerland, assignor to Von Roll A.G., Gerlafingen, Switzerland, a corporation of Switzerland

Filed June 26, 1963, Ser. No. 290,792
Claims priority, application Switzerland, July 2, 1962, 7,878/62
16 Claims. (Cl. 241—36)

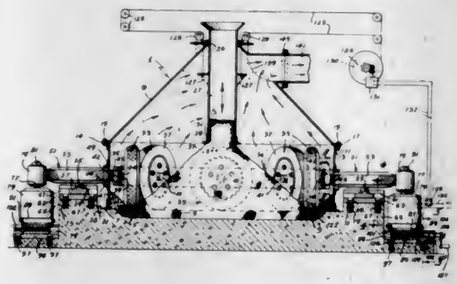


1. Apparatus for the size reduction of refuse, particularly for refuse to be destroyed by combustion, comprising a pair of frame members, means mounting at least one of said frame members for pivotal movement, drive means for pivoting the pivotal mounted frame member towards the other frame member, shearing means provided for both of said frame members, said shearing means of each frame member incorporating spaced shearing elements providing a recess between each two neighboring shearing elements, said recess extending throughout the thickness of the corresponding frame member, said shearing elements of said shearing means of any one frame member being offset with respect to said shearing elements of the shearing means of the other frame member to permit comb-like interengagement of said shearing means of both frame members in one extreme position of said pivotal mounted frame member.

3,223,335
APPARATUS FOR PRODUCING DUST

Charles D. Jacobs, 1100 S. Lakeside Drive, Lake Worth, Fla.

Filed Sept. 20, 1962, Ser. No. 225,097
8 Claims. (Cl. 241—109)

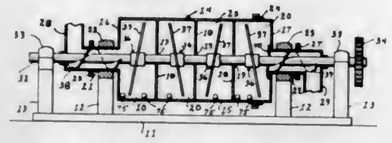


1. Apparatus for producing fine particles from granular, pulverant material, comprising: a substantially closed housing having at least three equally spaced openings formed in the side walls thereof; a circular wheeled carriage rotatably mounted in said housing adapted to ride on the surface of a layer of said pulverant material disposed on the floor of said housing for reducing the particle size of said pulverant material; a series of at least three, horizontally disposed drive wheels rotatably mounted on vertical axes extending through said openings and into frictional contact with said carriage; and means for rotating said drive wheels.

3,223,336
GRINDING APPARATUS

Fritz Otto Wienert, Lewiston, N.Y.
(41 Roosevelt Ave., Rte. 47, Niagara Falls, N.Y.)

Filed Dec. 30, 1960, Ser. No. 79,669
14 Claims. (Cl. 241—172)

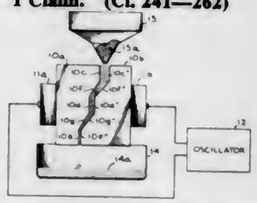


1. A grinding mill comprising an elongated shell, a grinding zone in said shell arranged to contain a bed of material to undergo treatment intermixed with a plurality of freely movable grinding bodies, a substantial portion of said grinding bodies being out of contact with said shell at any specific time, material moving means within said shell comprising a shaft extending longitudinally of said elongated shell and a rigid disc fixed to said shaft and disposed obliquely thereto, said disc being disposed at least partially within said bed when said mill is operating, supporting means for said shell and material moving means operable to permit relative rotatable movement therebetween about the axis of said shell, and drive means operable to effect such relative rotation therebetween, imparting to at least a substantial portion of said grinding bodies arcuate tumbling movement about the axis of said mill and oscillatory axial movements of substantial extent in opposite directions with respect to the longitudinal axis of said mill.

3,223,337
PULVERIZER HAVING ULTRASONIC DRIVE MEANS

Alvin A. Snaper, Burbank, Calif.
(9722 Casaba, Chatsworth, Calif.)

Filed Oct. 21, 1963, Ser. No. 317,545
1 Claim. (Cl. 241—262)



Pulverizer apparatus comprising: a pair of walls movably positioned in face-to-face relationship, each oppositely associated face being alternately vertical and inwardly and downwardly inclined at substantially the same angle on the same side relative to a vertical plane in order to provide both pulverizing and shearing forces to material fed between said walls; a pair of ultrasonic transducer elements respectively mounted on said pair of walls for vibrating said walls toward and away from each other in response to a single applied thereto at an ultrasonic frequency; and an oscillator for applying a signal at an ultrasonic frequency to said pair of transducers.

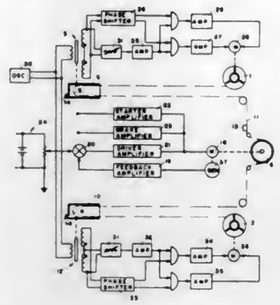
3,223,338
TAPE DRIVE MECHANISM

Sho Takeuchi, Yokohama-shi, Japan, assignor to Fujitsu Limited, Kawasaki, Japan, a corporation of Japan

Filed July 31, 1963, Ser. No. 299,688
Claims priority, application Japan, Aug. 1, 1962, 37/32,911
6 Claims. (Cl. 242—55.12)

1. A tape driving system, comprising a pair of spaced tape reels supporting upon them and between them a single magnetizable tape, vacuum means acting upon a portion of said magnetizable tape intermediate said reels

for adjusting the tension upon said tape, a single rotatable capstan directly engaging the intermediate portion of said tape for driving said tape in either direction, magnetic read-in and read-out means in operative proximity

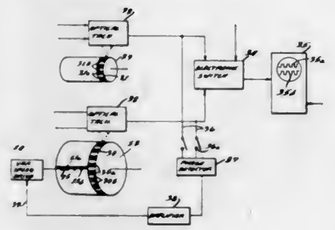


with said tape, a D.C. motor directly coupled to said capstan for rotating said capstan in either direction, starting means coupled to said D.C. motor for starting rotation of said capstan, and braking means coupled to said D.C. motor for stopping rotation of said capstan.

3,223,339
FLYING SPLICE SYNCHRONIZER

Edgar J. Justus, Beloit, Wis., and Carl B. Dahl, Rockton, Ill., assignors to Beloit Iron Works, Beloit, Wis., a corporation of Wisconsin

Filed Jan. 29, 1962, Ser. No. 169,234
1 Claim. (Cl. 242—58.3)



A mechanism for synchronizing the speed of a main roll carrying a web to be unwound with the speed of a traveling unwinding web for connecting the unwinding web to the web on the main roll comprising,

a cylindrical main roll having an outer cylindrical web supporting surface,

a guide roll having an outer cylindrical web supporting surface,

a first annular band mounted on the outer surface of a roll of paper on the main roll,

a second annular band mounted on the outer surface of said guide roll,

each of said bands having spaced indicator marks facing radially outwardly with the indicator marks being uniformly spaced a predetermined distance apart with the same spacing on each band,

a first photoelectric detector for detecting the speed of movement of the marks on the first band providing a first output signal,

a second photoelectric detector for detecting the speed of movement of marks on the second band providing a second output signal,

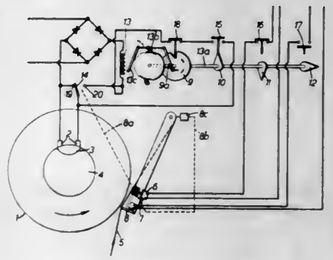
means electrically connected to receive said first and second signals converting the signals to first and second visible signals having wave forms each providing an indication as a function of frequency of the movement of the marks past said detectors,

and means for controlling the speed of the main roll until the wave forms are correlated to obtain an equal surface speed between an unwinding web running over the guide roll and a web wound in the roll.

3,223,340
WEB RENEWING MECHANISM

Claude E. F. Willis, London, England, assignor to R. W. Crabtree & Sons Limited

Filed Dec. 26, 1963, Ser. No. 333,319
Claims priority, application Great Britain, Jan. 1, 1963, 95/63
27 Claims. (Cl. 242—58.3)



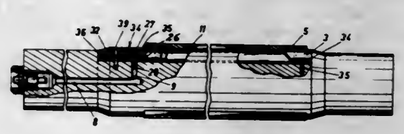
1. Web renewing mechanism including a web deflector which moves to an operative position to cause the running web with which it is to be used to contact the periphery of a replacement roll, resilient means urging said web deflector towards said operative position and electromagnetic means including a releasable magnetic connection which holds the deflector in an inoperative position.

18. In a web renewing mechanism including a replacement roll on a spindle and a pivoted support arm, a web deflector carried by said arm for causing a running web to contact the roll, a web cutting knife carried by said arm for cutting the running web, and control means for said deflector and said knife including a camshaft carrying cams, an electrical mechanism for actuating said camshaft, and electrical circuits provided with switches, said cams being disposed to actuate said switches and energize said circuits to control said deflector and said knife, one of said cams operating said deflector and another cam operating said knife.

3,223,341
EXPANSIBLE MANDREL

Tore Lennart Gadde, Amal, Sweden, assignor to AB Amals Gjuteri Och Mekaniska Verkstad, Amal, Sweden, a corporation of Sweden

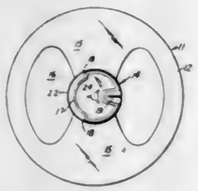
Filed Feb. 14, 1964, Ser. No. 344,900
Claims priority, application Sweden, Oct. 30, 1963, 11,945/63
5 Claims. (Cl. 242—72)



1. An expansible mandrel comprising an elongated body, a notch in said body, expanding means comprising a tubular, inflatable member in said notch, said member

being adapted to be inflated to extend laterally beyond the periphery of said body and thereby to expand the mandrel, a conduit opening at one end at the outside of said body and at the other end at said notch and adapted at its opening outside said body to communicate with a source of a fluid to inflate said inflatable member, an aperture in the wall of said inflatable member located toward an end of said inflatable member, said aperture being in registry with the conduit opening at the notch, a nipple comprising a head and a tube piece, said nipple head being positioned in said inflatable member adjacent said aperture and said tube piece extending through said aperture and into said conduit, a channel through said nipple and opening at one end at said nipple head inside said inflatable member and at the other end at said tube piece inside said conduit, a pressing element in juxtaposition to the apertured end of said inflatable member at the outside of the wall of said inflatable member opposite the apertured wall, means to urge the pressing element against said inflatable member whereby the walls of the said inflatable member are pressed together and against the nipple head and the apertured wall of the inflatable member is pressed against the bottom of the notch.

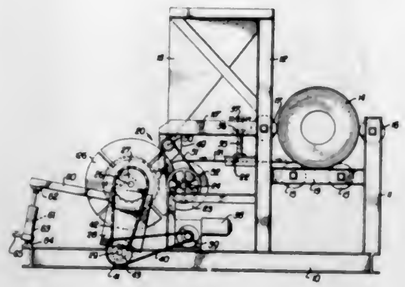
3,223,342
TAPE REEL
Richard N. Brandon, Richmond, Va., assignor of one-tenth to Auzville Jackson, Jr., Richmond, Va.
Filed July 17, 1963, Ser. No. 295,749
2 Claims. (Cl. 242—74.2)



1. A reel comprising, in combination, two flanges separated by a hub, a slot in said hub, a recess in said hub on the opposite side of the hub from said slot, a circular resilient spring clamp concentric with said hub of less width than the distance between said flanges, two clamping faces on said clamp meeting one another with the clamping faces extending into said slot to hold the end of a tape in said slot, and a deformation area on said clamp adjacent said recess whereby the clamp may be deformed radially inward into said recess to cause the clamping faces to move to a non-clamping position.

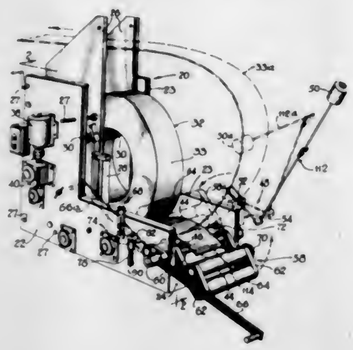
3,223,343
APPARATUS FOR FORMING SHEET METAL TREATING PACKS
Maurice R. Commanday, Los Angeles, and Jacob Z. Goldberg, Fallbrook, Calif., assignors to Chromizing Corporation, Hawthorne, Calif., a corporation of California
Filed Oct. 29, 1962, Ser. No. 233,556
11 Claims. (Cl. 242—78.1)

1. Apparatus for incorporating comminuted material in a convolute roll pack, comprising
(A) a winding mandrel,
(B) means for rotating the mandrel,
(C) means for supporting sheet metal extending to the mandrel to be wound thereon in convolute roll form by the rotation of the mandrel,
(D) means for feeding solid comminuted material into a throat formed at and by convergence of the sheet metal with the outer convolution of the roll, and



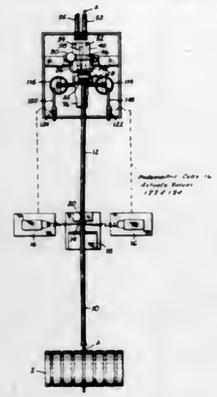
(E) means resisting winding advancement of the sheet extending to the roll so that said comminuted material is compacted for retention between the roll convolutions.

3,223,344
COILED STOCK CRADLE FEEDERS
George J. Weymouth, Fairfield, Conn., assignor to Cooper-Weymouth, Inc., Stratford, Conn., a corporation of Connecticut
Filed Oct. 22, 1963, Ser. No. 318,006
15 Claims. (Cl. 242—78.7)



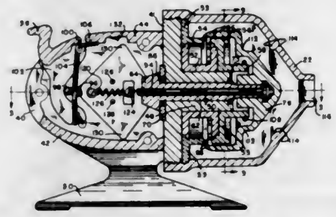
1. A cradle-feeder for coiled material comprising, in combination:
A. a housing having bottom surfaces designed to rest on a supporting floor,
B. cradle rolls rotatably mounted in the housing for supporting a coil of material,
C. a lower pinch roll rotatably supported in a loading end of the housing near the bottom surfaces,
D. drive means in the housing for rotating all of said rolls, and
E. an upper pinch roll rotatably supported by the housing and pivotally movable, about an axis parallel to the lower pinch roll positioned between the lower pinch roll and the loading end of the housing, from an engaged position, juxtaposed above the lower pinch roll, to a disengaged position, spaced away from the lower pinch roll in which a coil of material may be moved past the pinch rolls by rolling it over the disengaged upper pinch roll and then over the lower pinch roll toward the cradle rolls.

3,223,345
ROD MILL SWITCH
William J. Hill, Worcester, Mass., assignor to Morgan Construction Company, Worcester, Mass., a corporation of Massachusetts
Filed Apr. 5, 1963, Ser. No. 270,934
12 Claims. (Cl. 242—80)



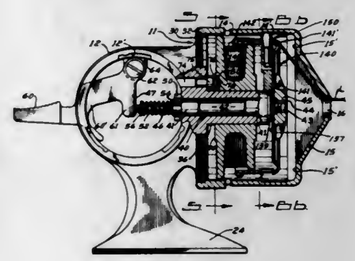
4. A switch for a rod mill comprising a fixed support, an arm pivotally mounted on the front of said support for swinging movement in a plane transverse of the line of rod travel, means on the upper end of said arm supporting the discharge end of a switch pipe in a manner permitting axial movement of the switch pipe end with respect to the support as the pipe may elongate or contract under temperature changes, other means on said arm supporting a short nozzle in alignment with said switch pipe, a rod guide fixed to said support having two passages therethrough, means for moving said arm and nozzle from a position of alignment with one of said passages to a position of alignment with the other of said passages when no rod is present in said nozzle, and means permitting said nozzle to be adjusted axially to bring its discharge end into close proximity to but not touching the entrance ends of said passages.

3,223,346
LINE DRAG MEANS FOR A SPINNING REEL
Alvah W. Fowler, 1912 Ashland, Fort Worth, Tex.
Filed Jan. 28, 1963, Ser. No. 254,182
2 Claims. (Cl. 242—84.2)



2. A fishing reel of the spinning type having a body member, a spool carried by the body member adaptable to receive a line wound thereon, an axially positionable pickup member supported adjacent and forward said spool, and external thumb controllable means for axially positioning said pickup member, and a cover member supported on said body member enclosing said spool and said pickup member, said cover member having an opening therein whereby a line wound on said spool may be extracted from said fishing reel, a means for controllably providing frictional drag to the extraction of said line from said reel comprising:
an extending annular projection formed on one of the internal surfaces of said cover member and the forward face surface of said pickup member and an annular groove formed on the other of such surfaces to receive the said annular projection when said pickup member is forwardly positioned, said annular projection adaptable to frictionally engage said line when said pickup member is axially forwardly positioned by said external thumb controllable means.

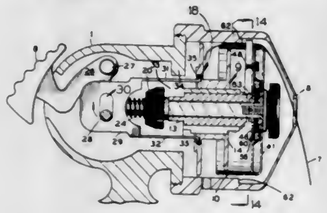
3,223,347
SPIN-CASTING FISHING REEL
Joseph C. Clark, Orlando, Fla., assignor to True Temper Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Oct. 25, 1962, Ser. No. 233,000
4 Claims. (Cl. 242—84.2)



1. In a fishing reel of the character described comprising a housing, said housing consisting of a gear casing and a centrally apertured spool casing, said year casing having a tubular member integrally formed therewith projecting forwardly of the same into the spool casing, a line carrying spool carried by said tubular member, a driven shaft rotatably and axially movable in said tubular member and spring-urged toward a rearward portion therein having a portion extending forwardly of said tubular member when in said rearward position, a winding drum member secured to the said forwardly extending portion of said shaft and adapted to rotatably and axially move therewith, said winding drum member having a part telescopically receiving said spool, said part having an enlarged opening therethrough, said winding drum member having line pick-up means eccentrically mounted on the inner face of the forward portion thereof, said pick-up means comprising a pick-up slide having a circular bore therein, a pick-up pin rotatably disposed within said bore, said slide being provided with a lower edge portion adapted to contact said driven shaft during one position of operation of said reel and to contact the outer periphery of said tubular member forwardly of the spool carrying portion thereof during a different operative position, said tubular member having a pair of projections disposed forwardly of said tubular member on opposite sides of the forward face thereof and flat surfaces interposed between flat side walls provided on the said projections, said projections being provided with arcuate upper surfaces abutting the outer periphery of said tubular member, said projections being of relatively less arcuate extent than that of the flat interspaced surfaces of the tubular member, said pick-up means being adapted to seat in a non line-engaging position on a forward portion of said shaft when said shaft is axially moved to a forward position in said spool casing, release of said spring pressure causing said pick-up pin to engage the forward end of said tubular member, rotation of the winding means causing the lower edge of said pick-up means to move rearward on the arcuate portion of an

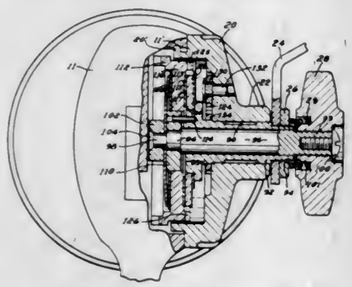
adjacent projection to elevate the said pick-up means to the outer periphery of the tubular member and project the rotatable pick-up pin through the said opening in the winding means to contact the line.

3,223,348
SPIN-CAST FISHING REEL WITH LEVEL WINDING MEANS
Joseph C. Clark, Orlando, Fla., assignor to True Temper Corporation, Cleveland, Ohio, a corporation of Ohio
Original application May 5, 1959, Ser. No. 811,162, now Patent No. 3,114,514, dated Dec. 17, 1963. Divided and this application Oct. 31, 1963, Ser. No. 320,342
4 Claims. (Cl. 242—84.21)



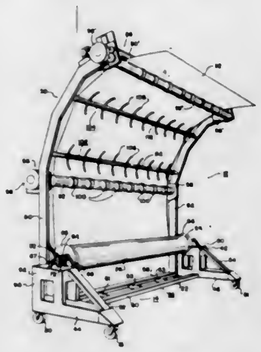
1. In a reel of the character described, means forming a housing, a manual crank means journalled in one side of said housing for rotation about an axis transverse said housing including a crank pin inside said housing secured to said crank means, a flanged spool means journalled for axial reciprocation along an axis normal to said crank axis for retaining a line wound thereon, said spool means including an annular recess in one side thereof forming a radial inward depending flange, a yoke member positioned normal to one side of said spool means including a pair of legs having opposite disposed abutments at one end thereof removably engaged in opposite sides of said recess and retained therein by said flange, said yoke member including a slot at the yoke end thereof engaged with said crank pin for reciprocating said spool means when said crank means is rotated for level winding said line when wound thereon.

3,223,349
DRAG MECHANISM FOR A SPINNING REEL
Joseph M. Holahan, Geneva, Ohio, assignor to True Temper Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Oct. 25, 1962, Ser. No. 233,001
2 Claims. (Cl. 242—84.45)



2. A drag assembly for fishing reels comprising a gear case housing, a main driving gear disposed therein, a crank sleeve, a drag shaft, said crank sleeve and drag shaft disposed through said housing, crank means for rotating said crank sleeve and said drag shaft relative to said housing, an annular dish-shaped spring member carried at one end of said drag shaft, drag washer means associated with said gear and interposed between said spring member and said crank sleeve, a drag knob disposed for rotation at the opposite end of said drag shaft, a second spring member associated with said drag knob and exerting an outward pressure on said drag knob, said drag knob when rotated increases the said second spring pressure until a predetermined drag is reached, continued movement then being adapted to longitudinally move said drag shaft outwardly of the housing against the pressure exerted by said second spring member to cause gradual increase of pressure by the said first recited spring member whereby frictional coupling of the said gear and said crank sleeve is caused through pressure exerted on said interposed drag washer means.

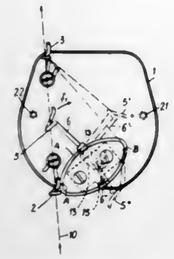
3,223,350
ROOFING DISPENSER
Wallace B. Bock and Calvin V. Bock, Elkhart County, Ind., assignors to Bock Industries of Elkhart, Indiana, Inc., Elkhart, Ind., a corporation of Indiana
Filed June 20, 1963, Ser. No. 289,328
8 Claims. (Cl. 242—86.52)



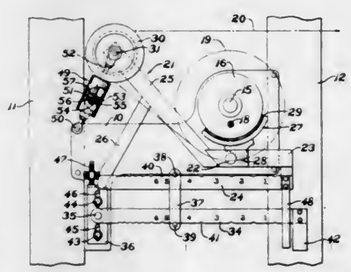
8. A dispenser for coiled roofing comprising a base, a reel on said base for the coiled roofing, an upstanding frame mounted rigidly on said base being curved and extending over said reel to a height corresponding approximately to the position of the edge of the roof on which the roofing is to be applied, a pair of pinch rollers mounted on said frame for uncoiling the roofing material from the coil and delivering the uncoiled material to the upper end of the frame, a motor for driving said pinch rollers, and means near the upper end of the frame for guiding the uncoiled roofing material onto the top of a trailer.

3,223,351
THREAD TENSION REGULATOR FOR TEXTILE MACHINES
Francis Lemarchand, Rouen, France
Filed Feb. 26, 1964, Ser. No. 347,451
Claims priority, application France, Mar. 15, 1963, 928,145
6 Claims. (Cl. 242—154)

1. A thread tension regulating device comprising: a casing, a stationary inlet thread guide secured to said casing, a convex shoe secured to said casing and having a long radius portion adjacent said inlet thread guide and a shorter radius portion remote from said thread guide, a movable thread guide pivotally mounted on said casing, a stationary outlet thread guide secured to said casing, said movable guide being operatively associated and located with respect to said convex shoe so that thread threaded successively through said inlet guide, said movable guide and said outlet guide will frictionally engage an arcuate portion of said convex shoe which is longer and longer as said movable thread guide is pivoted more and more in a predetermined direction, and means mounted in said casing for resiliently urging said movable thread guide in said predetermined direction with a constant torque adapted to always balance the torque exerted by the thread tension upon said movable thread guide.

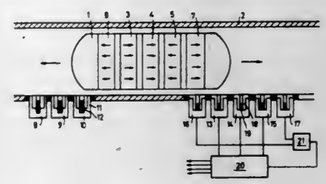


3,223,352
LET-OFF APPARATUS
Merle A. Fuller and Raymond J. Slezak, Akron, Ohio, assignors to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
Filed Feb. 11, 1964, Ser. No. 344,136
6 Claims. (Cl. 242—156.2)



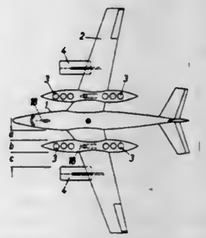
1. A let-off for flexible filamentary material comprising:
(a) a stationary support,
(b) means on said support rotatably supporting a supply spool of the filamentary material,
(c) a braking surface on said spool supporting means,
(d) a lever pivoted on said stationary support adjacent the spool supporting means,
(e) brake shoe means mounted on said lever for braking engagement with said braking surface to selectively apply and release braking force upon said spool supporting means in response to rocking movement of said lever,
(f) guide means for the filamentary material supported on said lever at a location such that tension in the filamentary material extending from the supply spool over said guide means applies lever rocking force in the direction for effecting brake release,
(g) a force applying lever pivotally mounted on said stationary support and extending generally parallel with and in spaced relationship from the first-mentioned lever, and
(h) link means engaging both levers and movable longitudinally therealong to vary the force exerted by the force applying lever upon the first-mentioned lever.

3,223,353
APPARATUS FOR DESTINATION CONTROL OF A CONVEYANCE BY MEANS OF HALL GENERATORS
Friedrich Kuhrt, Hans Joachim Lippmann, and Klemens Wiehl, all of Nurnberg, Germany, assignors to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany
Filed Dec. 27, 1963, Ser. No. 333,840
Claims priority, application Germany, Dec. 28, 1962, S 83,083
6 Claims. (Cl. 243—29)



1. For a transportation system having a conveyance capable of travelling along paths to a number of destinations, a control system comprising a plurality of magnetizable information bands on said conveyance oriented transverse to the travel path, two timing bands oriented transverse to the travel path and respectively located on said conveyance on either side of said plurality of information bands, a plurality of Hall-generator sensor means each corresponding to one of said bands and located along said path for sensing the respective bands simultaneously when said conveyance passes them, electronic gate means connected to said sensor means for passing signals sensed by the sensors corresponding to the information bands only when said sensors corresponding to the timing bands sense the timing bands simultaneously.

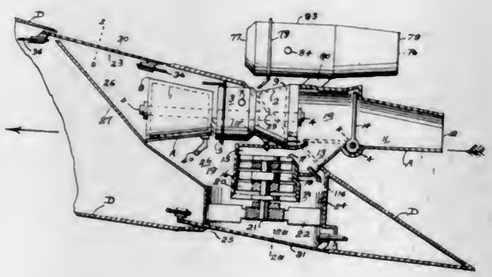
3,223,354
VERTICAL TAKE OFF AND LANDING AIRCRAFT
Wilhelm O. Selbold and Gerhard Eggers, Bremen, Rolf R. B. Riccius, Berlin-Mariendorf, and Rolf Stuessel, Bremen, Germany, assignors to Vereinigte Flugtechnische Werke Gesellschaft mit beschraenkter Haftung frueher "Weser" Flugzeugbau/Focke-Wulf/Heinkel-Flugzeugbau, Bremen-Flughafen, Germany
Filed Jan. 4, 1962, Ser. No. 164,282
Claims priority, application Germany, Jan. 7, 1961, F 32,924
6 Claims. (Cl. 244—12)



1. In a vertical take-off and landing aircraft having a fuselage with a central fore-and-aft axis, and right and left wings fixed with and extending outwardly from said fuselage, right and left nacelle means each carried by a respective one of said wings in outwardly spaced relation with respect to said fuselage and symmetrical with and parallel to said axis, and a pair of lifting propulsion units carried by each said nacelle means, one said unit being

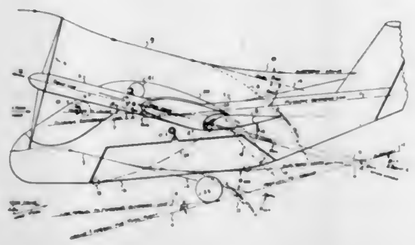
forwardly of the leading edge of its wing and the other said unit being rearwardly of the trailing edge of its wing, right and left forward jet propulsion units, each carried by a respective one of said wings in outwardly-spaced relation with respect to the corresponding one of said nacelles, deflector means carried by each said forward jet propulsion unit and movable from a first position out of the exhaust from its unit, to a second position within, and deflecting downwardly, a portion of the exhaust gases emerging from its unit, and means operable to move each said deflector means between said first and said second positions.

3,223,355
ALTERNATIVE SUSTENTATION SYSTEM FOR AIRCRAFT
Adolphe C. Peterson, 4623 Bruce Ave. S., Minneapolis, Minn.
Filed Apr. 1, 1963, Ser. No. 269,288
4 Claims. (Cl. 244—12)



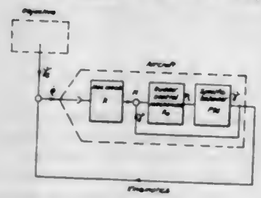
1. In an aircraft: a fuselage structure, a sustentation surface structure arranged to provide sustentation in translational flight by its angular disposition relative to translational flight of the aircraft; a propulsion system to provide thrust for translational flight; a plural number of air channels, each having means for air intake, each having an air discharge directed downwardly of the translational flight direction, each having shutter means at its said air discharge, each said shutter means having alternative location, in one location forming a closure for said air discharge associated with it each closure forming relatively a continuation of said sustentation surface structure, and in an alternative location being placed to open said air discharge associated for flow of air; each said air channel having air propellor means located therein between said air intake and the associated air discharge, each air propellor means having interconnected therewith means to rotationally drive the air propellor means, the said last named means to rotationally drive including inter-connecting conduit means between the said propulsion system and turbine means inter-connected with the air propellor means for transmission of exhaust gases from said propulsion system to said turbine means the said propulsion system to provide thrust for translational flight including a combustion turbine inducting air from ambient air and supplied with fuel to produce jet propulsion translationally, the said propulsion system including also an alternative jet propulsion system having ram-jet air intake, ram-jet combustion chamber and fuel supply thereto and jet discharge directed rearwardly of the direction of translational flight; and means to prevent air flow into said first named propulsion system when there is combustion induced flight propulsion by said alternative propulsion system.

3,223,356
DEFLECTED SLIPSTREAM SYSTEM FOR AIRCRAFT
Alberto Alvarez-Calderón, 1560 Castilleja St., Palo Alto, Calif.
Filed Mar. 6, 1963, Ser. No. 263,217
11 Claims. (Cl. 244—13)



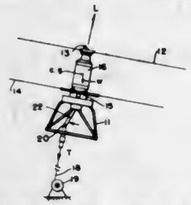
2. A propeller driven high lift aircraft having a reduced variation of angle of attack during high speed and slow speed flight conditions comprising a fuselage with a longitudinal line of reference, wings mounted on said fuselage at a substantial positive incidence with respect to said longitudinal line, a pair of propellers mounted ahead of said wings one on each side of said fuselage with said propellers having propeller axes at a large positive incidence with respect to said longitudinal line of reference, a movable trailing edge flap on each of said wings; said aircraft further characterized in that it operates for cruising flight with said line of reference at a small negative angle to the horizon, with said wings and propeller axes during cruise at an intermediate positive angle to the horizon, and with said flaps during cruise flight permanently inclinded upward at a negative angle from said wings to redirect a propeller slipstreams from a propeller axial direction towards a horizontal direction, and in that said aircraft operates during slow speed flight with said line of reference inclined upward to the horizon at an intermediate angle, with said wings and propeller axes inclined upward to the horizon by a large angle, and with said flaps inclined downward to said wings to redirect said propeller slipstream from a propeller axial direction towards a downward direction.

3,223,357
AIRCRAFT PROPORTIONAL NAVIGATION
Kurt Bruecker-Steinkuhl, Liesegangstr. 10, Duesseldorf, Germany
Filed June 12, 1962, Ser. No. 202,943
Claims priority, application Germany, June 19, 1961, B 62,953; June 25, 1961, B 63,393
3 Claims. (Cl. 244—14)



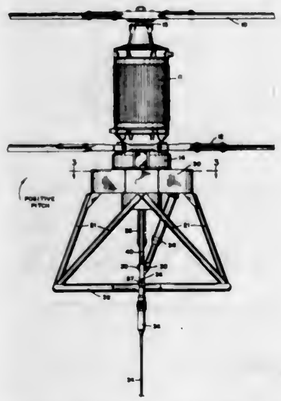
1. In an aircraft having steering mechanism and servomotor means for adjusting the steering mechanism to direct the aircraft toward an objective, a regulating apparatus on the aircraft for improving the proportional navigation of the aircraft comprising: means for measuring the angular velocity of the line of sight from the aircraft to an objective and for converting the measurement into a first electric potential; means for measuring the angular velocity of the direction of flight of the aircraft and for converting the measurement into a second electrical potential; means for multiplying said first electrical potential by an arbitrary constant to provide a command value; a mixer station having means for measuring the difference between said second electrical potential and said command value; and means for amplifying said difference and feeding it to said servomotor means for adjusting said steering mechanism.

3,223,358
TETHERED HELICOPTER
Stanley L. Quick, Annapolis, Md., assignor to Fairchild Hiller Corporation, a corporation of Maryland
Filed Mar. 18, 1964, Ser. No. 352,737
18 Claims. (Cl. 244—17.17)

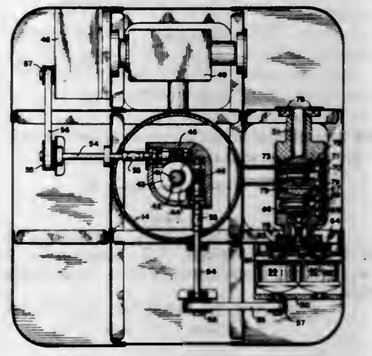


1. A helicopter vehicle tethered by a single cable on which a force is produced when said vehicle is in flight comprising a tethering point on said vehicle, means for connecting said cable to said tethering point, and means for controllably shifting the tethering point of said vehicle with respect to both transverse major axes of the vehicle to cause the force on said cable to produce force moments on said vehicle.

3,223,359
HELICOPTER FLIGHT CONTROL SYSTEM
Stanley L. Quick, Annapolis, Md., and Everett W. Opdahl, Poughkeepsie, N.Y., assignors to Fairchild Hiller Corporation, a corporation of Maryland
Filed Mar. 19, 1964, Ser. No. 353,168
15 Claims. (Cl. 244—17.13)

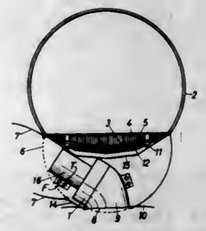


12. A helicopter having a rotor means comprising: means for driving said rotor, means connected to said driving means for controlling the attitude of the helicopter about an axis generally transverse to the yaw axis of the helicopter, means responsive to the deviation of the helicopter in yaw from a predetermined reference position for producing a control signal representative thereof,



and means connected to said driving means and responsive to the control signal for modifying the torque output of the rotor means for controlling the yaw motion of the helicopter.

3,223,360
VTOL AIRCRAFT JET INSTALLATION
Heinrich Ludwig Hertel, Berlin-Charlottenburg, and Helmut Paul Krug, Berlin, Germany, assignors to Vereinigte Flugtechnische Werke Gesellschaft mit beschraenkter Haftung fruehер "Weser" Flugzeugbau/ Focke-Wulf/Heinkel-Flugzeugbau, Bremen-Flughafen, Germany
Filed Oct. 10, 1962, Ser. No. 236,177
Claims priority, application Germany, Oct. 12, 1961, F 35,123
10 Claims. (Cl. 244—23)



1. In a vertical take-off and landing aircraft, an enclosed fuselage having a central longitudinal axis, a pair of lifting jet devices, each having a downwardly-directed air outlet and an upwardly- and outwardly-directed air inlet, and means mounting each said device beneath said fuselage in suspended connection therewith, with said outlets in symmetrical relation with a normally vertical plane through said axis and said inlets directed outwardly and upwardly at respectively opposite sides of said fuselage.

3,223,361
FLEXIBLE WING WITH INTEGRATED TAIL UNIT
Peter F. Girard, La Mesa, Calif., assignor to The Ryan Aeronautical Co., San Diego, Calif.
Filed Oct. 5, 1964, Ser. No. 401,478
4 Claims. (Cl. 244—75)

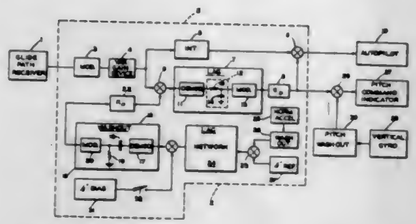
1. In a flexible wing aircraft having a longitudinal keel and flexible wing panels secured to and extending on opposite sides of the keel, the improvement comprising:
a tail unit having rigid tail plane portions secured to the

rear end of said keel and to rear portions of said wing panels and extending on opposite sides thereof;



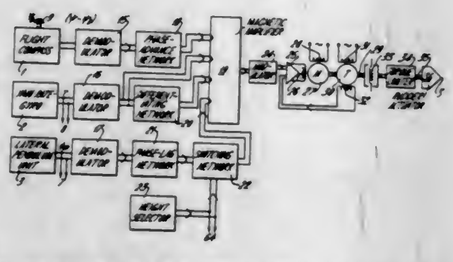
and movable pitch control surfaces operably pivotally mounted on said tail plane portions.

3,223,362
FLIGHT CONTROL APPARATUS
Jerry Doniger, Montvale, N.J., assignor to The Bendix Corporation, Teterboro, N.J., a corporation of Delaware
Filed Aug. 21, 1963, Ser. No. 303,611
9 Claims. (Cl. 244—77)



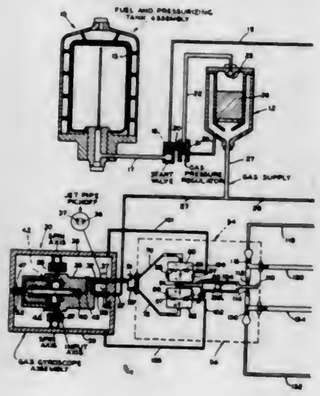
1. Apparatus for guiding an aircraft onto a selected path, said apparatus comprising receiver means for providing a radio defined displacement signal, instrument means independent of said receiver means for providing a relatively disturbance free displacement rate signal, and signal generating means utilizing said radio defined displacement signal as a low frequency reference and said displacement rate signal as a high frequency reference for providing a relatively disturbance free displacement signal corresponding to the angular displacement of said aircraft from said selected path.

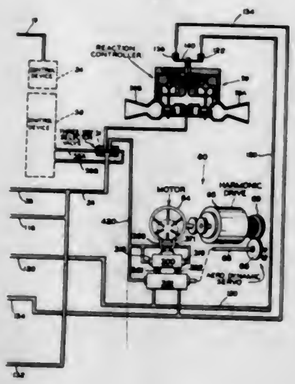
3,223,363
AIRCRAFT FLIGHT SYSTEMS
Geoffrey Francis Boothby, Kenneth Fearnside, and Heinz Pollak, all of Cheltenham, England, assignors to S. Smith & Sons (England) Limited, London, England, a British company
Filed Nov. 15, 1963, Ser. No. 324,118
20 Claims. (Cl. 244—77)



10. In an aircraft, a flight control system for use during a landing maneuver, comprising means for providing a first control signal dependent upon displacement of the aircraft laterally from a predetermined approach path, means responsive to acceleration of the aircraft athwartships to provide a second control signal dependent upon said athwartship acceleration, means responsive to said first and second signals for deriving a demand for bank of the aircraft, said demand having a first component that is dependent upon said first signal to demand bank in a sense to reduce said displacement towards zero and a second component that is dependent upon said second signal to demand bank in a sense for reducing said athwartship acceleration towards zero by sideslip of the aircraft, control means for controlling the aircraft in bank in accordance with the bank demand, means for providing a third control signal in accordance with difference between the heading of the aircraft and a predetermined heading aligned with the approach path, and control means that is responsive to said third control signal for controlling the aircraft in yaw to maintain said difference in heading zero.

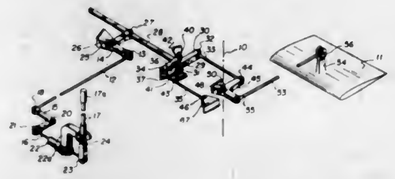
3,223,364
HOT GAS PROPORTIONAL CONTROL VALVE
Robert H. Bosworth, Morristown, N.J., assignor to The Bendix Corporation, Teterboro, N.J., a corporation of Delaware
Filed Mar. 12, 1964, Ser. No. 351,367
12 Claims. (Cl. 244—78)





1. In a fluid control system having pressurized gas for energy supply, said control system including a signal transmitting means, a pair of balanced pressure transmitting bellows operatively connected to the signal transmitting means, a pair of balanced pressure transmitting means, diaphragm means sensitive to the output signals of the fluid control system and operatively associated with each bellows, a capillary tube operatively connecting each of said bellows to a constant fluid pressure source so as to render negative the output signals from the fluid control system of the low frequency range and transmitted to each of said bellows by said signal sensitive diaphragm means, a hot gas proportional control valve operative to receive transmitted output signals of a frequency range intermediate said low frequency range and an extending high frequency range, said valve comprising supply pressure ports for receiving pressure from said pressurized gas energy supply, ports for receiving differential pressure signals from said bellows, movable means operated by the differential pressure signal for directing the pressurized gas energy supply in a sense depending on the signal pressure, bellows interposed between the supply pressure ports and the signal pressure ports and operatively connected to said movable means for effecting movement of said movable means and the compensation of said supply pressure by said signal pressure so as to prevent damage to said bellows.

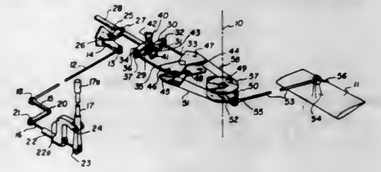
3,223,365
CONTROL MECHANISM
William R. Snook, Jr., 3908 E. Funston, Wichita, Kans.
Filed Jan. 30, 1964, Ser. No. 341,290
13 Claims. (Cl. 244—90)



1. In an aircraft having at least one wing member pivotally connected to a fuselage and an aileron element movably connected to the wing member, a control mechanism for the element comprising, first crank means, first push rod means having one end pivotally connected to one end of said first crank means, second push rod means having one end pivotally connected to another end of said first crank means, transverse slide bar means having one end pivotally connected to said first crank means intermediate the ends thereof, said transverse slide bar means being adapted to receive element control input motion, yoke means pivotally anchored to the fuselage and said other end of said first crank means pivotally connected thereto within the yoke thereof, first control motion transfer means pivotally connected to said first push rod means and to the aileron element for transmitting control input motion from said first push rod means to the aileron element, and wing member movement feedback means pivotally connected to said second push rod means and to the pivotally connected wing member for feeding back pivotal movement of the wing member to said second push rod means.

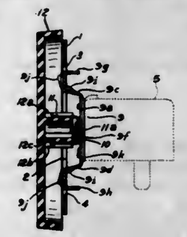
3,223,366
CONTROL MECHANISM
William R. Snook, Jr., 3908 E. Funston, Wichita, Kans.
Filed Jan. 30, 1964, Ser. No. 341,291
12 Claims. (Cl. 244—90)

1. In an aircraft, pivotally mounted member means pivotal about a pivot axis, element means movably connected to said member means, remote control means controlling the position of said element means relative to said member means from a remote position, and feedback loop control means for accurately maintaining the position of said element means relative to said member means throughout a range of pivotal movement of said member means relative to the aircraft, and said remote control means and said feedback loop control means including, crank means, first means pivotally connected to said crank means, second means pivotally connected to said crank means, third means pivotally connected to said crank means for transmitting control input motion to said crank means and said first means, fourth means carried by said aircraft pivotally connected to said crank



means, fifth means comprising a cable and pulley system pivotal about said pivot axis of said member means and pivotally connected to said first means, control motion transfer means connected to said fifth means and to said element means for transmitting control input motion from said first means to said element means, and sixth means comprising a cable and pulley system connecting said second means to said member means for feeding pivotal movement of said member means to said element means through said sixth means, said second means, crank means, said first means, said fifth means, and said control motion transfer means.

3,223,367
SNAP-IN MOUNTING MEANS
Marion M. Iglehart, Wauwatosa, Wis., assignor to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware
Filed Apr. 7, 1964, Ser. No. 357,990
11 Claims. (Cl. 248—27)



1. In an apparatus for converting an electrical control device from a screw-mounted type to a snap-in mounted type without changing the construction of the panel on which it is adapted to be mounted, the panel having an aperture adapted for receiving any one of a number of different sizes of control devices therethrough and small holes on opposite sides of the aperture originally adapted for receiving screws to secure lateral arms of a screw-mounted control device supporting member to the panel:

a snap-in mounting device adapted to be substituted for the screw-mounted member and to be snap-mounted on the panel comprising:

first means substantially in a first plane and including means for securing the same to an electrical device;

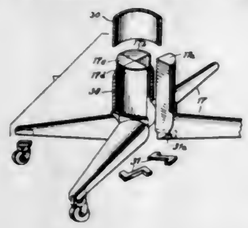
a pair of arms extending from the plane of said first means and having end portions in a com-

mon plane offset from said first plane, said end portions being adapted to overlie the panel between the aperture and screw holes thereof;

prongs extending from the ends of said arms adapted to receive into the screw holes to position said mounting device in the center of the aperture and to prevent turning thereof;

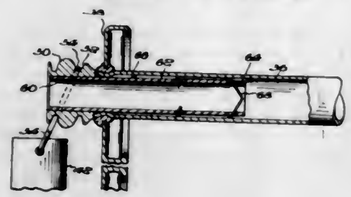
and means on said arms adapted to engage the edges of the aperture and snap thereover when said end portions are pressed against the panel from one side thereof and to allow removal from the same side of the panel by prying said arms therefrom.

3,223,368
FURNITURE PEDESTAL
Charles R. Pollock, 373 Henry St., Brooklyn, N.Y.
Filed Nov. 23, 1964, Ser. No. 413,130
5 Claims. (Cl. 248—158)



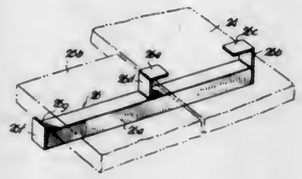
1. In a furniture pedestal for supporting an article of furniture above a surface, said article of furniture having a brace member on the under side thereof with a depending cylindrical boss, the provision of a hollow cylindrical stanchion receiving said boss in the upper end thereof and integral quadrant leg pieces which fit together as a solid cylinder received within the lower end of said stanchion in telescoping relationship therewith, each of said quadrant pieces having attached to the lower end thereof a radially outwardly projecting support portion and a groove formed at the innermost portion of each of said support portions on the lowermost surface of the quadrant cylinder portion with the grooves of opposed quadrants aligned and a plurality of staples, each of said staples having a portion in opposed grooves.

3,223,369
LADDER ATTACHMENTS
James Albert Benninger, Jr., Greenville, Pa., assignor to R. D. Werner Co., Inc., Greenville, Pa., a corporation of Pennsylvania
Filed Apr. 30, 1964, Ser. No. 363,772
4 Claims. (Cl. 248—210)



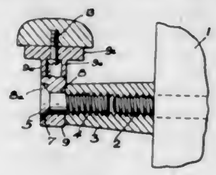
1. A removable attachment for mounting items having a handle onto the rungs of a ladder and the like, comprising a boss having elliptical grooves formed at conjugate angles therein and of a depth for receiving a handle of an item, tubular means extending into a socket opening at the center of said boss and forming a connection with said boss, and the opposite end of said tubular means being proportioned to extend into one of the various open-ended rungs at a preselected elevational location of a ladder to provide a support mounting at the side of a ladder.

3,223,370
PLANK SUPPORT BRACKET
Harold V. Pignon, 12817 E. 47th St., Independence, Mo.
Filed June 11, 1964, Ser. No. 374,336
3 Claims. (Cl. 248—214)



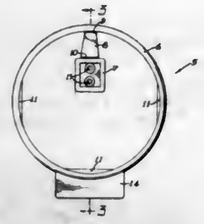
1. A plank support bracket comprising an elongate body member sufficiently rigid to resist deflection when supporting a board at its free end and of sufficient length to underlie at least the combined widths of a first and a second plank, two L-shaped flange means one connected to one end of said body member and the other intermediate the length thereof, said two flange means, adapted to engage therebetween the side edges of and overlie with a portion of each of same portion of one side of a first plank, and a vertical flange stop on the free end of said body member adapted to engage between same and the intermediate flange the side edges of a second plank.

3,223,371
BRACKET FOR SUPPORTING RAILS
Fred J. Miller, 520 Bryant St., San Francisco, Calif.
Filed Oct. 31, 1963, Ser. No. 320,423
2 Claims. (Cl. 248—251)



1. In a bracket for supporting a hand rail or the like on the side of a supporting structure, an internally threaded sleeve adapted to be mounted on a device extending outwardly from the supporting structure, a body having means for mounting a rail or the like thereon and having an opening extending therethrough in registry with the opening in the sleeve, the outer end portion of the opening in the body having converging sides forming an inwardly tapered socket, the said converging sides having inwardly converging serrations thereon, and a screw extending loosely through the opening in the body and having an inwardly tapered head adapted to fit wholly within the socket, the said tapered head having converging serrations thereon adapted to engage with the serrations on the sides of the socket, the screw head having an outer planar face, the screw extending into and engaging with the threads in the outer portion of the sleeve and arranged for inward adjustment to lodge the head wholly within the socket and adjust the body toward and into abutting relationship with the outer end of the sleeve.

3,223,372
PLASTIC HOLDER
Percy Marton Ward, 2057 Eileen Drive, Anaheim, Calif.
Filed July 1, 1964, Ser. No. 379,625
2 Claims. (Cl. 248—313)



1. A unitary molded plastic holder including a ring, and a mounting plate and strap normally positioned within said ring and in integral co-planar relationship therewith, said strap flexibly uniting said ring to said plate and transmitting to said ring from said plate when the latter is positioned downwardly and outwardly from within said ring, a downward bias to said ring so that when said plate is so positioned and mounted on a wall said bias tends to hold said ring in gripping relation with an article inserted vertically therethrough.

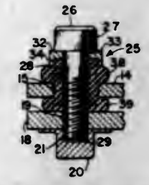
3,223,373
HANGER ORNAMENT
Bernard J. Molinaro, 239 Trumbull Ave., Bridgeport, Conn.
Filed Apr. 27, 1965, Ser. No. 451,242
4 Claims. (Cl. 248—339)



1. A hanger ornament, capable of use separately as an ornament or as an ornamental hanger for hanging Christmas tree ornaments, comprising an ornamental body having an ornament securing loop formed in its lower portion and a downwardly facing open loop formed in its upper portion adapted to be hooked over and supported on a branch said ornamental body having a portion extending above said downwardly facing open loop and being balanced such that the hanger will resist rotation on the branch even though no object is mounted on the ornament securing loop in the lower portion.

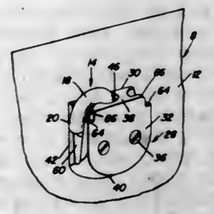
3,223,374
MINIATURE VIBRATION ISOLATOR
David H. Butler and Wilbert C. Falk, Hampton, Va., assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed May 23, 1963, Ser. No. 282,817
12 Claims. (Cl. 248—358)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. A miniature vibration isolation assembly comprising: a first member; a second member to be mounted in spaced relation to said first member; said first and second members having aligned apertures; the aperture in one of said members being larger than the aperture in the other member; an elastic tube fitting through the large aperture and abutting said other member; a cup-like washer engaging and surrounding the nonabutting



end of said elastic tube; fastener means passing through said apertures, tube and cup-like washer; and folded beads formed between said first and second members and one of said members and said cup-like washer upon compression of said elastic tube to isolate said members.

3,223,375
ROPE HOLDDOWN HOOK AND BRACKET THEREFOR
Joseph Edwin Bernasconi, 3145 S. Cole Road, Boise, Idaho
Filed Apr. 30, 1964, Ser. No. 363,839
8 Claims. (Cl. 248—361)

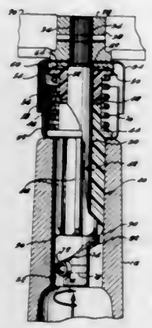


1. For use on the outward side of the wall of a pick-up truck or similar load-hauling conveyance wherein a rope or the like is used to bind and retain the grain, hay or similar load in place, means for positioning and tautening an end portion of said rope, said means comprising a heavy duty J-shaped member providing an attaching and journaling shank and a rope hook at one end, and means for mounting and anchoring said first-named means in a given position on said outward side, said mounting and anchoring means having a bearing and said shank being journaled for rotation in said bearing and permitting said hook to be positioned at right angles to the plane of said outward side when desired for rope hitching use and, alternatively, to be swung toward and positioned close to said outward side when not intended to be used, said mounting and anchoring means comprising a block-like constituting a bracket, said body having an open-ended bore extending therethrough and defining the aforementioned bearing, said body having a keeper seat and said shank having a detent constituting a keeper and releasably engageable with said keeper seat.

3,223,376
SELF-RETURNING CHAIR CONTROL
Aurelio Ciuffini, Bridgeport, and Philip Joseph Williams, Fairfield, Conn., assignors to Stewart-Warner Corporation, Chicago, Ill., a corporation of Virginia
Filed Nov. 18, 1963, Ser. No. 324,400
3 Claims. (Cl. 248—417)

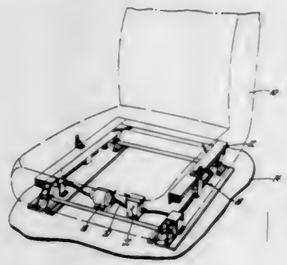
1. A swivel control for supporting a chair having a chair post relative to a pedestal, comprising plastic hub means having a cam surface formed on one end wall and longitudinal ribs of uniform diameter formed on the

peripheral wall of said hub means and fixed within an opening in said pedestal, said hub means having a through-bore of generally uniform dimension for receiving therein the lower end of the chair post for free axial and rotatable movements, a freely rotatable plastic collar slidably positioned on the chair post between the hub means and the chair and having a peripheral flange, a spring positioned betwen the hub means and the flange operable to bias said collar and hub means axially apart, a retainer ring secured to said post, a bearing interposed between said flange and said ring for rotatably carrying



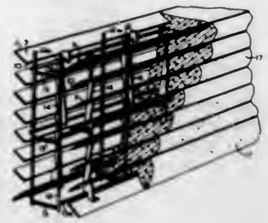
said ring and post on said flange whereby said bias is transmitted to said post, while permitting said post to rotate relative said collar without transmitting a turning torque to said spring, a cam follower pin projecting in a direction transverse to the axis of said post and having a roller fixed against movement transverse to said post axis for preventing engagement between said roller and the wall of said pedestal opening and adapted to cooperate with the cam surface on said hub means in response to the transmission of said spring bias against said bearing for rotating said post to a predetermined position.

3,223,377
MEMORY SYSTEM FOR POWERED SEAT
Samuel Bartlett Robbins, Rochester, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed May 13, 1963, Ser. No. 279,933
7 Claims. (Cl. 248—419)



1. A power seat adjuster for controlling the position of a vehicle seat comprising in combination, seat adjusting mechanism effective when actuated for changing the seat position, a reversible electric motor, a flexible drive cable operatively interconnecting said motor to said seat adjusting mechanism for driving said mechanism, means for controlling energization of said motor including switch mechanism directly actuated in response to movement of said flexible drive cable and effective to de-energize said motor upon movement of said seat to a preselected seat position, and manually operable switch means for energizing said motor to drive said seat adjusting mechanism toward said preselected seat position.

3,223,378
REINFORCED CONCRETE STRUCTURES HAVING FORMWORK EMBEDDED THEREIN
Sydney Bennett, 33 Benwerrin Ave., Carss Park, near Sydney, New South Wales, Australia
Filed June 25, 1963, Ser. No. 290,544
7 Claims. (Cl. 249—15)

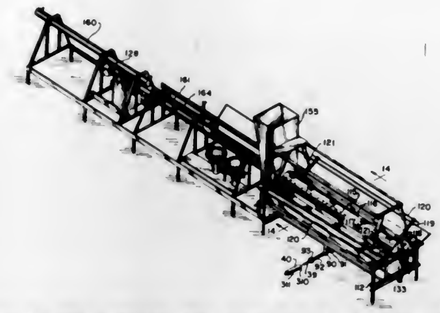


1. A reinforced concrete structure comprising the combination of
a framework including spaced horizontal longitudinal stays,
spaced vertical brackets secured to said stays, each of said brackets having angled slat-supporting surfaces thereon and
longitudinally extending spaced horizontal slats secured to said brackets on said angled supporting surfaces to complete said framework, said slats, when so secured, being in mutually parallel spaced relationship, located each at an acute angle downwardly, with the lower longitudinally edge projecting inwardly of said framework and the upper edge projecting outwardly therefrom,
the vertical spacing of the slats being such that the lower inner edge of a slat is a short distance from the plane of the upper outer edge of the next lower slat and the angle of inclination of the slats is such that spaces are provided between the lower edges of slats and the upper edges of adjoining slats, adapted for the flow of wet cement and aggregate mix therethrough and
cement and aggregate poured into and bonded with said framework, surrounding said stays, and brackets and filling the said spaces between said slats to complete the reinforced concrete structure when set.

3. A reinforced concrete structure according to claim 1 in which
the spacing of the slats is such that the lower inner edge of each slat is a short distance above the plane of the upper edge of the next lower slat and
a sheet of light material is removably secured against the outer edges of the assembled slats to confine the cement and aggregate as it is poured into the framework.

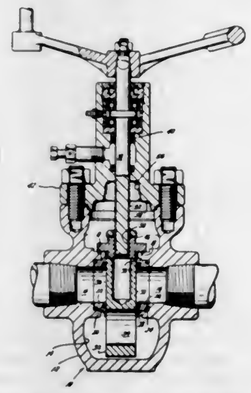
3,223,379
APPARATUS FOR PRODUCING PRESTRESSED CONCRETE ARTICLES
Elmer L. Erickson, 3435 7th Ave. S., Great Falls, Mont.
Filed Oct. 16, 1962, Ser. No. 230,873
4 Claims. (Cl. 249—97)

2. Apparatus for automatically producing pre-stressed concrete articles comprising at least one pallet means for moving said pallet to a predetermined position, movable mold means for engaging said pallet in said predetermined position and forming a chamber open at one end, conveyor means movable into and substantially through said chamber, a wire extendable through said conveyor means, the opposite end of said chamber having a wire receiving opening, means for extending said wire through said wire receiving opening, means for automatically securing said wire to one end of said pallet adjacent to the closed end of said chamber, means for applying tension to said wire, said conveyor means adapted



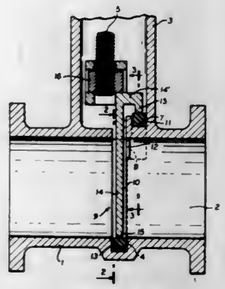
to fill said chamber and move out of the same as the chamber is being filled, means for closing the open end of said chamber after it has been filled, means for automatically securing said wire to said means for closing said chamber, means for severing said wire adjacent to said closing means, and means for moving the filled pallet away from the predetermined position, whereby a concrete article will be automatically molded on the pallet after which the pallet will be moved to a remote position for drying.

3,223,380
STEM-GATE CONNECTION
William R. Hochmuth, William E. Lowrey, and Paul J. Natho, Houston, Tex., assignors to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed Feb. 1, 1963, Ser. No. 255,480
8 Claims. (Cl. 251—284)



8. A gate valve comprising a housing having a valve chamber, diametrically opposed inlet and outlet passageways having hub portions extending into said valve chamber, a seat member in each of the hub portions, a reciprocating gate member in said valve chamber having a transverse passage alignable with the inlet and outlet passageways in the open position and a solid portion having sealing faces cooperating with seat members to clock flow in the closed position, a vertical passage extending from one end of the gate member, a transverse passage near said end intersecting said vertical passage, a member slidingly positioned in said transverse passage having a passage aligned with the vertical passage in the gate and having ears which extend past the sealing surfaces of the gate member, a stem having a male portion engaged with the passage of the member in the gate member, a detachable bonnet attached to the housing closing the valve chamber having a sealed passage through which the stem extends, the ears of the member of the gate engaging the hub portions to limit axial inner movement of the gate and said ears engaging said bonnet to limit axial outward movement of said gate whereby the gate member remains free floating in the closed position and the sealing surface of the gate remain coplanar with the sealing surfaces of the seat members.

3,223,381
GATE VALVE WITH RESILIENT SEALING MOUNTED IN THE VALVE BODY
Eugen Fischer and Siegmar Förster, Heidenheim, Brenz, Germany, assignors to Johannes Erhard, H. Waldenmaier Erben, Suddeutsche Armaturenfabrik, Brenz, Germany, a corporation of Germany
Filed Sept. 9, 1963, Ser. No. 307,440
Claims priority, application Germany, Sept. 29, 1962, E 23,614
5 Claims. (Cl. 251—328)



1. A gate valve comprising
a valve body defining an axial passage therethrough and having an inner face and an outer face,
a dome piece projecting from the outer face of said valve body,
said dome piece being connected with said passage by an opening,
a non-rising threaded spindle disposed in said dome piece,
said inner face of said valve body having a first groove disposed in a plane perpendicular to the longitudinal axis of said passage and leading toward said opening in said valve body,
said outer face of said valve body having a second groove longitudinally spaced apart from said first groove and extending substantially for the length of said opening in said valve body,
said second groove terminating at a point overlapping said first groove,
said valve body having a third groove connecting the ends of said second groove with said first groove,
sealing means disposed in said first groove, in said second groove, and in said third groove,
said latter sealing means comprising a web member disposed in said third groove and connecting said sealing means of said first groove and of said second groove,

said first and second grooves including side faces disposed in parallel planes spaced apart from each other along and perpendicular to the axis of said passage,

a closing disc being in part of a configuration complementary to that of said first groove and having a flange-like projection,

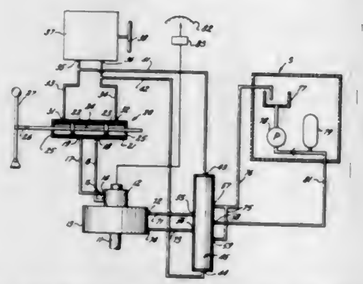
said closing disc being disposed and movable in a plane perpendicular to the longitudinal axis of said valve body and including a nut member cooperating with said threaded spindle, to open and to close, respectively, said closing disc,

said disc engaging said sealing means disposed second groove on top of said last mentioned sealing means,

said closing disc and said flange-like projection having a continuous rim means for engagement with said sealing means in the closing position of said closing disc, and

said threaded spindle being disposed eccentrically relative to said closing disc.

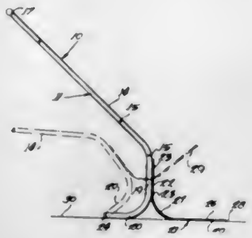
3,223,382
HYDRAULIC CONTROL SYSTEM
Jean Mercier and Bernard Mercier, New York, N.Y.; said Bernard Mercier assignor to Mercier Olaer Patent Corporation, Wilmington, Del., a corporation of Delaware
Filed Apr. 20, 1964, Ser. No. 360,996
10 Claims. (Cl. 253—1)



1. A hydraulic control system for effecting rotary movement of a shaft on each side of a neutral position, comprising a hydraulic motor operatively connected to said shaft to rotate the latter, said motor having control ports, a valve having control ports connected to the control ports of said motor, said valve having a fluid pressure inlet port and a return port, a source of fluid under pressure connected to said pressure inlet port and adapted to provide a constant source of pressure thereto, a reservoir connected to said return port, a second source of fluid under pressure adapted to supply fluid under pressure only when actuated, said valve having a valve member, resilient means reacting against said valve member normally retaining the latter in neutral position to block said control ports and said inlet and return ports and means operatively connecting said second source to said valve to effect movement of said valve member to operative position upon actuation of said second source thereby to connect said control ports to said inlet port and said return port to actuate said hydraulic motor.

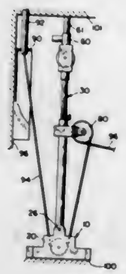
3,223,383
SNOW REMOVAL APPARATUS
Charles J. Hrabal, 110 Blackhawk, Park Forest, Ill.
Filed Nov. 20, 1964, Ser. No. 419,265
3 Claims. (Cl. 254—131.5)

1. A snow removal device, comprising, a substantially L-shaped blade, one leg portion of said blade being substantially flat and horizontally disposed and the other leg portion being substantially flat and vertically disposed when the device is in one operative position, the forwardmost, transversely extending edge of said horizontally disposed leg portion being straight and serving as a scraping edge, an elongated handle having one end fixedly connected to the vertically disposed leg portion adjacent the uppermost, transversely extending edge thereof, said handle extending rearwardly and upwardly from said vertically disposed leg portion, and a pair of stabilizing rails,



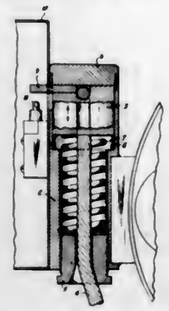
each of said rails having one end fixedly connected to said vertically disposed leg portion adjacent the lowermost edge thereof, said rails extending transversely outwardly and rearwardly from said vertically disposed leg portion, each of said rails having a terminal tip portion disposed adjacent a vertical plane containing a respective marginal side edge of said blade and having a lowermost surface lying substantially in a plane containing the underside surface of said horizontally disposed leg portion.

3,223,384
POWER PULLING ARRANGEMENT
George B. Gebo, 15448 Lemac, Van Nuys, Calif.
Filed Sept. 25, 1963, Ser. No. 311,428
8 Claims. (Cl. 254—134.3)



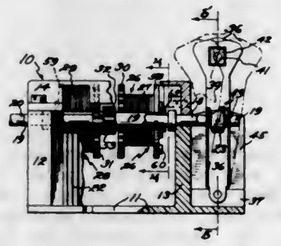
1. In a power driven wire pulling device, a base member, a first axially elongated tubular member pivotally connected to the base member, a second tubular member telescopically received within said first member and movable axially relative thereto, first pulley means carried by the base for rotation thereon and below said first member, second pulley means carried by said second member adjacent the outer end thereof, power drivable reel means adapted for operable association with a pull line carried by one of said member and in operative relation with all of said pulley means, and means to lock said first and second members in selected positions relative to each other.

3,223,385
HOIST COMPRISING AUTOMATIC VARIABLE SPEED WINDING MEANS
Sakae Murakami, 382–2 Matsunagacho, Matsunaga, Hiroshima, Japan
Filed Dec. 12, 1963, Ser. No. 330,108
Claims priority, application Japan, Dec. 15, 1962, 37/76,586
3 Claims. (Cl. 254—173)



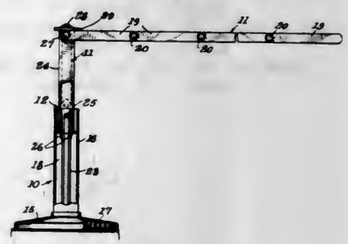
1. Hoisting apparatus comprising an electric motor connectable to operate as either a two-pole or a four-pole motor and to develop a distinctly greater torque when connected for operation as a four-pole motor than as a two-pole motor, a control switch movable between a first position in which it connects said motor to develop one of said torques and a second position in which it connects said motor to develop the other of said torques, means biassing said switch toward said second position, actuating means movable between a first position in which it holds said switch in its first position and a second position in which it permits said switch to assume its second position, means biasing said actuating means toward its second position, flexible load supporting means connected at one end to said actuating means to transfer thereto at least a predetermined portion of any load supported by said load supporting means, and move said actuating means and switch means into their first positions when said predetermined load portion is sufficient to overcome the force exerted by said biassing means, and means driven by said motor connected to wind up and unwind said flexible load supporting means.

3,223,386
TOY COMPOUND WINCH
Marshall H Frisbie, Hamden, and William A. Scholefield, East Haven, Conn., assignors to The A. C. Gilbert Company, New Haven, Conn., a corporation of Maryland
Filed July 26, 1963, Ser. No. 297,869
7 Claims. (Cl. 254—185)



1. A toy compound winch for selectively diversifying the action of winch animated toys by power obtained from a single prime mover comprising, a plurality of winch drums each carrying gear teeth and adapted to take in and pay off a toy animating draw line, a rotary support for said drums permitting sequential rotation thereof independently of each other, a power intake shaft adapted to be driven by a prime mover, and variable power transmitting connections between said intake shaft and said drums including a selector pinion supported for rotary movement and also for axial movement into and out of mesh with said gear teeth on either of said winch drums together with a single shifter member connected to move said selector pinion in axial directions, and separate stop means movable between positions operative to brake or release for rotation each of said winch drums, said separate stop means being operably related to said single shifter member.

3,223,387
PORTABLE STREET BARRIER
Pasquale C. Magliocco, 22 Los Higos St., Alhambra, Calif.
Filed Jan. 27, 1964, Ser. No. 340,234
3 Claims. (Cl. 256—1)



1. In a portable street barrier, a standard having a weighted bottom portion and a tubular upright column, an extensible arm assembly comprising a plurality of foldable arm sections pivoted together at their adjacent end portions, detent means adjacent each pivotal connection for holding said arm sections in relative adjusted position on their pivots, a tubular member, means pivotally connecting said tubular member with the free end of an end arm section of said arm assembly, said tubular member being slidably positioned within said upright column for adjustment from an upper position to a retracted position, post means fixed within said column and spaced from said column wall, means connecting said post means and said tubular member for guiding said tubular member in its movement to and from retracted position in said column, and spring friction means between the tubular member and the post means for retaining said tubular member in a vertically adjusted position.

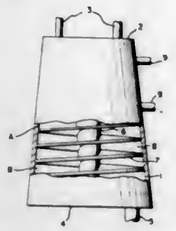
3,223,388
APPARATUS FOR MIXING
Roger E. Knox, Claymont, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed May 20, 1963, Ser. No. 281,535
2 Claims. (Cl. 259—4)

1. A mixing apparatus comprising

(1) an outer shell in the form of truncated cone with the top or smaller diameter of said cone having at least one inlet opening and the bottom or larger diameter having at least one outlet opening;

(2) a second truncated cone axially positioned within said outer shell and inverted in relation to said outer shell; and

(3) a helical or spiral channel extending continuously throughout the axial length of said second cone in



the area between said second cone and the inner surface of said outer shell so that one end of said channel communicates with said inlet opening and the other end with said outlet opening, said channel having a constantly increasing cross-sectional area from beginning to end.

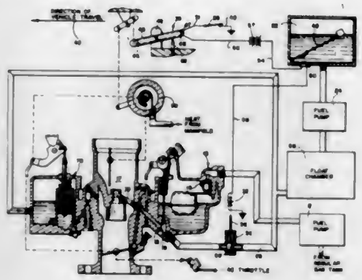
3,223,389
PAINT MIXER
Clyde S. Simmonds, 6108 Elder Creek Road, Sacramento, Calif.
Filed Feb. 10, 1964, Ser. No. 343,795
3 Claims. (Cl. 259—106)

1. A paint mixer for use in a paint can comprising a rotary depending shaft having paint mixing elements on its lower end, operating means for the shaft connected to the upper end thereof, and means detachably supporting the operating means from one side of the can with the shaft projecting into said can; the supporting means including a pair of rigid transversely spaced depending bars, separate hangers shaped to straddle and engage the rim of the can at circumferentially spaced points thereon, and means securing the hangers to the bars for rotation relative thereto about vertical axes.

3,223,390
DUAL FUEL CARBURETION SYSTEM
Harry F. Bunze, Rolling Hills Estates, Calif. (849 Serpentine Drive, Redlands, Calif.)
Filed May 29, 1962, Ser. No. 198,511
5 Claims. (Cl. 261—18)

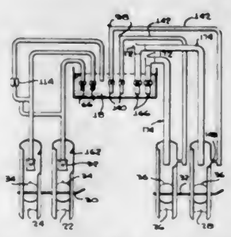
1. A dual fuel carburetion system for use in a vehicle engine adapted to selectively provide regular or anti-knock fuel to the engine carburetor in accordance with the forward acceleration and incline conditions of said vehicle comprising

a carburetor,
a source of regular fuel,
a source of anti-knock fuel,
separate fuel lines interconnecting each of said fuel sources and said carburetor,
a valve interposed in said anti-knock connecting fuel line,
electrically responsive actuator means operatively connected to said valve,
a power source,



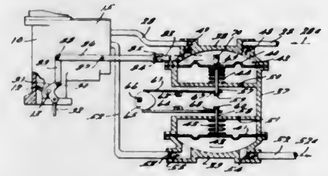
and acceleration sensitive electrical switch means comprising a mercury switch interposed between said power source and said actuator means,
said switch means closing in response to predetermined combinations of vehicle incline and forward acceleration,
whereby when said switch means is closed said valve is opened to permit anti-knock fuel to pass to said carburetor.

3,223,391
CARBURETOR
Warner B. Shepherd, Jr., 831 5th St., Verona, Pa.
Filed Oct. 26, 1962, Ser. No. 233,261
2 Claims. (Cl. 261—23)



1. A carburetor comprising a body having air duct means therethrough adapted to be connected to the intake manifold of an internal combustion engine so as to supply and air-fuel mixture from said duct means to said manifold, a fuel chamber in said body, first and second venturi means in said duct means, a main fuel passage from said fuel chamber to said first venturi means, a main fuel metering jet in said main passage, a secondary fuel passage between said second venturi means and said fuel chamber, a secondary fuel metering jet in said secondary passage, said secondary fuel passage having an air vent of predetermined size in operative communication with said secondary fuel metering jet controlling the suction thereon and thereby metering the fuel therethrough, an auxiliary passage between said fuel chamber and opening into said second venturi means, a high speed jet in said auxiliary passage, said auxiliary passage having an air vent of predetermined size in operative communication with said high speed jet controlling the suction thereon and thereby metering the fuel therethrough, said last mentioned air vent being substantially larger than said first mentioned air vent to prevent venturi action of said second venturi means from drawing fuel through the high speed jet at all low and intermediate speeds of the engine, said main passage adapted to supply fuel to said first venturi means at and above low engine speeds, said secondary passage adapted to supply fuel to said second venturi means at and above intermediate engine speeds, a throttle valve in said duct downstream of said second venturi, pneumatic motor means controlling said throttle valve, and a fluid control passage connecting said pneumatic motor means to said first venturi means, whereby when a sufficient vacuum is created at said first venturi means, during high engine speeds, said throttle valve will be moved to wide open position thereby creating sufficient vacuum at said second venturi means to cause said high speed jet to supply fuel through said auxiliary passage to said second venturi means, and said high speed jet and auxiliary passage at other engine speeds remaining inactive.

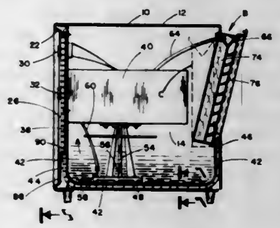
3,223,392
RETURN FLOW CARBURETOR
Thomas M. Ball, Bloomfield Hills, Mich., assignor to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware
Original application July 28, 1959, Ser. No. 830,007, now Patent No. 3,161,700, dated Dec. 15, 1964. Divided and this application June 15, 1964, Ser. No. 381,279
4 Claims. (Cl. 261—27)



1. In a carburetor for an internal combustion engine having an intake manifold system, a throttle valve in said system, a fuel bowl, a movable-wall type fuel pumping means, inlet conduit means connecting said pumping means and bowl for supplying the latter with fuel upon operation of said pumping means, means for maintaining the fuel in said bowl at a predetermined level comprising an overflow weir in said bowl defining at least in part a chamber adapted to receive excess fuel overflowing said weir from said bowl when the fuel in said bowl attains said predetermined level, fuel return means in communication with said chamber to drain fuel therefrom upon overflow of excess fuel from said bowl into said chamber, said pumping means having a reciprocable wall movable in alternate intake and pumping strokes, a cyclical cam, follower means engageable with said cam and wall to effect reciprocation of the latter, and means operatively connected with said throttle valve for adjustably controlling the relative positions of said follower means with respect to said cam to increase the length of said pumping stroke upon opening of said valve.

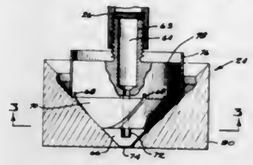
3. In a carburetor for an internal combustion engine having an intake manifold system, a throttle valve in said system, a fuel bowl, a movable-wall type fuel pumping means, inlet conduit means connecting said pumping means and bowl for supplying the latter with fuel upon operation of said pumping means, fuel duct means connecting said bowl and intake manifold system for supplying fuel to the latter, means for maintaining the fuel in said bowl at a predetermined level comprising an overflow weir in said bowl defining at least in part a chamber adapted to receive excess fuel overflowing said weir from said bowl when the fuel in said bowl attains said predetermined level, fuel return means in communication with said chamber to drain fuel therefrom upon overflow of excess fuel from said bowl into said chamber, said pumping means having a reciprocable wall movable in alternate intake and pumping strokes, pressure exerting means for yieldingly urging said wall in a pumping stroke, reciprocable actuating means operatively connected with said wall for moving the latter in opposition to said pressure exerting means to effect an intake stroke of said wall upon movement of said actuating means in one direction and for releasing said wall for movement in said pumping stroke upon movement of said actuating means in the opposite direction, and means operatively connected with said throttle valve for adjustably controlling the movement of said actuating means in opposition to said pressure exerting means for increasing said pumping stroke in accordance with opening of said valve.

3,223,393
EVAPORATIVE COOLER CONSTRUCTION
Adam D. Goettl, Phoenix, Ariz., assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware
Filed Jan. 23, 1964, Ser. No. 339,782
1 Claim. (Cl. 261—28)



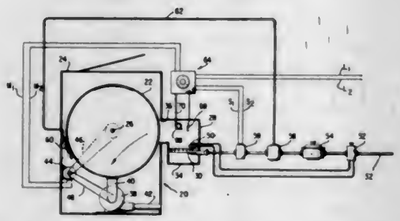
In an evaporative cooler the combination of: a housing; an inverted U shaped housing member forming a top and two opposite vertically disposed sides of said housing; an upright U shaped housing member oriented substantially 90 degrees to and telescopically secured to said inverted U shaped housing member; a sump structure in a lower portion of said housing; a horizontal portion of said upright U shaped housing member forming a bottom of said sump structure; and opposed upstanding sides of said U shaped upright housing member forming two sides of said sump structure above and at said horizontal portion; said sides of said inverted U shaped housing member forming two sides of said sump structure above and at said horizontal portion; a blower mounted in said housing; one of said sides having an opening therein; an outlet of said blower communicating with said opening; an evaporative cooler pad mounted in another one of said sides; and means for supplying water to an upper portion of said pad, said horizontal portion having downwardly turned flanges contiguous with respective sides of said inverted housing and forming mastic holding crevices to seal said sump structure; said flanges extending downwardly substantially to the lowermost end of said sides of said inverted U shaped housing member and said lowermost ends having inturned flanges extending inwardly below said horizontal portion whereat said flanges of said horizontal portions bottom at the bend between said lowermost ends of said inturned flanges.

3,223,394
ASPIRATOR FOR A CARBURETOR
Bruce R. Walsh, Wilkinsburg, Pa., assignor to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware
Filed Dec. 18, 1961, Ser. No. 160,208
7 Claims. (Cl. 261—78)



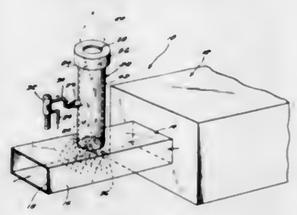
1. In a carburetor having an air passageway defined by an air passageway wall one end of which is an upstream end and the other a downstream end, a fuel conduit adapted to supply fuel to said air passageway extending into said air passageway, said fuel conduit having a terminus coaxially disposed with respect to said air passageway and facing in a downstream direction therein, the improvement comprising aspirator means disposed at said fuel conduit terminus, said aspirator means coaxially disposed with respect to said air passageway and spaced apart from the wall of said air passageway to provide an annular space between the wall of said air passageway and the exterior of said aspirator means so that air flowing in said air passageway flows past the exterior of said aspirator means, air inlet means in said aspirator means open to said air passageway adapted to channel a portion of the air flowing in said air passageway into said aspirator means, swirling means in said aspirator means adapted to swirl the air entering through said air inlet means, said aspirator means adapted so that the swirling air aspirates fuel through said fuel conduit to form a fuel-air mixture, discharge means in said aspirator means opening into said air passageway in a downstream direction adapted for the discharge of a swirling spray into said air passageway.

3,223,395
CLOTHES DRYER CONTROL SYSTEM
Francis S. Genbauffe, Irwin, Pa., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Virginia
Filed Nov. 2, 1961, Ser. No. 149,738
6 Claims. (Cl. 263—33)



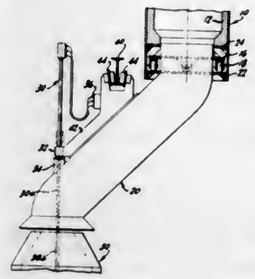
4. For use in combination with a clothes drier having a rotatable drier drum, a blower operable to induce a flow of air through said drum from an air inlet to an air outlet, electric motor means operable when energized to simultaneously rotate said drum and operate said blower, a fuel burner for heating air in said inlet, and a fuel supply line for supplying fuel to said burner; control means comprising a normally closed solenoid operated valve in said supply line operable when energized to supply fuel to said burner, modulating valve means in said supply line operable when said solenoid valve is energized to adjust the rate of flow of fuel through said supply line to said burner, first temperature responsive means for operating said modulating valve means to regulate the rate of flow of fuel to said burner to maintain the temperature of air adjacent said air outlet at a substantially constant temperature, a multiple position drying cycle programmer including a first switch connected to said motor means and a second switch connected to said solenoid controlled valve for selectively energizing said motor means and said solenoid controlled valve, respectively, said programmer being operable in a first position to close said first and second switches to energize said motor means and said solenoid controlled valve and being operable in a second position to close said first switch and open said second switch to energize said motor means while de-energizing said solenoid controlled valve, and second temperature responsive means for shifting said program switch from said first position to said second position in response to a decrease in the temperature of air adjacent said inlet to a preselected temperature.

3,223,396
HEAT TREATMENT APPARATUS
Alden W. Thompson, Cranston, R.I., assignor to C. I. Hayes, Inc., Cranston, R.I., a corporation of Rhode Island
Filed Apr. 22, 1963, Ser. No. 274,502
3 Claims. (Cl. 266—5)



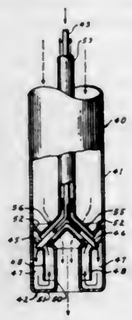
1. In a furnace for use in the heat treatment of a continuously moving work piece, a heat treatment chamber through which said work piece travels during the heat treatment thereof, a passageway open to atmosphere communicating with said chamber and through which said work piece passes, means for introducing a heat treatment atmosphere into said heat treatment chamber, a vertically extending stack communicating with said passageway and through which the heat treatment atmosphere is discharged and burned off after circulation through said heat treatment chamber, a conduit located in said stack and projecting downwardly therethrough, said conduit terminating directly beneath said stack and extending into said passageway, and means for introducing an inert gas under pressure into said conduit for passage therethrough into said passageway, said conduit directing the major portion of said inert gas toward the open end of said passageway to define a barrier for preventing atmospheric air from entering said heat treatment chamber from the entrance end of said passageway, a relatively small portion of the inert gas being directed upwardly from the lowermost end of said conduit into said stack for reducing the temperature of the lower end of said stack to prevent burning of treatment gas therein, said inert gas directed into said stack further preventing ingress of atmosphere into said passageway from said stack in the event that burn-out of said heat treatment atmosphere occurs at the upper end of said stack.

3,223,397
ROTATABLE HOOD ASSEMBLY
James A. Young, Alameda, Calif., assignor, by mesne assignments, to Kaiser Industries Corporation, Oakland, Calif., a corporation of Nevada
Filed May 22, 1962, Ser. No. 196,723
2 Claims. (Cl. 266—34)



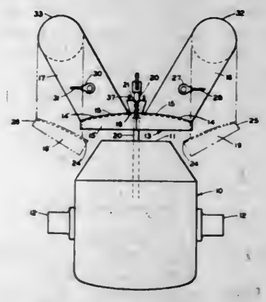
1. A rotatable hood assembly adaptable to be selectively disposed over the open mouth of a metal refining vessel, said assembly comprising stack means having an annular platform mounted at the lower end thereof, elongated arcuate guide means, and hood means; a supporting rim, having rollable elements, secured to said hood means adapted to dependingly and rotatably affix said hood means to said stack means by engagement with said annular platform, said elongated guide means supportingly contacting said hood means, vertically movable, elongated gas introducing means mounted on said hood means and extendable through a portion of said hood means, the lowermost portion of said hood means being adapted to traverse a path conforming to said elongated guide means.

3,223,398
LANCE FOR USE IN A BASIC OXYGEN CONVERSION PROCESS
John M. Bertram, Concord, Edward J. Prince, Oakland, Joseph K. Stone, Berkeley, Calif., assignors to Kaiser Industries Corporation, Oakland, Calif., a corporation of Nevada
Filed Feb. 20, 1963, Ser. No. 259,839
4 Claims. (Cl. 266—34)



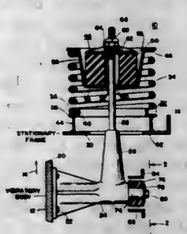
1. A lance for use in a basic oxygen conversion process comprising an elongated conduit terminating at one end in an open nozzle surrounded by an annular chamber, terminating at the other end in a seal over said conduit which seal has an inlet for oxygen, an inlet for cooling fluid, and an outlet for cooling fluid, the said annular chamber having a cylindrical baffle therein connected to an upper portion of the chamber wall and extending downwardly short of the bottom of said chamber, a first tube connecting the inlet for cooling fluid with the annular chamber on one side of said baffle, a second tube connecting the outlet for cooling fluid with said annular chamber on the other side of said baffle whereby cooling fluid must pass beneath said cylindrical baffle to pass from said inlet to said outlet, said first and second tubes being out of contact with the walls of said conduit.

3,223,399
APPARATUS FOR OXYGEN CONVERSION OF IRON TO STEEL
John Walker, Walnut Creek, Calif., assignor, by mesne assignments, to Kaiser Industries Corporation, Oakland, Calif., a corporation of Nevada
Filed Nov. 26, 1962, Ser. No. 261,242
5 Claims. (Cl. 266—36)



1. In an apparatus for oxygen conversion of iron to steel the combination of a conversion vessel pivotally mounted to be movable from a normal steel converting position to a tilted pouring position, said vessel also being provided with a mouth at the upper portion thereof, a shallow hood disposed in gas-collecting position with respect to said mouth when said vessel is in said normal steel converting position, said hood comprising separable segments that are extendable to and retractable from a joined position in which they form said hood, each segment including a duct, said segments when in joined position providing a gas-collecting chamber superposed about the mouth of said vessel, the hood formed by said segments further including an aperture for receiving a lance.

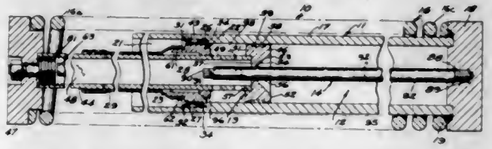
3,223,400
VIBRATION ISOLATION MOUNT
Emil E. Deister, Jr., Fort Wayne, Ind., assignor to Deister Machine Company, Fort Wayne, Ind., a corporation of Indiana
Filed Oct. 21, 1963, Ser. No. 320,252
5 Claims. (Cl. 267—1)



1. A vibration isolation mount for supporting a vibratory body on a stationary frame, said body having components of vibratory movement in a first direction and in a second direction transverse to said first direction,

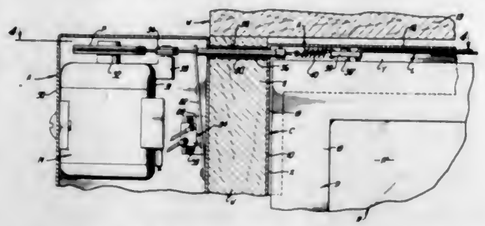
said mount comprising: a first member adapted to be attached to said body and to vibrate therewith; an elongated rod member having one end connected to said first member and extending in a direction parallel with said first direction; a second member adapted to be attached to said frame and having an annular spring seat portion; a coil spring having one end seated on said spring seat portion; said rod member extending through said spring seat portion and spring and normally coaxial therewith; a cup-shaped member coaxially disposed within said spring and having an annular rim portion engaging the other end of said spring, the bottom wall of said cup-shaped member having a central opening normally defining a clearance with said rod member, said clearance extending in said second direction; a cylindrical tubular column formed of resilient rubber-like material within said cup-shaped member and having one end seated on the inner surface of said bottom wall; said column having greater flexibility than said spring in said second direction, said rod member extending through said column and normally being coaxial therewith, the inner surface of the side wall of said cup-shaped member normally defining a clearance in said second direction with the outer peripheral surface of said column; and a member attached to the other end of said rod member and engaging the other end of said column, whereby said spring and column absorb the vibration component in said first direction and said column absorbs the vibration component in said second direction.

3,223,401
HYDRAULIC CUSHION CYLINDER HEAD ARRANGEMENT
William H. Peterson, Homewood, Ill., assignor to Pullman Incorporated, Chicago, Ill., a corporation of Delaware
Filed Jan. 13, 1964, Ser. No. 337,193
8 Claims. (Cl. 267—1)



1. In a hydraulic cushion device including a cylinder having a bore, a first cylinder head fixed to one end of said cylinder, an intermediate cylinder head fixed within said cylinder bore inwardly of the open end of said cylinder, said intermediate cylinder head defining on one side thereof with said first cylinder head a hydraulic fluid-filled bore and on the opposite side thereof adjacent said open end a flexible boot reservoir chamber, an axial opening in said intermediate cylinder head, a piston head reciprocable within said hydraulic fluid-filled bore and having a hydraulic fluid orifice means formed therein, a tubular piston rod fixed on one end to said piston head for receiving within the bore thereof the hydraulic fluid passing through said orifice means, said tubular piston rod extending outwardly through said axial opening in said intermediate cylinder head, a flexible boot reservoir connected between said intermediate cylinder head and said end of said tubular piston rod extending outwardly of said intermediate cylinder head whereby said flexible boot reservoir is expandable within said flexible boot reservoir chamber, hydraulic fluid passage means providing communication between said hydraulic fluid-filled bore and said flexible boot chamber, a buffer head fixed to the other end of said tubular piston rod, and return spring means disposed between said first cylinder head and said buffer head; the improvement comprising means for fixing said intermediate cylinder head within said cylinder bore in fluid-tight and sealing relationship, said means including first shoulder means formed on the periphery of said intermediate cylinder head, a compressible sealing gasket disposed about said periphery adjacent a second shoulder means longitudinally spaced from said first shoulder means, a compression ring slidably disposed about said periphery between said first shoulder means and said sealing gasket, and a plurality of angularly spaced clip means disposed between said first shoulder means and said compression ring, said clip means being initially transversely bent and having one end thereof abutting said first shoulder means and said other end abutting said compression ring so that upon straightening thereof the effective length of said clip means is increased whereby the compression ring is urged toward said sealing gasket to compress the latter against said second shoulder means.

3,223,402
DOOR CLOSER
Edward R. Glenn, 1651 Casa Grande Ave., Pasadena, Calif.
Filed May 8, 1961, Ser. No. 158,622
6 Claims. (Cl. 268—53)

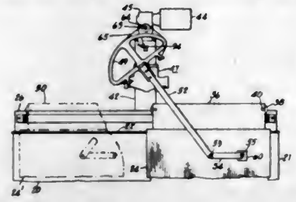


1. A closer for a sliding door arranged in an elongate frame including, a housing fixed to the exterior of the frame at one end thereof, a pair of laterally inwardly extending guide tubes carried by the housing and projecting through the frame to establish communication between the interior of the frame and the housing, a reversible electric motor mounted within the housing, a driven pulley within the housing and driven by the motor, an idler pulley carried by the frame remote from the housing, an endless tow-line engaged about said pulleys, through the guide tubes and fixed to the door, and electrical control means for the motor including a manually operable starter switch accessible at the exterior of the housing and frame and to start the motor and to move the door from its closed to its open position, a reversing switch in the housing to reverse the motor when the door reaches its open position, a stop switch in the housing to stop the motor when the door is closed, and operating means for the reversing and stop switches including a tubular slide slidably engaged in and projecting from the opposite end of each guide tube, an operating arm fixed to the inner end of each slide and operatively related to one of said switches, and a pair of stops fixed to the tow-line, one stop to engage and shift the slide related to the reversing switch inwardly when the door reaches its open position and to actuate the reversing switch, the other stop to engage and shift the slide related to the stop switch inwardly when the door returns to its closed position and to actuate the stop switch.

3,223,403
CLOSURE OPERATING MECHANISM
Benjamin Whitehead Tucker, Jr., South Orange, N.J., assignor to Otis Elevator Company, New York, N.Y., a corporation of New Jersey
Filed May 23, 1963, Ser. No. 282,758
9 Claims. (Cl. 268—53)

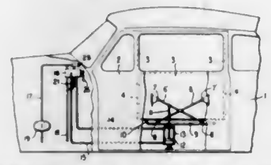
1. A compact closure operating unit for actuating a closure for an elevator comprising, a driving motor, a

two-stage speed reducing assembly having a worm and worm-gear first stage and a chain-coupled sprocket and segment second stage, and a cushioning device, including



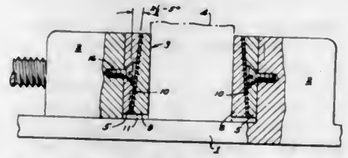
an operating shaft, for minimizing impact of said closure, said shaft being fastened to said segment to constitute a pivot therefor.

3,223,404
AUXILIARY INSTALLATION FOR ACTUATION OF MOVABLE BODY PARTS OF MOTOR VEHICLES
Friedrich K. H. Nallinger, Stuttgart, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed Dec. 28, 1960, Ser. No. 78,985
Claims priority, application Germany, Dec. 30, 1959, D 32,238
7 Claims. (Cl. 268—125)



5. An apparatus for automatically raising and lowering the window of a motor vehicle having a passenger compartment and at least one window therefor adapted to be selectively moved comprising the frame means for said window, and actuating means for moving said window in said frame means including an auxiliary power supply for supplying the actuating force to said window and control means connecting said supply to said window including first means for applying said actuating force to said window to selectively raise and lower the same, second means effectively and selectively varying the actuating force applied to said window, said first and second means each including a control element adapted to be controlled by hand arranged within the passenger space of the vehicle.

3,223,405
JAWS FOR A VISE
Arthur O. Wilson, San Bruno, Calif., assignor of one-half to Nicholas Gust, Pacifica, Calif.
Filed July 24, 1963, Ser. No. 297,428
7 Claims. (Cl. 269—137)



2. Laminated jaws for a machine vise having clamping members, at least one of said clamping members being movable relatively to the other, and a base under and between said clamping members, each jaw comprising,

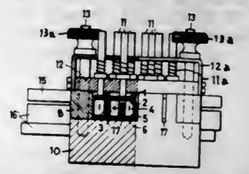
(a) a fixed lamination fixed to one of said clamping members

(b) a floating lamination superimposed on each fixed lamination

(c) a resilient binder element bonded to the superimposed faces of the laminations

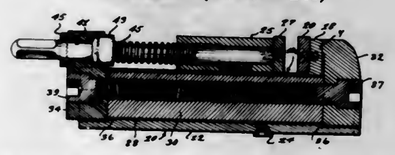
(d) the superimposed faces of the adjacent laminations being inclined toward the base and away from the space between the jaws so that each floating lamination is wider at its edge nearer the base than at its other edge.

3,223,406
DEVICE FOR PRODUCING THERMOELECTRIC BATTERY BLOCKS
Hans-Georg Traeger, Nurnberg, Germany, assignor to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany
Filed May 2, 1963, Ser. No. 277,615
Claims priority, application Germany, May 12, 1962, S 79,422
4 Claims. (Cl. 269—153)



1. A device for assembling and soldering thermocouple battery blocks from a multiplicity of *n*-type and *p*-type legs and connecting bridge pieces, comprising a rigid frame structure having a frame opening which defines the perimetric size and shape of the multi-leg block to be produced; two groups of elongated divider bars removably assembled with said frame and extending through the frame space in transverse direction to each other, each group comprising a plurality of parallel dividers in engagement with those of the other group at the respective intersections so as to partition the frame space into a plurality of compartments in checkerboard-type arrangement and adapted to receive the respective thermocouple legs, said dividers being alternately offset inwardly in the assembled condition so as to accommodate the bridge pieces to be soldered onto each two adjacent legs on each side of the frame opening, the divider bars of at least one of said groups being divided respectively into a plurality of parts extending in the longitudinal direction of the respective divider bars of said one group, said parts of said divider bars respectively being slidable sequentially in said respective longitudinal direction out of said frame space for disassembling the device; a base beneath the frame structure for supporting the legs and bridge pieces when placed into the frame structure; and a cover with fastening means on top of the frame structure for closing the frame and retaining the inserted legs and bridge pieces.

3,223,407
PRECISION VISE
Marvin Wills, 2630 E. Willamette, Colorado Springs, Colo.
Filed Feb. 3, 1964, Ser. No. 341,854
6 Claims. (Cl. 269—240)



1. A vise comprising;
a base having a smooth top sliding surface and a fixed

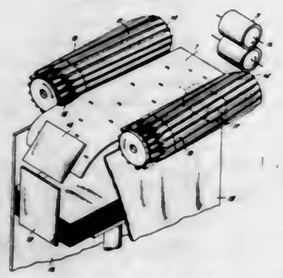
vise jaw member upstanding from said surface on one end thereof;
a second vise jaw member slidably positioned on the smooth top surface of said body in opposing relation to the fixed jaw member;
a clamp having;
a rigid spacer member, and
first and second fixed clamping jaws secured to the ends of the spacer member, said clamp being carried by the base and disposed with respect thereto so that at least a portion of the first fixed clamping jaw abutts at least a portion of the said fixed vise jaw;
screw means rotatably carried by the second one of said fixed clamping jaws, said screw means being threaded into second vise jaw member.

3,223,408
BOWLING BALL WITH SIGHTING MEANS
Howard D. Jones, Royal Oak, Mich.
(P.O. Box 141, Detroit, Mich.)
Filed Sept. 15, 1960, Ser. No. 56,298
9 Claims. (Cl. 273—63)



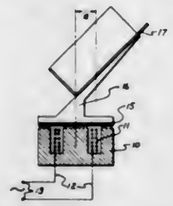
9. A bowling ball having a thumbhole and at least one fingerhole, and also provided with a plurality of contrasting marks spaced a predetermined distance apart and forwardly from the thumbhole and in such positions that a selected one of the marks may be located at the top of the ball when the ball is held for the start of an approach with the thumbhole positioned substantial distances behind and below the uppermost part of the ball.

3,223,409
STACK-FORMING CONVEYOR DEVICE FOR DATA CARDS
Erich Elsfeld, Munich, and Lothar Babisch, Munich-Pasing, Germany, assignors to Siemens & Halske Aktiengesellschaft, Berlin, Germany, a corporation of Germany
Filed Feb. 4, 1963, Ser. No. 256,171
Claims priority, application Germany, Feb. 5, 1962, S 77,893
15 Claims. (Cl. 271—71)



1. Conveying device for stacking data cards which arrive in succession, comprising conveying means for the arriving cards, said conveying means defining an entering plane for said arriving cards, feed means for issuing the cards from the device, said feed means being spaced forward from said conveying means in the conveying direction of the latter, card deflector means mounted between said conveying means and said feed means and engageable with the cards for deflecting the rear end of the issuing cards from said entering plane of the arriving cards, said deflector means comprising two blade wheels mounted on opposite sides respectively of the card conveying path and having radially protruding blades engageable with respective lateral portions of the cards for deflecting the cards, said blade wheels having mutually opposed directions of rotation and the blades of each blade wheel having substantially planar surfaces extending at a right angle to the rotational axis of said blade wheel, said axis being inclined to the plane of the card to cause said blades when rotating to deflect the card, and braking means for retarding the issuing cards.

3,223,410
JOGGING DEVICE
John H. Wilson, 2301 W. Meadow Drive, Phoenix, Ariz.; Noland E. Vogt, Phoenix, Ariz. (2111 Camino de Los Robles, Menlo Park, Calif.); and Vahak K. Sahakian, 492 Cypress Ave., Phoenix, Ariz.
Filed Feb. 14, 1963, Ser. No. 258,505
5 Claims. (Cl. 271—89)



3. A jogger for aligning documents comprising.
a stationary base;
a flat elongated ferromagnetic flexible member coupled at each end to said stationary base;
a jogging tray coupled to said flexible member having a pair of substantially perpendicularly disposed sides for containing and supporting said documents; and,
an electromagnetic means for flexing the flexible member with a bending and torsional flex that repeatedly moves said documents against said perpendicular sides and away from said sides, said flat flexible member located substantially in a first plane and having a center line in said plane with said jogging tray eccentrically located relative to said center line to cooperate with said electromagnetic means and facilitate the rotational displacement of said jogging tray.

3,223,411
LOGROLLING TYPE AMUSEMENT DEVICE
James O. Becroft, % James O. Becroft, 90 Grieb Road, Wallingford, Conn.
Filed Feb. 9, 1962, Ser. No. 172,227
3 Claims. (Cl. 272—1)



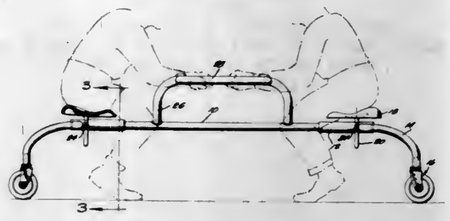
1. A logrolling-type amusement device of the character described comprising a non-buoyant elongated open ended hollow cylindrical tubular body member, and a pair of longitudinally spaced similar gas-tight hollow buoyant members one of which is concentrically secured about each end of said body member; each of said buoyant members comprising a pair of similar longitudinally spaced end walls rigidly secured to said body member, and a plurality of equally spaced radially extending hollow tooth-shaped paddle portions secured to and between said end walls.

3,223,412
MAGNETICALLY ACTUATED DOLL LIGHT
Harold M. Freeman, Madison Heights, and John F. Toth, Ferndale, Mich., assignors to Inventions, Incorporated, Detroit, Mich., a corporation of Michigan
Filed Aug. 13, 1963, Ser. No. 301,859
5 Claims. (Cl. 272—8)



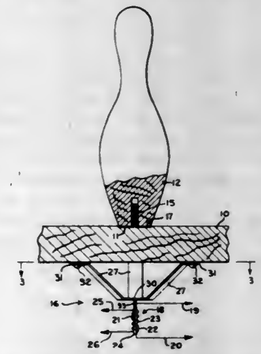
1. A magnetically actuated doll light comprising a doll-shaped supporting structure including a base portion, lamp means attached to said supporting structure, means for selectively actuating said lamp means comprising electrical switch means concealed within said supporting structure, said switch means including a movable armature to actuate said switch means and having first movable permanent magnet means attached thereto for altering the position of said armature thereby to vary the energization state of said lamp means, said first permanent magnetic means being attached to said armature by non-magnetic means adapted to magnetically space said first permanent magnet means from said switch means, magnetic keeper means disposed at a fixed location adjacent the path of possible movement of said first magnet means, said keeper means comprising a body of magnetic material attached to and magnetically spaced from said switch means by further non-magnetic means, said keeper means being positioned for selective engagement with said first magnet means during alterations in the position of said armature, and operator means for selectively moving said first permanent magnet means toward and away from said keeper means thereby to alter the position of said armature, said operator means comprising an elongated wand mounted upon a portion of said supporting structure and completely removable therefrom to permit said wand to be manually varied in position in a random fashion adjacent the exterior of said supporting structure, at least a portion of said wand including second permanent magnet means adapted to interact magnetically with the field of said first magnet means during said random variations in position of said wand.

3,223,413
DUAL OCCUPANT VELOCIPEDE FOR TUG-OF-WAR CONTESTS
Lawrence H. Whitney, 161 Longwood Place W., Detroit, Mich.
Filed Mar. 6, 1964, Ser. No. 349,813
7 Claims. (Cl. 273—1)



1. A toy vehicle for contesting riders comprising a frame including a central tube from which depend a plurality of legs with a pair of legs disposed at each end of said frame, a caster wheel carried by each of said legs, a seat carried at each end of said frame, and said legs being bifurcated and having a portion telescoped on said tube.

3,223,414
PINFALL DETECTION MEANS
Donald F. Uecker, Spring Lake, Mich., assignor to Brunswick Corporation, a corporation of Delaware
Filed May 31, 1962, Ser. No. 199,034
10 Claims. (Cl. 273—52)



6. A pin detector for a bowling pin containing a permanent magnet therein with one pole above the other when the pin is standing comprising: a bowling alley having a pin spot thereon, a magnetically actuated reed type switch located in an upright position coaxially of said bowling pin bed spot and vertically beneath it.

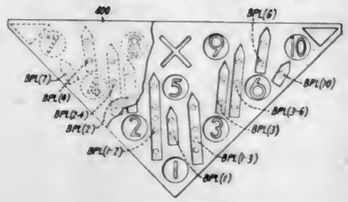
3,223,415
GRANITE BOWLING LANE
James L. Stengel and Neil D. Lewis, both % Dakota Granite Co., P.O. Box 269, Milbank, S. Dak.
Filed June 4, 1962, Ser. No. 199,963
4 Claims. (Cl. 273—51)



3. A bowling alley comprising a plurality of substantially rectangular slab members defining the lane portion proper being of polished granite having approximately 30% quartz in the composition thereof, said slab members being rigidly supported in end to end abutting rela-

tionship and having their upper surfaces highly polished and extending in a common plane from end to end thereof, and said alley having an approach deck at one end and a pin deck at the other end thereof of a thickness at least equal to that of the intermediate abutting slabs.

3,223,416
BOWLING BALL PATH INDICATOR
Roy E. Blewitt, Jr., 100 Cedar Road, Southport, Conn.
Filed Nov. 28, 1962, Ser. No. 240,636
11 Claims. (Cl. 273—54)

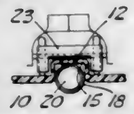


2. In a ball path indicating system for a bowling lane of the type having means for detecting the identity of standing pins on a pin deck, an optimum ball path selection computer and indicating means having selectable indicia with actuating means for each indicia energized by said computer to indicate the optimum ball path for a selected pin combination, said computer comprising a plurality of pin combination circuits each representative of a selected standing pin combination and having active and passive states with one of said circuits being selectively activated in accordance with pin position and totals information for a corresponding detected pin combination, each of said pin combination circuits being connected to one of said indicia actuation means, and operative when activated to energize said associated indicia actuating means, and means connected to at least one of said pin combination circuits and operative in response to the detected presence of certain selected standing pins among a group of standing pins and absence of certain other selected standing pins for conditioning said circuit for activation regardless of the detected presence of additional standing pins in accordance with both selected standing and fallen pins.

ERRATUM

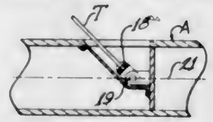
For Class 273—63 see:
Patent No. 3,223,408

3,223,417
RACING GAME
Nicholas P. Riso, 398 Huntington Ave., Buffalo, N.Y.
Filed Aug. 23, 1962, Ser. No. 218,872
2 Claims. (Cl. 273—86)



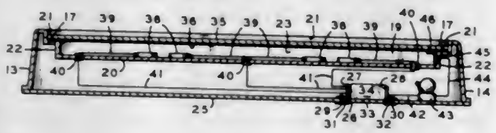
1. Racing game apparatus comprising a generally horizontal panel, a plurality of generally parallel guide formations defining a plurality of racing lanes of a race course at the upper surface of said panel, a tubular conduit at the underside of said panel in alignment with each of said guide formations, a piston of magnetic material in each of said conduits, a racing figure adapted to track along each of said guide formations, magnetic means on each of said racing figures for magnetic attraction to the piston of the associated tubular conduit, and manually operable pump means connected to each end of each of said tubular conduits for moving the piston thereof selectively in opposite directions therein and consequently moving the associated racing figure along the aligned guide formation, each racing figure being constrained to its racing lane by its guide formation whereby magnetic connection between said figure and its associated piston may be established or reestablished by movement of said piston in its conduit in a direction toward the figure until registry with said figure occurs.

3,223,418
SUBSONIC AND SUPERSONIC TOWED AERIAL TARGET
Robert I. Norman, Birmingham, Ala., and Norman F. Meullen, Charlotte, N.C., assignors to Hayes International Corporation, a corporation of Delaware
Filed July 27, 1964, Ser. No. 385,331
4 Claims. (Cl. 273—105.3)



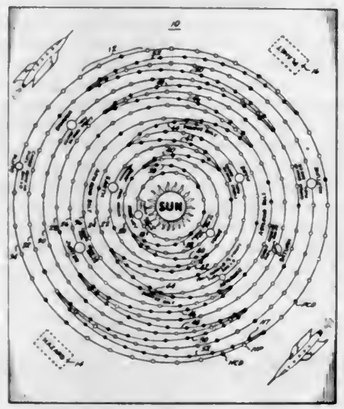
1. In a target adapted to be towed through the air at the end of a cable by an aerial vehicle at speeds above Mach 1, a tube-like elongated body symmetrical about its longitudinal axis and having an overall fineness ratio greater than seven, a connection for attaching the tow cable to the body intermediate its ends on the longitudinal center line of the body in the form of a horizontal pivot extending transversely of the longitudinal center line of the target and limiting the target to rotational movement in a plane defined by the line of pull of the cable and the longitudinal center line of the target, vertical and horizontal stabilizing surfaces located to create a center of lift pressure at least one body diameter rearwardly of the center of gravity of the target, said horizontal surfaces being cambered to create a nose-down pitching moment which is substantially constant throughout subsonic and supersonic speed ranges of the target, said tow cable connection being located substantially on the center of gravity of the target, thereby to provide a target which flies with its longitudinal axis substantially within plus or minus 5 degrees of any given flight path at all speeds above 150 knots indicated air speed.

3,223,419
MAGNETIC GAME APPARATUS
Charles W. Isaacs, 14 Mary Drive, and Harry Wade, 12 Mary Drive, both of Fenton, Mo.
Filed May 15, 1963, Ser. No. 280,551
3 Claims. (Cl. 273—131)



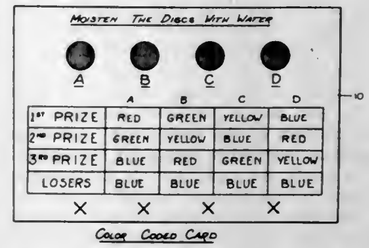
1. A game comprising a gameboard and at least two permanent magnet playing pieces, the gameboard having a frame supporting an upper panel, means to provide an electrically conductive lower surface of the upper panel, a plurality of electrically conductive magnetically attractive slugs positioned below the panel, each slug being connected to a flexible wire and normally occupying a position spaced from the lower surface of the panel, the wires being electrically conductive and being part of an electric circuit including the slugs and also including an indicator, a source of electrical energy, and the electrically conductive under surface of the panel; the permanent magnets on the playing pieces being of sufficient strength to attract a slug into contact with the electrically conductive under surface of the panel to close the said electric circuit when such playing piece is moved to a position directly overlying a slug.

3,223,420
SOLAR SYSTEM TRAVEL GAME
Richard L. Turner, 232 Belmont E., Seattle, Wash.
Filed Mar. 7, 1963, Ser. No. 263,449
4 Claims. (Cl. 273—134)



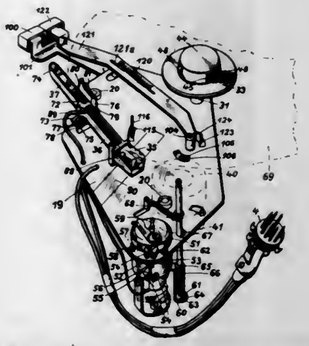
1. A solar system travel game comprising:
(a) a game board having indicia thereon symbolic of the solar system including planets in individual concentric orbits about the Sun, transfer orbits interconnecting adjacent planetary orbits, travel routes delineated on said planetary and said transfer orbits, said travel routes including stopping stations disposed at intervals thereon, including a distinctively identified planet station on each planetary orbit representing a stop on the planet of such orbit, said game board further including indicia adjacent each planet station indicating the purchase price of cargo and fuel at such planet;
(b) a plurality of differently identified position markers, each to be manually moved by a player along said routes;
(c) a like number of similarly identified token holders to be disposed in front of the players, and constructed to hold only a predetermined number of tokens;
(d) a group of Fuel tokens to be held on the token holders, to be expended by a player when he moves his position marker from a planet position and from a planetary orbit to a transfer orbit;
(e) a group of Cargo tokens identical in physical size and shape to said Fuel tokens, to be held on the token holders with said Fuel tokens, and comprising tokens representing cargo from each of the planets;
(f) chance means for determining the number of stopping stations to be traversed by a player's position marker during such player's turn; and
(g) credit paper to be used for purchasing Fuel and Cargo tokens..

3,223,421
COLOR CODED GAME CARD
Philip Hershkowitz, 700 Berkley Ave., East Meadow, N.Y.
Filed Apr. 15, 1963, Ser. No. 272,960
3 Claims. (Cl. 273—139)



1. A color coded game comprising a set of cards, each card having printed thereon a series of geometric blanks, each of said blanks being printed with an ink including a moisture-responsive invisible means which when moistened changes into a predetermined color to form a series of differently colored blank combinations, said card having also instructions thereon indicating which series of differently colored combinations constitutes a winning series, whereby the receiver of the card is able to determine from the card itself whether the card has been drawn as a winner or loser, at least one card in said set but not all having a winning series printed thereon, said at least one card having a combination of colors which differs from the combination of colors on the losing cards.

3,223,422
PORTABLE BATTERY OPERABLE RECORD PLAYER
Max Ernst, Lohengrinstr. 14, Nurnberg, Germany
Filed Nov. 2, 1962, Ser. No. 235,610
Claims priority, application Germany, Nov. 6, 1961, E 21,922
11 Claims. (Cl. 274—9)



1. In a portable record player: mounting plate means, a turntable having a surface for receiving a record, clamping means for clamping a record on said turntable, means rotatably supporting said turntable on said mounting plate, a two-arm pick-up lever, universal joint means supporting said pick-up arm on said mounting plate means so that said pick-up lever is tiltable in various planes, said pick-up lever being moveable from a radially outer starting position on a record on said turntable inwardly to a radially inner end portion, a sound-head on one arm of said pick-up lever for engagement with a record on said turntable, balancing means so mounted on the other arm of said pick-up lever as to bring the center of gravity of the

pick-up lever assembly into the immediate region of said universal joint means, spring means continuously urging the pick-up lever in the direction to move said sound head toward said turntable, first elements of abutment means on said pick-up lever and on said universal joint means, a motor switch on said mounting plate means, a control rod slidably mounted on said mounting plate means, a member on said control rod operable for closing and opening in the said motor switch in first and second end positions respectively of said control rod, second elements of abutment means on said control rod adapted to engage the said first elements of abutment means in said second position of the control rod and adapted to lift said pick-up lever from said turntable and to return the same to its starting position, a bi-stable control member connected to said control rod and adapted releasably to hold the latter in its respective end positions, manual means including spring biased pushbutton means operable to move said control rod into its said first end position, and means operatively connected to said control rod and engageable by said pick-up lever when said pick-up lever reaches its said radially inner end position and adapted when so engaged to move said control rod into its said second end position.

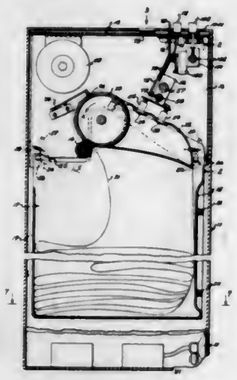
3,223,423

SOUND RECORDING AND REPRODUCING APPARATUS

Robert E. Boyden, 5040 Sereno Drive, Temple City, Calif.

Filed June 7, 1962, Ser. No. 201,728

11 Claims. (Cl. 274—11)



5. Sound translating apparatus comprising a relatively wide magnetic belt, a sound translating head, a rotatable member for driving said belt past said head, a drive control member, means supporting said drive control member for movement into either of two positions, a rotatable drive member supported by said drive control member, a braking element supported by said drive control member, means for moving said drive control member into one of said positions to engage said drive element with said rotatable member whereby to drive said rotatable member, and means for moving said drive control member into the other of its positions to engage said braking element with said rotatable member whereby to cause said braking element to brake said rotatable member.

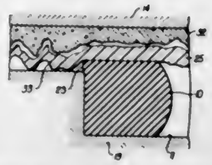
3,223,424

SEAL ASSEMBLY WITH FLUID PRESSURE RELIEVING MEANS

Sidney Loeb, Los Angeles, Calif., and Srinivasa Sourirajan, Ottawa, Ontario, Canada, assignors to The Regents of the University of California, a corporation of California

Filed Apr. 3, 1962, Ser. No. 184,718

8 Claims. (Cl. 277—23)



1. In an assembly of the type including a compressible sealing element, parts to be sealed including one which is a membrane through which some pressure may pass and having a portion disposed in a gap between adjacent portions of other parts being sealed, one of said other parts having a groove having the said sealing element disposed therein, the improvements comprising an additional membrane assembled in the seal assembly adjacent to the first membrane in the gap and between said other parts, the additional membrane having means disposed in said gap to provide for a low resistance flow path in the said gap whereby to eliminate any substantial pressure differential across the part of the first membrane in the gap on the low pressure side of the sealing element and to thereby relieve pressure from the part of the said sealing element adjacent the said gap on the low pressure side and to allow the said sealing element to extrude into the gap.

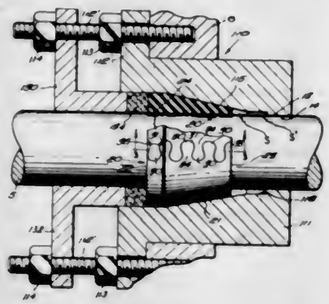
3,223,425

SLUSH PUMP PISTON ROD PACKING ASSEMBLY AND PACKING

Arthur L. Leman, P.O. Box 24068, Houston, Tex.

Original application Feb. 19, 1959, Ser. No. 794,429, now Patent No. 3,076,658, dated Feb. 5, 1963. Divided and this application Apr. 5, 1965, Ser. No. 445,682

3 Claims. (Cl. 277—115)



1. In a piston rod packing assembly for a reciprocating-piston slush pump having a cylinder with an end wall, and a piston rod for operatively entering therethrough, the combination comprising a rod stuffing box for mounting on and entry through said wall, the box having a central bore coaxial with the piston rod path, an inner end wall providing an internal annular shoulder about the rod path and an external radial mounting flange,

the stuffing box bore including internal relatively large and relatively small cylindrical portions at the outer and at the inner ends respectively and a major intermediate portion continuously tapering between the outer and the inner cylindrical portions, said box bore portions defining an annular packing recess to surround the piston rod,

and a resilient integral one-piece packing ring unit with a rod-receiving internal cylindrical bore and an external circumferential face presenting a major conical portion and a relatively short cylindrical portion at the larger outer end,

said packing ring unit having an initial longitudinal cross-sectional shape similar to that of the stuffing box bore wall including part of the cylindrical outer end portion thereof but with an initial free axial length short of the inner cylindrical end portion of said bore wall and further having an initial free radial wall dimension at all points along it greater than that of said annular packing recess at the corresponding point and to an extent greater than maximum expected variation in piston rod diameter under operative wear,

said packing ring unit having outer and inner end faces of substantial radial extent and disposed substantially entirely in planes perpendicular to the piston rod axis and having from end to end thereof a single longitudinal zone of separable jointure for lateral application and removal of the packing unit relative to the rod,

said jointure zone comprising along each opposed longitudinal margin thereof a series of alternating lugs and sockets similarly spaced at the two margins and longitudinally staggered for entry of the lugs of one margin into the sockets of the opposite margin, said lugs presenting at the free ends rounded heads of greater than half-round body and being bowed and terminally flared radially of the packing whereby three-dimensional interlocking of the lugs and sockets is afforded along the full extent of the jointure zone,

and a gland and associated threaded means at the outer end of the stuffing box for applying to the packing unit axial thrust of a high order effective at the respective flat radially disposed end faces of the packing unit in a manner insuring secure sealing fully along and at the ends of the longitudinal jointure zone primarily under mechanical pressure alone.

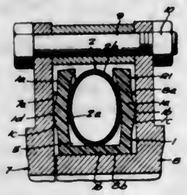
3,223,426

SEALING RING

William P. Reid, Long Beach, Calif., assignor to Aeroquip Corporation, Jackson, Mich., a corporation of Michigan

Continuation of application Ser. No. 98,439, Mar. 27, 1961. This application Aug. 3, 1964, Ser. No. 388,031

15 Claims. (Cl. 277—153)



1. A composite sealing ring for use between relatively rigid surfaces, comprising: an annular flexible sealing jacket of channel shape in cross section adapted to be positioned with its open side exposed to the pressure of fluid between said surfaces; coiled spring means mounted within said jacket to resist deformation thereof; said spring means including a helically coiled spring formed of a flat ribbon-like strip of spring material whereby the coils present closely spaced wide surfaces in contact with the interior surface of said jacket; and a rigid ring disposed in said open side of said jacket in opposed relation to said spring means.

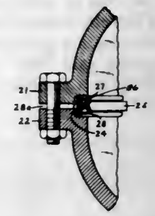
3,223,427

SEAL ASSEMBLY FOR PRESSURIZED TUBULAR JOINT

George Gerard, Yonkers, and Jacob Brayman, Staten Island, N.Y., assignors to Barogenics, Inc., a corporation of New York

Original application July 28, 1961, Ser. No. 127,738, now Patent No. 3,156,475, dated Nov. 10, 1964. Divided and this application Nov. 2, 1964, Ser. No. 413,676

6 Claims. (Cl. 277—176)



1. An article comprising, annular carrier ring means having a central axis and having a pair of axially spaced, annular surfaces converging towards each other in the inward radial direction to render said carrier ring means of tapered cross section in radial planes including said axis, and first and second sealing ring means each of lesser outer diameter than said carrier ring means and carried coaxially by said carrier ring means in axially spaced relation from each other, each of said sealing ring means being seated on a respective one of said surfaces to be in axially superposed, contacting relation therewith, and each of said sealing ring means providing when axially squeezed against said carrier means a seal precluding radial flow of pressurized fluid between that sealing ring means and said carrier means.

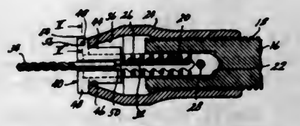
3,223,428

AUXILIARY JAWS FOR CHUCK TOOLS

Robert K. Walker, P.O. Box 5194, Tulsa, Okla.

Filed Oct. 10, 1963, Ser. No. 315,286

5 Claims. (Cl. 279—36)



1. In combination with a drill chuck including a tubular barrel and a pair of main jaws disposed in said barrel and extending through the open forward end thereof, said main jaws being operable by movement of said barrel to clamp a drill bit between the adjacent faces thereof, auxiliary jaws comprising:

(a) a pair of generally planar plates each having an elongated shank portion adapted to be inserted into the forward end opening of said barrel between said main jaws, the adjacent faces of said plates each having a groove formed longitudinally therein, whereby a drill bit may be inserted into said grooves of said plates and gripped therebetween.

3,223,429

FOLDABLE UTILITY CART

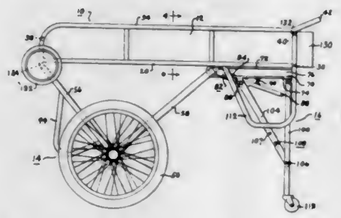
Robert L. Hastings, 1108 4th St., La Porte, Ind.

Filed Nov. 20, 1962, Ser. No. 239,004

7 Claims. (Cl. 280—36)

1. A foldable delivery cart, comprising a frame having two longitudinal side members and two end members connected to said side members, a foldable undercarriage including an axle extending transversely of said frame, a wheel on each end of said axle, a first inverted U-shaped

support member pivoted at its upper end to said frame at one end thereof and connected at its lower end to said axle, a second inverted U-shaped support member connected at its lower end to said axle, a bracket means secured to the underside thereof adjacent the end opposite said first mentioned support member and having an elongated slot therein extending lengthwise of the frame and slidably holding the upper end of said second support member, a latch means for retaining said second support member in the end of said slot nearest said first support member and thereby retaining said undercarriage in its unfolded position, a leg pivoted to said frame at the end thereof opposite said first support member, a spring for urging said leg to a position adjacent the under-



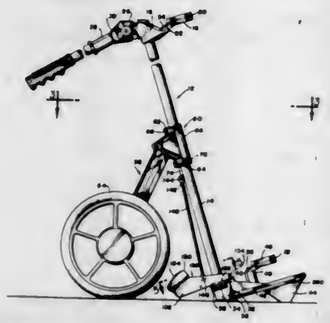
side of said frame, a releasable bracket for retaining said leg in its upstanding position, a roller on the lower end of said leg, a pair of rigid legs at each side of said frame near the same end as said leg, said rigid legs extending downwardly from the frame to the same extent as said wheels when said undercarriage is in its folded position, a pair of spaced wheels connected to said frame at the same end as said first support member, a handle connected to said frame at the same end as said legs, and an elongated transversely arranged container mounted on said frame adjacent said handle and having a plurality of compartments and a hinged cover therefor, said container being secured to said frame when said cart is in either its folded or unfolded position without interfering with the folding and unfolding operation.

3,223,430

GOLF CART WHEEL LATCHING STRUCTURE

Lloyd R. Fitzsimmons, Portland, Oreg., assignor to Product Engineering Company, Portland, Oreg., a corporation of Oregon

Filed May 11, 1964, Ser. No. 366,562
17 Claims. (Cl. 280—42)



1. In a golf cart,
a frame,
a pair of wheels,
a pair of leg means mounting the wheels pivotally relative to the frame between extended positions and collapsed positions,
a foot pedal actuator mounted movably on the frame,
coupling means interconnecting the actuator to the leg means,
and means for latching the actuator selectively in a first position holding the lever means in a first position holding the wheels in their extended positions and a second position holding the wheels in their collapsed positions.

3,223,431

SUPPORT FOR A CHILD CARRYING UNIT INCLUDING A CARRIAGE BODY, A CHAIR OR THE LIKE

Louis Gottfried, 515 West End Ave., and Jacob Berger, 600 W. 246th St., both of New York, N.Y.

Filed Mar. 2, 1964, Ser. No. 348,470
5 Claims. (Cl. 280—47.38)



1. In combination,
an upper element comprising a child carrying unit,
a support constituting an intermediate element and disposed below said upper element,
means for releasably securing said upper element to said support,
said support comprising two longitudinal members, each of said members including an upper arm and a lower arm and an end portion connecting each of the front ends and the rear ends of said arms to form two loop members disposed in upwardly directed planes,
at least one spacing bar disposed between said upper arms and between said lower arms, respectively,
a lower element comprising a running gear and including longitudinal channel members,
said lower arms including longitudinal laterally cranked out portions disposed parallel to and spaced apart from said planes for permitting the mounting of said support in said longitudinal channel members, and
said channel members receiving releasably said longitudinal portions of said lower arms of said longitudinal members.

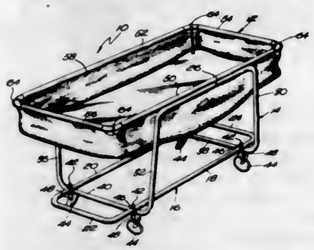
3,223,432

MOBILE CARRIAGE WITH VERTICALLY MOVABLE PLATFORM

Domenick Nicolaci, Fairhaven, Mass., assignor to Cliftex Clothing Co., Inc., New Bedford, Mass., a corporation of Massachusetts

Filed July 30, 1963, Ser. No. 298,641
6 Claims. (Cl. 280—79.2)

3. In a carriage for use in the handling of articles formed of a fabric material, a lower frame, an upper frame vertically spaced from said lower frame and being disposed generally parallel with respect thereto, an intermediate frame including spaced longitudinally extending members that are joined to said upper frame, spaced transversely extending members that are joined to said lower frame and substantially vertical members that interconnect said longitudinal and transverse members, said longitudinally extending members of said upper frame extending beyond the vertical members of said intermediate frame to define an overhang with respect thereto, a flexible net secured to said upper frame and depending therefrom,



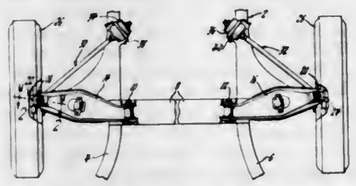
a horizontally disposed platform fixed to the lower end of said flexible net and located between said vertical members in parallel relation with respect to said upper and lower frames, and a plurality of resilient elements secured to said platform for normally urging said platform to a position adjacent the upper end of said carriage, said platform being responsive to the weight of the articles located thereon for movement in a vertical direction, wherein articles located on said platform are always accessible at the uppermost end of said carriage.

3,223,433

VEHICLE SUSPENSION CONSTRUCTION

Robert R. Parks, Warren, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Mar. 18, 1964, Ser. No. 352,924
6 Claims. (Cl. 280—96.2)



1. In a suspension structure, the combination of a control arm having a top wall formed with a vertically directed aperture and spaced side walls formed with aligned apertures horizontally displaced from said vertically directed aperture, a ball joint housing disposed between the side walls of said arm in abutting relation with said top wall, stud means projecting through said vertical aperture connecting said housing to said top wall, a strut rod associated with said arm including an end portion extending through said aligned apertures, and laterally projecting means on said housing surroundingly engaging at least a part of the end portion contained between said side walls.

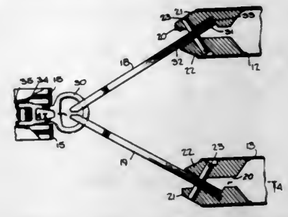
3,223,434

PALLET TRUCK COUPLING

George F. Quayle, Philadelphia, Pa., assignor, by mesne assignments, to Yale & Towne, Inc., New York, N.Y., a company of Ohio

Filed June 28, 1963, Ser. No. 291,465
16 Claims. (Cl. 280—456)

1. In a truck of the class described, a pair of rearwardly disposed legs adapted to enter a pallet so as to move to a position for lifting and supporting the pallet, an elongated pulling hook mounted on each pallet supporting leg for movement between a retracted position housed within the leg and an extended position for engag-



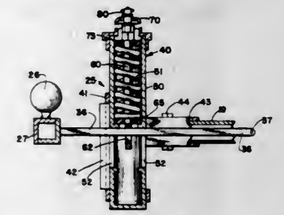
ing a trailer, and means coacting on each pulling hook and its leg for retaining the hook when in extended position so that the truck will act through the pulling hooks to pull the trailer.

3,223,435

SHOCK ABSORBER TRAILER HITCH

Glen Yarbrough, P.O. Box 65, Washington, Ind.

Filed Apr. 5, 1963, Ser. No. 270,827
3 Claims. (Cl. 280—489)



1. A shock absorber trailer hitch including a ball and socket connector joint for operatively joining a trailer and a tow vehicle which includes, a pair of juxtaposed vertically arranged compression coil springs each enclosed in a protective cylindrical housing which completely surrounds and encloses the coil spring a pair of vertical diametrically disposed slots extending through the cylindrical wall of said housing, a radially inwardly projecting lower fixed seat located within each housing and arrranged to support the lower end of the coil spring and to limit the extent of its downward movement within the housing, another radially inwardly projecting upper adjustable seat located within each housing and arranged to support the upper end of the coil spring and to limit the extent of its upward movement within the housing, and a pair of horizontally disposed elongated arms pivotally connected to the tow vehicle and extending through the vertical slots in the housing and adapted to engage and to compress said coil spring to absorb shock both upon the upward and downward movement of the ball and socket connector joint which may occur as the trailer and tow vehicle are moving over rough terrain.

3,223,436

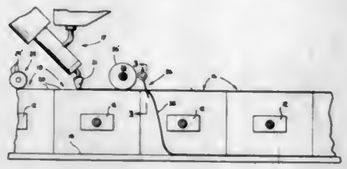
METHOD OF BINDING BOOKS AND PRODUCT THEREOF

Hollis V. Becker, 2253 N. Graham St., Indianapolis, Ind.

Filed Apr. 22, 1963, Ser. No. 274,440
2 Claims. (Cl. 281—21)

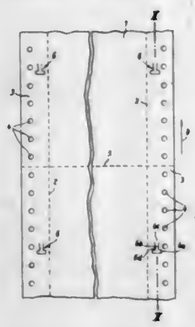
1. The method of continuously binding books comprising extruding a continuous web of polyethylene having a density of from 0.915 to 0.940 pound per cubic inch and a melt index of from 1 to 50 onto the edges of a plurality of assembled pages, the extrusion tempera-

ture of the polyethylene being within the range of from 600 to 750° F., whereby partial oxidation of the polyethylene is obtained and the adhesion of the polyethylene to the paper is increased, firmly gripping each as-



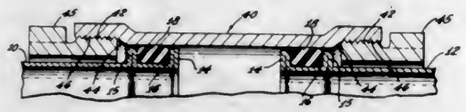
sembly of pages adjacent and parallel to said edges, and causing a roller to roll against the polyethylene and pages to work the polyethylene into firm adhesion with said pages.

3,223,437
ENDLESS BLANK FORMS
Fritz Bertsch, Neuffen, Wurttemberg, Germany, assignor to Messrs. Hans Biel, Neuffen, Wurttemberg, Germany
Filed Apr. 23, 1963, Ser. No. 275,047
Claims priority, application Germany, May 3, 1962, B 67,090
3 Claims. (Cl. 282—11.5)



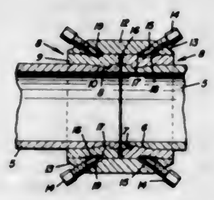
1. A continuous composite blank comprising, in combination, a plurality of superimposed working and copying webs, said webs being formed with punched-out tongues spaced in longitudinal direction from each other and each integral at one end thereof with the respective web and bent out of the plane of the web to extend through the complementary aperture formed by the punched-out tongue on the adjacent web to thus fasten the webs to each other, each of said tongues having a longitudinally extending leg integral at one end thereof with the respective web and tapering in width toward its other end, and a pair of abutting portions integral with said other end of said leg and projecting to opposite sides of said leg normal to the elongation thereof, said leg being adapted to extend through said complementary aperture and said abutting portions being adapted to extend upwardly of the web in which said aperture is formed, said abutting portions having respective shoulders adjacent the junction of said abutting portions with said other end of said leg and adapted to engage a circumferential edge portion of an aperture formed in a web other than the web with which said tongue is integral so that, when said webs shift position relative to one another in longitudinal direction of said leg, said shoulders will engage said circumferential edge portion of said aperture and said abutting portions will be drawn against said circumferential edge portion so as to overlie the same and to prevent separation of said webs.

3,223,438
COUPLING
Herbert A. De Cenzo, Arcadia, Calif., assignor to Purolator Products, Inc., a corporation of Delaware
Filed June 20, 1960, Ser. No. 37,480
5 Claims. (Cl. 285—233)



1. In a coupling for connecting two confronting tube ends, the combination of: a pair of radial flanges on each of said tube ends spaced apart to form a circumferential groove on the tube end; an elastomer sealing ring seated in each of said grooves; a cylindrical body to bridge the two tube ends and enclose all of said flanges, the unrestrained radial dimension of each of said sealing rings being greater than the radial clearance between the coupling body and the bottom of the groove in which the sealing ring is seated whereby each sealing ring is radially compressed by the coupling body for effective sealing contact both with the coupling body and with the bottom wall of the groove in which the sealing ring is seated with consequent axial elongation of the sealing ring, each of said grooves being of a width dimensioned to oppose the axial elongation of the sealing ring with consequent increase in the radial pressure of the sealing ring outwardly against the coupling body and inwardly against the corresponding tube end, the interior of one end of said coupling body being flared to facilitate sliding advance of the coupling body over the corresponding sealing ring with consequent radial compression of the sealing ring, said one end of the coupling body being formed with a first screw thread; radially inwardly extending means on the two ends respectively of said coupling body in abutment with the rearmost flanges of the two tube ends to limit separation movement of the two tubes, one of said inwardly extending means being at the flared end of the coupling body and being a ring member formed with a second screw thread for releasable engagement with said first screw thread, said two screw threads being positioned and dimensioned for screw action of the ring member against the rearmost flange of the corresponding tube end to force said flared portion of the coupling body over the corresponding sealing ring.

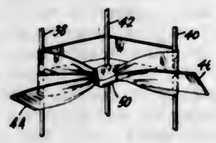
3,223,439
PIPE JOINT
William E. Stevens, Hollywood, Fla. (12 Nelson Court, Woodards View, Shoreham-by-Sea, Sussex, England)
Filed Aug. 3, 1962, Ser. No. 214,556
1 Claim. (Cl. 285—373)



A pipe joint assembly comprising a pair of pipe sections disposed in an adjacent end-to-end relationship, each of said pipe sections having a tapered annular groove

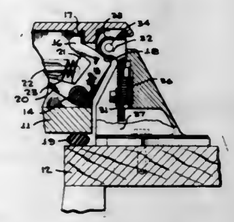
formed in the outer peripheral surface adjacent the end thereof, each groove having one wall tapering radially inwardly toward the adjacent end of said pipe and another wall extending radially outwardly which defines an annular shoulder, a pair of substantially semicircular collars encircling each pipe section and including tapered circumferential ribs on the inner surface thereof shaped complementary to said grooves and defining shoulders for engaging said annular shoulders, each pipe collar having a radial face disposed axially of its corresponding shoulder and terminating short of the adjacent end of its respective pipe sections when said shoulder is seated in its complementary groove, a sleeve having a cylindrical inner surface closely embracing but freely slidable and rotatable on said collars for enabling free longitudinal movement of the sleeve in overlying relation to the collars, a V-shaped peripheral groove defined in the outer surface of each collar, independently operable screw means disposed at an acute angle to the axis of said sleeve with the axes of said screw means intersecting a plane disposed perpendicular to the axis of the pipe sections and passing between the adjacent end faces of the pipe sections and said collars, the radial limits of said plane being defined by the inner periphery of the pipe sections and the outer periphery of said collars, said screw means engaging each collar within said peripheral groove of each collar for forcing the collars axially toward each other and thereby urging the pipe sections toward each other, an annular sealing gasket of substantially T-shaped cross-section disposed between said pipe sections and said collars, the radial face of each of said collars terminating against the axially extending portion of said T-shaped gasket, and the adjacent ends of said pipe sections engaging a radial leg of said T-shaped gasket, the ribs, shoulders and screw means being so related that upon tightening of said screw means, the collars and pipe sections are urged axially into sealing contact with said gasket.

3,223,440
METHOD OF MAKING AN ADJUSTABLE LOOP BOW AND RESULTANT PRODUCT
William Rosenzweig, Roslyn, N.Y. (% Fashion Ribbon Co. Inc., 22 W. 26th St., New York 16, N.Y.)
Filed Apr. 1, 1963, Ser. No. 269,679
9 Claims. (Cl. 289—1.2)



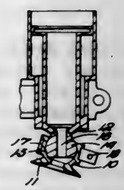
1. A method of tying a length of flexible material to form an adjustable loop bow, said method comprising looping said material so that one part thereof passes over a pin in contact therewith, and passing at least two other parts of said material over and in contact with one of a pair of laterally spaced pins and passing at least still another two parts of said material over and in contact with another one of said pair of pins, crossing the ends of said material over each other and bringing one end of said material over, behind and down the parts of said material extending between said pair of pins, forming a loop in one of said ends of the material, passing the other end of said material through said formed loop to form a knot, and pulling said ends of said material to tighten said knot.

3,223,441
IRREMOVABLE ADJUSTABLE KEEPER FOR A DOOR LATCH
Fortune Odend'hal, Hagerstown, Md., assignor to Jamison Cold Storage Door Company, Hagerstown, Md.
Original application Oct. 26, 1961, Ser. No. 147,935. Divided and this application Nov. 23, 1962, Ser. No. 239,552
2 Claims. (Cl. 292—341.18)



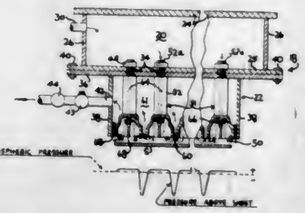
1. A keeper for a latch comprising a body member having a base and a standard having a front face perpendicular to the base, a bracket adjustably mounted on said standard, a latch engaging member on the bracket, said bracket having a rear face, means for adjustably fastening said bracket to said standard to hold said front face and said rear face in engagement with each other and to define a plane, a threaded recess formed partially in said bracket and partially in said standard and having a central longitudinal axis offset from said plane and parallel thereto, and a screw threaded in said recess, the threads of the recess cooperating with the threads of the screw for precluding relative movement between said bracket and said standard when the face of said bracket and standard are held in engagement by said fastening means.

3,223,442
SUCTION GRIPPERS
Charles Frederick Fawdry and Ernest George White, both of London, England, assignors to Headley Townsend Backhouse, Lausanne, Switzerland
Filed Apr. 24, 1964, Ser. No. 362,508
Claims priority, application Great Britain, May 3, 1963, 17,612
2 Claims. (Cl. 294—64)



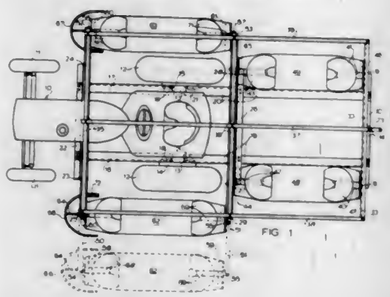
1. A suction gripper consisting of a mouthpiece of resilient material having an open mouth, a part-spherical socket and a throughway for suction leading from the socket to the mouth, in combination with a carrier member having a ball received within the said socket and resiliently gripped thereby forming a ball and socket pivotal attachment of the mouthpiece to the carrier member and also having a passageway for suction with a port open to the throughway and with means for increasing the grip of the mouthpiece on the carrier member, which means comprises at least one opening in the surface of the ball opposed to the socket said opening being connected to the suction passageway whereby the suction is operative to draw the socket into gripping engagement with the ball.

3,223,443
HANDLING OF SHEET MATERIAL
George W. Misson, Pittsburgh, Pa., assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 17, 1963, Ser. No. 316,870
15 Claims. (Cl. 294—65)



1. A method of supporting a sheet of glass which comprises supplying gas under pressure greater than ambient pressure to spaced pressure zones above a sheet of glass and withdrawing gas at a pressure less than ambient pressure from exhaust zones intermediate said spaced pressure zones at rates that differentially establish a pressure above said sheet of glass of a magnitude sufficiently less than ambient pressure to cause the weight of said sheet to be supported by the ambient pressure.

3,223,444
TOBACCO HARVESTER
Jasper B. Tart, Rte. 2, Dunn, N.C.
Filed May 25, 1964, Ser. No. 370,029
2 Claims. (Cl. 296—26)



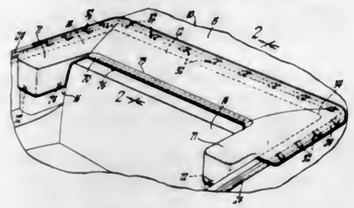
1. A tobacco harvesting device comprising a tractor having sets of front and rear wheels, a brakedrum mounted on the inside of each of said rear wheels, a pair of forward base support members detachably mounted on said brakedrums and being disposed in a plane parallel to the longitudinal axis of said tractor and extending forward from said drums; a pair of rear base support members detachably mounted on said brakedrums and being disposed in a plane parallel to the longitudinal axis of said tractor and extending rearwardly from said drums, a forward cross support member mounted between said forward support members and perpendicular thereto, an intermediate cross member mounted between said rear base support members and perpendicular thereto, a pair of forward upright members secured to either end of said forward cross support member, a pair of intermediate upright members secured to either end of said intermediate cross support member, a forward carrying tube insertedly mounted in the upper portions of the forward upright members and being disposed parallel to said forward cross support member, a rear carrying tube insertedly mounted in the upper portion of said intermediate upright members and disposed parallel to said intermediate cross support member, rod members slideably mounted within each end of both the forward and rear carrying tubes, wing support members secured to each of said rod members and projecting downwardly therefrom, seat means adjustably mounted on each of said wing support members whereby field workers may be conveyed through a field while working, a rear cross support member detachably secured to the rear portion of the rear base support members and being disposed perpendicular thereto, a pair of vertically disposed rear upright members secured at their lower portions to either end of said rear cross support member, seat means adjustably mounted on each of said rear and intermediate upright members and a trailer connection plate secured to said rear cross support member whereby as tobacco is harvested it may be placed on a trailing vehicle behind the workers thereby facilitating and speeding up the work.

3,223,445
GUIDED DOOR HINGE MECHANISM
Gino M. Apolloni, Pontiac, Harry A. Mackie, Birmingham, and William J. Streetman, Madison Heights, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed June 13, 1963, Ser. No. 287,71>
7 Claims. (Cl. 296—44)



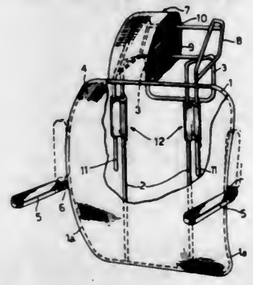
1. In a vehicle body including a door swingable to close a substantially vertical door opening therein, a concealed hinge mechanism comprising a pair of pendulum hinge members, means pivotally mounting the upper ends of said pendulum hinge member on the vehicle body at one side of the door opening for upward swinging movement about vertically spaced and substantially horizontal parallel axes, means pivotally connecting the lower end of each of said pendulum hinge members to the adjacent side face of the door to permit simultaneous compound swinging movement of the door upwardly and outwardly of the door opening by said pendulum hinge members about their body mounted pivotal axes and outwardly of the pivotal lower ends of said hinge members toward a raised and fully opened door position, spring means interposed between said door and body and operable to counterbalance and assist swinging movement of the door between its lower closed and fully opened raised positions, and guide means intermediate said door and body and operable to effect controlled outward swinging of said door about the lower pivotal connecting means simultaneously and in accordance with the upward door swinging movement effected by said pendulum hinge members, said guide means including a guide channel of curved configuration mounted on said body adjacent the pivotal mounting of one of the pendulum hinge members, a guide following arm secured to the door face adjacent said guide channel and a bearing member carried by said arm and slidably engaging said guide channel to control opening movement of said door.

3,223,446
CONVERTIBLE DUST BOOT CONSTRUCTION AND SECURING MEANS
Kenneth E. Coppock, Pleasant Ridge, and Virgil R. Hallenbeck, Royal Oak, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 24, 1963, Ser. No. 333,101
16 Claims. (Cl. 296—136)



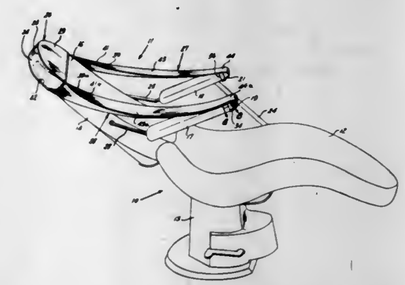
1. In a vehicle body having a convertible top and a top housing well opening transversely of the body,
a dust boot for enclosing the well when the top is retracted therein and having an edge portion overlying a corresponding body edge defining at least one side of the well opening,
means on said body forming two vertically inclined shoulders extending parallel to said body edge with one of said shoulders being located adjacent said body edge and the other of said shoulders being spaced laterally outwardly of the body therefrom,
a plurality of spring clips mounted inwardly of the overlying edge of the boot at spaced intervals and said clips each having depending spring arms deflectable into opposed boot retaining engagement with the laterally spaced vertically inclined shoulders formed on the body, and said clips each having a depending arm intermediate said spring arms and engageable with said shoulder forming means to limit deflection of the clip relative thereto.

3,223,447
BACK REST ATTACHMENT FOR MOTOR VEHICLE SEATS
Vittorio Terracini, Turin, Italy, assignor to Tervit Gestione Brevetti S.r.l., Turin, Italy
Filed Oct. 20, 1964, Ser. No. 405,199
1 Claim. (Cl. 297—397)



In a back rest attachment for motor vehicle seats, the combination comprising a rigid frame, substantially rectangular in plan, including two side members, a top member and a bottom member interconnected to each other, and a pair of rods extending between said top and bottom members intermediate said side members; a sheet of wide mesh fabric stretched between said top, bottom and side members; a pair of split sleeve clamp members each fixedly secured to a respective rod with the split sleeves extending substantially parallel to each other and to said rods; an upholstered head rest having embedded therein a frame including a pair of legs depending from said head rest in spaced substantially parallel relation substantially equal to the spacing of said split sleeves, for adjustable insertion through said split sleeves to disengageably mount said head rest on said back rest; and bolt and nut means operatively associated with each split sleeve clamp member to clamp said legs releasably in adjusted position in said split sleeve clamp members; said head rest being provided with a pocket formed in the covering of the rear side of said head rest.

3,223,448
ARM SUPPORT
John L. Naughton, Des Moines, Iowa, assignor to Den-Tal-Ez Chair Manufacturing Co., Des Moines, Iowa, a corporation of Iowa
Filed June 18, 1964, Ser. No. 376,041
6 Claims. (Cl. 297—418)

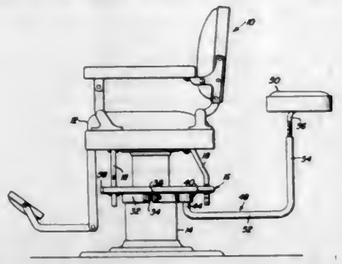


1. Arm support apparatus for a chair having a seat unit, a back rest unit having a head end and a bottom end pivotally secured to the seat unit and movable to an upright position and a reclined position, and arms pivotally mounted on the back rest unit and extended forwardly therefrom adjacent opposite sides of the seat unit comprising:
(a) a cap member having opposite sides, said cap member being positionable over the head end of the back rest unit,
(b) a pair of flexible arm members, one end of one arm member positionable adjacent and secured to one of the sides of the cap member and the corresponding end of the other arm member positionable adjacent and secured to the other side of the cap member, and
(c) means secured to the opposite ends of the arm members for attaching said members to the forward ends of the chair arms whereby when the back rest unit is in the reclined position the arm members provide rests for the arms of a person seated in the chair.

3,223,449
TURNING ATTACHMENT FOR BARBER OR BEAUTY TYPE CHAIR
Melvin C. Naylor, 7286 S. State St., Midvale, Utah
Filed Feb. 5, 1965, Ser. No. 430,532
3 Claims. (Cl. 297—429)

1. In a rotatable chair having a fixed base and a rotatable chair mounted in the fixed base, the improvement comprising a foot supporting and chair manipulating means rigidly and adjustably attached to the rotatable chair and adapted to facilitate rotation of the seat by an attendant, said means including a U-shaped foot supporting rail, said U-shaped foot supporting rail including adjustable bracket means rigidly and adjustably securing said rail in downwardly projecting relation to the rotatable chair for rotation therewith, said bracket means supporting said rail being adapted to permit unimpeded sliding

movement of the feet of an attendant therealong along substantially the entire length of the upper surface of said



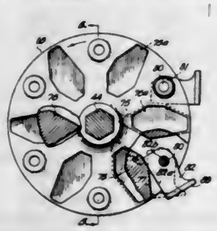
rail, thereby facilitating manipulation of the rotatable chair by the feet of an attendant.

3,223,450
UPHOLSTERED FURNITURE
Charles R. Pollock, 373 Henry St., Brooklyn, N.Y.
Filed Nov. 23, 1964, Ser. No. 414,516
11 Claims. (Cl. 297—445)



1. An article of furniture comprising an elongated rod bent to a desired contour to form a continuous frame, said rod having a longitudinally extending slot formed therein, a relatively rigid shell suspended within said frame and supported thereby, said shell having a continuous peripheral lip received within said slot to suspend said shell from said frame and to cause load stresses imposed thereon to be effectively distributed throughout said frame, a cross-brace attached to said frame and provided with extremities received in said slot, said extremities extending through cut-outs in said shell, and means coupled to said brace to support said article above floor level.

3,223,451
CUTTER TIP HOLDER FOR ROOF SCRATCHING CONSTRUCTION
Fay Orr, Oak Grove, Mo.
Filed Dec. 19, 1960, Ser. No. 76,719
2 Claims. (Cl. 299—85)



1. A cutter tip holder for the cutter head of a roof scratching device comprising

a circular plate mountable on an axle for rotation therewith,

said plate having a plurality of circumferential slots in the edge thereof extending substantially radially inwardly thereof,

a cutter tip body pivotally mounted along the length thereof in each of a plurality of said slots whereby to pivot therein forwardly and rearwardly with respect to the operating direction of rotation of the holder,

each cutter tip body comprising an elongate flat member substantially received in one of said slots and having a flat cutting flange attached to the outer end thereof,

the plane of extension of said cutting flange oriented substantially normal to the planes of extension of said plate and the elongate body of the cutter tip carrying same,

the width of said cutting flange greater than the slot width whereby said flange remains outside of said slot,

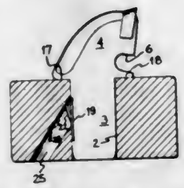
each cutter flange and cutter tip body having forward and following edges with respect to the operating direction of rotation of the holder,

the wall of each cutter tip carrying slot following in the direction of rotation of said holder having a first relatively inward base positioned so as to contact the inward following edge of the cutter tip body in a first forwardly pivoted position thereof and limit forward rotation of the outer end of the cutter tip in the direction of operating rotation of the cutter tip holder,

said wall also having a second relatively outward face thereof positioned so as to contact the outward following edge of the cutter tip body in a second rearwardly pivoted position thereof and limit rearward rotation of the outer end of the cutter tip body in the direction opposite that of operating rotation of the holder,

the angle of outward extension of the cutter flange in the direction of holder rotation greater at the rearward rotation limit position of the cutter tip body than at the forward same.

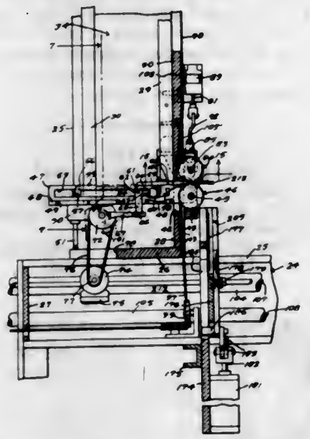
3,223,452
CUTTER BIT AND SOCKET STRUCTURES
Claude B. Krekeler, Monfort Heights, Ohio, assignor to The Cincinnati Mine Machinery Co., Cincinnati, Ohio, a corporation of Ohio
Filed Aug. 14, 1961, Ser. No. 131,282
18 Claims. (Cl. 299—92)



1. In a cutter bit device and socket member combination, a socket member, a separate resilient holding means, said socket member having a perforation to receive the shank of said cutter bit device and shaped to permit insertion and withdrawal of said shank in a direction axial of said shank, and said resilient holding means comprising a first portion lying at least partially within and extending generally longitudinally of the perforation of said socket member, said perforation being otherwise unobstructed, said first portion of said resilient holding means having supporting engagement with one of said recited elements, and a second portion of said holding means resiliently related to said first portion and having resilient engagement with the other of said recited elements against an engagement surface so located that a forward and downward force is exerted upon the shank of said cutter bit device, and means fixing said first portion against axial movement with respect to the one of said recited elements with which it has supporting engagement.

10. The structure claimed in claim 1 wherein said resilient holding means constitutes a short length of resilient wire-like substance having one end comprising said first portion and engaged in a hole in the shank of said cutter bit device, the free end of said resilient holding means comprising said second portion.

3,223,453
BRUSH MAKING MACHINE
Joseph Abate, Jr., Moosic, and Michael Dreistadt, Sr., Old Forge, Pa., assignors to Star Products, Inc., Moosic, Pa., a corporation of Pennsylvania
Filed Nov. 7, 1962, Ser. No. 235,947
17 Claims. (Cl. 300—2)



1. In a brush making machine, guide means having an entrance and an exit and through which two wires move for changing the direction of travel of the wires and forming a bight in the wires at said entrance, means feeding bristles into the bight of the wires to be gripped by the wires in passing therewith through said guide means, means engaging the wires beyond the exit of the guide means for pulling the wires away from said exit and for simultaneously intertwisting the wires for clamping the bristles between the portions of the wires emerging from the exit, and selectively operated means carried by the guide means and movable into a position for obstructing said entrance to interrupt feeding of the bristles into portions of the two wires passing simultaneously through said guide means.

3,223,454
APPARATUS FOR MAKING BRUSHES
Percy Dieffenbach, R.D. 1, Olyphant, Pa.
Filed Oct. 15, 1963, Ser. No. 316,232
2 Claims. (Cl. 300—2)

1. In a machine for automatically making bristle-type brushes:

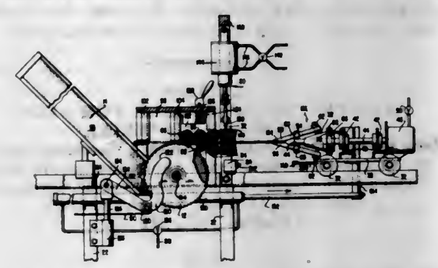
a freely rotatable picker wheel having formed over the greater portion of its periphery transversely oriented bristle carrying slots while the remainder of its periphery is free from slots,

an inclined hopper for directly supplying bristles to said slots located adjacent and beneath the top portion of said picker wheel, movement of said wheel causing said slots to pick up groups of bristles and raise them from the lower quadrant of the wheel adjacent the hopper to a bristle discharge point approximately at the top of said wheel,

a groove formed on the periphery of said picker wheel,

a first binding wire wound in said groove in driving frictional engagement with said picker wheel and in contact with the groups of bristles, the path of movement of said binding wire while in contact with said wheel being generally upwardly,

a second binding wire overlapping and spaced by the groups of bristles from said first wire with which it



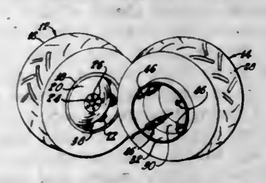
is arranged coextensively from the bristles discharge point,

metering means slidably engaged by vertical supports located entirely above the bottom end of said hopper having a guide surface adjacent to and curved complementary to that of the picker wheel periphery,

carriage means reciprocable toward and from said picker wheel,

means movable with said carriage for clamping and drawing the wires while simultaneously twisting the same to lock the groups of bristles therebetween, thereby producing continuous brush stock.

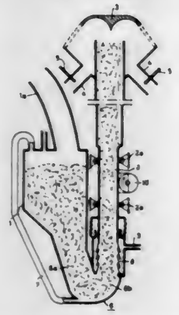
3,223,455
MOUNTING MEANS FOR AUXILIARY WHEELS
Ervin J. Hammer, Miller City, Ohio, assignor to Hammer and Gump, Miller City, Ohio, a partnership
Filed July 30, 1964, Ser. No. 386,312
4 Claims. (Cl. 301—36)



1. In combination with a tractor wheel comprising a tire, a first tire rim on which the tire is mounted, said rim having an offset portion, a hub, a drive axle affixed to said hub, and a plurality of lugs affixing said tire rim to said hub at a plurality of equally spaced points around the periphery of said hub, a plurality of D-rings having straight back portions and projecting eye portions with the back portions having openings therethrough receiving said lugs, a second tire rim, a second tire mounted on said second rim, a spacing band welded to said second rim and bearing against the offset portion of said first rim, a plurality of brackets with pivot holes welded to said second rim, each bracket being diametrically opposite another bracket to form a pair, a first pair of said brackets being on a line perpendicular to a line through a second pair of said brackets, and a third pair of said brackets being on a line making an angle of 60° with the line through said second pair of brackets, four connectors for four of said brackets, each of said connectors comprising a hook engaged with one of said D-rings and having a

threaded end, a U-shaped link having a threaded opening at an end thereof to receive the threaded end of said hook, said link having a pair of pivot holes at the opposite end, a lever having a pair of legs extending on each side of the associated bracket, said bracket legs having a pair of aligned pivot holes therein which are aligned with the bracket pivot hole, said lever having an additional hole spaced from the leg pivot holes, a pivot pin connecting said link pivot holes and said lever additional hole, rivets connecting two of said levers through the lever pivot holes to the brackets of said second pair, and roll pins removably connecting the other two levers to either of said first and third pairs of said brackets.

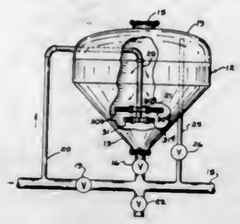
3,223,456
CONVEYING APPARATUS FOR FINE-GRANULAR MATERIAL
Hans Sonnenschein, Mulheim (Ruhr), Germany, assignor to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany
Filed Nov. 14, 1963, Ser. No. 323,801
12 Claims. (Cl. 302—17)



1. Apparatus for conveying particle material between spaces of respectively different pressure, comprising an upwardly extending conveyor duct in which a column of particle material is to be lifted by utilization of the pressure difference, a feeder device having a material supply chamber located ahead of said duct relative to the particle-conveying direction, said device having a generally U-shaped feeder duct whose two legs extend downwardly to its bight portion and extend both predominantly in an approximately vertical direction, said feeder device having pressure-gas supply means communicating with one of said legs near said bight portion, and said same leg having a gas-permeable wall upwardly spaced from said supply means and located ahead of said conveyor duct for producing in said feeder device a gas flow between said supply means and said permeable wall to promote the reversal of the material flow direction in said feeder duct and lifting of the particle mass in said conveyor duct, said gas-permeable wall being adapted to discharge substantially all of said gas flow before reaching said conveyor duct.

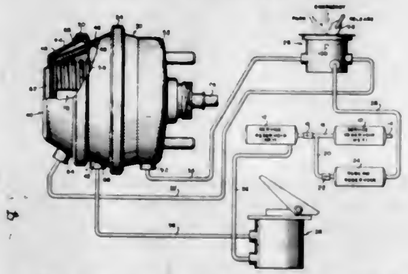
3,223,457
PNEUMATIC FLUIDIZING MEANS
Douglas Albert, Oakland, Calif., assignor to Albert Air Conveyor Corp., Oakland, Calif., a corporation of Nevada
Filed Jan. 29, 1964, Ser. No. 340,925
5 Claims. (Cl. 302—53)

1. An improved apparatus for handling pulverant material comprising: a hollow tank including a hopper having a sloping wall secured to the bottom thereof; outlet means connected to the lowermost portion of the hopper for discharging pulverant material from said tank; a substantially vertically extending gaseous fluid supply means connected to direct pressurized gaseous fluid into said tank; and a plurality of hollow fluid distributor means having terminal ends spaced apart from and above said sloping wall, each said terminal end having a wall portion including fabric of the type which is pervious to



pressurized fluid and impervious to pulverant material, means for removably mounting said fabric to said fuel distributor means, said distributors being connected to project in radially spaced apart relation from the fluid supply means to fluidize the pulverant material with the pressurized fluid for subsequent discharge of the fluidized material through said outlet means.

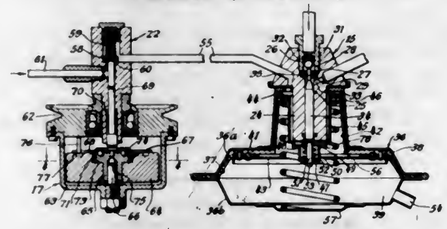
3,223,458
BRAKE MECHANISM
Harry M. Valentine, Elyria, Ohio, assignor to Bendix-Westinghouse Automotive Air Brake Company, Elyria, Ohio, a corporation of Delaware
Filed Dec. 31, 1962, Ser. No. 248,751
10 Claims. (Cl. 303—6)



1. A fluid pressure safety brake system having a source of fluid pressure, a fluid pressure actuator for applying a vehicle brake, spring-applied brake locking means for locking said actuator in a brake applied position, fluid pressure operated release means for releasing said brake locking means, and valve means for controlling the application of fluid pressure to and from said actuator and to and from said release means, said valve means including a manually operable member movable to a first position to connect said source with said release means and to connect said actuator with the atmosphere, and movable to a second position to connect said release means with the atmosphere and connect said actuator with the source, said manually operable member being movable from said second position to a third position to connect both said release means and said actuator with the atmosphere, means normally operative for preventing movement of said manually operable member from said second position to said third position, and means responsive to a predetermined pressure admitted to said actuator for moving said preventing means to an inoperative position.

9. A fluid pressure safety brake system having a source of fluid pressure, a fluid pressure actuator for applying a vehicle brake, spring-applied brake locking means for locking said actuator in a brake applied position, fluid pressure operated release means for releasing said brake locking means, and valve means for controlling the application of fluid pressure to and from said actuator and to and from said release means, said valve means including a first valve for controlling the application of fluid pressure to and from said release means, a second valve for controlling the flow of fluid pressure to and from said actuator, and a single manually operable member for controlling the operation of said first and second valves, said valve means also including a pressure operated member responsive to a decrease in fluid pressure from said source to a predetermined value for supplying fluid pressure to said actuator to apply the brake.

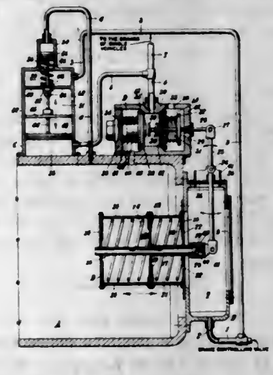
3,223,459
LIQUID PRESSURE BRAKING SYSTEMS FOR VEHICLES
Mervyn B. Packer, Leamington Spa, England, assignor to Automotive Products Company Limited, Leamington Spa, England
Filed May 29, 1963, Ser. No. 284,032
Claims priority, application Great Britain, June 15, 1962, 23,195/62
4 Claims. (Cl. 303—21)



1. A liquid braking system of the hydrostatic type wherein there is provided a master cylinder and a brake operating motor cylinder with a brake operated by said motor cylinder, a servo device including a housing, diaphragm means in said housing dividing it into a high pressure and a lower pressure chamber, a cup shaped member disposed centrally of said diaphragm means, a liquid chamber disposed centrally of said cup member, a first conduit in communication with said master cylinder and liquid chamber, a second conduit in communication with said liquid chamber and motor cylinder, a non-return valve adjacent said liquid chamber for cutting off communication between said first conduit and master cylinder and said second conduit and motor cylinder, a slidable plunger in said liquid chamber adapted to unseat said valve, said cup member being disposed to actuate said plunger to maintain said valve unseated, biasing means normally urging said cup member against said plunger, a by-pass valve in said diaphragm means in communication with said high and low pressure chambers, and by-pass valve biasing means normally maintaining said by-pass valve open when said braking system is in a non-braking application, said plunger being disposed to close said by-pass valve when liquid pressure in said first conduit and liquid chamber increases above a predetermined value due to a braking application, and a sensing device operatively connected to said high pressure chamber to supply air under pressure thereto when the deceleration of a wheel exceeds a predetermined rate.

3,223,460
AUTOMATIC BRAKE VALVE INCLUDING QUICK SERVICE MEANS
Nicolas Osvaldo Spagnolo, 922 Avenida Corrientes, Buenos Aires, Argentina
Filed Mar. 30, 1962, Ser. No. 183,921
2 Claims. (Cl. 303—38)

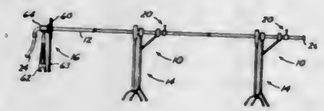
1. A braking system for vehicles trailed in series with a brake control valve for simultaneously and instantaneously controlling the braking and brake releasing operations in the brakes of all the vehicles, comprising a compressed air tank, a pressure controlling unit comprising a container, a first pipe connecting said container with said brake control valve, a movable spring valve connecting said tank with said container for shutting off the air passage from the tank to the container comprising an elastically deformable hollow cylinder, a first circular plate and a second cylindrical plate closing the open ends of said deformable cylinder respectively, said second plate closing an opening provided in the side wall of the container and being rigidly fastened thereto, a diaphragm dividing said deformable cylinder in two valve chambers, two coil springs arranged in said valve chambers respectively to rest at one end on one of said plates respectively and at the other ends on the opposite sides of said diaphragm, a first tubular element rigidly fastened in a central bore of said first plate and passing through central bores provided in said diaphragm and said second plate, a second tubular element rigidly fastened to said diaphragm around said first tubular element, said second tubular element being in tight and slidable relation with the central bore in said second plate and with said first tubular element, said tubular elements projecting into said container through an opening provided in the side wall of the tank, said container and tank being rigidly connected with one another at their openings, a valve head screwed on the



end of said second tubular element and having an inner valve plug engageable with a valve seat provided at the end of said first tubular element and a series of bores provided in its side wall for allowing the passage of the compressed air from the tank to the container, whereby at a subpressure caused in said container by operating said brake controlling valve the air pressure in the tank will cause said first plate to displace said first tubular element for engaging its valve seat with said valve plug and shutting off the communication between said tank and said container and the successive action of the air pressure displaces also the second tubular element together with said valve head mechanically connected to said brake control unit, a series of bores being provided in said second plate for allowing the outflow of the air from said second valve chamber at the displacement of said second tubular element, a brake control unit connected with said tank through an air passage duct and with the atmosphere through a vent bore and mechanically coupled to said spring valve for controlling the inflow and outflow of the compressed air into and from the brakes of the vehicles, a second pipe connecting said brake control unit with the brakes of the vehicles; an accelerating valve unit for accelerating the braking operation, a third pipe, a fourth pipe and a fifth pipe connecting said accelerating valve unit respectively with said tank, first pipe and second pipe, said accelerating valve unit comprising a cylindrical casing

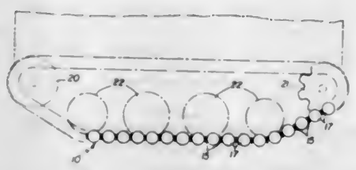
fixed on the upper wall of said tank and having a cylindrical projection connected at its top through said third pipe to said tank, a first piston arranged in said casing and having a first piston stem protruding upwardly in said casing, a disc shaped element rigidly fastened to said piston stem for guiding said piston in said casing, a terminal disc forming the end of said first stem, a horizontal partition provided in said casing beneath said cylindrical projection, a second piston arranged in said projection and having a second piston stem protruding downwardly into said cylindrical casing through a central cone shaped bore in said partition, a spring valve arranged around said second piston stem and abutting at its ends on said horizontal partition and said second piston, a truncated cone shaped sealing element secured to the end of said second stem beneath said partition, said partition and first piston dividing said casing into an upper chamber formed between the top of said cylindrical projection and said partition and connected with said first pipe through said fourth pipe, an intermediate chamber formed between said partition and said first piston and communicating with the atmosphere through a vent bore in the wall of said casing, and a lower chamber formed between said first piston and the bottom of the casing and connected with said second pipe through said fifth pipe, whereby the compressed air entering in the lower chamber from said brake control unit through said fifth pipe causes the first piston to displace upwardly to close the cone shaped bore in the partition, whereby at a subpressure generated by the brake control valve in said fourth pipe the braking operation will be accelerated by the opening of said sealing element and discharge of the compressed air into the atmosphere through said vent bore in the wall of the accelerating valve casing and successively owing to the subpressure generated in said container said spring valve will be closed by the action of the air pressure in the tank and displaced for operating said brake control unit to cause the compressed air to flow into said control unit through said air package duct and then through said second pipe to the brakes and to shut off communication with the atmosphere through said vent bore.

3,223,461
AMBULATORY IRRIGATION SYSTEM
William H. Stout, 223 N. Jessup St., Portland, Oreg.
Continuation of application Ser. No. 264,159, Mar. 11, 1963. This application Jan. 19, 1965, Ser. No. 427,217
16 Claims. (Cl. 305—2)



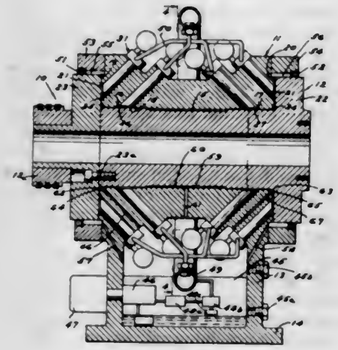
16. An ambulatory irrigation system, comprising:
an elongated conduit adapted to dispense water, at least two ambulatory mechanisms in spaced apart relation connected by and supporting said conduit in elevated position relative the ground,
each ambulatory mechanism including a pair of upright ground-engaging supports, said supports being pivotally interconnected by crank means providing spaced apart axes whereby each support may ambulate in a predefined path, established by and relative the position of the other, and
power means is included to activate the crank means of said ambulatory mechanisms.

3,223,462
ENDLESS TRACK FOR A TRACK LAYING VEHICLE
Wayne W. Dalrymple, Wichita, Kans., assignor to The Boeing Company, Wichita, Kans., a corporation of Delaware
Filed Apr. 25, 1963, Ser. No. 275,555
15 Claims. (Cl. 305—34)



2. An endless track for a track laying vehicle comprising,
a plurality of parallel endless cables,
a plurality of transverse grousers carried by said cables, and
at least two deformable tires carried by said cables between adjacent grousers and freely rotatable about an axis parallel to the direction of motion of the track when not deformed, and said two deformable tires forcibly engaging each other when deformed under load and mutually braking each other against rotation.

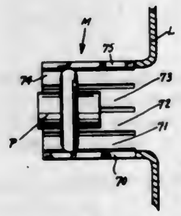
3,223,463
MACHINE TOOL SPINDLE
Gordon H. Porath, 6101 Concord, Detroit, Mich.
Filed Jan. 9, 1963, Ser. No. 250,384
14 Claims. (Cl. 308—9)



1. In a machine tool spindle adapted to rotate at varying high speeds,
the combination comprising a rotary member adapted to be driven at varying high speeds,
a housing member having an opening therethrough through which the rotary member extends,
said housing member having a base whereby said spindle may be readily mounted on a machine tool,
said housing member having at least one set of spaced pads along the inner surface of the opening,
said set comprising a plurality of circumferentially spaced pressure pads,
said housing member including radial end thrust surfaces facing axially outwardly in opposite directions,
a plurality of circumferentially spaced pressure pads

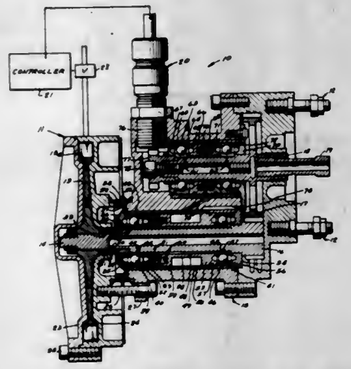
associated with each said radial end thrust surface,
an orifice associated with each pressure pad and
means for supplying liquid under pressure to each said orifice,
said rotary member having made of two separable sections,
one said section of said rotary member including generally axial surfaces complementary to the surfaces in which said set of pressure pads is positioned,
the said sections of said rotary member having complementary radial surfaces facing and adjacent the radial surfaces of said housing member,
the pressure of liquid in the pads of each set of pads being equal,
said pads being located relative to one another and said surfaces such that the liquid flows substantially equal distances from said pads and the pressure of said liquid is substantially dissipated as the liquid reaches the edges of said surfaces,
said housing having drain passages at the edges of the surfaces through which the liquid flows,
the relative dimensions of said housing and said rotary member being such that a pressurized film of liquid flows continuously between the surfaces through the pressure pads so that forces on the rotary member are balanced by pressures in the pressure pads providing a permanent stable separation of the surfaces and retaining the rotary member in a stable position relative to the housing member.

3,223,464
BEARING STRUCTURE
George W. Hoddy, Gerald L. Hoddy, and Raymond A. Hoddy, Owosso, Mich., assignors to Universal Electric Company, Owosso, Mich., a corporation of Michigan
Original application Aug. 7, 1958, Ser. No. 753,695, now Patent No. 3,063,761, dated Nov. 13, 1962. Divided and this application May 24, 1962, Ser. No. 197,398
3 Claims. (Cl. 308—72)



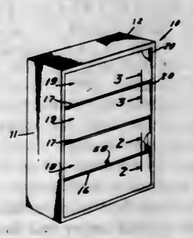
1. A self-aligning bearing structure for a motor shaft and the like comprising
a bearing member having a ring and a bore for the reception of a shaft,
a motor housing or the like,
an extension having one end thereof immovably fixed to said motor housing and circumscribing a cylindrical supporting surface and has radially yieldable portions,
said bearing member having an outer perimeter which is transversely curved to define a substantially spherical contacting surface portion,
said spherical contacting surface having its center aligned substantially on the axis of the cylindrical supporting surface and having a diameter substantially equal to the diameter of the cylindrical supporting surface,
said cylindrical supporting surface having a longitudinal extent sufficient to permit relatively unrestrained axial movement of said bearing member relative to said supporting surface.

3,223,465
DRIVE UNIT BEARING ASSEMBLY
George Y. Ono, Mayfield Heights, Ohio, assignor to Thompson Ramo Wooldridge Inc., a corporation of Ohio
Original application Sept. 23, 1957, Ser. No. 685,603, now Patent No. 3,095,712, dated July 2, 1963. Divided and this application Nov. 13, 1962, Ser. No. 237,194
4 Claims. (Cl. 308—187)



1. In a drive coupling unit for use under severe acceleration conditions,
a housing having a bore therein,
a shaft in said bore,
means defining radially inwardly and outwardly facing lubricated bearing surfaces respectively in said bore and on said shaft,
bearing elements between said surfaces, and means for confining said lubricant immediately adjacent said bearing elements between said bearing surfaces during high accelerations of said unit, including a pair of rings disposed closely adjacent to and axially of the sides of said bearing elements to define a lubrication chamber of minimum volume,
and thereby to minimize pumping action on the lubricant and to minimize flow during high accelerations of the unit.

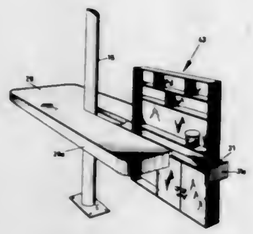
3,223,466
FILING CABINET
Judson E. Roberts, Northridge, Calif., assignor to Holga Metal Production Company, Van Nuys, Calif., a corporation of California
Filed Nov. 12, 1963, Ser. No. 322,777
11 Claims. (Cl. 312—220)



10. In a filing cabinet:
(A) walls defining a cabinet enclosure having an open side;

(B) a plurality of spaced shelves dividing the cabinet interior into a plurality of compartments;
(C) a door for each compartment, said doors being pivoted at one edge so that said doors swing outwardly;
(D) at least one longitudinally movable lock-rod operably mounted substantially normal to the pivoted edge of said doors;
(E) a plurality of lock-dogs on said lock-rod and spaced longitudinally of said rod at one side thereof;
(F) a lock-rod lift for said lock-rod, said lock-rod lift being secured to one of the doors and having a cam part adapted to engage an adjacent respective lock-dog as said one door is closed and thereby effect raising of the lock-rod;
(G) and a lock-hasp on the inner side of another door, said hasp having a notch for reception of a lock-dog, said lock-hasp having means for positively moving the door thereof to the closed position.

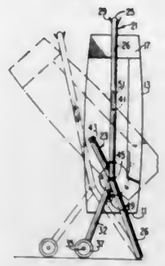
3,223,467
PILLAR BRACKET ATTACHMENT
Victor M. Jafelice, 15 Kuhl Ave., Islington, Ontario, Canada
Filed July 1, 1963, Ser. No. 291,933
4 Claims. (Cl. 312—253)



3. A pillar bracket for the support of working and storage areas and comprising; a U-clamp for fitting about a vertical pillar; side arms extending horizontally from the closed end of said clamp; a track support beam located across the open end of said clamp; dovetail slots in said arms and said beam; means for securing said beam to said clamp about said pillar; means for securing said clamp to said pillar; a counter surface supported by said bracket and including a covered slot therein for fitting about said pillar; and cupboards slidably positioned in said slot whereby said bracket supports said cupboards.

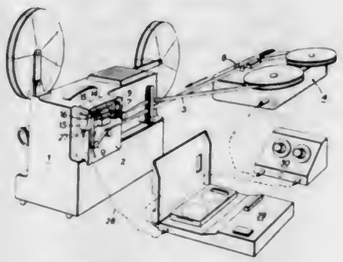
3,223,468
ENCLOSURE AND STAND THEREFOR
Kenneth R. Fenne, River Forest, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Sept. 9, 1963, Ser. No. 307,506
10 Claims. (Cl. 312—255)

7. A stand for supporting a cabinet selectively in storing and operating positions and including in combination, first and second elongated stand means each having an upper section pivotally secured to the cabinet and a lower section extending oblique to said upper section, and means pivotally securing said first and second stand means at the junctures between said upper and lower sections thereof, said stand means being disposed with the respective reflex angles formed by said upper and lower sections thereof facing each other such that crossing of said upper sections of said stand means will occur as said lower sections of said stand means are moved from a relatively adjacent relationship to a relatively spaced relationship and



vice versa, whereby angular displacement of the cabinet may be achieved through minimum movement of said elongated stand means.

3,223,469
ARRANGEMENT FOR THE SYNCHRONIZATION OF A PROJECTOR WITH A TAPE RECORDER
Karl Cech, Modling, near Vienna, and Friedrich Förch, Vienna, Austria, assignors to Karl Vockenhuber and Christl Hauser, both of Vienna, Austria
Filed June 12, 1962, Ser. No. 202,016
Claims priority, application Austria, July 7, 1961, A 5,239/61
5 Claims. (Cl. 352—14)

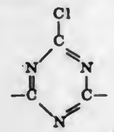


1. In an arrangement for the synchronization of a film projector with a separate sound tape recorder,
a film projector, including a driving roller,
a driving motor for said film projector feeding film through the latter,
a sound tape recorder including a capstan pulling a tape from said projector, said driving roller drawing said tape from said recorder,
a synchronous control means controlling the running speed of said driving motor,
said synchronous control means being mechanically operated by said film projector and by the sound tape of said recorder, and including
a pivoted, spring-biased lever including a spring tending to tension said sound tape,
a tape reproducer including a remote starting device for the latter,
an electric circuit including said remote starting device and a switch,
said switch being operated by said pivoted, spring-biased lever in response to the tension of said sound tape
said spring of said spring-biased lever being dimensioned such that the tension of said sound tape required for operation of said switch is greater than the tension of said sound tape required for the operation of said synchronous control means.

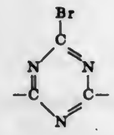
CHEMICAL

3,223,470
PROCESS FOR THE PREPARATION OF DYEINGS AND PRINTS WHICH ARE FAST TO WET PROCESSING
Hermann Boedeker, Frankfurt am Main, Gerhard Langbein, Hofheim, Taunus, Karl Sommer, Konigstein, Taunus, Hans Zimmermann, Hofheim, Taunus, and Klaus Berner, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany
No Drawing. Filed May 1, 1962, Ser. No. 191,439
Claims priority, application Germany, May 6, 1961, F 33,866
5 Claims. (Cl. 8—39)

1. In a process for dyeing fibrous articles of a material selected from the group consisting of natural cellulose, regenerated cellulose, wool, silk and polyamides, the improvement which comprises applying to said fibrous articles a water-soluble organic dyestuff selected from the group consisting of azo-, complex metal azo-, phthalocyanine, complex metal phthalocyanine, anthraquinone, and dioxazine dyestuffs, said dyestuffs containing 1 to 4 radicals selected from the group consisting of



and



and 1 to 4 substituents selected from the group consisting of $-SO_2-CH=CH_2$, $-SO_2-CH_2-CH_2-Cl$, $-SO_2-CH_2-CH_2-OSO_3H$ and

$$-SO_2-CH_2-CH_2-O-PO(OH)_2$$

and an alkaline agent.
$(OH)_2$, and an alkaline agent.

3,223,471
PROCESS FOR DYEING TEXTILE MATERIALS
Robert Kuth and Hanswilli von Brachel, Cologne-Sulz, Otto Schneider, Cologne-Flittard, and Mathieu Quaedvlieg, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed Mar. 12, 1962, Ser. No. 179,249
Claims priority, application Germany, Mar. 17, 1961, F 33,439; Feb. 27, 1962, F 36,130
4 Claims. (Cl. 8—88)

1. In a process for dyeing textile material of synthetic fibers wherein the textile material is treated with a member selected from the group consisting of a solution and a suspension of a dyestuff, and fixing the dyestuff on the treated textile material by heating, the improvement consisting of treating with the dyestuff in the presence of a combination of additives consisting of active amounts of (1) a reaction product of a high molecular weight carboxylic acid with a member selected from the group consisting of ammonia, an amine, and an alkylolamine, and (2) polyethers containing as chain members polyethylene glycol radicals repeatedly alternating with radicals having not less than 5 carbon atoms directly linked with one another.

3,223,472
PROCESS FOR IMPROVING THE TINCTORIAL CHARACTERISTICS OF FIBERS OBTAINED FROM OLEFIN POLYMERS
Avito Monaci and Paolo Lazzari, both of Terni, Italy, assignors to Montecatini Società Generale per l'Industria Mineraria e Chimica, Milan, Italy
No Drawing. Filed Dec. 13, 1961, Ser. No. 159,145
Claims priority, application Italy, Dec. 15, 1960, 21,527/60
6 Claims. (Cl. 8—115.5)

1. A process for improving the dye receptivity of fibers obtained by the melt extrusion of at least one crystalline alpha-polyolefin and a basic nitrogen compound which comprises treating the melt extruded fibers with a solution of an alkylene oxide.

3,223,473
METHOD OF CONTROLLING WOOL SHRINKAGE AND PRODUCTS THEREOF
Werner Von Bergen, North Caldwell, and Harold W. Wolf, Clifton, N.J., assignors to J. P. Stevens & Co. Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed May 15, 1962, Ser. No. 194,977
4 Claims. (Cl. 8—128)

1. A process for shrink-proofing wool and wool-containing fabrics comprising treating said fabrics at a temperature below 100° C. with a stable alkaline solution comprising an alkali metal permanganate in a concentration of about 0.2% to about 1.0%, based on the weight of the solution, and a permanganate non-degrading dialkyl sulfosuccinate.

3,223,474
METHOD OF HYDROLYZING SILICON CHLORIDES
Siegfried Nitzsche and Paul Buchheit, Burghausen, Bavaria, Germany, assignors to Wacker-Chemie G.m.b.H., Bavaria, Germany
No Drawing. Filed Mar. 7, 1962, Ser. No. 177,992
Claims priority, application Germany, Mar. 15, 1961, W 29,655
4 Claims. (Cl. 23—14)

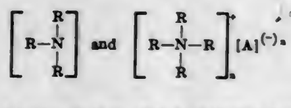
3. The method of hydrolyzing a chlorosilane of the general formula $R_xH_ySiCl_{4-(x+y)}$ wherein each R is a monovalent organic radical selected from the group consisting of hydrocarbon radicals, halogenated hydrocarbon radicals, cyanoalkyl radicals, cyanoalkoxyalkyl radicals, hydroxyalkyl radicals esterified with carboxylic acids and carboxyalkoxy radicals esterified with alcohols, x has a value from 0 to 3 inclusive, y has a value from 0 to 3 inclusive and the sum of $x+y$ has a value from 1 to 3 inclusive consisting essentially of reacting said silane with a mixture of water and ethylene oxide, the water and ethylene oxide being present in quantities such that there is present at least a molar equivalent of water and of ethylene oxide for each gram-atom of chlorine present in the chlorosilane.

3,223,475
PROCESS FOR THE PREPARATION OF URANIUM MONOCARBIDE POWDER
Pierre Blum and Claude Moreau, Grenoble, France, assignors to Commissariat a l'Energie Atomique, Paris, France
Filed July 29, 1960, Ser. No. 46,233
Claims priority, application France, Aug. 5, 1959, 802,093; May 18, 1960, 827,484
5 Claims. (Cl. 23—14.5)

1. A process for producing pure, finely divided and sinterable uranium monocarbide comprising a first stage of heating pure powdered uranium metal in contact with an aliphatic gaseous hydrocarbon in an amount larger than the stoichiometric amount providing the required carbon content at a temperature between 700 and 900° C. until the uranium metal has absorbed about 4.8% carbon and a second stage of heating the carbonised uranium metal in an atmosphere selected from the group consisting of a vacuum and a rare gas at a temperature between 700 and 900° C. until the uranium metal is completely converted into uranium monocarbide the powdered material being continuously stirred by tumbling in both of said stages.

3,223,476
EXTRACTION OF METAL VALUES FROM ACID SOLUTIONS
James L. Hart, deceased, late of Bartlesville, Okla., by Darall G. Hawk, special administrator, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed July 27, 1962, Ser. No. 213,060
8 Claims. (Cl. 23—14.5)

1. In a process for the recovery of metal values from a pregnant aqueous acidic solution containing said values and molybdenum values, which comprises contacting said solution with an extractant comprising a substantially water-immiscible organic diluent and an organonitrogen compound selected from the group consisting of compounds represented by the formulas:

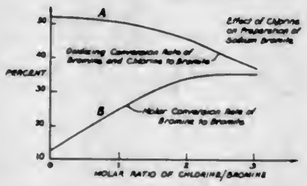


where R is a hydrocarbon radical selected from the group consisting of alkyl, alkenyl, cycloalkyl, cycloalkenyl, and aryl radicals, aralkyl, aralkenyl, alkylcycloalkyl, cycloalkylalkenyl, arylcycloalkyl, and cycloalkenylaryl; wherein at least one of said R radicals has at least 8 carbon atoms, and is an alkyl or alkenyl radical; the total number of carbon atoms in the sum of said R radicals being in the range between 11 and 40; A is an anion selected from the group consisting of chloride, bromide, iodide, fluoride, hydroxide, sulfate, phosphate, acetate, nitrate, benzoate, salicylate; and wherein *n* is an integer equal to the valence of the anion A, whereby metal values are extracted into the organic phase, the metal-loaded organic phase is separated from the remaining acidic solution, and extracted metal values are recovered from said metal-loaded organic phase, the improvement comprising: maintaining the pH of said molybdenum-containing acidic solution below 3.0 by the addition of a mineral acid, if necessary; and incorporating into said extractant, prior to contacting said solution, an ether of the formula:

$$R\{OCH_2CH_2\}_mOR'$$

wherein *m* is an integer selected from the group consisting of 1 and 2, R is a 4 to 6 carbon alkyl radical, and R' is selected from the group consisting of hydrogen and a 4 to 6 carbon alkyl radical.

3,223,477
METHOD FOR PREPARING ALKALI METAL AND ALKALINE EARTH METAL BROMITES
Jean Breiss, Rueil-Malmaison, Rene Kircher, Argenteuil, and Jean-Pierre Zimmermann, Cormeilles-en-Parisis, France, assignors to Societe d'Etudes Chimiques pour l'Industrie et l'Agriculture (SECPIA), Paris, France
Filed June 12, 1962, Ser. No. 201,997
Claims priority, application France, July 20, 1961, 868,455
8 Claims. (Cl. 23—85)



1. In a process for producing a bromite selected from the group consisting of an alkali metal bromite and an alkaline earth metal bromite from an aqueous mixture of the corresponding hypobromite, which process comprises adjusting the pH of said aqueous mixture to a pH of 10–12.5 and adjusting the temperature of said aqueous mixture to a temperature below ambient temperature to attain an approximately maximum conversion of hypobromite to bromite, and then raising the pH of said aqueous mixture so as to stop the conversion of hypobromite to bromite at the aforesaid maximum, and simultaneously stabilize the resulting secondary bromite-containing mixture, the improvement which comprises the preliminary step of introducing both bromine and chlorine into an aqueous alkali mixture of the base corresponding to the bromite contemplated to produce said aqueous mixture of the corresponding hypobromite, the mol ratio of chlorine to bromine being about 1:1 to 3:1.

3,223,478
STORAGE STABILITY OF AMMONIUM NITRATE
Joseph F. Wilson, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed May 9, 1962, Ser. No. 193,612
14 Claims. (Cl. 23—103)

1. A method for improving the storage stability of particulate ammonium nitrate, which comprises coating said ammonium nitrate with a material which comprises, as the sole essential storage stability agent, an admixture of a minor amount of a water insoluble alkaline earth metal petroleum sulfonate of a deasphalted and solvent refined lubricating oil bright stock having a viscosity of at least 90 SUS at 210° F. and a major amount of an inorganic material selected from the group consisting of attapulgite, kaolin, and diatomaceous earth, said agent being employed in an amount sufficient to improve the storage stability of said ammonium nitrate.

3,223,479
LEAVENING COMPOUND
Reginald E. Vanstrom, Crete, Ill., assignor to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware
No Drawing. Continuation of application Ser. No. 172,865, Feb. 13, 1962. This application Jan. 5, 1965, Ser. No. 423,605
1 Claim. (Cl. 23—107)

A novel complex crystalline sodium aluminum acid orthophosphate which exhibits X-ray powder diffraction lines of major intensity at *d*-spacings of approximately 8.10, 4.10 and 3.07 angstroms prepared by reacting a compound selected from the group consisting of sodium hydroxide and sodium carbonate and a reactive trivalent inorganic aluminum compound with aqueous phosphoric acid, the reactants containing sodium, aluminum and phosphorus being added in proportions to provide a reaction mixture having a ratio of Na:Al:P of about 3:3:8 heating the resulting viscous reaction mixture between 45° C. and 160° C. until a dry crystalline product forms and recovering the dry crystalline product.

3,223,480
CHEMICAL LEAVENING ACID
Reginald E. Vanstrom, Crete, Ill., assignor to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware
No Drawing. Continuation of application Ser. No. 172,852, Feb. 13, 1962. This application Feb. 8, 1965, Ser. No. 431,179
1 Claim. (Cl. 23—107)

A novel complex crystalline sodium aluminum acid orthophosphate which exhibits X-ray powder diffraction lines of mapor intensity at *d*-spacings of approximately 7.85, 3.66 and 3.41 angstroms prepared by reacting a compound selected from the group consisting of sodium hydroxide and sodium carbonate and a reactive trivalent inorganic aluminum compound with aqueous phosphoric acid, the reactants containing sodium, aluminum and phosphorus being added in proportions to provide a reaction mixture having a ratio of Na:Al:P of about 4:2:8 heating the resulting viscous reaction mixture between 45° C. and 160° C. until a dry crystalline product forms and recovering the dry crystalline product.

3,223,481
PRODUCTION OF ORTHOPHOSPHATES
Karl Gelersberger, Cologne-Deutz, Kurt Tesche, Lovenich-Cologne, and Gotz-Dieter Woltas, Cologne-Ostheim, Germany, assignors to Chemische Fabrik Kalk G.m.b.H., Cologne-Kalk, Germany
No Drawing. Filed Jan. 18, 1962, Ser. No. 167,164
Claims priority, application Germany, Jan. 28, 1961, C 23,269
4 Claims. (Cl. 23—109)

1. A process for producing very low bulk weight finely divided orthophosphates having a particle size of less than about one micron comprising

(a) providing an aqueous mixture of phosphoric acid with a salt of a strong volatile acid selected from the group consisting of nitric, hydrochloric and sulfuric acids and an element selected from the group consisting of the metals of the second group of the periodic system and aluminum wherein said mixture has a molar ratio of metal oxide to phosphorus pentoxide of 0.6 to 3.5, and

(b) spraying said mixture into an inert hot gas stream having a temperature of 190 to 450° C. to form the finely divided orthophosphates having a particle size of less than about one micron and drive off the volatile acid formed.

3,223,482
PROCESS FOR PRODUCING READILY DISPERSIBLE SiO_2 AND Al_2O_3 SOLIDS
Ira E. Puddington and Aurelio F. Sirianni, Ottawa, Ontario, Canada, assignors to National Research Council, Ottawa, Ontario, Canada, a corporation of Canada
No Drawing. Filed Aug. 12, 1964, Ser. No. 389,205
6 Claims. (Cl. 23—141)

1. A method of producing finely divided discrete solids which comprises the steps of (1) admixing with a substantially salt-free aqueous dispersion of colloidal particles selected from the group consisting of silica and alumina, at least about 50%, by weight, of a conditioning agent selected from a group consisting of the ammonium and amine alcohol salts and the sorbitan and polyoxyethylene sorbitan esters of aliphatic and cycloaliphatic carboxylic acids containing from 8 to 22 carbon atoms, the urea complexes of said acids having a molecular weight less than about 2000, and alkyl phenol-polyoxyethylene ether adducts having a molecular weight in the range of about 800 to about 2000, said conditioning agent having a volatilization temperature above about 100° C., (2) agitating said mixture sufficiently to form a coating of said conditioning agent on said particles, (3) removing the water from said mixture to form a substantially water-free mass of conditioning agent-coated particles, and (4) heating said water-free mass at a temperature in the range of about 350° C. to about 700° C. until said coating is substantially completely burned from the surface of said particles.

3,223,483
METHOD OF PRODUCING ACTIVE ALUMINA
Harry E. Osment, Baton Rouge, La., assignor to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware
No Drawing. Filed June 14, 1962, Ser. No. 202,387
11 Claims. (Cl. 23—143)

1. In the method of producing alumina material by selectively calcining alumina trihydrate to obtain a transition alumina capable of at least partial rehydration, agglomerating the selectively calcined alumina by mixing with water, rehydrating the alumina agglomerates and then heating said rehydrated agglomerates, the improvement for producing a material of low sodium content which comprises the following procedure for said rehydration:

(a) only partially rehydrating the alumina agglomerates;

(b) circulating water of low sodium content through the partially rehydrated alumina agglomerates to remove soluble sodium compounds therefrom and lower the sodium content thereof while continuing the rehydration of the partially rehydrated alumina agglomerates.

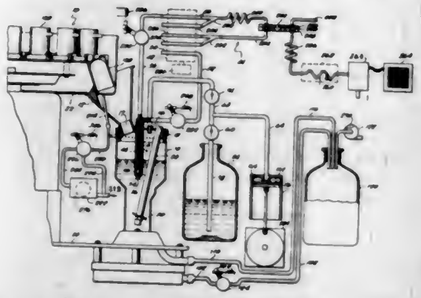
3,223,484
DIAGNOSTIC PROCEDURE
Roy Thomas Fisk, Glendale, Calif., assignor to Hyland Laboratories
No Drawing. Filed Feb. 13, 1961, Ser. No. 88,676
1 Claim. (Cl. 23—230)

The method of determining the amount of beta-lipoprotein present in serum which comprises adding to said serum a beta-lipoprotein antiserum which is capable of precipitating all of the beta-lipoprotein in human serums that contain from 300 to 1500 mg. of beta-lipoprotein per 100 ml. of blood serum, drawing the resultant mixture into a capillary tube for a prescribed distance, sealing said tube, centrifuging the capillary tube, measuring the length of the column of precipitate, and relating the height of the precipitate to a control standard.

3,223,485
APPARATUS FOR TREATMENT OF SOLIDS FOR ANALYSIS
Andres Ferrari, Scarsdale, N.Y., and Nelson G. Kling, Ringwood, N.J., assignors to Technicon Instruments Corporation, Chauncey, N.Y., a corporation of New York
Filed Sept. 7, 1962, Ser. No. 222,013
19 Claims. (Cl. 23—253)

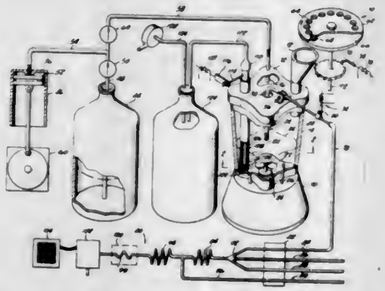
1. Apparatus for treating solid material for on-stream automatic quantitative analysis with respect to a known ingredient thereof, comprising a container having inlet means for said material and a carrier liquid therefor to form a liquid in the container containing said material as

a constituent thereof, take-off means positioned in said container for withdrawing a quantity of said constituent-containing liquid from said container, said container having an outlet opening for the removal of liquid not withdrawn from said container by said withdrawing means, suction-operated valve means for controlling said outlet



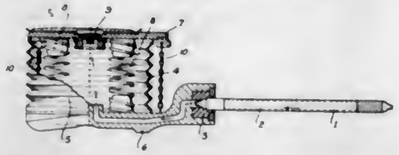
opening, first valve means operable for controlling the application of suction to said withdrawing means, second valve means operable for controlling the application of suction to said suction-operated valve, and means for controlling the operation of said first and second valve means for operating said suction-operated valve after the operation of said withdrawing means.

3,223,486
APPARATUS FOR TREATMENT OF SOLIDS FOR ANALYSIS
Walter Winfield Holl, Jr., Palmyra, N.J., and Richard Wiegmann Walton, Langhorne, Pa., assignors, by mesne assignments, to Technicon Instruments Corporation, Chauncey, N.Y., a corporation of New York
Filed Sept. 12, 1962, Ser. No. 223,109
7 Claims. (Cl. 23—253)



5. Apparatus for treating quantities of solid material for analysis, comprising a mixing container; a turntable means for storing a plurality of tablets, each tablet comprising a predetermined quantity of material, dispensing means coupled to said turntable means for causing said turntable means to transfer one tablet into said container during each of successive periods; supply means for introducing a predetermined quantity of liquid into said container during each of the successive periods; mixer means operable within said container for mixing the tablet with the liquid therein, to form a liquid containing the material of the tablet as a constituent thereof, during each of the successive periods; take-off means operable only between the successive periods, in fluid flow communication with said container, for withdrawing a portion of the material containing liquid from said container; clean-out means operable only between the successive periods and subsequent to the operation of said take-off means for removing all liquid from said container, whereby said container is emptied prior to the commencement of each period; and programming means coupled to said dispensing means, said supply means, said mixer means, said take-off means, and said clean-out means for sequentially and cyclically operating these means.

3,223,487
GAS DETECTION AND PUMP THEREFOR
Karl Grosskopf, Bad Schwartau, Germany, assignor to Otto Heinrich Dräger, Lubeck, Germany
Filed Aug. 15, 1962, Ser. No. 217,214
Claims priority, application Germany, Sept. 21, 1961, D 37,080
2 Claims. (Cl. 23—254)



1. In a hand operatable gas detection pump for determining constituents in gases by drawing the desired volume of gas to be analyzed through a detector tube having an inside diameter of about 5 to 8 millimeters, the improvement comprising spring-actuated bellows means for drawing the desired volume of gas through said detector tube at a volume gas flow rate of about from 60 to 100 liters per hour, and said tube having a gas supply resistance of 100 Torr measured at one liter per minute.

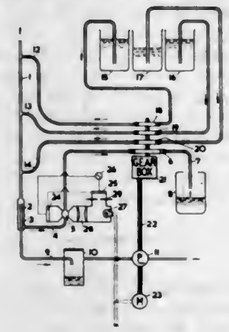
3,223,488
DEVICE FOR ALCOHOL DETERMINATION
Manley J. Luckey, San Bernardino, Calif., assignor to Luckey Laboratories, Inc., San Bernardino, Calif., a corporation of California
Filed Aug. 6, 1962, Ser. No. 214,944
11 Claims. (Cl. 23—254)



1. In apparatus for determining the alcohol content of human alveolar breath including a container for breath calibrated to exert a pressure within a predetermined range of pressures upon breath contained therein, and a mouthpiece communicating with the interior of the container for filling the container with alveolar breath, an improved article of manufacture for visually indicating said alcohol content comprising a transparent indicator tube communicating with the interior of the container, flow restricting means within the length of the tube for restricting the rate of flow of breath from the container through the indicator tube to substantially a predetermined rate at the predetermined range of pressures, a body of granular material disposed in the tube and impregnated

with an alcohol sensitive indicator which chemically reacts with alcohol in breath flowing through the tube to produce a color change, whereby the indicator changes color progressively along the tube in proportion to the quantity of alcohol reacting therewith, and a layer of inert grit material in the body of granular material for visually indicating a point along the body to which the color change will progress during a predetermined period of time in response to the passage of breath therethrough at the predetermined flow rate when such breath contains that percentage of alcohol which indicates a blood alcohol content at a predetermined level, whereby the approximate percentage of alcohol in the blood of the person whose breath is passed through the tube is visually determinable by comparison of the extent of progressive color change actually produced in said period of time relative to the layer of inert grit material.

3,223,489
GAS SAMPLING APPARATUS
Alan Macpherson Kinnear, "Byeways" Firs Road, Winterslow, England
Filed Sept. 12, 1963, Ser. No. 308,395
6 Claims. (Cl. 23—255)

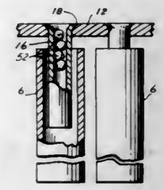


1. A gas sampling apparatus for detecting a contaminant in a gas, which comprises a sampling tube, means for rapidly forcing the gas to be sampled through the sampling tube, means for slowly injecting at least one liquid contaminant-sensitive reagent into the tube to be forced by the gas stream into a thin film around the walls of the tube and be impelled along the tube absorbing any contaminant present, a separator comprising two concentric tubes into which the sampling tube feeds, the walls of the sampling tube being continuous with the wall of the outer tube of the separator, means for withdrawing liquid through the outer tube of the separator at a rate which is less than that at which liquid is supplied to the sampling tube, and a detecting device for observing a physical or chemical property of the liquid withdrawn from the said outer tube, which can reveal the presence of a contaminant in the gas.

3,223,490
CATALYST LOADER AND METHOD OF FILLING TUBES
Donald K. Sacken, Beaumont, Tex., and Thomas R. Young, Riverside, Conn., assignors to Houston Chemical Corporation, New York, N.Y., a corporation of Texas
Filed Feb. 9, 1962, Ser. No. 173,089
9 Claims. (Cl. 23—288)

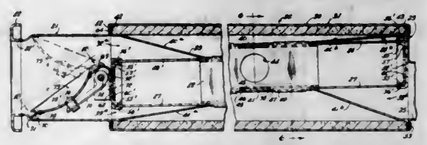
3. In an arrangement for loading with granules a multiplicity of elongated reactor tubes that are subject to being undesirably bridged by the granules, the improvement comprising:

a plate having depending from respective spaced apertures therein a corresponding multiplicity of fill tubes of such predetermined length and outer diameter as to extend inside said elongated tubes respectively a predetermined distance which is substantially less



than the length of the respective elongated tube, and of such predetermined inner diameter as to allow feeding of said granules through each fill tube only one granule at a time.

3,223,491
MUFFLER CONSTRUCTION
James Berton Maillie and Harry Mulder, Akron, Ohio, assignors to Firestone Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed Sept. 27, 1962, Ser. No. 226,709
2 Claims. (Cl. 23—288)

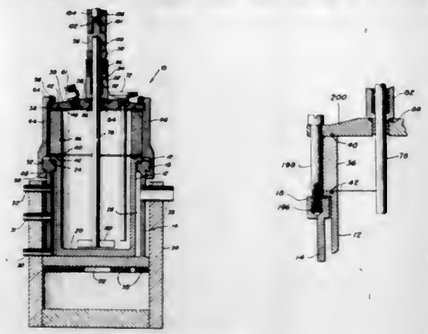


1. Catalytic muffler construction for exhaust gases comprising, upper and lower foraminous grids having spaced longitudinal slots and forming an elongated flattened bed structure for enclosing catalyst material, a one-piece body shell surrounding said upper and lower grids and having peripheral flanges at either end, longitudinal inward embossments formed in said body shell exteriorly of said grids, a longitudinal perforated center beam between said grids extending a portion of the length thereof, spaced projections on the edges of said longitudinal perforate beam extending through said spaced slots in said grids and attached to said longitudinal inward embossments of said body shell, bearing strips interposed between said longitudinal center beam and the inner surfaces of said grids, whereby said grids are movably supported and the catalytic material is restricted from escaping into the slots of said grids, end shells having peripheral flanges mating with and attached to the peripheral flanges on said body shell and providing tapered flow transitions, and means on the interior of said body shell and end shells sealing the periphery of said grids against the escape of catalyst material.

3,223,492
PRESSURE VESSEL
Robert C. Geltz, 21 Mayflower Road, Noroton, Conn.
Filed Nov. 14, 1960, Ser. No. 69,169
13 Claims. (Cl. 23—290)

1. Apparatus of the character described, comprising inner and outer containers, a chamber between the walls of said containers, means for sealing said chamber including cooperating flange portions at the mouths of the inner and outer containers, a single cover overlying and projecting beyond the flange portion of the inner container, and bolts located outwardly of the flange portion of said

inner container securing the cover to the outer container for clamping together the cooperating flange portions and



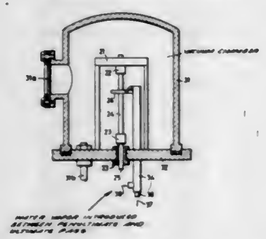
for clamping the cover member over the mouth of the inner container to close the same.

3,223,493

METHOD OF CRUCIBLE-FREE ZONE-MELTING OF SEMICONDUCTOR MATERIAL

Wolfgang Keller, Pretzfeld, and Herbert Kramer, Forchheim, Germany, assignors to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany

Filed June 9, 1961, Ser. No. 115,974
Claims priority, application Germany, June 11, 1960, S 68,896; Nov. 2, 1960, S 71,088
3 Claims. (Cl. 23—301)



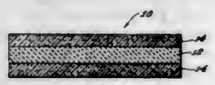
1. In the method of crucible-free zone-melting of silicon semiconductor material wherein a rod-shaped semiconductor body is mounted within a vacuum vessel, said vessel being evacuated, and a heater within said vessel serves to cause a molten zone to pass repeatedly through and along the length of said body being within said vessel, the improvement which comprises the steps of introducing humid air into said vessel after the penultimate zone-melting pass, re-evacuating the vessel and performing the last zone-melting pass.

3,223,494

MULTILAYER CERAMIC BODY

Joseph Wirt Crownover, San Diego, Calif., assignor to Electro Materials Corporation, La Jolla, Calif.

Filed Dec. 3, 1962, Ser. No. 241,977
7 Claims. (Cl. 29—195)



1. A multi-layer dielectric ceramic body suitable for use as a capacitive impedance element comprising: alternate strata of a dielectric ceramic material of predetermined formulation and a mixture of from 20% to 8% by weight of said dielectric ceramic material of predetermined formulation combined with from 80% to 92% by weight of a metal of high electrical conductivity.

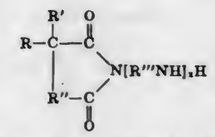
3,223,495

MOTOR FUEL COMPOSITION

Louis N. Calvino, Scotch Plains, and Monroe W. Munsell, Berkeley Heights, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Sept. 11, 1961, Ser. No. 137,037
8 Claims. (Cl. 44—71)

1. An improved motor fuel composition comprising a major amount of a liquid petroleum motor fuel boiling in the gasoline range and a minor amount sufficient to promote engine cleanliness of an additive combination of: (1) dispersant polymer having the general formula



wherein R is a C_2 to C_6 polyolefin having an average molecular weight of from 600 to about 3,000, R' is selected from the group consisting of hydrogen and C_1 to C_4 alkyl radicals, R'' is a C_1 to C_2 radical containing substituent groups selected from the group consisting of hydrogen and C_1 to C_4 alkyl radicals, R''' is a C_1 to C_4 alkylene radical, and x is a number from 1 to 6, and (2) a detergent polymer obtained by phosphosulfurizing a C_2 to C_6 polyolefin having a molecular weight between 600 and about 10,000, said polymers being present in a weight ratio of dispersant to detergent of between 5/1 and 1/5.

3,223,496

LIGHT STABILIZED HYDROCARBON FUEL

Walter F. Schoen, South Holland, Ill., assignor to Sinclair Research, Inc., Wilmington, Del., a corporation of Delaware

No Drawing. Filed July 5, 1962, Ser. No. 207,765
5 Claims. (Cl. 44—63)

1. A leaded gasoline composition consisting essentially of base hydrocarbon gasoline, a small amount of tetra-lower-alkyl lead anti-knock agent sufficient to reduce knock and a gasoline soluble N-hydroxy lower alkyl phenyl benzotriazole in an amount sufficient to retard decomposition of said anti-knock agent when said gasoline is exposed to sunlight, said lower alkyl having 1 to 5 carbon atoms.

3,223,497

GASOLINE COMPOSITION CONTAINING A MULTIPURPOSE ADDITIVE

Robert E. Malec, Chicago, Ill., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana

No Drawing. Filed Aug. 31, 1961, Ser. No. 135,160
3 Claims. (Cl. 44—70)

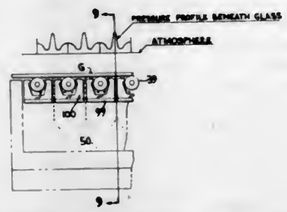
1. A liquid fuel comprising a major portion of hydrocarbon boiling within the gasoline range and from about 1 lb. to about 150 lbs. per 1000 barrels of said hydrocarbon, of a lithium salt of a monoaliphatic ester of a polycarboxylic acid wherein the backbone of said acid is a member of the group consisting of alkyl and alkenyl compounds having from 2 to about 10 carbon atoms, said acid having 3 carboxy groups and only carbon, hydrogen, and oxygen atoms, said carboxy groups containing the only carbonyl groups in said acid, said aliphatic radical of said ester being selected from the group consisting of alkyl and alkenyl radicals; having from about 10 to about 18 carbon atoms and only carbon and hydrogen atoms and said lithium forming a monolithium salt.

3,223,498

HEAT TREATMENT OF CONVEYED GLASS AND APPARATUS THEREFOR

Charles R. Davidson, Jr., Natrona Heights, Pa., assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Feb. 27, 1962, Ser. No. 176,080
10 Claims. (Cl. 65—25)



1. In a method of supporting and conveying a glass sheet, the improvement which comprises:
(a) disposing the glass upon a portion of a plurality of laterally spaced rolling supports having discrete spaces therebetween, which supports define a longitudinally extending path of movement of said glass,
(b) supplying gas in said discrete spaces at a pressure sufficient to partially support the glass,
(c) heating said glass at a deformation temperature while so supported,
(d) moving said glass in said path as said rolling supports thereunder rotate,
(e) maintaining the gaseous pressure in said discrete spaces
(1) high enough to partially support the glass during its movement thereover but
(2) low enough to support the glass in frictional contact with the rolling supports with which the glass is engaged, and
(f) maintaining the glass at deformation temperature while it is so supported.

9. Apparatus for supporting and conveying a heat deformable sheet which comprises:
(a) a plurality of spaced conveying rolls defining a path, the tops of said rolls defining a support level;
(b) at least one heat resistant member between a pair of adjacent conveying rolls and disposed below said support level, the heat resistant member having an upper surface disposed a short distance below said support level providing a passageway for hot gas along said support level in the direction of said path;
(c) means to supply hot gas at one end of the passageway in a direction toward said support level;
(d) means to exhaust gas from the other end of said passageway; and
(e) means to restrain the exhaust of said gas whereby when the sheet is disposed on the conveying rolls the hot gas flows along each said passageway under said sheet to apply a support pressure to the underside thereof.

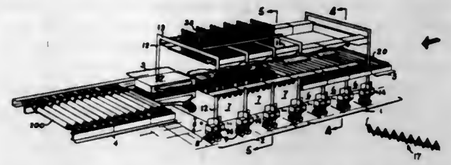
3,223,499

METHOD OF TREATING AND CONVEYING GLASS SHEETS

James H. Cypher, New Kensington, and Charles R. Davidson, Jr., Tarentum, Pa., assignors to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed June 4, 1962, Ser. No. 199,901
12 Claims. (Cl. 65—25)

1. In a method of treating a glass sheet, the steps comprising supporting said sheet on rolling supports, moving said sheet along a path of travel formed by said rolling supports, differentially supplying heat to the supported and unsupported side so as to bow the central portion of the glass sheet out of contact with the rolling supports, then supporting the glass sheet upon a fluid pressure, and increasing the temperature of the glass sheet to remove the bow.

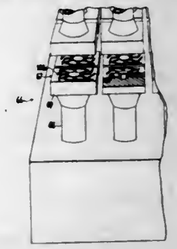


3,223,500

GAS MODULE SYSTEMS FOR HEAT TRANSFER AND/OR FLUID SUPPORT OF GLASS OR OTHER SHEET MATERIALS

George W. Mission, Pittsburgh, Pa., assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Nov. 7, 1962, Ser. No. 236,036
6 Claims. (Cl. 65—25)



1. Apparatus for emitting a flow of gas comprising a prismatic body, a central cavity beneath one surface of said body, a plurality of spaced grooves in said one surface curved in the plane of said surface and extending outwardly from the projection of said central cavity on said surface, and a restrictive orifice between said central cavity and each groove.

5. In a method of heat transfer wherein gas is directed against a sheet to be subjected to such transfer through a plurality of spaced outlets and wherein the gas at a temperature different from that of the sheet flows in contact with the sheet between said outlets and the sheet, the improvement which comprises directing a plurality of streams of the gas from source points in said outlets in directions which are substantially parallel to and along the surface of said sheet opposite said outlets, changing the direction of each of said streams at a point spaced from the source thereof to another direction substantially parallel to and along said surface, and supplying enough of said gas to said streams to cause the streams to overflow the outlets and contact the sheet surface.

3,223,501

METHOD AND APPARATUS FOR TREATING GLASS ON A PRESSURIZED FLUID BED

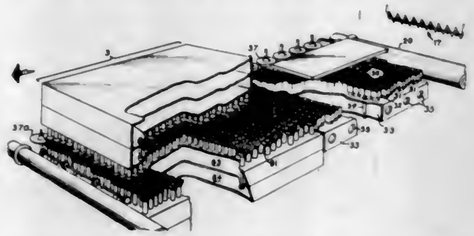
James C. Fredley, Tarentum, and George E. Sleighter, Natrona Heights, Pa., assignors to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Nov. 9, 1962, Ser. No. 236—676
35 Claims. (Cl. 65—25)

1. A method of conveying sheet material at a deformation temperature which comprises establishing a plurality of separate spaced gaseous pressure support zones each exerting an upward supporting pressure, exhausting gas

at lower pressure from said zones at points adjacent said zones, disposing sheet material on a portion of said zones and in contact with the gas thereof, the gas supporting the sheet material, feeding gas into said zones in an initial direction away from the direction of the support pressure, and moving the sheet material across another portion of said support zones.

9. Apparatus for providing fluid support for a moving sheet of glass comprising a plurality of rows of open topped fluid outlets each of which subtends a small portion of the support and each having at least portions of



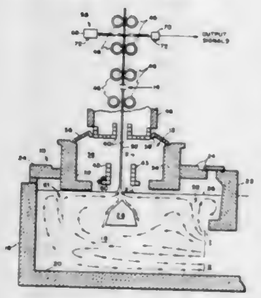
its upper periphery spaced from the upper peripheries of other fluid outlets and lying in a common generative surface, and exhaust means adjacent said outlets, each fluid supply outlet being closely spaced from adjacent supply outlets positioned in paths longitudinally of the pahts of travel of the glass and in paths normal thereto, each said fluid supply outlet being further positioned in offset and overlapping relationship with respect to each spaced adjacent outlet in said longitudinal path and each spaced adjacent outlet in said path normal to said longitudinal paths.

3,223,502

METHOD AND APPARATUS FOR DRAWING GLASS SHEET

Cecil R. Ward, Gibsonia, and Frank J. Rau, Pittsburgh, Pa., assignors to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Aug. 22, 1961, Ser. No. 133,184
11 Claims. (Cl. 65—29)



1. In the process of producing glass in ribbon form having a substantially uniform desired thickness and of reduced variation in the thickness of said ribbon, the improvement which comprises minimizing establishment of portions of the ribbon of a thickness greater than said desired thickness and portions of a thickness less than said desired thickness, by:

establishing a pool of molten glass,

flowing molten glass to a ribbon forming zone in said pool,

continuously withdrawing glass in ribbon form from said ribbon forming zone,

measuring said glass ribbon transversely thereof to locate portions of a thickness greater than said desired thickness and portions of a thickness less than said desired thickness,

increasing the heat in the region of said pool from which molten glass is supplied to the located portion of greater thickness to reduce the thickness of said portion to substantially the desired thickness,

and decreasing the heat in the region of said pool from which molten glass is supplied to the located portion of less thickness than said desired thickness to increase the thickness of said last-named portion to substantially the desired thickness.

7. In apparatus for producing glass in ribbon form having a substantially uniform desired thickness and of reduced variation in the thickness of said ribbon, the improvement which comprises

a pool of molten glass,

a ribbon forming zone in said pool to which molten glass flows,

means to withdraw glass in ribbon form from said ribbon forming zone,

means to measure the glass ribbon transversely thereof to locate a portion of a thickness greater than said desired thickness,

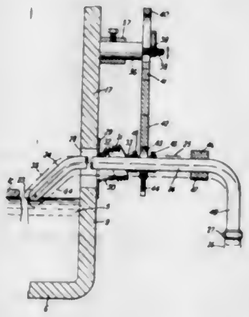
and means independent of said pool to selectively increase the heat in the region of said pool from which molten glass is supplied to the located portion of greater thickness to reduce the thickness of said portion with respect to the thickness of other portions.

3,223,503

MANUFACTURE OF FLAT GLASS

Richard Barradell-Smith, St. Helens, and Frederick William Silverwood, Appley Bridge, England, assignors to Pilkington Brothers Limited, Liverpool, England, a British company

Filed Aug. 10, 1960, Ser. No. 48,662
Claims priority, application Great Britain, Aug. 28, 1959, 29,514/59
9 Claims. (Cl. 65—99)



1. In the manufacture from glass forming substances of flat material in ribbon form during which the material in molten ribbon form is in contact with a bath of molten metal, while the ribbon is being advanced lengthwise along said bath, the width of the bath surface being greater than the width of the ribbon at least in localities where the ribbon is deformable, and the length of the deformable ribbon in said bath of molten metal being sufficiently great to tend to cause said ribbon in said localities to drift edgewise of its intended path, the step of creating surface movement of the molten metal of the bath across the intended path of the ribbon at least in said localities where there is said drifting tendency, so that transverse surface movement of the molten metal in contact with the underface of the ribbon acts to maintain the ribbon in its intended path as it is advanced along the bath.

3,223,504

METHOD OF BENDING GLASS SHEETS

James Hershel Cypher, New Kensington, and Clement Edward Valchar, Tarentum, Pa., assignors to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed Oct. 7, 1963, Ser. No. 314,553
4 Claims. (Cl. 65—106)

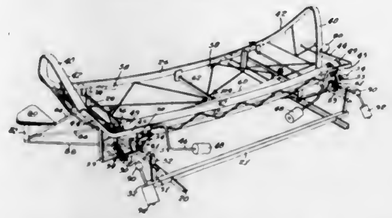
1. In the art of bending heat-softened glass sheets wherein a heat-softened glass sheet is shaped by pressurized contact between a pair of shaping members having substantially complementary shaping surfaces opposing one another and wherein fiber glass fabric is interposed between each major surface of the glass sheet and the shaping member it faces, the improvement comprising employing a woven fiber glass fabric of texturized fiber yarn.

3,223,505

METHOD FOR BENDING GLASS SHEETS TO COMPOUND CURVATURES

James S. Golightly, Tarentum, David H. Doehlert, New Kensington, and Charles R. Davidson, Jr., Tarentum, Pa., assignors to Pittsburgh Plate Glass Company

Original application Aug. 30, 1955, Ser. No. 531,461. Divided and this application Nov. 25, 1960, Ser. No. 75,652
2 Claims. (Cl. 65—107)



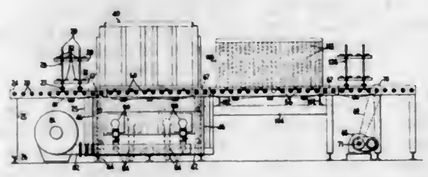
1. A method of bending glass sheets into compound bends including a longitudinal bend of non-uniform curvature and a transverse bend of non-uniform curvature comprisig supporting a flat sheet to be bent on a bending mold having an upper shaping surface, conveying the supported glass sheet through a region subjected to glass softening temperature, applying mechanical force to the longitudinal extremities of the heat-softened glass sheet to impart a longitudinal bend to the sheet and then applying an upward lifting force along one side portion only of the sheet to impart a transverse bend to the sheet.

3,223,506

METHOD AND APPARATUS FOR VERTICALLY SUPPORTING AND HEAT TREATING A GLASS SHEET

Robert W. Wheeler, Pittsburgh, Pa., assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed July 26, 1962, Ser. No. 212,682
9 Claims. (Cl. 65—114)



1. Apparatus for heat-treating glass sheets comprising a horizontal roller conveyor comprising a series of substantially parallel rolls spaced longitudinally of said conveyor, each roll being provided with a circumferential groove disposed along a common longitudinal axis of said conveyor for supporting the bottom edge of a plurality of glass sheets disposed along said conveyor, means for rotating said rolls in unison to propel said plurality of glass sheets along said common longitudinal axis, glass sheet heating means disposed along said conveyor comprising an elongated chamber below said conveyor, said elongated chamber having at its uppermost portion a slot opening of a width slightly greater than that of said circumferential grooves, means for introducing hot gas under superatmospheric pressure into said elongated chamber and for causing said gas to flow upwardly through said slot opening, whereby glass sheets conveyed along said path defined by said circumferential grooves are subjected to hot gas flows along the opposite surfaces thereof sufficient to balance the glass sheets in a substantially vertical plane occupied by said circumferential grooves.

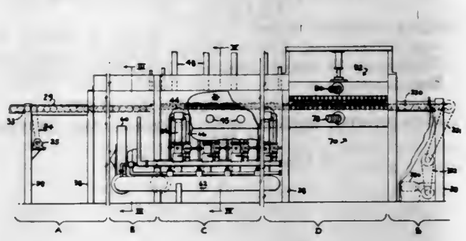
4. In the method of heating a sheet of glass to a deformation temperature while supporting it against deformation, the steps comprising supporting the sheet of glass in a substantially vertical position upon only a lower edge portion thereof, heating a gas to a temperature higher than that of the glass, flowing said gas so that the gas contacts the sheet first at one edge and then flows cross the major surfaces of the sheet to an opposite edge, the direction of said flow being controlled to produce at least a component of flow in a vertical direction, radiating heat to the major surfaces of the glass sheet and controlling the radiated heat so as to radiate a greater quantity of heat to portions of the major surfaces of the glass sheet adjacent the said opposite edge than to portions adjacent said one edge.

3,223,507

METHOD OF HEAT TREATING GLASS SHEETS

Dean L. Thomas, Crestline, Ohio, assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa.. a corporation of Pennsylvania

Filed June 17, 1964, Ser. No. 375,877
11 Claims. (Cl. 65—114)

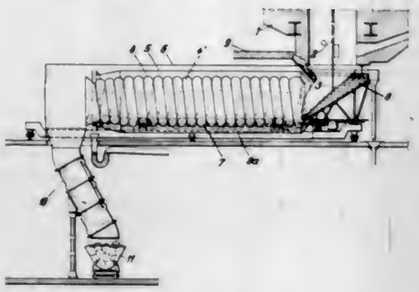


11. In a method of tempering glass in which the glass is at least partially supported while it is at a deformation temperature and is thereafter quenched, the improvement which comprises first heating the glass to a temperature higher than the minimum deformation temperature required for tempering; and, immediately prior to tempering, heating the surfaces of said glass at a lower temperature while maintaining the temperature of the glass above the minimum deformation temperature for tempering until distortion of the glass which ordinarily occurs during the tempering of said glass after said first heating thereof is substantially reduced, and then quenching the glass.

3,223,508
MIXING DEVICE FOR ADMIXING ADDITIVES TO A MELT

Erich Wolf, Kassel-Wilhelmshohe, Germany, assignor to Schlosser & Co. G.m.b.H., Michelbach, Germany

Filed Feb. 9, 1961, Ser. No. 88,079
2 Claims. (Cl. 65—142)
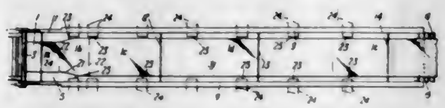


1. A device for admixing solid additives in the form of discrete particles to a molten hardening material, said device comprising a generally cylindrical forming tube having in its wall surface a spiral groove of concave cross section in reference to the interior of the tube, said tube being rotary about its longitudinal axis, first feed means for feeding the molten material while in its liquid state into the tube at one end thereof, second feed means for feeding the solid additives into the tube at the same end thereof, thereby effecting mixing of the molten material and the additives, a second rotary tube encompassing the forming tube radially spaced therefrom to define between the two tubes an annular space for a coolant to cause hardening of the mixture during the travel thereof along the spiral groove of the rotary tube, a stationary air-tight casing, both said tubes being mounted within the casing rotatable in reference thereto, and a discharge chute disposed adjacent the other end of the tube and in communication therewith for discharging the hardened mixture at said end of the forming tube.

3,223,509
APPARATUS FOR THE MANUFACTURE OF FLAT GLASS

Richard Barradell-Smith, St. Helens, and Frederick William Silverwood, Appley Bridge, England, assignors to Pilkington Brothers Limited, Liverpool, England, a British company

Filed Aug. 10, 1960, Ser. No. 48,677
Claims priority, application Great Britain, Aug. 28, 1959, 29,513/59
9 Claims. (Cl. 65—182)

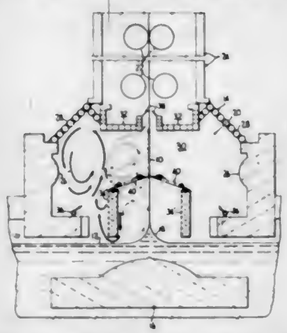


1. An apparatus for the manufacture of flat glass comprising, in combination, a tank structure containing a molten metal bath, means for delivering the glass to the bath and developing on the surface thereof a glass ribbon of definite width, means for advancing the glass ribbon along the bath and cooling it sufficiently to allow the ribbon to be taken without damage from the bath by mechanical conveying means, the width of the glass ribbon being substantially less than the width of the surface of the molten metal bath, at least in localities where the ribbon is deformable, and means for counteracting any objectionable bodily edgewise movement of the glass ribbon in either direction in such localities as it is advanced along the bath surface so as to maintain the ribbon in a straight path of travel along the bath, said means comprising heat control elements arranged in the molten metal bath at or near the surface thereof and located in different localized regions along the bath, each of said heat control elements being elongated and extending lengthwise of the bath in a direction parallel to the intended path of travel of the glass ribbon and located in proximity to but out of contact with the confronting edge of the ribbon, said heat control elements being capable of setting up in the respective localized regions convection currents in the molten metal bath which cause a transverse movement of the surface of the bath in contact with the under surface of the glass ribbon in a direction opposed to that of any objectionable bodily edgewise movement of said ribbon.

3,223,510
APPARATUS FOR DRAWING SHEET GLASS

Cecil R. Ward, Gibsonia, Pa., assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania

Continuation of application Ser. No. 850,122, Nov. 2, 1959. This application Feb. 12, 1963, Ser. No. 260,094
5 Claims. (Cl. 65—203)



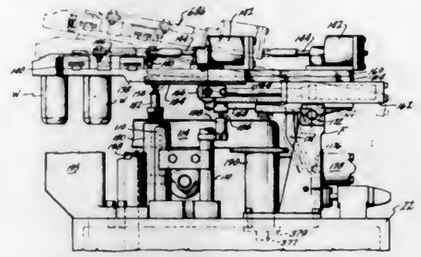
1. In apparatus for drawing a sheet of glass in a substantially vertical plane from a bath of molten glass, and having a drawing chamber at least partially defined by refractory members supported on each side of the plane of draw of the glass sheet, the combination of a cooling member spaced above the bath substantially parallel to the sheet on each side of the plane of draw, a baffle assembly extending substantially the width of the glass sheet and within the chamber between each cooling member and the glass sheet, said baffle assembly having a hollow first portion mounted adajcent a cooling member and having a second portion adjacent and spaced from the glass sheet, means to supply a cooling fluid to such first portion of said baffle assembly, and gas current injecting means extending substantially the width of the plane of draw and located in said drawing chamber between each cooling member and said refractory members on each side of the plane of draw.

3,223,511
GLASSWARE FORMING MACHINE

George E. Rowe, Wethersfield, Conn., assignor to Emhart Corporation, a corporation of Connecticut

Filed May 16, 1961, Ser. No. 110,461
14 Claims. (Cl. 65—240)

1. A glassware forming machine having a first or parison forming station and a second or final shaping station which are spaced apart respectively rearwardly and forwardly, said machine comprising means including a blank mold operable at the first station to form a parison, means including a mold at the second station to form finished ware from a parison, means for supporting a parison at each station and for moving a parison from the first to the second station including a first and a second separable neck ring unit, transfer mechanism operatively associated with each neck ring unit including a plurality of motors for moving the same generally horizontally and rectilinearly from the first to the second station and for thereafter moving its associated unit upwardly and

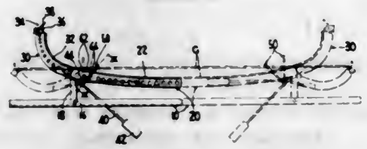


then rearwardly and downwardly to return it to the first station, means for opening and closing the separable neck ring units, and control means operatively associated with said transfer mechanism motors for positioning a neck ring unit at each station and for then interchanging them by the said movement of a neck ring unit from each of the respective stations.

3,223,512
GLASS BENDING MOLD WITH SHEET GUIDE

William F. Grafton, Kittanning, Pa., assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania

Original application Aug. 25, 1958, Ser. No. 756,766, now Patent No. 3,155,482, dated Nov. 3, 1964. Divided and this application Mar. 11, 1964, Ser. No. 351,049
3 Claims. (Cl. 65—290)



1. Apparatus for bending elongated glass sheets comprising a horizontally disposed, sectionalized mold including two end molding sections and a center molding portion intermediate said end molding sections, a weighted arm secured to each of said end molding sections and extending longitudinally inwardly therefrom, pivot means attached to said center molding portion and extending transversely thereto for pivoting each of said end molding sections about a substantially horizontal axis between a spread mold position for receiving a flat glass sheet for bending and a closed mold position, and a glass edge contacting member located on the longitudinally inner side of said pivot means in a substantially vertical plane adjacent and laterally outboard of one side only of said center molding portion and connected to the laterally inner side of each weighted lever arm for arcuate movement therewith in said substantially vertical plane with its associated weighted arm in response to the pivoting of said attached end molding section, said glass edge contacting member being operatively responsive to rotation of its associated end molding section into the closed mold position to move downwardly in said substantially vertical plane with a component of motion in said plane extending longitudinally of a contacted glass sheet edge and a vertical component of motion in said plane substantially equal to the vertical distance the contacted glass edge portion moves vertically to conform to the mold shaping surface, said glass edge contacting members not applying a compressive force against said contacted edge.

3,223,513
PESTICIDAL RESIN AND METHOD OF PREPARING SAME

Robert J. Geary, Vero Beach, Fla., assignor to Plant Products Corporation, Blue Point, N.Y., a corporation of New York

No Drawing. Filed Oct. 14, 1959, Ser. No. 846,238
10 Claims. (Cl. 71—2.3)

1. A method of preparing a pesticidal composition in self-sustaining bulk form comprising forming a substantially homogeneous mixture, substantially devoid of inert carrier, of a pesticide and monomeric amido and monomeric aldehyde reactants capable of forming an amido-aldehyde resin in the presence of an acid catalyst, said reactants being employed in proportions yielding about 0.2 to 50 parts of resin per part of pesticide and then adding an acid catalyst to said mixture to form an amido-aldehyde resin in situ.

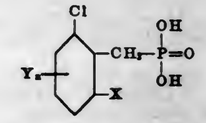
5. A method as defined in claim 1 wherein said pesticide is herbicidal.

3,223,514
PROCESS FOR THE CONTROL OF PLANT GROWTH

Marcel A. Gradsten, Demarest, N.J., assignor, by mesne assignments, to Tenneco Chemicals, Inc., a corporation of Delaware

No Drawing. Filed May 10, 1961, Ser. No. 108,995
4 Claims. (Cl. 71—2.3)

1. The process for the control of plant growth in a medium normally supporting plant growth which comprises applying to said medium a phytotoxic amount of a herbicidal compound selected from the group consisting of chlorobenzylphosphonic acids having the structural formula



wherein X represents a member selected from the group consisting of chlorine, bromine, alkyl groups containing from 1 to 4 carbon atoms, and alkoxy groups containing from 1 to 4 carbon atoms; Y represents a member selected from the group consisting of chlorine, bromine, alkyl groups containing from 1 to 4 carbon atoms, alkoxy groups containing from 1 to 4 carbon atoms, amino, nitro, and mixtures thereof; and *n* represents a number in the range of zero to 3; the sodium, potassium, calcium, barium, ammonium, and dimethylamine salts of said acids; and their methyl, ethyl, isopropyl, propyl, and butyl esters.

3,223,515
METHOD FOR THE CONTROL OF PLANT GROWTH

Adolph J. Deluet, Woodcliff Lake, N.J., assignor, by mesne assignments, to Tenneco Chemicals, Inc., a corporation of Delaware

No Drawing. Filed Mar. 15, 1962, Ser. No. 180,041
2 Claims. (Cl. 71—2.3)

1. The method for the control of plant growth which comprises applying to a medium normally supporting plant growth a phytotoxic amount of 2,6-dichloro-3-nitrobenzaldehyde.

3,223,516
CHLOROFLUOROPHENOXY HERBICIDAL COMPOSITION AND METHOD

Everett E. Gilbert, Morris Township, Morris County, N.J., and Christ N. Ylannios, North Haven, Conn., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Oct. 5, 1964, Ser. No. 401,704
12 Claims. (Cl. 71—2.3)

1. The method of combatting growth of vegetation which comprises applying to said vegetation material selected from the group consisting of 2(2-chloro-4-fluorophenoxy) ethanol-1, 4(2-chloro-4-fluorophenoxy) butanol-1, and esters thereof selected from the group consisting of their acetic acid esters; their trichloroacetic acid esters; their dichloropropionic acid esters; their benzoic acid esters; their alkali metal monosulfates; and their tri-esters of phosphorous acid, said material being in amount sufficient to cause deterioration of said vegetation.

3,223,517
CONTROLLING TOBACCO SUCKER GROWTH

Walter W. Abramitis, Downers Grove, and Richard A. Reck, Hinsdale, Ill., assignors to Armour and Company, Chicago, Ill., a corporation of Delaware

No Drawing. Filed June 29, 1962, Ser. No. 206,196
5 Claims. (Cl. 71—2.7)

4. A method for treating tobacco plants to control sucker growth therein without producing injury to desired portions of the plants, comprising applying to the plant in an aqueous solution a compound selected from the group consisting of secondary and tertiary amine salts having an ammonium cation wherein one substituent is alkyl containing from 8 to 18 carbon atoms and wherein said cation has from one to two substituents selected from the group consisting of methyl and ethyl; said compound being applied in an amount effective to attain said control.

3,223,518
GRANULAR FERTILIZER HAVING A PLURALITY OF COATINGS AND THE PROCESS OF MAKING

Louis I. Hansen, Minneapolis, Minn., assignor to Archer-Daniels-Midland, Minneapolis, Minn., a corporation of Delaware

Filed Aug. 18, 1961, Ser. No. 132,383
9 Claims. (Cl. 71—64)

2. A fertilizer product comprising:

(a) a core of fertilizer material, said core having at least one water soluble plant nutrient,

(b) a plurality of coatings surrounding said core, each of said coatings being in the amount of from about 0.25 to 10% by weight based on said core,

(c) at least one of said coatings being cured coating of curable copolymer of dicyclopentadiene and ester of unsaturated acid, and

(d) the total coating weight being such as to delay and effect gradual release of said water soluble plant nutrient.

7. A method for preparing a coated fertilizer granule to thereby delay and effect a gradual release of a water soluble plant nutrient contained in said granule, the method which comprises:

(a) heating granular fertilizer material containing at least one water soluble plant nutrient,

(b) applying a coating of a rapid drying solvent solution of curable copolymer of dicyclopentadiene and ester of unsaturated acid to said heated fertilizer granules,

(c) tumbling said fertilizer granules and drying said coating at least until the point of incipient gelation,

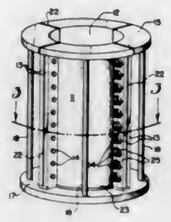
(d) repeating said application of said copolymer and said tumbling and drying at least one more time, and

(e) finally drying to completion the last applied coating to thereby form a water insoluble coating around said fertilizer granule.

3,223,519
INDUCTION FURNACE

George H. Schippereit, Columbus, Ohio, assignor, by mesne assignments, to National Distillers and Chemical Corporation, a corporation of Virginia

Filed May 20, 1957, Ser. No. 660,287
4 Claims. (Cl. 75—10)



1. A low-frequency coreless induction furnace comprising a cup-shaped metal crucible having an inner metal surface formed from a hollow, cylindrically shaped metal part and a disk shaped metal bottom, said cylindrically shaped part being formed of individual metal sections, each of said metal sections constituting a continuous area running the length of said part and said sections being insulated from one another by an electrically nonconductive material, said cylindrically shaped part being insulated from said disk-shaped bottom by an electrically nonconductive material, means surrounding said crucible for providing an induced low-frequency alternating current to the charge contained within and in contact with the inner metal surface of said crucible and means for cooling the outside surface of said crucible.

3,223,520
METHOD FOR CONTROLLING THE REACTIONS IN AN ARC FURNACE

Jan-Erik Östberg, Surahammars Bruks Aktiebolag, Huvudkontoret, Surahammar, Sweden

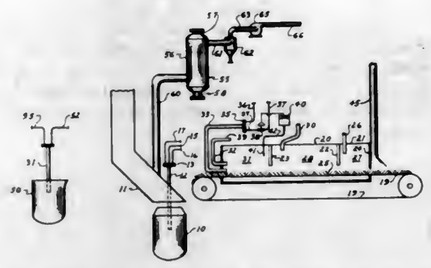
No Drawing. Filed Nov. 5, 1962, Ser. No. 235,530
Claims priority, application Sweden, Nov. 8, 1961, 11,090/61
3 Claims. (Cl. 75—60)

1. A method of controlling the reaction between carbon and oxygen in an electric arc furnace having a plurality of arc electrodes, for the manufacture of iron or steel, in which the carbon is oxidized with ore which is introduced into the furnace, under conditions which tend to cause foaming of the slag, to counteract the tendency to build up temperature and chemical composition gradients in the slag layer and to reduce slag foaming, which comprises introducing tangentially into the arc furnace, at a level at least as high as the upper part of the slag layer, at least one jet of an oxygen-containing gas, and maintaining the pressure, volume and angle of introduction of such gas at such values as to produce a rotating movement of the slag and the furnace atmosphere around the electrodes while preventing such displacement of the slag as to uncover the surface of the molten metal therebeneath, said rotating atmosphere leaving a substantially stationary area of gas in the area of the electrodes, the gas having a pressure of at least 10 p.s.i. and the jet forming an angle with the horizontal not exceeding 60°.

3,223,521
METHODS FOR INCREASING THE PROPORTION OF SCRAP METAL CHARGED TO BASIC OXYGEN CONVERSION PROCESSES

Joseph K. Stone, Berkeley, Calif., assignor, by mesne assignments, to Kaiser Industries Corporation, Oakland, Calif., a corporation of Nevada

Filed Feb. 18, 1963, Ser. No. 259,138
5 Claims. (Cl. 75—43)



1. A method of preheating scrap metal for use in a basic oxygen conversion process which comprises

(A) enclosing the scrap in a preheat zone,

(B) burning carbonaceous fuel,

(C) passing the resultant combustion gas into contact with said scrap,

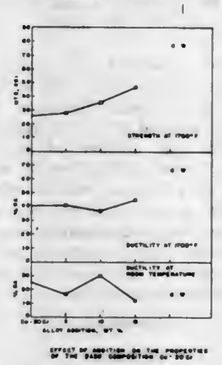
(D) terminating the preheating by contacting the scrap with combustion gas having its composition regulated to contain less than 1% by volume of available oxygen for a period of time sufficient to bring said scrap substantially into equilibrium with said gas, and

(E) regulating the total amount of fuel burned to provide enough hot combustion gas to raise the temperature of the scrap at least to 1500° F.

3,223,522
CHROMIUM, TUNGSTEN COBALT BASE ALLOYS CONTAINING ADDITIONS OF TANTALUM, TITANIUM AND NIOBIUM

John J. Rausch, Evanston, and Joseph B. McAndrew, Chicago, Ill., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed Jan. 31, 1963, Ser. No. 255,415
2 Claims. (Cl. 75—171)



1. In a forgeable, oxidation resistant alloy consisting of 45–80% cobalt, 15–35% chromium, 5–20% tungsten, the addition of 2–4% tantalum and 1–2% titanium characterized by a 30–170 fold increase in rupture life at 1700° F. and under a stress of 10,000 p.s.i.

3,223,523
METHODS FOR IMPROVING PRESSED PROPERTIES AND CHARACTERISTICS OF SINTERED POWDER METAL COMPACTS

Arthur Adler, % C. K. Williams & Co. Inc., Easton, Pa.

No Drawing. Filed July 5, 1963, Ser. No. 293,147
13 Claims. (Cl. 75—212)

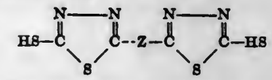
1. A process for improving the compacting properties of stainless steel powder which comprises the steps of uniformly blending said powder with an aqueous solution of at least one salt of a cation selected from the group consisting of molybdenum, copper and nickel, the amount of cation consisting essentially of 0.5 to 3.5% by weight of said powder, evaporating the water, reducing said salt in an atmosphere of hydrogen thereby to produce a surface coating on said stainless steel powder having a spongy porous characteristic, compacting said powder into a desired shape and subjecting the compacted shape to sintering at an elevated sintering temperature.

3,223,524
PROCESS FOR THE PRODUCTION OF PLANOGRAPHIC PRINTING PLATES HAVING AN ALUMINIUM SUPPORT

Anita von König, Leverkusen, Germany, assignor to Agfa Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Sept. 26, 1960, Ser. No. 58,181
5 Claims. (Cl. 96—29)

2. A process for producing planographic printing plates consisting in developing an imagewise exposed silver halide emulsion layer while in contact with an aluminum plate in a silver halide developer solution containing a silver halide solvent for dissolving silver halide from the unexposed areas of said silver halide emulsion layer, transferring the dissolved unexposed silver halide to said aluminum plate and reducing the dissolved silver halide on said aluminium plate to obtain a corresponding silver image, characterized in thereafter contacting said silver image directly with a hydrophobing amount of a 2-mercapto-1,3,4-thiodiazole having the formula



wherein Z stands for a bivalent member selected from the group consisting of (I) alkylene having up to 6 carbon atoms; (II) —SAS—, wherein A is a member selected from the group consisting of alkylene of 1–10 carbon atoms, phenylalkylene, $-[(CH_2)_m-O-(CH_2)_m]_n-$ wherein m is 2–4 and n is 1–5; and (III)

—NH—B—NH—

wherein B is a member selected from the group consisting of alkylene of 4–10 carbon atoms, cyclohexylene, phenylene, diphenylene, and phenylalkylene.

3,223,525
METHOD OF MANUFACTURING, BY PHOTOGRAPHIC MEANS, EXTERNAL, ELECTRICALLY CONDUCTIVE NOBLE-METAL PATTERNS ON NON-METALLIC, ELECTRICALLY NON-CONDUCTIVE, MACROMOLECULAR SUPPORTS AND PRODUCTS OBTAINED BY THESE METHODS

Hendrik Jonker and Cornelis Johannes Dippel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed July 11, 1960, Ser. No. 41,799
Claims priority, application Netherlands, July 22, 1959, 241,541
20 Claims. (Cl. 96—35)

1. A method of producing by photographic means an external electrically conductive noble-metal pattern on

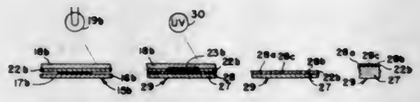
an at least superficially non-metallic, electrically non-conductive, at least slightly hydrophilic macro-molecular support comprising the steps of sensitizing said support with at least one light-sensitive compound selected from the group consisting of the silver halides and those organic compounds the light reaction products of which are capable of reacting in the presence of water with a water soluble metallic compound selected from the group consisting of water soluble silver and mercurous compounds to form free silver and mercury metal at the exposed portions, said water soluble metallic compound being present prior to development, selectively exposing said support for a time at least equivalent to an outgrowth exposure, treating said selectively exposed support with said water soluble metallic compound in the presence of moisture, thereby forming an internal latent image containing free metal selected from the group consisting of silver and mercury at the exposed areas and physically developing said latent image by treatment with a developing solution comprising an aqueous solution of a water soluble reducible salt of a noble metal selected from the group consisting of silver, gold and platinum, said developing stabilized solution being stabilized with an ionic surface active compound for a time at least sufficient to cause said internal image to grow into an external electrically conductive pattern of said noble-metal.

3,223,526

PRINTING PROCESSES INCLUDING SIZE REDUCTION OF GRAPHIC INTELLIGENCE

Emil W. Grieshaber, White Bear Township, Ramsey County, and Donald J. Newman, White Bear Lake, Minn., assignors to Minnesota Mining & Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Filed May 28, 1959, Ser. No. 816,640
8 Claims. (Cl. 96—46)



1. The process of making a grossly reduced size copy of a graphic original having differently radiation-absorptive image and background areas comprising: briefly exposing said original while in heat-conductive surface contact with a heat shrinkable plastic copy sheet to said radiation at high intensity to induce in said original a heat-pattern corresponding to the radiation-absorptive image areas and to provide on said copy sheet a visible reproduction of the thus heated image areas; and then uniformly heating said copy sheet above the second order transition temperature but below the melting temperature of said plastic while supporting said sheet substantially free of restraint so as to permit shrinkage of said copy sheet to said reduced size.

6. The process of making a grossly reduced size copy of a graphic original having image and background areas differentially transmissive of actinic light, comprising: exposing to light through said original a copy-sheet having a thin vesicular-image diazo coating on a heat shrinkable plastic film; and thereafter developing a reduced size visible reproduction of said original by uniformly heating said copy-sheet above the second order transition temperature but below the melting temperature of said plastic while supporting said copy-sheet substantially free of restraint.

3,223,527

PROCESS FOR THE PRODUCTION OF PHOTOGRAPHIC IMAGES BY THE SILVER DYESTUFF BLEACHING PROCESS AND PHOTOGRAPHIC LAYERS THEREFOR

Paul Dreyfuss, Basel, Switzerland, assignor to Ciba Corporation, a corporation of Delaware

No Drawing. Filed May 9, 1961, Ser. No. 108,759
Claims priority, application Switzerland, May 12, 1960, 5,435/60
6 Claims. (Cl. 96—53)

1. In a process for the production of color photographic images by the silver dyestuff bleaching method, the step which comprises decreasing the contrast obtained by bleaching at least one of the dyestuffs serving for image formation by means of a supplementary dyestuff which corresponds to the fomula

R—N=N—Py

in which R represents a member selected from the group consisting of a benzene radical, a naphthalene radical and a pyrazolone radical containing in one of the positions 1 and 4 relatively to the azo group a substituent selected from the group consisting of a hydroxy group and an amino group, and Py represents the radical of a 5-pyrazolone bound in 4-position to the azo linkage, and by destroying completely said supplementary dyestuff in an oxidizing bath following the bleaching bath.

3,223,528

GELATIN DERIVATIVES AND PHOTOGRAPHIC SILVER HALIDE EMULSION LAYERS

Marcel Nicolas Vrancken, Ringlaan 31, Berchem-Antwerp, Belgium; Arthur Henri De Cat, Ter Varentstraat 62, Mortsel-Antwerp, Belgium; and Jozef Frans Willems, Sterrenlaan 52, Wilrijk-Antwerp, Belgium

No Drawing. Filed July 18, 1961, Ser. No. 124,819
Claims priority, application Great Britain, July 18, 1960, 25,009/60
3 Claims. (Cl. 96—94)

1. A method of preparing a hardened photographic gelatino silver halide emulsion which comprises the steps of adding to an aqueous solution of silver nitrate an aqueous solution of a potassium halide containing also 20% by weight based on the silver nitrate of a sulfonyl derivative of gelatin prepared according to the method described in claim 3, acidifying the emulsion obtained to precipitate said sulfonyl derivative of gelatin together with the silver halide, washing this precipitate with water, redissolving said sulfonyl derivative of gelatin by adding water to said precipitate, heating to about 45° C., and acidifying to pH 6.5, and adding a required amount of binding agent.

3. A method of preparing sulfonyl derivatives of gelatin which comprises adding to a 9–20% aqueous solution of gelatin of pH 8–10 whilst vigorously stirring, a solution in a solvent selected from the group consisting of dimethylformamide and acetone of an aromatic compound containing a fluorosulfonyl group selected from the group consisting of p-toluene sulfofluoride, p-aminobenzene sulfofluoride, m-fluorosulfonyl benzoic acid, p-fluorosulfonyl acetanilide, p-fluorosulfonyl salicylic acid and benzoyl - (3 - fluorosulfonyl) - acetanilide, said aromatic compound reacting with said gelatin in solution to produce said sulfonyl gelatin derivative.

3,223,529

COMPOSITION FOR IMPROVING FOAM OF MALT BEVERAGES

Irwin M. Stone, Staten Island, N.Y., assignor to Baxter Laboratories, Inc.

No Drawing. Filed Mar. 7, 1961, Ser. No. 93,851
1 Claim. (Cl. 99—48)

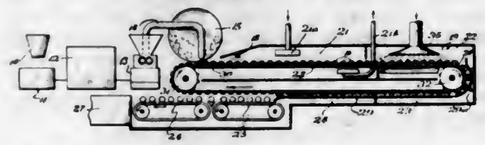
A composition of matter for improving the foam of fermented malt beverages comprising a mixture of propylene glycol alginate and a water-soluble zinc salt, the zinc salt comprising 1 to 70% of the mixture.

3,223,530

PROCESS FOR PREPARING SAUSAGE

Harry W. Weprin, Chicago, Ill., assignor to Armour and Company, Chicago, Ill., a corporation of Delaware

Filed Nov. 25, 1960, Ser. No. 71,543
2 Claims. (Cl. 99—109)



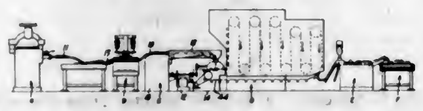
1. In a process for preparing sausage by encasing comminuted heat in a mold, passing an electric current therethrough to coagulate protein and to form a shaped-supporting sausage, and applying smoke to the sausage to give it the desired smoked characteristics, the improvement including the steps of chilling the sausage and impinging a high velocity air blast in the form of ribbons containing smoke directly on the rotating sausage axially thereof to form a skin thereon.

3,223,531

METHOD OF PROCESSING CONTINUOUS STRANDS OF ENCASED SAUSAGE LINKS AND APPARATUS THEREFOR

Calvin N. Kugler and Walter V. Marbach, Palos Heights, Ill., assignors to Union Carbide Corporation, a corporation of New York

Filed Sept. 10, 1962, Ser. No. 222,551
10 Claims. (Cl. 99—109)



1. Method of processing continuous strands of encased sausage links, comprising the steps of:

continuously feeding strands of encased sausage links, in a first direction transversely across a first zone, and then in a direction opposite to said first direction, transversely across said first zone;

feeding said links to said first zone at a rate faster than the rate of formation of transverse strands, and causing each link, in each strand, to lie at an angle to an adjacent link;

supporting and conveying to a treatment zone, said strands in the thus formed pattern of transverse strands connected by a bend, and having undulations in said transverse strands.

7. Apparatus for use in the processing of continuous strands of encased meat emulsion links, comprising:

a conveyor movable in a longitudinal direction and having a pair of transverse ends;

a guide member reciprocably movable transversely, from a first position at one end of said conveyor to a second position at the other end of said conveyor;

power driven feeding means positioned for cooperation with said guide member, so as to feed continuous strands of encased meat emulsion links to said guide member,

said feeding means being operatable at a speed such that the rate of delivery of said links transversely across said conveyor is greater than the rate of transverse movement of said guide member across said conveyor;

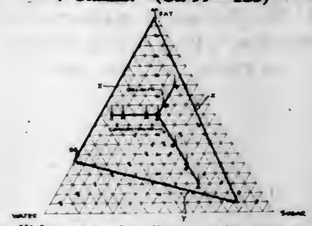
whereby a strand of links is laid in a first direction transversely across said conveyor, a bend is laid, a strand is laid transversely across said conveyor in a direction opposite to said first direction, and each link in each strand lies at an angle to an adjacent link thus forming undulations in each of the transverse strands.

3,223,532

EMULSIONS FOR FOOD USE

Hamilton A. Pinkalla, Gerald L. Neuser, Leon R. Cook, and Roy F. Korfhage, Milwaukee, Wis., assignors, by mesne assignments, to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

Filed Aug. 6, 1963, Ser. No. 301,699
7 Claims. (Cl. 99—123)



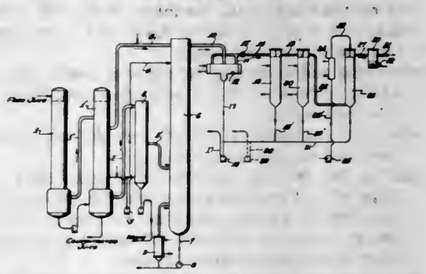
1. An edible water-in-oil emulsion consisting essentially of 4.7–98.2% of edible fat, 1.8–74.0% of water, 1.0–12.0% of a mixture of edible non-ionic hydrophilic and lipophilic emulsifiers having a total HLB of 3–6, the emulsifiers being in the proportions of 0–75.0% of hydrophilic and 100–25.0% of lipophilic, the lipophilic emulsifier having an iodine value of 8 and above, and 1.0–10.0% of edible wax, the percentages being by weight and the amounts of emulsifier and wax being a part of the total weight of fat, the proportions of the emulsion being variable for providing varying viscosities suitable for use in foods.

3,223,533

METHOD FOR IMPROVING FLAVOR CONSTITUENTS

Edgar J. Kelly, Placentia, Calif., assignor to Libby, McNeill & Libby, Chicago, Ill., a corporation of Maine

Filed Dec. 5, 1960, Ser. No. 73,742
16 Claims. (Cl. 99—140)



1. In a method of separating and isolating odor and flavor constituents of natural fruit and berries from water vapor and non-condensable gases containing a minute quantity of said constituents the steps of: separating a source material composed of water vapor and non-condensable gases containing a minute quantity of volatile odor and flavor constituents at a temperature below about 43° C. and absolute pressure of not over 115 mm. Hg in a condensation zone to condense not less than 70% by weight of the water contained in said source material thereby increasing the partial pressure of the odor and flavor constituents in residual vapors and gases; separating the condensed water from the residual vapors and

gases; passing said residual vapors and gases through a series of condensation zones maintained at virtually equal absolute pressure below about 115 mm. Hg, the temperatures in said zones being maintained at progressively lower levels between about 22° C. and 2° C.; and combining the condensates from said series of condensation zones to obtain a virtually colorless liquid containing said odor and flavor constituents.

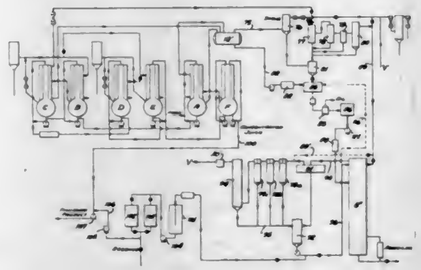
3,223,534

METHOD OF IMPROVING FLAVOR CONSTITUENTS

Edgar J. Kelly, Lake Zurich, Ill., assignor to Libby, McNeill & Libby, Chicago, Ill., a corporation of Maine

Filed Nov. 7, 1962, Ser. No. 236,097

18 Claims. (Cl. 99—140)



1. In a method of treating a gaseous mixture containing water vapor, flavor and odor constituents and a small proportion of oily contaminants, to obtain an essence containing a high concentration of flavor and odor constituents, the steps of:

subjecting the mixture to preliminary condensation to condense a major portion of the water and oily contaminants;

subjecting the remaining uncondensed gaseous mixture to repeated sequential scrubbing with cold water to condense a portion of the flavor and odor constituents and oily contaminants;

combining and collecting the aqueous condensates containing condensed flavor and odor constituents and oily contaminants;

removing substantially all of the oily contaminants from said aqueous condensates;

feeding the de-oiled aqueous condensate to a water stripping and rectifying zone wherein the vapors are subjected to a temperature not in excess of 55° C. and at a pressure of below 155 mm. Hg, to separate water from gaseous constituents;

subjecting the gaseous constituents discharged from said zone to a series of interconnected, fractional condensation zones all at a substantially uniform subatmospheric pressure of below 120 mm. Hg and at progressively lower temperatures in the range 18° C. to 0° C.;

combining the flavor and odor bearing condensates from said series of fractional condensation zones; and

returning a selected portion of said combined flavor and odor bearing condensates as reflux to said stripping and rectifying zone to obtain a desired concentrate of flavor and odor constituents in the essence condensate.

3,223,535

PACKAGE HAVING NON-COCKLING FOOD WRAPPER

Charles M. Rosser, Wallingford, Pa., assignor, by mesne assignments, to FMC Corporation, San Jose, Calif., a corporation of Delaware

No Drawing. Filed Nov. 19, 1962, Ser. No. 238,745

3 Claims. (Cl. 99—171)

1. A package comprising a moisture-containing food article wrapped in a transparent flexible wrapper which is resistant to cockling comprising regenerated cellulose base film, the side of said film forming the outer surface of the package having a uniform heat-sealable and moistureproof nitrocellulose coating, and the opposite side of the film which is adjacent to the food article having a uniform heat-sealable but non-moistureproof nitrocellulose coating.

3,223,536

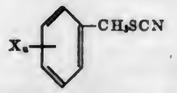
SURFACE-COATING COMPOSITIONS CONTAINING HALOBENZYL THIOCYANATES

Theodore A. Girard, Wayne, N.J., assignor, by mesne assignments, to Tenneco Chemicals, Inc., a corporation of Delaware

No Drawing. Filed June 5, 1963, Ser. No. 285,602

20 Claims. (Cl. 106—18)

1. A surface-coating composition having improved resistance to attack by fungi and other microorganisms which comprises (1) a water-insoluble resinous binder selected from the group consisting of oleoresinous binders, synthetic linear addition polymers obtained by the vinyl polymerization of monoethylenically unsaturated molecules, and mixtures thereof, and (2) approximately 0.10% to 2.0%, based on the weight of said composition, of a fungicide comprising a compound having the structural formula



wherein X represents a member selected from the group consisting of chlorine, bromine, and iodine atoms and *n* represents a number in the range of 1 to 3.

3,223,537

METHOD FOR PREPARING FOAMED INSULATING MATERIAL

Robert E. Wiegert, Middletown, and Thomas J. Byrne, Franklin, Ohio, assignors to Aeronca Manufacturing Corporation, Middletown, Ohio, a corporation of Ohio

No Drawing. Filed Jan. 15, 1962, Ser. No. 166,359

10 Claims. (Cl. 106—40)

1. The method which comprises, forming a mixture consisting essentially of about 25–31 parts by weight granular alumina (Al_2O_3), about 30–40 parts granular aluminum hydroxide, about 0.01–0.1 part of a powdered hydrogen displacing metal, phosphoric acid in an amount equivalent to about 22–27 parts of 85% phosphoric acid aqueous solution, and about 8–14 parts water, said alumina, hydroxide, metal, and water first being mixed, said phosphoric acid thereafter being added and producing a foaming reaction between said acid and said alumina, hydroxide, and metal in which steam and hydrogen are evolved and impart a light cellular structure to a reaction mass, casting the reaction mass in a form and permitting said mass to set without the application of heat additional to that produced by the reaction, said setting being substantially complete within a period less than about one hour, and curing the set mass by heating to the range of about 200–600° F.

3,223,538

FOAMED ZIRCONIA INSULATING MATERIAL

Robert E. Wiegert, Middletown, and Thomas J. Byrne, Franklin, Ohio, assignors to The Aeronca Manufacturing Corporation, Middletown, Ohio, a corporation of Ohio

No Drawing. Filed Feb. 7, 1962, Ser. No. 171,581

9 Claims. (Cl. 106—40)

1. A method of producing a foamed zirconia insulating material comprising the steps of preparing a mixture consisting essentially of about 50–65 parts by weight of granular zirconia, about 20–25 parts granular cerium dioxide, 0.05–1.0 part powdered aluminum metal, about 8–14 parts water, and about 10–20 parts phosphoric acid in 85% aqueous solution, said zirconia, cerium dioxide and aluminum metal first being mixed, said water and phosphoric acid then being added to produce a foaming reaction in which steam and hydrogen are evolved which impart a light cellular structure to the reaction mass, the heat of reaction thereby released rapidly gelling the mass so that the cellular structure is preserved, and subjecting the resultant product to temperatures in the range of 200–800° F. for a period of hours sufficient to further harden the product.

3,223,539

COMBUSTION CHAMBER LINER FOR WELL GAS AND AIR BURNER

Collin Hyde, Tiffin, and Herbert D. Sheets, Jr., Upper Arlington, Ohio, assignors, by mesne assignments, to Chevron Research Company, San Francisco, Calif., a corporation of Delaware

Filed Nov. 3, 1964, Ser. No. 408,609

10 Claims. (Cl. 106—64)

7. A composition of matter consisting essentially of alumina bubbles, between minus 12 mesh and 20 mesh size, about 30 to 50 percent by weight; dense alumina, minus 14 mesh size and minus 48 mesh size, a substantial portion of which does not pass a 48 mesh screen, about 20 to 30 percent by weight; dense alumina, minus 325 mesh size, about 5 to 15 percent by weight; and calcium aluminate cement, about 25 to 30 percent by weight.

3,223,540

REFRACTORY COMPOSITION

Robert W. Limes, Cleveland, and Michael P. Fedock, Seven Hills, Ohio, assignors to Republic Steel Corporation, Cleveland, Ohio, a corporation of New Jersey

Filed Oct. 11, 1962, Ser. No. 229,873

13 Claims. (Cl. 106—65)

1. A composition suitable for improved refractories consisting essentially of 60–75 percent by weight of coarse silica having a particle size that will pass through a 3-mesh screen but will not pass through a 20-mesh screen, and 25–40 percent by weight of finely divided alumina of a particle size that will pass through a 100-mesh screen.

3,223,541

PRODUCTION OF REFRACTORY SILICA ARTICLES

John W. Lindenthal, Red Bank, N.J., assignor to Engelhard Industries, Inc., Newark, N.J., a corporation of Delaware

No Drawing. Filed Dec. 26, 1962, Ser. No. 247,386

11 Claims. (Cl. 106—69)

4. A method for producing refractory silica articles, which comprises grinding silica to a finely-divided particle size, incorporating an ammonium salt selected from the group consisting of the carbonate, nitrate, formate and acetate of ammonium into an aqueous suspension of the finely-divided silica particles thereby to flocculate the discrete silica particles to form a paste, the ammonium salt being incorporated into the suspension in amount, by weight, from about 0.05–1 percent based on weight of SiO_2, forming the paste into an article of the desired shape, and firing the article shape at a temperature from about 800° C.–1200° C.

3,223,542

WATERPROOFING PREPARATION

Neville A. Hammer, Sr., 617 W. Woodrow Ave., Knoxville, Tenn.

No Drawing. Filed Apr. 6, 1965, Ser. No. 446,121

The portion of the term of the patent subsequent to June 30, 1981, has been disclaimed

8 Claims. (Cl. 106—89)

1. A composition for the waterproof coating of masonry consisting essentially of 37 parts by weight of Portland cement, 8 parts by weight of sodium chloride, 1 part by weight of sodium carbonate, and 57.78 to 59.4 parts by weight of calcium oxide.

3,223,543

PAPER SIZING EMULSION

Anthony Ralph Savina, Stamford, Conn., assignor to American Cyanamid Company, New York, N.Y., a corporation of Maine

No Drawing. Filed May 26, 1961, Ser. No. 112,782

4 Claims. (Cl. 106—213)

1. In the manufacture of a dispersion of a hydrophobic cellulose-reactive paper-sizing fatty anhydride wherein said anhydride is emulsified in aqueous medium which has a temperature above the melting point of said anhydride and which contains at least sufficient of a water-soluble cationic starch to render the anhydride cellulose-substantive, the improvement which consists in adding to said aqueous medium prior to said emulsification a small amount of an anionic material selected from the group consisting of sodium lignosulfonate, sodium formaldehyde-condensed naphthalenesulfonate, and mixtures thereof, as agent inhibiting formation of anhydride aggregates.

3,223,544

MANUFACTURE OF CATIONIC PAPER SIZING KETENE DIMER EMULSIONS

Anthony Ralph Savina, Stamford, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Mar. 19, 1963, Ser. No. 266,179

4 Claims. (Cl. 106—213)

1. In the manufacture of a substantially uniformly fine dispersion of a hydrophobic cellulose-reactive paper-sizing fatty ketene dimer wherein said dimer is emulsified in an aqueous liquid which has a temperature above the melting point of said ketene dimer and which contains at least sufficient of a water-soluble cationic starch to render the ketene dimer cellulose-substantive, the improvement which consists in adding to said aqueous liquid, prior to said emulsification and in an amount sufficient to inhibit the formation of ketene dimer aggregates, an anionic material selected from the group consisting of sodium lignosulfonate, the formaldehyde condensation product of sodium naphthalenesulfonate, and mixtures thereof.

3,223,545

DIALKANOL AMIDE ANTISTATIC COMPOSITION FOR POLYOLEFINS

Major L. Gallaugher and James E. Pritchard, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Oct. 8, 1962, Ser. No. 229,227

10 Claims. (Cl. 106—287)

2. An antistatic composition suitable for application to the surface of a solid polymer of ethylene having a density of at least 0.940 gm./cc. consisting essentially of a mixture of from about 50 to about 98 parts by weight of a

volatile inert alcohol and about 50 to about 2 parts by weight of the diethanol amide of lauric acid based on total composition weight said alcohol being a solvent for said diethanol amide of lauric acid, inert to said polymer and said diethanol amide of lauric acid, and volatile at the conditions of application of said diethanol amide of lauric acid to said polymer.

3,223,546

COLOR-REACTABLE INORGANIC ADSORBENT PIGMENT AND COATING COMPOSITION CONTAINING THE SAME

Glen A. Hemstock, East Brunswick, N.J., assignor to Minerals & Chemicals Philipp Corporation, Menlo Park, N.J., a corporation of Maryland

No Drawing. Filed Jan. 17, 1962, Ser. No. 166,913
6 Claims. (Cl. 106—288)

1. An improved sensitized color-reactable adsorbent pigment composition adapted for use in transfer printing with a mixture of benzoyl leuco methylene blue and crystal violet lactone comprising a mixture of:

a major weight proportion of heat activated attapulgite clay and

a minor weight proportion of a white aluminum silicate having a B.E.T. surface area of at least about 120 sq. m./gm.,

said aluminum silicate having been obtained by calcining kaolin clay at a temperature and for a time to produce metakaolin, cooling said metakaolin to a temperature below about 125° C., and subjecting said metakaolin to hydrothermal treatment at superatmospheric pressure at a temperature and for a time selected to convert said metakaolin into an amorphous aluminum silicate of the approximate formula $Al_2O_3.2SiO_2$ (1.4–1.7 H_2O).

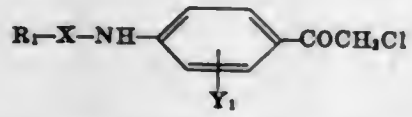
3,223,547

ANTIMICROBIC COMPOSITIONS AND USE THEREOF

Jakob Bindler, Riehen, near Basel, and Ernst Model, Basel, Switzerland, assignors to Geigy Chemical Corporation, Ardsley, N.Y., a corporation of Delaware

No Drawing. Original application June 6, 1962, Ser. No. 200,355. Divided and this application Apr. 10, 1964, Ser. No. 367,269
Claims priority, application Switzerland, June 7, 1961, 6,605/61
9 Claims. (Cl. 106—316)

2. A plasticizer composition consisting essentially of (a) an organic plasticizer sensitive to microbial attack, and (b) an antimicrobially active compound of the formula



wherein

R_1 is a member selected from the group consisting of alkyl containing at most three carbons, monochloroalkyl containing at most three carbons and polychloroalkyl containing at most three carbons, phenyl and monochlorophenyl,

Y_1 is a member selected from the group consisting of hydrogen and chlorine and

X is a member selected from the group consisting of —CO— and —SO_2— with the limitation that if X is —SO_2—, R_1 must be a member selected from the group consisting of said alkyl, said monochloroalkyl and said polychloroalkyl, said component (b) being present in an amount effective for protecting said plasticizer against microbial attack.

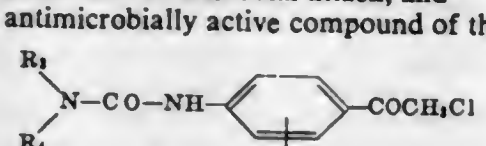
3. An emulsion paint consisting essentially of

(a) a pigment component for imparting color to said paint,

(b) an aqueous medium in which said pigment component is emulsified,

(c) a synthetic resin base for said pigment, which resin base is sensitive to microbial attack, and

(d) an antimicrobially active compound of the formula



wherein

Y_1 is a member selected from the group consisting of hydrogen and chlorine,

R_3 is a member selected from the group consisting of hydrogen, alkyl containing at most five carbons, phenyl and phenyl substituted by one $ClCH_2CO$—, and

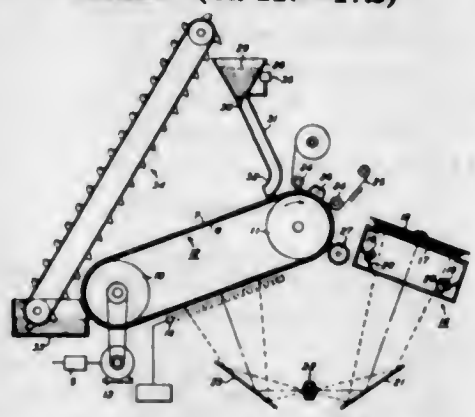
R_4 is a member selected from the group consisting of hydrogen and alkyl containing at most five carbon atoms with the limitation, as to R_3 and R_4, that the total number of carbons in the alkyl radicals, when both R_3 and R_4 are an alkyl, is at most five, said component (d) being present in said paint in an amount effective for protecting said paint against microbial attack.

3,223,548

XEROGRAPHIC DEVELOPING MACHINE AND METHOD

Harold E. Clark, Penfield, George R. Mott, Rochester, and Robert W. Gundlach, Victor, N.Y., assignors to Xerox Corporation, a corporation of New York

Original application May 1, 1961, Ser. No. 106,656, now Patent No. 3,146,688, dated Sept. 1, 1964. Divided and this application Dec. 19, 1963, Ser. No. 331,716
7 Claims. (Cl. 117—17.5)



1. A method of developing an electrostatic latent image on a flat portion of a xerographic plate comprising positioning the flat portion with the electrostatic latent image facing upwards and at a given angle slightly greater than the angle of repose of a granular electrostatic image developer on said plate when said plate is in an uncharged condition, and directing said granular electrostatic image developer downwardly against said electrostatic image substantially tangentially thereto at a velocity substantially equal to the terminal velocity that would be obtained by said granular developer flowing over a xerographic plate of indefinite length inclined at said given angle.

3,223,549

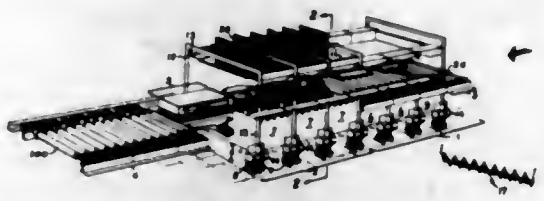
COATING OF GLASS SHEET WHILE DEFORMABLE AND SUPPORTED ON GAS

James C. Fredley, Tarentum, and George E. Sleighter, Natrona Heights, Pa., assignors to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania

Continuation of application Ser. No. 178,997, Mar. 12, 1962. This application Nov. 9, 1964, Ser. No. 409,662
10 Claims. (Cl. 117—119.8)

3. A method of producing an enameled glass sheet which comprises applying an enamel frit to the glass, sub-

jecting the glass and the frit to a temperature at which the glass is deformable and at which the frit fuses and becomes bonded to the glass, and at least partially supporting the glass sheet throughout the major portion of the area



thereof on gas while the glass is subjected to said temperature, thereby minimizing impairment during the fusion of said frit, said gas being at a temperature high enough to keep the glass at a deformation temperature.

3,223,550
PROCESS FOR RENDERING THERMOPLASTIC FIBERS PAPER TRANSLUCENT

Julian J. Hirshfeld, Decatur, Ala., assignor, by mesne assignments, to Monsanto Company, a corporation of Delaware

No Drawing. Filed Jan. 16, 1962, Ser. No. 166,671
16 Claims. (Cl. 117—138.8)

15. A method of rendering translucent paper composed of acrylic fibers which comprises impregnating said paper with a solution of a translucidizing agent selected from the group consisting of tris(2,3-dibromopropyl)phosphate, phosphoric acid and phytic acid and drying said treated paper.

3,223,551
LEATHER-LIKE MATERIAL AND METHOD OF MAKING THE SAME

Shu-Tung Tu, Ipswich, Mass., assignor to United Shoe Machinery Corporation, Flemington, N.J., a corporation of New Jersey

No Drawing. Filed Feb. 5, 1963, Ser. No. 256,225
15 Claims. (Cl. 117—140)

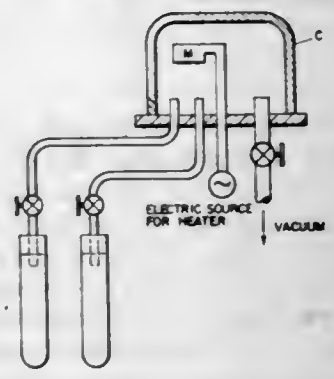
1. The process of forming a leather-like material which comprises the steps of applying to an intermeshed fiber mass in penetrating relation an aqueous suspension containing from about 1% to about 5% by weight based on the weight of the suspension of swollen distinct fine collagen fibers of microscopic size to carry said collagen fibers into the interstitial spaces of said intermeshed fiber mass, said suspension having a pH outside the isoelectric range of said collagen fiber, removing the swelling water from said fine short collagen fibers in the interstitial spaces of said intermeshed fiber mass to reaggregate them into a larger collagen fiber structure within the interstitial spaces throughout said mass of intermeshed fibers to reinforce said intermeshed fibers against displacement.

13. An open-fibered leather-like material comprising a mass of intermeshed nonwoven fibers and associated collagen fiber structure extending through the interstices in said mass of fibers to reinforce the fibers of said mass against displacement, said collagen fiber structure possessing the special association with the fibers of said mass secured by formation in situ in the interstitial spaces of said mass of intermeshed fibers from an aqueous suspension of short distinct swollen collagen fibers of microscopic size by removing the swelling water from the collagen fibers in the interstitial spaces of said intermeshed fiber mass to reaggregate them into a larger collagen fiber structure in reinforcing relation to the fibers of said mass.

3,223,552
METHOD FOR PRODUCING THIN TITANO-CERAMIC FILM

Shigeki Sakurai, Shijio Watabe, and Atsuo Morio, Tokyo, Japan, assignors to Nippon Telegraph & Telephone Public Corporation, Tokyo, Japan, a corporation of Japan

Filed Jan. 11, 1961, Ser. No. 102,329
Claims priority, application Japan, Jan. 14, 1960, 35/824; June 30, 1960, 35/29,577
11 Claims. (Cl. 117—200)



1. A method for producing a titano-ceramic film comprising the steps

(1) forming a vaporized mixture of an

(a) organic titanium compound selected from the group consisting of a titanium cyclopentadiene, titanium phenylate, tetraethyl titanate, and

$$Ti[N(C_6H_5)_2]_4, \text{ and}$$

(b) a material selected from the group consisting of barium, barium hydroxide, barium naphthenate, barium ricinoleate, cadmium ricinoleate, magnesium phenylate

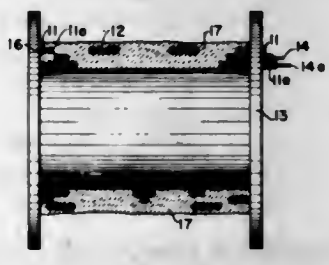
(2) heating the vaporized mixture to a temperature sufficiently high to cause the organic compound to decompose; and

(3) providing a substrate upon which is deposited from the decomposed mixture a thin titano-ceramic film.

3,223,553
ELECTRICAL INSULATING GLASS COMPOSITION AND APPARATUS ENCAPSULATED THEREWITH

George W. Morey, Bethesda, Md., assignor, by mesne assignments, to Anaconda Wire and Cable Company, a corporation of Delaware

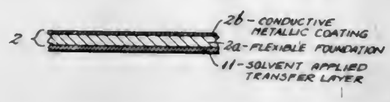
Filed Jan. 10, 1962, Ser. No. 165,392
4 Claims. (Cl. 117—215)



1. An electrical insulating glass composition consisting on an oxide basis of:

	Parts by weight
Li_2O	0–7
Na_2O	5–13
K_2O	5–8
Fe_2O_3	10–20
Al_2O_3	1.5–5
B_2O_3	15–24.2
P_2O_5	8–12
SiO_2	10–30

3,223,554
PROCESS OF PREPARING TRANSFER MEDIA
Douglas A. Newman, Glen Cove, N.Y., assignor to Columbia Ribbon and Carbon Manufacturing Co., Inc., Glen Cove, N.Y., a corporation of New York
Filed Oct. 22, 1962, Ser. No. 232,111
7 Claims. (Cl. 117—217)



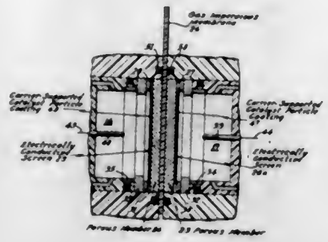
1. The process of avoiding the hazards of static electricity while coating a continuous flexible foundation having a tendency to accumulate static electricity with an organic solvent-applied transfer composition, which comprises coating said foundation with a thin flexible conductive metal layer, grounding said metal-coated foundation to allow the static electricity to be conducted therefrom and coating said grounded metal-coated foundation with a layer of transfer composition comprising binder material, imaging material and a volatile organic solvent, and evaporating said solvent to solidify said transfer composition and form a pressure-sensitive transfer layer on said metal-coated foundation while the foundation is maintained grounded, thereby avoiding the possibility of static accumulation which attracts deleterious dust into the transfer composition and avoiding the possibilty of static discharge which could cause combustion of the organic solvent particularly during the evaporation thereof.

3,223,555
SEALED BATTERY STACKED ELECTRODE ASSEMBLY
Frank Solomon, Lake Success, and Albert Himy, Elmhurst, N.Y., assignors to Yardney International Corp., New York, N.Y., a corporation of New York
Filed Apr. 5, 1962, Ser. No. 185,341
20 Claims. (Cl. 136—14)



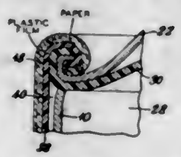
1. An electrochemical battery cell comprising a generally cylindrical casing and a stacked electrode assembly in said casing, said assembly including a plurality of disk-shaped first electrodes of one polarity, at least one disk-shaped second electrode of opposite polarity between said first electrodes, disk-shaped separators between said first and second electrodes, at least one of said separators having a marginal tab bent over in axial direction of the stack and overlying the periphery of said second electrode, and a conductor ribbon interconnecting said first electrodes alongside said stack, said ribbon registering with said tab and being held by said tab out of contact with said second electrode.

3,223,556
FUEL CELL
Johann G. E. Cohn and Anna P. Hauel, West Orange, and Carl D. Keith, Summit, N.J., assignors to Engelhard Industries, Inc., Newark, N.J., a corporation of Delaware
Filed Apr. 13, 1961, Ser. No. 103,687
6 Claims. (Cl. 136—86)



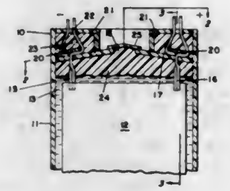
1. An electricity-producing apparatus comprising a container, unobstructed anode and cathode compartments provided within said container, a gas-impervious ion exchange membrane disposed within the container in such fashion as to provide a gas-impervious separation between the anode and cathode compartments, a substantially electrically non-conductive porous member disposed in the anode compartment on one side of the ion exchange membrane, another substantially electrically non-conductive porous member disposed in the cathode compartment on the opposite side of the gas-impervious membrane, the non-conductive porous members being of a material from the group consisting of ceramic, cellulose and animal skins, the surface of each such non-conductive porous member farthest removed from the ion exchange membrane having deposited thereon a substantially uniform thin coating of powdered activated carbon-supported precious metal-containing catalyst particles, an electrolyte initially wetting said gas-impervious ion exchange membrane and such porous members and catalyst particles, the porous members subsequently absorbing electrolyte from the supported catalyst particles, first electrically conductive means to provide electrical contact with the catalyst coating on the anode compartment porous member, second electrically conductive means to provide electrical contact with the catalyst coating on the cathode compartment porous member, means for supplying a fuel into the anode compartment into contact with the catalyst on the porous member therein, and means for supplying an oxidizer into the cathode compartment into contact with the catalyst on the porous member therein.

3,223,557
LEAK-RESISTANT DRY CELL
Thomas A. Reilly, Johnson R. Beckman, and Harry K. Bishop, Cleveland, Ohio, assignors to Union Carbide Corporation, a corporation of New York
Filed May 1, 1961, Ser. No. 106,764
The portion of the term of the patent subsequent to May 21, 1980, has been disclaimed
7 Claims. (Cl. 136—133)



1. A leak-resistant dry cell comprising, in combination, a cup electrode of a consumable metal containing depolarizer mix, electrolyte and a central carbon electrode embedded within said depolarizer mix; a non-metallic jacket having a liquid-proof liner embracing said cup electrode; a metallic top closure and bottom plate locked to said jacket, said top closure having gas venting means therein; a substantially tubular shaped member positioned between said top closure and said depolarizer mix having an outwardly flanged upper end locked in engagement between said top closure and said jacket, said tubular shaped member surrounding said carbon electrode and providing a free space therebetween and an exudate chamber surrounding said tubular shaped member and defining a barrier which protects said carbon electrode from contact with liquid exudate from said cell, said tubular shaped member being embedded within said depolarizer mix and forming a juncture which prohibits the passage of said liquid exudate beneath said member and into said free space, said tubular shaped member in conjunction with said gas venting means in said top closure providing a path for venting gas from said cell; a disc-like shield for said bottom plate positioned below said cup electrode; and an electrical contact element positioned within said disc-like shield and making electrical contact between said cup electrode and said bottom plate.

3,223,558
METHOD OF ASSEMBLING AND SEALING AN ELECTRIC STORAGE BATTERY CELL
Thomas H. Purcell, Jr., Raleigh, N.C., assignor to The Electric Storage Battery Company, a corporation of New Jersey
Filed Mar. 5, 1963, Ser. No. 262,924
4 Claims. (Cl. 136—168)

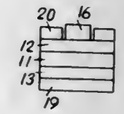


1. A method for assembling and sealing a sealed electric storage battery cell which comprises inserting an electrode pack in a container, said electrode pack comprising positive electrodes and negative electrodes with separators interposed, attaching a top cover plate to said container in such a manner that lug wires leading from each of the positive electrodes protrude through one opening in the top cover plate and lug wires leading from each of the negative electrodes protrude through another opening in the top cover plate, spreading said lug wires as they protrude through the top cover plate, applying a sealant to the spread lug wires which coats each individual lug wire and substantially closes the openings in the top cover plate through which the lug wires protrude, attaching two seal housings to the container and the top cover plate in such a manner that each set of lug wires protruding through the top cover plate is enclosed by one of the seal housings, said lug wires projecting through an opening in the top of each seal housing, substantially completely filling each seal housing with a sealant, filling the cell with the desired amount of alkaline electrolyte through a fill hole in said top cover plate, and thereafter completely sealing the cell by introducing into the cell a sealant having a lower specific gravity than the alkaline electrolyte through said fill hole in the top cover plate.

3,223,559
METHOD OF SEALING A GALVANIC CELL
Robert Carmichael, Lakewood, and James Southworth, Jr., Rocky River, Ohio, assignors to Union Carbide Corporation, a corporation of New York
Filed Dec. 19, 1961, Ser. No. 160,620
3 Claims. (Cl. 136—175)

1. A method of radially sealing a galvanic cell, said cell comprising a cell container, a cover therefor and an electrolyte therein; said method comprising interposing between the inner wall of said cell container and said cover a gasket of a hard dielectric plastic-like material which is resistant to cold flow, and radially compressing said gasket between said cover and said cell container wall while restraining any vertical displacement of said gasket and said cover; said radial compression being effected by applying a relatively large sealing force, perpendicular to the axis of said cell and having substantially no vertical component, in the horizontal plane of said cover and said gasket so that said container is primarily squeezed radially about a peripheral zone near said cover, the restraining of said gasket and said cover being effected by applying a relatively small axial force directly on said cover; said radial compression being effected by positioning said container with said gasket and said cover in place beneath an annular-shaped collet having a plurality of segments and squeezing said segments so that said segments partially collapse and draw said container in and around said cell cover and said gasket in compressive stress.

3,223,560
SEMI-CONDUCTOR CONTROLLED RECTIFIER HAVING TURN-ON AND TURN-OFF PROPERTIES
David Everitt Millington, Sutton Coldfield, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England
Filed July 23, 1962, Ser. No. 211,674
Claims priority, application Great Britain, Aug. 3, 1961, 28,196/61
1 Claim. (Cl. 148—1.5)



In the manufacture of a p-n-p-n semi-conductor device of the kind having an anode, a cathode and a gate, and in which the device can be turned on to permit flow of current between the anode and cathode by a positive pulse applied between the gate and cathode, and can be switched off by a negative pulse applied between the gate and cathode, the method comprising the steps of treating an n-type crystal layer to form on opposite sides thereof p-type layers one of which is to act as said anode and the other of which to act as said gate, subsequently forming on part of said other p-type layer a further n-type layer, masking the n-type layer with a protective coating, removing peripheral portions of the masked layer and the underlying n-type layer around a predetermined area of n-type layer, treating the exposed p-type layer portions to increase its thickness and the p-concentration thereof, removing the masking layer from the balance of the n-type layer, etching the peripheral portion of the n-type layer to penetrate the increased p-concentration layer to at least the surface of the original p-layer to increase the breakdown voltage of said peripheral junction.

3,223,561
SOLDERING FLUX

Hobart N. Durham, Jr., Pena Blanca, N. Mex., assignor, by direct and mesne assignments, to Connecticut Valley Chemical, Inc., Essex, Conn., a corporation of Connecticut

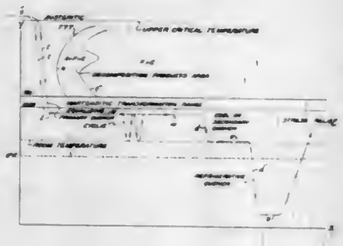
No Drawing. Filed Jan. 19, 1962, Ser. No. 167,418
3 Claims. (Cl. 148—23)

1. A composition for use as a soldering flux comprising a water solution consisting essentially of at least 1 mole per liter of hydrazine acetate, and an excess of acetic acid, the combined and free acetic acid being present in a molar quantity of from 2¼ to 4½ times that of the hydrazine.

3,223,562
HEAT TREATING PROCESS FOR MARTENSITIC TRANSFORMATION ALLOYS

William I. Bassett III, Gardena, Calif., assignor, by mesne assignments, to Union Carbide Corporation, a corporation of New York

Filed May 1, 1961, Ser. No. 106,865
16 Claims. (Cl. 148—125)



1. An improved process of effecting an austenitic to martensitic type transformation in an alloy subject to such transformation, including the following steps: heating the article to and maintaining it at an austenitizing temperature until a homogeneous solid solution of austenite is obtained; then rapidly quenching the article in a primary quench through its critical martensitic transformation range in which about 90% of martensite is formed; arresting said quench at an equalization temperature approximately equal to the temperature at which said 90% of martinsite is formed; subjecting said alloy to said equalization temperature while external and internal temperatures of the article are equalized; and then further quenching the article from said temperature level down to room temperature.

3,223,563
SOLID POLYSULFIDE RUBBER DECABORANE HIGH ENERGY FUEL AND METHOD OF PREPARATION

Robert William Atteberry, Kenmore, Edward Harry Keefer, Buffalo, and William Leonard Wachtel, Niagara Falls, N.Y., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia

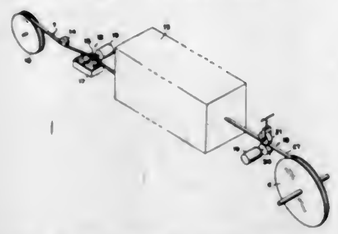
No Drawing. Filed July 18, 1958, Ser. No. 749,560
8 Claims. (Cl. 149—19)

1. A solid high energy fuel composition consisting essentially of the product of reaction of a polysulfide rubber and a borane selected from the group consisting of decaborane and lower alkyl decaboranes at a temperature of about 50 to 135° C. and in amounts of about 0.005 to 10.0 parts by weight of borane per part of rubber.

3,223,564
MANUFACTURE OF POLYTETRAFLUOROETHYLENE INSULATED WIRES

Francis X. Buschman, Huntington, N.Y., and Charles J. Beran, Riverside, Conn., assignors to Tensolite Insulated Wire Co., Inc., a corporation of Delaware

Filed Jan. 22, 1962, Ser. No. 168,586
3 Claims. (Cl. 156—53)

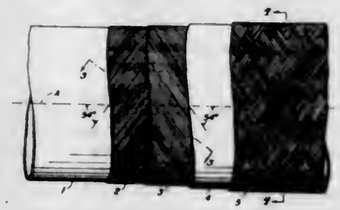


1. A process for covering an elongated body with a polytetrafluoroethylene resinous covering which includes coating one side of a tape of sintered polytetrafluoroethylene resin with an aqueous dispersion of finely divided, uncured polytetrafluoroethylene resin and of polyisobutylene as a volatile viscosity modifier, drying said coating, parallel wrapping said coated tape in a generally spirally overlapping relation over said elongated body with said coated side of said tape facing said body, heating said tape and apply pressure thereto while wrapping said tape over said elongated body to cause said polytetrafluoroethylene in said tape and coating to fuse together in said spiral relationship over said elongated body, and thereafter cooling said tape to set said tape in said spiral relationship about said elongated body.

3,223,565
METHOD OF MAKING HEAT RESISTANT FLEXIBLE HOSE

Harry E. Fritz, Philadelphia, Pa., Raymond A. Gallagher, Gibbsboro, N.J., Frederick M. Galloway and Richard M. Kerr, Langhorne, Pa., Frank B. Plumb, Haddonfield, N.J., and Godfrey J. Rittenhouse, Feasterville, and Robert H. Sinnamon, Huntingdon Valley, Pa., assignors to H. K. Porter Company Inc., Pittsburgh, Pa., and Thermoid Division, Quaker Works, Philadelphia, Pa., a corporation of Delaware

Original application May 19, 1960, Ser. No. 30,126, now Patent No. 3,117,597, dated Jan. 14, 1964. Divided and this application Aug. 5, 1963, Ser. No. 301,231
2 Claims. (Cl. 156—86)

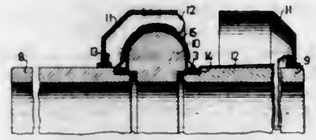


1. The method of making a heat resistant flexible hose which comprises extruding an uncured elastomer silicone tube, at least partially curing said tube, disposing the tube on a hollow tubular mandrel, impregnating fabric of tire cord fabric weave having glass fiber warp yarns and polyethylene terephthalate filler yarns with an uncured silicone elastomer, winding a strip of the impregnated fabric helically about the mandrel-mounted tube with the edges of the strip in abutting relation, winding thereabout a second layer of like fabric in a corresponding helix of opposite hand, enveloping the second impregnated fabric layer with a silicone elastomer, braiding a reinforcing layer of polyethylene terephthalate yarns thereabout, subjecting the components on the mandrel to radially inward pressure while directing a heating medium into the mandrel to thereby cure the elastomeric components of the hose and shrink the polyethylene terephthalate components thereof, then relieving said pressure and separating the mandrel from the hose.

3,223,566
METHOD OF MAKING PNEUMATIC TIRES FOR VEHICLES

Walter Niclas, Altwarmbuchen, and Richard Beckadolph, Hannover, Germany, assignors to Continental Gummi-Werke Aktiengesellschaft, Hannover, Germany

Filed Apr. 11, 1960, Ser. No. 21,284
Claims priority, application Germany, Apr. 13, 1959, C 18,785
2 Claims. (Cl. 156—123)

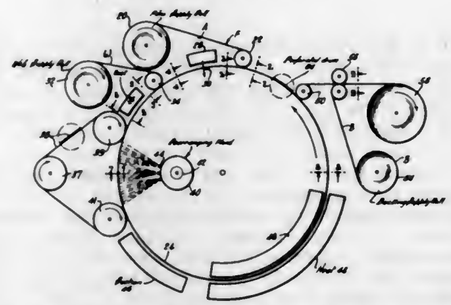


1. A method of making substantially identical pneumatic tire carcass sections for making pneumatic vehicle tires therefrom, which includes the steps of: applying fabric plies to an expandable drum having spaced grooves therein to form a cylindrical fabric body on the drum having end portions extending beyond said grooves at both ends of the drum, placing bead cores upon the fabric body in alignment with said grooves, expanding the drum to cause the bead cores to be moved into said grooves, folding the end portions of said fabric body axially inwardly over the respective adjacent bead core, and cutting said fabric body midway between the two bead cores to form two cylindrical sections.

3,223,567
METHODS OF MAKING A NON-ADHERENT DRESSING

Robert J. Trewella, Milltown, N.J., assignor to Johnson & Johnson, a corporation of New Jersey

Original application Feb. 19, 1959, Ser. No. 794,416, now Patent No. 3,077,882, dated Feb. 19, 1963. Divided and this application Apr. 10, 1962, Ser. No. 192,614
10 Claims. (Cl. 156—253)

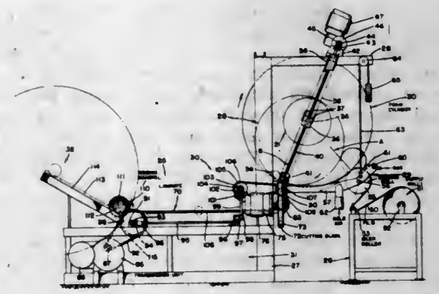


1. A method of making an absorbent dressing which comprises: positioning a fibrous starting material the individual fibers of which are capable of movement under the influence of an applied fluid force in contact with a perforated non-adherent film; rearranging the fibers of said fibrous material into a pattern of openings and fiber bundles with the openings in registry with the perforations in said non-adherent film and said fiber bundles extending between and about said openings; and positioning an absorbent pad on the rearranged fibrous material, whereby the absorbent pad is spaced from the non-adherent film by the thickness of the rearranged fibrous material.

3,223,568
PRODUCTION OF FOAMED PLASTIC MATERIALS

Sterling W. Alderfer, 464 N. Portage Path, Akron, Ohio

Filed Jan. 30, 1961, Ser. No. 85,748
2 Claims. (Cl. 156—255)

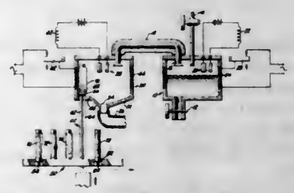


1. A process for producing a laminate of urethane foam having a vinyl resin film backing comprising the steps of, freely rotatably mounting a cylinder of urethane foam, continuously heating one side of a sheet of vinyl resin film, simultaneously cooling the other side of said film, continuously applying the heated side of said film to the surface of said cylinder under pressure while continuing to cool the other side of said film, cutting inwardly of the surface of said cylinder linearly and transversely the entire width thereof to sever a laminate of said foam and said film, and positively displacing said severed laminate to rotate said cylinder and provide a constant output of the laminate.

3,223,569
APPLICATION OF FILMS

William R. McKeirnan, Crosby, and Leonard D. Schwender, Sylvan Heights, Emporium, Pa., assignors to Sylvania Electric Products Inc., a corporation of Delaware

Filed Apr. 27, 1961, Ser. No. 106,080
5 Claims. (Cl. 156—294)



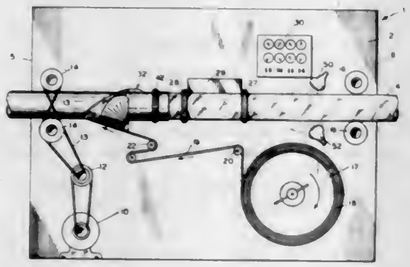
1. The process of applying a film containing potentially electron emissive material and an ethyl cellulose binder therefor to a cathode base metal comprising subjecting said film and base, while in contact and at cool temperatures, to the effects of a hot dry atmosphere containing a mixture of isomeric amyl acetates whereby initially some of the acetates condense upon the cool metal and film to effect a complete adherence of the film to the metal and, subsequently, to dry the metal and film, and then removing the resulting cathode from said atmosphere.

3,223,570
PROCESS OF APPLYING OVERLAY DESIGN TO PRE-CURED RESIN
Louis L. Korb and Joseph Metzner, Sheboygan, Wis., assignors to Plastics Engineering Company, Sheboygan, Wis., a corporation of Wisconsin
Filed May 7, 1962, Ser. No. 192,981
6 Claims. (Cl. 156—298)



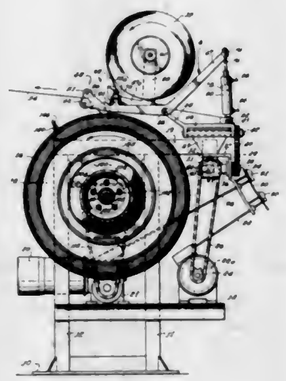
1. A process for bonding an overlay sheet having a conductive metallic design printed thereon to a substantially fully cured resin material comprising the steps of imprinting a design in a conductive metal ink on a sheet of uncured thermosettable resin, drying said imprinted design, and thereafter bonding said imprinted sheet to a substantially fully cured resin molded article by applying pressure in the range of 500–3000 p.s.i. at a temperature in the range of 280°–380° F. for at least 15 seconds to fully cure the resin in said sheet while said sheet is in intimate contact and pressed against said molded article said substantially fully cured resin material and said uncured thermosettable resin each being selected from the class consisting of phenolic-aldehyde resins, melamine-aldehyde resins, urea-aldehyde resins, diglycidyl ether resins of bisphenol, resorcinol and dihydroxydiphenyl, diallyl and dimethallyl phthalate resins, and ethylene glycol and glyceryl maleate copolymers of styrene and of vinyl acetate.

3,223,571
APPARATUS FOR APPLYING A PLASTIC FILM WRAPPING TO A PIPE LINE
Clemens F. Straughan, 3919 E. 38th St., Tulsa, Okla.
Filed Apr. 30, 1962, Ser. No. 191,093
6 Claims. (Cl. 156—392)



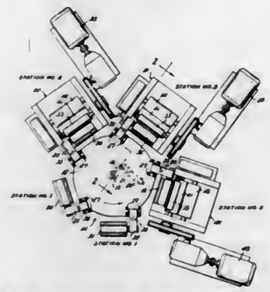
1. Apparatus for applying single thickness heat shrinkable synthetic resin film to the outside surface of a rigid pipe comprising:
a support frame;
means associated with said frame to self-propel and guide said frame relative to said pipe in a forward direction;
a wing shaped film holder having a longitudinal opening to perimt axial movement of said pipe and supported to said frame, the forward rounded edge of said folder extending outwardly and rearwardly from said opening, the upper surface smoothly tapered downwardly and forwardly to said forward edge, the lower surface smoothly rounded upwardly and forwardly to said forward edge;
a substantially tubular portion coaxially extending about said pipe rearwardly from said folder and having longitudinal overlapping split leaves along its upper surface, said leaves spring-flexible to permit expansion and contraction of said leaves;
a supply roll of said film rotatably supported about an axis on said frame normal to the axis of said pipe;
means to tension and guide said film from said roll to said forward edge of said folder along said lower surface, thence rearwardly along said upper surface and said opening to form a fold rearwardly thereof about said pipe such that one longitudinal edge of said film is between said pipe and one leaf of said tubular member, while the other longitudinal edge overlaps said one edge between said leaves to form a continuous longitudinal seam rearwardly thereof; and
means to join said seam and heat said film whereby after cooling said film will shrink tight upon said pipe.

3,223,572
MACHINE FOR BUILDING A TREAD ON PNEUMATIC TIRES
Robert L. Holloway, Snyder, and Joseph A. Grom, Tonawanda, N.Y., assignors to American Machine & Foundry Company, a corporation of New Jersey
Filed Dec. 24, 1959, Ser. No. 861,961
27 Claims. (Cl. 156—394)



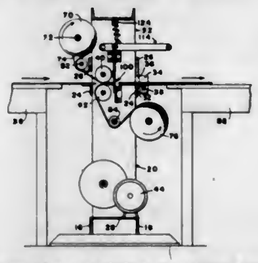
1. A machine for winding on a pneumatic tire a composite ribbon of uncured rubber adhesively mounted on a backing, said ribbon being narrower than the tread portion of the tire, said machine including a frame, a hollow shaft rotatively mounted on said frame, means for rotating said shaft, a tire support on said shaft, a source of constant pressure connected to said hollow shaft for inflating and maintaining said tire inflated at constant pressure during the ribbon-winding cycle of said machine, a source of supply of composite ribbon, a ribbon feeding and applying mechanism, said feeding and applying mechanism having means for feeding said ribbon from said source of supply to said tire being wound, said feeding and applying mechanism having first means for adhering said composite ribbon to said tire, second means for peeling off said backing from the uncured rubber portion of said ribbon substantially concurrently with the adherence of said ribbon to said tire, and third means for oscillating said ribbon applying mechanism through a predetermined angular path of movement for applying a plurality of windings of said ribbon on a selected area of said tire from side to side and over the crown of said tire.

3,223,573
APPARATUS FOR APPLYING UNVULCANIZED RUBBER MATERIAL TO A TIRE BODY
Herbert H. Deist, Akron, Ohio, assignor to The Firestone Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed Sept. 18, 1962, Ser. No. 224,459
7 Claims. (Cl. 156—396)



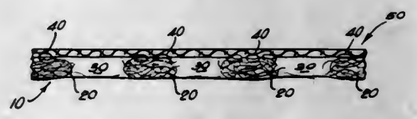
1. Apparatus for applying unvulcanized rubber material directly to a tire body comprising
a rotatable turret assembly with a plurality of stations spaced around the periphery thereof including a loading station and an unloading station,
a tire body-supporting mandrel rotatably mounted on said turret assembly at each of said stations,
a plurality of material application stations intermediate said loading and unloading stations,
a calender at each of said application stations operable to produce a continuous calendered sheet of unvulcanized material,
trimming means associated with each calender for segregating strip material of desired width from the continuous calendered sheet produced by such calender,
and roll means for applying the segregated strip material from each calender to the tire body.

3,223,574
MACHINE FOR APPLYING PRESSURE-SENSITIVE TAPE TO METAL SHEETS
Fred D. Childs, Springville, Utah, assignor to Brigham Young University, Provo, Utah
Filed May 6, 1963, Ser. No. 278,380
9 Claims. (Cl. 156—552)



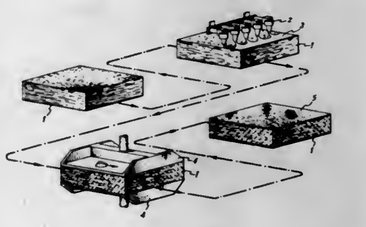
1. A machine for applying pressure-sensitive tape to metal sheets comprising a frame having a lower section and an upper section, means pivoting the upper section to the lower section to swing on a pivot axis, an upper feed roll journaled in said upper frame section, a lower feed roll journaled in said lower frame section, means to drive at least one of said feed rolls, said rolls being journaled on axes laterally displaced from and parallel to said pivot axis and parallel to each other whereby the rolls are yieldingly biased toward each other by the weight of said upper section to form a bight for feeding metal sheets therebetween, means for supporting on said frame a roll of pressure-sensitive tape having a backing coated with pressure-sensitive adhesive on one surface only and feeding tape therefrom to one of said feed rolls with the adhesive-free surface of the tape against said feed roll and the adhesive-coated surface against a metal sheet in the bight of said feed rolls, and means to guide a metal sheet into the bight of said rolls whereby said pressure-sensitive tape is smoothly applied to a surface of said metal sheet as it is fed between said feed rolls.

3,223,575
SHEET MATERIALS
Hector W. Griswold, Princeton, N.J., assignor, by mesne assignments, to Johnson & Johnson, New Brunswick, N.J., a corporation of New Jersey
Filed Jan. 4, 1961, Ser. No. 80,599
3 Claims. (Cl. 161—83)



2. A textile structure comprising a flexible base textile sheet material and a flexible nonwoven inherently heat-sealable sheet material having openings therein of an average effective diameter of from about 0.018" to about 0.125" and a thermoplastic adhesive substance adhered substantially between the openings in said flexible inherently heat-sealable nonwoven sheet material and bonding, in random fashion, said base textile sheet material to said inherently heat-sealable sheet material to provide a laminate free of undesirable stiffness as compared with said original base textile sheet.

3,223,576
FIBROUS PANELS IMPREGNATED WITH FOAM PLASTIC
Robert E. Evans and William L. Prior, Newark, and Aubrey V. Baber, Delaware, Ohio, assignors, by mesne assignments, to National Gypsum Company, Buffalo, N.Y., a corporation of Delaware
Filed Aug. 11, 1961, Ser. No. 130,846
4 Claims. (Cl. 161—84)

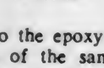


1. A structural building panel consisting essentially of a rigid fibrous board composed of a network of filamentary material bonded together in sheet form by means of an inorganic cementitious binder and characterized by a multiplicity of passageways and interstices extending inwardly from the exposed surfaces of the board throughout the entire thickness thereof, the passageways and interstices in said fibrous board being filled and closed by an essentially rigid foamed plastic material characterized by

having been foamed in situ, said foamed plastic material additionally defining an integral foam plastic layer covering and sealing at least one face of said fibrous board, said layer having a cast foam surface.

3,223,577
SILYLATED POLYEPOXIDES
Edwin P. Plueddemann, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan
No Drawing. Filed May 19, 1961, Ser. No. 111,147
11 Claims. (Cl. 161—193)

2. A silylated polyepoxide in which each silyl moiety is selected from the group consisting of radicals of the formula



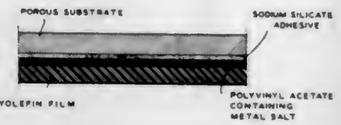
which are attached to the epoxy moiety through a SiC linkage and radicals of the same formula which are attached to the epoxy moiety through an alkylene bridge derived from at least one silicon bonded alkenyl group, in which R is selected from the group consisting of monovalent aliphatic hydrocarbon radicals and monovalent monocarboxyacyl radicals, both of less than 4 carbon atoms and *n* is an integer from 0 to 2 inclusive, said epoxy moiety being composed of carbon, hydrogen and oxygen atoms, the latter being in the form of 1,2-epoxy groups, in said silylated polyepoxide there being per molecule at least 3 epoxy groups, at least 1 of said silyl groups and at least 1



group.

9. A laminate of superior strength comprising multilayers of glass fibers which fibers have been coated with a thin coating of a composition of claim 2 in amount of at least .1 percent by weight of the weight of the glass fibers and over said coating directly bonded to said coating, a cured polyester resin.

3,223,578
METHOD OF OVERCOATING POLYOLEFIN SURFACES TO BE BONDED TO POROUS SUBSTRATES
Glenn E. Lineburg, Tuscola, Ill., assignor to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia
Filed July 7, 1961, Ser. No. 122,414
13 Claims. (Cl. 161—254)



1. A laminate comprising a film of a homopolymer of lower 1-olefins bonded to a porous substarate with sodium silicate adhesive, said film having been previously treated to make it more adherent and then overcoated with polyvinyl acetate in which is incorporated about 0.1 to 3% by weight of a metal salt selected from the group consisting of aluminum chloride, zinc chloride, aluminum bromide and zinc bromide.

3,223,579
PIGMENT COATED PAPER INCLUDING POLYVINYL ALCOHOL BINDER AS HARDBOARD OVERLAY
Rodger M. Dorland, Maxwell M. Yan, and Stanley H. Baldwin, Sault Ste. Marie, Ontario, Canada
Filed Oct. 1, 1962, Ser. No. 227,315
Claims priority, application Canada, Sept. 22, 1958, 759,049
11 Claims. (Cl. 162—123)

1. The method of forming hardboard comprising the steps of applying to a wet lap of coarse fibrous wood pulp which has been partially dewatered to a solids content of 25 to 40%, a sheet of paper which has been coated on one surface with a coating comprising a pigment and a polyvinyl alcohol binder in the amount of about 5 to 10% by weight of the pigment, said sheet of paper having been applied to said partially dewatered wet lap with its surface which has not been coated with the pigment and the polyvinyl alcohol facing the partially dewatered wet lap, and consolidating the wet lap and the coated paper under simultaneous heat and pressure to form hardboard having said coated paper bonded to its surface.

11. A hardboard having an overlay on at least one surface thereof, said overlay consisting in a sheet of paper having an opaque coating comprising a pigment and a polyvinyl alcohol binder on its outer surface and said sheet of paper being integrally united with said surface of said hardboard by an adhesive comprising the natural binding constituents of the furnish for said hardboard.

3,223,580
DIMENSIONALLY STABLE MINERAL WOOL FIBERBOARD
Lewis W. Eckert, Lancaster Township, Lancaster County, and Frank Celmer, East Hempfield Township, Lancaster County, Pa., assignors to Armstrong Cork Company, Lancaster, Pa., a corporation of Pennsylvania
Filed Apr. 10, 1963, Ser. No. 272,016
4 Claims. (Cl. 162—145)

1. The method of making a strong, dimensionally stable fiberboard which comprises forming a slurry in water of kraft fibers, depositing a coating of synthetic rubber selected from the group consisting of butadiene homopolymer, butadiene-styrene copolymers, butadiene-acrylonitrile copolymers, polychloroprenes, and isoprene rubbers on the kraft fibers, forming a slurry in water of uncoated mineral wool fibers and said rubber-coated kraft fibers, said mineral wool fibers being used in an amount of 60–95% by weight of total solids and said kraft fibers being used in an amount of 2–20% by weight of total solids, mixing the slurry of uncoated mineral wool fibers and rubber-coated kraft fibers, and forming a board having a thickness of at least ¼ inch from the mixed slurry by removing the water therefrom.

3,223,581
PROCESS FOR THE PRODUCTION OF A SHEET OF SYNTHETIC POLYMER FIBROUS MATERIAL
Erwin Sommer, Obernburg, Klaus Gerlach, Obernau, and Helmut Werner, Elsenfeld, Germany, assignors to Vereinigte Glanzstoff-Fabriken A.G., Wuppertal-Elberfeld, Germany
Filed Nov. 27, 1962, Ser. No. 240,342
Claims priority, application Germany, Nov. 30, 1961, V 21,700
5 Claims. (Cl. 162—157)

1. In a process for the production of a sheet of synthetic polymer fibrous material wherein an aqueous dispersion of synthetic polymer fibers is transferred to a supporting surface, water is withdrawn to form a fibrous

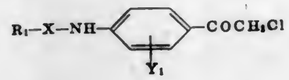
web on said supporting surface, and the web is then removed from said supporting surface and formed into a bonded sheet of fibrous material, the improvement which comprises: forming a fibrous web on said supporting surface with individual fibers which consist predominantly of melt-spun, non-fibrillated synthetic polymer strands, each of said strands having a solid elongated cross-section in which the ratio of maximum length



to maximum width is at least 3:1 and each of said strands also having smooth and flat surfaces, whereby said individual fibers are in contact with each other along said flat surfaces; withdrawing water from said fibrous web to a residual moisture content of 30 to 85% by weight with reference to the wet web; and removing said fibrous web with said moisture content from the supporting surface.

3,223,582
ANTIMICROBIC COMPOSITIONS AND USE THEREOF
Jakob Bindler, Riehen, near Basel, and Ernst Model, Basel, Switzerland, assignors to Geigy Chemical Corporation, Ardsley, N.Y., a corporation of Delaware
No Drawing. Filed June 6, 1962, Ser. No. 200,355
Claims priority, application Switzerland, June 7, 1961, 6,605/61
17 Claims. (Cl. 167—30)

1. A process for protecting a site from and disinfecting it against bacteria comprising applying to said site a disinfecting composition containing as an active ingredient a compound of the formula



wherein

R_1 is a member selected from the group consisting of alkyl containing at most three carbons, monochloroalkyl containing at most three carbons and polychloroalkyl containing at most three carbons, phenyl and monochlorophenyl,

Y_1 is a member selected from the group consisting of hydrogen and chlorine and

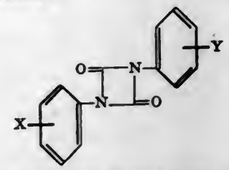
X is a member selected from the group consisting of —CO— and —SO_2— with the limitation that if X is —SO_2—, R_1 must be a member selected from the group consisting of said alkyl, said monochloroalkyl and said polychloroalkyl.

3,223,583
CYCLOHEXIMIDE SEMICARBAZONE EMULSIONS
Gerald A. Boyack, Kalamazoo, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware
No Drawing. Filed Oct. 24, 1960, Ser. No. 64,266
14 Claims. (Cl. 167—33)

5. A fungicidal composition comprising an oil-in-water emulsion, the dispersed phase of which contains in addition to oil globules, finely dispersed cycloheximide semicarbazone having a particle size less than 60 microns.

3,223,584
URETIDINEDIONE FUNGICIDES
Raymond W. Luckenbaugh and Kenneth C. Smeltz, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Mar. 18, 1964, Ser. No. 352,997
9 Claims. (Cl. 167—33)

1. Method for the control of foliar fungi comprising applying to plant foliage a fungicidal amount of a compound of the formula

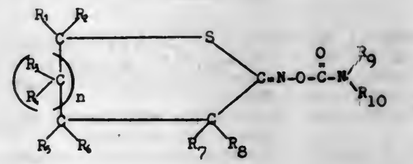


wherein X and Y are separately selected from the group consisting of hydrogen, fluorine, chlorine and methyl.

3,223,585
PESTICIDAL MONOSULFUR HETEROCYCLIC COMPOSITIONS
Roger Williams Addor, Pennington, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed Feb. 23, 1965, Ser. No. 434,680
5 Claims. (Cl. 167—33)

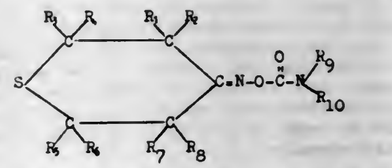
1. An insecticidal and miticidal composition consisting essentially of an inert carrier and an effective amount of an oximino heterocyclic nonosulfur compound of the formula and selected from the group consisting of:

(A)



and

(B)



wherein each R_1 to R_8 is a substituent selected from the group consisting of hydrogen and lower alkyl; R_9 represents a substituent selected from the group consisting of hydrogen and lower alkyl; R_{10} stands for lower alkyl and *n* is an integer from 0 to 1.

3,223,586
ANTI-DEPRESSANT COMPOSITIONS AND METHODS
Frank J. Villani, West Caldwell, N.J., assignor to Schering Corporation, Bloomfield, N.J., a corporation of New Jersey
No Drawing. Filed June 28, 1963, Ser. No. 291,295
7 Claims. (Cl. 167—65)

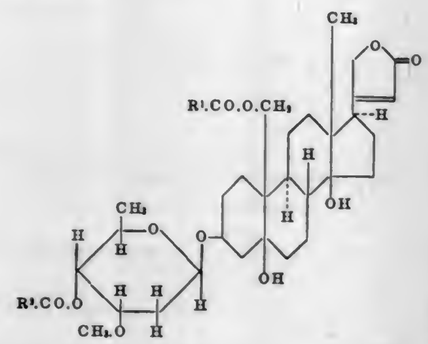
4. The method of treating psychopharmacological depression which comprises administering to mammals a therapeutically effective does of a compound selected from the group consisting of 5-(4-dimethylaminocyclohexyl)-dibenzo-[a,d]-cyclohepta-[1,4]-diene and the non-toxic acid addition salts thereof.

3,223,587
CARDIAC ACTIVE ACYL CYMAROLS

Samuel Wilkinson, London, England, assignor to Burroughs, Wellcome & Co. (U.S.A.), Inc., Tuckahoe, N.Y.

No Drawing. Filed Sept. 24, 1963, Ser. No. 311,207
Claims priority, application Great Britain Oct. 4, 1962, 37,529/62; Aug. 16, 1963, 32,511/63, 32,512/63
18 Claims. (Cl. 167—65)

1. A process for treating cardiac insufficiency which comprises administering in non-toxic dosage, a compound of the formula:



(I)

wherein R^1 is selected from the class consisting of a hydrogen atom and alkyl having from 1 to 3 carbon atoms and R^2 is selected from the class consisting of alkyl having from 1 to 3 carbon atoms.

3,223,588
OPTICAL BRIGHTENING DENTAL COMPOUND

Frank D. Pickel, Merrick, N.Y., assignor to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware

No Drawing. Filed Apr. 28, 1964, Ser. No. 363,297
4 Claims. (Cl. 167—93)

1. A paste-like dentifrice composition consisting essentially of a paste dentifrice base, a film-forming system comprising a fatty amine having an average carbon content of from 10 to about 18 carbon atoms and being present in an amount from 0.05% to 2% by weight of the dentifrice composition, and an optical brightener selected from the group consisting of 4-methyl-7-hydroxycoumarin and 4-methyl-7-diethylamine-coumarin, said optical brightener being present in an amount from about 0.01% by weight to about 0.1% by weight of the dentifrice composition.

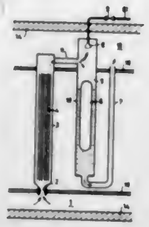
3,223,589
REGULATING METHOD AND APPARATUS FOR NUCLEAR REACTORS

Albert Ziegler, Erlangen, Germany, assignor to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany

Filed Jan. 26, 1961, Ser. No. 85,106
Claims priority, application Germany, Jan. 30, 1960, S 66,861
20 Claims. (Cl. 176—22)

1. The method of regulating a nuclear reactor having a core with fuel channels and movable neutron-absorptive floatable control means, which comprises causing coolant liquid to boil to steam in a selected fuel channel at a given operating condition below full power rating of the reactor, said channels being separately cooled from the remainder of the core, condensing the steam to coolant liquid in a chamber separate from said fuel channel, and variably displacing the control means into various degrees of immersed condition within said chamber relative to the core in dependence upon occurrence of boiling in said channel.

7. Apparatus for regulating a nuclear reactor having a core with fuel channels and movable absorptive control means, comprising a selected fuel channel having liquid coolant supply means adapted to cause boiling of coolant

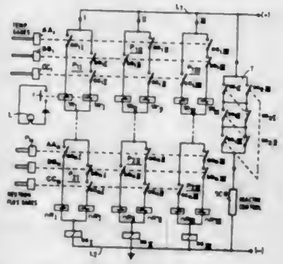


in said channel at a given operating condition below full power rating of the reactor, a vapor chamber communicating with said fuel channel to be subjected to varying vapor pressure due to boiling of coolant in said channel, one of said movable control means forming a float in said vapor chamber so as to be immersed in said core in accordance with pressure-responsive changes of the condensate level in said chamber.

3,223,590
ELECTRIC PROTECTION SYSTEM FOR NUCLEAR REACTORS

Herbert Troeger, Baiersdorf, Germany, assignor to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany

Filed May 28, 1963, Ser. No. 283,895
Claims priority, application Germany, June 1, 1962, S 79,726
2 Claims. (Cl. 176—24)

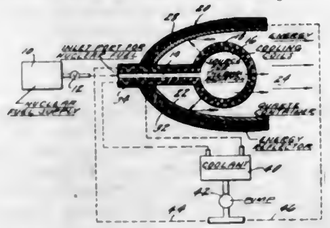


1. A reactor safety circuit comprising three probe means for separately responding to the same reactor condition to be sensed, each of said three probe means having three contacts, three line means in mutually parallel relation each including one contact from each trio of probe means, each line means forming two parallel branches and having a relay coil in series with said parallel branches, the three contacts in each line means being distributed among the branches of the respective line means in a manner differing from the distribution in the branches of the other line means, and relay switches responding to the relay coils and adapted to be series connected between a reactor control and a source so as to cut off the reactor if two out of three of said relay coils are unenergized, said branches each including low inductance check relay means.

3,223,591
GASEOUS REACTOR CONTAINER

George H. McLafferty, Manchester, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed Aug. 27, 1962, Ser. No. 219,378
2 Claims. (Cl. 176—52)



1. An energy transformation device comprising a container having an inlet, means for conducting a fluid nuclear fuel within said container through said inlet, moderator means spaced externally and adjacent said container for inducing a nuclear reaction in said nuclear fuel and producing high temperature and thermal radiation, said container having walls of a material which is substantially transparent to thermal radiation, a focussing reflector means externally of said container and spaced therefrom for receiving said thermal radiation and reflecting the energy created thereby to a point remote from said container, and means for cooling said container and said reflecting means.

3,223,592
PRODUCTION OF 5'-NUCLEOTIDES

Kinichiro Sakaguchi, Tokyo, and Akira Kuninaka, Choshishi, Chibaken, Japan, assignors to Yamasa Shoyu Kabushiki Kaisha (doing business as Yamasa Shoyu Co., Ltd.), Choshi, Japan, a Japanese corporation

No Drawing. Filed Aug. 22, 1958, Ser. No. 756,541
Claims priority, application Japan, Sept. 27, 1957, 32/23,698; Apr. 28, 1958, 33/11,586
2 Claims. (Cl. 195—28)

1. A process for preparing 5'-nucleotides which comprises intimately contacting ribonucleic acid in an aqueous medium with a 5'-phosphodiesterase-containing enzyme produced by *Penicillium citrinum*, and recovering the 5'-nucleotides from the resulting medium.

3,223,593
METHOD OF PREPARING IMMOBILIZED SERUM CHOLINESTERASE AND PRODUCT THEREOF

Frank L. Aldrich, Falls Church, Vera R. Usdin, Arlington, and Bruno M. Vasta, Vienna, Va., assignors to Melpar, Inc., Falls Church, Va., a corporation of Delaware

No Drawing. Filed Aug. 14, 1963, Ser. No. 301,953
5 Claims. (Cl. 195—63)

5. An enzymatically active powder comprising a lyophilized gel containing horse serum cholinesterase, the gelling material being starch, agar or carrageenin.

3,223,594
METHOD OF PRODUCING PANCREATIN

Serge Hoek, Van Houtenlaan, Weesp, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

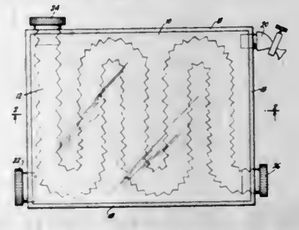
No Drawing. Filed Oct. 23, 1961, Ser. No. 147,091
Claims priority, application Netherlands, July 21, 1961, 257,268
4 Claims. (Cl. 195—68)

1. The process of obtaining pancreatin from the pancreata of slaughter beasts which method comprises finely dividing a pancreas, adding at least an equal volume of water to the finely divided pancreas, stirring said mixture of water and finely divided pancreas with an agitator in a manner such that substantially no fibres adhere to the agitator, adding acetone to said mixture in an amount of at least 20% of the total amount of fluids present while continunig to stir said mixture, continuing further to stir said mixture by lifting substantially all fibres from said mixture, removing the solids from the resultant fibre free mixture and drying said solids thereby obtaining pancreatin.

3,223,595
CULTURFLEX APPARATUS AND FLEXIBLE TUBULAR CASING THEREIN

John H. Brewer, 425 Oak Lane, Towson 4, Md.

Filed Oct. 1, 1962, Ser. No. 227,360
2 Claims. (Cl. 195—139)



1. Apparatus for the prolonged and continuous culturing of microorganisms and for the production of toxins comprising an outer sealed envelope made of liquid impervious, flexible plastic material and providing a liquid chamber therein and an inner envelope made of an elongated tubular semipermeable membrane disposed in the chamber inside said outer envelope and having a liquid chamber therein, said membrane being of serpentine configuration, of a length substantially longer than the length of said outer envelope so as to expose a maximum surface area of the membrane to the liquid chamber of said outer envelope, and being permeable to waste products, and nutrients and impermeable to the microorganisms one of said chambers serving as a liquid culture media chamber and the other chamber serving as a chamber for microorganisms in a suitable liquid so that nutrients from the culture media can dialyze through the membrane to the liquid containing the microorganisms, waste products from the microorganisms can dialyze through the membrane to the culture media and the toxins from the microorganisms will be held by the membrane in the liquid containing the microorganisms, both of said chambers being substantially full of said liquids found within said respective chambers, and both of said envelopes containing separate remotely located inlets and outlets so that fresh culture media can be flowed into the culture media chamber and culture media containing waste products can be withdrawn therefrom and fresh liquid can be introduced into the microorganism containing chamber and liquids having toxins can be withdrawn therefrom, the inlet and outlet openings of the inner envelope being arranged to communicate with opposite ends of the tubular membrane and to extend through the outer envelope in sealed relation thereto.

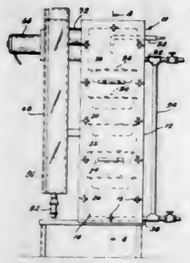
3,223,596
STILL WITH HEATED-AIR CIRCULATION FOR EVAPORATING AND RECOVERING OF LIQUID SOLVENT

Richard H. Fuller, St. Louis, Mo., assignor to Hammond Industries, Inc., Waco, Tex., a corporation of Texas

Filed Aug. 30, 1962, Ser. No. 220,460
2 Claims. (Cl. 202—201)

1. Means for recovering dry cleaning solvent from a mixture with filter muck that accumulates during a dry cleaning process comprising a housing having top and bottom portions and an access door, a plurality of verti-

cally spaced, filter muck retention trays removable through said access door positioned in staggered vertical relation in said housing with opposite ends of adjacent trays being spaced from the housing forming a tortuous air flow path that extends back and forth across the housing between adjacent trays from the top to the bottom portion of the housing, means for feeding an excess quantity of filter muck to the uppermost tray whereby the amount in excess of what the uppermost tray will hold overflows into the next lower tray and so on to the bottom tray, means for circulating air along the air flow path between adjacent trays, said air circulating means including a blower having compression and suction connections communicating respectively with the top and bottom portions of the housing for moving a mass of air along said tortuous air flow path whereby the air simultaneously communicates with the top of one of said trays and the bottom of another of said trays, heater means positioned in the compression connection of the blower to warm the air mass entering the housing to evaporate solvent contained in the trays, cooler means positioned in the suction connection to condense the solvents carried by the solvent laden warm air leaving the housing, means for accumulating the condensed solvents, and a movable closure member for closing the space above the bottom-most tray and the housing and means operably connected to said closure member for moving said member to a position opening said space.



3,223,597

METHOD AND MEANS FOR OXYGEN ANALYSIS OF GASES

Paul A. Hersch, Fullerton, Calif.
(1640 Arundel St., St. Paul, Minn.)

Filed Mar. 1, 1961, Ser. No. 92,481
Claims priority, application Great Britain, Mar. 7, 1960, 8,017/60
16 Claims. (Cl. 204—1)



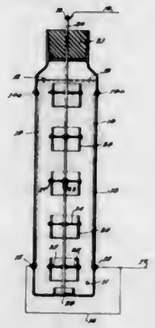
14. In the method for detecting and measuring small amounts of oxygen in a gas by contacting a stream of said gas with a cathode separated from a consumable anode by a porous, electrolyte-containing diaphragm and measuring the current across said anode and cathode, said anode being incapable of evolving hydrogen at said cathode when circuited with said cathode, the improvement which comprises employing as said cathode a porous, nonreticulated, electrically conducting sheet in which the pores are partially filled with aqueous electrolyte, said cathode being selected from the group consisting of silver, gold, platinum, copper, iridium and carbon.

3,223,598

METHOD FOR DETERMINING THE ADHESION OF METAL PLATING

Germaine F. Jacky, Robert Sorenson, and Donald W. Shannon, Richland, Wash., and William E. Tragert, Scotia, N.Y., assignors to the United States of America as represented by the United States Atomic Energy Commission

Filed Nov. 23, 1962, Ser. No. 239,850
14 Claims. (Cl. 204—1)



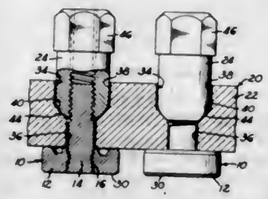
1. A method for determining the adhesion of metal plating permeable to atomic hydrogen to a substrate substantially impermeable to atomic hydrogen comprising electrolytically generating only hydrogen on the surface of the plating in an electrolytic cell having the metal plated piece as its cathode by passing a predetermined constant total amount of direct current electricity between the anode and the cathode of said cell, and quantitatively measuring the amount of blistering of the plating.

3,223,599

HOLDING PLATE FOR ELECTROPLATING A DETONATOR PLUG

Daniel Dwight Taylor, Altadena, Calif., assignor to Beckman Instruments, Inc., a corporation of California

Filed Apr. 15, 1963, Ser. No. 273,198
4 Claims. (Cl. 204—15)



3. In a method for the electroplating of a conductive detonator plug comprising a plug disc and a stem of smaller diameter extending outwardly from one face thereof along the axis of said plug disc, the step comprising:

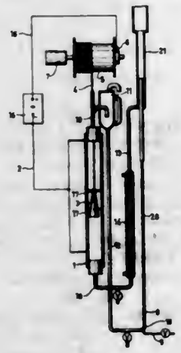
providing as one terminal of an electroplating bath a metal holding plate having a transverse hole of two succeeding diameters, holding the detonator plug to the holding plate with a face of the plug disc engaging the holding plate about the transverse hole and with the stem extending through the smaller diameter length of the hole into the larger diameter length of said hole, engaging an elongated nut to the threads of the plug stem, drawing the plug disc against the holding plate and bottoming the nut against the wall at the juncture of the two diameter lengths of the transverse hole, placing the plate in an electroplating bath and electroplating the exposed portions of said plug.

3,223,600

METHOD OF ELECTROLYTIC METAL PLATING

Bengt Ivar Andersson, Torshalla, Sweden, assignor to Nyby Bruks Aktiebolag, Nybybruk, Sweden, a company of Sweden

Filed Jan. 18, 1962, Ser. No. 167,087
Claims priority, application Sweden, Jan. 20, 1961, 605/61
1 Claim. (Cl. 204—26)



A method of electroplating a surface of a metal object which comprises arranging the metal object, coupled as a cathode, and a metal body, coupled as an anode, generally vertically and separated from each other sufficiently to define between them a space for electrolyte; passing unidirectional direct current from anode to cathode through intervening electrolyte while upwardly moving the anode with respect to the cathode and as the anode passes each successive zone of said cathode surface progressively diminishing the distance between anode and cathode thereby initiating electrodeposition under relatively low-current density conditions and then progressively increasing current density to maximum, whereby each successive spot on the surface to be plated receives deposition under conditions of minimum current density followed by progressively increasing current density, and simultaneously establishing and maintaining an upwardly flowing current of electrolyte through said space thereby sweeping upwardly out of said space any gas bubbles which may form on said surface.

3,223,601

PROCESS OF FORMING DIELECTRIC MATERIALS FOR CONDENSERS

Henri J. C. George, Paris, France, assignor to Quartz & Silice S.A., Paris, France, a corporation of France

No Drawing. Filed June 14, 1960, Ser. No. 35,902
Claims priority, application France, June 26, 1959, 798,603, Patent 1,237,912
2 Claims. (Cl. 204—56)

1. The process of forming dielectric materials for condensers utilizing titanium dioxide as a raw material which comprises placing a quantity of the titanium dioxide in a chamber in the presence of a reducing material, simultaneously evacuating said chamber and heating said titanium dioxide to a temperature in excess of that necessary to evaporate said titanium dioxide until decomposition of said titanium dioxide takes place, collecting evaporated materal in the form of a layer of sub-oxides, removing said layer from said chamber, and electrolytically oxidizing said layer.

3,223,602

IRON-SILICON ALLOYS AND TREATMENT THEREOF

Hans Werner Wawrousek, Pittsfield, Mass., assignor to General Electric Company, a corporation of New York

No Drawing. Filed May 17, 1961, Ser. No. 110,663
6 Claims. (Cl. 204—140.5)

1. The method of making ductile highly grain oriented silicon steel containing from above about 4% to about 6% silicon which comprises alternately rolling and heat treating silicon steel sheet material containing from above about 4% to about 6% silicon for reducing the same to the desired thickness and developing the grain crystals therein in a high degree of directional orientation, and electrolytically polishing the thus-processed silicon steel material.

3,223,603

MACHINING BY COMBINED SPARK DISCHARGE AND ELECTROLYTIC ACTION

Kiyoshi Inoue, 182 Yoga Tamagawa Setagaya-ku, Tokyo, Japan

Filed Apr. 4, 1960, Ser. No. 19,685
1 Claim. (Cl. 204—143)

The process of electrical machining comprising the steps of mounting a machining electrode and a conductive workpiece in spaced relationship with a gap therebetween, providing a dielectric fluid in said gap, passing a series of unidirectional electrical impulses from a first source across said gap, simultaneously modulating said impulses by operatively connecting to said first source and the gap a second source of electrical impulses comprising unidirectional impulses of like polarity thereto with a plurality of intervening impulses of opposite polarity to provide a combined output of relatively high voltage impulses spaced by a plurality of like polarity impulses of relatively low voltage for rough machining operation, removing the dielectric fluid from the gap, providing an electrolyte fluid in said gap, disabling said second source and maintaining said first source operable for finish machining operation, and maintaining said electrode and workpiece in situ during rough and finish machining operations.

3,223,604

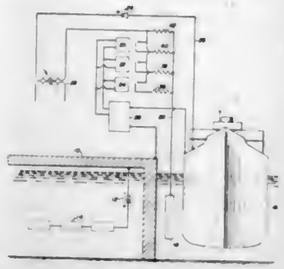
METHOD AND APPARATUS FOR ELIMINATING SPARK HAZARDS

Glenn A. Marsh, Crystal Lake, and Alfred E. Wolter, Arlington Heights, Ill., assignors, by mesne assignments, to Union Oil Company of California, Los Angeles, Calif., a corporation of California

Filed May 25, 1962, Ser. No. 197,746
4 Claims. (Cl. 204—147)

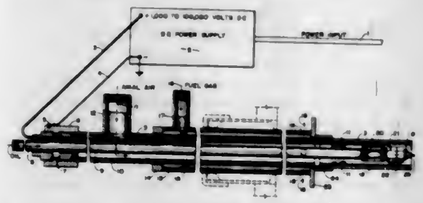
1. An apparatus for reducing the potential between a ship and an adjacent, partially submerged, metallic structure comprising circuit means, including an anode submerged between said ship and said structure, for applying direct current to the side of said ship adjacent to said structure, means responsive to the potential difference be-

tween said ship and structure for controlling the magnitude of said applied current, said responsive means comprising parallel resistors, at least one of which being adapted to be cut out of said circuit to decrease said applied current when the ship is negative in potential with respect to



said structure and being adapted to be cut into said circuit to increase the said applied current when the ship is positive in potential with respect to said structure, whereby said potential difference is maintained within the limits of 0.05 volt.

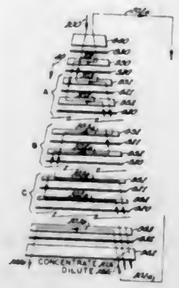
3,223,605
MANUFACTURE OF CARBON BLACK
Theodore A. Ruble and Burton F. Latham, Jr., Houston, Tex., assignors to Continental Carbon Company, Houston, Tex., a corporation of Delaware
Filed Aug. 27, 1962, Ser. No. 219,589
8 Claims. (Cl. 204—173)



2. In a process for the manufacture of carbon black wherein a normally liquid hydrocarbon feedstock is injected into a reaction zone in which pyrolysis conditions are continuously maintained; the improvement which comprises injecting said feedstock in an atomized form into the reaction zone from a spray nozzle which alone is maintained at a potential of from about 1,000 to 100,000 volts.

3,223,606
ELECTRODIALYSIS DEVICE AND METHOD OF OPERATION
William Kwo-Wei Chen, Stamford, Conn., assignor to American Machine & Foundry Company, a corporation of New Jersey
Continuation of applications Ser. No. 815,188, May 22, 1959, and Ser. No. 195,352, Mar. 30, 1962, which is a division of application Ser. No. 815,188, May 22, 1959. This application Dec. 6, 1962, Ser. No. 243,217
5 Claims. (Cl. 204—180)

4. A method of electrodialysis comprising:
(a) imposing a direct current potential between first and second electrode means;
(b) arranging a plurality of permselective membranes between said electrode means;
(c) forming concentrating and diluting chambers, having inlet and outlet means, between said membranes;
(d) connecting said diluting chambers in serial flow in a direction from said first electrode means to said second electrode means;
(e) deionizing an electrolyte stream by successive passage through said diluting chambers; and



(f) increasing the linear velocity of said electrolyte stream as said stream is deionized by decreasing the separation between at least some of said membranes in a direction from said first electrode means toward said second electrode means.

3,223,607
METHOD OF MANUFACTURING ELECTRICAL HEATING ELEMENTS WITH IMPROVED ALUMINUM OXIDE COATING
Tivadar Millner, Karoly Fukker, Kornel Martin, and Magda Dvorszky, all of Budapest, Hungary, assignors to Egyesult Izzolampa es Villamossagi Reszvenytarsasag, Budapest, Hungary, a Hungarian enterprise
No Drawing. Filed Feb. 23, 1960, Ser. No. 10,109
Claims priority, application Hungary Feb. 24,1959, EE–635
2 Claims. (Cl. 204—181)

1. In the production of electrical heating elements by steps comprising coating said elements with aluminum oxide, wherein said aluminum oxide is subjected to heat treatment, the improvement which comprises initially heating the aluminum oxide which is predominantly in the gamma state to a temperature in the range of 700° to 1700° C. in a non-oxygenous atmosphere formed by a gas selected from the group consisting of hydrogen, nitrogen, and mixtures thereof, so as to convert said gamma-aluminum oxide essentially entirely to a stabilized alpha-aluminum oxide having maximum insulating properties while providing minimum leakage loss, and applying said alpha-aluminum oxide as an insulative coating to a metallic heating element.

3,223,608
ELECTROCHEMICAL GAS ANALYZER
Paul A. Hersch, Fullerton, Calif.
(1640 Arundel St., St. Paul, Minn.)
Filed May 5, 1961, Ser. No. 108,198
2 Claims. (Cl. 204—195)

1. In an apparatus capable of detecting and measuring small amounts of oxygen in a gas, the combination comprising
a conductive cathode wire, the surface of which is selected from the group consisting of carbon, copper, gold, mercury, silver, and the elements of Group VIII of the Periodic Table having an atomic number of at least 44,
a conductive anode wire, the surface of which is selected from the group consisting of carbon, gold, silver, stainless steel, tantalum, mercury, and the elements of Group VIII of the Periodic Table having an atomic number of at least 44,

a non-conductive polymeric porous electrolyte-retentive substantially cylindrical diaphragm,
an outer source of electrical current connected to said anode wire and said cathode wire having an electromotive force sufficient to cathodically reduce oxygen but insufficient to decompose water whereby hydrogen is evolved, and



a current measuring device connected in series with said source of electrical current and said electrodes, wherein said anode wire and said cathode wire are helically wrapped around and on the cylindrical diaphragm and the turns of said anode wire are separate from and alternating with the turns of said cathode wire, and the said cathode wire is adapted to be partially exposed to the gas.

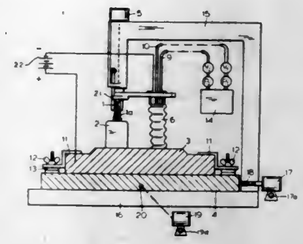
3,223,609
HYGROMETER
John W. Reeds, Jr., La Habra, Calif., assignor to Beckman Instruments, Inc., a corporation of California
Filed Oct. 30, 1961, Ser. No. 148,442
9 Claims. (Cl. 204—195)



1. An electrolytic hygrometer cell having at least one electrode composed of rhodium.

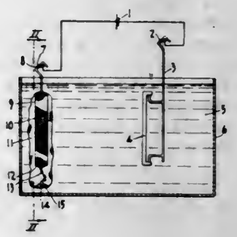
3,223,610
APPARATUS FOR MACHINING HORIZONTAL WORK SURFACES
Kiyoshi Inoue, 182 3-chome Tamagawayoga, Setagaya-ku, Tokyo, Japan
Filed Sept. 21, 1962, Ser. No. 225,300
14 Claims. (Cl. 204—224)

8. An apparatus for successively rough and finish machining a substantially planar surface on a conductive workpiece comprising support means for holding said workpiece, a machining tool of the mechanical cutting type for removing material from said surface with a predetermined cutting width, an electrode tool for removing material from said surface across an electrolyte filled gap, a source of electrical potential connected across said electrode tool and said workpiece, means operatively connected to said electrode tool for defining an area of erosion on said workpiece surface of a width at least equal to the aforesaid cutting width, feed means for providing successive traversing movements in a common linear path between said tools and said workpiece, and means for



providing a shifting movement between said workpiece and said tools at the end of each successive traversing movement a distance at most equal to the aforesaid cutting width of said machining tool.

3,223,611
ANODE BASKET WITH DANGLER FOR ELECTROLYTIC PLATING
Kergan Wells, Toronto, Ontario, and William K. Wells, Richmond Hill, Ontario, Canada, assignors to W. W. Wells Limited, Scarborough, Ontario, Canada
Filed Apr. 6, 1962, Ser. No. 185,750
Claims priority, application Canada, Jan. 31, 1962, 841,189
9 Claims. (Cl. 204—297)

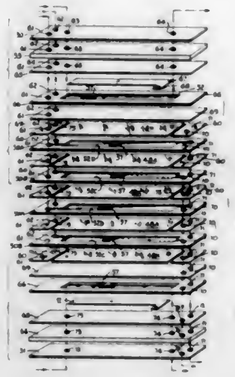


1. In apparatus for electrolytic nickel plating wherein an anode comprises a basket at least partially comprising titanium for receiving pieces of nickel therein and for effecting electrical contact to said nickel, and a bag surrounding said basket for collecting particles falling from the basket, the improvement of a flexible titanium dangler within said bag effecting electrical connection between said anode and said particles collected in said bag.

3,223,612
FLUID TREATMENT
William Kwo-wei Chen and Milton Sheldon Mintz, Stamford, and Richard Nellsen Smith, East Norwalk, Conn., assignors to American Machine and Foundry Company, Inc., a corporation of New Jersey
Filed Oct. 2, 1959, Ser. No. 844,046
12 Claims. (Cl. 204—301)

1. A dialysis device comprising, in combination, layers of gaskets, each gasket having at least two fluid flow apertures passing through it, a cut out portion in each gasket forming a cell frame, membranes free from fluid flow

apertures interspersed between said gaskets, and manifold spacers associated with said gaskets with said manifold spacers containing fluid flow apertures aligned with the fluid flow apertures in said gaskets to form manifold pas-



sages, hydraulic connections between at least two manifold passages and each cut out portion, said membranes extending beyond the cut out portions of adjacent gaskets to form cells.

3,223,613
WAX COATING COMPOSITION

John Podlipnik, Palos Heights, Hallard C. Moyer, Homewood, and Arnold L. Guttman, Chicago, Ill., assignors, by mesne assignments, to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 8, 1961, Ser. No. 130,190
4 Claims. (Cl. 208—21)

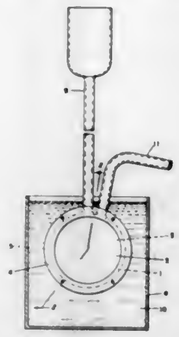
1. A wax composition consisting essentially of about 59 to 81.5 weight percent of a paraffin wax component having a melting point in the range of about 130–145° F., a viscosity at 210° F. (SUS) of about 42 maximum, said paraffin wax component including about 15 to 35 weight percent of a paraffin wax fraction having a melting point in the range of about 145 to 160° F., a viscosity at 210° F. (SUS) of about 43 to 50 and a penetration at 77° F. of about 10 to 20; about 10 to 25 weight percent of a high viscosity isoparaffin-naphthenic wax having a melting point in the range of about 105 to 120° F., a viscosity at 210° F. (SUS) of about 42 to 50, an average molecular weight of about 450 minimum, a refractive index at 80° C. of about 1.4400 minimum and a penetration at 77° F. of about 40 to 100; about 7.5 to 15 weight percent of a low viscosity isoparaffin wax having a melting point up to about 115° F. containing greater than 10 weight percent isoparaffins at least about 90% by weight of which are within the C_{25}–C_{34} range and having a refractive index at 80° C. of about 1.4235 minimum, and a viscosity at 210° F. (SUS) of about 35 to 40; and about .75 to 1.25 weight percent of a microcrystalline wax having a melting point in the range of about 180 to 200° F., a penetration at 77° F. of about 2–8 and a viscosity at 210° F. (SUS) of 100 maximum.

3,223,614
DECOLORIZATION OF WAXES BY DIALYSIS

Joseph F. Paulson, Claymont, Del., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

Filed May 14, 1962, Ser. No. 194,315
2 Claims. (Cl. 208—24)

1. Process of decolorizing petroleum wax which comprises dialyzing a solution of the wax in a hydrocarbon solvent through a polypropylene film, said film having a specific gravity of .87–.92 and having a maximum ex-



tractable fraction of .1 to 50 weight percent when extracted with n-hexane at reflux temperature.

3,223,615
OXIDATIVE PURIFICATION OF n-PARAFFINS

Philip S. Magee, San Rafael, Calif., assignor to Chevron Research Company, a corporation of Delaware

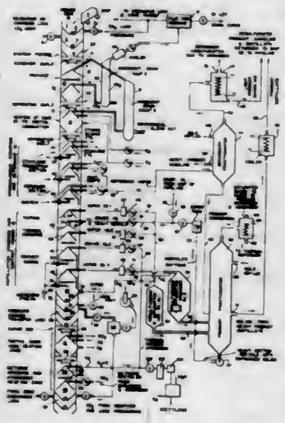
No Drawing. Filed July 20, 1962, Ser. No. 211,420
2 Claims. (Cl. 208—27)

1. A method of purifying paraffins of at least 8 carbon atoms derived from crude petroleum stock to be free-radically oxidized in the presence of boric oxide, which comprises heating said paraffins at a temperature in the range of 400° F. to 460° F. in the presence of oxygen for a time sufficient to result in from 1 to 4% conversion of said paraffins, steam stripping the resulting product to carry over the paraffins and isolating the purified paraffins.

3,223,616
MULTIVAPOR PETROLEUM REFINING AND APPARATUS THEREOF

Morgan G. Huntington, Washington, D.C., assignor to Huntington Oil Refining Company, a corporation of Nevada

Filed Oct. 1, 1962, Ser. No. 227,217
15 Claims. (Cl. 208—89)



1. A method of upgrading crude oil comprising; contacting crude oil with a free falling cascade of solid carbonaceous materials at a temperature sufficient to distill

crude oil and in sufficient amount to provide adequate sensible heat for distillation of the crude oil and thermal cracking thereof, introducing said crude oil into contact with the free falling cascade of solid carbonaceous materials during the free fall thereof, providing a hydrogen environment for said contacting, selectively withdrawing hydrocarbon vapors from a plurality of different horizons adjacent the point of contacting the crude oil with the cascade so that different and mixed vapors may be withdrawn from the different horizons, and catalytically treating at least some of the so withdrawn hydrogen entrained vapors to saturate with respect to hydrogen and to remove organically combined oxygen, nitrogen and sulphur as respective hydrides.

3,223,617
CATALYTIC HYDROCARBON CONVERSION

John Maziuk, West Deptford Township, Gloucester County, N.J., assignor to Socony Mobil Oil Company, Inc., a corporation of New York

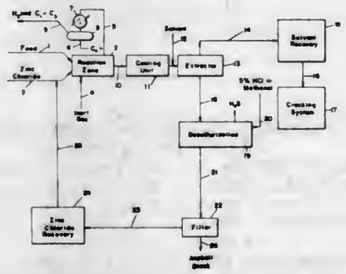
No Drawing. Filed Jan. 30, 1962, Ser. No. 169,934
10 Claims. (Cl. 208—138)

4. A process for reforming a hydrocarbon mixture which comprises contacting said mixture under reforming conditions in the presence of hydrogen with a catalyst consisting essentially of a mechanical mixture of particles of less than about 100 microns in diameter of: (1) particles consisting of a carrier comprising predominately alumina having deposited thereon an amount of a metal of the platinum series such that the ultimate catalyst has a content of said metal between about 0.05 and about 5 percent by weight, and (2) particles consisting of a porous inert carrier having deposited thereon an amount of an oxide of a rare earth metal selected from the group consisting of ceria and samaria such that the ultimate catalyst has a rare earth metal oxide content of between about 0.1 and about 40 percent by weight, the relative weight fractions of the two components being between about 0.1 and 0.9.

3,223,618
PRODUCTION OF CRACKING FEED STOCKS

Robert J. Convery, Wilmington, Del., Junior West Loveland, Swarthmore, Pa., and Wayland E. Noland, Minneapolis, Minn., assignors to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

Filed Sept. 28, 1962, Ser. No. 226,998
1 Claim. (Cl. 208—247)



A process for producing a high quality catalytic cracking feed stock comprising the steps of contacting an asphalt base crude petroleum fraction contaminated with coke formers, sulfur, nitrogen and metals with zinc chloride at a temperature in the range of from 220 to 500° C., said petroleum fraction having an initial boiling point ranging from 200–700° F., containing 10–50 vol. percent asphaltic components and having an A.P.I. gravity ranging from 0.0 to 30 and a viscosity of from 10 to 2200 seconds (SUS) at 210° F., and separating a gas-vapor fraction, an asphalt black fraction insoluble in benzene, and a liquid fraction, said liquid fraction being substantially decreased in coke formers, sulfur, nitrogen and metals and suitable for catalytic cracking.

3,223,619
RADIOACTIVE FALLOUT TREATMENT KIT

Calvin Calmon, Birmingham, Martin E. Gilwood, Princeton, and John P. Termini, Levittown, N.J., assignors to Pfaudler Permutit Inc., Birmingham, N.J., a corporation of New York

Filed Feb. 21, 1962, Ser. No. 174,847
8 Claims. (Cl. 210—24)



1. A treatment device for rendering potable, water contaminated with radioactive fission products and toxic chemical agents comprising a pliable watertight container and a treatment composition disposed within said container, said treatment composition comprising an anion exchange resin selected from the class consisting of strongly basic anion exchange resins, and weakly basic anion exchange resins; a cation exchange resin selected from the class consisting of sulfonic acid resins and carboxylic acid resins; a filter aid selected from the class consisting of comminuted cellulose and diatomaceous earth; and a clarifying agent selected from the class consisting of ferric phosphate, apatite, tricalcium phosphate, ferric hydroxide, ferric oxide and activated alumina.

3,223,620
CORROSION INHIBITION

Alfred W. Oberhofer, Alsip, Ill., assignor to Nalco Chemical Company, Chicago, Ill., a corporation of Delaware

No Drawing. Filed July 9, 1963, Ser. No. 293,835
8 Claims. (Cl. 210—30)

1. A process for maintaining a non-corrosive environment in industrial process water systems which comprises the steps of treating said systems with a chromate based corrosion inhibitor to provide a chromate dosage, expressed as CrO_3, greater than 1 part per million, but not in excess of 1,000 parts per million, maintaining the pH within the range of from 5.0–8.0, continuing the operation of said systems until the dissolved solids build up excessively, removing at least a portion of the water contained in said system to provide a blowdown fraction, adjusting the pH of this blowdown fraction to not greater than 6.5, contacting this blowdown fraction with a strong base anion exchange resin which has as its exchangeable anion the anion of a strong mineral acid whereby the chromates contained in the blowdown fraction are selectively retained by the resin thereby forming a chromate free fraction, discarding the chromate free fraction, continuing to contact the anion exchange resin with blowdown fraction until the resin is substantially exhausted with chromate, regenerating the chromate exhausted resin at least once with the same mineral acid salt solution which has a pH of at least 8.5, collecting the chromate removed from the strong base anion resin, and then returning the collected chromate to the system for reuse.

3,223,621
OIL WELL DRILLING FLUID SPOILAGE INHIBITORS
Bernard Marlowe, Broomall, Pa., Richard L. Raymond, Wilmington, Del., and John D. Douros, Jr., West Chester, Pa., assignors to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey
No Drawing. Filed Jan. 15, 1962, Ser. No. 166,360
5 Claims. (Cl. 252—8.5)

1. A well drilling fluid composition comprising a major amount of a drilling fluid comprised of an aqueous suspension of inorganic solids having admixed therein an organic gel-forming material which is susceptible to microbiological attack selected from the group consisting of starches, gums, and carboxyalkyl celluloses and a minor amount of a microbiological inhibiting additive of the structure



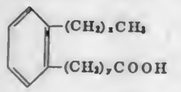
wherein R and R′ are substituents selected from the group consisting of alkyl, hydroxyalkyl, alkoxy, formyl, hydroxy, carboxy, the alkyl esters of carboxy and the salts of carboxy, said inhibiting additive being present in sufficient amount to inhibit microbiological attack of the drilling fluid composition, said alkyl, alkoxy, carboxy, and hydroxyalkyl substituents having from 1 to 6 carbon atoms.

3,223,622
DRILLING MUD SYSTEM
James L. Lummus, Platho P. Scott, Jr., and Arthur Park, Tulsa, Okla., assignors to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware
No Drawing. Filed June 25, 1962, Ser. No. 205,130
4 Claims. (Cl. 252—8.5)

1. In a method for preventing the occurrence of differentially stuck drill pipe wherein a well is being drilled into a formation using a water base liquid drilling fluid and wherein there is a pronounced tendency for said pipe to become stuck to the wall of said well, the improvement which comprises incorporating into said fluid from about 0.2 to about 25 pounds per barrel of said fluid of a surface-active agent prepared from about four parts of a half ammonium half isopropylamine salt of the sulfosuccinic acid ester of the oleic acid amide of isopropanol amine and about one part of the isopropylamine salt of dodecyl benzene sulfonic acid.

3,223,623
TEXTILE LUBRICANTS
Karl A. Kubitz, Pensacola, Fla., assignor, by mesne assignments, to Tenneco Chemicals, Inc., a corporation of Delaware
No Drawing. Filed May 18, 1962, Ser. No. 195,961
6 Claims. (Cl. 252—8.6)

1. Textile fiber having thereon as a lubricant an effective amount of a material selected from the group consisting of aromatized tall oil fatty acids and partial soaps of such acids, said aromatized tall oil fatty acids being essentially composed of a mixture of tall oil fatty acids and aromatized linoleic acid, said mixture containing by weight at least 5% of aromatized linoleic acid, at least 50% of oleic acid, not more than 5% polyunsaturated tall oil fatty acids, and the remainder of said mixture being saturated tall oil fatty acids, and said aromatized linoleic acid being a mixture of acids having the formula:



wherein the sum of x and y is equal to 10 and y is at least 5 and less than 8.

3,223,624
LUBRICATING GREASE
Arnold J. Morway, Clark, and Hugh E. Ramsden, Scotch Plains, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
Filed Dec. 7, 1962, Ser. No. 243,058
6 Claims. (Cl. 252—18)

3. A high temperature lubricating grease composition suitable for ball bearing lubrication comprising a major amount of mineral lubricating oil, and about 20 to 49 wt. percent of a sodium mixed salt thickener system of acetic acid, C_{10} to C_{16} aliphatic saturated dicarboxylic acid and C_{12} to C_{24} fatty acid in a mole hydrogen equivalent ratio of about 3 to 6 mole equivalent proportions of said acetic acid per mole equivalent of said dicarboxylic acid, and about 1 to 4 mole equivalents of said higher monocarboxylic acid per molar equivalent of said dicarboxylic acid.

6. A grease composition according to claim 3 also containing 1 to 6 wt. percent trisodium orthophosphate.

3,223,625
COLLOIDAL MOLYBDENUM COMPLEXES AND THEIR PREPARATION
Elmer B. Cyphers, Cranford, Richard F. Neblett, Plainfield, and Charles S. Lynch, Lebanon, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Filed Nov. 12, 1963, Ser. No. 323,151
The portion of the term of the patent subsequent to July 14, 1981, has been disclaimed
14 Claims. (Cl. 252—18)

1. A process for preparing a stable colloidal complex containing molybdenum which comprises the steps of preparing an acidic aqueous solution of a compound of molybdenum selected from the class consisting of molybdic acid and the halogen, ammonium, and alkali metal salts thereof, said solution having been acidified with a mineral acid to an acidity within the range of from 4 N to 8 N, extracting said acidic solution with a hydrocarbon ether of from 3 to 8 carbon atoms, dispersing the resultant extract in an oil-soluble dispersant having sufficient basicity to neutralize the free acidity of said extract, and then removing ether from the dispersion.

13. A lubricating composition comprising a major proportion of a lubricating oil and from about 0.01 to about 2 weight percent of molybdenum in the form of a colloidal complex prepared by the process of claim 1.

3,223,626
CORROSION INHIBITING RESIN-BONDED SOLID FILM LUBRICANT
George P. Murphy, Jr., and Francis S. Meade, Rock Island, Ill., assignors to the United States of America as represented by the Secretary of the Army
No Drawing. Filed Apr. 13, 1962, Ser. No. 187,442
3 Claims. (Cl. 252—25)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. A graphite-free film lubricant composition consisting essentially of a solution of

	Parts by weight, about—
A mixture of an epoxy resin being a high molecular weight polyglycidyl ether of 2,2-bis(4-hydroxyphenyl) - propane, and of a methylol-phenolic resin being an allyl ether of methylol - substituted phenol	[1] 7 to 17.5
Antimony trioxide	4.3 to 30
Molybdenum disulfide	11.6 to 70

[1] Solids.

in a solvent comprising p-dioxane, said solution having a solids content of about 20 to 50 percent.

3,223,627
LUBRICATING COMPOSITIONS CONTAINING METAL SALT OF BENZOIC ACID
Hans G. Vesterdal, Elizabeth, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Filed Mar. 22, 1963, Ser. No. 267,352
3 Claims. (Cl. 252—25)

1. A soap-free lubricating grease composition ranging from an alkalinity of about 0.50% calculated as NaOH to an acidity of about 5.6% calculated as oleic acid, comprising:
(a) as the base oil, a lubricating oil selected from the group consisting of silicone and silane oils, and
(b) about 34 to 68 wt. percent of a grease thickener, said grease thickener consisting essentially of a mixture of alkaline earth metal salt of benzoic acid and alkaline earth metal salt of C_1 to C_6 fatty acid, and wherein said alkaline earth metal salt of said C_1 to C_6 fatty acid represents about 6 to 28 wt. percent of said mixture.

3,223,628
LUBRICANT COMPOSITIONS
Donald E. Loeffler, Walnut Creek, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Apr. 11, 1963, Ser. No. 272,226
7 Claims. (Cl. 252—28)

1. A grease composition consisting essentially of a major amount of a lubricating base oil gelled to grease consistency with a colloidally dispersed clay, said clay bearing on the surfaces thereof from 0.8 to 5.0 parts by weight, basis clay, of a resin formed by the co-condensation reaction of the amines melamine and benzoguanamine with an aliphatic aldehyde having up to about 6 carbon atoms, said resin having been formed in the presence of a mineral acid in excess of that required to acidify the surfaces of the clay, the molar ratio of melamine-to-benzoguanamine being from 0.8:1 to 5.0:1, and the equivalent ratio of aldehyde to aliphatic amines being between 0.9:1 and 1.5:1.

3,223,629
LUBRICANT COMPOSITIONS
Donald E. Loeffler, Walnut Creek, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed May 13, 1963, Ser. No. 280,124
7 Claims. (Cl. 252—28)

1. A process for the preparation of polymer-coated clay-thickened grease, said clay being coated with an aminoplast resin, comprising the steps
(a) forming a clay hydrosol;
(b) admixing with the hydrosol
(1) a mineral acid in excess of that required to completely acidify the surfaces of the clay, and
(2) a plurality of coreactive aminoplast-forming compounds consisting of amines and aldehydes the equivalent ratio of aldehyde to amine being from 0.9:1 to 1.5:1;
(c) heating the admixture of hydrosol and aminoplast-forming coreactants to at least the boiling point of water and maintaining the admixture at such temperature for a period of at least ten minutes, thus forming an aminoplast-resin coating on the clay;
(d) removing at least 50% of the water and substantially all excess acid from the reaction mixture by filtering, water-washing and refiltering the washed filter residue the weight ratio of resin to clay, dry basis, having from 0.8:1 to 5.0:1;
(e) admixing lubricating oil with the substantially acid-free filtered residue;
(f) heating the admixture of lubricating oil and filter residue to a temperature of at least 250° F. to effect substantial dehydration thereof; and
(g) milling the dehydrated admixture to form a grease.

3,223,630
INCREASING THE BASE NUMBER OF CALCIUM PETROLEUM SULFONATE
James T. Gragson, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Oct. 9, 1961, Ser. No. 143,783
3 Claims. (Cl. 252—33)

1. A process for producing a lubricant additive which comprises passing carbon dioxide through a mixture consisting essentially of a calcium petroleum sulfonate made from a highly paraffinic, deasphalted and solvent refined petroleum fraction having a viscosity of 180 to 230 SUS at 210° F. and having a viscosity index of at least about 85, a compound selected from the group consisting of calcium oxide and calcium hydroxide in an amount based on equivalent calcium oxide in the range of 2 g. calcium oxide per 100 g. sulfonate to 80 g. calcium oxide per 100 g. of mixture, water in the range of 50 to 1,000 percent of the theoretical amount necessary to convert all of the calcium compound expressed as calcium oxide to calcium hydroxide, methanol in the range of 10 g. per 100 g. of sulfonate to 150 g. per 100 g. of mixture, and n-octanol in the range of 2 to 50 weight percent of the total alcohol present, the maximum amount of calcium compound and methanol being further limited according to the equation

$$Ca(OH)_2 = \frac{350}{CH_3OH - 37} + 8$$

wherein the amounts are parts by weight per 100 parts of mixture.

3,223,631
LUBRICATING COMPOSITION
Arnold J. Morway, Clark, and Alfred J. Rutkowski, Colonia, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Filed Dec. 7, 1962, Ser. No. 242,893
6 Claims. (Cl. 252—33.6)

1. A lubricating grease comprising a major amount of mineral lubricating oil, 10 to 45 wt. percent of sodium mixed salts of acetic acid and C_7 to C_{30} fatty, and 0.1 to 10 wt. percent of an aliphatic dinitrile of the general formula:

$$N{\equiv}C{-}(CH_2)_n{-}C{\equiv}N$$

wherein n is an integer of 8 to 20, said salts being prepared by neutralizing said acids in a weight ratio of about 0.1 to 10 parts of acetic acid per part of said dinitrile, and about 0.1 to 20 parts of said fatty acid per part of said dinitrile.

4. A lubricating grease according to claim 1, which contains unreacted sodium hydroxide in a amount sufficient to form sodium salt of a carboxylic acid derivative of said dinitrile upon hydrolysis of said dinitrile.

3,223,632
LUBRICATING COMPOSITIONS CONTAINING METAL SALT OF A BICYCLO CARBOXYLIC ACID

Hans G. Vesterdal, Elizabeth, and Rudolph Kassinger, Westfield, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Mar. 22, 1963, Ser. No. 267,357
1 Claim. (Cl. 252—33.6)

A soap-free lubricating grease comprising a silicone lubricating fluid, as the base oil, and an amount sufficient to form a grease structure and within the range of from 20 to 65 wt. percent of a mixture of calcium salts of chlorendic acid and benzoic acid, the amount of calcium salt of said chlorendic acid being about 4 to 35 wt. percent of the total weight of said grease.

3,223,633
LUBRICANT

Arnold J. Morway, Clark, and Hugh E. Ramsden, Scotch Plains, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed July 1, 1963, Ser. No. 292,079
9 Claims. (Cl. 252—40)

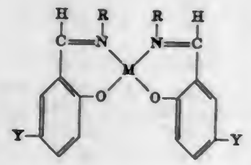
5. A water-insoluble, high-temperature lubricating grease composition suitable for ball-bearing lubrication comprising a major amount of mineral lubricating oil, and about 15 to 35 wt. percent of a metal mixed salt thickener system of: acetic acid, C_9 to C_{16} aliaphatic saturated dicarboxylic acid, and C_{12} to C_{24} fatty acid which is predominantly saturated, in a mole hydrogen equivalent ratio of about 1 to 2 mole equivalent proportions of said acetic acid per mole equivalent of said dicarboxylic acid, and about 1 to 2 mole equivalent proportions of said C_{12} to C_{24} fatty acid per molar equivalent of said dicarboxylic acid, and wherein said metal is selected from the group consisting of (A) lithium and (B) lithium-calcium mixtures in a weight ratio of about 1 to 4 parts of lithium per part of calcium.

3,223,634
LUBRICANT COMPOSITIONS

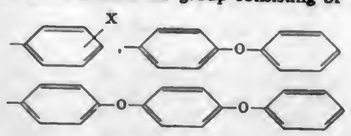
David X. Klein, Upper Montclair, N.J., assignor, by mesne assignments, to Tenneco Chemicals, Inc., a corporation of Delaware

No Drawing. Filed May 28, 1963, Ser. No. 283,693
15 Claims. (Cl. 252—42.7)

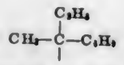
1. A lubricant composition comprising an aliphatic acid ester of a polyol containing from 2 to 4 hydroxyl groups, said acid being selected from the group consisting of (1) saturated, aliphatic monocarboxylic acids and (2) at least one saturated, aliphatic monocarboxylic acid and at least one saturated, aliphatic dicarboxylic acid, said ester being stabilized against oxidative degradation by a minor amount relative the amount of ester of a diaromatic secondary amine selected from the group consisting of diaryl amines, aryl alkaryl amines and dialkaryl amines, and a minor amount relative the amount of ester of metal chelate represented by the formula:



wherein Y represents a member selected from the group consisting of NO_2 and H; M represents a member selected from the group consisting of Ni, Co, and Zn; R represents a member selected from the group consisting of



and



and X represents a member selected from the group consisting of H, CH_3, and Cl.

3,223,635
COOLANT AND LUBRICANT COMPOSITION AND METHOD FOR COLD WORKING METAL

Philip M. Dwyer, Arcadia, Calif., and George A. Jedenoff, Provo, Utah, assignors, by direct and mesne assignments, to Far-Best Corporation, Los Angeles, Calif., a corporation of California

No Drawing. Filed Apr. 6, 1964, Ser. No. 357,826
6 Claims. (Cl. 252—51.5)

1. A lubricant suitable for use as a cooling lubricant for cold-working metals consisting essentially of from about 75 to about 97% of a fatty oil, and from about 3 to about 25% of a polymer chosen from the group consisting of polymers of unsaturated fatty acids having carbon atoms in the range of about 32 to about 54 carbon atoms, hydroxy lower alkyl esters of said polymer acids and hydroxy lower alkyl amido partial esters of said polymer acids.

2. In the lubricant of claim 1, in which the polymer is a hydroxy lower alkyl amido partial ester of said polymer acids.

3,223,636
LEAD CORROSION INHIBITOR

Stephen J. Metro, Scotch Plains, Alfred H. Matuszak, Westfield, and Robert E. Barnum, Fanwood, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed May 23, 1961, Ser. No. 111,928
8 Claims. (Cl. 252—56)

1. An ester lubricating oil composition for lubricating in the presence of lead-containing bearings, comprising a major amount of a synthetic carboxylic acid ester lubricating oil having a tendency to corrode lead, and a lead corrosion inhibiting amount, within the range of 0.1 to 2.0 wt. percent, of a product formed by reacting 1 to 8 molar proportions of C_1 to C_8 saturated aliphatic monohydric alcohol with a molar proportion of a C_8 to C_{12} saturated aliphatic dicarboxylic acid by heating under reflux conditions for about 0.2 to 6.0 hours, in the absence of an esterification catalyst, whereby said product contains less than 30 wt. percent diester of said alcohol and said dicarboxylic acid, and has a total acid number within the range of 150 to 600 mg. KOH/gm., and an average molecular weight within the range of 300 to 700 as determined by boiling point rise.

3,223,637
ESTERS AND COMPOSITIONS CONTAINING SAME

John J. Barch, Crestwood, N.Y., and William M. Kraft, Verona, N.J., assignors to Tenneco Chemicals, Inc.

No Drawing. Filed July 24, 1964, Ser. No. 385,045
6 Claims. (Cl. 252—56)

3. A lubricant composition comprising a base fluid, at least 50% of the base fluid consisting of the combination of from 67 to 73 parts by weight of trimethylolpropane tripelargonate and from 33 to 27 parts by weight of pentaerythritol dipelargonate di-2-methylpentanoate.

3,223,638
LUBRICANTS CONTAINING CYCLOHYDROCARBON POLYMERS AND METHOD OF PREPARING SAID POLYMERS

William S. Anderson, Oakland, and John Boor, Jr., El Cerrito, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 3, 1961, Ser. No. 93,012
4 Claims. (Cl. 252—59)

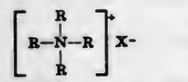
1. A mineral oil composition comprising a major amount of mineral oil and from 0.01% to 5% by weight of an oil-soluble non-crystalline cyclohydrocarbon copolymer having a molecular weight of from 500,000 to 1,000,000 obtained by reacting a mixture of biallyl and an alpha-monoolefin of from 2 to 18 carbon atoms in a liquid hydrocarbon medium at a temperature below 100° C. in the presence of a catalyst obtained by reacting hydrocarbon solutions of aluminum triethyl and titanium tetrachloride in a mole ratio ranging from about 0.1:1 to less than 0.4:1 at elevated temperatures for a time at least sufficient to completely oxidize the aluminum triethyl and thereafter reacting the resulting mixture with a hydrocarbon solution of aluminum diethyl chloride in an amount to give a catalyst-containing mixture having a total aluminum-to-titanium mole ratio of at least 1:1.

3,223,639
SOLION ELECTROLYTE

Robert Allen Powers, Lakewood, Ohio, and Alvin Bayard Thomas, deceased, late of Lakewood, Ohio, by Fred L. Alexander, administrator, Berea, Ohio, assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed July 10, 1962, Ser. No. 208,960
5 Claims. (Cl. 252—62.2)

1. An electrolyte for a solion which consists essentially of a non-reactive, non-aqueous polar solvent having a viscosity not exeecding that of water and having a dielectric constant of at least about 10; a reversible redox system which is a member of the group consisting of iodine-iodide, bromine-bromide, ferricyanide-ferrocyanide, ferric-ferrous, and ceric-cerous, dissolved in said solvent; and an ionizable quaternary ammonium salt, which is represented by the formula



wherein R is an alkyl radical containing from 1 to 10 carbon atoms and X^- is an anion selected from the group consisting of chloride, bromide, iodide, cyanide, acetate, nitrate, perchlorate, and picrate, dissolved in said solvent; said quaternary ammonium salt being present in the electrolyte in a concentration in the range from about 0.1 M to about 1 M.

3,223,640
THERMOELECTRIC COMPOSITIONS AND PROCESS FOR PRODUCING SAME

Lothar H. Brixner, Brandywine Hills, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Sept. 13, 1963, Ser. No. 308,636
9 Claims. (Cl. 252—62.3)

1. A process for the production of thermoelectric compositions of matter having the general formula

$$W_xMo_yTa_{1-(x+y)}Se_zTe_{2-z}$$

wherein tungsten, molybdenum and tantalum must be present and x and y each have values of from .470 to .495, said compositions containing at least one chalcogen selected from the group consisting of selenium and tellurium and wherein z has a value of from 0 to 2 inclusive, said process comprising firing under an inert atmosphere at a temperature within the range of about 500° to 1150° C. for from about 4 to 30 hours a powdered mixture of the constituent elements in atomic proportions according to said formula until the X-ray diffraction pattern of the product fails to disclose the characteristic lines of the starting components.

3,223,641
SQUARE LOOP MOLYBDENUM MODIFIED FERRITES

Howard Lessoff, Needham, and Eugene G. Fortin, Norwood, Mass., assignors to Radio Corporation of America, a corporation of Delaware

Filed Aug. 28, 1963, Ser. No. 305,236
8 Claims. (Cl. 252—62.5)

1. A magnetic core having a squareness ratio R_s of at least 0.7 and the molar composition:

$$Li_{0.5}Mn_wMe_xMo_zFe_yO_4$$

where:

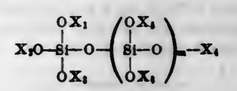
Me is at least one member of the group consisting of Cd, Zn, and Mg
w is between 0.00 and 0.15
x is between 0.00 and 0.05
y is between 2.35 and 2.60
z is between 0.005 and 0.02.

3,223,642
FLUORINATED REACTION PRODUCT USEFUL AS A FUNCTIONAL FLUID

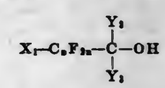
Robert K. Smith, Springfield Township, Delaware County, Pa., and John Andreas Kearney, Pennsauken, N.J., assignors to E. F. Houghton & Co., Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed June 14, 1960, Ser. No. 35,875
12 Claims. (Cl. 252—78)

1. The method of forming a heat-stable fluid which comprises reacting a hydrolyzable organic silicon compound of the formula:

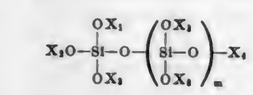


where m is an integer of from 0 to 1 and each of X_1, X_2, X_3, X_4, X_5 and X_6 is a saturated hydrocarbon radical containing from 1 to 8 carbon atoms with a fluorinated alcohol of the formula:

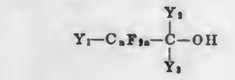


where n is an integer from 2 to 12 and Y_1, Y_2 and Y_3 are each selected separately from the group consisting of H and F, in the presence of a basic catalyst selected from the group consisting of an alkoxide of the metals sodium, aluminum and magnesium containing from 1 to 2 carbon atoms, and lead oxide, the number of mols of fluorinated alcohol employed being substantially equal to the number of hydrocarbon groups present in said silicon compound, to form a reaction product comprising a mixture of silicon esters in which each silicon atom is esterified by at least 3 ester radicals selected from the group consisting of saturated hydrocarbon radicals and fluorine-containing saturated aliphatic hydrocarbon radicals and any residual valence is connected to an oxygen-terminated silicon to silicon linking radical, said reaction product containing a portion boiling above about 600° F. at atmospheric pressure, and recovering a fraction boiling above about 600° F.

9. The method of forming a heat-stable fluid which comprises reacting a hydrolyzable organic silicon compound of the formula:



where m is an integer of from 0 to 1 and each of X_1, X_2, X_3, X_4, X_5 and X_6 is a saturated hydrocarbon radical containing from 1 to 8 carbon atoms with a mixture of a fluorinated alcohol of the formula:



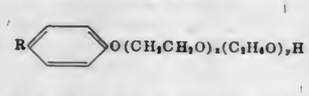
where n is an integer from 2 to 12 and Y_1, Y_2, and Y_3 are each selected separately from the group consisting of H and F, and an alkylcarbinol, the alkyl radical of which is a saturated aliphatic carbon chain substituted only by substituents selected from the group consisting of H and F, and containing up to 18 carbon atoms, in the presence of a basic catalyst selected from a group consisting of an alkoxide of the metals sodium, aluminum and magnesium containing from 1 to 2 carbon atoms, and lead oxide, the total number of mols of fluorinated alcohol and alkylcarbinol employed being substantially equal to the number of hydrocarbon groups present in said silicon compound, to form a reaction product comprising a mixture of silicon esters in which each silicon atom is esterified by at least 3 ester radicals selected from the group consisting of saturated hydrocarbon radicals and fluorine-containing saturated aliphatic hydrocarbon radicals and any residual valence is connected to an oxygen-terminated silicon to silicon linking radical, said reaction product containing a portion boiling above about 600° F. at atmospheric pressure, and recovering a fraction boiling above about 600° F.

3,223,643
LIQUID ACID-DETERGENT-SANITIZER COMPOSITION

Andrew B. Law, Levittown, Pa., assignor to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Nov. 12, 1964, Ser. No. 410,705
5 Claims. (Cl. 252—106)

1. A liquid acid-detergent-sanitizer composition consisting of phosphoric acid, a C_8–C_{18} alkyl dimethyl benzyl ammonium chloride sanitizer, and an alkylaryl polyether alcohol detergent from the class consisting of octyl and nonyl phenoxyethanols having an average of from about 5 to about 7.5 ethylene oxide units, and polypropyleneoxypropyl octyl and nonyl phenoxypolyethoxyethyl ethers having the structural configuration



in which R=a C_8–C_9 alkyl group, x=5 to 1.5 and y=10 to 15, the amounts of said sanitizer and detergent being in substantially a 1:1 ratio, and the amount of phosphoric acid being in sufficient quantity to give a pH of between about 2.5 and 3.5, said ratio and pH being in effect when the composition is diluted with water so as to contain between 200–900 parts per million of the acid and at least about 200 parts per million each of the sanitizer and of the detergent.

3,223,644
LIQUID DETERGENT-SANITIZER

Andrew B. Law, Levittown, Pa., assignor to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Nov. 12, 1964, Ser. No. 410,720
9 Claims. (Cl. 252—106)

1. A liquid detergent-sanitizer solution whose principal active ingredients are present in a total amount ranging from about 12.5% to about 40%, by volume, the ratios of said ingredients ranging from 1 part detergent:6 parts sanitizer to 1 part sanitizer:3 parts detergent, the remainder of the solution consisting of 60% to 87.5% water, the detergent consisting of an ethoxylated amine having the general formula $t\text{-}C_{11-14}H_{23-29}NH(CH_2CH_2O)_nH$ in which n=1 to 80, the carbon values for the amine representing quantities which are averages coming within the indicated range, and the sanitizer consisting of a C_8–C_{18} alkyl dimethyl benzyl ammonium chloride.

3,223,645
WASHING COMPOSITION

John Nicholas Kalberg, Wyoming, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

No Drawing. Filed Apr. 30, 1962, Ser. No. 191,275
4 Claims. (Cl. 252—117)

1. A detergent bar consisting essentially of an intimate admixture of:

(1) from about 40% to about 80% by weight of soap having from 8 to 20 carbon atoms, at least 20% by weight of said soap having from about 8 to about 14 carbon atoms and any remaining soap having from about 14 to about 20 carbon atoms, the cation of said soap being selected from the group consisting of sodium and a mixture of sodium and potassium cations such that no more than 20% by weight of the said soap is potassium soap;

(2) from about 0.05 to about 1.0 part per part by weight of said soap of a salt of an ester of an alpha sulfonated fatty acid, said ester containing from about 15 to about 25 carbon atoms, said fatty acid containing from about 8 to about 22 carbon atoms, and the cation of said salt being selected from the group consisting of alkali metal, ammonium, monoethanolamine, diethanolamine, and triethanolamine cations;

(3) from about 0.05 to about 0.30 part per part by weight of (1) plus (2), but not more than about 15% by weight of fatty acid having from 8 to 20 carbon atoms;

(4) from about 0% to about 12% by weight of water; and

(5) from about 2% to about 16% by weight of a mixture of NaCl and KCl wherein the ratio of NaCl to KCl by weight is from about 1:3 to about 3:1 whereby superior luster and smear characteristics are achieved.

3,223,646
DRY FREE-FLOWING DETERGENT COMPOSITION AND METHOD OF PREPARATION

James Cline McKenna, Shaker Heights, Kurt Albrecht, Painesville, and John H. McCracken, Madison, Ohio, assignors to Diamond Alkali Company, Cleveland, Ohio, a corporation of Delaware

No Drawing. Filed Aug. 25, 1961, Ser. No. 133,773
7 Claims. (Cl. 252—135)

1. A dry, free-flowing detergent composition, consisting essentially of a mixture of at least one phosphate of the formula:

$$M_xH_yPO_4 \cdot aH_2O$$

where M is an alkali metal, x and y are positive integers greater than 0, the sum of which is 3, and a is a number

from 0 to 2, and at least one alkali metal compound selected from the group consisting of carbonates, bicarbonates, sesquicarbonates, and mixtures thereof, said composition having a mole ratio of M_2O:P_2O_5 from about 3:1 to about 12:1 and a pH in a 1% water solution, greater than about 7.5, said composition resulting from a chemical reaction between dry solid particles of an alkali metal compound selected from said group and a phosphoric acid, in proportions such as to give said mole ratio, and obtained by intimately dispersing an aqueous phosphoric acid solution in a body of dry solid particles of an alkali metal carbonate with mechanical agitation, while maintaining the temperature of the mixture not substantially in excess of 100° C.

3,223,647
MILD DETERGENT COMPOSITIONS

Howard F. Drew, North College Hill, and Jack G. Voss, Wyoming, Ohio, assignors to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

No Drawing. Filed Apr. 20, 1959, Ser. No. 807,333
11 Claims. (Cl. 252—137)

1. A composition capable of synergistic mildness when used as an active ingredient in a detergent composition, said composition being a mixture of a water soluble alkyl benzene sulfonate having an alkyl radical ranging from about 9 to about 15 carbon atoms and a tertiary amine oxide having the formula $R_1R_2R_3 \rightarrow O$ wherein R_1 is an alkyl radical containing from about 10 to about 18 carbon atoms and R_2 and R_3 are each selected from the group consisting of methyl, ethyl and propyl radicals, the ratio of alkyl benzene sulfonate to tertiary amine oxide being in the range of about 10:1 to about 1:2.

5. A mild granular detergent composition consisting essentially of about 5% to about 50% of the mixture of claim 1, sodium tripolyphosphate and sodium sulfate.

3,223,648
OILS SELF-EMULSIFYING IN WATER

Jürgen Plapper, Dusseldorf, and Manfred Teupel, Dusseldorf-Holthausen, Germany, assignors to Bohme Fettchemie G.m.b.H., Dusseldorf, Germany, a corporation of Germany

No Drawing. Filed Dec. 6, 1960, Ser. No. 73,970
Claims priority, application Germany, Feb. 20, 1960, B 56,749
13 Claims. (Cl. 252—312)

1. A clear oil composition self-emulsifying in water consisting of 90 to 60% of an oil selected from the group consisting of mineral oil, animal oil, vegetable oil and synthetic oil and 10 to 40% of an emulsifier mixture consisting of 80 to 20% of a petroleum fraction sulfonate having an average molecular weight of at least 400 and 20 to 80% of a condensation product formed by the addition of 2 to 20 moles of ethylene oxide to a member selected from the group consisting of aliphatic hydrocarbon alcohols having 10 to 20 carbon atoms and alkyl phenols having 10 to 20 carbon atoms.

3,223,649
CORROSION-INHIBITED PHOSPHATE SOLUTIONS AND COMPOSITIONS USEFUL FOR MANUFACTURING THEM

Robert P. Langguth, Overland, Mo., assignor to Monsanto Company, a corporation of Delaware

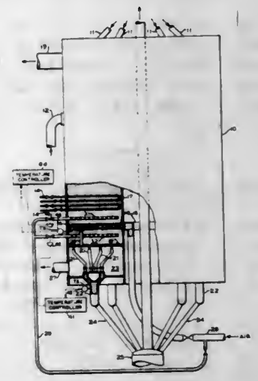
No Drawing. Filed Nov. 6, 1962, Ser. No. 235,870
6 Claims. (Cl. 252—389)

1. A concentrated ammonium phosphate composition useful when diluted and dissolved in water to protect copper and copper alloys from corrosion ordinarily caused by aqueous solutions of ammonium phosphate, said composition consisting essentially of a water-soluble inorganic water soluble sulfite compound and at least one ammonium orthophosphate salt; the weight ratio of said ammonium orthophosphate salt to said sulfite compound in said composition being from about 3800:1 to about 10:1.

3,223,650
REGENERATION OF CONTACT MATERIAL

Joe Van Pool, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Mar. 26, 1962, Ser. No. 182,160
7 Claims. (Cl. 252—418)



1. In a process for regeneration of a solid particle-form contact mass material which has become spent by deposition of a carbonaceous deposit thereon and which exists at a temperature suitable for initiating combustion of said deposit, which process comprises: passing said particle-form solid material downwardly through a burning zone as a substantially compact column of gravitating particles, introducing a stream of combustion air into the burning zone, splitting the combustion air stream into two streams at a point intermediate the ends of the compact column of particles in the burning zone, one stream of combustion air passing upwardly through the column to burn off part of the contaminant on the gravitating particle-form material and be withdrawn from the upper section of the column, the second stream of combustion air passing downwardly through the column to burn off additional amounts of contaminant from the material and be withdrawn from the column into substantially particle-free flue-gas withdrawal regions in the lower section of the column, cooling the particle-form material and the downwardly passing second stream of combustion air and resulting flue gas in an indirect heat exchange zone located above the particle-free flue-gas withdrawal regions, introducing a first stream of cooling air directly into the particle free flue-gas withdrawal regions, withdrawing the mixture of flue gas and cooling air from the particle-free flue-gas withdrawal regions and withdrawing the contact material from the bottom of the compact column; the improvement comprising introducing a second stream of cooling air directly into the column of particle-form contact material at a point above said particle-free flue-gas withdrawal regions and below said indirect heat exchange zone to admix said second stream of cooling air directly with the downwardly passing second stream of combustion air and resulting flue gas and with said particle-form contact material to cool said downwardly passing second stream of combustion air and resulting flue gas and said particle-form contact material to a temperature at which afterburning will not occur, to thus eliminate the possibility of afterburning adjacent the particle-free flue-gas withdrawal regions.

3,223,651

CO-CRYSTALLIZED VANADIUM-TITANIUM-ALUMINUM HALIDE CATALYST SYSTEM

Erik G. M. Tornqvist, Roselle, N.J., and Perry A. Argabright, Englewood, Colo., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Original application July 17, 1959, Ser. No. 827,710, now Patent No. 3,139,419, dated June 30, 1964. Divided and this application Feb. 20, 1963, Ser. No. 260,081

5 Claims. (Cl. 252—429)

1. An improved catalyst system comprising a cocrystallized titanium, vanadium and aluminum component corresponding substantially to the formula

$$y\ TiX_3 \cdot (1-y)\ VX_3 \cdot 0.33\ AlX_3$$

wherein X is halogen and y is .50 to .97, admixed with an aluminum alkyl compound corresponding to the formula wherein R and R' are alkyl groups having from 2 to 8 carbon atoms and X' is selected from the group consisting of hydrogen, chlorine, and alkyl radicals having from 2 to 8 carbon atoms.

3,223,652

PREPARATION OF IRON GROUP METAL CATALYSTS

Henry Erickson, Park Forest, and Robert A. Sanford, Homewood, Ill., assignors to Sinclair Research, Inc., Wilmington, Del., a corporation of Delaware

No Drawing. Filed Sept. 5, 1962, Ser. No. 221,420

9 Claims. (Cl. 252—439)

1. A method for the preparation of a catalyst consisting essentially of a catalytic amount of an iron group metal supported on a solid catalyst base which consists essentially of impregnating a solid catalyst support with a reducible iron group metal compound, heating said impregnated support in the presence of a reducing gas at temperatures of about 500 to 1200° F., sulfiding the catalyst with H_2S to provide the iron group metal on the support as the sulfide, with the proviso that at temperatures above about 750° F. H_2S is added to the reducing gas to provide simultaneous reduction and sulfiding.

3,223,653

MANGANO-CHROMIA-MANGANITE CATALYSTS CONTAINING VANADATES

Alvin B. Stiles, Charleston, W. Va., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed June 9, 1961, Ser. No. 116,082

5 Claims. (Cl. 252—464)

1. As a catalyst for the treatment of combustion gases which contain such products as nitrogen oxides, carbon monoxide, and hydrocarbons and which additionally contain a lead compound; mangano-chromia-manganite having the empirical formula:

$$XCr_2O_n \cdot 2YMnO_m$$

where the ratio of Y:X=3:0.5 to 3:30; n=2, 3 and 6; and m=1, 1.33, 1.5, 2 and 2.5, together with a vanadium compound selected from the group consisting of alkali metal and alkaline earth metal meta vanadates and aluminum, copper, iron, cobalt, nickel, manganese, cerium and chrominum meta vanadates, the proportion of the vanadium compound to the mangano-chromia-manganite by weight being 10:1 to 0.1:1.

3,223,654

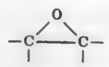
EPOXY RESIN FOAMS AND METHOD OF MAKING SAME

Mortimer H. Nickerson, Winchester, and Herbert S. Schnitzer, Springfield, Mass., and John Eliot Curtis and George D. Patterson, Thompsonville, Conn., assignors, by mesne assignments, to DeBell & Richardson, Inc., Hazardville, Conn., a corporation of Connecticut

No Drawing. Filed June 19, 1959, Ser. No. 821,346

13 Claims. (Cl. 260—2.5)

1. Method of producing a rigid thermoset foam essentially isotropic from a resin having at least two



groups per molecule which comprises exothermally reacting a mixture of said resin and a curing agent to partially cure said resin, dispersing a finely divided decomposable blowing agent in said mixture with the reaction temperature below the active decomposition temperature of said blowing agent, with said blowing agent present in the mixture, thereafter conducting the reaction below said decomposition temperature, said blowing agent being the sole blowing agent present in the mixture, and thereafter, with the reaction below said decomposition temperature, triggering a rapid decomposition of the blowing agent by the addition of a material selected from the group consisting of the primary and secondary aliphatic polyamines, and immediately confining the mixture whereby the cure of the resin is completed and the active foaming reaction takes place under an internally generated pressure.

3,223,655

CURABLE COATING COMPOSITION COMPRISING COPOLYMER CONTAINING GRAFTED CARBOXYL OR ALKYLOLATED AMIDE GROUPS, AND AMINE/ALDEHYDE CONDENSATE OR EPOXY RESIN

James David Murdock, St. Hilaire Station, Quebec, Canada, assignor to Canadian Industries Limited, Montreal, Quebec, Canada, a corporation of Canada

No Drawing. Filed July 13, 1961, Ser. No. 123,633

Claims priority, application Great Britain, July 19, 1960, 25,140/60

4 Claims. (Cl. 260—4)

1. A coating composition adapted to form a hard but flexible coating upon baking on a substrate, which contains essentially a mixture selected from the group consisting of

(I) a mixture of
  (A) a graft copolymer resulting from the copolymerization of at least one monoethylenically unsaturated monomer having ethylenic unsaturation as sole reactive group with an α,β-monoethylenically unsaturated carboxylic acid in the presence of from 2% to 20%, based on the combined weight of said monomer and acid, of a rubbery material selected from the group consisting of natural rubber, rubbery copolymers of butadiene and styrene containing from 20% to 30% by weight of stylene, rubbery copolymers of butadiene and acrylonitrile containing from 20% to 40% by weight of acrylonitrile and rubbery polymeric ethyl acrylate having a molecular weight in excess of 20,000, and
  (B) a cross-linking agent selected from the group consisting of epoxidized materials containing at least two epoxide groups per molecule and resinous hexamethyl ethers of hexamethylmelamine;

(II) a mixture of
  (A) a graft copolymer resulting from the copolymerization of at least one monoethylenically unsaturated monomer having ethylenic unsaturation as sole reactive group with acrylamide in the presence of from 2% to 20%, based on the combined weight of said monomer and acrylamide, of natural rubber, and
  (B) as cross-linking agent, an amine-aldehyde resin;

(III) a mixture of
  (A) a graft copolymer resulting from the copolymerization of at least one monoethylenically unsaturated monomer having ethylenic unsaturation as sole reactive group with acrylamide in the presence of from 2% to 20%, based on the

combined weight of said monomer and acrylamide, of a rubbery copolymer of butadiene and styrene containing from 20% to 30% by weight of styrene, and
  (B) as cross-linking agent, an amine-aldehyde resin;

(IV) a mixture of
  (A) a graft copolymer resulting from the copolymerization of at least one monoethylenically unsaturated monomer having ethylenic unsaturation as sole reactive group with acrylamide in the presence of from 2% to 20%, based on the combined weight of said monomer and acrylamide, of a rubbery polymeric ethyl acrylate having a molecular weight in excess of 20,000, and
  (B) as cross-linking agent, an amine-aldehyde resin;

(V) a mixture of
  (A) a graft copolymer resulting from the copolymerization of at least one monoethylenically unsaturated monomer having ethylenic unsaturation as sole reactive group with an N-alkylol derivative of acrylamide in the presence of from 2% to 20%, based on the combined weight of said monomer and derivative, of a rubbery copolymer of butadiene and styrene containing from 20% to 30% by weight of styrene, and
  (B) as cross-linking agent, an epoxidized material containing at least two epoxide groups per molecule;

(VI) a mixture of
  (A) a graft copolymer resulting from the copolymerization of at least one monoethylenically unsaturated monomer having ethylenic unsaturation as sole reactive group with an α,β-monoethylenically unsaturated carboxylic acid in the presence of from 2% to 20%, based on the combined weight of said monomer and acid, of a natural rubber, the carboxylic acid groups of said copolymer having been in part reacted with an olefinic oxide to form β-hydroxyalkyl groups, and
  (B) as cross-linking agent, an amine-aldehyde resin; and

(VII) a mixture of
  (A) a graft copolymer resulting from the copolymerization of at least one monoethylenically unsaturated monomer having ethylenic unsaturation as sole reactive group with an α,β-monoethylenically unsaturated carboxylic acid in the presence of from 2% to 20% based on the combined weight of said monomer and acid, of a rubbery copolymer of butadiene and styrene containing from 20% to 30% by weight of styrene, the carboxylic acid groups of said copolymer being in part reacted with an olefinic oxide to form β-hydroxyalkyl groups, and
  (B) as cross-linking agent, an amine-aldehyde resin.

3,223,656

UREA-FORMALDEHYDE MOLDING COMPOSITIONS CONTAINING CYANURIC ACID AS LATENT CURING CATALYST AND METHOD

Thomas C. Frazier, Hopewell, Va., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Mar. 28, 1961, Ser. No. 98,736

6 Claims. (Cl. 260—17.3)

1. A molding compound that is a solid particulate composition comprising (1) a urea-formaldehyde condensate, (2) from 20% to 35% by weight of said compound of a cellulosic filler, (3) a mold lubricant, and (4) from 0.5% to 5% by weight of said compound of cyanuric acid as a latent curing catalyst.

3,223,657

RESINOUS COMPOSITION COMPRISING AN EPOXIDIZED ESTER OF A NEOPENTYL POLYHYDRIC ALCOHOL

Joseph Weisfeld, Orange, and William M. Kraft, Verona, N.J., assignors, by mesne assignments, to Tenneco Chemicals, Inc., a corporation of Delaware

No Drawing. Filed July 27, 1961, Ser. No. 127,118

10 Claims. (Cl. 260—18)

1. The resinous composition comprising (a) an epoxidized ester of a neopentyl polyhydric alcohol containing from 3 to 8 hydroxyl groups per molecule and monocarboxylic acid wherein each of the hydroxyl groups of said neopentyl polyhydric alcohol has been replaced by the acid radical of said monocarboxylic acid, one of said monocarboxylic acid radicals being an aliphatic monocarboxylic acid radical containing 4 to 22 carbon atoms and from 1 to 3 oxirane groups and the remainder of said monocarboxylic acid radicals being members selected from the group consisting of aliphatic monocarboxylic acid radicals containing from 4 to 22 carbon atoms and from 1 to 3 oxirane groups, aliphatic monocarboxylic acid radicals containing from 4 to 22 carbon atoms, benzenoid monocarboxylic acid radicals, and mixtures thereof, said epoxidized ester having an oxirane content of approximately 4.0% to 8.0%; (b) a low molecular weight polyglycidyl ether that is the product of the condensation of epichlorohydrin with a polyhydric compound selected from the group consisting of polyhydric alcohols and polyhydric phenols, said ether having an average of 1.0 to 3.0 oxirane groups per molecule; and (c) an acidic ester that is the product of the reaction of a neopentyl polyhydric alcohol containing 3 to 6 hydroxyl groups with an anhydride of a polycarboxylic acid containing from 2 to 4 carboxyl groups, said acidic ester containing approximately 0.7 to 1.2 carboxyl groups for each ester linkage, said composition containing approximately 0.5 to 1.5 equivalents of said acidic ester for each epoxide equivalent of said epoxidized ester and said polyglycidyl ether.

3,223,658

STABLE AQUEOUS ALKYD RESIN EMULSIONS

William M. Kraft, Verona, and Joseph Weisfeld, Newark, N.J., assignors, by mesne assignments, to Tenneco Chemicals, Inc., a corporation of Delaware

No Drawing. Filed July 21, 1958, Ser. No. 749,628

10 Claims. (Cl. 260—22)

1. A stable aqueous emulsion having as its disperse phase an alkyd resin which is the reaction product of a polyhydric alcohol selected from the group consisting of trihydric neopentyl alcohols, mixtures of neopentyl trihydric alcohols and lower alkylene glycols, and mixtures of neopentyl tetrahydric alcohols and lower alkylene glycols, wherein said lower alkylene glycols are members selected from the group consisting of ethylene glycol, propylene glycol, and mixtures thereof, said polyhydric alcohol containing an average of 2.3 to 3.5 hydroxyl groups per molecule, with a polybasic acid selected from the group consisting of aliphatic dicarboxylic acids containing from 3 to 36 carbon atoms per molecule, phthalic acids, the anhydrides of said acids, and mixtures thereof and a monobasic acid selected from the group consisting of aliphatic monocarboxylic acids containing from 4 to 22 carbon atoms per molecule, benzoic acid, alkylbenzoic acids wherein the alkyl group contains from 1 to 4 carbon atoms, chlorobenzoic acids, salicylic acid, and mixtures thereof, said polybasic acid being present in the amount of 0.6 to 1.2 moles per mole of polyhydric alcohol and said monobasic acid in the amount of 0.25 to 1.0 mole per mole of polyhydric alcohol and which has an acid number of less than 35.

3,223,659

WATER DISPERSIBLE AND WATER SOLUBLE ALKYDS COMPRISING POLYALKYLENE GLYCOL, MONOCARBOXYLIC ACID, DICARBOXYLIC ACID, AND POLYOL

Gerald M. Curtice and Milton Dale Saunders, Minneapolis, Minn., assignors to Archer-Daniels-Midland Company, Minneapolis, Minn., a corporation of Delaware

No Drawing. Filed May 18, 1962, Ser. No. 195,964

14 Claims. (Cl. 260—22)

1. The process of producing a self-dispersible and water soluble non-oxidizing alkyld resin, which comprises:

(I) forming a first mixture of (A) polyalkylene glycol selected from the group consisting of polyethylene glycol and polypropylene glycol having a molecular weight between 600 and 6,000; (B) monocarboxylic acid selected from the group consisting of [1] non-oxidizing fatty acids of from 6–18 carbon atoms, [2] aromatic and saturated aliphatic monocarboxylic acids of from 7–14 carbon atoms, other than fatty acids, and [3] mixtures of [1] and [2]; and (C) material selected from the group consisting of aromatic dicarboxylic acids, saturated aliphatic dicarboxylic acids, and anhydrides thereof, of from 4–10 carbon atoms, and mixtures of the same; and reacting said first mixture at temperatures between 410° and 550° F.;

(II) subsequently adding to the mixture at least one polyhydric alcohol, other than said polyalkylene glycols, to thereby form a second mixture, said polyhydric alcohol having at least two hydroxyl groups and containing 2–8 carbon atoms, reacting said second mixture at temperatures between 410° and 550° F., continuing said reacting until an acid number of not more than about 10 is obtained, and neutralizing the residual acidity with an acid neutralizing agent which is volatile at temperatures below about 375° F., thereby effecting the production of said alkyd resin.

3,223,660

STABILIZATION OF VINYL RESINS WITH TETRAHYDROPYRANS AND ORGANIC METAL SALTS

Louis J. Pulver, Clifton, N.J., and Henry R. Thompson, West Forest Hills, N.Y., assignors to Nopco Chemical Company, Newark, N.J., a corporation of New Jersey

No Drawing. Filed May 27, 1960, Ser. No. 32,077

15 Claims. (Cl. 260—23)

7. A composition of matter comprising

(I) an iron-free polyvinyl halide resin selected from the group consisting of

(1) homopolymers of vinyl chloride,

(2) homopolymers of vinyl bromide,

(3) homopolymers of vinylidene chloride,

(4) copolymers of vinyl chloride containing in an amount up to about 20% by weight of said copolymer of at least one ethylenically unsaturated monomer copolymerizable therewith selected from the group consisting of vinyl acetate, styrene, diethyl maleate, maleic anhydride, esters of acrylic acid and vinylidene chloride,

(5) copolymers of vinyl bromide containing in an an amount up to about 20% by weight of said copolymer of at least one ethylenically unsaturated monomer copolymerizable therewith selected from the group consisting of vinyl acetate, styrene, diethyl maleate, maleic anhydride, esters of acrylic acid and vinylidene chloride, and

(6) copolymers of vinylidene chloride containing in an amount up to about 20% by weight of said copolymer of at least one ethylenically unsaturated monomer copolymerizable therewith selected from the group consisting of vinyl acetate, styrene, diethyl maleate, maleic anhydride, esters of acrylic acid and vinyl chloride and

(II) as a stabilizer therefor, present in stabilizing amounts, a mixture including

(1) at least one tetrahydropyran selected from the group consisting of

(a) 3,3,5,5-tetrakis (hydroxymethyl)-tetrahydropyranol-4,

(b) 2 - hydroxymethyl - 3,4,5 - trihydroxy-6-alkoxy tetrahydropyrans wherein said alkoxy substituent contains from one to four carbon atoms,

(c) esters of said (a) and (b) which are the reaction products of said (a) and (b) with an organic acid selected from the group consisting of aliphatic saturated and unsaturated acids having from 2 to 22 carbon atoms and

(d) ethers of said (a) and (b) which are the reaction products of said (a) and (b) with from one to about 15 mols of an alkylene oxide selected from the group consisting of ethylene oxide, propylene oxide and butylene oxide with the proviso that said ester (c) and said ether (d) have present at least two hydroxyl groups, and

(2) at least on metal organic salt, the cationic portion thereof being selected from the group consisting of the calcium, barium, strontium, magnesium, zinc, cadmium, mercury, tin and lead and anionic portion thereof being selected from the group consisting of saturated and unsaturated fatty acids having from two to eighteen carbon atoms, naphthenic acids, rosin oil, rosin and mixtures therof,

said tetrahydropyran and metal organic salt being present in a weight ratio of from about 5:1 to 1:5.

3,223,661

ULTRAVIOLET LIGHT STABLE VINYL CHLORIDE RESIN

Herbert M. Bond, Stillwater Township, Washington County, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

No Drawing. Filed July 5, 1960, Ser. No. 40,540

8 Claims. (Cl. 260—23)

1. A homogeneous composition of matter having improved resistance to degradation under ultraviolet light comprising

(1) 100 parts by weight of vinyl chloride resin selected from the group consisting of

(a) vinyl chloride homopolymer,

(b) vinylidene chloride homopolymer,

(c) copolymers of vinyl chloride and up to about 15 parts by weight of copolymerizable monomer, and

(d) copolymers of vinylidene chloride and up to about 15 parts by weight of copolymerizable monomer, and

(2) at least two parts and not more than a compatible amount of a modified natural triglyceride having, per average molecular weight, at least one-half aryloxy group and at least one oxirane group directly and laterally attached to carbon atoms of the fatty acid radicals of the triglyceride, said carbon atoms being at least eight carbon atoms removed from the acyl carbon atoms of the triglyceride.

3,223,662

REFINED PETROLEUM WAX-ETHYLENE VINYL ACETATE COPOLYMER-CHLORINATED PETROLEUM WAX COMPOSITION

Albert William Dreger, Blackwood, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Sept. 29, 1961, Ser. No. 141,813

15 Claims. (Cl. 260—28.5)

1. A coating composition comprising, as the essential organic film-forming components thereof, a ternary combination of (A) a resinous chlorinated paraffin containing at least about 60% chlorine by weight as the principal component, (B) a copolymer of ethylene and vinyl acetate having a content of about 20% to 40% of copolymerized vinyl acetate and 60% to 80% of copolymerized ethylene, and (C) at least one refined petroleum wax, 100 parts by weight of said ternary combination consisting of at least 47 parts of (A) said chlorinated paraffin, at least 12 parts of (B) said ethylene/vinyl acetate copolymer, and at least 8 parts of (C) said refined petroleum wax, and containing at least one mutual solvent for said film-forming components.

3,223,663

NOVEL TEXTILE PRINTING COMPOSITIONS AND TEXTILE DECORATED THEREWITH

John A. Altobelli, Brooklyn, N.Y., and John De Graff, Waldwick, and Arthur R. Heuser, Mahwah, N.J., assignors to Interchemical Corporation, New York, N.Y., a corporation of Ohio

No Drawing. Filed June 27, 1962, Ser. No. 206,547

10 Claims. (Cl. 260—28.5)

1. A reactive textile printing composition consisting of pigment dispersed in a vehicle comprising (a) a thickened aqueous phase, the thickener which contains reactive groups, insolubilizes when the printing composition is cured by heat, (b) a carboxylated elastomeric polymer including from 1 to 5% of an acid selected from the group consisting of acrylic, methacrylic and itaconic acids, (c) a reactive dispersing agent consisting of water-soluble salts of partial esters of the copolymer of the group consisting of copolymers of maleic anhydride with ethylene, and copolymers of maleic anhydride with styrene, the esterifying substances being selected from the group consisting of benzyl alcohol and butyl Cellosolve, the degree of partial esterification being from 25 to 65% and the amount of said dispersing agent being from 0.25 to 1 part for each part of pigment and (d) 0 to 5% of a lubricant selected from the group consisting of lubricating oil, paraffin wax, and mixtures of polydimethylsiloxanes with polymethylhydrogensiloxanes.

3,223,664

THERMOPLASTIC MOLDING COMPOSITIONS

Ralph David Conlon, Deer Park, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

No Drawing. Filed Feb. 4, 1963, Ser. No. 256,094

9 Claims. (Cl. 260—29.1)

1. A method for preparing a particulate thermoplastic resin molding composition having improved molding and processing characteristics comprising the steps of:

(1) preparing an aqueous solution of sodium chloride;

(2) applying said solution to a particulate thermoplastic molding resin selected from the group consisting of polyethylene, polymethylmethacrylate, polypropylene, polystyrene, polyvinyl chloride and combinations and copolymers thereof; and

(3) evaporating the water until the granules are substantially dry,

the concentration of sodium chloride in the dry granules ranging from about 0.01% to about 10% by weight of the thermoplastic resin.

3,223,665

STABLE AQUEOUS EMULSIONS OF ORGANOHYDROGENSILOXANES CONTAINING A WATER-SOLUBLE ALDEHYDE

Heinz Eder, Gauting, near Munich, Germany, assignor to Wacker-Chemie G.m.b.H., Munich, Bavaria, Germany

No Drawing. Filed Aug. 24, 1961, Ser. No. 133,562

Claims priority, application Germany, Aug. 26, 1960, W 28,456

3 Claims. (Cl. 260—29.2)

1. In an aqueous emulsion containing 4 to 57.5 percent by weight of organohydrogensiloxane polymer, the improvement consisting of adding to the emulsion 0.1 to 10 percent by weight, based on the weight of the emulsion, of a water-soluble aldehyde containing at least two carbon atoms and selected from the group consisting of saturated aliphatic aldehydes, unsaturated aliphatic aldehydes, aliphatic dialdehydes, substituted aliphatic aldehydes, polymeric aldehydes, aromatic aldehydes and substituted aromatic aldehydes.

3,223,666

POLYESTER USING BENZENE TRIBASIC ACID

Benjamin A. Bolton, Gary, Ind., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana

No Drawing. Filed Sept. 13, 1962, Ser. No. 223,538

19 Claims. (Cl. 260—29.2)

1. A resin consisting essentially of the polyester condensation reaction product of (a) a benzene tribasic acidic member selected from the group consisting of trimellitic acid, trimellitic anhydride, trimesic acid, hemimellitic acid and hemimellitic anhydride, (b) aliphatic dicarboxylic acids containing from 4 to about 60 carbon atoms and (c) aliphatic polyols, wherein the mole ratio acidic member:dicarboxylic acid:polyol is between about 1:1:2 and about 10:1:25, which resin is characterized by an acid number of about 20–100, by the formation of a thermoset material on baking at about 400° F. and by solubility in oxygenated organic solvents.

3,223,667

THERMOSETTING RESIN COMPOSITION COMPRISING ALKALI BARK DERIVATIVE AND POLYMETHYLOL PHENOL AND ADHESIVE PREPARED THEREFROM

Franklin W. Herrick, Shelton, Wash., and Louis H. Bock, Vancouver, British Columbia, Canada, assignors to Rayonier Incorporated, Shelton, Wash., a corporation of Delaware

No Drawing. Filed Mar. 20, 1961, Ser. No. 96,667

19 Claims. (Cl. 260—29.3)

1. A thermosetting composition comprising an alkali-bark derivative from a coniferous bark prepared by digesting coniferous bark with an aqueous solution of an alkaline compound of the group consisting of NaOH, KOH, NH_4OH, Na_2S, K_2S and $(NH_4)_2S$ and removing the water-soluble alkali-bark derivative from the unreacted bark, said alkali-bark derivative having a formaldehyde reactivity of at least 5%, and a polymethylol phenol compound in which the mole ratio of formaldehyde to phenol is from 2.0 to 3.0, said composition when in aqueous solution being condensible to an insoluble, infusible resin by heat, the polymethylol phenol compound providing formaldehyde which reacts with phenolic constituents of the alkali-bark derivative in forming the resin.

3,223,668

PHENOL-ALDEHYDE, DICYANDIAMIDE BINDER COMPOSITION

Joseph P. Stalego, Newark, Ohio, assignor to Owens-Corning Fiberglas Corporation, a corporation of Delaware

No Drawing. Filed Apr. 23, 1962, Ser. No. 189,319
5 Claims. (Cl. 260—29.3)

1. A hardenable phenol-aldehyde resin binder composition, which is an aqueous dispersion containing from about 1 to about 50 percent of solids consisting essentially of a heat-hardenable phenol-aldehyde resin having no more than about 3.6 percent by weight of free aldehyde, and from about 10 to 120 parts by weight of unreacted dicyandiamide for each 100 parts of the hardenable phenol-aldehyde resin, on a dry solids basis.

3,223,669

PIGMENT PAD-DYEING COMPOSITIONS AND TEXTILES DECORATED THEREWITH

Vernon L. Chase, Butler, and Ernest Messmer, Fair Lawn, N.J., assignors to Interchemical Corporation, New York, N.Y., a corporation of Ohio

No Drawing. Filed Nov. 13, 1962, Ser. No. 237,362
10 Claims. (Cl. 260—29.4)

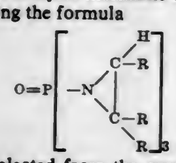
1. A pigment pad-dyeing reactive composition consisting of pigment dispersed in a vehicle comprising

(a) about 2.0 parts of a reactive latex with a solids content of about 50 parts, the solid being an interpolymer of about 75–90 parts of 2-ethylhexyl acrylate, about 13–20 parts of acrylonitrile, and about 2 parts of itaconic acid,

(b) about 0.25 parts of a reactive dispersant comprising a methylolated interpolymer of 60–70 parts of ethyl acrylate, 5–20 parts of lauryl acrylate, 5–20 parts of methacrylic acid, and 10–20 parts of acrylamide,

(c) about 0.45 part of a 28% by weight aqueous solution of a water-soluble carboxylic ternary copolymer of methyl methacrylate, ethyl acrylate, and acrylic acid, the acid content being about 35% by weight based on the weight of the copolymer,

(d) about 0.5 to 1.50 parts of a crosslinking agent selected from the group consisting of the hexamethyl ether of hexamethylol melamine and a polyfunctional imine having the formula



where R is selected from the group consisting of H, CH_3, and C_2H_5, and

(e) water to make 100 parts.

3,223,670

LATICES

Harry A. Cantor, Plainfield, William B. Horback, Irvington, Joseph A. Vona, Westfield, and Edward J. Kuczynski, Bayonne, N.J., assignors to Celanese Corporation of America, New York, N.Y., a corporation of Delaware

No Drawing. Filed May 24, 1962, Ser. No. 197,242
10 Claims. (Cl. 260—29.6)

1. A latex comprising an aqueous dispersion of a copolymer of 20 to 60 parts by weight of vinyl acetate, 1 to 3 parts by weight of monoethylenically unsaturated carboxylic acid selected from the group consisting of itaconic acid and acrylic acid, 40 to 80 parts by weight of an alkyl acrylate selected from the group consisting of ethyl acrylate, n-propyl acrylate, n-butyl acrylate and 2-ethyl hexyl acrylate, and 2 to 5 parts by weight of glycidyl methacrylate.

3,223,671

INSULATED ELECTRICAL CONDUCTORS AND INSULATION FOR SUCH CONDUCTORS

William M. Kraft, Verona, N.J., assignor, by mesne assignments, to Tenneco Chemicals, Inc., a corporation of Delaware

No Drawing. Filed Oct. 25, 1961, Ser. No. 147,434
6 Claims. (Cl. 260—31.6)

1. An insulated conductor comprising a metallic electrical conductor and thermoplastic insulation for the conductor, the insulation comprising solid vinyl chloride resin and a plasticizer for the resin comprising pentaerythritol divalerate dipelargonate in an amount of from 25% to 75% by weight of said resin.

4. Thermoplastic electrical insulation comprising solid vinyl chloride resin and a plasticizer for the resin comprising pentaerythritol divalerate dipelargonate in an amount of from 25% to 75% by weight of said resin.

3,223,672

POLYURETHANE SOLUTION AND METHOD OF MAKING SAME

Lester Edward Schniepp, Barrington, Ill., assignor to American Can Company, New York, N.Y., a corporation of New Jersey

No Drawing. Filed Dec. 28, 1960, Ser. No. 78,809
14 Claims. (Cl. 260—32.4)

1. A composition comprising a stable solution of 10 to 30% by weight of a polyester urethane resin having an average molecular weight of at least 10,000 dissolved in 90 to 70% by weight of a liquid mixture of a mononuclear aromatic hydrocarbon liquid free of aliphatic unsaturation and a strongly polar organic liquid, said urethane resin being the product of the substantially complete reaction between only an aromatic diisocyanate and an aliphatic polyester combined in a ratio of from 0.9 to 1.1 mols of said diisocyanate per mol of said polyester, said polyester being the reaction product of only an aliphatic discarboxylic acid and an aliphatic dihydroxy alcohol in a mol ratio no greater than 0.9 and having an average molecular weight of from 1,500 to 3,000, and said solution having a viscosity at room temperature of from 400 to 3,000 cps.

3,223,673

MASTICATING RUBBER WITH VANADIUM ACETYLACETONATE AS THE PRINCIPAL PEPTIZING AGENT

Gerard Kraus and Kent W. Rollmann, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Oct. 29, 1962, Ser. No. 233,918
10 Claims. (Cl. 260—34.2)

1. In the process of masticating a rubber selected from the group consisting of natural rubber and rubbery polymers of conjugated dienes, the improvement comprising incorporating vanadium acetylacetonate into said selected rubber in an amount sufficient to enhance the breakdown of said rubber.

3,223,674

PROCESS FOR PROMOTING THE CURE OF CLAY-CONTAINING ELASTOMERIC COPOLYMER COMPOSITIONS

Anthony L. Shloss, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed July 6, 1962, Ser. No. 208,126
20 Claims. (Cl. 260—41)

1. In a process for promoting the di(aralkyl) peroxide cure of elastomeric chain-saturated copolymers of alpha-olefin monomers, said copolymer containing clay, the improvement which comprises, in sequence, (1) masticating at about 250° F. to 500° F. (a) about 10 parts by weight of said copolymer, (b) about 20 to 300 parts by weight of a clay selected from the group consisting of kaolin clay and calcined clay and (c) a promoter which when said clay is kaolin clay, said promoter is present in an amount of about 0.5 to 1.5 parts by weight and is selected from the group consisting of p-quinone dioxime, morpholine disulfide and mixtures thereof and when said clay is calcined clay, said promoter is present in an amount of about 0.1 to 1.5 parts by weight and is selected from the group consisting of p-quinone dioxime, morpholine disulfide, nitroso amines where the nitrogen atom bearing the —NO radical has no more than one aromatic substituent, poly(paradinitrosobenzene) and mixtures thereof; (2) introducing about 1 to 10 parts by weight of said di(aralkyl)peroxide per 100 parts by weight of said copolymer and (3) heating at about 266° F. to 410° F. so as to effect a cure.

3,223,675

CURED CHLOROSULFONATED POLYETHYLENE COMPOSITIONS

Thelma J. Brackbill, Manheim, Pa., assignor to Armstrong Cork Company, Lancaster, Pa., a corporation of Pennsylvania

No Drawing. Filed Sept. 19, 1962, Ser. No. 224,820
7 Claims. (Cl. 260—41)

1. A flexible, soil-resistant floor covering comprising a cured, pigmented and plasticized composition containing 30–85% by weight inorganic fillers and 70–15% by weight of a binder system including chlorosulfonated polyethylene rubber and poly(vinyl acetal) curing agent in an amount of 2–20 parts by weight of said acetal per 100 parts by weight of said rubber.

3,223,676

PROCESS FOR PRODUCING A MOLDED GASKET FROM POLYTETRAFLUOROETHYLENE AND A BUTADIENE-ACRYLONITRILE ELASTOMER

Howard L. Rucker, Somerville, N.J., assignor to Johns-Manville Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed July 7, 1960, Ser. No. 41,240
4 Claims. (Cl. 260—41.5)

1. A process of producing a gasket comprising preparing a composition consisting essentially of polytetrafluoroethylene in solid particulate condition mixed in an elastomeric butadiene-acrylonitrile copolymer matrix in an amount between 5 and 60 parts per weight for each 100 parts of said copolymer, and forming the composition into a desired self-containing and self-supporting shape under the influence of heat and pressure.

3,223,677

PROCESS FOR PREPARING POLYCARBONATES

Markus Matzner, Edison Township, N.J., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed July 2, 1963, Ser. No. 292,477
9 Claims. (Cl. 260—47)

1. Process for preparing polycarbone resins which comprises dissolving a dihydric phenol, phosgene and a catalytic amount of a Friedel-Crafts catalyst in an inert liquid organic solvent to form a reaction mixture at a temperature below the boiling point of the mixture, heating the mixture at just the boiling point, removing the HCl evolved, continuing heating the mixture at higher temperatures as phosgene is consumed but just at the boiling point of the mixture and finally heating the mixture until the boiling point of the solvent at operating pressures is reached.

3,223,678

CHAIN SHORTENING OF POLYCARBONATE RESINS USING MONOETHANOLAMINE OR MORPHOLINE AS THE SHORTENING AGENT

Nicholas C. Bolgiano, Lancaster County, Pa., assignor to Armstrong Cork Company, Lancaster, Pa., a corporation of Pennsylvania

No Drawing. Filed Dec. 7, 1964, Ser. No. 416,638
2 Claims. (Cl. 260—47)

1. The method of converting a polycarbonate which will not form a film on drying an emulsion thereof to a polycarbonate which will form such a film by reducing the molecular weight of the polycarbonate in a controlled manner which comprises dissolving in an inert solvent therefor a polycarbonate which is the reaction product of phosgene and a bis-phenol selected from the group consisting of 2,2-bis-(4 hydroxyl phenyl) propane, the methyl ester of 4,4-bis-(4 hydroxyl phenyl) pentanoic acid, the ethyl ester thereof, and the butyl ester thereof, adding to the resulting solution an organic amine selected from the group consisting of monoethanolamine and morpholine in an amount of 0.1–20% by weight of the polycarbonate-amine mixture, thereby causing chain scission of said polycarbonate.

3,223,679

DERIVATIVES OF ALKENYL AROMATIC POLYMERS HAVING PENDANT VINYL KETO GROUPS THEREIN

Frederick C. Leavitt, Framingham, Mass., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

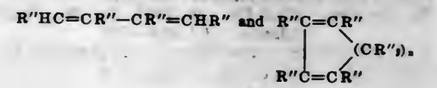
No Drawing. Filed July 16, 1962, Ser. No. 210,216
28 Claims. (Cl. 260—66)

1. The process of preparing a cyclic derivative of a preformed aromatic polymer having pendant vinyl keto groups extending therefrom comprising the step of reacting

(a) said preformed polymer of an alkenyl aromatic compound of the formula $CH_2{=}C(R){-}Ar$, wherein R is a radical selected from the class consisting of hydrogen, methyl and ethyl radicals, Ar is an aromatic group selected from the class consisting of phenyl and naphthyl groups and the derivatives thereof in which each derivative group is selected from the class consisting of chloro, bromo, fluoro, cyano, alkyl, cycloalkyl and aryl groups, said alkyl, cycloalkyl and aryl derivative groups each having no more than 8 carbon atoms, said preformed polymer having pendant vinyl keto groups extending from a plurality of the aromatic nuclei therein, said vinyl keto groups having a formula selected from the class consisting of $R'CH{=}CR'{-}C{=}O$ and $R'CH{=}CR'{-}Ar'{-}C{=}O$, wherein in each formula, one R' represents hydrogen, and the other R' represents a radical selected from the class consisting of hydrogen, methyl, phenyl, cyano and chloro radicals, and Ar' is a divalent aromatic radical selected from the class consisting of phenylene, naphthylene and diphenylene radicals and derivatives thereof in which each derivative group is selected from the class consisting of chloro, bromo, fluoro, alkyl, cycloalkyl and aryl groups, said alkyl, cycloalkyl and aryl derivative groups each having no more than 8 carbon atoms therein, said vinyl keto groups being present in a proportion of at least 0.01 unit and no more than 50 units per 100 aromatic nuclei in said polymer

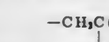
with

(b) a conjugated diene compound having a formula selected from the class consisting of

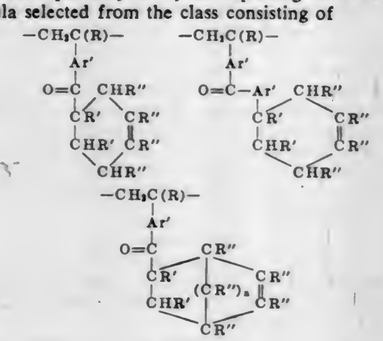


wherein n is an integer having a value of no less than 1 and no greater than 2, and R'' is a radical selected from the class consisting of hydrogen, halogen, cyano, alkoxy, aryloxy, cycloalkoxy, alkyl, aryl and cycloalkyl radicals with the total number of carbon atoms in said R'' radicals totaling no more than 7.

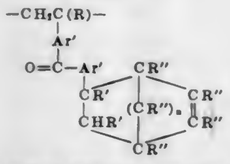
17. A linear polymer having in the polymer chain thereof a plurality of aromatic repeating units having the formula



and also a plurality of cyclic repeating units having a formula selected from the class consisting of



and



wherein R is a radical selected from the class consisting of hydrogen, methyl and ethyl radicals, Ar is an aromatic group selected from the class consisting of phenyl and naphthyl groups and the derivatives thereof in which each derivative group is selected from the class consisting of chloro, bromo, fluoro, cyano, alkyl, cycloalkyl and aryl groups, said alkyl, cycloalkyl and aryl derivative groups each having no more than 8 carbon atoms, one R' in each formula represents hydrogen, and the other R' represents a radical selected from the class consisting of hydrogen, methyl, phenyl, cyano, and chloro radicals, Ar' is a divalent aromatic radical selected from the class consisting of phenylene, naphthylene and diphenylene radicals and derivatives thereof in which each derivative group is selected from the class consisting of chloro, bromo, fluoro, alkyl, cycloalkyl and aryl groups, said alkyl, cycloalkyl and aryl derivative groups each having no more than 8 carbon atoms therein, n is an integer having a value of no less than 1 and no greater than 2, and R'' is a radical selected from the class consisting of hydrogen, halogen, cyano, alkoxy, aryloxy, cycloalkoxy, alkyl, aryl and cycloalkyl radicals with the total number of carbon atoms in said R'' radicals totaling no more than 7.

3,223,680

POLYESTERS OF OLEFINIC ALCOHOLS AND COMPLEX ACIDS AND THEIR POLYMERIZED PRODUCTS

Walter E. Kramer, Niles, Ill., assignor, by mesne assignments, to Union Oil Company of California, Los Angeles, Calif., a corporation of California

No Drawing. Filed Dec. 30, 1960, Ser. No. 79,505
2 Claims. (Cl. 260—75)

1. A polymerized, cross-linked resin prepared by the reaction under esterification conditions of

(1) a carboxylic acid prepared from solvent extracts obtained in the solvent refining of mineral lubricating oils using a solvent selective for aromatic compounds, by reaction of said solvent extracts with an alkali metal to form the alkali metal adduct, carbonation of said adduct to form the corresponding alkali metal salt of a carboxylic acid and acidification of said salt to form the free acid characterized by having an average molecular weight of about 375 to 450, contain about 1.9 to about 4.5 weight percent of combined sulfur and have an average of about 1.7 to 3.5 aromatic rings per mean aromatic molecule and

(2) an alcohol of the group consisting of monohydric olefinic alcohols having 3 to 33 carbon atoms per molecule, monohydric diolefinic alcohols having 5 to 45 carbon atoms per molecule, dihydric diolefinic alcohols having 6 to 46 carbon atoms per molecule, dihydric olefinic alcohols of 4 to 33 carbon atoms per molecule and the corresponding acetylenic alcohols of said group using about 1 mole of said carboxylic acid to about 2 to 2½ moles of said alcohol at a temperature of about 100° to 200° C. to form the unsaturated ester and polymerizing said ester in the presence of a peroxide initiator.

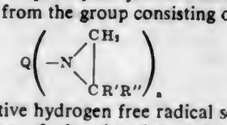
3,223,681

POLYMER COMPOSITIONS FROM AN ALKYLENIMINE DERIVATIVE, A DICARBOXYLIC ACID ANHYDRIDE AND WATER

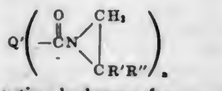
George M. Rambosek, Maplewood, Minn., assignor to Minnesota Mining & Manufacturing Company, St. Paul, Minn., a corporation of Delaware

No Drawing. Filed Oct. 24, 1960, Ser. No. 64,256
9 Claims. (Cl. 260—77.5)

1. A curing process which comprises contacting with water at about room temperature an essentially anhydrous and normally stable admixture consisting essentially of an organic acid anhydride which yields at least a dibasic carboxylic acid upon hydrolysis and an alkylenimine derivative selected from the group consisting of



wherein Q is an active hydrogen free radical selected from the group consisting of phosphoryl and thiophosphoryl, and



wherein Q' is an active hydrogen free, n-valent radical selected from the group consisting of aliphatic, aromatic and alicyclic radicals, n being from 2 to 3 and R' and R'' being selected from the group consisting of hydrogen and a lower alkyl radical.

3,223,682

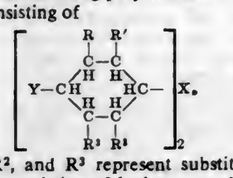
PREPARATION OF LINEAR POLYUREA POLYMERS FROM UREA AND AN ALICYCLIC DIAMINE

Rudolf Gabler, Zollikerberg, Zurich, and Helmut Muller, Oberrieden, Zurich, Switzerland, assignors to W. R. Grace & Co., Cambridge, Mass., a corporation of Connecticut

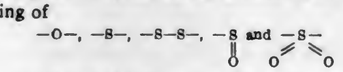
No Drawing. Filed Nov. 28, 1961, Ser. No. 155,507
Claims priority, application Switzerland Apr. 1, 1958
9 Claims. (Cl. 260—77.5)

1. A process for preparing a high molecular weight, fiber forming, essentially linear, thermoplastic polyurea polymer which comprises heating equimolar amounts of urea and an alicyclic diamine at a temperature ranging between about 150° C. and 300° C. for a period of about

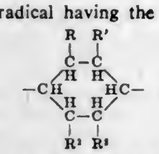
2.5 to 8 hours in an oxygen-free atmosphere, continuing the reaction until the liberation of ammonia has ceased, and recovering the resulting polymer, said diamine having the structure consisting of



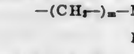
where R, R', R^2, and R^3 represent substituents selected from the group consisting of hydrogen and a lower alkyl radical having 1 to 4 carbon atoms, n has one of the values 0 and 1, X represents a member selected from the group consisting of alkylene radicals having 1 to 4 carbon atoms, a divalent hetero atom selected from the group consisting of



and a cyclohexyl radical having the structure



where R, R', R^2 and R^3 represent a member of the aforementioned substituents, and Y represents the group



where R^4 represents a member selected from the group consisting of hydrogen and a lower alkyl radical having 1 to 4 carbon atoms, and m has one of the values 0, 1, 2 and 3.

3,223,683

CROSS-LINKED POLY- AND INTERPOLY-(AMIDE-ACETALS)

Everett H. Pryde, Peoria, Ill., assignor to the United States of America as represented by the Secretary of Agriculture

No Drawing. Filed Apr. 14, 1961, Ser. No. 103,175
4 Claims. (Cl. 260—78)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. Transparent, infusible, completely crosslinked polyamides selected from the group consisting of completely crosslinked poly(amide-acetals) and completely crosslinked interpoly(amide-acetals) that are further characterized by molecular weights of about 2,900 to about 6,300, by being insoluble in a 50 percent solution of phenol in tetrachloroethane, and by being very adherent to glass, said completely crosslinked interpoly(amide-acetals) being the products obtained by heating a hereinafter defined linear interpoly(amide-acetal) polymer at 260°–295° C. under a reduced pressure of nitrogen and in the presence of at least 0.5 percent by weight of the polymer of a crosslinking catalyst selected from the group consisting of p-toluenesulfonic acid, zinc acetate, zinc oxide, lead oxide, antimony oxide, and magnesium oxide, said linear interpoly(amide-acetal) polymers being the intermediates obtained by previously condensing a pentaerythritol acetal selected from the group consisting of the pentaerythritol acetal of methyl azelaaldehydate and the pentaerythritol acetal of azelaic semialdehyde with (a) about 1 to about 12 molar equivalents of an alkylene diamine selected from the group consisting of ethylene diamine and hexamethylene diamine and (b) from zero to about 10 molar equivalents of a dicarboxylic ester selected from the group consisting of dimethyl azelate and dimethyl terephthalate, the condensation reaction having been conducted under distillation conditions at about 260°–290° C. for about 2 to 4 hours in the presence of bubbled inert gas to remove the alcohol of reaction and then for at least another 2 hours under subatmospheric pressure.

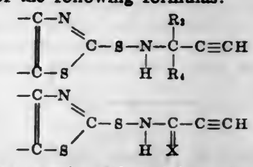
3,223,684

N-(PROPYNYL)-2-(THIAZOLE) SULFENAMIDES AS RUBBER ACCELERATORS

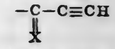
George E. P. Smith, Jr., Akron, Ohio, assignor to The Firestone Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Original application June 5, 1958, Ser. No. 739,989, now Patent No. 3,020,287, dated Feb. 6, 1962. Divided and this application Feb. 6, 1961, Ser. No. 87,108
18 Claims. (Cl. 260—79.5)

1. A vulcanizable composition comprising a sulfur vulcanizable diene rubber, sulfur and between 0.05 and 5 phr. of an N-(propynyl)-2-(thiazole) sulfenamide selected from the class consisting of those sulfenamides having one of the following formulas:



wherein R_3 is a member selected from the group consisting of hydrogen and lower alkyl; R_4 is a member selected from the group consisting of alkyl of no more than 20 carbon atoms, alkenyl of no more than 18 carbon atoms, cycloalkyl of no more than 7 carbon atoms and hydrocarbon aryl of no more than 14 carbon atoms;



is a member of the group consisting of ethynylcycloalkyl and ethynylcycloalkenyl containing no more than 12 carbon atoms, ethynylcycloalkadienyl and ethynylcycloalkatrienyl containing no more than 10 carbon atoms; and the valences of the carbon atoms in the 4- and 5-positions of the thiazole ring are satisfied by a member selected from the group consisting of hydrogen, methyl, ethyl and residues of carbocyclics, said carbocyclics containing no more than 13 carbon atoms and being a member selected from the group consisting of unsubstituted naphtho, unsubstituted benzo, 5, 6, 7, 8-tetrahydrobenzo, nitrobenzo, alkylbenzo, methylbenzo, dimethylbenzo, phenylbenzo, tolylbenzo and chlorobenzo.

3,223,685

2-VINYLOXYETHYL THIOCYANATE AND POLYMERIZATION PRODUCTS THEREOF

John W. Lynn, Charleston, W. Va., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Dec. 27, 1960, Ser. No. 78,246
4 Claims. (Cl. 260—79.7)

1. 2-vinyloxyethyl thiocyanate.

2. A copolymer of 2-vinyloxyethyl thiocyanate and vinylidene chloride.

3,223,686

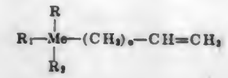
POLYMERS OF VINYL ORGANIC MONOMERS AND PROCESS FOR PRODUCING THE SAME

Giulio Natta, Giorgio Mazzanti, Paolo Longi, and Francesco Bernardini, all of Milan, Italy, assignors to Montecatini Società Generale per l'Industria Mineraria e Chimica, a corporation of Italy

No Drawing. Filed Dec. 19, 1958, Ser. No. 781,425
Claims priority, application Italy, Dec. 23, 1957, 18,327/57; Apr. 3, 1958, 5,134/57
18 Claims. (Cl. 260—80)

1. A linear high molecular weight polymeric product selected from the group consisting of (1) crystalline

homopolymers of vinyl monomers of the general formula



in which Me is a metal selected from the group consisting of silicon and tin, *n* is an integer from zero to four, R, R_1 and R_2 being radicals selected from the group consisting of lower alkyl radicals, cycloalkyl radicals, and aryl radicals when Me is tin, R and R_1 being selected from the group consisting of lower alkyl radicals, cycloalkly radicals and aryl radicals when Me is silicon, and R_2 being selected from the group consisting of lower alkyl radicals, cycloalkyl radicals, aryl radicals and hydrogen when Me is silicon, and being hydrogen when R and R_1 are methyl groups and Me is silicon and (2) copolymers of said vinyl monomers with mono-olefins.

3,223,687

PREPARATION OF TERPOLYMERS AND FILMS

Bernard F. Crowe, Maplewood, N.J., assignor, by mesne assignments, to Cumberland Chemical Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 21, 1962, Ser. No. 181,448

14 Claims. (Cl. 260—80.5)

13. A method for preparing a terpolymer containing from about 60% to about 80% vinyl alcohol, about 20% to about 30% vinyl pyrrolidone, and about 1% to about 10% lauryl methacrylate, which comprises copolymerizing vinyl acetate, vinyl pyrrolidone, and lauryl methacrylate in proportions yielding a terpolymer containing from about 76% to about 88% vinyl acetate, about 11% to about 17% vinyl pyrrolidone, and about 1% to about 7% lauryl methacrylate, dissolving said vinyl acetate-vinyl pyrrolidone-lauryl methacrylate terpolymer in methanol, adding a catalytic amount of a compound selected from the group consisting of sodium hydroxide, potassium hydroxide, sodium methylate, and potassium methylate, and converting said terpolymer in said solution to a terpolymer containing vinyl alcohol, vinyl pyrrolidone, and lauryl methacrylate.

3,223,688

VINYL POLYMERIZATION PROCESS USING A CO-CATALYST OF CHROMYL COMPOUND WITH ORGANOMETALLIC COMPOUND

Elmer J. Badin, Cranford, N.J., assignor to Celanese Corporation of America, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 12, 1959, Ser. No. 798,842

20 Claims. (Cl. 260—88.7)

1. A process of polymerizing at least one monomer selected from the group consisting of vinyl chloride, acrylonitrile, methyl methacrylate and ethylene which comprises contacting said monomer with a polymerization catalyst system consisting essentially of (1) a chromyl compound selected from the group consisting of a preformed complex of chromyl chloride and an alpha olefin having up to about 6 carbon atoms, and chromyl acetate and (2) an organometallic compound having up to about 18 carbon atoms, wherein a metal of Group III*b* of the Periodic Table (Mendeleev) is directly bonded to at least one member selected from the class consisting of alkyl, aryl, and alkyl sesquihalide groups.

3,223,689

COPOLYMERS OF FLUORINATED UNSATURATED HYDROCARBONS WITH NON-FLUORINATED NITROSO COMPOUNDS AND METHOD OF PREPARING SAME

Robert Neville Haszeldine, Windyridge, Lyme Road, Disley, England; Ronald Eric Banks, 187 Kingsway, Manchester, England; and Michael King McCreath, 7 Rutland Road, Harrogate, England

No Drawing. Filed Feb. 27, 1962, Ser. No. 176,090

Claims priority, application Great Britain, Mar. 17, 1961, 9,875/61

9 Claims. (Cl. 260—92.1)

1. Copolymers of nitroso compounds having the formula

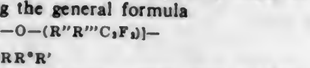
$$RR^{\circ}R'CNO$$

where R is selected from the group consisting of chlorine and alkyl groups having not more than 20 carbon atoms and R° and R′ are alkyl groups having not more than 20 carbon atoms, and a fluoroalkene having the general formula

$$R''R'''C{=}CF_2$$

where R″ is selected from the group consisting of fluorine, chlorine, hydrogen, and alkyl, fluoroalkyl, chloroalkyl and fluorochloroalkyl groups having from one to 10 carbon atoms and R‴ is selected from the group consisting of fluorine, chlorine, hydrogen, and alkyl, alkenyl, fluoroalkyl, fluoroalkenyl, chloroalkyl, chloroalkenyl, fluorochloroalkyl and fluorochloroalkenyl groups having from 1 to 10 carbon atoms; provided that when R″ is fluorine, R″ may be a $CF_3(CF_2)_n$-group where *n* is an integer not greater than 20 said copolymer having a molecular weight of at least 1,000.

4. Polymeric compounds having a molecular weight of at least 1,000 and consisting essentially of a chain of repeating units having the general formula



where R is selected from the group consisting of chlorine, alkyl, aryl, and cycloalkyl groups, and alkyl, aryl, and cycloalkyl groups substituted by non-interfering substituents, R° and R′ are selected from the group consisting of alkyl, aryl and cycloalkyl groups, and alkyl, aryl and cycloalkyl groups substituted by non-interfering substituents, R″ is selected from the group consisting of fluorine, chlorine, hydrogen, and alkyl, fluoroalkyl, chloroalkyl and fluorochloroalkyl groups having from one to 10 carbon atoms and R‴ is selected from the group consisting of fluorine, chlorine, hydrogen, and alkyl, alkenyl, fluoroalkyl, fluoroalkenyl, chloroalkyl, chloroalkenyl, fluorochloroalkyl and fluorochloroalkenyl groups having from 1 to 10 carbon atoms; provided that when R″ is fluorine, R‴ may be a $CF_3(CF_2)_n$-group where *n* is an integer not greater than 20.

3,223,690

POLYMERIZATION CATALYST FOR ALPHA OLEFINS CONSISTING OF A GROUP VIIb COMPOUND, A GROUP IIIa OR Va METAL HALIDE COMPOUND AND AN ORGANO METAL COMPOUND

Rudolph S. Wilsher, Westfield, Erik Tornqvist, Roselle, and Merrill Lynn, Elizabeth, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Dec. 26, 1962, Ser. No. 247,282

16 Claims. (Cl. 260—93.5)

1. A process for preparing a polymerization catalyst comprising the steps of (a) intimately mixing an inorganic metallic compound, wherein the cationic moiety is a metal of Group VII–*b* of the Periodic System and the anionic moiety is an element of Group VI–*a* of the Periodic System, with a compound having the general formula MO_cX_d, wherein M is a metal of Groups III–*a* or V–*a* of the Periodic System, O is oxygen, *c* is an integer of zero to one inclusive, X is a halogen with an atomic number of at least 17, *d* is an integer of one to five inclusive, and the sum of *c* and *d* is equal to the valence of the metal M, thereby forming a cocrystalline solid and (b) contacting the cocrystalline solid with an organometal compound having the general formula $R_nM'X_y$, wherein R is a monovalent hydrocarbon radical, M′ is a metal of Groups I–*a*, II–*a*, II–*b*, or III–*a* of the Periodic System, X is a halogen with an atomic number of at least 17, *n* is an integer of one to theree inclusive, *y* is an integer of zero to two inclusive, and the sum of *n* and *y* is equal to the valence of the metal M′.

3,223,691

POLYMERIZATION PROCESS

Harry Greenberg and Virgil L. Hansley, Cincinnati, Ohio, assignors to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed June 15, 1962, Ser. No. 202,713

The portion of the term of the patent subsequent to Dec. 4, 1979, has been disclaimed

7 Claims. (Cl. 260—93.5)

1. In a process for preparing a polymer from a feed material consisting of an alkenylbenzene in the presence of an alfin catalyst consisting essentially of a sodium alkoxide, a sodium alkenyl compound, and an alkali metal halide, the improvement which comprises carrying out said polymerization in the presence of a dihydro aromatic hydrocarbon selected from the group consisting of 1,2 - dihydrobenzene, 1,4-dihydrobenzene, 1,4 - dihydronaphthalene, dihydrotoluene, and dihydroxylene to control the molecular weight of the polymer.

3,223,692

PROCESS FOR PRODUCTION OF CIS 1,4-POLYBUTADIENE

Ralph C. Farrar and Floyd E. Naylor, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Aug. 30, 1961, Ser. No. 134,812

The portion of the term of the patent subsequent to Sept. 7, 1982, has been disclaimed and dedicated to the Public

10 Claims. (Cl. 260—94.3)

1. A process for producing a rubbery polymer of 1,3-butadiene having at least 85 percent cis 1,4-addition which comprises contacting 1,3-butadiene with a catalyst which forms on mixing components comprising (a) a compound corresponding to the formula R_3Al, wherein R is selected from the group consisting of alkyl, cycloalkyl, aryl, and combinations of these radicals, (b) a compound corresponding to the formula $Ti(OR)_4$, wherein R is as defined above, and (c) a compound having the formula MI_n, wherein M is a metal selected from the group consisting of beryllium, zinc, cadmium, aluminum, gallium, indium, thallium, titanium, silicon, germanium, tin, lead, phosphorus, antimony, arsenic and bismuth, and *n* is an integer from 2 to 5, inclusive, the mol ratio of said component (a) to said component (c) being in the range of 2:1 to 100:1, the mol ratio of component (a) to component (b) being in the range of 2:1 to 100:1, and the mol ratio of component (b) to component (c) being in the range of 0.5:1 to 3:1.

3,223,693

FLUIDIZATION OF REACTION MIXTURE OF ORGANOALUMINUM-TITANIUM TETRACHLORIDE POLYMERIZED ISOPRENE BY ADDITION OF AN ORGANOMETALLIC COMPOUND

Ralph C. Farrar, Jr., Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Dec. 21, 1961, Ser. No. 161,281

8 Claims. (Cl. 260—94.3)

1. In a process for polymerizing isoprene which comprises polymerizing isoprene with a catalyst which forms on mixing components comprising (1) an organometallic compound having the formula R_3Al, wherein R is selected from the group consisting of alkyl, cycloalkyl, aryl, and combinations of these radicals, and (2) titanium tetrachloride, the mol ratio of said organometallic compound to titanium tetrachloride being in the range of 0.6:1 to 1.5:1, and said polymerizing occurring at a temperature in the range of zero to 100° C. in the presence of a hydrocarbon diluent, the improvement which comprises adding to the unquenched polymerization mixture obtained in the aforesaid polymerization which has proceeded to the desired degree of conversion a fluidizing agent having the formula R_nM, wherein R is as defined above, M is a metal selected from the group consisting of lithium and aluminum, and *n* is equal to the valence of the metal M, the mol ratio of the total amount of said organometallic compound in said catalyst and said fluidizing agent to titanium in said catalyst being at least 2.5:1, blending said added fluidizing agent with said polymerization mixture, and thereafter adding hydrocarbon diluent to said mixture so as to obtain a fluid mixture.

3,223,694

PROCESS AND CATALYST FOR PRODUCTION OF RUBBERY POLYMERS

Ralph C. Farrar, Jr., Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Mar. 20, 1962, Ser. No. 181,171

6 Claims. (Cl. 260—94.3)

1. A method for polymerizing a monomer selected from the group consisting of 1,3-butadiene and isoprene to form a polymer containing at least 70 percent trans, 1,4-addition which comprises contacting said monomer under polymerization conditions with a catalyst which forms on mixing components comprising (a) an ether solution of lithium aluminum hydride, (b) titanium tetrachloride, and (c) bromine, wherein the mol ratio of lithium aluminum hydride to titanium tetrachloride is in the range of 0.5 to 6 and the mol ratio of bromine to lithium aluminum hydride plus titanium tetrachloride is in the range of 0.1 to 1.5.

3,223,695

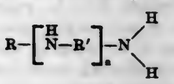
MONOOLEFIN POLYMERS DESTATICIZED WITH ALKYL POLYAMINES

Major L. Gallaugher, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Nov. 6, 1961, Ser. No. 150,131

8 Claims. (Cl. 260—94.9)

1. A composition consisting essentially of a resinous polymer of a 1-olefin destaticized by the addition thereto of a long chain polyamine of the general formula



in which R is a member of the group consisting of a straight chain saturated aliphatic group and a straight chain unsaturated aliphatic group containing from 6 to 20 carbon atoms, R′ is an alkylene group containing from 1 to 3 carbon atoms and *n* is an integer from 1 to 4 in an amount sufficient to destaticize said polymer.

3,223,696

POLYMERIZATION EMULSIFIERS COMPRISING A SOAP OF DISTILLED ROSIN AND AN OIL

Francis J. Boylan, 2511 McCawber Drive, Limestone Gardens, and Stearns T. Putnam, 4913 Old Hill Road, Sedgely Farms, both of Wilmington, Del.

No Drawing. Filed Feb. 18, 1963, Ser. No. 259,347
6 Claims. (Cl. 260—97)

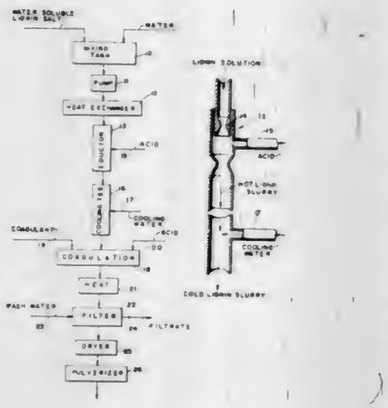
1. An emulsifier for use in aqueous emulsion polymerization processes comprising a soap selected from the group consisting of sodium and potassium soaps of a blend of an overhead fraction of a distilled stabilized rosin, said overhead fraction having been derived by subjecting a stabilized rosin to distillation under reduced pressure whereby there is provided an overhead fraction and a high boling residue fraction, said high boiling residue fraction consisting of from about 3% to 20% by weight of the stabilized rosin, with up to about 20% by weight, based on the weight of the overhead fraction of distilled stabilized rosin, of an oil selected from the group consisting of a naphthenic-based petroleum oil, an aromatic-based petroleum oil, a paraffinic-based petroleum oil, a rosin oil, a terpene polymer, and mixtures thereof.

3,223,697

PRECIPITATED LIGNIN AND PRODUCTS CONTAINING SAME AND THE PRODUCTION THEREOF

Frank J. Ball, 4 Atlantic St.; Mitchell S. Dimitri, 5 Morton Ave., Westwood; and Rudolf Schmut, 35½ Legare St., all of Charleston, S.C.

Filed Aug. 12, 1960, Ser. No. 49,239
11 Claims. (Cl. 260—124)



1. Alkali lignin in discrete powder form having a surface area of at least 20 square meters per gram.

4. A method of producing precipitated lignin which comprises continuously propelling, at a temperature between 35 and 190° F., a stream of an aqueous solution of alkali lignin through a mixing zone of constricted cross-sectional area with sufficient velocity to create conditions of turbulent flow in excess of a Reynolds number of 75,000 in said mixing zone, continuously introducing a stream of an aqueous solution of a precipitant for said lignin selected from the group consisting of acids and polyvalent metallic salts, whereby said precipitant solution is mixed substantially instantaneously with said lignin solution and the lignin is precipitated in said mixing zone and subjected to said conditions of turbulent flow, and recovering the precipitated lignin by separating the residual liquid therefrom.

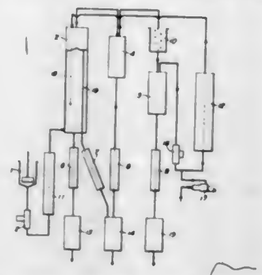
3,223,698

METHOD FOR LIQUEFYING LIGNIN

Motoyoshi Oshima, Yoshio Maeda, and Kan Kashima, all of Tokyo, Japan, assignors to The Noguchi Institute, Tokyo, Japan, an incorporated body of Japan

Filed May 29, 1961, Ser. No. 113,349
Claims priority, application Japan, Jan. 9, 1961, 36/374, 36/375
5 Claims. (Cl. 260—124)

1. A method for liquefying lignin, comprising admixing lignin, as the raw material, with 50% to 200%, based upon the lignin material, of a solvent therefor; adding thereto 0.5 to 30% of at least one catalyst selected from the group consisting of mixtures of iron oxide, tin oxide, copper oxide and sulfur; iron hydroxide, tin hydroxide, copper hydroxide and sulfur; iron, tin, copper and sulfur, (mole ratio of Fe:Cu:Sn:S being 10:0.5–1:



0.5–1:11–12); keeping the mixture at the reaction condition of 300° to 400° C. and 150 to 450 atm. under hydrogen gas atmosphere until the lignin is liquefied; and separating the resulting liquefied product.

3,223,699

PROCESS FOR PREPARING ALKYLATED POLYSACCHARIDE BINDING AGENTS

Rosa Schlageter, Vienna, Austria, assignor to Etablissement Ena, Vaduz, Liechtenstein

Filed Mar. 26, 1962, Ser. No. 182,202
5 Claims. (Cl. 260—209)

1. A process for the production of a binding agent which is to be used for the production of paper, cardboard and pasteboard comprising the steps: husking seeds of *Tamarindus indica;* grinding the husked seeds to a seed meal; and treating the resulting seed meal with an aqueous methanolic solution of sodium hydroxide and a hydroxyalkylating agent selected from the group consisting of ethylene oxide, propylene oxide, ethylene chlorohydrin and propylene chlorohydrin.

3,223,700

GLYCINE AMIDES

Wilfrid Klavehn, Schwetzingen, Baden, and Horst Neumann, Ludwigshafen (Rhine), Germany, assignors to Knoll A.-G. Chemische Fabriken, Ludwigshafen (Rhine), Germany, a corporation of Germany

No Drawing. Filed June 9, 1961, Ser. No. 115,886
Claims priority, application Germany, June 11, 1960, K 40,929; Aug. 23, 1960, K 41,523
14 Claims. (Cl. 260—239.1)

4. The glycine amide compound selected from the group consisting of (2,6-dimethyl octyl-8)-amino-N-(norbornyl methyl) acetamide and its pharmaceutically acceptable acid addition salts.

6. The glycine amide compound selected from the group consisting of (2-methyl heptyl-6)-amino-N-(2-methyl heptyl-6)-N-(isoamyl) acetamide and its pharmaceutically acceptable acid addition salts.

8. The glycine amide compound selected from the group consisting of (2,6-dimethyl octyl-8)-amino-N-(methyl cyclohexyl methyl) acetamide and its pharmaceutically acceptable acid addition salts.

3,223,701

STEROIDO-[3,2-c] PYRAZOLES AND PREPARATION THEREOF

Ralph F. Hirschmann, Scotch Plains, N.J., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed June 28, 1963, Ser. No. 291,292
5 Claims. (Cl. 260—239.5)

3. 6,16α - dimethyl - 11 - oxo - 21 - oic acid methyl ester - 2' - phenyl - 4,6,17(20)pregnatrieno - [3,2 - c] pyrazole.

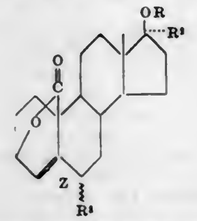
3,223,702

3,19-LACTONES OF 3β-HYDROXY-19-OIC ACIDS OF THE ANDROSTANE AND PREGNANE SERIES

Albert Bowers, Mexico City, Mexico, assignor to Syntex Corporation, Panama, Panama, a corporation of Panama

No Drawing. Filed June 17, 1963, Ser. No. 288,496
15 Claims. (Cl. 260—239.57)

1. A compound of the following formula:



wherein R is selected from the group consisting of hydrogen and a hydrocarbon carboxylic acyl group of less than 12 carbon atoms; R^2 is selected from the group consisting of hydrogen and lower alkyl; R^3 is selected from the group consisting of hydroxyl and keto; and Z is a member of the group consisting of a double bond and a saturated linkage, each between C–4 and C–5.

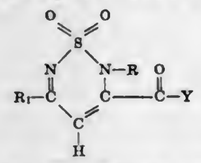
3,223,703

3-CARBALKOXY- AND 3-CARBAMOYL-5-SUBTITUTED - (2H) - 1,2,6 - THIADIAZINE - 1,1-DIOXIDES AND PROCESS

John B. Wright, Kalamazoo, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Aug. 1, 1963, Ser. No. 299,176
23 Claims. (Cl. 260—243)

1. Compounds having the structural formula:



wherein R is selected from the group consisting of hydrogen and lower-alkyl; R_1 is selected from the group consisting of lower-alkyl, phenyl, tolyl, halophenyl, and lower-alkoxyphenyl; and Y is selected from the group consisting of lower-alkoxy, hydrazino, and amino of the formula



wherein R_2 and R_3 taken separately are selected from the group consisting of hydrogen and lower-alkyl, and taken together with the nitrogen atom constitute a saturated heterocyclic amino radical selected from the group consisting of pyrrolidinyl, piperidyl, 2-methylpyrrolidinyl, morpholinyl, thiamorpholinyl, 4-methylpiperidyl, piperazinyl, 4-methylpiperazinyl, and hexamethylenimino.

3,223,704

QUATERNARY AMMONIUM SULFAMATES

William J. Shibe, Jr., Riverton, N.J., and Marcus Sittenfield, Philadelphia, Pa., assignors to Hollichem Corporation, Camden, N.J., a corporation of New Jersey

No Drawing. Filed Oct. 27, 1961, Ser. No. 148,029
7 Claims. (Cl. 260—247.1)

1. Quaternary ammonium organic mono-sulfamate.

3,223,705

SALTS OF 4,6-DIAMINO-1,2-DIHYDRO-2-LOWER ALKYL-1-ARYL-s-TRIAZINES

Edward F. Elslager, 4081 Thornoaks Drive, and Donald F. Worth, 1111 Paul St., both of Ann Arbor, Mich.

No Drawing. Filed Apr. 20, 1962, Ser. No. 188,985
5 Claims. (Cl. 260—249.9)

1. 4,6 - diamino - 1,2 - dihydro - 1 - (p - iodophenyl)-2,2-dimethyl-s-triazine salt with ½ formula weight 4,4'-thiobis(3-hydroxy-2-naphthoic acid).

4. 4,6 - diamino - 1 - (p - ethylphenyl) - 1,2 - dihydro-2,2 - dimethyl-s-triazine salt with ½ formula weight 5,5'-thiodisalicylic acid.

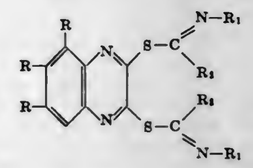
3,223,706

2,3-DIMERCAPTO-QUINOXALINES

Klaus Sasse, Cologne-Stammheim, Richard Wegler, Leverkusen, and Günter Unterstenhöfer, Opladen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed Jan. 3, 1962, Ser. No. 164,190
Claims priority, application Germany, Jan. 26, 1961, F 33,068
5 Claims. (Cl. 260—250)

2. A compound of the formula



wherein R is a member selected from the group consisting of hydrogen, chloro, nitro, trifluoromethyl, lower alkyl containing up to 4 carbon atoms, and lower alkoxy; R_1 is a member selected from the group consisting of a hydrogen, lower alkyl, phenyl, and chlorophenyl; and R_2 is a member selected from the group consisting of hydrogen. lower alkyl, phenyl, and chlorophenyl.

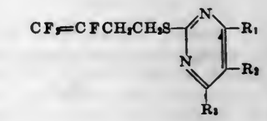
3,223,707

2-(TRIFLUOROBUTENYLMERCAPTO)-PYRIMIDINES

Mervin E. Brokke, Richmond, Calif., assignor to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 23, 1963, Ser. No. 332,857
4 Claims. (Cl. 260—251)

1. Substituted pyrimidines corresponding to the formula



wherein R_1, R_2 and R_3 are selected from the group consisting of hydrogen and lower alkyl radicals.

3,223,708

N-DECANOYLTETRAHYDROQUINOLINE

Robert R. Mod, Evald L. Skau, Sara P. Fore, and Frank C. Magne, New Orleans, Arthur F. Novak, Baton Rouge, Harold P. Dupuy, New Orleans, Jesse R. Ortego, Dry Creek, and Mary J. Fisher, Lake Charles, La., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Original application May 24, 1962, Ser. No. 197,545. Divided and this application Nov. 4, 1963, Ser. No. 324,598

1 Claim. (Cl. 260—287)

N-decanoyltetrahydroquinoline.

3,223,709

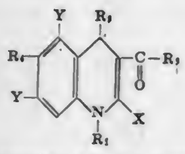
DIHYDROQUINOLINE-CARBOXYLIC ACID AMIDES AND A PROCESS FOR THEIR PREPARATION

Ivar Ugi, Leverkusen, Friedrich Beck, Munich, and Ernst Böttner, Munich-Pasing, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Feb. 26, 1963, Ser. No. 261,232
Claims priority, application Germany, Feb. 28, 1962, F 36,145

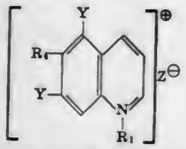
25 Claims. (Cl. 260—287)

11. A dihydroquinoline-carboxylic acid amide having the formula

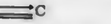


wherein R_1 is a member selected from the group consisting of methyl, ethyl, butyl, benzyl, and p-nitrobenzyl; R_2 is a member selected from the group consisting of hydrogen, methyl, phenyl, p-nitrophenyl, and chloro methyl; R_3 is a member selected from the group consisting of carboxylic acid isopropyl amide, carboxylic acid cyclohexyl amide, carboxylic acid xylenyl amide, carboxylic acid benzyl amide, carboxylic acid methoxy benzyl amide, and carboxylic acid chloro benzyl amide; R_4 is a member selected from the group consisting of hydrogen, methyl and methoxy; and Y is a member selected from the group consisting of hydrogen and chlorine.

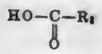
25. A process for preparing dihydroquinoline carboxylic acid amides which comprises reacting a quinoline salt having the formula



wherein R_1 is a member selected from the group consisting of methyl, ethyl, butyl, benzyl, and p-nitrobenzyl; R_4 is a member selected from the group consisting of hydrogen, methyl and methoxy; Y is a member selected from the group consisting of hydrogen and chlorine; and Z is a member selected from the group consisting of chlorine, bromine and iodine with an isonitrile of the formula



wherein R is a member selected from the group consisting of alkyl having 1–6 carbon atoms, phenyl, chlorophenyl, nitrophenyl, methoxy phenyl, cyclohexyl, benzyl, chlorobenzyl, nitrobenzyl, methoxybenzyl and xylenyl in the presence of an alkali salt of a carboxylic acid having the formula



wherein R_3 is a member selected from the group consisting of hydrogen, methyl, phenyl, p-nitrophenyl, and chloromethyl under the reaction conditions, including a liquid medium selected from the group consisting of water, aliphatic alcohols, ketones, ethers, and mixtures thereof and a temperature of 10° C. to 150° C. and thereafter recovering the formed dihydroquinoline carboxylic acid amide from the reaction mixture.

3,223,710

2-β-METHOXYETHYLPYRIDINE AND ITS PREPARATION

Norman Greenhalgh, Macclesfield, and Paul Arnall, of Four Ashes, near Wolverhampton, England, assignors to Imperial Chemical Industries Limited, Millbank, London, England, a corporation of Great Britain, and The Midland Tar Distillers Limited, Oldbury, near Birmingham, England, a corporation of Great Britain

No Drawing. Filed Nov. 7, 1960, Ser. No. 67,481
Claims priority, application Great Britain, Dec. 1, 1959, 40,845/59; Dec. 2, 1959, 40,931/59; June 8, 1960, 20,099/60

8 Claims. (Cl. 260—297)

1. A member of the group consisting of the compound 2-β-methoxyethylpyridine and pharmaceutically-acceptable salts thereof.

3,223,711

CYCLIC IMIDE ADDITION PRODUCTS

William J. Shibe, Jr., Riverton, N.J., and Marcus Sittenfield, Philadelphia, Pa., assignors to Hollichem Corporation, Camden, N.J., a corporation of New Jersey

No Drawing. Filed Mar. 20, 1962, Ser. No. 181,204

2 Claims. (Cl. 260—299)

1. A product of the reaction of a halo-amine and an aromatic cyclic imide wherein the halo-amine has the formula:

$$(R_3N)_nEX_{m-n}\cdot(n-1)X$$

where m is an integer from 3 to 4 and n is an integer from 1 to 4 when m is 4 and is an integer from 1 to 3 when m is 3, where at least one R attached to each nitrogen atom is attached thereto by means of a terminal carbon atom and is selected from the group consisting of alkyl, alkenyl, alkadienyl, hydroxyalkyl and alkyl benzyl, the straight chains of which have from 4 to 22 carbon atoms, and lower polyoxyalkylene having a total of 4 to 22 carbon atoms, any remaining R's being selected from the group consisting of hydrogen, alkyl radicals having from 1 to 5 carbon atoms, phenyl and benzyl, where E is selected from the group consisting of zinc, copper, cobalt, magnesium, manganese, aluminum, boron and iron, and where X is a halide, the cyclic imide being a member of the group consisting of benzosulfimide, phthalimide, naphthalimide, benzoxazolinone, benzothiazolinone, and their lower alkyl, halo and methoxy analogs.

2. The product of claim 1 complexed with a halogen.

3,223,712

SYNTHESIS OF THIOCTIC ACID AND THIOCTIC ACID AMIDE

Hideo Ose, Itabashi-ku, and Kenichi Yoshida, Toshima-ku, Tokyo, Japan, assignors to Yamanouchi Pharmaceutical Co., Ltd., Tokyo, Japan, a company of Japan

No Drawing. Filed July 14, 1961, Ser. No. 124,027
Claims priority, application Japan, July 18, 1960, 35/31,371; July 25, 1960, 35/32,382; July 29, 1960, 35/32,887; Aug. 18, 1960, 35/35,074; 35/35,075; 35/35,076; Sept. 1, 1960, 35/36,664; Oct. 12, 1960, 35/41,050; Dec. 26, 1960, 35/50,190; June 12, 1961, 36/20,292

5 Claims. (Cl. 260—327)

5. In a process for the preparation of thioctic acid, the steps of obtaining 6,8-dimercapto-octanoic acid directly by reacting a compound selected from the group consisting of lower alkyl 6-hydroxy-Δ^7-octenoate and 6-hydroxy-Δ^7-octenoic acid, with thiourea and with hydrohalogenic acid selected from the group consisting of hydrochloric, hydrobromic and hydroiodic acid, and hydroyzing the reaction product by adding to the reaction mixture 30 to 45% aqueous solutions of an alkali metal hydroxide at a temperature of from 100 to 120° C.

3,223,713

CYCLIC MALONALDEHYDE DIACETALS

George Kesslin, Teaneck, N.J., and Robert W. Handy, Stony Point, and James Steinmetz, Congers, N.Y., assignors to Kay-Fries Chemicals, Inc., West Haverstraw, N.Y., a corporation of New York

No Drawing. Filed July 2, 1963, Ser. No. 292,466

4 Claims. (Cl. 260—338)

1. The cyclic diacetal of malonaldehyde and butanediol-1,4.

3,223,714

PROCESS OF PRODUCING FURAN

Donald G. Manly, Barrington, and Joseph P. O'Halloran, Cary, Ill., assignors to The Quaker Oats Company, Chicago, Ill., a corporation of New Jersey

No Drawing. Filed May 22, 1963, Ser. No. 282,221

4 Claims. (Cl. 260—346.1)

1. A continuous low pressure vapor phase process for the production of furan comprising contacting furfural vapor with a supported palladium catalyst at a temperature between about 200° C. and about 350° C., said contacting taking place in the presence of hydrogen in an amount of at least 0.3 mole per mole of furfural vapor contacted, said supported palladium catalyst providing a pH of at least about 8.

3,223,715

EPOXIDIZED POLYCARBOXYLATES AND RESINOUS COMPOSITIONS CONTAINING SAME

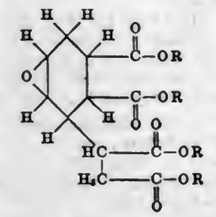
William M. Kraft, Verona, and Richard Green, Livingston, N.J., assignors, by mesne assignments, to Tenneco Chemicals, Inc., a corporation of Delaware

No Drawing. Filed Apr. 3, 1962, Ser. No. 184,683

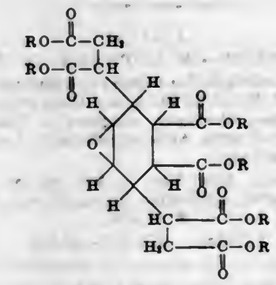
7 Claims. (Cl. 260—348)

1. An epoxidized polycarboxylate selected from the group consisting of

(a)



(b)



and (c) mixtures thereof, wherein each R represents an alkyl group having from 4 to 10 carbon atoms.

3,223,716

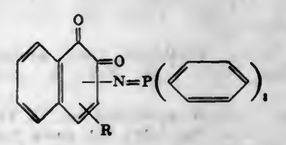
TRIPHENYLPHOSPHORANYLIDENE-AMINO-1,2-NAPHTHOQUINONE

William Lindsay Mosby, North Plainfield, and Mary-Louise Silva, Somerville, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed May 2, 1963, Ser. No. 277,443

3 Claims. (Cl. 260—396)

1. A compound of the formula:



wherein R is a member selected from the group consisting of hydrogen and chlorine.

3,223,717

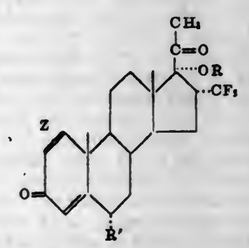
16-FLUOROMETHYL PREGNENE DERIVATIVES

Albert Bowers and John Edwards, Mexico City, Mexico, assignors, by mesne assignments, to Syntex Corporation, a corporation of Panama

No Drawing. Filed Oct. 18, 1960, Ser. No. 63,265
Claims priority, application Mexico, July 12, 1960, 59,144, 59,023

22 Claims. (Cl. 260—397.4)

1. A compound of the following formula:



wherein R is selected from the group consisting of hydrogen and a hydrocarbon carboxylic acyl group containing less than 12 carbon atoms; R′ is selected from the group consisting of hydrogen, methyl, fluorine and chlorine and Z is selected from the group consisting of a double bond between C–1 and C–2 and a saturated linkage between C–1 and C–2.

3,223,718

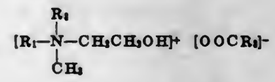
FATTY ACID-HYDROXYETHYL-QUATERNARY AMMONIUM COMPOUNDS AND PREPARATION THEREOF

Oscar L. Scherr and Samuel F. Moses, La Mirada, Calif., assignors, by mesne assignments, to Emery Industries, Inc., Cincinnati, Ohio, a corporation of Ohio

No Drawing. Filed June 21, 1962, Ser. No. 204,052

7 Claims. (Cl. 260—404)

1. A quaternary compound having the following general formula:



in which R_1 is an acyclic hydrocarbyl radical having from 16 to 22 carbon atoms, R_2 is selected from the group con-

sisting of an acyclic hydrocarbyl radical having from 16 to 22 carbon atoms and a methyl radical, and R_3 is selected from the group consisting of alkyl and hydroxy alkyl radicals having from 1 to 21 carbon atoms, and two of the radicals R_1, R_2 and R_3 are long chain.

3,223,719

PROCESS FOR PRODUCING CARBOXYLIC ESTERS FROM ORGANO MANGANESE COMPOUNDS

Kestutis A. Keblys, Southfield, Mich., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Original application Jan. 18, 1960, Ser. No. 2,825, now Patent No. 3,081,324, dated Mar. 12, 1963. Divided and this application Oct. 30, 1962, Ser. No. 234,210

1 Claim. (Cl. 260—410.9)

The method for the conversion of a compound selected from the class consisting of hydrocarbon halides and hydrocarbon sulfates having up to 12 carbon atoms per hydrocarbon group, to esters of hydroxy hydrocarbons wherein the hydrocarbyl radical of the hydrocarboncarboxy portion of said ester is the hydrocarbon group of said compound, in which method said compound is converted to the corresponding hydrocarbyl manganese pentacarbonyl by reacting said compound with sodium manganese pentacarbonyl, thereafter reacting the hydrocarbyl manganese pentacarbonyl thereby produced with a reactant selected from the class consisting of primary and secondary amines wherein the hydrocarbon radicals of said amines have up to 13 carbon atoms, and ammonia, to form a corresponding intermediate selected from the class consisting of hyrocarboyl manganese tetracarbonyl ammonias, hydrocarboyl manganese tetracarbonyl primary amine compounds, and hydrocarboyl manganese tetracarbonyl secondary amine compounds, in which the hydrocarboyl group has a CO group linking the original hydrocarbyl group to the manganese atom, and then cleaving said intermediate with an alkali metal salt of a monohydroxy hydrocarbon having up to 13 carbon atoms per molecule, to form the ester of said monohydroxy hydrocarbon with a carboxylic acid corresponding to said hydrocarboyl group.

3,223,720

ALUMINUM PAMOATE

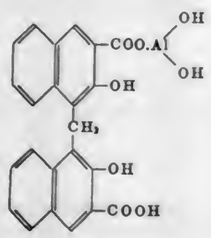
Silvano Casadio, Milan, Italy, assignor to Instituto de Angeli, S.p.A., Milan, Italy, a corporation of Italy

No Drawing. Filed June 7, 1963, Ser. No. 286,184

Claims priority, application Great Britain June 18, 1962

1 Claim. (Cl. 260—448)

The aluminum salt of pamoic acid of the formula



3,223,721

1-(4-BROMOPHENYL), 3-METHOXY, 3-METHYL-UREA

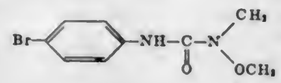
Henry Martin, Basel, Hans Aebi, Riehen, and Ludwig Ebner, Stein, Aargau, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a Swiss company

No Drawing. Filed Feb. 16, 1965, Ser. No. 433,155

Claims priority, application Switzerland, May 6, 1961, 5,336/61

1 Claim. (Cl. 260—453)

The compound of the formula



3,223,722

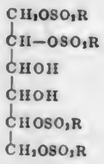
1,2,5,6-TETRA(LOWER ALKYLSULFONYL) HEXITOLS

Tibor Horvath and Laszlo Vargha, Budapest, Hungary, assignors to Chinoin Gyógyszer- és Vegyészeti Termékek, Gyára, Budapest, Hungary

No Drawing. Filed Apr. 4, 1962, Ser. No. 184,921

5 Claims. (Cl. 260—456)

1. A compound selected from the group consisting of compounds of the formula



wherein R is alkyl having 1 to 5 carbon atoms; and acid addition salts thereof.

3,223,723

PROCESS FOR THE PREPARATION OF CYANOBENZOIC ACID

Roger L. Weichman and William L. Fierce, Crystal Lake, Ill., assignors, by mesne assignments, to Union Oil Company of California, Los Angeles, Calif., a corporation of California

No Drawing. Filed Feb. 21, 1962, Ser. No. 174,707

3 Claims. (Cl. 260—465)

1. A method of preparing cyanobenzoic acid which consists in reacting tolunitrile with nitrogen dioxide in the presence of a solvent selected from the group consisting of dichlorobenzene, chlorobenzene, carbon tetrachloride, 1,1,1-trichloroethane, hexane, heptane, decane, nitromethane and nitroethane at a temperature of about 50°–150° C. under superatmospheric pressure sufficient to maintain the reactants in the liquid phase.

3,223,724

PURIFICATION OF ALIPHATIC DINITRILES

Karl Adam, Ludwigshafen (Rhine)-Gartenstadt, and Wolfgang Arend, Reinhold Frick, and Hans Haas, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed Nov. 1, 1960, Ser. No. 66,430

Claims priority, application Germany, Nov. 7, 1959, B 55,450

7 Claims. (Cl. 260—465.8)

1. A process for the removal of impurities from crude dinitriles having a hydrocarbon structure containing from 4 to 22 carbon atoms, said dinitriles consisting of two nitrile groups connected by a saturated hydrocarbon radical of at least two carbon atoms, which process comprises: contacting said crude dinitriles with from 0.01% to 10% by weight with reference to said dinitriles of a bisulfate salt selected from the group consisting of sodium bisulfate, potassium bisulfate, ammonium bisulfate, magnesium bisulfate, iron bisulfate, manganese bisulfate, zinc bisulfate, cobalt bisulfate, nickel bisulfate, and ammonium bisulfates N-substituted by 1 to 3 alkyl with 1 to 4 carbon atoms, said N-substituted ammonium bisulfates being otherwise unsubstituted, in the presence of from 1% to 20% by weight of water with reference to said dinitrile, and thereafter distilling off the purified dinitrile.

3,223,725

PREPARATION OF ESTERS THROUGH THE USE OF FRIEDEL-CRAFTS CATALYSTS

Marion E. Hill, Kensington, Md., assignor to the United States of America as represented by the Secretary of the Navy

No Drawing. Filed May 17, 1956, Ser. No. 585,591

37 Claims. (Cl. 260—471)

(Granted under Title 35, U.S. Code (1952), sec. 266)

1. A method of preparing esters of aliphatic alcohols comprising reacting a primary, saturated lower aliphatic alcohol substituted in the beta position with a substituent selected from a group consisting of NO_2, Cl, Br, and F with an acid chloride in the presence of a metal halide catalyst of the Friedel-Crafts type said metal halide being present in a quantity ranging from about 1.5 percent to not more than about 100 percent molar equivalent of said acid chloride.

3,223,726

FLUORINE CONTAINING ESTERS OF POLYCARBOXYLIC ACIDS

Stephen J. Metro, Scotch Plains, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Original application Feb. 25, 1960, Ser. No. 10,862, now Patent No. 3,124,533, dated Mar. 10, 1964. Divided and this application June 28, 1963, Ser. No. 291,302

4 Claims. (Cl. 260—485)

1. A monoester of a C_6 to C_8 alkanoic acid of 3 to 4 carboxylic acid groups each of which are attached to a different carbon atom of said acid, and a fluoro alcohol having the formula:

$$X(CF_2)_nCH_2OH$$

wherein X is selected from the group consisting of hydrogen and fluorine, and *n* is an integer of from 2 to 19.

3,223,727

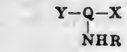
REDUCTION OF AROMATIC NITRO AND NITROSO COMPOUNDS

Harvey Irvin Stryker, Carney's Point, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Feb. 18, 1963, Ser. No. 259,427

4 Claims. (Cl. 260—510)

1. In the process of reducing a compound selected from the group consisting of (A) 3-nitro-1,5-naphthalenedisulfonic acid, (B) compounds having the structure Y—Q—X, wherein Y is a radical selected from the group consisting of —NO_2 and —NO; Q is an unsubstituted nucleus selected from the group consisting of benzene and naphthalene; and, X is a radical selected from the group consisting of —OH, —SO_3H and —COOH; and (C) compounds having the structure



wherein Y is a radical selected from the group consisting of —NO_2 and —NO, Q is benzene, X is a radical selected from the group consisting of —SO_3H and —COOH; when said X is —SO_3H, R is a radical selected from the group consisting of H and C_{1-14} alkyl and when said X is —COOH, R is H, said compound being reduced to the corresponding amino compound with a member selected from the group consistng of sodium sulfide and sodium sulfhydrate, the improvement wherein the resulting free amino base is precipitated directly from its reducing medium by treating said reducing medium containing said free amino base with sulfur dioxide until a pH within the range of from 7.5–3.5 is reached, prolonged exposure to atmospheric oxygen at elevated temperatures being avoided during said process.

3,223,728

PROCESS FOR THE PREPARATION OF POLYCHLOROBENZOIC ACIDS

Eugene P. Di Bella, Rochelle Park, N.J., assignor, by mesne assignments, to Tenneco Chemicals, Inc., a corporation of Delaware

No Drawing. Filed Dec. 31, 1962, Ser. No. 248,193

8 Claims. (Cl. 260—515)

1. The process for the production of polychlorobenzoic acid having a chlorine atom in each of the two ring positions adjacent the carboxyl group comprising contacting polychlorotoluene having a chlorine atom in each of the two ring positions adjacent the methyl group with chlorine in the presence of an inorganic acid selected from the group consisting of phosphoric acid and mixtures of sulfuric and boric acid containing from 0.3 to 1 gram molecule of sulfuric acid per gram molecule of boric acid until the polychlorotoluene is side-chain chlorinated to polychlorobenzal chloride, and passing gaseous chlorine into contact with the resulting reaction mixture in the presence of water until a substantial portion of the polychlorobenzal chloride has been converted to polychlorobenzoic acid.

3,223,729

3-ALLYLHYDANTOIC ACID

Franklyn W. Gubitz, Nassau, N.Y., assignor to Sterling Drug Inc., New York, N.Y., a corporation of Delaware

No Drawing. Original application June 6, 1962, Ser. No. 200,317, now Patent No. 3,197,477, dated July 27, 1965, which is a division of application Ser. No. 106,483, May 1, 1961. Divided and this application Jan. 22, 1965, Ser. No. 427,495

1 Claim. (Cl. 260—534)

3-allylhydantoic acid.

3,223,730

PREPARATION OF SULFONE DIACETIC ACID

Garson P. Shulman, St. Louis Park, William J. McKillip, Bloomington, and Freeman M. Young, Richfield, Minn., assignors to Archer-Daniels-Midland Company, Minneapolis, Minn., a corporation of Delaware

No Drawing. Filed May 3, 1963, Ser. No. 277,716

4 Claims. (Cl. 260—537)

1. Process which comprises treating a glacial acetic acid solution of 2,5-dihydrosulfolene with ozonized oxygen until the solution will no longer absorb ozone, treating the resulting mixture with hydrogen peroxide and an acid catalyst selected from the group consisting of a strong mineral acid and a strong organic acid, removing by distillation at least a portion of the water and acetic acid present, cooling the residue, and recovering the sulfone diacetic acid crystals formed thereby.

3,223,731
RECOVERY OF DIACID AND DIAMINE COMPONENTS OF POLYAMIDE HYDROLYZATES

John Thorburn Craig, Linden, Wellington, New Zealand, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Sept. 4, 1962, Ser. No. 221,345
Claims priority, application Great Britain, Sept. 12, 1961, 32,715/61
8 Claims. (Cl. 260—537)

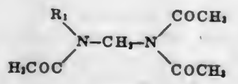
1. A process for the recovery of constituent diamine and diacid from a synthetic fibre-forming polyamide obtained by condensing a diamine selected from the group consisting of aliphatic and aromatic diamines with a dicarboxylic acid selected from the group consisting of aliphatic and aromatic dicarboxylic acids, which comprises hydrolizing said polyamide under pressure in an inert atmosphere at a temperature between 160° C. and the temperature of decomposition in the presence of an aqueous solution containing at least 20% excess equivalents of an alkali metal hydroxide, extracting the diamine from the hydrolysis product with an organic solvent for said diamine capable of forming a two phase system when added to the hydrolysis product and having a boiling point sufficiently remote from that of the diamine to permit separation of said solvent from said diamine by distillation, said solvent being an alcohol selected from the group consisting of an aliphatic alcohol containing from 3 to 8 carbon atoms and a cycloaliphatic alcohol, and separating the solvent solution of diamine from the residual aqueous solution of diacid salt.

3,223,732
TRIACETYL- AND TETRAACETYLMETHYLENEDIAMINE AND PROCESS

Wilhelmus J. C. Viveen and Cornelis U. Kloosterman, Deventer, Netherlands, assignors to Koninklijke Industrieele Maatschoppij vorheen Noury & van der Lande N.V., Deventer, Netherlands, a corporation of the Netherlands

No Drawing. Original application June 2, 1960, Ser. No. 33,397, now Patent No. 3,163,606, dated Dec. 29, 1964. Divided and this application Aug. 12, 1963, Ser. No. 301,595
Claims priority, application Netherlands, June 6, 1959, 239,952; Great Britain, June 19, 1959, 21,220/59; July 29, 1959, 26,061/59; Oct. 13, 1959, 34,695/59
5 Claims. (Cl. 260—561)

1. A compound having the formula



wherein R_1 is selected from the group consisting of H and CH_3CO.

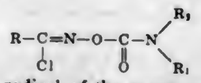
5. The process for preparing a compound selected from the group consisting of N,N,N'N'-tetraacetylmethylenediamine and mixtures thereof with N,N,N'-triacetylmethylenediamine comprising heating N,N'-diacetylmethylenediamine with acetic acid anhydride while continuously distilling off acetic acid formed during the reaction.

3,223,733
O-CARBAMOYL-SUBSTITUTED ACYLCHLORIDE OXIME

Rudolf Heiss, Cologne-Stammheim, Gerhard Burmeister, Cologne-Muhlheim, and Ferdinand Grewe, Cologne-Stammheim, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed Aug. 14, 1962, Ser. No. 216,718
Claims priority, application Germany, Sept. 1, 1961, F 34,832
6 Claims. (Cl. 260—566)

1. An O-carbamoyl-substituted acylchloride oxime having the formula



in which R is a radical of the group consisting of lower alkyl radicals containing up to 4 carbon atoms, chloro-substituted lower alkyl radicals containing up to 4 carbon atoms, phenyl and substituted phenyl, the substituents of said substituted phenyl being up to 2 in number and of the group consisting of chloro, nitro and methoxy, R_1 is a radical of the group consisting of lower alkyl radicals containing up to 4 carbon atoms and phenyl and substituted phenyl, the substituents of said substituted phenyl being up to 2 in number and of the group consisting of lower alkyl, chloro, nitro and lower alkoxy and R_2 is a radical of the group consisting of hydrogen and lower alkyl radicals containing up to 4 carbon atoms.

3,223,734
PROCESS FOR PRODUCING TERTIARY AMINES

Harlan T. Fallstad, Hopkins, Minn., and Alfred E. Rheineck, Fargo, N. Dak., assignors to Archer-Daniels-Midland Company, Minneapolis, Minn., a corporation of Delaware

No Drawing. Filed Apr. 26, 1961, Ser. No. 115,065
18 Claims. (Cl. 260—583)

1. A liquid phase process for preparing aliphatic tertiary amine which comprises the steps of forming a mixture of alcohol and amine, said alcohol being selected from the group consisting of saturated and ethylenically unsaturated, substituted and unsubstituted, straight and branched chain aliphatic alcohols having a primary hydroxy group, said amine being selected from the group consisting of saturated and ethylenically unsaturated, substituted and unsubstituted, straight and branched chain, aliphatic amines having at least one reactive hydrogen attached to its nitrogen atom, said mixture having excess alcohol equivalent per said reactive hydrogen, said alcohol and said amine containing hydroxy and amino groups as the only reactive groups, and subsequently reacting said mixture in the presence of a catalytic amount of hydrogenation-dehydrogenation catalyst at a reaction temperature of from 90° C. to 230° C., thereby producing aliphatic tertiary amine and by-product water, and continuously removing by-product water simultaneously with the production of said aliphatic tertiary amine.

3,223,735
PRODUCTION OF 1,3-PROPYLENE DIAMINE

Heinrich Scholz, Ludwigshafen (Rhine), and Paul Guenthert, Iggelheim, Pfalz, Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Continuation of application Ser. No. 708,759, Jan. 14, 1958. This application Dec. 10, 1962, Ser. No. 243,651
Claims priority, application Germany, Jan. 23, 1957, B 43,227
8 Claims. (Cl. 260—583)

1. A continuous process for the production of 1,3-propylene diamine which comprises continuously mixing

acrylonitrile with an excess of liquid ammonia in a ratio of 5 to 20 parts by weight of ammonia to one part by weight of acrylonitrile and continuously treating the liquid mixture with hydrogen at a temperature of from 20° to 200° C. and under a pressure of between 15 and 500 atmospheres in the presence of a hydrogenation catalyst.

3,223,736
PREPARATION OF ALKYL PHOSPHINES FROM HYDROCARBON PHOSPHITES AND ALKYL SODIUM COMPOUNDS

Ingenuin Hechenbleikner and Kenneth R. Molt, Cincinnati, Ohio., assignors to Carlisle Chemicals Works, Inc., Reading, Ohio, a corporation of Ohio

No Drawing. Filed July 20, 1962, Ser. No. 211,436
8 Claims. (Cl. 260—606.5)

1. A process of preparing a compound having the formula PR'_3 comprising reacting one mol of a compound having the formula $(RO)_3P$ with at least 3 mols of a compound having the formula R'Na wherein R is selected from the group consisting of alkyl, chloroalkyl, phenyl, cresyl, chlorophenyl, bromophenyl and benzyl, and R' is selected from the group consisting of alkyl and lower alkoxy phenyl.

3,223,737
PREPARATION OF PHOSPHINES AND PHOSPHONIUM HALIDES

Leo C. D. Groenweghe, St. Louis, Mo., assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed Sept. 5, 1962, Ser. No. 221,449
16 Claims. (Cl. 260—606.5)

2. A process for manufacturing a phosphonium halide of the class $[R_yR'_zPH_{4-(y+z)}]X$, which process comprises reacting together at a temperature between about 50° C. and about 500° C. H_2S and a halophosphine of the class $R_yR'_zPX_{3-(y+z)}$; wherein R and R' are aliphatic radicals which are inert to H_2S and are attached to the phosphorus atom through a carbon/phosphorus bond, X is a halogen selected from the group consisting of chlorine, bromine and iodine, and y and z are integers from 0 to 1, and the sum of y and z is an integer from 1 to 2; and recovering said phosphonium halide from the reaction zone.

3,223,738
CYCLODODECADIENYL MERCAPTANS AND THIOETHERS

Donald L. Crain, Roger F. Kleinschmidt, and John E. Mahan, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Mar. 15, 1963, Ser. No. 265,320
5 Claims. (Cl. 260—609)

1. Methyl cyclododecadienyl thioether.

3,223,739
POLYMERIZATION OF TETRAFLUOROETHYLENE AND PREPARATION OF FLUOROCARBON WAXES

Fred N. Teumac, 134 Sage, Lake Jackson, Tex.

No Drawing. Filed Aug. 2, 1963, Ser. No. 299,467
4 Claims. (Cl. 260—653.1)

1. A process for polymerizing tetrafluoroethylene which comprises contacting vapors of monomeric tetrafluoroethylene with cesium fluoride at temperatures between about 140° and 300° C. and superatmospheric pressure.

3,223,740
PROCESS FOR PREPARING DIHALOACETYLENES

Irl N. Duling, West Chester, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

Filed Apr. 10, 1962, Ser. No. 186,478
2 Claims. (Cl. 260—654)

1. A process for the production of dichloroacetylene which comprises pyrolyzing a chlorohydrocarbon selected from the group consisting of carbon tetrachloride, tetrachloroethylene, and hexachloroethane at a temperature in the range of from about 1200° C. to about 1300° C. and a pressure in the range of from about .001 micron to about 12 microns, quenching the reaction products to a temperature in the range of from −60° to −80° C. and separating dichloroacetylene from the reaction products.

3,223,741
HYDROCARBON PROMOTERS FOR DIMERIZATION

Julian Feldman and Bernard A. Saffer, Cincinnati, Ohio, assignors to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia

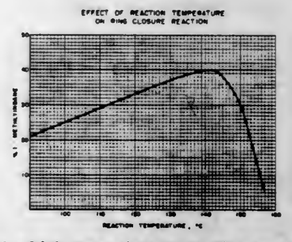
No Drawing. Filed Dec. 31, 1962, Ser. No. 248,260
11 Claims. (Cl. 260—666)

1. In a process for the production of 1,5-cyclo-octadiene by contacting, 1,3-butadiene with a zerovalent nickel carbonyl catalyst derived from nickel carbonyl by the replacement of at least one of the carbonyl groups by a compound of a trivalent element selected from the group consisting of phosphorus, antimony, and arsenic, the improvement which comprises admixing with said 1,3-butadiene a minor amount of a hydrocarbon compound containing at least two phenyl groups selected from the group consisting of fluorene, biphenyl, diphenylmethane, acenaphthene, phenanthrene, anthracene, trans-stilbene, and tetraphenylethylene.

3,223,742
ALKYLATION OF ALKYL AROMATIC HYDROCARBONS

Gert G. Eberhardt, Philadelphia, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

Filed Jan. 26, 1965, Ser. No. 428,065
20 Claims. (Cl. 260—668)



1. Method which comprises contacting an alpha olefin hydrocarbon with a benzenoid hydrocarbon containing at least one saturated hydrocarbon substituent group having benzylic hydrogen at a temperature in the range of about 80–160° C. in the presence of a catalyst system prepared by reacting in a hydrocarbon medium a member of the group consisting of K, KH and KR' with LiR wherein R and R' are hydrocarbon radicals having 1–10 carbon atoms selected from the group consisting of alkyl, cycloalkyl, aryl and aralkyl and recovering from the reaction mixture an alkylation product including a cyclization product resulting from alkylation by said olefin at a benzylic position of the benzenoid hydrocarbon followed by ring closure of the resulting substituent with the benzenoid nucleus.

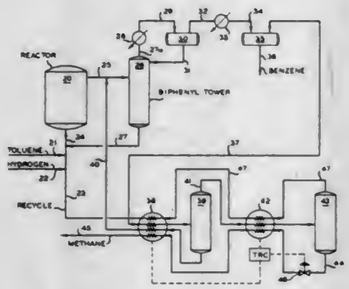
3,223,743
DEHYDROGENATION OF ETHYLBENZENE
Alistair C. MacFarlane, Texas City, Tex., assignor to Monsanto Chemical Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed Dec. 29, 1961, Ser. No. 163,022
6 Claims. (Cl. 260—669)

1. In a process for the dehydrogenation of ethylbenzene to form styrene in the presence of added steam at elevated temperatures, the improvement which comprises successively passing the vaporous ethylbenzene-steam mixture through a fixed bed of dehydrogenation catalysts arranged in at least two layers, the initial layer of catalyst being one wherein the selectivity to styrene is at least 90 percent, the catalyst of said initial layer of catalyst having a major constituent selected from the group consisting of iron oxide, titanium oxide, and zirconium oxide which is promoted with at least one alkali metal salt and structurally promoted with at least one metal oxide, and the final layer of catalyst being one wherein the activity is high enough to yield conversion of ethylbenzene to styrene approaching within about 5 percent of the chemi- of catalyst having a major proportion of iron oxide which cal equilibrium conversion, the catalyst of said final layer is promoted with an alkali metal oxide.

3,223,744
BORATE ESTER ALKYLATION
Robert T. Adams, Lafayette, and Philip S. Magee, San Rafael, Calif., assignors to Chevron Research Corporation, a corporation of Delaware
No Drawing. Filed July 20, 1962, Ser. No. 211,414
4 Claims. (Cl. 260—671)

1. A method of alkylating aromatic hydrocarbons which comprises treating at a temperature in the range of 0°–100° C. with an acid selected from the group consisting of sulfuric acid and hydrofluoric acid, wherein the water content of said acids is not greater than 10%, an aliphatic borate and an aromatic hydrocarbon.

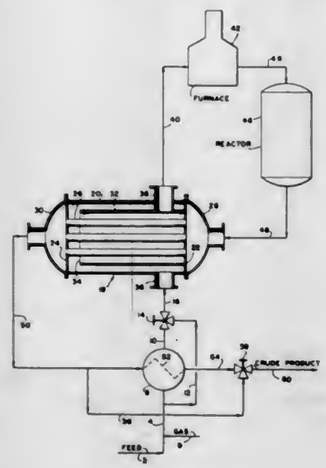
3,223,745
PROCESS FOR DEALKYLATION AND RECOVERY OF HYDROGEN FROM REFINERY GASES
Joseph W. Davison, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Jan. 2, 1962, Ser. No. 163,553
6 Claims. (Cl. 260—672)



2. A hydrodealkylation operation wherein toluene is hydrodealkylated to produce benzene which comprises hydrodealkylating toluene in a hydrodealkylation reaction zone in the presence of hydrogen, recovering benzene from the reaction zone effluent, recovering a gaseous stream containing hydrogen, unreacted toluene, methane, ethane and some benzene and passing the same to a heat exchanger, therein cooling said stream to liquefy a portion thereof, separating as a liquid from said stream hydrocarbons boiling higher than methane, further cooling now-remaining gaseous stream to liquefy a substantial portion of methane therein contained, separating a liquefied methane stream from the thus-cooled remaining gases, expanding the liquefied methane stream and using the expanded liquefied methane stream to cool the incoming gases, as well as said remaining gases; recovering hydrogen-containing gases from the separation of the liquefied methane stream from the cooled remaining gases, and passing said hydrogen, without pressure reduction into heat exchange with the incoming gases and said remaining gases, and thence to said reaction zone as the hydrogen used in the hydrodealkylation operation effected in said reaction zone; and recovering methane from the operation.

3,223,746
HIGH TEMPERATURE HEAT EXCHANGE
James D. Hammond, Fanwood, N.J., and Murray J. Stevens, Hempstead, N.Y., assignors to Socony Mobil Oil Company, Inc., a corporation of New York
Filed Dec. 28, 1962, Ser. No. 248,024
14 Claims. (Cl. 260—672)

1. In a process for the thermal reaction entirely in the vapor phase of normally liquid material and a gas at a temperature substantially above 900° F. wherein said reactants are at least partially preheated and the reaction effluent is cooled by heat exchange therebetween, the improvement which comprises vaporizing liquid in a mixed phase stream of said normally liquid material and gas by heating in a first indirect heat exchanger, introducing the resulting wholly gaseous stream into a second indirect heat exchanger at a temperature less than about 650° F., heating said gaseous stream in the second exchanger by the transfer of heat from said reaction effluent



which is thereby cooled from a temperature above 900° F. to less than about 800° F., and passing the partially cooled reaction effluent from the second exchanger to the first exchanger to heat said mixed phase stream.

5. In a process for the thermal hydrodealkylation of an alkyl aromatic hydrocarbon entirely in the vapor phase at a temperature above about 1200° F. in the presence of hydrogen at a partial pressure of at least about 200 p.s.i. wherein said hydrocarbon and hydrogen reactants are at least partially preheated and the hydrodealkylation effluent is cooled by heat exchange therebetween, the improvement which comprises vaporizing liquid in a mixed phase stream of said hydrocarbon and hydrogen by heating in a first indirect heat exchanger, introducing the resulting wholly gaseous stream into a second indirect heat exchanger at a temperature less than about 650° F., heating said gaseous stream in the second exchanger by the transfer of heat from said hydrodealkylation effluent which is thereby cooled from a temperature above 900° F. to less than about 800° F., and passing the partially cooled hydrodealkylation effluent from the second exchanger to the first exchanger to heat said mixed phase stream.

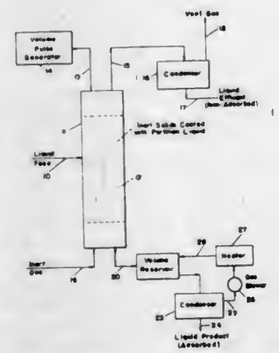
3,223,747
CONTINUOUS FIXED BED VAPOR-LIQUID PARTITION CHROMATOGRAPH
Byron B. Bohrer, Chester, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey
Filed Aug. 1, 1961, Ser. No. 128,475
6 Claims. (Cl. 260—674)

1. A continuous process for separating a multicomponent mixture of miscible organic liquids into two separate fractions by partition chromatography which comprises

(a) continuously feeding a multicomponent mixture of miscible organic liquids into a separation zone containing a fixed foraminous body of solid inert particles having thereon a liquid coating selective for one fraction of said miscible organic liquid mixture:

(b) continuously separating the liquid mixture into two fractions by passing through said separation zone an inert carrier gas which selectively carries the unadsorbed fraction of the miscible liquid mixture to one end of said zone;

(c) imposing a cyclic volume pulse on said zone to alternately reverse the flow direction of the carrier gas within said zone whereby the adsorbed fraction



of said mixture is selectively moved in the direction countercurrent to that of the carrier gas;

(d) continuously removing from one end of said separation zone the adsorbed fraction of said miscible liquid mixture, and

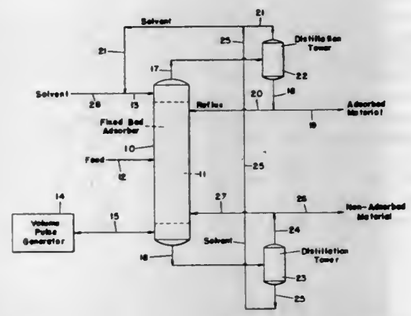
(e) continuously removing from the opposite end of said separation zone carrier gas and the unadsorbed fraction of said miscible liquid mixture.

3,223,748
MULTI-COMPONENT SEPARATION PROCESS
Byron B. Bohrer, Chester, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey
Filed Aug. 1, 1961, Ser. No. 128,476
6 Claims. (Cl. 260—674)

1. A continuous adsorption process for separating a mixture of miscible organic liquids into two separate fractions which comprises

(a) continuously feeding a multicomponent mixture of miscible organic liquids into an adsorption zone containing a fixed foraminous bed of solid adsorbent selective for adsorbing one fraction of said mixture,

(b) feeding a liquid organic solvent through said adsorption zone, said solvent being more adsorbable on the adsorbent than any of the fractions of the mixture to be separated, said solvent selectively moving the unadsorbed fraction of said mixture to one end of said adsorption zone,

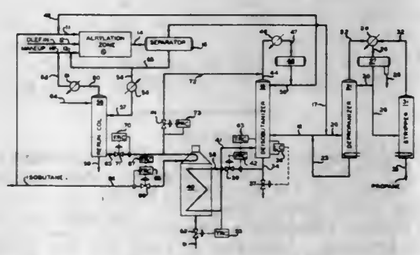


(c) imposing a cyclic volume pulse on the adsorption zone to alternately reverse the directional flow of the liquid phase within said adsorption zone and thereby selectively move the adsorbed fraction in the direction countercurrent to that of the unadsorbed fraction,

(d) removing solvent and the unadsorbed fraction from one end of the adsorption zone, and

(e) removing solvent and the adsorbed fraction from the opposite end of said adsorption zone.

3,223,749
HF ALKYLATION AND ACID RERUN PROCESS
Joe Van Pool and Dave G. Blaker, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Oct. 1, 1962, Ser. No. 227,149
3 Claims. (Cl. 260—683.48)



1. In an alkylation process which comprises contacting a low-boiling isoparaffin with a low-boiling olefin in an alkylation zone, passing an effluent from said alkylation zone to a separation zone, withdrawing a hydrocarbon phase from said separation zone, passing at least a portion of said hydrocarbon phase to a fractionation zone, passing said low-boiling isoparaffin from the upper region of said fractionation zone to said alkylation zone, withdrawing alkylate from the lower region of said fractionation zone, heating a portion of said withdrawn alkylate in a fired reboiler, passing heated alkylate from said

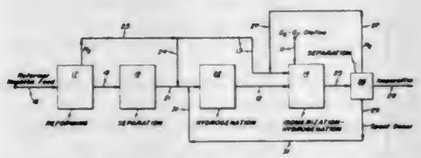
fired reboiler into the lower region of said fractionation zone, withdrawing an acid phase from said separation zone, and passing at least a portion of said withdrawn acid phase to a regeneration zone; the improvement which comprises passing said low-boiling isoparaffin through a conduit means positioned within the convection section of said fired reboiler, thereby heating said low-boiling isoparaffin, passing at least a portion of said heated low-boiling isoparaffin from said convection section into the lower region of said regeneration zone, withdrawing the remainder of said heated low-boiling isoparaffin from said convection section as a product stream responsive to a measurement representative of the pressure within said conduit means, thereby maintaining the pressure within said conduit means substantially constant, measuring a property of said heated low-boiling isoparaffin flowing from said convection section representative of the temperature thereof, manipulating the rate of flow of said low-boiling isoparaffin to said convection section responsive to said temperature measurement, passing hydrogen fluoride and low-boiling isoparaffin stream from the upper region of said regeneration zone to said alkylation zone, and withdrawing from said regeneration zone acid-soluble oils.

3,223,750

HYDROCARBON CONVERSION PROCESS

Samuel W. Harris and Bernard L. Evering, both of Chicago, Ill., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana

Filed June 26, 1961, Ser. No. 119,375
14 Claims. (Cl. 260—683.65)



1. A hydrogen transfer process for the production of branched-chain paraffinic hydrocarbons, which process comprises contacting a hydrocarbon feed containing a substantial amount of a normal olefin having from 5 to 7 carbon atoms per molecule with a hydrogen donor in the presence of a solid acidic isomerization catalyst and an added hydrogen-affording gas in a hydrogen transfer reaction zone under hydrogen transfer conditions; said hydrogen donor comprising a hydrocarbon containing labile combined hydrogen effective to hydrogenate said olefin under the process conditions and being present in an amount between about 0.5 and 5 moles per mole of said olefin; and recovering the resulting isoparaffinic product having a high ratio of isoparaffins to normal paraffins.

3,223,751

TREATING AGENTS COMPRISING CARBOXYL CONTAINING COPOLYMERS AND AMINO RESIN OR AMINO RESIN BASE

Lucien Sellet, Saddle River, N.J., assignor to Nopco Chemical Company, a corporation of New Jersey

No Drawing. Filed Oct. 5, 1960, Ser. No. 60,576
17 Claims. (Cl. 260—855)

1. Compositions of matter selected from the group consisting of

(1) mixtures of

(a) a completely neutralized salt selected from the group consisting of ammonium and alkali metal salts of water-soluble anionic linear copolymers, said copolymers containing approximately equimolar amounts of at least one member of the group consisting of maleic anhydride, maleic acid and itaconic acid and at least one other ethylenically unsaturated monomer copolymerizable therewith with the proviso that when said copolymer contains acrylamide copolymerized with a comonomer selected from a group consisting of itaconic acid and salts of itaconic acid, there are from 1 to 3 moles of acrylamide per mole of said monomer, and

(b) at least one member selected from the group consisting of water-soluble and water-dispersible amphoteric aminoplast resins and stable water-soluble and water-dispersible cationic aminoplast resins, said cationic aminoplast resins being formed by reacting a water-soluble amino-formaldehyde resin containing free and unreacted methylol groups with a water-soluble amino resin base in an amount sufficient to substantially react with all of said methylol groups of said amino-formaldehyde resin, said amino-formaldehyde resin being formed by reacting at least one amino resin base with a compound selected from the group consisting of formaldehyde and formaldehyde liberating compounds, and the mole ratio of (a) to (b) in said mixture being from about 15:1 to about 1:15,

(2) complex salts of

(a) a material selected from the group consisting of the free acid form of, the partially neutralized ammonium salt form of and the partially neutralized alkali metal salt form of water-soluble anionic linear copolymers, said copolymers containing approximately equimolar amounts of at least one member of the group consisting of maleic anhydride, maleic acid and itaconic acid and at least one other ethylenically unsaturated monomer copolymerizable therewith with the proviso that when said copolymer contains acrylamide copolymerized with a comonomer selected from a group consisting of itaconic acid and salts of itaconic acid, there are from 1 to 3 moles of acrylamide per mole of said monomer, and

(b) at least one member of the group consisting of water-soluble and water-dispersible amphoteric aminoplast resins, and stable water-soluble and stable water-dispersible cationic aminoplast resins, said cationic aminoplast resins being formed by reacting a water-soluble amino-formaldehyde resin containing free and unreacted methylol groups with an amino resin base in an amount sufficient to react with substantially all of said methylol groups of the amino-formaldehyde resin, said amino-formaldehyde resin being formed by reacting at least one amino resin base with a compound selected from the group consisting of formaldehyde and formaldehyde liberating compounds, and the mole ratio of (a) to (b) in forming said complex salt being from about 15:1 to about 1:15,

(3) condensates formed by reacting

(a) water-soluble anionic linear copolymers containing at least one reactive radical selected from the group consisting of anhydrides and free carboxy acids, said copolymers containing approximately equimolar amounts of at least one member of the group consisting of maleic anhydride, maleic acid and itaconic acid and at least one other ethylenically unsaturated monomer copolymerizable therewith with the proviso that when said copolymer contains acrylamide copolymerized with a comonomer selected from a group consisting of itaconic acid and salts of itaconic acid, there are from 1 to 3 moles of acrylamide per mole of said monomer, with

(b) a nitrogenous material at temperatures and pressures sufficient to remove the water of condensation, said nitrogenous material being selected from the group consisting of water-soluble and water-dispersible cationic aminoplast resins, amphoteric aminoplast resins, cationic amino resin bases and amphoteric amino resin bases, said cationic aminoplast resins being formed by reacting a water-soluble amino-formaldehyde resin containing free and unreacted methylol groups with a water-soluble amino resin base in an amount sufficient to react with all of the methylol groups of the amino-formaldehyde resin, said amino formaldehyde resin being formed by reacting at least one amino resin base with a compound selected from the group consisting of formaldehyde and formaldehyde liberating compounds, said nitrogenous material being present in an amount sufficient to react with all of said reactive radicals of said anionic linear copolymers.

3,223,752

DYEABLE POLYOLEFIN CONTAINING MODIFIED POLYESTER

Clifton W. Tate and Jack G. Scruggs, Cary, N.C., assignors, by mesne assignments, to Monsanto Company, a corporation of Delaware

No Drawing. Filed May 31, 1961, Ser. No. 113,671
19 Claims. (Cl. 260—873)

1. A new composition of matter comprising a crystalline polymer of an alpha-monoolefin of 2 to 5 carbon atoms and a modified polyester, said polyester being formed by the reaction of at least one dicarboxylic acid and at least one glycol containing from 2 to 12 carbon atoms, and being modified by a compound selected from the group consisting of (A) aliphatic dicarboxylic acids containing from 16 to 32 carbon atoms and the alkyl diesters thereof, (B) heterocyclic glycols, (C) 0.05 mol perment to 1.0 mol percent, based on the total weight of said dicarboxylic acid, of a chain-terminator selected from the group consisting of polyalkylvinyl ethers having one terminal hydroxyl group wherein the alkyl group contains 1 to 4 carbon atoms, and compounds having the formula,

(I) $R—O—[(CH_2)_mO]_x(CH_2)_n—OH$

wherein R is selected from the group consisting of alkyl groups containing 1 to 18 carbon atoms and aryl groups containing 6 to 10 carbon atoms, *m* and *n* are integers from 2 to 22, and *x* is an integer from 1 to 100, indicative of the degree of polymerization, and (D) 0.05 mol percent to 4.0 mol percent, based on the total weight of said dicarboxylic acid, of said chain terminator of (C) further modified by 0.05 mol percent to 2.4 mol percent, based on the total weight of said dicarboxylic acid, of a chain-branching agent selected from the group consisting of compounds having the formula,

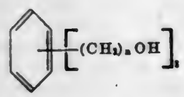
(II) $R—(OH)_n$

wherein R is a saturated aliphatic hydrocarbon radical containing from 3 to 6 carbon atoms and *n* is an integer from 3 to 6, compounds having the formula,

(III) $R—(CH_2OH)_3$

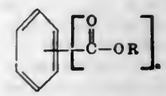
wherein R is a saturated aliphatic hydrocarbon radical containing from 2 to 6 carbon atoms, compounds having the formula,

(IV)



wherein *n* is an integer from 1 to 6, and compounds having the formula,

(V)



wherein *n* is an integer from 3 to 5 and R is an alkyl radical of up to 3 carbon atoms.

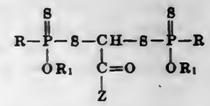
3,223,753

PHOSPHONODITHIOIC ACID ESTERS

Karoly Szabo, Pleasantville, N.Y., assignor to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 9, 1962, Ser. No. 229,470
4 Claims. (Cl. 260—928)

1. A bisorganophosphorus ester of the general formula:



wherein R and R_1 represent lower alkyl radicals and Z is selected from the class consisting of lower alkoxy, amino and lower alkylated amino.

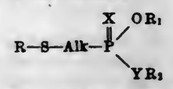
3,223,754

ALKYL MERCAPTO ALKYL ESTERS OF SUBSTITUTED PHOSPHONIC ACIDS

Reimer Cölln, Wuppertal-Elberfeld, and Gerhard Schrader, Wuppertal-Cronenberg, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Nov. 29, 1960, Ser. No. 72,305
Claims priority, application Germany, Dec. 4, 1959, F 300,021
13 Claims. (Cl. 260—948)

1. A compound of the formula:



wherein X and Y are chalcogen having an atomic number from 8 to 16, R and R_1 stand for lower alkyl having up to 4 carbon atoms, R_2 stands for a member selected from the group consisting of lower alkyl mercapto alkyl, phenyl mercapto alkyl, lower dialkyl amino alkyl, lower alkyl amino carbonyl lower alky, lower dialkyl amino carbonyl lower alkyl, chloro substituted phenyl, nitro substituted phenyl, lower alkyl substituted phenyl, lower alkyl mercapto substituted phenyl, lower alkyl mercapto-(lower alkyl) phenyl, chloro substituted benzyl, 3-chloro-4-methyl-7-coumarinyl and 4-methyl-7-coumarinyl and Alk stands for lower alkylene having up to 4 carbon atoms.

3,223,755

PROCESS FOR THE BROMINATION OF ALLYL ESTERS

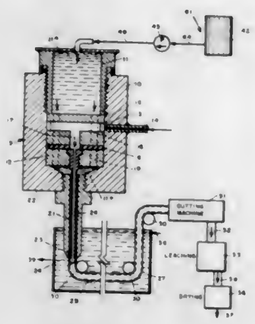
Robert W. Rimmer, Pennsville, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed June 15, 1962, Ser. No. 202,662
9 Claims. (Cl. 260—986)

1. The process for the addition bromination of an allyl ester which comprises

(a) brominating a neutral allyl ester of an acid of the group consisting of an alkanoic carboxylic acid of 1 to 4 carbon atoms, phosphoric acid, pyrophosphoric acid, and allylphosphonic acid,
(b) at a temperature of about —20° C. to 100° C.,
(c) with about 1 mol of elemental bromine for each ethylenic unsaturation in each mol of the allyl ester,
(d) in the presence of about 1% to about 50% by weight, based on the allyl ester, of a metal halide of a metal of the group consisting of Li, Be, Mg, Ca, Zn, Sr, Cd and Ba in which the halogen has an atomic number of 17–35,
(e) in about 50% to about 500% by volume, based on the allyl ester, of a liquid, inert, non-polar organic solvent having a normal boiling point in the range of about —20° C. to about 185° C.

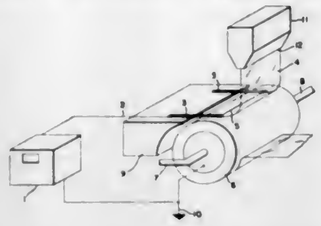
3,223,756
SMOKELESS POWDER MANUFACTURE
Ellsworth S. Goodyear and Charles E. Thomas, Kenvil, N.J., assignors to Hercules Powder Company, Wilmington, Del., a corporation of Delaware
Filed Dec. 20, 1957, Ser. No. 704,205
10 Claims. (Cl. 264—3)



1. A method for the manufacture of perforated smokeless powder, which comprises extruding a water-miscible alkoxy alcohol solution of nitrocellulose of from 11.3 to 13.9 weight percent N content around an elongated obstruction member in form of a perforated strand into a body of water containing at the point of initial contact not more than 90 volume percent of said alcohol, and passing water through the said elongated obstruction member toward and into the resulting perforation in direct contact with the strand portions forming same, whereby gelation of both the outer surface of the strand and the inner surface forming said perforation takes place to maintain said strand in its perforated form.

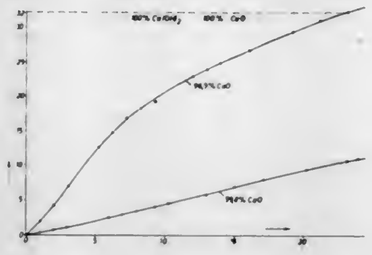
3,223,757
PROCESS FOR QUENCHING EXTRUDED POLYMERIC FILM
John Edward Owens, Wilmington, Del., and Wolf Randolph Vieth, Anniston, Ala., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed July 21, 1961, Ser. No. 126,818
15 Claims. (Cl. 264—22)

1. A process for quenching a freshly extruded polymeric film which comprises extruding a molten thermoplastic, film-forming, polymeric material in the form of a thin continuous film onto an electrically grounded moving quenching surface; passing said molten film in proximity to but out of contact with at least one electrode to deposit on the upper surface of said film before said film has solidified an electrostatic charge sufficient to cause



said film to adhere firmly across its width to said quenching surface; and withdrawing a solidified continuous film from said quenching surface.

3,223,758
PROCESS FOR THE PRODUCTION OF LININGS FOR METALLURGICAL FURNACES
Wilhelm Anton Fischer, Ratingen, Germany, assignor to Max-Planck-Institut fur Eisenforschung, Dusseldorf, Germany, a corporation of Germany
Filed July 26, 1962, Ser. No. 212,595
Claims priority, application Germany July 29, 1961
1 Claim. (Cl. 264—30)

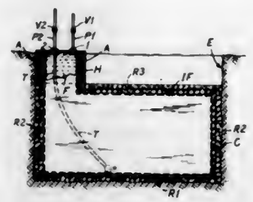


A method of making a lining for a metallurgical furnace for the treatment of ferrous melts in the presence of liquid slags, comprising the steps of dead-burning lime; melting the dead-burnt lime in an arc furnace to produce a fused mass having little tendency toward hydration; cooling said mass slowly to concentrate impurities in one portion of said mass while rendering another portion of said mass substantially free from impurities and imparting to said other portion a purity of at least 98% calcium oxide; comminuting said other portion of said mass; and applying the comminuted mass to a furnace wall.

3,223,759
METHOD OF FABRICATING STRUCTURES
Charles S. Williamson III, 4332 Emory Ave., Baton Rouge, La.
Filed Mar. 5, 1962, Ser. No. 177,397
6 Claims. (Cl. 264—34)

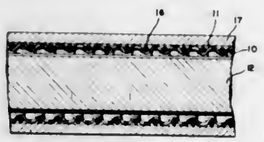
1. The method of fabricating structures without the use of rigid interior forms comprising placing a collapsible form of flexible substantially inelastic material in a surrounding rigid enclosure having interior surfaces conforming to the size and shape of the exterior of the desired structure, said form adapted when expanded to assume a size and shape corresponding substantially to the interior of the desired structure, expanding said form and positioning it in said enclosure whereby the interspaces between the exterior surfaces of said form and the interior surfaces of said enclosure correspond to the

thickness of the walls of the desired structure, simultaneously flowing a hardenable plastic material into said interspaces while flowing a flowable filler material having a density substantially equal to that of said plastic material into the interior of said form, controlling the relative flow rates of said plastic and filler materials so



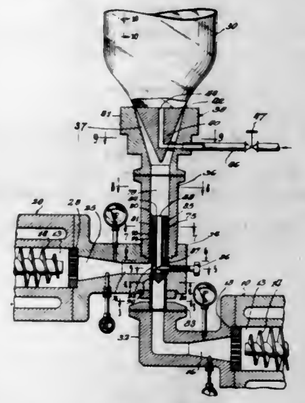
that the levels of said materials are maintained substantially equal as said interspaces are filled thereby to maintain substantially equal hydrostatic pressures on the inner and outer surfaces of said form, and removing said filler material from said form and said collapsible form from the interior of the thus formed structure after said plastic material has hardened.

3,223,760
METHOD OF MAKING HOSE
Fred T. Roberts and Robert E. Roberts, Wilton, Conn., assignors to Fred T. Roberts & Company, Wilton, Conn., a partnership
Original application Mar. 10, 1958, Ser. No. 720,190. Divided and this application July 31, 1962, Ser. No. 215,241
2 Claims. (Cl. 264—94)



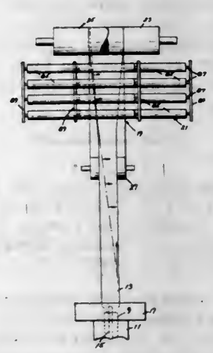
1. In a method of manufacturing elongate reinforced hose comprising a smooth cylindrical molded outer surface, a continuous helical reinforcing member embedded in the body and internal corrugations formed between the helices of said reinforcing member, the steps of preforming a tubular layer of elastomeric material, applying over the surface of said tubular layer a layer of open mesh fabric, applying over said tubular layer and layer of fabric and in contact with the surface thereof a continuous helical reinforcing member having spaced convolutions with said layers holding said convolutions in the proper position, inserting said assembled tubular layer, fabric layer and reinforcing member within a mold cavity having a surface to form the cylindrical surface of the hose applying internal pressure and heat within said tubular layer of elastomeric material and causing said material thereof to move outwardly through said fabric and around the reinforcing member and into engagement with the surface of the cavity to mold the cylindrical outer surface of the hose with the movement of the elastomeric material stretching the fabric lying between the convolutions of the reinforcing member outwardly and forming the internal surface of the hose with corrugations between the convolutions of the reinforcing member, continuing the heat and pressure to set the material in its molded state, and thereafter removing the resulting product from the mold.

3,223,761
MELT EXTRUSION OF MULTI-WALL PLASTIC TUBING
Garland E. Raley, Terre Haute, Ind., assignor to Union Carbide Corporation, a corporation of New York
Filed Apr. 30, 1962, Ser. No. 191,230
8 Claims. (Cl. 264—95)



1. Method of producing multi-wall thermoplastic tubing by melt-extrusion which comprises, forming a cylindrical solid stream of different melted thermoplastic materials in which the thermoplastic material to form the innermost wall of said tubing constitutes the core of said stream, and at least one thermoplastic material different from the thermoplastic material in said core is coaxially distributed as an annulus enveloping and contacting said core, moving said solid stream through a cylindrical passage at a velocity below the threshold of turbulence to thereby maintain the coaxial distribution of the melted thermoplastic materials, converting said solid stream at the terminus of said cylindrical passage into a tubular stream by axially piercing and radially distributing the solid stream, extruding the tubular stream through an annular die orifice to form tubing and cooling the tubing to a set condition.

3,223,762
MANUFACTURE OF THIN-WALL TUBING
Horace P. Fry, Jr., West Chester, Pa., assignor, by mesne assignments, to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Oct. 10, 1962, Ser. No. 229,671
7 Claims. (Cl. 264—95)



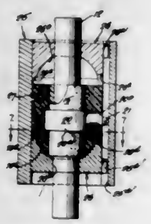
1. A method of forming a thin-walled tubing including the steps of extruding a flowable film-forming material through an annular die in the form of a tubing having

longitudinally extending elements which differ in thickness, maintaining the tubing in an expanded condition as it is extruded, solidifying the film-forming material of the expanded tubing, collapsing the tubing into a flattened condition, and rotating the expanded portion of the tubing about its longitudinal axis and relative to the flattened portion thereof at intermittent intervals and from an approximately neutral position during the collapsing thereof whereby the longitudinal fold lines of the flattened tubing occur on different longitudinal elements of the tubing.

3,223,763
METHOD OF MAKING A METAL REINFORCED PLASTIC ARTICLE

Lester K. Keen, Lancaster, Pa., assignor to Raybestos-Manhattan, Inc., Manheim, Pa., a corporation of New Jersey

Filed Aug. 22, 1962, Ser. No. 218,726
5 Claims. (Cl. 264—112)



1. The method of making a valve plug comprising a body of compressed and sintered fluorocarbon polymer having a bore therethrough and reinforced by a metal insert having an annular band portion which is completely covered with fluorocarbon polymer which comprises: forming a tubular core preform by introducing powdered fluorocarbon polymer into the annular space between a core pin and a tubular mold and compacting said polymer particles by applying pressure axially of said mold, the outer diameter of said core preform being such as to tightly engage the inner annular band portion of said reinforcing metal insert, positioning the annular band portion of said insert on the tubular preform intermediate the ends of said preform, placing the preform, core pin and insert as a core unit in a plug-forming mold with the preform and reinforcing insert located at an intermediate position axially in said mold, filling the plug-forming mold with powdered fluorocarbon polymer so as to surround said preform and insert, applying pressure axially of said mold to form a coherent valve plug body in which said polymer forming said core preform is united with said polymer forming the body of said valve plug, and sintering said body of polymer to form a homogeneous body of sintered polymer completely surrounding said reinforcing insert.

3,223,764
PROCESS FOR PRODUCTION OF BIAXIALLY ORIENTED POLYPROPYLENE FILM

Harry A. Kahn, Macedon, and Edward D. Henze, Pittsford, N.Y., assignors to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Nov. 28, 1961, Ser. No. 155,446
10 Claims. (Cl. 264—178)

1. A process for the production of biaxially oriented film which comprises the following continuous, sequential steps:

(a) extruding polypropylene resin, having an isotatic polypropylene content of greater than about 70% by weight, at a temperature of about 350° to 550° F. from an extrusion zone in a web thickness of about 8 to 12 times finished web thickness and at a draw down ratio above about 7:1 to obtain maximum melt orientation;

(b) rapidly cooling said extruded web in a zone containing substantially a ripple-free liquid quench whose upper surface is maintained at a distance of about ⅜ to 2 inches from the exit point of the web from said said extrusion zone;

(c) withdrawing said extruded web from the liquid quench and stretching the web in a longitudinal direction at a temperature of about 200° to 300° F. to a stretch ratio of about 1.2:1 to 1.6:1;

(d) heating the longitudinally stretched web, while said web is under longitudinal tension, to a temperature of about 250° to 300° F.;

(e) stretching the heated longitudinally stretched web in a transverse direction at a temperature of about 200° to 300° F., while said web is under longitudinal tension, to obtain a stretch ratio of about 6:1 to 12:1;

(f) cooling the resulting biaxially oriented polypropylene film to about ambient temperature; and

(g) recovering the biaxially oriented polypropylene film.

3,223,765
METHOD FOR MAKING COMPOSITE SECTIONS FOR USE AS CRAWLER TRACKS AND THE LIKE

Gordon I. McNeil, 330 E. Perry St., Port Clinton, Ohio

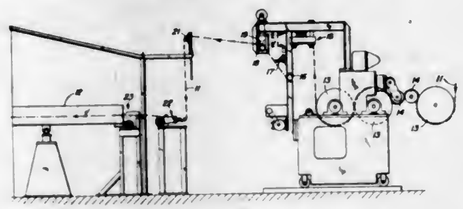
Filed May 9, 1962, Ser. No. 193,495
5 Claims. (Cl. 264—229)

1. A method of making an endless belt having improved strength and wear-resistant characteristics from a plurality of composite, segmental sections to be applied to track laying vehicles of the type including at least one wheel or the like, the steps comprising, providing a lower mold member and an upper engageable mold member which together define a mold cavity, said mold cavity having a radius of curvature which is substantially greater than the radius of curvature of the wheel to which the belt is to be applied, attaching a plurality of elongated metallic inserts at one end in laterally spaced, stationary relationship to said lower mold member, applying tension to the other end of said inserts in an amount sufficient to draw said inserts downwardly into spaced, parallel relationship within the cavity of said lower mold member, supporting said tensioned inserts in predetermined spaced relationship from the bottom of the cavity of said lower mold member, filling said cavity with rubber-like material, engaging said upper mold member over said lower mold member, vulcanizing the rubberized material around said tensioned inserts under heat and pressure wherein the tension on said inserts and the reactive force imparted thereto by the radius of curvature of the cavity in said lower mold member coact to maintain the inserts in said spaced, parallel relationship to provide a composite, segmental section, and subsequently removing said section from between the upper and lower mold members and joining a plurality of such sections together in end-to-end relationship to provide an endless belt.

3,223,766
BASE FILM OSCILLATION

Edward D. Henze, Pittsford, and Edward W. Forman, Jr., Palmyra, N.Y., assignors to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia

Filed Sept. 17, 1962, Ser. No. 223,933
9 Claims. (Cl. 264—288)



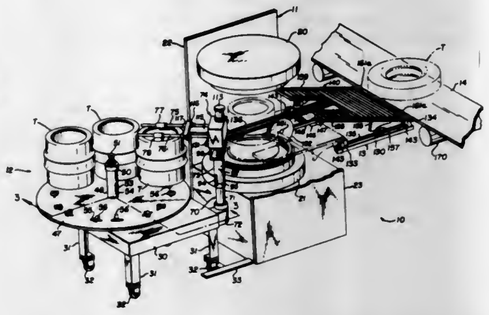
1. A method for producing random variations in the gauge profile of a continuous thermoplastic sheet material while transversely orienting said sheet material, comprising feeding the sheet material longitudinally through a tenter frame and effecting oscillatory motion between the sheet material and the tenter frame to produce a transversely oriented sheet material having a random distribution of longitudinal gauge bands throughout the width thereof.

5. An apparatus for randomizing variation inherent in the gauge profile of a continuously produced thermoplastic sheet material, including a tenter frame, means for longitudinally feeding said sheet material toward and into said tenter frame and means for laterally oscillating the sheet material and the tenter frame relative to one another during the initial stage of transverse orientation of the sheet material in the tenter frame.

3,223,767
METHOD OF LOADING A TIRE IN A TIRE PRESS

Edward J. Harris, 1733 Tanglewood Drive, Akron, Ohio

Continuation of application Ser. No. 788,456, Jan. 22, 1959. This application Oct. 7, 1964, Ser. No. 402,256
1 Claim. (Cl. 264—326)



In the method of curing an unvulcanized tire in a tire press composed of an upper and lower mold part, the steps which comprise

(a) accurately vertically positioning an uncured tire on a horizontal support by contacting the inner surface of said tire adjacent its bottom by positioning means,

(b) engaging only an upper inside portion of said tire so positioned by transporting means,

(c) and then by means of said transporting means, (1) maintaining said accurate vertical orientation of said tire; (2) transporting said accurately vertically positioned tire from said positioning means to an open tire mold, and (3) accurately locating said accurately vertically oriented tire concentrically into said mold part,

(d) disengaging said transporting means and removing same leaving said tire in the mold in perfect vertical alignment,

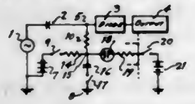
(e) closing the mold and molding the tire.

ELECTRICAL

3,223,768
KEYING SYSTEMS FOR ELECTRIC MUSICAL INSTRUMENTS

Walter Munch, Jr., Covington, Ky., and Robert C. Scherer, Cincinnati, Ohio, assignors to D. H. Baldwin Company, Cincinnati, Ohio, a corporation of Ohio

Filed Aug. 28, 1961, Ser. No. 135,101
36 Claims. (Cl. 84—1.01)



1. In an electronic organ, a source of alternating voltage representing musical tone, a load, a first circuit interconnecting said source and said load, said circuit including diode means and capacitive means connected in circuit with said diode means and said source, said diode means being connected to provide rectified charging current of one sign only to said capacitive means from said source, said capacitive means being connected completely and alone to back bias said diode means into non-conductive state with respect to said alternating voltage when charged from said source via said diode means, a further circuit comprising in series a source of direct voltage, a switch and a resistance, said further circuit being poled and connected to provide charging current to said capacitive means of sign opposite to said one sign and of magnitude sufficient to enable free passage of the entire wave form of said alternating voltage through said diode means to said load, said resistance having a value when taken in conjunction with the capacity of said capacitive means to provide a time constant selected to provide an audibly gradual transition of said diode means from the non-conductive to the conductive state on closure of said switch.

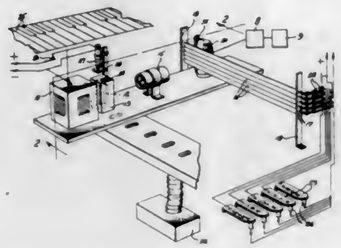
3,223,769
PHOTO ELECTRIC ORGAN

Richard F. Wroblewski, 335 E. 8th St., New York 9, N.Y.

Filed Oct. 11, 1963, Ser. No. 315,608
14 Claims. (Cl. 84—1.18)

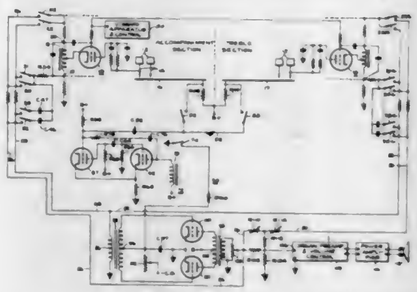
1. In a photoelectric organ for delivering a musical sound, a playing key, a switch operated by said key, a light source having a condensing lens for transmitting light, a transparent reed block aligned with the trans-

mitted light and having a reed chamber with an air hole, a reed adapted to be vibrated within the reed chamber, an air chest communicating with the reed chamber, air exhaust fan for exhausting air from the air chest and the reed chamber to vibrate the reed therein, a plunger normally closing the air hole in the reed chamber, a solenoid for operating said plunger to open the air hole, said key switch connected in electric circuit relation with the solenoid to retract the plunger when the playing key is depressed, and thereby cause the reed to vibrate, said



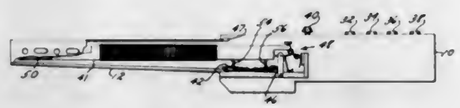
light passing through said chamber containing said air driven reed, a projection lens in the path of the transmitted light from the reed, a photoelectric cell in front of said projection lens, a plurality of selectively operated normally closed shutters disposed in front of the photoelectric cell solenoids for respectively operating the shutters, means including a tone coloring strip disposed between the shutter and photoelectric cell for controlling the timbre of the musical sound, tablet keys for operating the respective shutters, and amplifier and speaker means operated by the photoelectric cell to deliver the musical sound.

3,223,770
LEGATO PERCUSSION APPARATUS FOR ELECTRICAL MUSICAL INSTRUMENTS
John M. Hanert, Des Plaines, Ill., assignor to Hammond Organ Company, Chicago, Ill., a corporation of Delaware
Filed Sept. 30, 1960, Ser. No. 59,640
4 Claims. (Cl. 84—1.26)



1. In an electrical musical instrument having an output system, a manual comprising a plurality of playing keys extending throughout the accompaniment and treble ranges, a plurality of sources of electrical musical tone signals of corresponding pitch ranges, a plurality of switches respectively operated by the keys to render the associated sources effective to transmit tone signals to the output system, one of the poles of each of the switches operated by keys in the accompaniment section being connected to a common conductor, one of the poles of each of the switches associated with the keys in the treble register being connected to a second common conductor, a one shot multivibrator, means optionally operable to connect the input of said multivibrator to either or both of said common conductors, means responsive to a pulse produced upon closure of one of the key operated switches to trigger said multivibrator, a percussive tone intensity envelope control means, means operated upon triggering of said multivibrator to trigger the operation of said percussive tone intensity envelope control means, tone control means for seelctively transmitting tone signals from said sources to the output system, and additional tone control means selectively operable to transmit signals from the sources through said percussive intensity envelope control means to the output system.

3,223,771
ELECTRONIC MUSICAL INSTRUMENT EMPLOYING FINGER-PRESSURE MEANS TO SEQUENTIALLY ENERGIZE OSCILLATOR MEANS AND AMPLIFIER MEANS
Alvin S. Hopping, Nolan's Point, Lake Hopatcong, N.J.
Filed Feb. 23, 1962, Ser. No. 175,022
2 Claims. (Cl. 84—1.26)

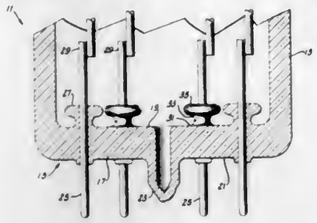


2. A musical instrument which comprises a transistorized tone generator having a finger-operated tone selector, means for biasing said tone selector to a normal rest position in which no tone is selected, a power supply for said tone generator connected thereto through a switch operated by said tone selector, said switch being in an open position in which position said tone generator is deactivated when said tone selector is in its normal rest position, a transistorized amplifier for amplifying the output of said tone generator, a power supply for said amplifier connected thereto through a second switch also operated by said tone selector, said second switch normally being in an open position in which position said amplifier is deactivated when said tone selector is in its normal rest position, said finger-operated tone selector being adapted, on application of initial finger pressure thereto, to determine the tone generated by said generator, on the application of further finger pressure thereto, to close said switch between said tone generator and said power supply therefor, thereby energizing said tone generator, and on application of yet further finger pressure thereto, to close said second switch between said amplifier and said power supply therefor, thereby energizing said amplifier, whereby the output of said musical instrument is devoid of key clicks and is completely silent when not generating a tone.

3,223,772
LEAKAGE INHIBITING SUPPORTING STRUCTURE
Robert J. Moening, Ottawa, Ohio, assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Mar. 12, 1964, Ser. No. 351,376
2 Claims. (Cl. 174—17.05)

1. A leakage inhibiting supporting stem structure for an electron discharge device comprising:
- an insulative wafer member having oppositely disposed interior and exterior surfaces;
- a plurality of spaced electrical conductors hermetically sealed into said member and extended therethrough; and
- a plurality of solid insulative circularly configurated beads providing vertical support for said conductors

formed of said wafer member material each having a diametrical base portion integral to said interior surface of said member, a body portion having a smaller diametrical dimension thereabove and a laterally extended terminating top portion having a larger diametrical dimension than said body and said base portions to form a mushroom-shaped bead, all of said portions of each bead being sequentially com-



bined and integrally formed of uninterrupted like material continuous from said wafer member to bondingly encompass the total section of each respective conductor contained therein, said plurality of beads each having a combined surface contour wherein said laterally extended top portion provides shielding to said body and base portion of said bead and said wafer member to inhibit electrical leakage thereover.

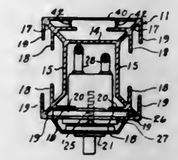
3,223,773
HIGH-TENSION CABLE INSULATED WITH SYNTHETIC TAPE AND OIL
Paolo Gazzana Priaroggia, Milan, Italy, assignor to Pirelli Societa per Azioni, Milan, Italy, a corporation of Italy
Filed Feb. 27, 1962, Ser. No. 175,991
Claims priority, application Italy, Mar. 31, 1961, 5,950/61
8 Claims. (Cl. 174—25)



3. A high-tension electric cable comprising a conductor surrounded by a plurality of layers of oil impermeable insulating tape of synthetic plastic material, each of said layers being formed by a single thickness of said tape, at least one oil impermeable, continuous filament of synthetic plastic material which is thin relative to the thickness of said tape disposed intermediate and in contact with each of said layers and the next layer and separating each of said layers from the others throughout their lengths, said filament being disposed in a predetermined ordered arrangement throughout the length of said cable with at least portions of its periphery separated from other portions thereof and from the adjacent tape to provide lengthwise and circumferential fluid passageways between the adjacent layers, each of which passageways extends from one end to the other end of said cable, and an insulating oil filling said passageways.

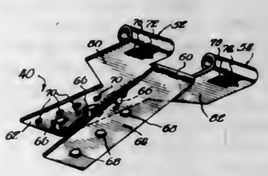
3,223,774
ELECTRICAL FIXTURE MOUNTING SYSTEM WITH A DOUBLE FLANGE FRAMING MEMBER
Leonard O. Downes, 4077 2nd St., Wayne, Mich.
Filed Oct. 1, 1962, Ser. No. 227,370
7 Claims. (Cl. 174—61)

7. In combination
(a) a framing member having a longitudinal central recess,
(b) each side of said recess having a pair of spaced parallel flanges extending toward and in a common plane with the flanges on the other side of said recess,
(c) an electrical fixture carried in said recess and means securing said fixture to said flanges of said framing member,
(d) electricity conducting means carried in said recess and electrically connected with said fixture,
(e) said securing means comprising means carried by said fixture and dimensioned to straddle said flanges,



a nut member dimensioned to pass between the outermost pair of said flanges and upon rotation to straddle said outermost flanges in a position intermediate said outermost flanges and the innermost of said flanges,
a screw member carried by said flange straddling means and received by said nut member and operable upon tightening of said screw member to bring said nut member and said straddling means into tight engagement with said flanges.

3,223,775
CONDUCTIVE CLIP
Daniel Eugene Nugent, 1924 Greendale Ave., Park Ridge, Ill.
Filed Mar. 29, 1963, Ser. No. 269,105
1 Claim. (Cl. 174—84)



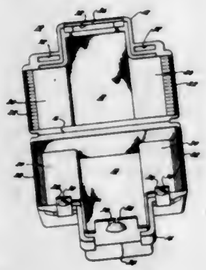
A connector for connecting electrical wires to electrically conductive interlying material in the laminate of a heating panel and interconnecting the wires comprising:
a unitary electrically conductive metal clip;
said clip having a pair of planar clamping portions hingedly secured to one another and adapted to abut opposing sides of a heating panel laminate and clamp the laminate therebetween;
at least one of said pair of clamping portions having a plurality of elongate tines projecting therefrom, said elongate tines being widely spaced interiorly over said one clamping portion and projecting toward the other of said clamping portions,
the other of said pair of clamping portions having apertures therein correspondingly spaced and in alignment with said elongate tangs to receive said elongate tines therethrough,
said elongate tines being sufficiently elongate to extend through the laminate and then through said apertures and to provide a sufficient extension beyond said apertures for bending over to securely clamp said pair of said clamping portions together,

a plurality of spaced and staggered abbreviated tines projecting interiorly from at least one of said pair of clamping portions toward the other of said clamping portions, said abbreviated tines projecting sufficiently to only partially penetrate the laminate to make electrical engagement with the electrically conductive material therein;

a pair of tubular portions each adapted to receive and secure therein an electrical wire;

and a connecting portion connecting said pair of tubular portions to each other and to said pair of clamping portions in spaced relation to said clamping portions.

3,223,776
CABLE-TAP CLOSURE DEVICE
Raymond F. Piasecki, Hazlet, N.J., assignor to The Thomas & Betts Co., Elizabeth, N.J., a corporation of New Jersey
Filed May 13, 1965, Ser. No. 455,488
3 Claims. (Cl. 174—138)



1. A unitary closure device formed of insulating material for receiving a cable-tap connection therein comprising, a pair of hingedly connected complementary box-like half-sections, coactable latching means on the respective half-sections for holding the sections in closed relationship about the cable tap connection, each of said half-sections being bounded at its opposite ends by a transverse end wall, each end wall constituted by a plurality of parallel rows of aligned, flexible, comb-like tines, disposed in outwardly inclined relation, the tines in each row being spaced apart a distance less than the width of the tine, the tines in the innermost row being staggered with respect to the tines in the adjacent row, said tines being adapted to distend outwardly about the periphery of a pair of connected cables upon closure of said half-sections thereon, the tines in the innermost row filling the spaces between the tines in the next adjacent row thereby substantially shielding said cable tap connection.

3,223,777
SCANNER SYSTEM
Jack A. Crawford and William H. Woodworth, China Lake, Calif., assignors to the United States of America as represented by the Secretary of the Navy
Filed Nov. 26, 1962, Ser. No. 240,183
8 Claims. (Cl. 178—5.4)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. A method of televising the earth's surface, comprising:

providing a television mechanical-scanning and transmitting system having a lens system, and a rotatable scanner disk provided with a plurality of equally spaced light admitting apertures arranged in a circular pattern about the edge portion of the disk and spaced at equal distances from the center thereof;

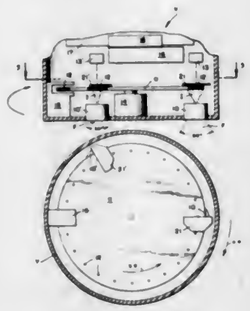
displacing the system from the surface of the earth into celestial space;

rotating said disk;

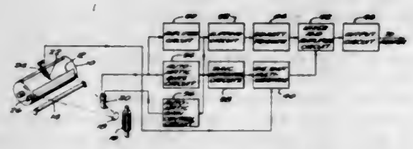
focusing light reflected from the surface of the earth for forming an image of a view of the earth on said disk through said lens system, whereby portions of the image in the form of beams of light are passed in sequence through said disk to impinge on a light responsive means to thus provide a series of image reproducing scan-line generated sweep signals;

rotating the system relative to the earth, while continuing to focus the image forming light on the disk so that the relative rotation between the system and the earth presents a rotating image on the surface of the disk, which image is sequentially traversed in a chopping fashion by said apertures for thereby progressively generating a series of bisecting scan-lines intersecting at the center of the image; and

blanking each first occurring one-half portion of each bisected scan-line whereby display is effected through a progression of scan-line generated sweeps radiating from a common center of the image.

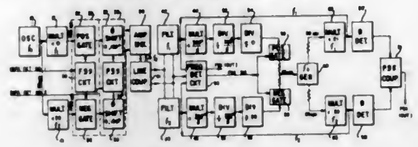


3,223,778
FACSIMILE SYSTEM
Joseph J. Stone, Glenview, Roman A. Adams, Skokie, Henry Dahl, Mount Prospect, and Paul J. Estock, Elk Grove Village, Ill., assignors to A. B. Dick Company, Chicago, Ill., a corporation of Illinois
Filed Feb. 26, 1962, Ser. No. 175,445
17 Claims. (Cl. 178—7.1)



8. In a system of the type wherein copy having data thereon is scanned by a phototube for generating electrical signals the improvement comprising means to which said electrical signals are applied for generating therefrom a background-level signal representative of the background reflectivity of said copy, and means for applying said background-level signal to said phototube for varying the gain thereof responsive to said background-level signal for accentuating the data-representative portion of said electrical signals.

3,223,779
COMBINED FREQUENCY SHIFT AND PHASE SHIFT KEYING
Maynard D. McFarlane, Corona del Mar, Calif., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
Filed Jan. 23, 1962, Ser. No. 168,122
29 Claims. (Cl. 178—66)



1. A communication system comprising;

means generating a fundamental frequency,

means generating a pair of harmonically related frequencies from said fundamental frequency, said frequencies being conveyed in adjacently related channels,

means coupling said frequency channels to corresponding frequency channels in a receiving apparatus,

means effective to permit only one of said frequencies to be transmitted to said receiving apparatus at any instant,

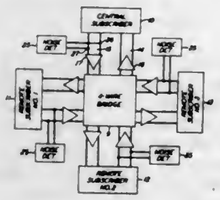
means effectively impressed similar phase shift steps of less than 180° in each said channel in accordance with information to be transmitted, frequency detecting means in said receiving apparatus indicating which of said frequencies is instantly transmitted,

means effective in said receiving apparatus developing a reference signal from the received frequency devoid of said frequency shifted information and synchronized with said generated harmonic frequency,

means effective in said receiving apparatus for comparing the phase of said received frequency with the phase of said developed frequency,

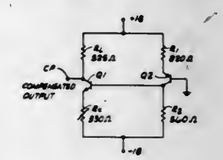
and means in said receiving apparatus for indicating the existence of a phase shift difference as an information output.

3,223,780
METHOD OF AND APPARATUS TO MONITOR INTERCONNECTED SPEECH CIRCUITS FOR NOISE
Werner G. Feger, Morristown, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 22, 1961, Ser. No. 161,647
19 Claims. (Cl. 179—1)



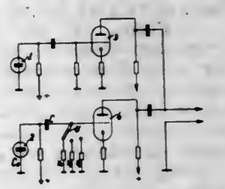
3. In a speech transmission system including a plurality of discrete speech transmission circuits, a bridge network to interconnect said circuits for enabling speech communication therebetween, each circuit transmitting speech and noise voltage tending to render the speech voltage unintelligible, both of which voltages are communicable to the other circuits at said bridge, and a plurality of devices for identifying the respective circuits transmitting such speech and noise voltage, each of said devices comprising terminals to connect each device to one of said circuits, means to translate the speech voltage into a plurality of groups of pulses having a predetermined magnitude for representing the syllables of the speech voltage and having relatively long time intervals between adjacent pulse groups to represent the time intervals between adjacent syllables, said means also translating the noise voltage into a constant voltage having a predetermined magnitude substantially equal to the predetermined pulse magnitude, and means connected to said translating means and responsive to the speech pulse groups to indicate in an intermittent manner the speech voltage on said one circuit and further responsive to the constant noise voltage to indicate in a continuous manner the noise voltage on said one circuit.

3,223,781
CONSTANT VOLTAGE DEVICE
Alfred Magnus Hestad, Chicago, Ill., assignor to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Maryland
Filed Feb. 13, 1962, Ser. No. 174,351
12 Claims. (Cl. 179—1)



1. A constant voltage device comprising a plurality of voltage dividers connected in parallel between sources of potential, each arm of said voltage dividers including an impedance element which has characteristics such that relatively large voltage drop variations may occur across the elements, means individually associated with each of said voltage dividers for controlling the gain of current flowing therethrough, means responsive to voltage changes appearing at a potential point on one of said voltage dividers for controlling the current gain in another of said voltage dividers, and means comprising one arm of said other voltage divider for providing a useful load circuit including a telephone speech path, whereby the voltage appearing across said one arm provides the talking battery for said speech path.

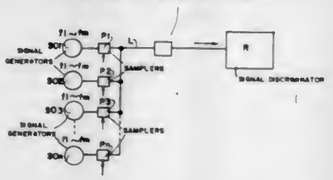
3,223,782
DIRECTIONAL MICROPHONE WITH DISTANCE CONTROL
Bernhard Weingartner, Vienna, Austria, assignor to Akustische u. Kino-Gerate Gesellschaft m.b.H., Vienna, Austria
Filed June 12, 1962, Ser. No. 201,958
Claims priority, application Austria, June 19, 1961, A 4,749/61
13 Claims. (Cl. 179—1)



1. A sound transmitter having a unidirectional pattern comprising, in combination, at least one electrostatic transducer having a unidirectional pattern and a frequency response characteristic normally varying with the distance from a 0° frequency sound source; and selec-

tively adjustable, frequency dependent attenuating means operatively coupled to said transducer and adjustable to effect optimum attenuation of the rear frequency response of the latter independently of the distance of said transducer from a sound source to compensate said distance-variable frequency response of said transducer to maintain the unidirectional frequency response of said sound transmitter substantially constant over a range of such distances.

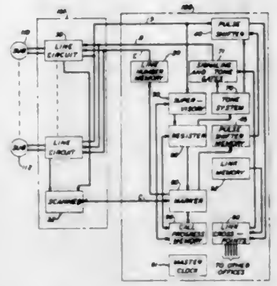
3,223,783
TIME-DIVISION MULTIPLEX VOICE-FREQUENCY DISCRIMINATOR
Takuma Yamamoto, Tokyo, and Toshihiko Nakamura and Ryosaku Shimada, Kawasaki-shi, Japan, assignors to Fuji Tsushinki Seizo Kabushiki Kaisha, Kawasaki, Japan, a corporation of Japan
Filed May 8, 1961, Ser. No. 108,426
Claims priority, application Japan, May 9, 1960, 35/23,850
5 Claims. (Cl. 179—15)



1. In a time-division multiplex-channel transmission system, a voice-frequency signal discriminator of the multiplex time-division common to all channels comprising input means for receiving sampled voice-frequency signals through respective channels, first threshold discriminating means for recognizing the time when an incoming sampled signal has exceeded a first predetermined threshold level, second threshold discriminating means responsive to recognition by said first threshold discriminating means for picking up sampled incoming pulses exceeding a second predetermined threshold level lower than said first threshold level, pulse extracting means connected to said second threshold discriminating means for extracting a particular pulse from groups of said picked up sampled pulses exceeding the second threshold level, and counting means connected to said pulse extracting means for measuring a given parameter of extracted pulses within a fixed time period.

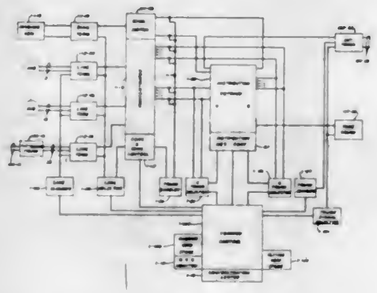
3,223,784
TIME DIVISION SWITCHING SYSTEM
Hiroshi Inose, Shibuya-ku, Yoichi Kawai, Bunkyo-ku, Zenya Koono, Musashino, Mikio Takagi, Shinagawa-ku, Yasuhiko Yasuda, Koganei, and Yuichi Yoshida, Kitatama-gun, Japan, assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Apr. 24, 1962, Ser. No. 189,873
35 Claims. (Cl. 179—15)

1. A communication system comprising a plurality of lines including active lines communicating in pairs, a common transmission channel, switching means for connecting said active lines to said channel in distinct time slots of a repetitive cycle, delay means connected to said channel to receive such samples and supervisory indications from a calling one of said active lines in a first time slot, means for registering outputs of said delay means in distinct recurring intervals to discriminate between said speech samples and supervisory indications provided by said first line, means connected to said registering means for receiving the registered supervisory indications designating a called line and for assigning a second time slot in the recurrent cycle to said called line, and means for transposing information between the distinct time slots assigned to said calling and called lines in communication, said last-mentioned means comprising a delay element connected to said channel to receive information from one of said calling and called lines in



the corresponding time slot, and means for applying an output of said delay element taken in the time slot assigned to the other one of said first and second lines to said channel to transmit the information to said other line.

3,223,785
ELECTRONIC TELEPHONE SWITCHING SYSTEM
Willis A. Budlong, Morristown, Glen G. Drew, Franklin Township, Somerset County, and John A. Harr, Morris Plains, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 30, 1959, Ser. No. 862,812
52 Claims. (Cl. 179—18)

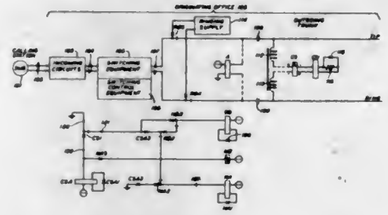


3. In a telephone switching system in combination a plurality of lines, a permanent memory for storing control program sequences of orders, a temporary memory for storing control information, common control means for controlling said system, said permanent memory and said temporary memory in response to individual orders received from said permanent memory, means responsive to each of a plurality of orders received from said permanent memory for regenerating information stored in said temporary memory, and other means responsive to orders for controlling said temporary memory for interrupting the operation of said regenerative means.

32. An electronic switching system comprising in combination a plurality of lines, a switching network connected thereto, permanent memory for storing sequences of orders for controlling said system and said network, common control means including an order register for receiving orders from said permanent memory, parity check means for checking orders entered upon said order word register, means responsive to a previous order and to an odd parity check by said parity check means for reordering the order entered on said order word register from said permanent memory.

39. An electronic telephone switching system comprising in combination, a permanent memory for storing sequences of orders for controlling said system, common control means for sending control signals to said permanent memory, a cathode-ray tube included in said permanent memory, means responsive to control signals received thereby for changing the location of the beam in said cathode-ray tube, a timer circuit, means operating concurrently with the change in direction of the beam in said cathode-ray tube for restoring said timer circuit to its initial condition and means responsive to the operation of said timing circuit for directing the beam within said cathode-ray tube to a predetermined rest location.

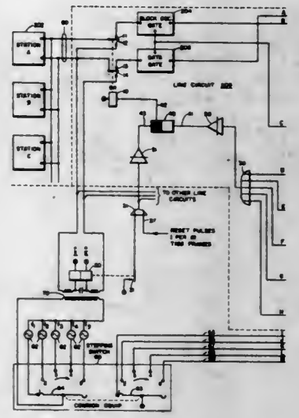
3,223,786
SIGNALING CIRCUIT
Donald C. Pilkinton, Metuchen, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed June 15, 1962, Ser. No. 202,751
8 Claims. (Cl. 179—18)



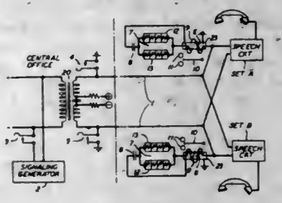
5. In a circuit for detecting polarity reversals on a trunk extending to a remote control terminal having controllable means for reversing the polarity of said trunk at a predetermined rate, a first relay operated during a normal polarity condition and released during a reversed polarity condition of said trunk, a second relay, means responsive to the first release of said first relay for operating said second relay, a third relay, means responsive to the reoperation of said first relay when said second relay is operated for operating said third relay, means responsive to the operation of said third relay for releasing said second relay, a fourth relay, and means responsive to the operation of said third relay for operating said fourth relay upon the second release of said first relay.

3,223,787
TELEPHONE RINGING CONTROL SYSTEM
Adam A. Jorgensen, Victor, N.Y., assignor, by mesne assignments, to Stromberg-Carlson Corporation, Rochester, N.Y., a corporation of Delaware
Filed Feb. 20, 1961, Ser. No. 90,412
4 Claims. (Cl. 179—84)

1. In combination, a plurality of line circuits each including a line, at least one station coupled to each of said lines, each station including means capable of returning answer supervision after being signaled, a signal generator common to said line circuits for selectively signaling the stations on said lines, an answer supervision detector common to said line circuits for detecting the return of answer supervision from said stations, switching means associated with each line circuit for coupling and decoupling said signal generator and said answer supervision detector to and from the line of its associated line circuit, common control means for controlling said switching means and including means for storing signaling information for controlling which switching means are to be actuated to couple said signaling generator and said answer supervision detector to said lines, said common control means further including means coupled between said means for storing and said switching means for actuating various ones of said switching means depending upon said signaling information stored within said means for storing, said common control means further including means responsive to the detection of said answer supervision signal from a particular line by said answer supervision detector for altering the signaling information pertaining to said particular line stored within said means for storing to disconnect said signaling generator from said particular line.



3,223,788
TELEPHONE RINGER CIRCUIT
Melville S. Hawley, Summit, and Donald W. McLellan, New Providence, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed June 22, 1962, Ser. No. 204,433
6 Claims. (Cl. 179—84)



5. Apparatus for apprising telephone subscribers of incoming calls comprising, in combination, an electromagnetically actuated tone structure including a percussion sounder and an armature disposed in striking relation thereto, a magnetic flux circuit including a core for vibrating said armature, first and second two terminal coils coaxially wound on said core, a two terminal network which exhibits a relatively high impedance to voltages applied thereto below a predetermined level and a

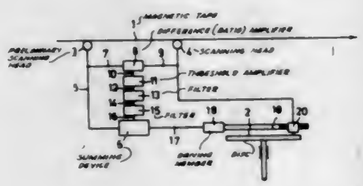
relatively low impedance to voltages applied thereto above said level, a capacitor disposed in series with said network, means for connecting a terminal of said first coil to a terminal of said network, means for connecting the other terminal of said first coil to a telephone line, means for connecting a terminal of said second coil to said capacitor, means for connecting the other terminal of said second coil to ground, and means including said telephone line for applying bipolar energy to said coils.

3,223,789

AUTOMATIC CONTROL OF GROOVE SPACING IN PHONOGRAPH RECORDS

Johan Lodewijk Ooms, Baarn, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed May 10, 1962, Ser. No. 193,755
Claims priority, application Netherlands, May 16, 1961, 264,825
5 Claims. (Cl. 179—100.4)



1. Apparatus for the automatic control of the groove spacing in phonograph records comprising: a moving carrier in which the signal to be cut into a phonograph record is recorded, a pick-up head for reading said signal from said carrier, a preliminary pick-up head for reading said signal prior in time to said scanning head, means for obtaining the instantaneous ratio between the output signals of said two pick-up heads, means for applying said ratio and the output signal of the preliminary pick-up head to deriving means for deriving a control voltage having a value dependent on said ratio and the output signal of the preliminary pick-up head, a cutting head for said record, a driving member for said cutting head, and means for applying said control voltage to said driving member.

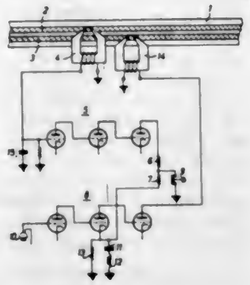
3,223,790

DUBBING CIRCUITS FOR MAGNETIC RECORDERS WITH MEANS FOR REDUCING FEEDBACK

Helmut Brandt, Berlin-Grunewald, Germany, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Feb. 8, 1962, Ser. No. 171,866
Claims priority, application Germany, Feb. 17, 1961, P 26,605
6 Claims. (Cl. 179—100.2)

1. Apparatus for dubbing signals recorded on one track of the tape of a magnetic recorder onto a second track of the same tape, comprising: a reproducing head scanning one track of a magnetic tape, a recording head for recording signals on a second track of the same magnetic tape, first and second signal coils associated with said reproducing and recording heads respectively, a first capacitor connected in parallel with said first signal coil, first amplifier means for amplifying the signals from said first coil, second amplifier means for amplifying the signals applied to said second signal coil, said second amplifier means comprising a plurality of stages one of which includes a tuned filter, and a resistor coupling between the output of said first amplifier means and an input of said one stage of the second amplifier means,



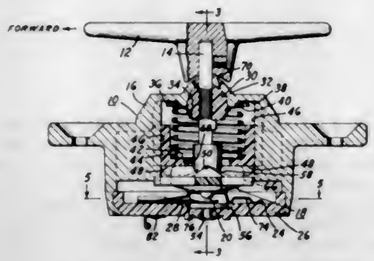
said parallel connection in combination with said tuned filter acting to suppress feedback from said reproducing head.

3,223,791

SIX-WAY SEAT ADJUSTER SWITCH WITH SPRING BIASED CENTERING MEANS AND GYRATIONAL PIVOT STRUCTURE

Bert R. Wanlass, Warren, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed July 9, 1963, Ser. No. 293,820
9 Claims. (Cl. 200—6)



1. An electrical switch having a base carrying contacts comprising, a switch body, an actuator means, a pivoting means pivotally disposed against the switch body carried by said actuator means and cooperating with the switch body, centering means formed as cooperating cam surfaces integral with said actuator means to center said actuator means after a pivotal movement thereof, said centering means including a ball integrally formed as a portion of said actuator means and a socket partially formed on said switch body and partially formed on said centering means, and a contoured contact blade in engagement with said centering means and being positioned relative to said actuator means to be slidably moved along the base of said switch to selectively engage contacts therein.

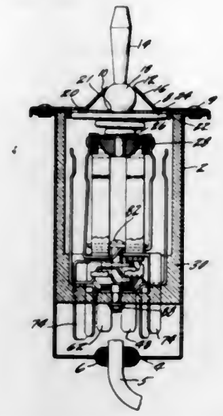
3,223,792

ELECTRIC SWITCH WITH UNIVERSAL PIVOT ACTUATOR

George W. Strother, Jr., Arlington, Va., assignor to Navionics, Inc., a corporation of Delaware

Filed Dec. 12, 1963, Ser. No. 330,107
16 Claims. (Cl. 200—6)

1. A multiple switch including a container having a cover, a base within the container, four pairs of fixed contact fingers extending upwardly from the base with the free ends arranged in a ring about the axis of the base, said pairs being spaced substantially 90° apart around said axis, another four pairs of contact fingers extending upwardly from the base and arranged within the ring formed by the first fingers, and an actuating lever extending through and pivoted in said cap and having on its inner end an actuator for moving said second pairs of contacts selectively into contact with the first pairs of fingers, diagonally opposite fingers of said first contact fingers being electrically interconnected.

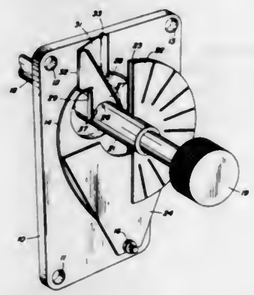


3,223,793

CONSTANT PRESSURE TYPE CONTACT SPRING

Warren C. Fackler and Carl E. Michel, Cedar Rapids, Iowa, assignors to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa

Filed Mar. 25, 1964, Ser. No. 354,666
6 Claims. (Cl. 200—11)



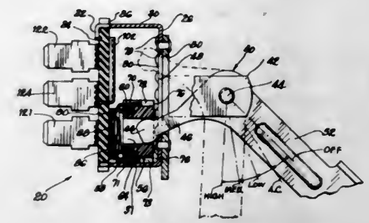
1. A contact arrangement comprising a sliding contact and a fixed contact, said sliding contact being attached to a supporting shaft and having a tapered portion attached to the shaft and extending therefrom and becoming narrower with distance away from the shaft, a bent portion extending from the tapered portion and adapted to engage said fixed contact with constant pressure, a first ridge formed along a first edge of said tapered portion and a second ridge formed along a second edge of the tapered portion, engagement of said bent portion with said fixed contact resulting in bending and torsional forces in the slide contact as it varies longitudinally relative to the shaft.

3,223,794

MULTIPLE POSITION ELECTRICAL SWITCH WITH CONTACT RAILS AND DUMMY CONTACT PRESSURE STABILIZERS

Leland C. Hoy, Skokie, and Borys Hazek, Mount Prospect, Ill., assignors to Indak Manufacturing Corp., Northbrook, Ill., a corporation of Illinois

Filed Nov. 13, 1963, Ser. No. 323,447
15 Claims. (Cl. 200—16)



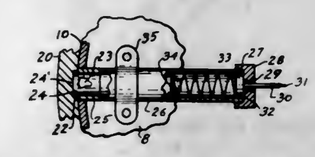
1. In an electrical switch,
the combination comprising a housing having a fixed insulating wall member,
a track comprising first and second fixed elongated substantially parallel conductive contact rails mounted on said insulating wall member within said housing,
at least one of said rails being segmented into a plurality of components,
a conductive contactor movable within said housing and having a first contact member riding in said track between said rails and slidably engaged with said rails to establish a closed circuit therebetween,
actuating means for moving said contactor along said track and within said housing,
at least two fixed conductive contacts mounted on said insulating wall member within said housing,
said contacts being on opposite sides of said track and spaced laterally from said rails,
and second and third contact members on said contactor and disposed on opposite sides of said track for engagement with said respective contacts,
said contactor having spring means biasing said contactor toward said insulating wall member and against said rails and said contacts,
said first, second and third contact members of said contactor being disposed in a triangular pattern to equalize the spring pressure among said first, second and third contact members.

3,223,795

BRAKE LINING SIGNAL SWITCH

Arnold J. Yerman, 9459 Kaiser St., Fontana, Calif.

Filed Feb. 17, 1964, Ser. No. 345,412
1 Claim. (Cl. 200—61.4)



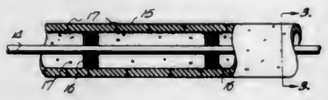
A signalling device for the brake units of vehicles and machinery; a shiftable brake shoe means, a rotary brake drum for contacting the shoe means, a casing with a shoulder therein attached to the shoe means, a lining on the shoe means, an electrical conductor brush in the casing having a portion extending to the lining, a conductor wire in electrical connection with the brush, means attached to the wire for operating a signal when the lining wears thin enough for the brush to make contact

with the brake drum, the brush having an offset means engaging the said shoulder to limit its motion toward the drum, and a conductor spring means in the casing constantly urging the brush toward the lining, the brush having a tough thin coating of insulating material except where the spring makes contact therewith to prevent the brush having electrical contact with the casing, lining, and the drum until the drum wears the coating to expose the brush for electrical contact with the drum.

3,223,796
INSULATED ELECTRIC FENCE WIRE STRUCTURE

Francis E. Willoughby, Potter, Nebr., assignor to Willoughby Manufacturing Company, Potter, Nebr., a corporation of Nebraska

Filed July 23, 1962, Ser. No. 211,548
6 Claims. (Cl. 200—61.41)

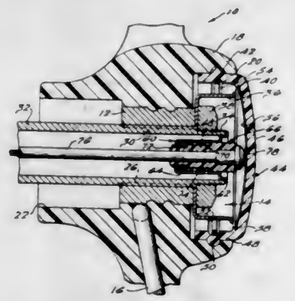


1. A fence adapted to be electrically charged to impart a spark to an animal which comes into contact therewith comprising an elongate conductor wire formed of electrically conductive material, an electrically insulative covering material substantially surrounding and enclosing said wire for inhibiting accidental grounding of said wire by weeds, grass and other objects, and means supporting said wire and covering a suitable distance above the ground surface to form the fence, said covering being provided at intervals along its length with interruptions therein disposed to provide a path for electrical discharge from the wire to an animal.

3,223,797
HORN BUTTON SWITCH

Miguel A. Ordorica, Lambertville, Mich., and Clarence E. Merritt, Toledo, Ohio, assignors to Kaiser Jeep Corporation, a corporation of Nevada

Filed Sept. 20, 1962, Ser. No. 225,011
8 Claims. (Cl. 200—61.54)

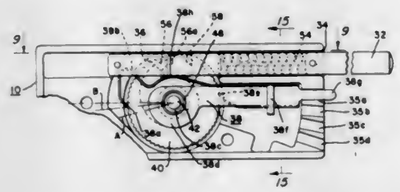


1. Apparatus for actuating a horn comprising a steering wheel member having a hub, means for securing said hub upon an end portion of a steering tube, a flexible cap having a front face and an annular flange axially extending from said front face and disposable matably relative to an annular surface portion of said hub, means resiliently urging said annular flange into peripheral engagement with said surface portion of said hub, and electrical circuit means selectively actuable for completing an electric circuit to the horn, said electrical circuit means comprising a first electrical contact member connected to the inside surface of said front face of said flexible cap and having a contacting surface mounted on and contiguous to said inside surface, a second electrical contact member, and means for securing said second electrical contact member proximate to and axially spaced from said contacting surface of said first electrical contact member whereby axial inward movement of said front face moves said first contact member into engagement with said second contact member.

3,223,798
VARIABLE TIMER SWITCH

Everett C. Armentrout, New Carlisle, and Jost S. Sucro, Dayton, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Apr. 18, 1963, Ser. No. 274,039
10 Claims. (Cl. 200—61.69)

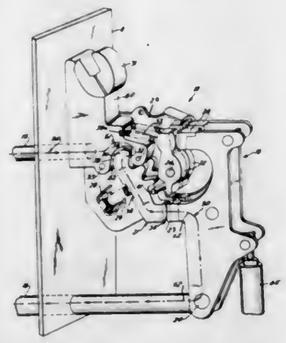


1. In control apparatus, an electrical switch, said switch comprising a body, a temperature responsive multiple position switching means disposed within said body, a cycle control having means for applying a mechanical impulse to said temperature responsive multiple position switching means for moving said switching means from a first position to a second position, said switching means including a bimetallic element and a heater therefor, said switching means responsive in said second position to a temperature change for movement of said switching means from said second position to said first position in response to movement of said bimetallic element by said heater.

3,223,799
STATIONARY CONTACT STRUCTURE HAVING BLOW-OPEN, BLOW-CLOSED, LOOP CURRENT PATHS

Frank J. Pokorny, Hatboro, and George A. Wilson, Media, Pa., assignors to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Dec. 29, 1960, Ser. No. 79,425
6 Claims. (Cl. 200—87)

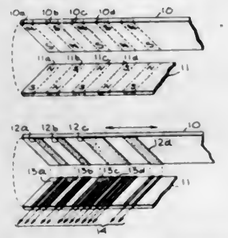


1. In combination, first and second contact pairs, first and second terminals each having first and second ends, a conductive bridge having first and second ends, said conductive bridge being pivotally mounted at its first end thereof to the first end of said first terminal to permit said bridge to be rotated between an open and a closed position, said first contact pair being fixedly mounted a spaced distance apart at the second end of said bridge, said second contact pair being pivotally mounted a spaced distance apart on said second terminal, said first and second contact pairs being engaged when said bridge is in said closed position and being disengaged when said bridge is in said open position, said first contact being comprised of first and second contact members, said second contact pair being comprised of third and fourth contact members, said fourth contact member having first and second ends, said second terminal, said fourth contact member and said second contact member defining a loop current path to bias said fourth contact member into engagement with said second contact member, said second terminal including a pair of side plates, each of said side plates having an aperture, said first end of said fourth contact member having a cylindrical hole, a cylinder inserted through said hole, the ends of said cylinder engaging said side plates at said apertures, a spring means positioned within said cylinder for urging said contact member into electrical engagement with one of said side plates, said fourth contact member being freely rotatable between a first and second position on said cylinder.

3,223,800
MULTIPLE ELECTRIC SWITCH FORMED FROM MAGNETIC ELEMENTS

Alvin A. Snaper, Burbank, Calif.
(9722 Cassba, Chatsworth, Calif.)

Filed Feb. 27, 1964, Ser. No. 347,796
2 Claims. (Cl. 200—87)

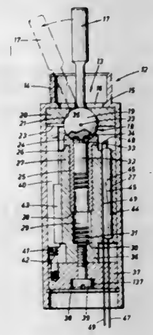


1. An electrical switch in which magnetic forces are used to make and break different switch connections, said switch comprising: a first member made of a dielectric material that contains particles homogeneously distributed throughout it that can be permanently magnetized, said first member being mounted in a fixed position and magnetically polarized along a number of areas that extend thereacross with the poles of said polarized areas alternating in a predetermined pattern, said first member including a number of separate and distinct electrically conductive strips mounted in a first pattern on a surface thereof; and a second member made of a dielectric material that contains particles homogeneously distributed throughout it that can be permanently magnetized; said second member being mounted in face-to-face relationship with said first member and movable relative thereto in a direction that is transverse to the direction in which the polarized areas extend on said first member, said second member also being magnetically polarized along a number of areas that extend thereacross with the poles thereof arranged in the same pattern as on said first member, said second mmeber including a plurality of groups of electrically conductive strips that are interlaced with one another mounted on a surface thereon, the surfaces of said first and second members on which said strips are mounted being face-to-face with each other, said plurality of groups of electrically conductive strips on said second member being arranged so that they are contacted in succession by the electrically conductive strips on said first member in response to successive displacements in the same direction of said first member relative to said second member.

3,223,801
PERMANENT MAGNETIC REED SWITCH

Douglas J. Cummins, 39 Strode Drive, Scarborough, Ontario, Canada, and Peter T. Davy, R.R. 2, Markham, Ontario, Canada

Filed Sept. 21, 1964, Ser. No. 397,840
7 Claims. (Cl. 200—87)

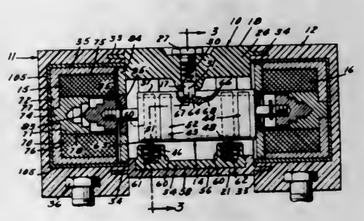


1. A circuit controller comprising a plurality of sealed switches each having contacts of ferromagnetic material, means supporting said plurality of switches in spaced apart relationship, a plurality of permanent magnets disposed in said supporting means, whereby a selected number of said sealed switches are magnetically responsive to one magnet only, each magnet being slidably disposed in an individual plane with means biasing each of said magnets to alter its magnetic effect on said selected number of sealed switches, a plurality of guide means in said support means, manually operable means movable in said plurality of guide means and a plurality of detent means on said manually operable means aligned in the planes of movement of said magnets, the movement of said manually operable means in one of said guide means being effective to move one of said detent means against a respective one of said magnets leaving the others unaffected.

3,223,802
SOLENOID HAVING A TWO-PIECE ARMATURE

Gunter H. Horst, Arcadia, Calif., assignor to Schulz Tool and Manufacturing Co., San Gabriel, Calif., a corporation of California

Filed June 14, 1963, Ser. No. 287,896
10 Claims. (Cl. 200—98)



1. A solenoid providing, when energized, a relatively large force during the initial portion of movement of its

armature and a relatively small force during the remaining portion of movement of its armature to overcome an initial large resistance to the armature movement, said solenoid comprising:

(a) a single solenoid having a winding adapted to be energized and of cylindrical shape providing a hollow interior space and having at least one flat surface;

(b) a movable aramture for said solenoid and adapted to be attracted by said solenoid winding when said winding is energized, said armature including

(1) a disc-shaped flapper disposed adjacent one of the flat surfaces of said winding and adapted to be attracted thereby for providing the initial large force, said flapper being spaced a relatively small distance from said solenoid, said armature further including

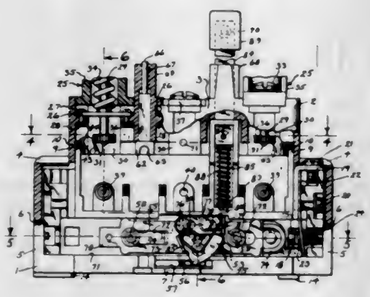
(2) a plunger mechanically coupled to said flapper, said plunger being disposed in the interior space of said solenoid and adapted to be attracted thereby, said plunger providing the relatively small force.

3,223,803

MULTI-POLE PROTECTIVE RELAY

Robert E. Walters, Bayside, Wis., assignor to Allen-Bradley Company, Milwaukee, Wis., a corporation of Wisconsin

Filed Mar. 21, 1962, Ser. No. 181,418
8 Claims. (Cl. 200—116)



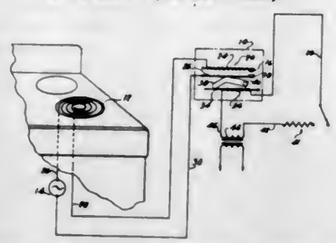
1. In a relay the combination comprising: a supporting structure; a trip member mounted by said structure movable between cocked and tripped positions; an actuator mounted by said structure movable between retracted and actuating positions with a part in the path of movement of said trip member that is engageable by the trip member to be carried therewith as the trip member moves toward tripped position, the actuator thereby being carried to actuating position; spring means biasing said trip member to cocked position and said actuator to retracted position; a plurality of tripping devices each of which is movable independent of the others between latched and operating positions; means mounting said tripping devices on said supporting structure; a striking portion forming a part of each tripping device that is engageable with the trip member to carry the trip member toward tripped position upon movement toward operating position and then to be carried by the trip member toward latched position upon movement of the trip member toward cocked position, each striking portion being independent of said trip member to remain in its latched position when another of said tripping devices moves to its respective operating position; bias means urging each tripping device toward its operating position; and releasable restraining means for holding each tripping device in its latched position.

3,223,804

LOW POWER THERMOSTATIC CONTROL HAVING INDEPENDENT LOAD SOURCE

Marshall Miles, Skokie, Ill., assignor to Stewart-Warner Corporation, Chicago, Ill., a corporation of Virginia

Filed Sept. 22, 1961, Ser. No. 140,066
3 Claims. (Cl. 200—122)



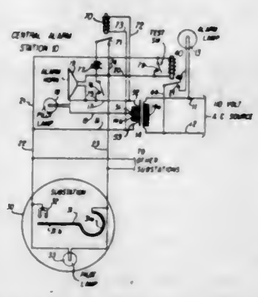
1. Apparatus for controlling average electric power delivered to a load from a first power source comprising: a pair of contacts, a first flexible arm of resistive material supporting one of said contacts, a second flexible arm supporting the other contact, said arms acting to series connect said contacts, said load, said resistive material and said first power source, a low power, controllable current source separate from said first source, a first bi-metal strip, means connected to said low power source for heating said first bi-metal strip, lever means operable by said first bi-metal strip to flex said second arm for initiating engagement of said contacts and controlling the contact pressure therebetween, and a second bi-metal strip attached to and electrically isolated from and in heat absorbing relation with said resistive flexible arm to intermittently disengage said contacts responsive to the power delivered to said resistive material.

3,223,805

FIRE ALARM HAVING FAIL SAFE BIMETAL-MAGNETIC MEANS

Jefferson C. Gibson, 217 E. Cullerton, Chicago, Ill.

Filed May 16, 1962, Ser. No. 195,269
3 Claims. (Cl. 200—138)



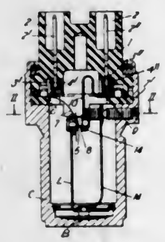
1. A substation for a fire alarm system which is manually adjustable to be responsive to different alarm temperatures and which is maintained operative even after responding to said alarm temperatures whereby a non-destructive alarm mechanism is effected comprising, in combination, a first and a second terminal, said first terminal including a magnetic contact and said second terminal including a pivot means with a pivotal arm thereon with its free end being manually movable toward said magnetic contact, a temperature responsive element mounted upon the pivotal arm and movable toward and into engagement with said magnetic contact when exposed to a predetermined alarm temperature, said alarm temperature being predetermined by the distance of said pivotal arm from said magnetic contact, and said distance being adjustable by the movability of said pivotal arm about the pivot means, a pilot light electrically connected to said pivotal arm and in parallel circuit with said magnetic contact and said temperature responsive element, whereby said pilot light is continuously illuminated to indicate a monitoring condition for said substation.

3,223,806

THERMALLY CONTROLLED ELECTRICAL SWITCH HAVING MOTION-AMPLIFYING LEVER MEANS

Antonio Moro, Piazza Po 6, Milan, Italy

Filed Sept. 9, 1964, Ser. No. 395,260
Claims priority, application Italy, Sept. 10, 1963, 18,556/63
4 Claims. (Cl. 200—138)



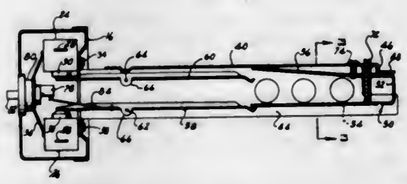
1. In a thermally controlled electrical switch having a metallic housing and a cover of insulating material, a movable contact, a bimetallic plate disposed in the base of the housing and adapted to reverse its curvature at predetermined limits of temperature of the medium surrounding the plate, an arm carying the movable contact, means for transmitting motions of the bimetallic plate to the arm thereby to multiply the motion of the bimetallic plate, and a fixed contact; the improvement comprising terminals carried by the cover, flexible conductors leading to the contacts, and spiral spring means in electrical contact at one end with the terminals and at the other end with said flexible conductors.

3,223,807

PROBE TYPE THERMOSTATIC CONTROL EMPLOYING A BIMETAL LEAF AND FORCE-TRANSMITTING LEVER

Darwin R. Grahl, Lincoln Park, Mich., assignor to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware

Filed Oct. 19, 1962, Ser. No. 232,667
9 Claims. (Cl. 200—138)



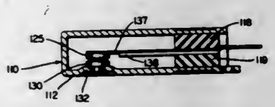
1. In a probe-type control: a base structure; an elongated probe frame extending from said base structure; a U-shaped bimetal mounted in the end of the frame remote from the base structure with the legs thereof extending toward said base structure but terminating substantial distances therefrom; a pair of actuator-equipped switches arranged on the base structure with the actuators thereof facing one another; and a pair of force-transmitting levers individually pivotally mounted in the frame with their opposite ends operatively engaging the bimetal legs and switch actuators.

3,223,808

PRECALIBRATED THERMOSTATIC SWITCHES

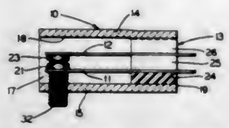
Glenn E. Wehl, North Canton, Ohio, assignor to Portage Electric Products, Inc., North Canton, Ohio, a corporation of Ohio

Filed Sept. 25, 1963, Ser. No. 312,827
1 Claim. (Cl. 200—138)



Thermostat switch construction including a tubular generally rectangular cross-section case of deformable metal having at least one open end, the case having spaced upper and lower walls and spaced side walls and at least a relatively flat inner surface on the lower wall, upper and lower rigid positioning blocks at and within the case open end between the case upper and lower walls, the rigidity of the positioning blocks providing said blocks substantially nondeformable, the lower positioning block having a substantially flat lower surface, upper and lower flexible substantially flat contact strip means having forward and rearward end portions, at least the upper contact strip means being bi-metallic and movable upwardly and downwardly subject to temperature variations, the forward end portion of the upper contact strip means having contact means thereon arranged for downward electrical contact and the forward end portion of the lower contact strip means having contact means thereon arranged for upward electrical contact, the rearward end portion of the upper contact strip means extending rearwardly between the upper and lower positioning blocks, the forward end portion of the upper contact strip means extending forwardly within the case spaced from the case side walls and spaced downwardly from the case upper wall and upwardly from the case lower wall in cantilever fashion with the contact means thereon spaced forwardly from the positioning block means, the rearward end portion of the lower contact strip means extending rearwardly between the flat lower surface of the lower positioning block and the lower case wall, the forward end of the lower contact strip means extending forwardly within the case flatwise against the inner surface on the case lower wall with the contact means thereon spaced forwardly from the positioning block means and being downwardly aligned with the contact means of the upper contact strip means, at least one of the case upper and lower walls adjacent the positioning blocks being deformed against said blocks clamping said blocks and the upper and lower contact strip means in the respective positions, and the case lower wall being deformed upwardly against the forward end portion of the lower contact strip means forming a permanent upwardly extending extruded portion means flexing the forward end portion of the lower contact strip means permanently upwardly and placing the contact means of the lower contact strip means in a predetermined permanent location relative to the contact means on the upper contact strip means for making and breaking electrical connection between the contact means of the upper and lower contact strip means under preselected temperature variations.

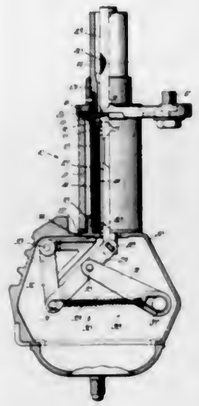
3,223,809
MOUNTING CONTACT STRIP MEANS FOR THERMOSTATIC SWITCHES
Glenn E. Wehl, North Canton, Ohio, assignor to Portage Electric Products, Inc., North Canton, Ohio, a corporation of Ohio
Filed Nov. 4, 1963, Ser. No. 321,703
4 Claims. (Cl. 200—138)



1. Thermostat switch construction including a tubular deformable metal case having at least one open end and an upper case wall, a rigid generally U-shaped cross-section first insulation block at and within the case open end with the U-opening thereof opening upwardly against the upper case wall, the rigidity of the first insulation block providing said block substantially non-deformable, first contact strip means having a rearward end portion extending through the U-opening of the first insulation block overlying said first block, the first contact strip means having a forward end portion extending into the case from said first block in cantilever fashion and having electrical contact means on said forward end portion spaced inwardly from the first insulation block and arranged for electrical contact upwardly, a rigid second insulation block within the U-opening of the first insulation block overlying the rearward end portion of the first contact strip means, the rigidity of the second insulation block providing said block substantially non-deformable, second contact strip means having a rearward end portion extending through the U-opening of the first insulation block overlying the second insulation block, the second contact strip means having a forward end portion extending into the case overlying the first contact strip means and having electrical contact means on said forward end portion aligned for electrical contact downwardly against the electrical contact means of the first contact strip means, at least one of the first and second contact strip means being bimetallic strip means for movement toward and away from the other of said strip means subject to temperature variations and for electrical contact between the respective electrical contact means, and deformed portion means on the case for clamping the case upper wall downwardly at least against the assembled second insulation block and first and second contact strip means to secure said second block and said contact strip means assembled within the U-opening of the first insulation block and to secure said first block within the case open end.

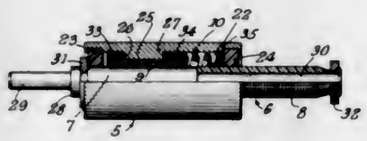
3,223,810
CIRCUIT INTERRUPTER EMPLOYING POLYPROPYLENE FOR CONFINING AND EXTINGUISHING THE ARC
Leonard C. Jelinek, North Riverside, Ill., assignor to S & C Electric Company, Chicago, Ill., a corporation of Delaware
Filed May 13, 1963, Ser. No. 279,882
3 Claims. (Cl. 200—149)

1. In a circuit interrupter, in combination, a sleeve of polypropylene, a stationary contact at one end of said sleeve having an internal annular contact surface in alignment with the inner surface of said sleeve, a movable contact having an annular contact surface mounted for movement through said sleeve and into and out of engagement with said annular contact surface of said stationary contact, and a trailer secured to and movable with said movable contact through said stationary contact into said sleeve to confine an arc from said contacts between the inner surface of said sleeve and the outer surface of said trailer, said trailer substantially filling said sleeve and the



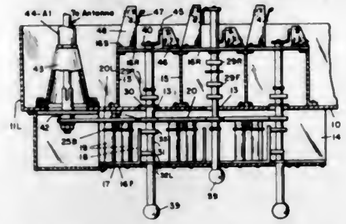
material forming its outer surface and subjected to the heat of the arc evolving an arc extinguishing medium due to the arc heat.

3,223,811
POSITIVE-CONTACT MERCURY SWITCH
James L. Grupen, 1269 Lynn Way, Sunnyvale, Calif.
Filed Jan. 18, 1963, Ser. No. 252,401
4 Claims. (Cl. 200—152)



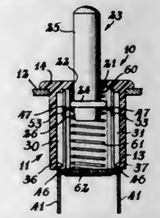
1. A positive-contact electric switch comprising
(a) an electrically conductive housing having an axial passage therethrough including a restricted area defined by a thickened wall portion terminating in spaced annular inwardly projecting abutments,
(b) opposed longitudinally spaced sealing rings in said passage arranged at each side of said restricted area and outwardly of said abutments, said rings projecting inwardly of said abutments and one of said sealing rings being slidable in said passage,
(c) a body of electrically conductive liquid in said conductive housing between said rings,
(d) an elongated member adapted to be adjustably slidably in said passage and through said spaced sealing rings and having a conductive end and a dielectric end,
(e) end caps of dielectric material fixed at each end of said housing formed with axially aligned openings for the passage of said elongated member therethrough, and
(f) spring means in said housing engaging said slidable sealing ring and one of said end caps to impose constant axial pressure to said slidable sealing ring to cause the liquid to have contact pressure with both the conductive housing and either the conductive or dielectric end of the elongated member according to the adjusted position of the elongated member in the axial passage in said body.

3,223,812
SWITCH SYSTEM
Charles S. Wright, 6700 Jansen Court, and Kenneth Owen, 6481 Hibbling Ave., both of Springfield, Va.
Filed June 15, 1964, Ser. No. 375,153
22 Claims. (Cl. 200—153)



1. A strip-line switch system for connecting any one of a plurality of transmitters or receivers to any one of a plurality of antennas comprising a vertically positioned flat base having a plurality of aligned plunger receiving rectangular apertures therethrough in vertical and horizontal rows, horizontally extending partition members on the front of said flat base extending between the horizontal rows of apertures, vertically extending partition members between the vertical rows of apertures on the rear of said base, front plates extending between adjacent front partition members, and rear plates extending between adjacent rear partition members, each front and each rear plate having a shaft receiving aperture and cooperating front and rear plates having their shaft receiving apertures in axial alignment with the cooperating rectangular aperture in said base, a dihedral angle guide bracket having one leg supported on the inner surface of each plate with the other leg extending transverse to said base and parallel to the axis of the cooperating shaft receiving aperture, a pair of insulators supported by one end from said one leg of each angle bracket, a strip-line section supported on the other ends of said insulators in parallel relation to the partition members and base, a strip of yieldable contact sheet material wrapped over both ends of each strip-line section and secured thereto, a figure-8 yoke embracing said insulators and connected to the associated strip-line section, a plunger for each rectangular aperture, each plunger including a front and a rear shaft slidable in the shaft receiving apertures in the corresponding front and rear plates, the front shaft having a flange on its rear end and the rear shaft having a flange on its front end and said shafts having a threaded axial bore at each end, a micro-switch operating disk on the rear shaft and an operating knob on said front shaft, a tubular insulator between the flange ends of said shafts and extending through the cooperating rectangular aperture in said base and of a length that the cooperating shafts remain supported in said plates while the flange ends of the shafts limit the axial movement, a rod threaded at both ends extending through said tubular insulator and screw threaded into the flanged ends of said shafts, a square front and a square rear contact element each having a central mounting aperture receiving said tubular insulator for electrical connection to adjacent strip-line sections to form therewith a continuous strip-line conductor, an electrical shielding sheet element on said tubular insulator between said square front and said square rear contact elements and rearwardly of said base to close the cooperating square aperture in said base to effectively shield the adjacent strip-line on the front from its crossing strip-line on the rear, a cross-switch contact including a conductive tubular body on said tubular insulator, front and rear rectangular contact elements on said tubular body of a size to engage with only one adjacent strip-line section so said cross-switch contact of each plunger may connect a single strip-line conductor on the front to its crossing single strip-line conductor on the rear whereby any strip-line conductor on the front can be connected to any strip-line conductor on the rear, and spacers on said tubular insulators to maintain said contacts in operative position when the flange stop of said shafts engage the cooperating plate.

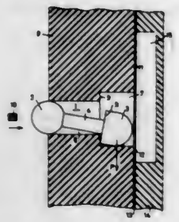
3,223,813
PLUNGER SWITCH HAVING CONTACTS READILY CONVERTIBLE BETWEEN NORMALLY OPEN AND NORMALLY CLOSED POSITIONS
Raymond F. Lewandowski, Cary, Ill., assignor to Oak Manufacturing Co., a corporation of Delaware
Filed July 2, 1963, Ser. No. 292,266
5 Claims. (Cl. 200—159)



1. A plunger switch adapted to be mounted in a support having an aperture, said switch comprising: a housing having a longitudinally extending body adapted to pass through said support aperture and a circular base adapted to be positioned in face abutting relation with said support, locking means on said base engageable with said support to retain said housing against movement relative to said support, a central axially extending bore in said body, said bore having an axially open end at the end of said body remote from said base and a partially closed end at the end of said body adjacent said base, said partially close bore end defining a shoulder which surrounds an axially extending opening through said base; a pair of channels in said body and positioned on opposite sides of and communicating with said bore, said channels each having an axially open end at the end of said body remote from said base and a closed end at the end of said body adjacent said base, a shoulder in each channel positioned inwardly from the channel open end and defining stop means; a terminal positioned in each channel, each terminal having an angularly disposed portion positioned against said stop means, each terminal also having a connector portion extending outwardly of said body from said open channel end, each terminal further having an inclined contact portion adjacent said closed channel end, said inclined contact portion being accessible from both said closed channel end and said open channel end; a generally cylindrical plunger reciprocally mounted in said bore and extending outwardly of said housing through said base opening, an annular shoulder on said plunger dividing said plunger into first and second plunger portions; a closure member positioned in and closing the open end of said bore; a first spring surrounding said first plunger portion and extending between said bore shoulder and one side of said plunger shoulder; a second spring surrounding said second plunger portion and extending between said closure member and the other side of said plunger shoulder, said second spring being substantially stronger than said first spring and continuously urging said plunger outwardly of said housing; and a contact bar having an annular ring portion surrounding said plunger, and held against said plunger shoulder by one of said springs, there being inclined fingers extending outwardly from diametrically opposed sides of said ring portion into said channels, the inclination of said fingers corresponding to the inclination of said terminal contact portions, said contact bar being actuated by reciprocation of said plunger in said bore to shift said contact bar

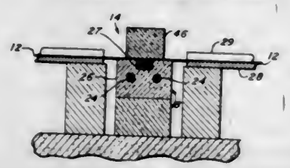
fingers into and out of engagement with said terminal contact portions.

3,223,814
CONTACT DEVICE BETWEEN A STATIONARY CURRENT SUPPLY AND A MOVABLE LOAD
Wolfgang Kalbitz, Erlangen, Germany, assignor to Siemens-Schuckertwerke Aktiengesellschaft, Berlin, Germany, a corporation of Germany
Filed Aug. 26, 1963, Ser. No. 304,354
Claims priority, application Germany, Aug. 29, 1962, S 81,149
11 Claims. (Cl. 200—166)



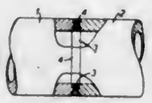
1. In a contact device between a stationary current supply and a movable load, an insulating support having a pair of opposing sides and formed with a bore extending between said sides, said bore having a portion of reduced diameter adjacent one of said sides and a portion of larger diameter adjacent the other of said sides; and a dumbbell shaped contact element received in said bore, said contact element being provided with a hemispherical end and a predominantly spherical end having a diameter corresponding to that of the reduced diameter bore portion, said predominantly spherical end being at least partly disposed in said bore portion of reduced diameter and said hemispherical end being at least partly disposed in said bore portion of larger diameter, and the axis of said element being inclined to the axis of said bore.

3,223,815
APPARATUS AND METHOD FOR WELDING BAND SAW BLADES
Stanley Gembicki, Des Plaines, and Lyman D. Dunn, Chicago, Ill., assignors to Marlan Company, a corporation of Illinois
Filed Aug. 6, 1964, Ser. No. 387,897
12 Claims. (Cl. 219—9.5)



1. The method of joining the ends of very thin metal band saw blades comprising the steps of: placing the opposed ends of the blade in juxtaposition for joining; positioning each of the ends on a nonmetallic resistor element so that the element and ends are in heat conductive contact placing a wetting agent on the opposed ends; inducing RF energy in an area adjacent the resistor to heat the resistor and thereby heat said ends to be joined in an area defined only by the face of the resistor raising the temperature of the ends slowly to a temperature which is within the melting and flow temperature of the wetting agent but below the annealing temperature of the metal strips and maintaining the desired temperature while the wetting agent wets both ends of the strips; and cooling the ends while subjecting the ends to pressure to force the opposed faces of the wetted ends together.

3,223,816
METHODS OF ELECTRIC ARC BUTT WELDING
Roy Marsden, Bolton, England, assignor to The Superheater Company Limited, London, England, a British company
Filed Dec. 9, 1963, Ser. No. 328,804
Claims priority, application Great Britain, Dec. 10, 1962, 46,595/62
8 Claims. (Cl. 219—61)



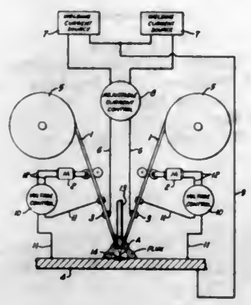
1. A method of butt welding together tubular members using an automatic electric arc welding process, comprising the steps of:
(a) securing the said members in end-face abutting relationship, and
(b) successively effecting butt fusion welds between the abutting members using automatic welding methods, one of said welds being effected internally of the members and the other said weld being effected externally of the said members so that the two said welds interfuse with each other through the wall thickness of the said members to form a composite fusion welded joint between the said members.

3,223,817
TORCH FOR ARC-OXYGEN UNDERWATER CUTTING AND WELDING
Guido Arena, 120 Via della Balduina, Rome, Italy
Filed May 17, 1963, Ser. No. 281,155
4 Claims. (Cl. 219—70)



1. An oxygen-arc torch having a handle,
An insulating head mounted on said handle and having a bore for receiving an electrode in one end of said bore,
fluid connector means mounted in the other end of said bore,
a metallic chuck surrounding said electrode in said one end of said bore,
clamping means around said chuck for pressing said chuck against said electrode,
a flexible tubular sealing member having one end clamped between said fluid connector means and the wall of said bore and the other end clamped between the inner end of said electrode and said chuck, and
an electric cable passing through said handle and connected to said chuck.

3,223,818
METHOD OF WELDING
John J. Chyle, Wauwatosa, Wis., assignor to A. O. Smith Corporation, Milwaukee, Wis., a corporation of New York
Filed Apr. 27, 1961, Ser. No. 106,031
7 Claims. (Cl. 219—73)

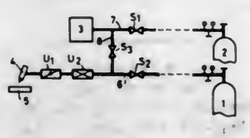


1. A process of welding, comprising establishing an arc at an end of an electrode immediately adjacent a workpiece to thereby provide a molten body of weld metal, said electrode consisting essentially by weight of:

	Percent
Chromium	10–20
Iron	0.01–15
Silicon	0.01–2.0
Manganese	0.01–3.0
Nickel	Balance

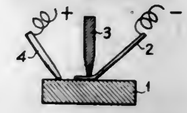
and introducing a welding flux containing molybdenum to the arc, said molybdenum alloying with the molten weld metal and being present in said flux in an amount sufficient to provide the solidified weld metal with a molybdenum content in the range of 1.0% to 20% by weight.

3,223,819
METHOD AND APPARATUS FOR WELDING WITH PROTECTIVE GAS
Hanskarl Wittemann, Gerbrunn, near Wurzburg, Germany, assignor to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt and Erlangen, Germany
Filed June 19, 1964, Ser. No. 376,421
Claims priority, application Germany, June 19, 1963, S 85,716
13 Claims. (Cl. 219—74)



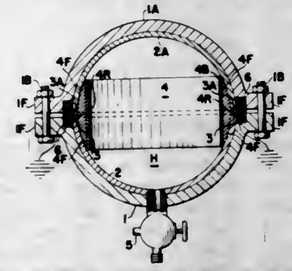
1. A method of welding which comprises enveloping a welding electrode at its welding location with a protective gas of relatively high cost as said electrode is being heated at said location to welding temperature by an electric current passing through said electrode, removing said protective gas of relatively high cost from said welding location when said electric current is discontinued and simultaneously enveloping said electrode at said location with a protective gas of relatively low cost for cooling said electrode at said location.

3,223,820
METHOD OF OHMICALLY CONNECTING FILAMENT TO SEMICONDUCTING MATERIAL
Etsuyuki Matsuura, 5900 Ohi-Kaneko-cho, Shinagawa-ku; Keiji Matsui, 74 Morikawa-cho, Bunkyo-ku; and Ryukiti R. Hasiguti, 96 Taira-cho, Meguro-ku, all of Tokyo, Japan
Filed Mar. 25 1963, Ser. No. 267,585
3 Claims. (Cl. 219—91)



1. A method of ohmically connecting leads to semiconducting materials comprising placing a conductive filament on a surface of a semiconducting material of the group consisting of silicon and germanium, pressing said filament against said semiconducting material with a pressure wedge consisting of quartz, pressing a current supplier against said semiconducting material and passing an electric current from said current supplier through said semiconducting material to said filament whereby said filament fuzes and becomes connected to said semiconducting material.

3,223,821
TANK WELDING PROCESS
Jesse D. Langdon, 1 John St., East Rockaway 5, N.Y.
Filed Jan. 27, 1964, Ser. No. 340,276
4 Claims. (Cl. 219—106)

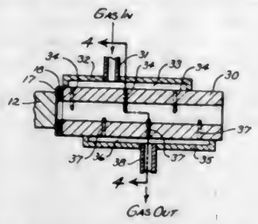


1. A tank welding process of the character described including a step by step method of telescopically bringing together and holding in assembled relationship, tank component means comprising hollow means having closed and open ends with edges of said open ends conjoining concomitant and surrounding annular welding strip means telescoped into wedged contact impinging proximate inner walls of said hollow means, establishing a hollow pressure tight tank assembly, establishing means of introducing and maintaining pneumatic pressure means within the hollow of the tank assembly, preparatory to welding, establishing heating means surrounding the outside of the conjoining said welding strip means and thereby establishing the area of weld, welding heat being applied over the area of weld, establishing embracing means concomitant clamping means enveloping said assembly, establishing the means of holding said tank component means together under effects of internal pressure.

3,223,822
ELECTRIC ARC TORCHES
James A. Browning, Hanover, and Chapin A. Pratt, Plainfield, N.H., assignors to Thermal Dynamics Corporation, a corporation of New Hampshire
Filed Aug. 6, 1963, Ser. No. 300,707
2 Claims. (Cl. 219—121)

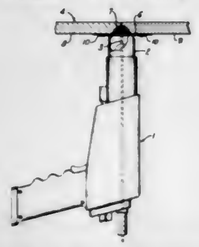
1. The method of stabilizing an arc column in an electric arc torch with a plasma forming gas comprising; in-

troducing said gas at successive points along said column; and, at alternate points along said column, drawing off a



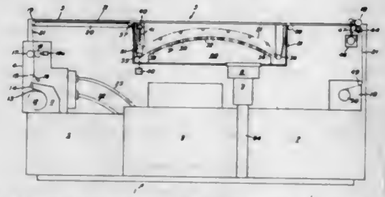
portion of the gas so introduced such that said portion does not issue from the nozzle of said torch along with the working effluent thereof.

3,223,823
OUT-OF-POSITION BURN-THROUGH SPOT WELDING
Robert J. Keller, Milwaukee, Wis., assignor to A. O. Smith Corporation, Milwaukee, Wis., a corporation of New York
Filed July 24, 1963, Ser. No. 297,410
9 Claims. (Cl. 219—127)



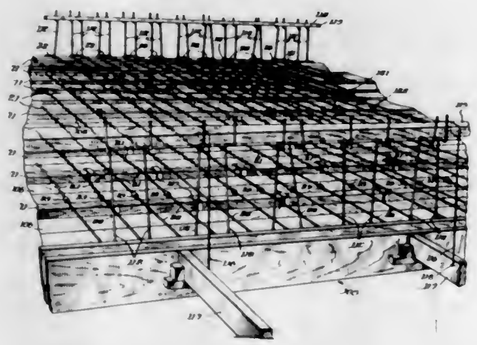
1. A method of out-of-position burn-through spot welding, which includes the steps affixing a fiber patch against a workpiece surface disposed in a plane ranging at an angle of 0° to 90° from the horizontal, disposing a welding gun adjacent the fiber patch, actuating said welding gun to cause a consumable electrode to penetrate through the fiber patch and strike an arc therethrough to said workpiece thereby forming a weld deposit, whereby said fiber patch holds the molten weld deposit in place while it solidifies.

3,223,824
RECORDER DRYING MECHANISM
David Shaler, Waldwick, N.J., and Ralph A. Varrichio, Brooklyn, N.Y., assignors to Hogan Faximile Corporation, New York, N.Y.
Filed Jan. 16, 1964, Ser. No. 338,148
6 Claims. (Cl. 219—200)



1. A drying mechanism for a facsimile recorder using an electrolytic recording medium, the drying mechanism comprising a frame, a rack of electric heater bars extending transversely of the frame and positioned in arcuate arrangement with the centrally located bars raised with respect to the end bars, rollers carried by the frame for movement of the electrolytic recording medium over the heater bars including a pair of lower rollers, one of said lower rollers located at each end of the heater bar rack and positioned at least slightly lower than and spaced from the adjacent heater bars, a pair of upper rollers, each of said upper rollers located above and outwardly of each of said lower rollers, and paper lifter means including a plurality of lifter bars interposed between the heater bars and mounted for outward movement to lift the paper from the heater bars.

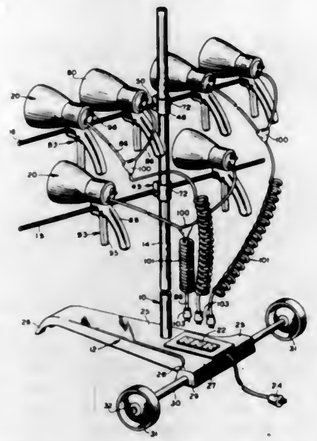
3,223,825
ELECTRIC GRID FLOOR HEATING SYSTEM
Chester I. Williams, 1501 Madison Ave. SE., Grand Rapids 7, Mich.
Filed Mar. 21, 1958, Ser. No. 722,971
3 Claims. (Cl. 219—213)



1. An electric grid floor heating system for a reinforced concrete floor construction, comprising:
reinforcing means,
said reinforcing means including a plurality of longitudinally extending and laterally spaced steel reinforcing rods;
U-shaped connectors for operatively connecting contiguous ends of the reinforcing rods in a series electrical circuit of the reinforcing rods;
coupling means having threaded interengagement with said connectors and reinforcing rods for connecting the U-shaped connectors to the reinforcing rods at the ends thereof; and
high-conductivity jumpers operatively connected in parallel with certain of said coupling means, whereby current through said coupling means is reduced to prevent localized generation of excessively heat,
said reinforcing rods, U-shaped connectors, and coupling means being integrally embedded within concrete, providing a reinforced concrete floor construction.

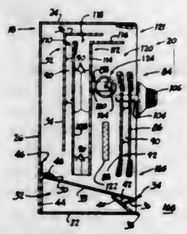
3,223,826
LAMP STAND
Michael Macaluso, Jr., 222 Chili Ave., Rochester, N.Y.
Filed Sept. 25, 1961, Ser. No. 140,287
4 Claims. (Cl. 219—352)

1. In a lamp stand the combination of a base, a pair of wheels rotatably supported on one end portion of said base, a surface gripping portion remotely located on another end portion of said base, a multiplug outlet member carried by said base and adapted to be energized by plugging into a source of electrical power, a vertical rod member upwardly extending from said base, at least one horizontal bar adjustably positioned on said rod member, means supporting said bar and operatively gripping said rod for holding said bar in a preselected position relative to said base, release means on said last named means for releasing said gripping on said rod whereby said bar can be adjusted relative to said base, at least one pair of heat lamps carried by said horizontal bar, releasable jaw means on each lamp for gripping said bar in preselected locations along its length, pivot means between said lamp and said jaw means whereby said lamp may be pivoted



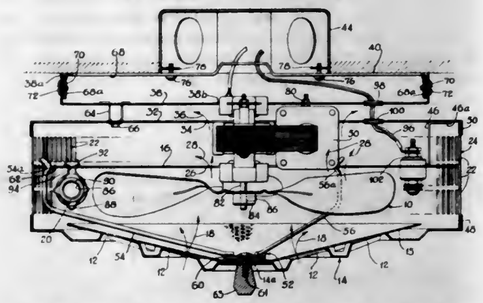
in a plane perpendicular to the axis of said pivot means, means connecting each pair of heat lamps to a single separate connector cord, plug means on each of said cords for plugging into a plug of said outlet member and means for separately energizing said lamps to direct heat rays onto a surface.

3,223,827
ELECTRIC CONVECTION HEATER
Russell A. Welch, Sr., Detroit, Mich., assignor of forty-five percent to Eugene A. Casaroll, Grosse Pointe, Mich., and five percent to Paul G. Hogue, Mount Clemens, Mich.
Filed Aug. 1, 1962, Ser. No. 213,951
7 Claims. (Cl. 219—365)



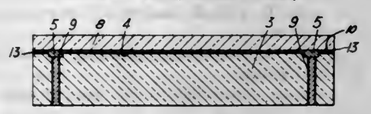
1. In a space heater of the convection flow type,
an elongated electric heating element,
a housing defining a passage at least partially surrounding said heating element to provide a convection flow of gas around said element,
an elongated coil-like body of radiant heat-absorbing material having angular spaced apart heat diffusing convolutions and positioned in generally parallel relation above said element and within said passage,
and said body being positioned in adjacent heat-absorbing spaced relation to said heating element to absorb heat of varying intensity from along the length of said element and diffuse the heat in all directions including between and above said diffusing convolutions and form the same into a uniform curtain equivalent to the effective length of said element for exchange back to the ambient atmosphere.

3,223,828
CEILING MOUNTED ELECTRIC SPACE HEATER
Lowell R. Mast, East Rochester, N.Y., assignor, by mesne assignments, to Friden, Inc., San Leandro, Calif., a corporation of Delaware
Filed May 7, 1963, Ser. No. 278,540
8 Claims. (Cl. 219—370)



1. An electric heater for installation on a ceiling comprising in combination:
(A) an upper horizontal panel;
(B) means for attaching said upper panel to a ceiling to form a dead-air space between the ceiling and said panel;
(C) a main partition suspended and spaced from said upper panel and having an aperture therethrough, said main partition and said upper panel defining a radial air flow passage therebetween;
(D) an electric motor having its heat producing element mounted between said upper panel and said main partition above said aperture and its shaft extending through said main partition, said aperture permitting air movement therethrough and around said motor;
(E) a fan mounted on said shaft below said main partition having blades pitched to move air axially upward;
(F) an electric heating element spaced below said main partition adjacent the periphery of said fan in the plane of rotation of said fan; and
(G) a housing for the electric heater comprising
(1) a perforated grill extending around the periphery of the heater, including at least a portion of the peripheral areas above and below said main partition to provide an air outlet around said housing, and
(2) a bottom panel supported below said fan and spaced from said main partition to define a peripheral radial air flow passage therebetween,
(a) said bottom panel having means forming an air intake opening therein.

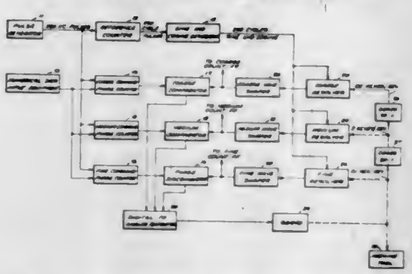
3,223,829
GLASS SANDWICHES PRIMARILY FOR WINDOWS OF OPTICAL INSTRUMENTS
John Rupert Davy and Alexander J. N. Hope, both of Anniesland, Glasgow, Scotland
Filed Nov. 4, 1960, Ser. No. 67,435
Claims priority, application Great Britain, Nov. 14, 1959, 38,676/59
5 Claims. (Cl. 219—522)



1. A glass sandwich for optical instruments involving optical magnification, comprising a pair of glass sheets

disposed in spaced substantially parallel relation to each other, at least one of said sheets being provided with aligned channels on its innermost face, an intervening layer of cement of transparent thermosetting material between said glass sheets, securing the latter together a series of fine electrically conductive elements positioned between said glass sheets in the cement, and bus-bars disposed between said glass sheets and located in said channels and connected to said conductive elements, the bus-bars being formed from a colloidal dispersion of electrically conductive material and an organic binding agent and completely surrounding the element ends in situ.

3,223,830
POSITION INDICATING DEVICE
John T. Evans, Waynesboro, Va., assignor to General Electric Company, a corporation of New York
Filed Mar. 14, 1963, Ser. No. 265,240
13 Claims. (Cl. 235—92)



1. In a system having a plurality of position feedback devices that produce recurring signals having different position significances and having phases relative to a reference signal which are indicative of the position of an object, a position indicating device comprising a plurality of selectively enabled counters of different and overlapping significances, means coupling each of said position feedback devices to a respective one of said counters for respectively permitting said recurring signals to enable said counters at predetermined times relative to said reference signal whereby said counters may count and for respectively and subsequently disabling said counters at predetermined times relative to said reference signal whereby said counters stop counting, means coupled to said counters for comparing said overlapping significances and correcting the counters on the basis of this comparison, and means coupled to said counters for utilizing the corrected count therein.

3,223,831
BINARY DIVISION APPARATUS
Charles R. Holleran, Ann Arbor, Mich., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 27, 1961, Ser. No. 162,503
5 Claims. (Cl. 235—164)

2. Apparatus for performing binary division in steps, including:

a register operable to initially store a binary dividend and subsequently during successive steps to store binary partial dividends;

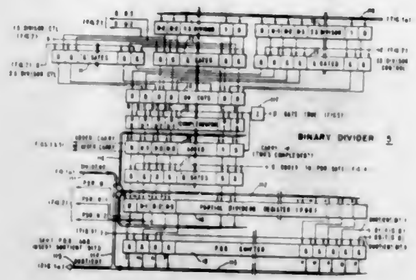
means connected to said register operable to shift the stored quantity a fixed number of binary orders during each step;

source means for supplying a plurality of multiples of a binary divisor;

selection means connected to said source and to said register operable to select, for each step, a divisor multiple in accordance with the binary value of preselected orders of the divisor and the dividend initially and the divisor and the partial dividend during subsequent steps;

an adder connected to said selection means and to said register operable, during each step, to replace the quantity stored in the register with the sum of the divisor selected for the step and the quantity stored;

quotient generation means, connected to the adder and



to the source operable during each step to develop a fixed number of bits, equal to said fixed number of shifts, in accordance with said preselected orders of said divisor and initially said dividend or subsequently said partial dividend, and said sum; and

control means for making said selection means, adder, shifting means and quotient generation means operative once during each step.

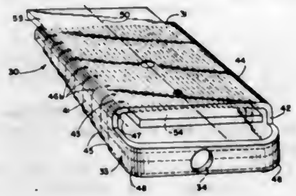
3,223,832
BORESCOPE LIGHT
Elbert B. Childs, Hastings on Hudson, N.Y., assignor to Socony Mobil Oil Company, Inc., a corporation of New York
Filed May 31, 1962, Ser. No. 199,067
6 Claims. (Cl. 240—2.18)



1. In combination an elongated tubular borescope having an eyepiece adjacent to one end thereof and an inspection lens and light bulb means adjacent to the other end thereof, said light bulb means having a voltage rating in the order of six volts and providing the sole light for enabling the inside of a cavity to be viewed through said eyepiece, and power supply means electrically connected to said light bulb means for applying a controlled continuous overvoltage to said light bulb means, said power supply means including variable means connected to said light bulb means for varying the voltage applied thereto, and voltmeter means connected to said variable means for indicating the voltage being applied to said light bulb means.

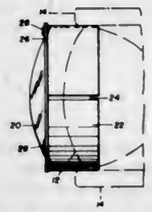
3,223,833
ILLUMINATED DIAL
Donald E. Protzmann, Athens, Ga., assignor to General Time Corporation, New York, N.Y., a corporation of Delaware
Filed Dec. 15, 1964, Ser. No. 418,495
6 Claims. (Cl. 240—6.43)

1. An illuminatable dial comprising a member of light-transmitting material including a display field face portion having a pair of opposed side edges, and a peripheral rim having a lamp receiving opening therein and a pair of opposed side portions integral with said edges of said face, the edges of the two opposed side portions of said rim defining internally reflecting surfaces for directing light from said opening toward the face portion of said member in a direction normal to said side edges of



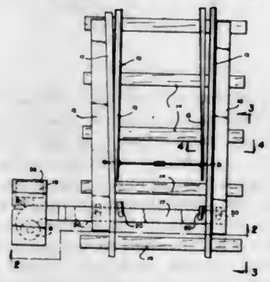
the face, said face portion being tapered in thickness inwardly from said opposed side edges so as to disperse light from the corresponding side portions of said rim over said face.

3,223,834
ANTIGLARE LENS STRUCTURE ATTACHMENT FOR HEADLIGHTS
Angelo Lorio, 161 Bleecker St., Brooklyn, N.Y.
Filed Sept. 19, 1963, Ser. No. 309,980
1 Claim. (Cl. 240—46.57)



A fog lens construction for overlying the lens of a head light having a frame therearound comprising, a sleeve, a fog lens releasably carried by said sleeve formed from colored transparent material having a contour to overlie said headlight lens, a ring-like rim integral with said sleeve and adapted to overlie and embrace the peripheral rim of the outer face of said lens, clips fixed to said rim and spaced around said sleeve and fog lens having resilient inner free ends extending inwardly over said fog lens, said sleeve having a perimeter receivable between said frame and headlight lens in tight sealing manner and provided with a slot extending the length thereto.

3,223,835
RAILROAD SWITCH HEATER
William J. Cherry, Rte. 1, Box 210, Elliston, Va., and Ivan H. East, % Norfolk & Western Railway Co., Roanoke, Va.
Filed Oct. 19, 1961, Ser. No. 146,089
2 Claims. (Cl. 246—428)



1. A heater apparatus for a railroad switch having two fixed rails and two movable rails comprising:

a pair of ducts, each positioned adjacent the outside of each one of the two fixed rails of a railroad switch;

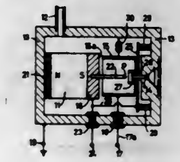
a main duct positioned transverse to the two fixed rails and connected to the pair of ducts positioned adjacent to the outside of each one of the two fixed rails;

heater means secured to one end of the main duct for heating air;

blower means secured to one end of the main duct for blowing the heated air through the main duct; and

four nozzles extending from the main duct, two of the nozzles communicating with the interior of the pair of ducts positioned adjacent the outside of the fixed rails through one end of the ducts and directing heated air into the ducts to melt snow and ice from the rails and the other two nozzles being positioned between the fixed rails and in front of the two movable rails for directing heated air towards the points of the movable rails for melting snow and ice from the rails.

3,223,836
MASS SPECTROMETER WITH PARTICULAR ION SOURCE FOR ANALYSIS OF SOLID BODIES
Walter Hänlein, Erlangen, and Karl-Georg Günther, Nurnberg, Germany, assignors to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany
Filed Apr. 27, 1962, Ser. No. 191,405
Claims priority, application Germany, Apr. 29, 1961, S 73,759
7 Claims. (Cl. 250—41.9)



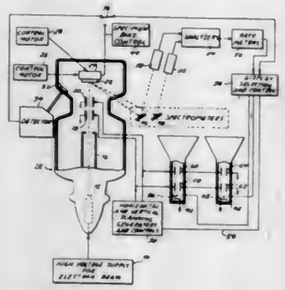
1. An apparatus for separating ions having different specific charges; comprising an evacuated vessel; means including electrodes in said vessel for creating an electric field therein, said means supplying to said electrodes a voltage having an arbitrary periodical function of time $f(t)$, creating a time-periodical field the potential of which is the general quadratic function

$$\varphi = f(t)(\alpha \cdot x^2 + \beta \cdot y^2 - \gamma \cdot z^2)$$

of the rectangular coordinates x, y, z of the electrode arrangement, α, β and γ being constants satisfying the equation $\alpha+\beta=\gamma$; cold-cathode electron-collision ion source means for creating charged ions in said evacuated vessel, the said ions being introduced into said field whereby due to the electrostatic forces of the field on the ions certain ions perform oscillations of a limited amplitude and others perform oscillations of an increasing amplitude, depending on their respective specific charges, and therefore follow stable and instable paths, respectively, and are thereby separated, said ion source means comprising a cathode structure having means providing an extraction channel through which ions may pass into the space where they are to be utilized, anode means coaxially disposed with respect to said extraction channel, said cathode structure comprising electric-field concentrating means having its maximum field density near said extraction channel at the anode side thereof a hollow rod cathode extending toward said extraction channel and magnet means having a magnetic pole end at said same location, whereby said electric and magnetic fields spacially and temporally fix the discharge plasma near said extraction channel, the material under investigation being disposed in said hollow rod cathode and being released at that end of said hollow rod cathode which is directed toward the

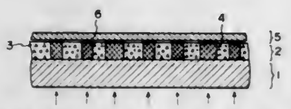
analyzer part of the apparatus away from the said electron-collision ion source.

3,223,837
BEAM PROBE SYSTEM AND APPARATUS
Louis Shapiro, Erlton, and Herbert A. Elion, Princeton, N.J., assignors, by mesne assignments, to The First Pennsylvania Banking and Trust Company, trustee
Filed July 10, 1961, Ser. No. 123,065
24 Claims. (Cl. 250—49.5)



1. A microanalyzer comprising means for supporting a specimen, means for supplying a beam of charged particles along an axis transverse to a supported specimen, means for forming and concentrating said beam in a decreased diameter substantially as a cylinder of particles parallel to said axis, means spaced axially from the supported specimen for deflecting the beam from said forming means over an area of said specimen, and means for detecting particles emitted from said specimen and passing through the space between said deflecting means and the supported specimen.

3,223,838
METHOD FOR THE PREPARATION OF RELIEF IMAGES BY THE USE OF A HEAT-SENSITIVE SHEET
Shoichiro Hoshino, Suginami-ku, and Akira Kato, Hachioji, both of Tokyo, Japan, assignors to Konishiroku Photo Industry Co., Ltd., Tokyo, Japan, a corporation of Japan
Filed Oct. 9, 1963, Ser. No. 314,907
Claims priority, application Japan, Oct. 16, 1962, 37/46,125; Feb. 7, 1963, 38/6,414
6 Claims. (Cl. 250—65)



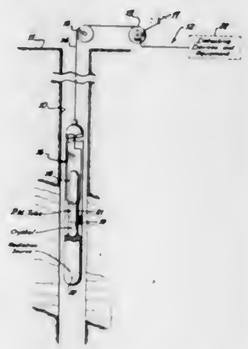
1. A method for the preparation of a relief image; which comprises

superposing an image-bearing original and a heat-sensitive sheet having a support and a layer thereon comprised of a heterogeneously dispersed mixture of a heat-fusible material having a melting point of from 50° to 150° C. in a polymeric compound as a binder,

exposing the superposed original and heat-sensitive sheet to infrared radiation until said heat-fusible material fuses homogeneously with said polymeric compound in those parts of said layer corresponding to image areas of said original, and

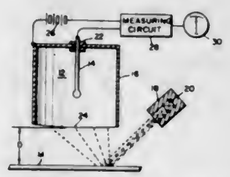
thereafter treating said layer of said sheet with a solvent in which said polymeric compound is soluble and said heat-fusible material is substantially insoluble so as to remove said layer from said support with the exception of said parts of the layer in which the heat-fusible material is fused homogeneously with the polymeric compound whereby said parts of the layer remaining on the support define a relief image of the image on said original.

3,223,839
APPARATUS FOR EXPLORING GEOLOGICAL STRATA UTILIZING A NEUTRON SOURCE AND DETECTOR
Philip W. Martin, 1345 West Road, Whittier, Calif., and Robert W. Pringle, 460 Wellington Crescent, Winnipeg, Manitoba, Canada
Filed June 2, 1952, Ser. No. 291,104
3 Claims. (Cl. 250—83.1)



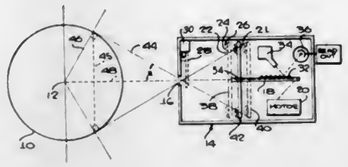
1. Apparatus for geophysical exploration of ground formations, comprising: a neutron-emitting source arranged to radiate neutrons into the formation; a plurality of crystals positioned to receive scattered neutrons from said formation, said crystals being adapted to scintillate under the action of fast neutrons; detecting means including a photo-electric cell; and a plastic light pipe interconnecting each of said crystals with said cell so as to collectively concentrate the scintillations from said crystals.

3,223,840
METHOD AND APPARATUS FOR MEASURING THE PROPERTY OF A MAGNETIZABLE WORKPIECE USING NUCLEAR RADIATION
Donald E. Varner, Columbus, Ohio, assignor to Industrial Nucleonics Corporation, a corporation of Ohio
Filed Apr. 27, 1961, Ser. No. 106,042
14 Claims. (Cl. 250—83.3)



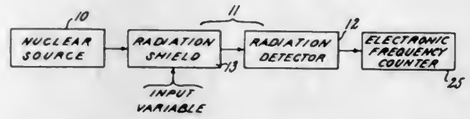
1. In the combination of a transport mechanism whereby a traveling magnetizable material of substantially constant, homogeneous composition is guided along a fixed path with a nuclear radiation reflection gauge mounted alongside said path for continuously measuring a property of said material, the improvement of means for obtaining a continuous indication of the hardness characteristic of said material, which comprises a source of nuclear radiation mounted in said gauge and having an energy characteristic such that said material presents an infinite absorber to said radiation, an indicator calibrated in hardness units for registering the response of said gauge, and means mounted alongside said path and upstream of said gauge for continuously demagnetizing said material before the same passes said gauge.

3,223,841
PIN HOLE WIDE-ANGLE TRACKER
Bernard L. Lewis, Winter Park, Fla., assignor to Radiation, Incorporated, Melbourne, Fla., a corporation of Florida
Filed Oct. 16, 1961, Ser. No. 145,097
13 Claims. (Cl. 250—83.3)



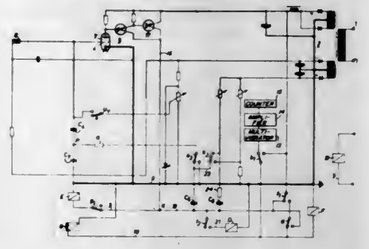
1. A pin hole detector unit for sensing the local vertical between an orbiting satellite and an orbited planet comprising a housing mounted in said satellite and having a pin hole therein, a movable piston mounted in said housing, said piston having a face portion and having a plurality of thermistor elements arranged in concentric groups on said face portion facing said pin hole so that an image of the orbited planet is projected on said face portion, means to compare the image intensities of the orbited planet projected on one concentric group of thermistor elements with that projected on the other concentric groups, and means responsive to said compared image intensities for driving said piston to a position whereat a horizon-including image falls on only one group of said concentric groups said horizon-including image intensity being epual in each thermistor element of said group.

3,223,842
DIGITAL MEASURING APPARATUS UTILIZING A RADIOACTIVE SOURCE AND DETECTOR
James L. Hyde, Little Neck Road, R.F.D. 5, Huntington, N.Y.
Filed Mar. 15, 1962, Ser. No. 180,050
7 Claims. (Cl. 250—83.3)



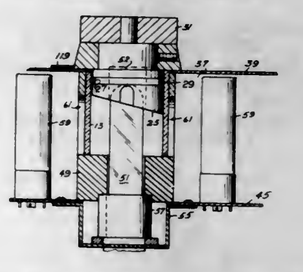
1. Digital measuring apparatus comprising: a radioactive particle source; a radiation shield having an effective aperture area and having a displaceable shutter in proximity to said aperture area and controlled in position by a variable to be measured for controlling the rate of radiation particles transmitted through said shield; the flux gradient of the particles emitted by said source being substantially zero through said effective aperture area in the direction of motion of said shutter; a radiation detector providing individual electrical pulses representative of the individual radiation particles transmitted through said shield; and terminal utilizing means responsive to said individual electrical pulses for developing output signals comprising a digital representation of the rate of said individual radiation particles transmitted through said shield and thus comprising a digital representaton of said variable.

3,223,843
CIRCUIT ARRANGEMENT FOR RADIATION DOSE-MEASUREMENT
Kurt Westerkowsky, Hamburg-Bramfeld, Germany, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Mar. 28, 1962, Ser. No. 183,078
Claims priority, application Germany, May 26, 1961, M 49,161
11 Claims. (Cl. 250—83.6)



3. X-ray measuring apparatus for measuring the energy supplied to a specimen irradiated by a source of X-rays, comprising an ionization chamber for producing an electrical current proportional thereto during a first time period, an integrating capacitor coupled to said ionization chamber for storing an electrical charge of a given polarity during said first time period, timing means for producing an indication of the amount of radiation supplied by said X-ray source, a trigger circuit, control means for actuating said timing means to begin a timing operation at the end of said first time period, said control means comprising means for producing a varying voltage of opposite polarity to said given polarity and means for combining said varying voltage and said stored charge and supplying same as a control input to said trigger circuit, said trigger circuit being responsive to the combined voltages at its control input for supplying a control signal to said timing means thereby to terminate said timing operation after a period of time determined by the charge stored on said capacitor.

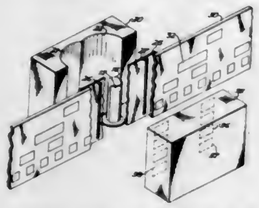
3,223,844
METHOD AND APPARATUS FOR PHOTOELECTRIC RATING OF THROTTLE TUBE DEPOSITS
Harry R. Weber, Haddonfield, N.J., assignor to Socony Mobil Oil Company, Inc., a corporation of New York
Filed Mar. 30, 1962, Ser. No. 183,914
7 Claims. (Cl. 250—218)



1. A deposit rating apparatus comprising a transparent throttle tube, said throttle tube having a throttle plate which is adapted to contact the inner wall of said throttle tube along a predetermined line within said throttle tube, means defining an examining chamber, an opaque tube within said chamber having a transparent opening defined through the wall thereof and adapted to receive said throttle tube, means to pass light through said opening and through said throttle tube received by said opaque tube, a photocell positioned to be irradiated by light pass-

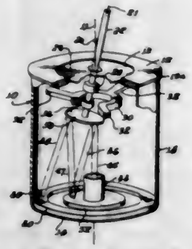
ing through said opening and through said throttle tube, and means to block said light from passing through said throttle tube on one side of said predetermined line.

3,223,845
OPTICAL TRANSDUCER FOR MEASURING DISTANCE
Roger O. Wales, Bloomington, Minn., assignor to Honeywell Inc., a corporation of Delaware
Filed Oct. 11, 1962, Ser. No. 229,855
3 Claims. (Cl. 250—220)



1. In an optical transducer, a single light source, a double cylindrical reflector mounted on one side of said light source to centrally locate said light source in said reflector to thereby produce a pair of columns of light spaced at a predetermined distance; a slit plate mounted on the other side of said light source, said slit plate having a pair of open elongated slits formed therein and spaced at said predetermined distance to thereby accept and further define said colums of light; a code plate movably mounted with respect to said columns of light and mounted in the close proximity to said slit plate on the side thereof opposite said light source, said code plate including a plurality of rows of coded light transmitting sections thereon to be illuminated by said columns of light; the sections of said code plate being repeatable and said predetermined distance being some multiple of the length of a repeatable section plus an additional length equal to one half the length of a light transmitting section of the lowest order information; a pair of columns of photoelectric sensors mounted on the side of said code plate which is opposite from said slit plate, said columns of sensors being spaced apart said predetermined distance in alignment with said columns of light; and electronic means connected to be controlled by said sensors to provide a coded output signal indicative of relative movement between said code plate and said columns of light.

3,223,846
PHOTOSENSITIVE OPTICAL FLUID STREAM DIRECTION INDICATOR
James R. Rochester, San Gabriel, Calif., assignor to Giannini Controls Corporation, Duarte, Calif., a corporation of New York
Filed Jan. 2, 1962, Ser. No. 163,515
5 Claims. (Cl. 250—234)



1. A system responsive to the direction of a fluid stream flowing generally parallel to the outer surface of a wall, said system comprising in combination

an elongated sensor element having a longitudinal sensor axis and an axial pivot point intermediate its length, and having at one end outward of the pivot point a working portion with an external surface that is axially symmetrical with respect to the longitudinal axis,

means mounting the sensor element with said working portion extending outwardly from the wall transversely of the fluid stream, said mounting means defining a normal position of the sensor axis essentially perpendicular to the wall and permitting limited universal swinging movement of the sensor element about its pivot point from said normal position in response to lateral pressure of the fluid stream upon the working portion of the sensor,

means limiting the magnitude of said swinging movement to a definite maximum angular deflection from said normal position, while permitting that deflection to assume a continuous range of azimuth angles with respect to said normal position,

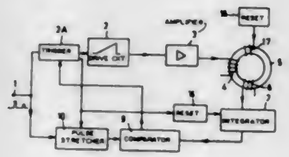
optical means comprising an optically reflective surface mounted on the sensor inwardly of the wall surface and lying in a surface of revolution with respect to the sensor axis,

means for producing a light beam directed parallel to the normal position of the sensor axis and incident upon the optical means,

light responsive transducer means of arcuate form fixedly mounted coaxially of the normal position of the sensor axis in position to receive light from the optical means at said maximum deflection and in any azimuth position of the sensor within said range,

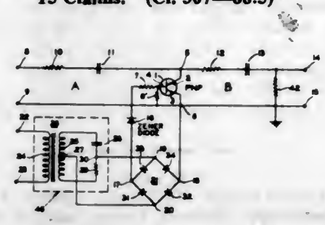
and output means controlled by said transducer means for indicating the azimuth angle of the sensor element deflection.

3,223,847
ANALOGUE MAGNETIC INTEGRATOR
Hugh Alexander Dell, Horley, England, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed May 9, 1961, Ser. No. 108,938
Claims priority, application Great Britain, May 10, 1960, 16,502/60
11 Claims. (Cl. 307—88)



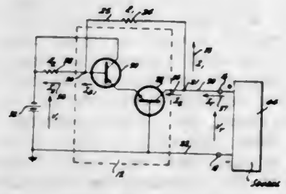
1. Apparatus for the analogue summation of the peak values of successive input pulses which apparatus comprises a remanent magnetic storage element, excitation means for changing the magnetization of said element, a circuit for driving said excitation means in response to the occurrence of discrete input pulses at discrete intervals of time, means for detecting any change in flux produced by said excitation means by converting the rate of such change into an electrical quantity, integrating means for integrating said electrical quantity so as to obtain an integrated electrical quantity representative of said change in flux, and control means responsive to said integrated quantity for controlling the excitation in such manner as to cause each flux change to assume a value representative of the peak level of the respective input pulse.

3,223,848
QUADRATURE REJECTION CIRCUIT
Robert J. Molnar, New York, and Walter Parfomak, Brooklyn, N.Y., assignors to The Bendix Corporation, Teterboro, N.J., a corporation of Delaware
Filed Apr. 5, 1961, Ser. No. 100,950
15 Claims. (Cl. 307—88.5)



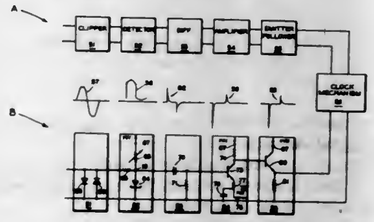
1. A phase discriminator for passing desired in-phase signals and discriminating against undesired quadrature signals, comprising an input circuit, an output circuit connected to said input circuit, and a transistor having its emitter and collector connected across the input circuit for providing a path across the input circuit, control means for changing the impedance of said path by providing a high impedance when the quadrature signal amplitude is a minimum and the in-phase signal amplitude is a maximum to prevent passage of any portion of the signal therethrough and a low impedance when the quadrature signal amplitude is a maximum and the in-phase signal amplitude is a minimum to prevent any portion of the signal from passing to the output.

3,223,849
CIRCUITS HAVING NEGATIVE RESISTANCE CHARACTERISTICS
Carl D. Todd, Costa Mesa, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of California
Filed Jan. 2, 1962, Ser. No. 163,808
3 Claims. (Cl. 307—88.5)



1. A circuit for providing a current-voltage characteristic having a linear negative resistance portion of preselected magnitude between first and second positive resistance portions comprising: first and second terminals between which said current-voltage characteristic is provided; a source of potential having one of its terminals connected to said second terminal; first and second transistors of opposite conductivity types each having an emitter, a collector and a base; the collector and base of said first transistor being directly connected to said first and second terminals, respectively; the emitter of said first transistor being directly connected to the emitter of said second transistor; the collector of said second transistor being directly connected to the other terminal of said source of potential; resistance means connected between the base of said second transistor and said other terminal of said source of potential for providing a substantially constant current flow therebetween; and a feedback resistor connected between the collector of said first transistor and the base of said second transistor for decreasing the base current of said second transistor in response to an increase in voltage between said first and second terminals; said feedback resistor having a resistance value equal in magnitude to the common emitter current gain of said second transistor times said preselected magnitude of said linear negative resistance.

3,223,850
PHASE ANGLE DIFFERENCE MEASURING CIRCUIT EMPLOYING TUNNEL DIODE SIGNAL CROSSOVER DETECTING CIRCUITS
Louis Carrozza, Newark, N.J., and Louis Nashelsky, Bronx, N.Y., assignors to The Bendix Corporation, Teterboro, N.J., a corporation of Delaware
Filed Feb. 16, 1962, Ser. No. 173,720
6 Claims. (Cl. 307—88.5)



4. A circuit for measuring phase angle difference between two alternating current signals, comprising

a first signal level marking circuit receiving one of the signals and including

detecting means having a tunnel diode having a volt ampere characteristic curve with first and second positive resistance regions separated by a negative resistance region with a crossover point between each pair of regions, means for biasing the tunnel diode in the first positive resistance region at an operating point corresponding to a predetermined signal level, means for applying the signal to the tunnel diode to shift the operating point from the first positive resistance region to the second positive resistance region to produce a sharp change in voltage when the signal passes through the predetermined level in a given direction, and

differentiating means to convert the sharp voltage change into a pulse coincident with the signal passing through the predetermined level, and

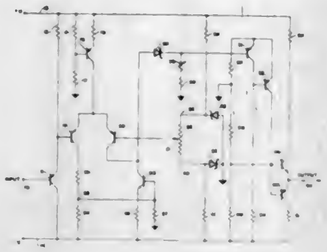
a second signal level marking circuit receiving the other signal and including

detecting means having a tunnel diode having a volt ampere characteristic curve with first and second positive resistance regions with a crossover point between each pair of regions, means for biasing the tunnel diode in the opposite direction from the tunnel diode of the first signal level marking circuit and in the second positive resistance region at an operating point corresponding to a predetermined signal level, means for applying the signal to the tunnel diode to shift the operating point from the first positive resistance region to the second positive resistance region to produce a sharp voltage change when the signal passes through the predetermined signal level in a direction opposite to the given direction of the signal applied to the first signal level marking circuit, and

differentiating means to convert the sharp voltage change into a pulse coincident with the signal passing through the predetermined level, and

clock mechanism connected to the marking circuits for counting the time between two successive pulses.

3,223,851
TRANSITION DETECTOR
William L. Kitchens, Costa Mesa, and Ronald J. Surprenant, Fullerton, Calif., assignors to Beckman Instruments, Inc., a corporation of California
Filed June 14, 1962, Ser. No. 202,437
1 Claim. (Cl. 307—88.5)



A transition detector for detecting transitions of an input signal comprising

a constant current source including a transistor,

a constant current sink including a transistor having at least a base electrode,

a transistor for receiving said input signal,

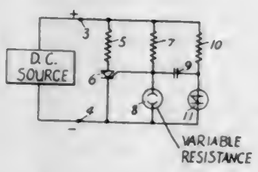
variable potential means for generating a setable constant reference voltage at a level which may be varied over a wide range,

first means interconnecting said constant current source, said constant current sink, said input transistor, and said potential means for conducting current from said current source to said current sink when the magnitude of transitions of said input signal is below said reference voltage and for diverting said current from said current sink when the magnitude of transitions of said input signal exceeds said reference voltage,

second means connected with said current sink for supplying current thereto when current from the current source is diverted therefrom,

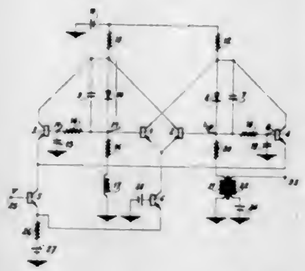
output means connected with said second means and responsive thereto for providing output signals indicative of said signal transitions third means connecting said first means to the base of said constant current sink transistor to accelerate occurrence of said output signals on transition.

3,223,852
SWITCHING CIRCUITS
Maurice James Wright, Harborne, Birmingham, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England
Filed Sept. 10, 1962, Ser. No. 222,388
Claims priority, application Great Britain, Sept. 21, 1961, 33,799/61
4 Claims. (Cl. 307—88.5)



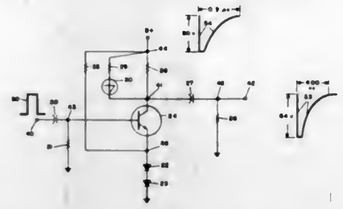
1. A switching circuit comprising in combination a switchable rectifier adapted for connection to a D.C. source, said switchable rectifier having an anode, a cathode and a gate and being switched on by a predetermined positive gate-cathode current and switched off by a predetermined negative gate-cathode current, a load in the anode circuit of the switchable rectifier, a free-running oscillator including a capacitor in series with the gate and cathode of the switchable rectifier, said capacitor being alternately charged and discharged in use and the discharge current serving to switch off the switchable rectifier if the latter is conductive, and variable resistance means connected in circuit with said capacitor and said switchable rectifier for determining whether or not the switchable rectifier is switched on during charging of the capacitor.

3,223,853
ELECTRONIC BISTABLE CIRCUIT
Roger Charbonnier, Meudon, France, assignor to Rochar Electronique, Montrouge (Seine), France, a corporation of France
Filed Dec. 20, 1962, Ser. No. 246,267
Claims priority, application France, Dec. 26, 1961, 883,064, Patent 1,317,269
4 Claims. (Cl. 307—88.5)



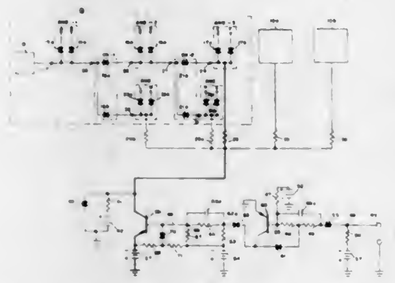
1. A bistable circuit including: first, second, third, fourth, fifth and sixth transistors each having a base, a collector and an emitter electrode, the emitter electrodes of said first and second transistors being connected in common to the collector electrode of said sixth transistor; means, connected in common to the emitter electrodes of said fifth and sixth transistors for supplying the same with a substantially constant current; the base electrode of said fifth transistor being adapted for receiving a pulse input signal, the collector electrode of said fifth transistor being connected in common to the emitter electrodes of said third and fourth transistors; a first impedance circuit connecting the base electrode of said first transistor to the base electrode of said third transistor; a second impedance circuit connecting the base electrode of said second transistor to the base electrode of said fourth transistor; a third impedance circuit connecting the collector electrode of said second transistor to the base electrode of said first transistor; and a fourth impedance circuit connecting the collector electrode of said first transistor to the base electrode of said second transistor, said first and second transistors being thus arranged in a common emitter circuit configuration and having their bases and collectors conductively cross-connected through said third and fourth impedance circuits whereby said first and second transistors form a trigger pair having two stable states of operating condition, said third and fourth transistors forming a gating pair, said pulse input signal controlling the transfer of the flow of said constant current to said fifth and sixth transistors and, therefore, respectively to said gating pair and said trigger pair, said gating pair then being adapted for controlling the biasing potentials of said trigger pair so as to prepare the switching thereof from one stable state to the other.

3,223,854
AVALANCHE TRANSISTOR CIRCUIT
Ramon D. Hansen and Delbert E. Bridenstine, Las Vegas, Nevada, assignors to Edgerton, Germeshausen & Grier, Inc., Boston, Mass., a corporation of Massachusetts
Filed Apr. 24, 1963, Ser. No. 275,409
6 Claims. (Cl. 307—88.5)



4. In an avalanche transistor circuit comprising a semiconductive device operative in the avalanche mode and having a conductive and non-conductive state, said device including emitter, base and collector electrodes; a source of operating potential coupled to said collector through a resistor; a capacitor connected to the junction of said resistor and said collector; the improvement for reducing the recovery time of said circuit, said improvement comprising, in series, a second resistor and a four-layer diode connected between said source and said junction.

3,223,855
SWITCHING CIRCUIT
Marvin R. Emerson, Tustin, and Rodger R. Lowe, Inglewood, Calif., assignors to Pacific Data Systems, Inc., Santa Ana, Calif., a corporation of California
Filed Oct. 29, 1963, Ser. No. 319,840
10 Claims. (Cl. 307—88.5)



1. In a computer, a logic system for preventing current from flowing through its logic inputs when the section of the computer containing said logic system is inactive, comprising

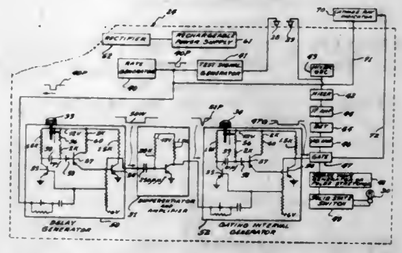
at least one diode logic circuit including a plurality of logic gates each having at least one logic input,

said logic gates being connected to form at least one logic chain in which current flows through the chain in one direction by way of a current supply junction,

output means connected to said chain at a point remote from said junction, and

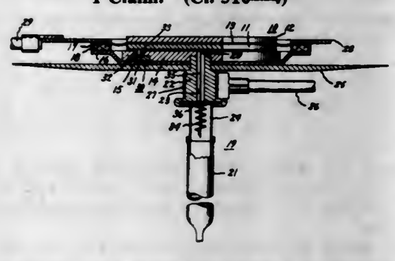
a single supply means including switching means for said logic system connected to said junction and responsive to control signals corresponding to the active state and inactive state of said computer section for application of a supply potential to said junction only during the time of said active state whereby current is prevented from flowing through said logic inputs during the time of said inactive state.

3,223,856
WIDE RANGE MONOSTABLE MULTIVIBRATOR
Ivan L. Joy, 1616 W. 29th St., Topeka, Kans.
Filed Aug. 20, 1963, Ser. No. 303,442
2 Claims. (Cl. 307—88.5)



1. In an adjustable range one-shot transistor multivibrator having an input transistor including base, emitter and collector elements connected normally to be cut off to respond to an input pulse at the base element to be rendered momentarily conducting for producing output at the collector element, an output transistor including base, emitter and collector elements connected normally to be saturated and a coupling circuit connected to feed output from the collector of said input transistor as input to the base element of said output transistor to cause said pulse acting through said input transistor to drive said output transistor to cut off, said coupling circuit including a timing capacitor, a diode, a wide range adjustable timing resistor connecting supply voltage to a juncture of said timing capacitor and said diode, and a transistor having a base connected through said diode to said juncture, a collector connected to the supply voltage and an emitter connected to the base of said output transistor.

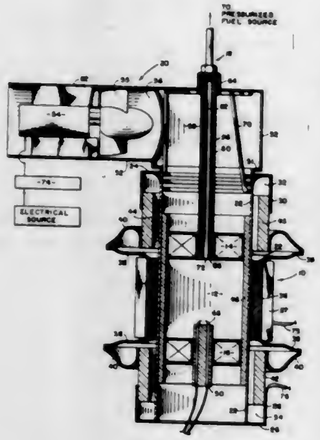
3,223,857
THERMIONIC CONVERTER
Jackson Lawrence, Troy, and Volney C. Wilson, Scotia, N.Y., assignors to General Electric Company, a corporation of New York
Filed Sept. 21, 1961, Ser. No. 139,792
1 Claim. (Cl. 310—4)



A cesium vapor thermionic converter comprising a cathode electrode having a planar metal surface, collector electrode having a planar metal surface, means supporting said electrodes in closely spaced opposed relation and exposed to the interior of a vacuum-tight envelope including a thin metal diaphragm extending from the periphery of said cathode and a peripheral extension of said collector electrode and means hermetically bonding said diaphragm and said extension together in insulated relation, a tubulation depending from said vacuum-tight envelope and communicating with the space between said electrode surfaces and thermally connected with said collector electrode, said tubulation including a section of reduced wall thickness for limiting the transfer of heat from said collector electrode to the remote portion of said tubulation, a quantity of liquid cesium within said tubulation, said diaphragm and said section of re-

duced thickness operating to maintain the desired temperature differential between the cathode and collector and between the collector and the liquid cesium, respectively, when said cathode is heated to operating temperature.

3,223,858
REGENERATIVE THERMIONIC CONVERTER
William R. Martini, Northridge, Calif., assignor to North American Aviation, Inc.
Filed Nov. 30, 1962, Ser. No. 241,328
4 Claims. (Cl. 310—4)



1. An internally heated fuel-fired thermionic converter device comprising, in combination:

a thermionic diode including in cooperatve relation a cylindrical cathode, an anode circumferentially spaced from said cathode, and plasma contained in the interelectrode space between said cathode and anode;

an interior combustion chamber whose sides are defined by said cathode;

regenerative heat exchangers disposed within said combustion chamber and defining the ends thereof;

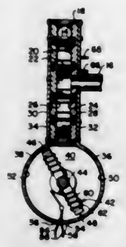
fuel-injecting means and air injecting means for separately and controllably injecting fuel and air into said chamber so that mixing of said fuel and air occurs only within said chamber to form a combustible mixture;

means for igniting said combustible mixture within said chamber to generate heat whereby said cathode is heated to an operative electron-emitting temperature;

and means for controlling the flow of air into said chamber in a preselected reversible direction so that each of said regenerative heat exchangers serves alternately to preheat the air entering said combustion chamber and to cool the exhaust gases ejected from said chamber whereby heat losses from said chamber are minimized.

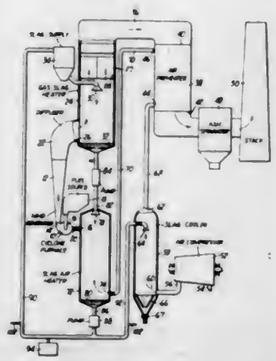
3,223,859
A.C. MAGNETOHYDRODYNAMIC GENERATOR
Howard E. Corbitt, Arcadia, Calif., assignor to Aerojet-General Corporation, Azusa, Calif., a corporation of Ohio
Filed June 25, 1962, Ser. No. 204,749
10 Claims. (Cl. 310—11)

1. A magnetohydrodynamic generator comprising a gas flow chamber for permitting a high temperature stream of gases to flow therethrough, magnetic material mounted outside the gas flow chamber on opposite sides thereof, first and second electrodes mounted in said chamber and positioned to receive electrons moving with a gas stream and adapted to be deflected by a magnetic field, said magnetic material having a low reluctance portion and a high reluctance portion, said gas flow chamber being positioned in the low reluctance portion, a magnet positioned in proximity to the high reluctance



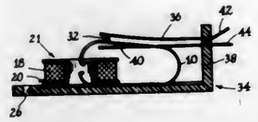
portion of the magnetic material, and combined means for causing the magnet to rotate and for forcing a high temperature gas stream through the gas flow chamber, whereby the rotation of said magnet in proximity to said high reluctance portion of the magnetic material induces an alternating magnetic field which is concentrated in said gas flow chamber so that an alternating voltage appears across said first and second electrodes.

3,223,860
HEAT EXCHANGE SYSTEM
Edward F. Brill, Brookfield, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Feb. 16, 1962, Ser. No. 173,692
8 Claims. (Cl. 310—11)



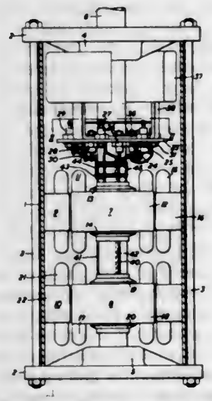
6. In an MHD electrical power generating plant, in combination, an MHD electrical generator, a furnace for burning fuel and combustion air to provide hot combustion gas to said generator, a source of hot liquid slag, a first heat exchanger into which combustion gas exhausted from said generator is directed and into which liquid slag from said source is directed and wherein heat is transferred from said combustion gas to said liquid slag, a source of preheated combustion air for said furnace, a second heat exchanger into which combustion air from said source is directed and into which liquid slag from said first heat exchanger is directed and wherein heat is transferred from said slag to said combustion air, and means for pumping said liquid slag from said second heat exchanger to said first heat exchanger for recirculation.

3,223,861
ELECTROMAGNETIC MOTOR
Rudolf Steiner, 17215 Valerio St., Van Nuys, Calif.
Filed Jan. 24, 1963, Ser. No. 253,692
1 Claim. (Cl. 310—21)



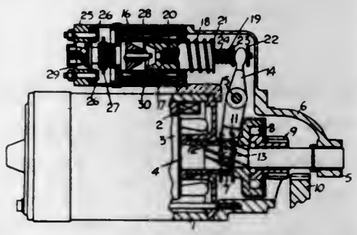
An electromagnetically actuated device comprising: a base having at least one mounting hole; a magnet coil having lugs mounted on said base; a single, continuous, magnetically conductive member having ends; said single, continuous, magnetically conductive member formed of resilient material to a shape so as to position said ends face to face with respect to each other across one single, operational air gap; said so formed single, continuous, magnetically conductive member being biased, by virtue of its inherent resilience, against a magnetizing force generated by said magnet coil, when energized, mounted on one portion of said base so as to position said single, operational air gap within the interior of said magnet coil, leaving its movable portion free to reciprocate toward and away from said mounted portion; a means for the control of electrical contacts mounted on the movable portion of said single, continuous, magnetically conductive member; contact leaves formed from an electrically conductive, resilient material mounted in groups on said base; one said group of said contact leaves being biased toward said means for the control of electric contacts when in the position corresponding to said magnet coil when de-energized; another said group of said contact leaves being biased toward said means for the control of electric contacts when in the position corresponding to said magnet coil when energized, effecting the closing and opening and transfer, respectively, of electric circuits connected selectively to said contact leaves.

3,223,862
ELECTRIC SERVO MOTORS
Edward Francis Daniel Webb, 367 Finchampstead Road, Wokingham, England
Filed May 9, 1961, Ser. No. 108,829
Claims priority, application Great Britain, May 16, 1960, 17,292/60
11 Claims. (Cl. 310—68)



1. A motor comprising two stator units wound for polyphase alternating current operation and connected to generate oppositely rotating fields through means for controlling the relative magnitude of the voltages applied to said stators, two wound rotor units rotatable together and arranged to cooperate one with each of said stator units, and a rectifier bridge interconnecting said two rotor windings, whereby the highest E.M.F. from any phase winding of one rotor is always opposed to the highest E.M.F. generated in any phase winding of the second rotor.

3,223,863
ELECTRIC STARTING MECHANISM FOR INTERNAL COMBUSTION ENGINES
Kenneth Preece and Roy Price Bowcott, Solihull, England, assignors to Joseph Lucas (Industries) Limited, Birmingham, England
Filed June 19, 1963, Ser. No. 289,112
Claims priority, application Great Britain, June 25, 1962, 24,269/62
3 Claims. (Cl. 310—75)

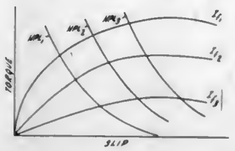


1. Starting apparatus for an internal combustion engine comprising, an electric motor, a rotor shaft extending from said motor, an axially movable pinion mounted on said shaft into engagement with a toothed wheel of the engine to be started, means for connecting said pinion with said shaft so that when the shaft is rotated rotary motion will be imparted to said pinion, a lever having one end operatively connected to said pinion so as to move said pinion axially on the shaft, an electromagnet having an armature operatively connected to the other end of said lever, resilient means acting intermediate the armature and said other end of the lever, said resilient means being arranged to be stressed when a tooth of the pinion engages end-to-end with a tooth of the toothed wheel to allow the armature to move to its fullest extent when the electro-magnet is energised, a first motor controlling switch disposed to be closed by the armature when the latter has moved to its fullest extent, the closing of said first motor controlling switch being arranged to energize the motor at low power, and a second motor controlling switch disposed to be closed by said other end of the lever, said second motor controlling switch being arranged to energise the motor at full power, so that in the event of end-to-end engagement occuring the motor will be energised at low power to cause the pinion to be moved angularly to clear said engagement whereupon the resilient means will move the pinion into full engagement with the toothed wheel and the second motor controlling switch will be closed to energise the motor at full power.

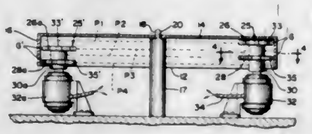
3,223,864
MAGNETIC CLUTCH COOLANT CONTROL
Chester L. Munson, Kenosha, Wis., assignor to The Louis Allis Company, Milwaukee, Wis., a corporation of Wisconsin
Filed Feb. 21, 1963, Ser. No. 260,233
13 Claims. (Cl. 310—94)

1. A system for controlling the temperature of magnetic clutch means by controlling the flow of a cooling fluid from a source thereof to a cooling unit operatively associated with the clutch means wherein the clutch means

includes a driving member rotatably driven from a power source and a driven member rotatated by the driving member through the medium of a variable strength electromagnetic field set up in the members, said system compraising; means for generating a signal generally proportional to the rate of heat generation in the clutch means, means for generating a balance signal generally proportional to the rate of flow of the cooling fluid, and means responsive to the relationship between said signals to vary the rate of flow of cooling fluid as the rate of heat generation in the clutch means varies.



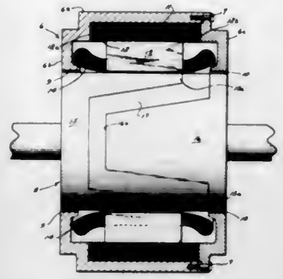
3,223,865
TURNTABLE WITH MAGNETIC HYSTERESIS DRIVE
Lewis Gladstone, 177—44 Troutville Road, Springfield Gardens, N.Y.
Filed Apr. 27, 1962, Ser. No. 190,531
6 Claims. (Cl. 310—103)



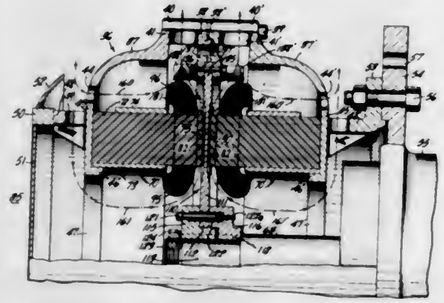
1. A magnetic hysteresis drive for high fidelity sound recording or reproducing apparatus, comprising a rotatable turntable having an unmagnetized peripheral ring formed of hysteresis material having a high retentivity of magnetization, a pair of cylindrical permanent magnet structures disposed in circumferentially spaced positions adjacent to the ring and radially spaced therefrom by narrow air gaps, each of said magnet structures having alternating peripheral north and south poles, and drive means respectively supporting and driving the magnet structures on their axes, whereby the magnet structures each magnetically induces local magnetic fields in the ring to develop torque between the magnet structures and the ring for cooperatively rotating the turntable while the magnet structures rotate simultaneously, each of the magnet structures including two parallel spaced disks, the magnetic poles on one disk being circumferentially offset from and disposed between the magnetic poles on the other disk, to induce said magnetic fields in substantially skewed paths in said ring.

3,223,866
ALTERNATOR
Janis Tiltins, East Cleveland, Ohio, assignor to TRW Inc., a corporation of Ohio
Filed Sept. 13, 1960, Ser. No. 55,791
2 Claims. (Cl. 310—155)

1. In an alternator, a stator of magnetic material, a housing of magnetic material having a cylindrical permanent magnet portion surrounding said stator and having a pair of walls spaced axially from the opposite ends of said stator, said permanent magnet being provided for inducing a north magnetic pole in one of said walls and a south magnetic pole in the other, a rotor of a diameter less than the inner diameter of the stator journaled for rotation within the stator, said rotor comprising a pair of opposed sections of magnetic material respectively coupled magnetically to said pair of walls, and at least one finger of magnetic material projecting axially from each of the rotor sections toward the other, said fingers being spaced angularly from one another to define poles for cooperation with said stator during operation of the alternator.

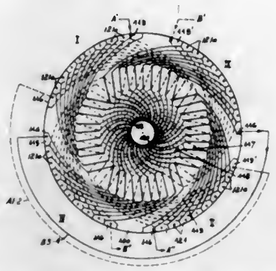


3,223,867
AXIAL AIR GAP MOTOR
Harris Shapiro, Oradell, N.J., assignor to General Dynamics Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 9, 1961, Ser. No. 143,614
4 Claims. (Cl. 310—166)



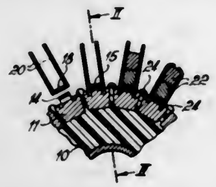
1. A double axial air gap polyphase induction motor comprising, a pair of stators separated by an axial radially-annular flux gap, each stator comprising a magnetic core having toward said gap an annular magnetic face characterized by a large plurality of salient pole teeth and by radial slots which intervene said teeth and are equiangularly spaced entirely around the face, a pair of fractional-pitch lap-wound polyphase windings of which each is on a respective one of said core faces and is comprised of a plurality of phase belts of adjacent coils of which all coils in each belt are for currents of one phase, each coil of each winding being received in non-adjacent ones of the slots of the corresponding face so as to form a loop around a plurality of pole teeth of that face, said two windings being responsive to current energization to produce respective magnetic fields rotating in magnetic push-pull relation in a common direction around said gap, and a rotor having an annular electroconductive portion which is at least predominantly non-magnetic and which is disposed in said gap, said annular rotor portion axially extending from side to side of said rotor, and said annular rotor portion being responsive to said fields to be rotated thereby and to be axially repelled from each of said stators.

3,223,868
A.C. PRINTED-CIRCUIT WINDING
Jacques Henry-Baudot, Antony, Seine, France, assignor to Printed Motors Inc., New York, N.Y.
Filed July 27, 1961, Ser. No. 127,204
Claims priority, application France, Sept. 8, 1960, 838,266
3 Claims. (Cl. 310—185)



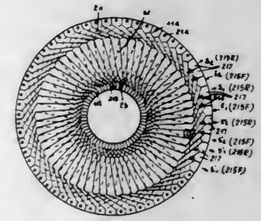
1. A field winding for the stator of an alternating current rotary machine of the flat annular airgap kind, comprising two sets of identically shaped half-turn printed-circuit conductors adhering to the opposite faces of an annular insulating carrier, each conductor comprising a substantially radial mid-portion having arcuate end-portions extending from opposite ends thereof to the inner and outer peripheral edges of said carriers, interface connections extending between registering ends of said conductors on opposite faces of said carrier, the inner end-portions of said conductors on each face of said carrier being formed as contiguous conductor portions spaced apart by narrow air-gaps, the middle portions of said conductors being formed in groups of contiguous conductors, the groups being connected in pairs equal in number to the elementary phases in the electrical supply to be applied to the windings, the said groups of middle portions being spaced apart by bare areas of said carrier, and said middle conductor portions, taken together on both faces of said carrier, covering substantially the complete middle annular area of said carrier, and said outer end-portions of said conductors being arranged in groups of contiguous conductor portions according to the grouping of said middle conductor portions, said groups of outer end-portions being separated by bare areas of said carrier.

3,223,869
COMMUTATOR FOR AN ELECTRIC MOTOR
Ludwig Reisnecker, Stuttgart-Botnang, Germany, assignor to Robert Bosch G.m.b.H., Stuttgart, Germany
Filed Feb. 12, 1962, Ser. No. 172,502
Claims priority, application Germany, Apr. 28, 1961, B 62,313
9 Claims. (Cl. 310—234)



5. In a commutator, in combination, a plurality of commutator segments each having at one end a tongue integral at one end thereof with the remainder of the segment and said tongue having opposite said end integral with said segment a free end; and a substantially U-shaped bracket having an intermediate portion extending beneath said tongue and held by the latter against the commutator segment so as to be fixed thereto, each bracket having a pair of legs extending from said intermediate portion thereof and directed away from the commutator axis so that armature leads may be located between said legs.

3,223,870
PRINTED-CIRCUIT WINDING FOR ROTARY ELECTRIC MACHINES
Jacques Henry-Baudot, Antony, France, assignor to Printed Motors Inc., New York, N.Y.
Filed July 27, 1961, Ser. No. 127,260
Claims priority, application France, Sept. 8, 1960, 838,267
2 Claims. (Cl. 310—268)

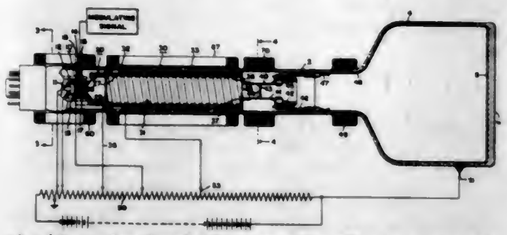


1. An alternating current inductor winding for an axial airgap electric rotary machine, comprising two sets of half-turn conductors intimately adhering to annular insulating areas on opposite faces of an annular carrier, the conductors of each set being uniformly distributed about said annular areas and terminating at the outer boundary of the annular areas in terminal portions located at equal distances from the center of the carrier, the terminal portions of the two sets of conductors being arranged in registering pairs on opposite faces of said carrier, the conductors of the two sets having inclined portions adjacent said terminal portions, said inclined portions being inclined in opposite directions, whereby the inclined portions of one set of conductors cross inclined portions of the other set, a first set of face-to-face connections establishing separate connections between the terminal portions of each registering pair of terminal portions for all pairs of terminal portions covering a major angular sector of said carrier, the remaining pairs of terminal portions within the minor angular sector being free of face-to-face connections and a second set of face-to-face connections located within said minor angular sector and connecting together registering crossing portions of conductor pairs, said second set of face-to-face connections being located radially inward from the terminal portions of said conductors, the face-to-face connections of said second set being spaced apart to skip a conductor at certain locations, thereby omitting the face-to-face connections for certain conductors to which supply leads may be connected.

3,223,871
ELECTRON OPTICAL SYSTEM
Kurt Schlesinger, Fayetteville, N.Y., assignor to General Electric Company, a corporation of New York
Filed Aug. 22, 1961, Ser. No. 133,221
13 Claims. (Cl. 313—83)

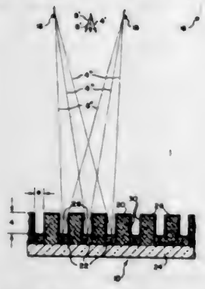
1. An electron optical system comprising, arranged in coaxial relation, an electron beam source, a target spaced from said source, a main electron beam focusing lens disposed between said source and said target, an electron beam prefocusing electron lens disposed between said electron beam source and said target for providing an electron optical image of said electron beam source for imaging on said target by said main focusing lens, and accelerating spiral electrode means providing an axial

electron accelerating field between said prefocusing lens and said main lens, and means for varying the strength



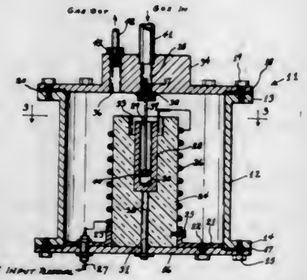
of said accelerating field to vary the effective object distance of said main lens to reduce spot size on said target.

3,223,872
COLOR SCREEN WITH ELECTRON- AND LIGHT-ABSORPTIVE MATERIAL SEPARATING ADJACENT COLOR STRIPS
Paul Raibourn, Southport, Conn., assignor to Paramount Pictures Corporation, New York, N.Y., a corporation of New York
Filed Aug. 13, 1962, Ser. No. 216,371
6 Claims. (Cl. 313—92)



1. A cathode ray tube for the reproduction of color television images comprising a target for cathode rays, a multiplicity of strips of phosphors fluorescent in plural primary colors disposed one adjacent another on said target in a repeating cyclic order, and electron absorptive, non-fluorescent spacing means separating each two adjacent ones of said strips, said spacing means having a height above said strips greater than the width of said strips.

3,223,873
RADIO FREQUENCY CELL FOR GAS CHROMATOGRAPHY
William C. Hampton, Takoma Park, Md., assignor to American Instrument Company, Inc., Silver Spring, Md.
Filed May 6, 1963, Ser. No. 278,008
7 Claims. (Cl. 313—161)



1. In a gas chromatography apparatus, a detection cell comprising a gas sampling chamber of conductive material, a coil form of insulating material mounted in said chamber, a ballast coil wound on said form, a hollow metal electrode mounted in said form and defining a core for said coil, one wall of said chamber being formed with a gas inlet passage, a metal gas inlet tube secured in said passage and extending into said electrode, said inlet tube being conductively connected to said chamber, said chamber being provided with a gas outlet passage spaced from said inlet passage, conductor means connecting said electrode to one end of said coil, a radio frequency input terminal mounted in and insulated from a wall portion of said chamber, and conductor means connecting said terminal to the other end of said coil.

3,223,874
PREIONIZER FOR USE IN OVERVOLTAGE PROTECTIVE DEVICES
Thomas J. Carpenter, Pittsfield, Mass., assignor to General Electric Company, a corporation of New York
Filed Dec. 13, 1963, Ser. No. 330,309
4 Claims. (Cl. 313—231)



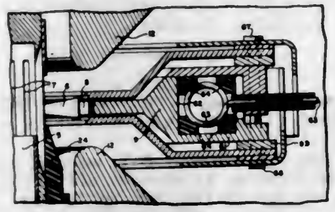
4. In an overvoltage protective device which has a pair of spaced electrodes defining a discharge gap, a preionizer for ionizing said gap, said preionizer comprising an integral body member formed of an insulating material, a pair of preionizer electrodes secured to said body member, one of said preionizer electrodes formed from conducting material coated on a portion of said body member, the other of said preionizer electrodes being formed from a metallic member which is secured in a cavity in an opposite portion of said body member, an ionizing gap formed between said preionizer electrodes, said gap being defined by that portion of the body member separating said preionizer electrodes, and means electrically connecting said preionizer in parallel circuit with said spaced electrodes.

3,223,875
ELECTRIC HEATING TUBE IN WHICH ENLARGED CONVOLUTIONS OF FILAMENT COIL ACT AS FILAMENT SUPPORTS
Reinhold Eggers, Burgau uber Riedlingen, Wurttemberg, Germany
Filed Dec. 15, 1959, Ser. No. 859,820
4 Claims. (Cl. 313—273)



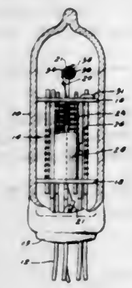
1. Electric heat-generating device comprising a hermetically sealed tubular enclosure having two ends, an inside wall, and an inside diameter, two conductors sealed through said ends, and an integral coiled filament extending approximately centrally within said enclosure and being connected at its ends to said conductors, said coiled filament including a main portion of smaller convolutions and at least a single larger convolution, said main portion having a substantially cylindrical shape and an outside diameter smaller than said inside diameter, said single larger convolution being shaped to provide point-contacts with said inside wall and thus to position said filament.

3,223,876
CATHODE HEATER ASSEMBLY FOR USE IN STRONG D.C. MAGNETIC FIELDS
Maurice F. Liscio, West Orange, N.J., assignor to S-F-D Laboratories, Inc., Union, N.J., a corporation of New Jersey
Filed Sept. 6, 1962, Ser. No. 221,796
4 Claims. (Cl. 313—276)



1. A cathode heater assembly for use in strong D.C. magnetic fields including, means for producing a strong magnetic field, a bare helical A.C. filament cathode heater element having spaced apart turns immersed in the strong magnetic field with the longitudinal axis of the helix being directed transversely of the direction of the magnetic field, a plurality of refractory insulating members peripherally spaced apart about the circumference of the cross-section of the helix and being longitudinally directed of the helix for tangentially supporting the bare A.C. heater filament within the cathode structure whereby motoring movement between the helix and said tangential support is permitted without shorting of the A.C. filament to the cathode structure.

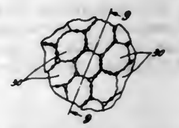
3,223,877
ELECTRON DISCHARGE DEVICE HAVING FILAMENTARY CATHODE TENSIONING MEANS
Mortimer E. Weiss, Flushing, N.Y., assignor, by mesne assignments, to Sylvania Electric Products Inc., Wilmington, Del., a corporation of Delaware
Filed July 25, 1949, Ser. No. 106,722
4 Claims. (Cl. 313—278)



1. An electron discharge tube having a filamentary cathode, a support for one end of said cathode, and a tensioning means connected to the other end of said cathode, said tensioning means including a support, a helical spring, and a sleeve surrounding said spring, said other end of said cathode being directly connected to said sleeve.

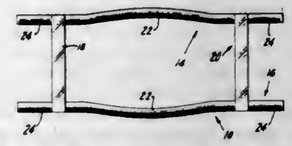
3,223,878
METHOD OF FABRICATING FINE GRIDS
Hoyt H. Todd, La Habra, Calif., assignor to Electro-Optical Systems, Inc., Pasadena, Calif., a corporation of California
Filed Sept. 17, 1962, Ser. No. 223,942
15 Claims. (Cl. 313—348)

14. A grid comprising a compact bundle of wires crowded together and deformed into non-circular cross-sectional configuration with the wires forming longitudinal passages through the bundle and with the ends of the wires



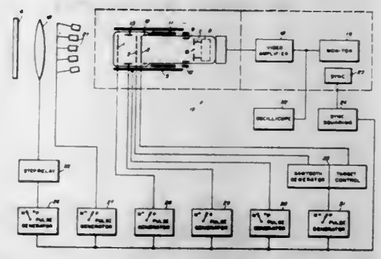
of the bundle enlarged to restrict the end portions of the passages.

3,223,879
PREFORMED AND PRESTRESSED STRAP FRAME GRID
Frank H. Grimone, Emporium, Pa., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Dec. 12, 1960, Ser. No. 75,328
5 Claims. (Cl. 313—348)



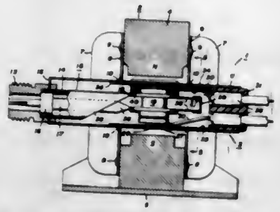
1. A frame for a grid comprising resilient side members and cross members, the side members having portions bowed away from each other between the cross members and each of the side members extending beyond each of the cross members to form spaced parallel leg portions for support of said frame.

3,223,880
APPARATUS AND METHOD FOR DETECTION OF TARGETS AT HIGH LIGHT LEVELS
James L. Harris, San Diego, Calif., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Jan. 30, 1961, Ser. No. 85,939
2 Claims. (Cl. 315—12)



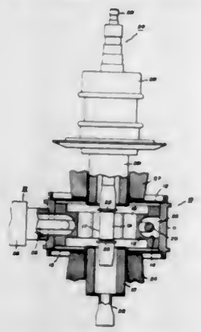
1. A storage tube comprising; cathode means adapted to emit electrons upon radiant energy impinging thereon; accelerating means for accelerating said electrons; target means disposed in the path of said emitted electrons for producing secondary electrons upon impingement of primary electrons thereon; screen means; means for applying a voltage potential to said cathode means accelerating means and screen means so that secondary electrons are attracted to said screen means; pulsing means for varying the potential on said cathode means so that electrons are restored to said target means; electron focusing means for focusing and defocusing the electrons emitted by said cathode means, said means for focusing and defocusing said electrons so constructed and arranged that said electrons are defocused in synchronism with said varying potential on said cathode means.

3,223,881
MAGNETRON MOUNTING STRUCTURE AND OUTPUT COUPLING
George A. Krug, Jr., Rotterdam, N.Y., assignor to General Electric Company, a corporation of New York
Filed Aug. 13, 1962, Ser. No. 216,639
11 Claims. (Cl. 315—39)



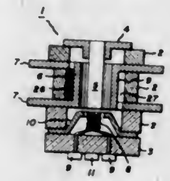
1. An R.F. circuit assembly for coupling a balanced electric discharge device to a coaxial output connector, said connector comprising a section of coaxial transmission line having one end thereof conductively coupled to said connector, a spaced pair of contact members in said circuit adapted to contact said device, the other end of said line having the outer and inner conductors thereof each conductively coupled to one of said spaced contact members, and said outer and inner conductors being tapered at the ends thereof coupled to said spaced contact members, the inner conductor having a double taper at the coupling end thereof and the outer conductor having a single taper at the coupling end thereof, and an inductance loop connected to at least one of said contact elements.

3,223,882
TRAVELING WAVE ELECTRIC DISCHARGE OSCILLATOR WITH DIRECTIONAL COUPLING CONNECTIONS TO A TRAVELING WAVE STRUCTURE WHEREIN THE NUMBER OF COUPLING CONNECTIONS TIMES THE PHASE SHIFT BETWEEN ADJACENT CONNECTIONS EQUAL AN INTEGRAL NUMBER OF WAVELENGTHS
Herbert L. Thal, Jr., Rotterdam, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Mar. 24, 1961, Ser. No. 98,048
21 Claims. (Cl. 315—39.3)



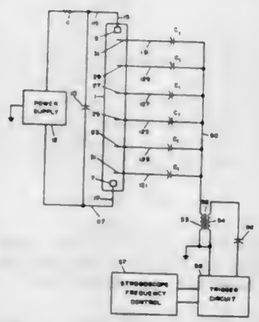
1. An electric discharge oscillator device comprising a cathode, a periodic slow wave high Q anode structure surrounding said cathode, said cathode and anode structure defining a reentrant slow wave structure effective for supporting a desired traveling wave mode of oscillation at particular operating frequencies, only a single transmission line concentric with said anode structure and including an output coupling port at one end and reverse terminating means at the opposite end thereof, directional coupling means comprising a plurality of coupling connections symmetrically equally spaced completely about said anode structure and connecting each periodic section thereof with said transmission line for directionally coupling energy toward only said output coupling port in said transmission line, the number of coupling connections times the phase shift between adjacent coupling connections being equal to an integral number of wavelengths, and means in said transmission line electrically separating said output port and reverse terminating means intermediate an adjacent pair of coupling connections.

3,223,883
MAGNETRON HAVING INTERNAL CONDUCTIVE MATERIAL COATED AREA BETWEEN ANODE TERMINALS
Gerald J. Carlson, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Nov. 30, 1962, Ser. No. 241,224
6 Claims. (Cl. 315—39.51)



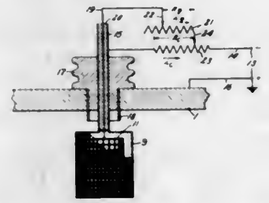
1. A magnetron comprising an annular insulator, an anode circuit including a pair of axially spaced annular terminals sealed to opposite ends of said insulator and a plurality of segments supported in cylindrical array from said terminals in mutually-spaced relation with alternate segments connected to one said terminals and the remaining segments connected to the other of said terminals, a conductive coating on a portion only of the inner surface only of said insulator effective for controlling the center frequency of said magnetron, a non-emissive electrode supported concentrically within the space defined by said segments for providing an interaction space, an electron emissive electrode displaced axially relative to said non-emissive electrode, and means for controllably directing electrons axially into said interaction space.

3,223,884
GASEOUS-DISCHARGE DEVICE
William A. Ward, Norwood, Mass., assignor to Edgerton, Germeshausen & Grier, Inc., Boston, Mass., a corporation of Massachusetts
Filed Sept. 26, 1961, Ser. No. 140,826
2 Claims. (Cl. 315—60)



1. In a gaseous-discharge device having a gas-filled envelope, an anode located within the envelope, a cathode spaced from the anode within the envelope, a plurality of wire probe type trigger electrodes spaced from each other and disposed in the space between the anode and the cathode, said anode, cathode and trigger electrodes each connected to conductive pins extending through the glass envelope, a tube socket having means for engaging the conductive pins to an operative circuit, the improvement comprising a coating of insulating material on each of the trigger electrode pins, said insulating material being located on the portion of each trigger electrode pin exterior to said envelope, whereby a capacitance is serially connected with each trigger electrode pin when inserted in said tube socket.

3,223,885
STABILIZATION CIRCUIT FOR ELECTRON BEAM APPARATUS
Lynn H. Stauffer, Pattersonville, N.Y., assignor to General Electric Company, a corporation of New York
Filed Apr. 29, 1963, Ser. No. 276,413
8 Claims. (Cl. 315—111)



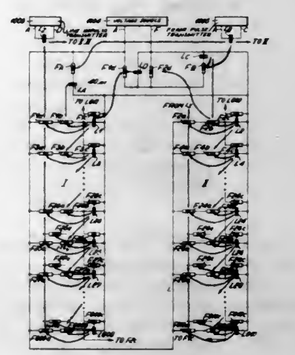
1. The combination of a cathode comprising a hollow perforated structure adapted for use in an ionizable gaseous medium and to be operated at a high negative potential relative to the enclosure of said medium sufficient to produce a plasma within the cathode, said cathode having an aperture through which an electron beam issues from the plasma, with

a control electrode comprising a structure being positioned within said cathode and electrically insulated therefrom, said control electrode having an aperture aligned with said cathode aperture through which said beam passes whereby the magnitude of current in said beam may be varied by varying the potential between said control electrode and cathode, and

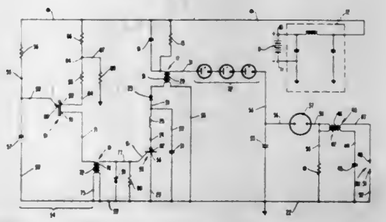
means connected in an electrical circuit which couples the cathode and control electrode for automatically regulating the magnitude of the beam current.

3,223,886
TELEVISION PICTURE SCREEN
Herbert Glaser, 62 Hammer Steindamm, Hamburg, Germany
Filed May 23, 1961, Ser. No. 112,013
Claims priority, application Germany, May 23, 1960, G 29,739
4 Claims. (Cl. 315—151)

1. A television image screen comprising, in combination, a group of parallel, spaced, line forming first conductors arranged in a sequential manner, a group of parallel, spaced, column forming second conductors arranged in a sequential manner and transversely related to said line forming first conductors and superimposed thereover, an electroluminescent material disposed between said first and second conductors whereby upon a voltage being applied to a first conductor and a second conductor the electroluminescent material disposed immediately therebetween will luminesce, a voltage source, a frame pulse source, a line impulse source, a first radiation sensitive electrical element associated with each of said second conductors selectively controlling voltage energization of the associated second conductor, a radiation source operatively associated with each radiation sensitive element adapted to selectively irradiate the associated element, means connecting the radiation sources of said second conductors in series with the adjacent sequentially prior second conductor, means connecting said line impulse source to the radiation source of the first conductor of said group of second conductors, means connecting said voltage source to said radiation sensitive elements of said second conductors, control means for said first conductors controlling voltage energization thereof, and means connecting said voltage, a frame pulse and line impulse sources to said control means.

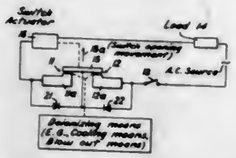


3,223,887
ELECTRICAL APPARATUS
David C. Brown, Sidney, N.Y., assignor to The Bendix Corporation, Sidney, N.Y., a corporation of Delaware
Filed June 29, 1962, Ser. No. 206,236
10 Claims. (Cl. 315—223)



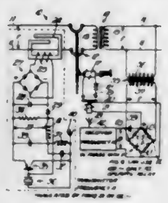
1. A system for generating a succession of electrical pulses comprising a source of direct current, a transformer, first circuit means connected across said source, said circuit means including the primary winding of said transformer and a condenser connected in series, second circuit means including an inductor and a switching device connected in series with each other and in parallel with said condenser, output circuit means including the secondary winding of said transformer to receive energy from said primary winding while the condenser is being charged by said source, means to render the switching device alternately conductive and non-conductive whereby alternately to charge and discharge the condenser, and a diode in the first circuit means interposed between said primary winding and a junction between the condenser and the series connected inductor and switching device, said diode permitting charging current to flow to the condenser but preventing condenser discharging current from flowing to said primary winding.

3,223,888
ARC-PREVENTING SWITCHING SYSTEM
Floris Koppelmann, Berlin-Siemensstadt, Germany, assignor to Licentia Patent-Verwaltungs-G.m.b.H., Frankfurt am Main, Germany
Filed Dec. 8, 1960, Ser. No. 74,657
Claims priority, application Germany, Dec. 14, 1959, L 34,922
6 Claims. (Cl. 317—11)



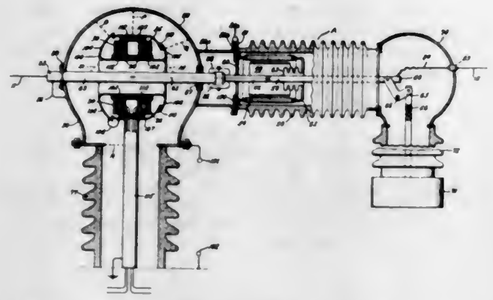
1. A switching circuit incorporated in an alternating current line, said circuit comprising, in combination: two serially connected mechanical switches; at least two monocrystal semiconductor rectifiers connected across said switches, respectively, said rectifiers being connected such that they pass current in opposite directions; and means for opening and closing said switches sequentially with each switch being opened and closed during the half wave in which the rectifier in parallel with the respective switch is conductive.

3,223,889
MEANS FOR PROTECTING POWER CIRCUITS AND THE LIKE
Edmund O. Schweitzer, Jr., 1002 Dundee Road, Northbrook, Ill.
Filed Jan. 22, 1963, Ser. No. 253,100
46 Claims. (Cl. 317—14)



7. In an electric power transmission system:
(a) an alternating current power supply circuit and a load circuit,
(b) circuit interrupter means interconnecting said circuits and trip means therefor,
(c) first and second non-linear impedance means,
(d) means for deriving from each of said circuits a fundamental frequency current and a second harmonic thereof and applying them respectively to said first and second non-linear impedance means to generate unidirectional effects individual thereto corresponding to the flow of alternating current in said circuits respectively,
(e) means for balancing said unidirectional effects whereby as long as the flows of alternating current in said circuits bear a predetermined relation to each other said unidirectional effects are nullified, and
(f) means responsive to predetermined unbalancing of said unidirectional effects corresponding to change in said predetermined relation between said current flows in said circuits for operating said trip means to open said circuit interrupter means.

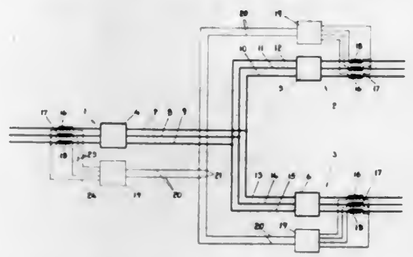
3,223,890
ELECTRIC PROTECTIVE EQUIPMENT
William J. Maul, Mount Ephraim, N.J., John A. Oppel, Aldan, Pa., and William H. Rathbun, Riverton, N.J., assignors to General Electric Company, a corporation of New York
Filed Sept. 30, 1963, Ser. No. 312,444
12 Claims. (Cl. 317—15)



1. A current transformer assembly comprising:
(a) a metal housing at high potential,
(b) insulating means supporting said housing and insulating said housing from ground,
(c) a primary conductor extending through said metal housing,
(d) a pair of secondary windings mounted about said primary conductor and located adjacent each other along the length of said primary conductor, said secondary windings being electrically spaced from said primary conductor,
(e) means for electrically connecting said primary conductor to said metal housing at one electrical side only of said secondary windings,
(f) means electrically insulating said housing and said primary conductor from each other except for said connection at said one electrical side,
(g) conductive shielding comprising a first conductive tube interposed between said primary conductor and said secondary windings and electrically spaced from said primary conductor, a second conductive tube disposed about said secondary windings, and means electrically connecting said conductive tubes together at said one electrical side only of said secondary windings,
(h) conductive means for providing a conductive path from said shielding to ground that is located at said one electrical side of said current transformer secondary windings,
(i) and additional insulating means for forcing substantially all current flowing from said shielding to ground to follow said conductive path at said one electrical side of said secondary windings, said additional insulating means comprising means insulating said conductive tubes from each other except for said connection between the tubes at said one electrical side only.

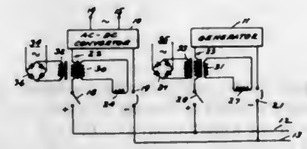
3,223,891
PILOT-WIRE PROTECTION OF TRANSMISSION LINES
Kenneth R. McClymont, 29 Abinger Court, Islington, Ontario, Canada
Filed Dec. 20, 1961, Ser. No. 160,763
13 Claims. (Cl. 317—27)

1. A pilot-wire arrangement for protecting a three-phase electric transmission line having a plurality of terminals, comprising a line circuit breaker at each terminal, a relay for each terminal for opening the circuit breaker of the terminal, current transformers in the line at each terminal, pilot-wires providing an electrical path between the terminals, and a relay control circuit for each terminal with connections between the pilot-wires and the current transformers of the terminal of such polarity that a current normally circulates in the pilot-wires, the connections of each control circuit including a mixing transformer having an input from the current transformers of the terminal and a two line output for delivering a current which is a function of the positive, negative and zero sequence components of the currents from the current transformers and is substantially independent of the impedance of the pilot-wires, and an insulating transformer connected between the two line output and the pilot-wires, means connected across the two line output for



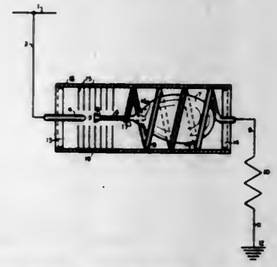
providing an operating voltage dependent on the voltage across the pilot-wires, a transformer in one line of the two line output and means connected across the last mentioned transformer for providing a restraint voltage dependent on the current in the pilot-wires, means responsive to a predetermined difference between the operating voltage and the restraint voltage to provide a voltage indicative of a fault between the terminals of the line, a power supply independent of the current transformers, means providing a stable reference voltage, and an electronic amplifier for operating the relay of the terminal from the independent power supply in response to a predetermined difference between said indicative and reference voltages, thus opening the circuit breaker of the terminal.

3,223,892
PROTECTION OF PARALLEL CONNECTED D.C. SOURCES
Isadore K. Dortort, Philadelphia, Pa., assignor to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania
Original application July 13, 1956, Ser. No. 597,781, now Patent No. 2,949,568, dated Aug. 16, 1960. Divided and this application July 22, 1960, Ser. No. 44,681
1 Claim. (Cl. 317—43)



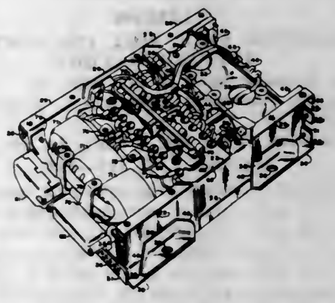
In a system for energizing a D.-C. load, said system comprising a first and second parallel connected source of D.-C. power and a current interrupting means connected in series with said first source of D.-C. power; said current interrupting means having an automatic trip means including a bucking coil associated therewith; a substantially non-linear reactor; said non-linear reactor being connected in series with said first source of D.-C. power and said D.-C. load; circuit connections for impressing the voltage of said non-linear reactor across said bucking coil; the current carried by said non-linear reactor being reversed upon a fault in said first source of D.-C. power to reverse the flux of said non-linear reactor; said bucking coil being energized responsive to flux change in said non-linear reactor; said automatic trip means including a magnetic circuit, a bucking bar passing through said magnetic circuit and carrying at least a portion of the current flowing through said current interrupting means; said bucking coil being wound on said magnetic circuit and an armature; said armature being operatively connected to said current interrupting means to operate said current interrupting means to a circuit interrupting position responsive to energization of said bucking coil; said bucking coil and said bucking bar being constructed to magnetize said magnetic structure in the same direction, said bucking bar providing back-up protection for said system.

3,223,893
LIGHTNING ARRESTER
Henry Greber, 225 W. 80th St., Apt. 8–D, New York, N.Y.
Filed Feb. 5, 1962, Ser. No. 171,097
5 Claims. (Cl. 317—65)



1. A lightning arrester of at least two counterposed electrodes, one of which being connected to the protected line, the other to a coil embracing an elastic insulated container having an outlet in the direction of said gap, into which air is blown from said elastic container when the latter is squeezed by the coil, which is retracted when it is passed by the lightning current.

3,223,894
BATTERY CHARGING APPARATUS
Thomas W. Moore, Dayton, Ohio, assignor to American Machine & Foundry Company, a corporation of New Jersey
Filed Aug. 13, 1959, Ser. No. 833,479
3 Claims. (Cl. 317—100)



1. An air cooled battery charger comprising in combination, a container having base, side and top walls and

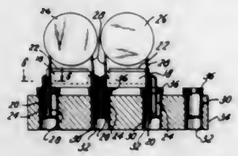
having front and back openings at each end, at least one heat conducting member transversely disposed between selected opposite walls of said container and proximate one end thereof, at least one shroud mounted in intimate heat conducting contact with said heat conducting member, fan means having blades mounted within said shroud to direct a current of air therethrough and through said container from said front to back openings, electrical components progressively arranged within said container in accordance with the heat sensitivity thereof, the components of greatest heat sensitivity being disposed in the intake air stream of said fan and in advance of the intake thereof, and heat producing, rectifying circuit elements mounted on said transverse heat conducting member in heat exchanging relationship therewith, said fan being operative to provide cooling air for conducting heat produced by said rectifiers away from said shroud and cool said progressively arranged electrical components.

3,223,895

SOLDERING OF DIODE STRING

Bernard Bernstein, Brooklyn, N.Y., assignor to General Instrument Corporation, Newark, N.J., a corporation of New Jersey

Filed June 18, 1962, Ser. No. 203,368
2 Claims. (Cl. 317—101)



1. In the manufacture of a string of silicon diodes with shunt resistors and capacitors, the diodes and resistors being collateral and being tiny cylinders with short leads extending generally perpendicular to the cylinders, the capacitors being of the flat ceramic disc type, the method which includes temporarily inserting small loose cups in a series of uniformly spaced holes in a metal block, said cups being standard closed-end eyelet blanks, placing a ring-shaped solder preform at the top of each eyelet blank, inserting the three leads at each end of the three shunt components through a solder ring and into a cup, repeating this for adjacent shunt components so that there are six leads in each cup, heating the assembly to melt the solder to run into the cups, controlling the heating temperature not to exceed a predetermined temperature which might prove injurious to the silicon diodes, cooling the solder, and removing the resulting string from the block, with said cups being unsupported except by said string.

3,223,896

ALUMINUM STRIP ROLL FOR FORMING ELECTRICAL COILS

Addison Romaine Smith II, Louisville, Ky., assignor to Anaconda Aluminum Company, a corporation of Montana

No Drawing. Filed Jan. 4, 1961, Ser. No. 80,546
3 Claims. (Cl. 317—158)

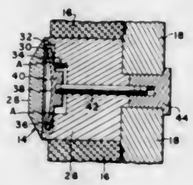
1. A roll of aluminum strip formed for rewinding into electric coils comprising an extended length of aluminum strip wound into a multi-layer roll, said strip having a continuous film of dielectric coating composition adherent to at least one face thereof which is disposed between successive layers of the roll, side edges on said strip which are free from said composition, a sealing compound disposed between and sealing the turns of the roll on at least the marginal edge portions of the strip on at least one side thereof with the side edges of the strip being free from said compound, and a distinct dielectric oxidic layer covering and insulating said side edges of the strip, said roll being wound with the successive layers formed by adjacent turns of the strip being free from blocking and separable from each other so that rewinding into electric coils is permitted.

3,223,897

APPARATUS FOR ADJUSTING THE CONFIGURATION OF A MAGNETIC FIELD

Ralph T. Sullivan, San Mateo, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California

Filed Sept. 23, 1963, Ser. No. 310,938
11 Claims. (Cl. 317—158)



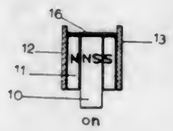
1. An adjustable magnet comprising:
a pair of magnetic pole members spaced in opposition and defining a nonmagnetic gap, each member comprising a magnetic pole piece and a magnetic pole cap joined to said pole piece, and a recessed portion formed in said pole piece and forming an air gap between said pole piece and said pole cap;
a magnetic disk disposed in each such air gap; and
adjustable means coupled to each said disk and disposed within each said member, and means providing a fulcrum within the recessed portion of each pole piece for changing the shape of each such disk to vary the magnetic field between the pole members.

3,223,898

VARIABLE MAGNET

Ahmet K. Bey, Chicago, Ill., assignor to Frances Budreck, Chicago, Ill.

Filed May 11, 1962, Ser. No. 194,026
3 Claims. (Cl. 317—159)



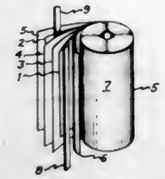
3. A variable magnetic device comprising a permanently magnetized sleeve having its poles located on opposite sides of the longitudinal axis thereof, a permanently magnetized core within said sleeve having its poles located on opposite sides of its longitudinal axis, a pole piece overlying and affixed to the south pole of the sleeve and another pole piece overlying and affixed to the north pole of the sleeve, said core and sleeve being relatively rotatable and said pole pieces being rotatable with the sleeve whereby the intensity of the magnetic field of the device may be selectively varied over a wide range by modifying the relative disposition of the poles of the core and the poles of the sleeve.

3,223,899

ELECTRICAL CAPACITOR AND TANTALUM-CONTAINING ELECTRODE MATERIAL THEREFOR

Donald Mohler, Saratoga Spa, and William E. Tragert, Scotia, N.Y., assignors to General Electric Company, a corporation of New York

Filed Jan. 4, 1961, Ser. No. 80,569
10 Claims. (Cl. 317—230)



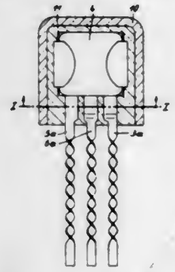
1. An electrical capacitor comprising, in combination, a pair of electrodes and a dielectric oxide film formed on one of said electrodes, at least said one electrode comprising an alloy of tantalum and germanium.

3,223,900

SEMICONDUCTOR RECTIFIER DEVICES WITH TABLET-SHAPED RECTIFIER ELEMENTS

Erwin Wittwer, Berlin-Lubars, Germany, assignor to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, a corporation of Germany

Filed Aug. 23, 1961, Ser. No. 133,434
Claims priority, application Germany, Aug. 25, 1960, S 70,070
2 Claims. (Cl. 317—234)



2. A semiconductor rectifying device adapted for printed circuits comprising a plurality of pellet-shaped rectifier elements, sheet-metal parts, said sheet-metal parts having plate-shaped portions contacting said rectifier elements, and strip-shaped terminal lugs projecting from said plate-shaped portions, and sheet-metal clamp means compressing the pellet-shaped rectifier elements and having a strip-shaped terminal lug projecting therefrom, said strip-shaped terminal lugs being twisted into a helical shape and being bendable in all directions.

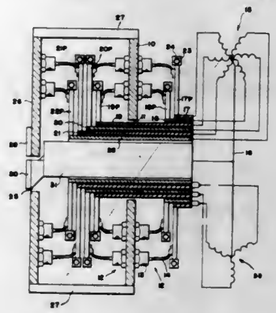
3,223,901

RECTIFIER ASSEMBLY HAVING BALANCED IMPEDANCE PATHS FOR PARALLEL CONNECTED DIODES

Joseph J. Riley, Warren, Ohio, assignor to The Taylor-Winfield Corporation, Warren, Ohio, a corporation of Ohio

Filed June 8, 1962, Ser. No. 201,157
5 Claims. (Cl. 317—234)

1. A compact rectifier and output terminal assembly for supplying heavy D.C. current from a multiple phase A.C. source comprising in combination a neutral bus bar, a plurality of nested current-conductive tubes of unequal diameters positioned concentrically about said bar and insulated from each other and from said bar, said bar having an output terminal end, the ends of said tubes which are adjacent said output terminal end having a stepped relation to each other resulting from the smaller diameter tubes extending outwardly beyond the adjacent ends of the larger diameter tubes, a current-conductive disc-like plate for each of the tubes mounted on their step end extremities and arranged in generally parallel



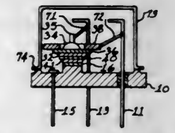
relation to each other concentric about the tubes, a current-conductive output plate having an output terminal area adjacent the output terminal end of said bar and disposed generally parallel with said first mentioned plates, and a multiplicity of semi-conductor diodes mounted on said output plate in concentric circular patterns concentric about said tubes and interconnecting each of said first mentioned plates with said output plate.

3,223,902

POWER TRANSISTOR AND METHOD OF MANUFACTURE

Jerome E. Wright, Plainfield, and Joseph Shellick, Manville, N.J., assignors to Radio Corporation of America, a corporation of Delaware

Original application Aug. 29, 1958, Ser. No. 758,090, now Patent No. 3,109,225, dated Nov. 5, 1963. Divided and this application Mar. 19, 1963, Ser. No. 266,364
4 Claims. (Cl. 317—234)



1. A semiconductor device comprising a thermally and electrically conductive base, a layer of indium on one face of said base, a nickel plate coated on one major face with indium and bonded by said indium coating to said indium layer on said base, a lead-containing electrode bonded on one side to the opposite face of said nickel plate, and a semiconductor wafer alloyed to the opposite side of said electrode.

3,223,903

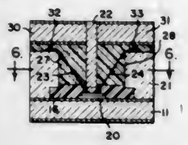
POINT CONTACT SEMICONDUCTOR DEVICE WITH A LEAD HAVING LOW EFFECTIVE RATIO OF LENGTH TO DIAMETER

Raymond Solomon, Costa Mesa, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed Feb. 24, 1961, Ser. No. 91,438
3 Claims. (Cl. 317—235)

1. A semiconductor device which comprises: a semiconductor body having a lead; an electrode bonded to the body; an insulating ring bonded to the electrode providing a wall surrounding the body; electrically insulating material filling a portion of the ring and covering the

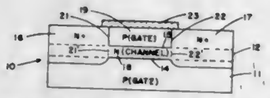
body and a portion only of the lead; and an electrically conducting material filling the balance of the ring and



making electrical connection to said lead, whereby to reduce the effective length to diameter ratio of the lead.

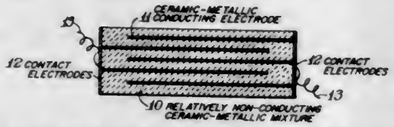
3,223,904
FIELD EFFECT DEVICE AND METHOD OF MANUFACTURING THE SAME
Raymond M. Warner, Jr., Scottsdale, George C. Onodera, Phoenix, and Wilfred J. Corrigan, Scottsdale, Ariz., assignors to Motorola, Inc., Chicago, Ill., a corporation of Illinois
Continuation of abandoned application Ser. No. 173,970, Feb. 19, 1962. This application Mar. 31, 1965, Ser. No. 445,864

15 Claims. (Cl. 317—235)



6. A semiconductor device of the field effect type including in combination, a semiconductor crystal element of a selected conductivity type and having a predetermined doping level, a first epitaxial semiconductor layer of a conductivity type opposite to said selected conductivity type on said crystal element and forming a channel region, said first layer having substantially uniform doping at said predetermined doping level and having a particular thickness and sheet resistivity, a second semiconductor region of said selected conductivity type at the surface of said first layer and forming a gate region, said device having diffused portions of said opposite conductivity type extending into said first layer and cooperating therewith to provide source and drain semiconductor regions forming effective ohmic electrical connections to the extremities of said channel region.

3,223,905
MIXED METAL-CERAMIC CAPACITOR
John H. Fabricius, Bennington, Vt., assignor to Sprague Electric Company, North Adams, Mass., a corporation of Massachusetts
Filed Oct. 14, 1964, Ser. No. 405,649
4 Claims. (Cl. 317—258)



1. A capacitor comprising a plurality of relatively non-conducting and relatively conducting layers, said non-conducting layers having a discontinuous surface and being a relatively non-conducting, pervious, polycrystalline ceramic-metallic composition selected from the group consisting of:

from 3 to less than 10% by weight palladium and from 97 to 90% by weight barium titanate,

from 5 to less than 60% by weight chromium and from 95 to 40% by weight silicon monoxide and,

from 5 to less than 20% by weight gold and from 80 to 95% by weight magnesium fluoride,

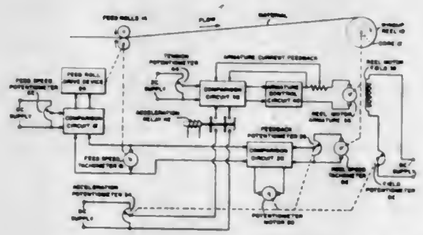
said relatively conducting layers being a ceramic-metallic composition selected respectively from the group consisting of:

from 10 to 95% by weight palladium and from 90 to 5% by weight barium titanate,

from 60 to 95% by weight chromium and 40 to 5% by weight silicon monoxide and, from 20 to 95% by weight gold and 80 to 5% by weight magnesium fluoride,

said relatively conducting layers being sandwiched between said relatively non-conducting layers and alternate conducting layers being contacted to two separate leads.

3,223,906
TENSION MOTOR CONTROL SYSTEM
Edward H. Dinger, Waynesboro, Va., assignor to General Electric Company, a corporation of New York
Filed Mar. 1, 1960, Ser. No. 12,097
4 Claims. (Cl. 318—7)

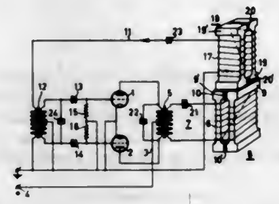


1. A system for maintaining the tension of a material at a predetermined magnitude as it is pulled by a reeling device past a feed drive device, comprising first means for producing a first signal indicative of the linear speed of said material past said feed drive device, second means for producing a second signal indicative of the angular speed of said reeling device, a variable potentiometer coupled to said second means for varying the magnitude of said second signal, comparing means coupled to said first means and to said potentiometer for comparing said first signal with said second signal as varied by said potentiometer and producing an error signal indicative of the relative values of said first signal and said varied second signal, first drive means coupled to said reeling device for operating said reeling device, second drive means coupled to said comparing means and operated in response to said error signal, means coupling said second drive means to said potentiometer and to said first drive means for operating said potentiometer and said first drive means in response to changes in said error signal, first independent means coupled to said first drive means for independently varying the torque of said first drive means, and second independent means coupled to said feed drive device for independently varying the braking and acceleration applied by said feed drive device to said material.

3,223,907
APPARATUS FOR THE PRODUCTION OF ULTRASONIC OSCILLATIONS
Lourens Blok and Hermanus Stephanus Josephus Pijls, Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Oct. 1, 1962, Ser. No. 227,453
Claims priority, application Netherlands, Oct. 3, 1961, 269,876
10 Claims. (Cl. 318—118)

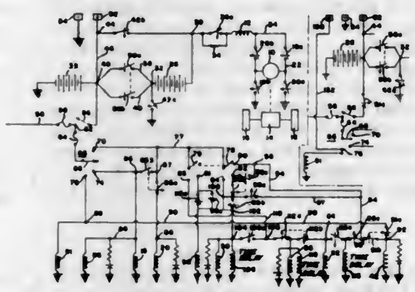
5. Apparatus for producing ultrasonic vibrations comprising an amplifying device having an input circuit and an output circuit, a first transducer comprising a core element composed of piezomagnetic material and shaped

to form a closed magnetic flux path, said transducer having a given natural frequency of vibration and having a winding disposed thereon, means for coupling said output circuit to said winding thereby to supply an alternating current of said given frequency to said winding, a second transducer comprising a core element composed of piezomagnetic material and shaped to form a closed magnetic flux path and having a winding disposed thereon which is magnetically isolated from said first trans-



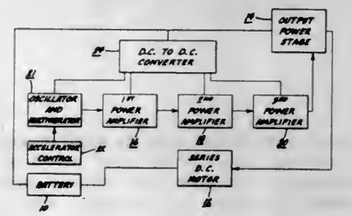
ducer winding, said second transducer having a natural frequency of vibration approximately equal to said first transducer given natural frequency, means for securing said second transducer to said first transducer so as to vibrate in response to vibration of said first transducer thereby to induce an alternating voltage of said given frequency in said second transducer winding by piezomagnetic action, and means for coupling said second transducer winding to said input circuit of said amplifying device.

3,223,908
ELECTRIC VEHICLE CONTROL
Richard W. Hutchinson and John S. Wroby, Birmingham, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 9, 1960, Ser. No. 54,962
8 Claims. (Cl. 318—139)



4. A motor control system for a battery powered vehicle comprising, an electric motor, a plurality of batteries, means for connecting said batteries in parallel or in series and with said electric motor to vary the energization of the electric motor to thereby vary its output speed, a manually operable speed selector switch having at least two operative positions, a resistor connected between said batteries and said electric motor, a first relay having normally open contacts connected across said resistor, said first relay having an actuating coil, a time delay relay having an actuating coil and switching contacts, said time delay relay being operable to close said switching contacts at a predetermined time following the energization of its actuating coil, means electrically connecting said actuating coil of said time delay relay with one side of said manually operable speed selector switch, and means connecting the contacts of said time delay relay in controlling relationship with the actuating coil of said first relay whereby said resistor is short circuited at a predetermined time delay following the closing of a circuit to the actuating coil of said time delay relay by said speed selector switch.

3,223,909
ELECTRIC MOTOR CONTROL SYSTEM
William J. Sensing, Donald E. Colvill, and Brooks H. Short, Anderson, and David S. Dennis, Chesterfield, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Jan. 26, 1962, Ser. No. 168,964
4 Claims. (Cl. 318—139)



1. A motor control system comprising, a source of direct current, a first field winding for said motor, a second field winding for said motor, a plurality of parallel connected power control transistors connected in series with said first field winding and in series with the armature of said motor, a switching means for connecting said second field winding in series with said motor armature and across said source of direct current, a multivibrator circuit having a substantially square wave output of variable width, a variable resistor for controlling the width of the output pulses of said multivibrator, means connecting said multivibrator circuit with said power control transistors whereby the conduction of said power control transistors is controlled by said square wave output of said multivibrator circuit a manually operable control means, and means coupling said manually operable control means with said variable resistor and with said switching means, said manually operable control means being operable in one position to close said switching means whereby said second field winding is connected in series with the armature of said motor and directly across the said source of direct current.

3,223,910
REVERSING SYSTEMS FOR SINGLE PHASE MOTORS
Harry Greenwald, Whitestone, N.Y., assignor of one-third each to Louis Wolff and Harry Silberglait, Brooklyn, N.Y.
Filed Oct. 8, 1962, Ser. No. 228,856
8 Claims. (Cl. 318—207)

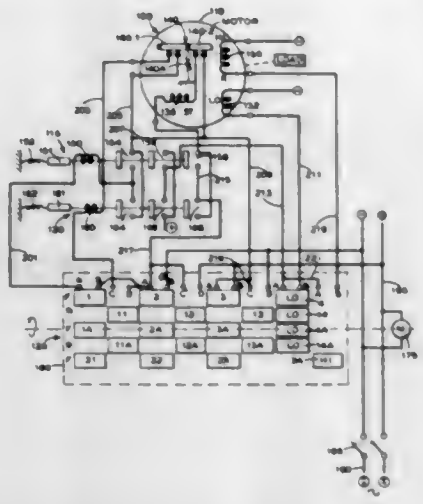
7. A reversing system for a single-phase motor having a starting winding and a speed-responsive switch normally closed and arranged to open when the motor attains a predetermined speed; said system comprising

a reversing switch to selectively connect the starting winding to an outside power supply in one of two alternate directions to cause motor starting and rotation in a selected direction;

relay switch means having an operating coil and a switch, the operating coil being connected in an energizing circuit controlled by said speed-responsive switch of the motor;

said relay switch being in series circuit with and cooperative with the speed-responsive switch of the motor for disconnecting the starting winding from

said power supply when the reversing switch is to be operated to reverse the direction of rotation of the motor, and said relay switch means serving also to prevent reconnection of the starting winding for



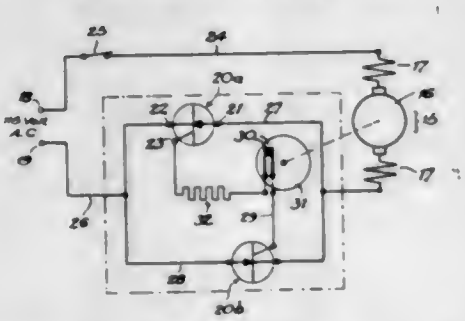
reverse energization until the speed-responsive switch is reclosed upon motor speed reduction to a predetermined safe value and until the speed-responsive switch completes the energizing circuit for said relay coil.

3,223,911

MOTOR SPEED CONTROL SYSTEM

Erick F. Seiler and Robert A. Seng, Milwaukee, Wis., assignors to Lee Engineering Company, Milwaukee, Wis., a corporation of Wisconsin

Filed Aug. 1, 1962, Ser. No. 213,928
10 Claims. (Cl. 318—325)



1. In a system for controlling the speed of an alternating current motor supplied from an alternating current source, a pair of solid-state controlled rectifiers each having an anode, a cathode, and a gate, said rectifiers being connected in circuit with said motor and when in conducting state alternately passing positive and negative current alternations, and a gate circuit connecting the gates of said rectifiers to be traversed by leakage current through said rectifiers and including a governor switch responsive to motor speed and a current-limiting resistor in series with said switch, said governor switch when closed permitting flow of gate current alternately firing said rectifiers.

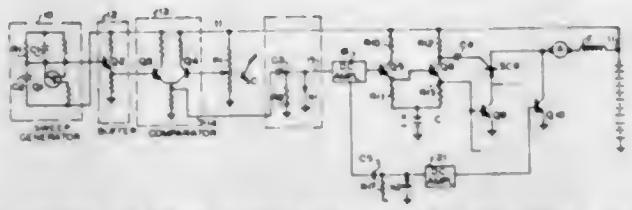
3,223,912

PULSE-WIDTH MODULATED D.C. CONTROL SYSTEM

Shay J. Sheheen, Freeville, N.Y., assignor to The Raymond Corporation, Greene, N.Y., a corporation of New York

Filed Jan. 20, 1964, Ser. No. 338,954
4 Claims. (Cl. 318—341)

4. A direct current motor control circuit, comprising, in combination: a direct current source; a controlled rectifier having an anode, a cathode and a control electrode; a first transistor having a base electrode and collector and emitter terminals; a direct current motor, said source, said motor, the anode-cathode circuit of said controlled rectifier, and the collector and emitter terminals of said transistor all being connected in a series circuit; a second transistor having a base electrode and a collector-emitter circuit, said collector-emitter circuit being connected in parallel with the series combination of said anode-cath-



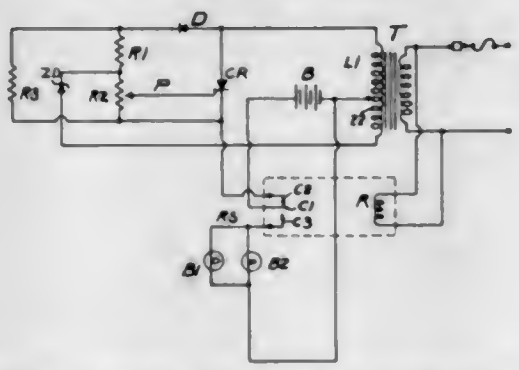
ode circuit of said controlled rectifier and said collector-emitter circuit of said first transistor, and means for applying driving pulses to said control electrode of said controlled rectifier and to said base electrodes of said transistors, thereby to vary the average current supplied to said motor.

3,223,913

BATTERY CHARGER AND VOLTAGE CONTROL MEANS

Rudolph W. Kalns, Weymouth, Mass. (21 Mason St., South Weymouth, Mass.), and Alfred W. Vasel, 222 Linwood St., Abington, Mass.

Filed Mar. 15, 1962, Ser. No. 179,875
3 Claims. (Cl. 320—39)



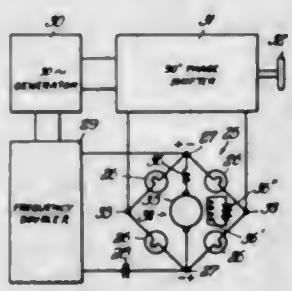
1. A battery charger, comprising a transformer having first and second secondary windings adapted to provide voltages out of phase with each other, and having a common junction, a charging circuit in series with said first winding and including a controlled rectifier having a control electrode, a bias circuit in parallel with said charging circuit and having means for providing a bias to said control electrode, and a zener diode connected between said control circuit and said secondary winding, whereby a voltage is applied to said zener diode during said charging cycle which is of opposite polarity to the bias voltage.

3,223,914

ELECTRIC CURRENT CONVERSION WITH A NON-LINEAR RESISTANCE BRIDGE CIRCUIT

Edmund O. Schweitzer, Jr., 1002 Dundee Road, Northbrook, Ill.

Continuation of application Ser. No. 594,322, June 27, 1956. This application Feb. 21, 1962, Ser. No. 174,725
11 Claims. (Cl. 321—8)



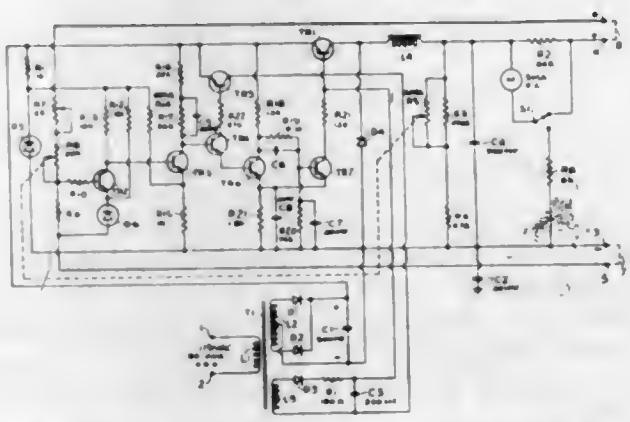
1. In combination, a first source of alternating current, a second source of alternating current having a frequency

twice that of said first source, a load device, a four arm bridge circuit having in at least each of two adjacent arms a nonlinear resistance device capable of conducting current in one direction or the other, circuit means connecting a pair of opposite terminals of said bridge circuit across said first source, circuit means connecting the remaining pair of opposite terminals of said bridge circuit at least one of which is between said nonlinear resistance devices across said second source, and circuit means connecting said remaining pair of opposite terminals across said load device for flow therethrough of direct current.

3,223,915
REGULATED POWER SUPPLY

Herbert R. Ryerson, Garfield Heights, and Hugh W. Busey, Cleveland, Ohio, assignors to Antron Manufacturing, Inc., a corporation of Ohio

Filed Jan. 11, 1962, Ser. No. 165,489
6 Claims. (Cl. 321—18)



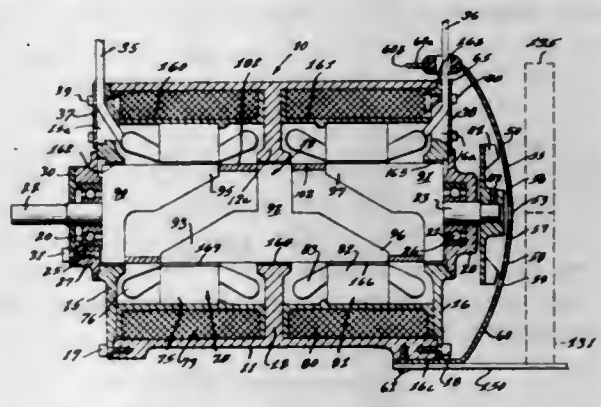
1. A voltage regulator circuit comprising a power transistor having its emitter-collector circuit connected between a source of unregulated D.-C. voltage and a load circuit terminal and means for alternatively switching said power transistor on and off in accordance with the potential at said load terminal, said means comprising a comparison circuit including a source of reference voltage and circuit means providing a control signal in accordance with the departure of said load terminal potential from said reference voltage, a regenerative switching trigger circuit receiving said control signal as input and having an output connection to the base electrode of said power transistor for switching it alternatively on and off, and an active reverse biasing circuit comprising a source of bias voltage and a transistor responsive to the state of said trigger circuit and having connections to apply said bias voltage to the base of said power transistor whenever the signal output from said trigger circuit is turning said power transistor off whereby to achieve a rapid transition from conduction to non-conduction in said power transistor.

5. A regulated power supply for deriving a regulated D.C. voltage from an alternating current source comprising a rectifier circuit providing an unregulated unidirectional voltage at an intermediate point relative to a common terminal, a power transistor having emitter, base and collector, a conductive impedance, the emitter-collector path of said power transistor and said conductive impedance being connected in series between said intermediate point and an output terminal, a diode connected between said common terminal and the junction of said transistor and conductive impedance, a capacitor connected between said common terminal and said output terminal, and means for alternatively switching said power transistor on and off in accordance with the potential at said output terminal comprising a comparison circuit including a source of reference voltage and circuit means providing a control signal proportional to the departure of the output potential from said reference voltage, an amplifier for amplifying said control signal, a regenerative switching trigger circuit receiving as input the control signal from said amplifier and having an output connection to the base electrode of said power transistor for turning it alternatively on and off, and an active reverse biasing circuit comprising a source of bias voltage and a transistor responsive to the state of said trigger circuit and having connections to apply said bias voltage to the base of said power transistor whenever the signal output from said trigger circuit is turning said power transistor off whereby to achieve a rapid transition from conduction to non-conduction in said power transistor.

3,223,916
BRUSHLESS ROTARY INVERTER

Robert J. Shafranek, Kent, and Janis Tiltins, Cleveland, Ohio, assignors to TRW Inc., a corporation of Ohio

Filed Feb. 5, 1962, Ser. No. 170,888
4 Claims. (Cl. 321—28)



3. A rotary machine comprising

(a) a generally cylindrical casing of magnetic material having opposite end plates of magnetic material and having a central radially extending partition flange of magnetic material, said end plates and said central partition flange terminating in end plate radially inwardly directed annular polar faces and a central partition radially inwardly directed annular polar face, respectively,

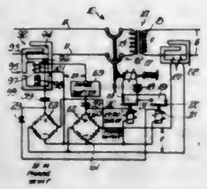
(b) a rotor assembly mounted for rotation within said casing and comprising outer rotor elements of magnetic material having cylindrical radially outwardly directed faces disposed in closely spaced confronting relation to the respective end plate polar faces and an intermediate rotor element of magnetic material having a cylindrical radially outwardly directed face in closely spaced confronting relation to the central partition annular polar face, said outer rotor elements having axially extending pole portions and said intermediate rotor element having integral pole portions extending axially therefrom in opposite directions and interdigitated with the pole portions of the outer rotor elements to provide respective first and second series of rotor poles,

(c) means securing said outer and intermediate rotor elements together as a unit for joint rotation,

(d) first and second excitation means adjacent said casing between the respective end plates and the central partition flange for producing exciting magnetic fluxes extending axially in the casing, radially inwardly in the end plates to the rotor element cylindrical faces, extending from the outer rotor element pole portions to the respective interdigitated intermediate rotor element pole portions and from the intermediate rotor element cylindrical face to the central partition flange, and

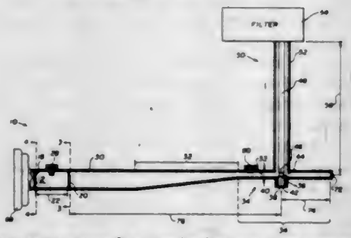
(e) first and second stator means radially inwardly of the first and second excitation means respectively and having first and second series of circumferentially spaced poles respectively cooperating with the first and second series of rotor poles of the rotor assembly.

3,223,917
MAGNETIC FREQUENCY DOUBLER WITH MEANS FOR PRODUCING A UNIDIRECTIONAL MAGNETIC FLUX IN SAID DOUBLER
Edmund O. Schweitzer, Jr., 1002 Dundee Road, Northbrook, Ill.
Filed May 15, 1961, Ser. No. 118,484
6 Claims. (Cl. 321—68)



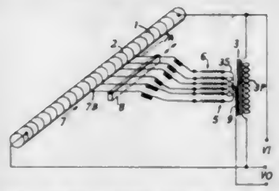
6. A static magnetic frequency doubler comprising, in combination, a magnetic core having a window for receiving therethrough a single turn primary winding in which alternating current flows and an E-shaped section extending laterally therefrom the common portion of which is saturated with alternating flux on flow of predetermined alternating current in said primary winding, means causing a unidirectional magnetic flux in the central leg of said E-shaped section and in opposite directions in said common portion, and a winding on said central leg into which an alternating current is induced having a frequency twice that of the alternating current in said primary winding.

3,223,918
FREQUENCY MULTIPLIER
David R. Ludwig and Richard R. Hewson, Randolph, Mass., assignors to General Electronic Laboratories, Inc., Cambridge, Mass., a corporation of Massachusetts
Filed Nov. 25, 1960, Ser. No. 71,823
10 Claims. (Cl. 321—69)



6. In an apparatus for producing microwave energy at a preselected frequency, the combination of a source of electrical excitation at a frequency which is an integral sub-harmonic of the selected frequency, a substantially lossless and predominantly reactive element having a non linear reactance characteristic to excitation voltage, a rectangular waveguide housing reactance element and having a depth cross sectional dimension parallel to the direction of the electrical field in the TE. mode and a width cross sectionl dimension perpendicular to the direction of said electric field, the width dimension being such that the cutoff frequency of the waveguide housing the reactance element lies above the harmonic of the input frequency which is nearest and below the selected frequency and the depth dimension is proportioned to substantially match the impedance of the reactance element, a cavity separate and remote from said reactance element and tuned to the selected microwave frequency and having an input and output structures, means coupling the reactance element to the cavity input structure for applying the selected frequency emanations of the reactance element to the cavity and reflecting a voltage minimum at the element for undesired harmonics, and means coupling the electrical excitation source and reactance element for applying the electrical excitation from the source to the reactance element and reflecting a voltage minimum at the element for undesired harmonics.

3,223,919
ELECTRICAL POTENTIOMETERS WITH A SECOND SET OF CONDUCTORS SPACED DIFFERENTLY FROM AN INTEGRAL MULTIPLE OF SPACINGS BETWEEN A FIRST SET OF CONDUCTORS
Eric Miles Langham, 14 The Close, Norwich, Norfolk, England
Filed June 12, 1961, Ser. No. 116,568
Claims priority, application Great Britain, June 21, 1960, 21,753/60
8 Claims. (Cl. 323—43.5)

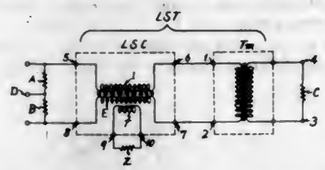


1. Electrical potentiometer means comprising:
a first mounting;
a first set of several uniformly spaced conducting elements supported on the first mounting and arranged transversely to a line intersecting each of said elements;
a second mounting;
a second set of several conducting elements supported on the second mounting, said second set of conducting elements being fewer in number than the elements of the first set, uniformly spaced, arranged transversely to a line intersecting each of said elements of said second set and in face to face relationship with elements of the first set, the spacing between the conducting elements of one of the sets differing from that and from an integral multiple of that obtaining between the elements of thet other set of conducting elements;
means for applying in use electrical potentials to the respective elements of the first set which increase in equal increments successively from element to element of the first set;
means for applying in use electrical potentials to the respective elements of the second set which increase in equal increments successively from element to element of the second set, the difference in electrical potential between end elements of the second set being substantially equal in magnitude and sense to the electrical potential between end elements of that part of the first set spanned by the second set; and
two output voltage connections respectively so coupled to the first and second sets of conducting elements as to provide in use a desired output voltage dependent upon the relative position of the second to the first set of conducting elements.

3,223,920
NOISE SUPPRESSING TRANSFORMER
Shiro Sasaki, 35 Nakasugiyama-tori, Sendai-shi, Japan
Filed Dec. 21, 1961, Ser. No. 161,206
Claims priority, application Japan, Jan. 9, 1961, 36/529
3 Claims. (Cl. 323—44)

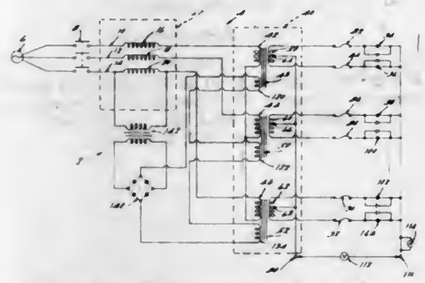
1. A transformer comprising a primary winding one terminal of which is connected to one input terminal and

the other terminal of which is connected to one terminal of a load, a secondary winding electro-magnetically coupled with said primary winding and one terminal of which is connected to the other input terminal and the other terminal of which is connected to the other terminal of said load, a tertiary winding which is electro-mag-



netically coupled with both said primary and said secondary winding and an impedance terminated across the terminals of said tertiary winding, thereby suppressing noise currents generated by external sources in a transmission line connected to the aforesaid input terminals without substantially affecting the signal currents transmitted along said transmission line.

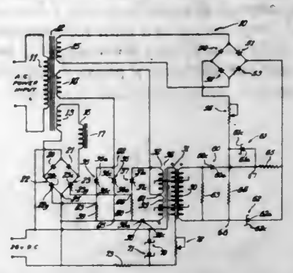
3,223,921
SATURABLE REACTOR CONTROLLED TRANSFORMER SYSTEM
Henry Z. Miller, Detroit, Michael A. Koltuniak, Warren, and Charles E. Fenoglio, Detroit, Mich., assignors to The Udylite Corporation, Detroit, Mich., a corporation of Delaware
Filed July 12, 1962, Ser. No. 209,444
4 Claims. (Cl. 323—56)



1. A control system comprising
a source of alternating current,
a saturable reactor having a controlled winding electrically connected to one side of said source,
an output transformer having a primary winding electrically connected to the controlled winding of said saturable reactor,
a D.C. winding electromagnetically associated with the primary winding of said output transformer, and
means for producing a D.C. current in said D.C. winding inversely related to load on said saturable reactor so as to alter the magnetic characteristics of said output transformer sufficient to render said saturable reactor controllable when load thereon is decreased below a predetermined minimum.

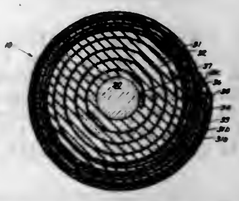
3,223,922
VOLTAGE REGULATOR CIRCUIT
Jay R. Borden, La Canada, Calif., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Aug. 29, 1960, Ser. No. 52,675
7 Claims. (Cl. 323—66)

1. In an electrical circuit for regulating the output voltage from an alternating current source, the combination of a magnetic induction device coupled to said source, gate controlled current conducting means for controlling the current flow through said induction device, magnetic amplifying means, including a control winding for gating the conduction of said conducting means, and



means operative responsive to changes in voltage of said source for providing a rectified voltage and applying the rectified voltage to said control winding to control the operation of said magnetic amplifying means.

3,223,923
PULSE TRANSFORMER
Edward Keith Howell, Hendersonville, N.C., assignor to General Electric Company, a corporation of New York
Filed July 2, 1962, Ser. No. 206,612
4 Claims. (Cl. 323—76)



4. In a combined transformer and capacitor construction, a core, a conductor in the form of thin layers of sheet material and having inner and outer ends, insulation in the form of thin layers of sheet material, said conductors and said insulation being assembled together and wound around said core to provide a spiral winding extending outwardly from said core with the conductor windings being insulated from each other, said conductor layers being separated from each other adjacent the outer end of said conductor, a capacitive layer of conducting material located between said separated conductor layers, insulating material on each side of and between said capacitive layers and the adjacent conductor layers, and means forming electrical connections to the opposite ends of the wound conductor and with the capacitive layer including a spark gap between the electrical connections to the capacitive layer and the outer end of the wound conductor.

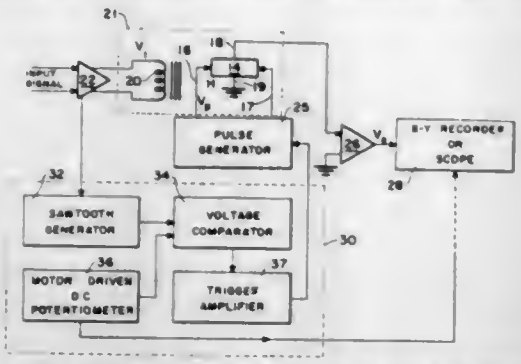
3,223,924
HALL EFFECT STROBOSCOPE AND MAGNETOMETER
Harry H. Wieder, Riverside, Calif., assignor to the United States of America as represented by the Secretary of the Navy
Filed Dec. 27, 1961, Ser. No. 162,616
4 Claims. (Cl. 324—45)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. An electronic stroboscope device for reproducing the amplitude and frequency components of a magnetic field of arbitrary waveshape having frequency components up to several megacycles per second, comprising:
(a) a Hall effect converter,
(b) said converter comprising a thin film intermetallic semiconductor Hall detector plate which has a pair

of drive current electrodes and a pair of output voltage electrodes and is mounted between a pair of stationary magnetic field cores and in intimate and direct contact therewith,

(c) said cores acting as a path for concentrating a magnetic field of arbitrary waveshape to be measured,

(d) means for applying a phase modulated pulse train of constant amplitude and repetition rate synchro-



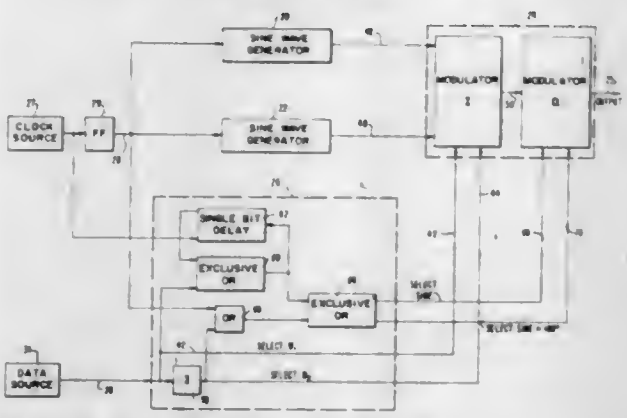
nized with said magnetic field of arbitrary waveshape connected across said drive current electrodes for synchronized stroboscopic sampling of those components of said magnetic field of arbirtary waveshape which are normal to said Hall detector plate, the Hall voltage appearing across said output voltage electrodes having components proportional to the amplitude components of said magnetic field.

3,223,925

DIGITAL DATA MODULATION DEVICE

William A. Florac, Jr., Carmel, Hans Y. Jullusburger, Ossining, and Arthur A. Kusnick, Peekskill, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Jan. 29, 1962, Ser. No. 169,332
11 Claims. (Cl. 325—163)



4. A modulation circuit comprising:

a plurality of wave generators each having a different frequency of oscillation;

a source of data signals;

first means coupled to said source of data signals and said generators for selecting and passing a predetermined output wave of only one of said generators;

and second means coupled to receive the selected frequency wave from said first means and coupled to said source of data signals, selectively operative to pass the original wave or a phase shifted wave of the selected frequency wave and provide an output waveform which is always continuous and without abrupt change in slope.

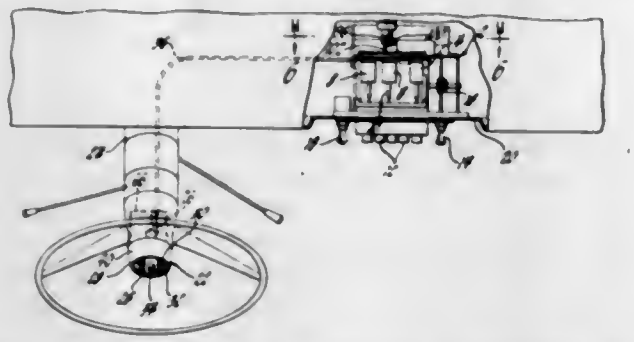
3,223,926

REMOTE CONTROLLED PUSH BUTTON TUNER

Terrance W. Maugans, Kokomo, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Feb. 13, 1963, Ser. No. 258,344
4 Claims. (Cl. 325—390)

1. In radio receiving apparatus having a plurality of mechanically adjustable means for tuning said radio receiving apparatus to a plurality of different predetermined signal frequencies when moved from a position of rest to a fully actuated position, a supplemental tuning unit for the radio receiving apparatus located at a position remote from the radio receiving apparatus, said supplemental tuning unit including a plurality of reciprocably movable manually engageable members, a single reciprocable member engageable by each of the first manually engageable reciprocably movable members and designed to be moved a different distance by each, selector means



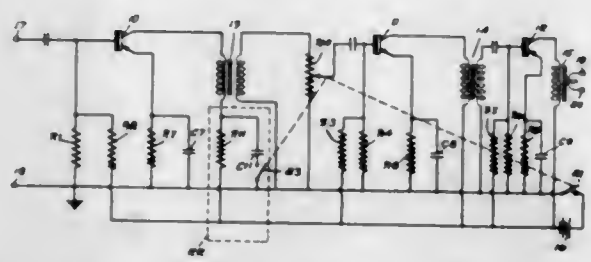
on said radio receiving apparatus to determine which of the plurality of mechanically adjustable means for tuning may be operated, power operating means for moving the selector means and one of said mechanically adjustable means for tuning to tune the radio receiving apparatus, and interconnecting means extending between the single reciprocable member in the supplemental tuning unit and the selector means to move the latter to different positions depending upon which of the plurality of manually engageable reciprocably movable members is depressed to tune in different stations.

3,223,927

WARNING DEVICE FOR RADIO RECEIVERS

Bernard Weinstein, 872 Chestnut St., Newton, Mass.

Filed Nov. 1, 1962, Ser. No. 234,640
3 Claims. (Cl. 325—401)



1. An amplifier circuit of the type subject to self-induced oscillation, having a suppressor network for suppressing such oscillation, and a manually adjustable gain control rotatable to a low gain position, said circuit including a warning device comprising a switch mounted adjacent said gain control and connected in said suppressor network and adapted, when open, to render said network ineffective to suppress said oscillation, and a member mounted on said gain control and engageable with said switch to open the same when said control is in said position.

3,223,928

APPARATUS FOR ACCURATELY MULTIPLYING THE FREQUENCY OF AN ELECTRICAL SIGNAL OF ANY FREQUENCY WITHIN A GIVEN RANGE OF FREQUENCIES

David L. Fayman, Merriam, Kans., assignor to Oread Electronics Laboratory, Inc., Lawrence, Kans., a corporation of Kansas

Filed Mar. 28, 1963, Ser. No. 268,675
7 Claims. (Cl. 328—23)

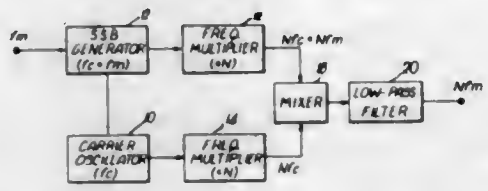
1. Wide band frequency multiplying apparatus for multiplying the frequency of a first electrical signal by

a predetermined integer value to obtain a signal of multiplied frequency comprising:

means for generating a second electrical signal of frequency higher than the frequency of said first signal;

means responsive to said first and second signals, coupled with said generating means and having means for coupling said first signal thereto, for combining the frequencies of said first and second signals to produce a third electrical signal of a frequency equal to the combination of said frequencies;

first frequency multiplying means coupled with said



combining means for multiplying the frequency of said third signal by said predetermined integer value;

second frequency multiplying means coupled with said generating means for multiplying the frequency of said second signal by said predetermined integer value; and

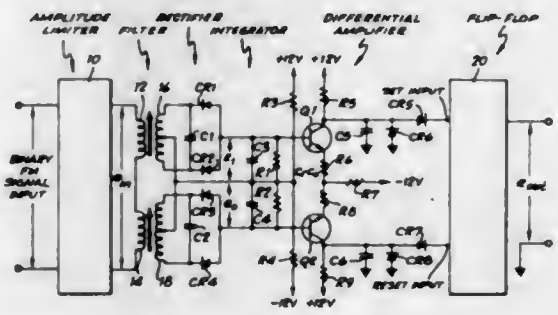
means coupled with said first and second multiplying means for subtracting the frequency of the lower of said multiplied second and third signals from the frequency of the higher thereof to produce said signal of multiplied frequency.

3,223,929

BINARY FREQUENCY MODULATION DEMODULATOR

Rolf B. Hofstad and Miroslav Swyryd, Palo Alto, Calif., assignors to Ampex Corporation, Redwood City, Calif., a corporation of California

Filed Oct. 3, 1963, Ser. No. 313,482
8 Claims. (Cl. 328—32)



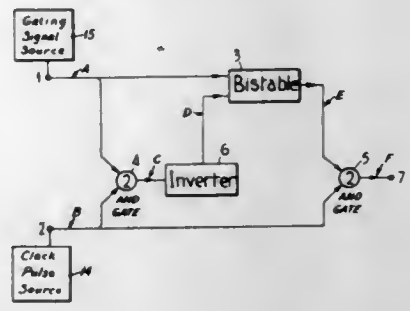
1. Apparatus for demodulating a signal which during certain discrete intervals has a first frequency and during other discrete intervals has a second frequency, said apparatus comprising a first filter tuned to said first frequency and having an input and an output terminal; a second filter tuned to said second frequency and having an input and an output terminal; means for applying said signal to said first and second filter input terminals; first signal rectification and integration means having an input and an output terminal, the input terminal thereof being connected to said first filter output terminal; second rectification and integration means having an input and an output terminal, the input terminal thereof being connected to said second filter output terminal; and a differential amplifier having first and second input and output terminals, the first and second input terminals thereof being respectively connected to the output terminals of said first and second rectification and integration means, wherein the differential amplifier provides amplified signals via the output terminals thereof in response to the difference between the signals introduced to the input terminals thereof.

3,223,930

ELECTRIC GATING CIRCUITS

James Neville Haile, Fareham, England, assignor to The General Electric Company Limited, London, England, a British company

Filed Dec. 17, 1962, Ser. No. 246,865
Claims priority, application Great Britain, Dec. 20, 1961, 45,701/61
3 Claims. (Cl. 328—95)



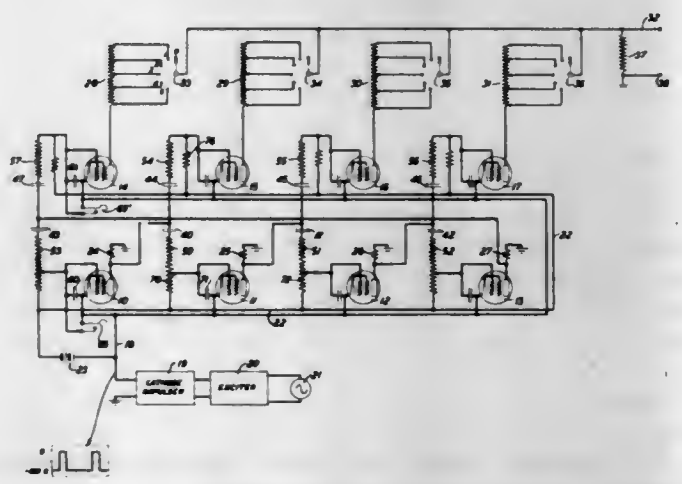
1. An electric gating circuit comprising a first input path over which a clock pulse signal comprising a train of clock pulses is arranged to be supplied, a second input path over which a gating signal which includes an input gate pulse is arranged to be supplied, means to derive from said signals a derived gate pulse the duration of which coincides with the duration of the input gate pulse less any portion of the duration of the input gate pulse contiguous with its leading edge which portion is coincident with a part only of the duration of a clock pulse, and an "AND" gate to which the clock pulse signal and the derived gate pulse are supplied, the arrangement being such that the "AND" gate only passes those clock pulses whose leading edges fall within the duration of the input gate pulse.

3,223,931

IMPULSE PRODUCING CIRCUIT

Milton E. Mohr, Summit, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Dec. 20, 1943, Ser. No. 514,997
3 Claims. (Cl. 328—154)



1. In a circuit for producing a wave of repetitive stepped form, a plurality of trigger tubes operating one after another in a closed cycle with each tube initiating operation of the next, a secondary series of tubes operating one at a time in unison with and under control of said plurality of trigger tubes, a common output circuit for all of the tubes of said secondary series, and connections from said common output circuit to the outputs of individual tubes of said secondary series including adjustable individual coupling means to apply a different fractional part of the individual tube output current to said common output circuit.

3,223,932
FOUR SPIN-FLIP SIX-LEVEL DOPED SILICON MASER AMPLIFIER

Robert A. Levy, 1617 N. Mesa St., El Paso, Tex.

Filed Nov. 15, 1962, Ser. No. 237,937
7 Claims. (Cl. 330—4)

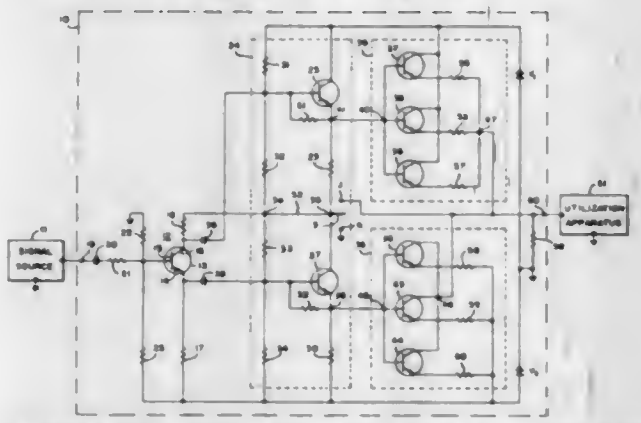


1. A device for amplifying high frequency electromagnetic energy, comprising a solid state medium characterized by a six-level energy system, said medium being composed of silicon doped with phosphorous and an acceptor impurity selected from the group composed of aluminum, boron, indium and gallium, means for producing an inversion of the spin populations of said levels, means for supplying to and abstracting from said medium energy of a frequency corresponding to the separation between a pair of energy levels and control means for selectively adjusting the separation of the energy levels of the acceptor impurity from those of the phosphorous.

3,223,933
SINGLE-ENDED PUSH-PULL DISTORTIONLESS POWER AMPLIFIER INCLUDING D.C. FEEDBACK

Norman R. La Fond, Commack, and Carl R. Wilhelmsen, Huntington Station, N.Y., assignors to Hazeltine Research Inc., a corporation of Illinois

Filed Dec. 21, 1962, Ser. No. 246,424
3 Claims. (Cl. 330—15)

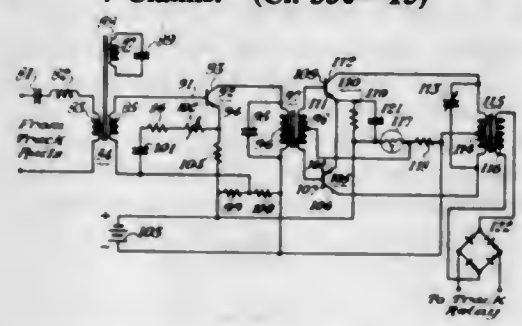


1. Transistor power amplifier apparatus comprising:
means for supplying an input signal;
transistor circuit means coupled to said signal supply means for deriving signals of like and unlike polarity from said input signal and having a plurality of output impedances across which said derived signals are developed;
transistor amplifier coupling means coupled to said transistor circuit means and being responsive to said derived signals for providing increased drive to said like and unlike polarity signals;
amplifier means coupled to said transistor amplifier coupling means including at least a pair of transistor amplifier circuits and a load impedance, each of said transistor amplifier circuits being responsive to one of said increased drive signals and having their respective output terminals connected to the same end of said load impedance in a single-ended fashion for providing a push-pull amplifier output signal;
and means for direct-current coupling said push-pull output signal to said deriving means in a bootstrap manner for providing equal, distortion-free amplification from each of said transistor amplifier circuits over a range of frequencies extending from nearly D.-C. to beyond the audio range.

3,223,934
TEMPERATURE COMPENSATED TRANSISTOR AMPLIFIER CIRCUIT INCLUDING FAIL-SAFE MEANS

Philip H. Luft, Freeport, Ill., assignor to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania

Original application Dec. 3, 1958, Ser. No. 778,022, now Patent No. 3,035,167, dated May 15, 1962. Divided and this application Nov. 8, 1961, Ser. No. 151,037
7 Claims. (Cl. 330—15)



3. An amplifier circuit arrangement comprising, a pair of transistors connected in push-pull, each of said transistors having an emitter, collector and base electrodes, means connecting a biasing potential to each of said transistors, means coupling an input signal to the base-emitter electrodes of each of said transistors, means for deriving an output signal from each of said transistors, a fail-safe temperature compensating circuit comprising a temperature-sensitive element having a negative temperature coefficient for minimizing variations in the output signal due to varying ambient temperature, means serially connecting said temperature-sensitive element and a first resistance across said biasing potential for providing base-emitter biasing potential for said transistors, a second resistance having a low power dissipation rating connecting the emitter of each transistor to the positive terminal of said biasing potential, means connecting each of said collectors to the negative terminal of said biasing potential, and means connecting the junction of said temperature-sensitive element in said first resistance to said base of each transistor in a manner such that during a short-circuited condition of said temperature-sensitive element the output signal is substantially reduced due to the decrease of the base-emitter biasing potential and such that during an open-circuited condition of said temperature-sensitive element the output signal momentarily increases due to the increase in the base-emitter potential and then ceases to flow due to the inherent self-destroying characteristics of said second resistance.

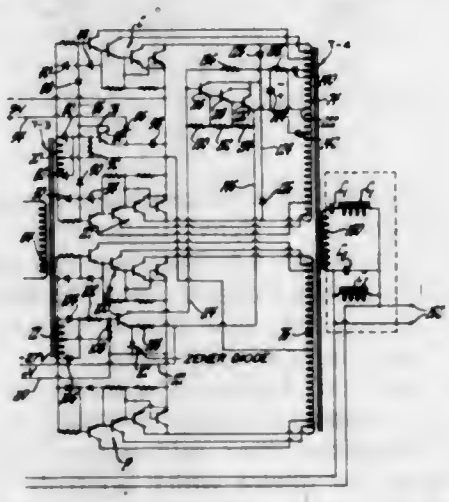
3,223,935
PLURAL CHANNEL AMPLIFIER WITH AUTOMATIC CUT OFF MEANS

James A. Rodaer, Kokomo, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Sept. 25, 1961, Ser. No. 140,593
5 Claims. (Cl. 330—19)

3. In amplifying means for alternating current waves in which there are finite periods of zero voltage, input circuit means to which the waves to be amplified are

applied, output transformer means having a primary winding, a first direct coupled compound connected transistor amplifier circuit having an input connected to said alternating current wave input circuit means and an output connected to one terminal of the primary winding of the output transformer forming a first conductive path, a second direct coupled compound connected transistor amplifier circuit having an input connected to said alternating current wave input circuit and an output connected to an opposite terminal of the primary winding forming a second conductive path, diode-resistance biasing means connected to each direct coupled compound connected transistor amplifier circuit and to the alternating current wave input circuit to properly bias the transistor electrodes of said direct coupled transistor amplifier circuits for either conduction or non-conduction so that when an incoming signal of one polarity is applied to said alternating current wave input circuit, one compound connected transistor amplifier circuit is biased to conduct and the other amplifier circuit is held non-conducting, and when a signal of the opposite polarity is applied, the first compound connected transistor amplifier circuit will be biased off and the second compound connected transistor amplifier circuit will be biased to conduct so that alternating current will be developed in the output transformer, a source of electrical power, a biasing transistor amplifier circuit means having an output connected between said power source and said diode-resistance biasing circuit means, means connecting the input of said biasing transistor amplifier circuit means to said alternating current wave input circuit to cause power from said source to apply a cut-off bias to both compound connected transistor amplifier circuits when there is zero voltage applied to said input.



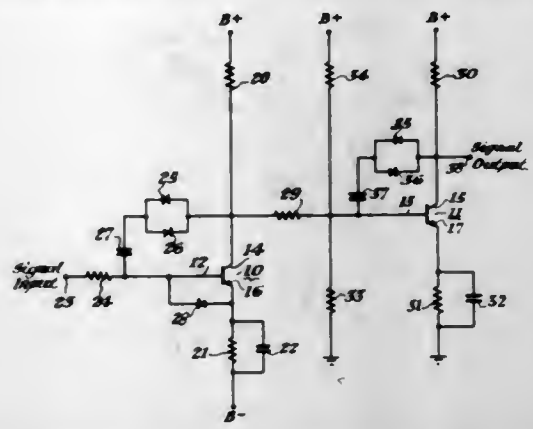
3,223,936

TRANSISTOR LIMITER AMPLIFIER CIRCUIT

James A. Cook, Jr., Wilkinsburg, Pa., assignor to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania

Filed Oct. 23, 1962, Ser. No. 232,491
4 Claims. (Cl. 330—19)

1. A transistor limiter amplifier comprising first and second transistors directly coupled with each having emitter, collector and base electrodes, said first transistor having its emitter electrode connected to the negative terminal of a source of operating potential and having its collector electrode connected to the positive terminal of said source, a voltage divider connected between the positive terminal of said source and ground, said second transistor having its base electrode connected to the junction of said voltage divider, having its emitter electrode connected to ground, and having its collector electrode connected to the positive terminal of said source, a first resistance means connecting input signals to be amplified to the base electrode of said first transistor, a second resistance means coupling the amplified signals from the collector electrode of said first transistor to the base electrode of said second transistor, a terminal means connected to the collector electrode of said second transistor for deriving output signals therefrom, and negative feedback circuit means serially connecting the collector electrode to the base electrode of each of said first and second transistors, said feedback means comprising a pair of



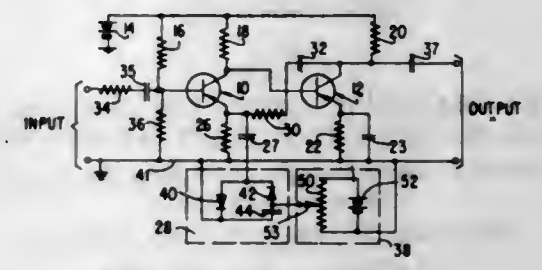
reversely parallel connected diodes coupled to each of the collector electrodes and a capacitor means coupled from the reversely connected diodes to each of the base electrodes for initially providing a charging path for said capacitor means and thereafter operating as a signal level control of said amplified and output signals with said capacitor means permitting operation of said amplifier over a wide range of collector to base potentials.

3,223,937

MULTI-CHANNEL EXPRESSION CONTROL FOR ELECTRICAL MUSICAL INSTRUMENTS

Lyell J. McDonald, Elkhart, Ind., assignor to C. G. Conn, Ltd., Elkhart, Ind., a corporation of Indiana

Filed June 5, 1962, Ser. No. 200,265
6 Claims. (Cl. 330—28)



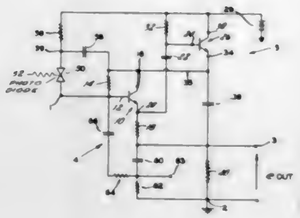
1. In an electric organ, the combination including, a plurality of channels for translating audio frequency signals representing selected tones creating a desired musical effect, first and second transistors connected as cascade amplifier stages in each of said channels, each of said transistors having input, output and common electrodes, separate feedback circuit means for coupling the output electrode of said second transistor to the common electrode of said first transistor of each of said channels to provide signal degeneration for said channel, each of said feedback circuit means including capacitor means to cause variations in frequency response with the gain of said amplifier stages of each of said channels and semiconductor diode means coupled to said feedback circuit means to control degeneration of said audio frequency signals in response to a direct current control voltage applied thereto to thereby control the gain of said amplifier stages, a control circuit for developing a direct current control voltage independently of said audio frequency signals, and circuit means applying said direct current control voltage to said semiconductor diode means of all of said channels for concurrently controlling the gain of all of said channels so that tone signals therein are held in balanced relation, with each of said channels having a selected frequency-gain response characteristic.

3,223,938

EMITTER FOLLOWER TRANSISTOR AMPLIFIER

James E. Brook, Maywood, N.J., assignor to The Bendix Corporation, Teterboro, N.J., a corporation of Delaware

Filed May 11, 1962, Ser. No. 194,006
11 Claims. (Cl. 330—32)



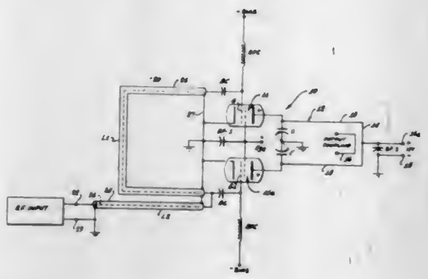
4. An electrical circuit comprising an emitter follower having an input terminal, an output terminal, a terminal for receiving power, and a reference terminal, load means connected between the output terminal and the reference terminal, a source of electrical potential, a transistor having a base coupled to the output terminal of the emitter follower for receiving a signal therefrom, a collector connected to the source of electrical potential, and an emitter connected directly to the power terminal of the emitter follower, means connected between the base and collector for biasing the transistor, capacitive means coupling the emitter to the reference terminal of the emitter follower, a reference potential, load means including a resistor connecting the reference terminal to the reference potential, said capacitive means conducting alternating signals from the emitter to provide an output signal across the last mentioned load means.

3,223,939

SELF-NEUTRALIZING DRIVE SYSTEM FOR PUSH-PULL RADIO FREQUENCY AMPLIFIERS

James F. Lawrence, Jr., 465 Sequoia Drive, Pasadena, Calif.

Filed June 27, 1963, Ser. No. 292,202
13 Claims. (Cl. 330—55)



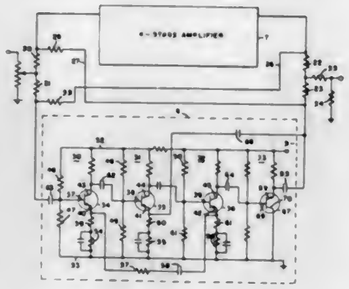
1. In a radio frequency push-pull amplifier having a pair of amplifier tubes and a push-pull plate tank circuit coupled to the plates of said tubes, a half wave length, phase reversing nonresonant transmission line intercoupling the grids of said tubes at opposite remote ends of said line, and means for impressing a radio frequency signal at one of said remote ends of said line.

3,223,940

REDUNDANT SIGNAL AMPLIFIER TRANSMISSION CHANNEL

Randolph Carlton Early and Allen Jefferson Fuller, Lynchburg, Va., assignors to General Electric Company, a corporation of New York

Filed June 29, 1962, Ser. No. 206,374
3 Claims. (Cl. 330—84)



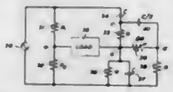
1. in a redundant signal transmission channel, the combination comprising a signal transmission path having an input and an output, a further signal transmission path having an input and an output, common input means for said paths having an input signal impressed thereon, means for splitting said input signal into two in-phase components the sum of which is equal to said input signal, said signal components being individually and simultaneously transmitted over said paths, said paths each including an active device which controls the amplitude response of said path, common output summing means coupled to the output of said paths for serially recombining the signal the magnitude of which is the sum of the transmitted components, and means for coupling the output of one of the said active devices to the input of the remaining device and the output of the remaining device to the input of said one device to control continuously the transmission characteristics of each path in response to the signal level in the other path whereby failure or deterioration of signal transmission in one of said paths does not affect the amplitude of the recombined signal.

3,223,941

ADJUSTABLE FREQUENCY BRIDGE CIRCUIT

Henry C. Schroeder, East Brunswick Township, Middlesex County, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Nov. 5, 1963, Ser. No. 321,490
12 Claims. (Cl. 330—109)



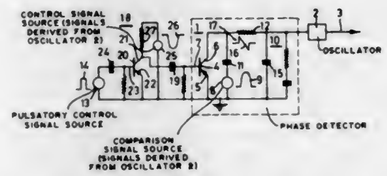
5. A frequency-selective attenuating network of the bridge type comprising
- a pair of input terminals,
- a pair of output terminals,
- a signal source of multiple frequency content connected across said input terminals,
- a utilization circuit connected across said output terminals,
- a first fixed resistor connected between one of said input terminals and one of said output terminals,
- a second fixed resistor connected between the other of said input terminals and the one of said output terminals,
- a third fixed resistor and a first fixed capacitor connected in series between said one input terminal and the other of said output terminals,
- a fourth fixed resistor and a second fixed capacitor connected in shunt between said other output terminal and said other input terminal,
- a fifth terminal,
- a third capacitor connected between said fifth terminal and the junction formed between said third resistor and said first capacitor,
- a fifth fixed resistor connected between said fifth terminal and said other input terminal, and
- an adjustable resistor connected between said fifth terminal and said other output terminal.

3,223,942

MEANS FOR INCREASING THE CATCH RANGE OF A PHASE DETECTOR IN AN AFC CIRCUIT

Wouter Smeulers, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Feb. 26, 1962, Ser. No. 175,443
Claims priority, application Netherlands, Mar. 13, 1961, 262,312
6 Claims. (Cl. 331—8)



1. Means for producing a control voltage for stabilizing the frequency of an oscillator, comprising a source of synchronizing pulses, means for deriving from said oscillator first and second pulsatory signals of the same frequency as said oscillator, electronic switch means having a control input circuit and a bidirectional current output circuit, a capacitor, means connecting said capacitor and said means providing said first pulsatory signal serially to said output circuit, coincidence circuit means, means applying said synchronizing pulses and second pulsatory signals to said coincidence circuit to provide a switching signal, whereby said switching signal occurs only upon coincidence of said synchronizing pulses and second pulsatory signals, means applying said switching signal to said control input circuit whereby said output circuit is conductive only upon the occurrence of said switching signal, and means for deriving said control voltage from said capacitor.

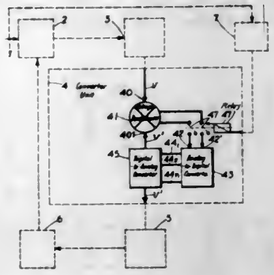
3,223,943

LOCAL OSCILLATOR CONTROLLING SYSTEMS USING QUANTIZING MEANS

Marc-Jean Dumaire and Jean-Pierre Vasseur, Paris, France, assignors to C.S.F.-Compagnie Générale de Telegraphie Sans Fil, a corporation of France

Filed June 21, 1962, Ser. No. 204,091
Claims priority, application France, June 29, 1961, 866,423, Patent 1,301,861; Feb. 22, 1962, 888,810, Patent 81,193
7 Claims. (Cl. 331—17)

1. An automatic frequency control system for controlling the phase of a local oscillator by the phase of an incident signal, comprising: means for providing error signals proportional to the instantaneous phase difference between said incident signal and the signal provided by said local oscillator; analog-to-digital converter means for converting into a quantized magnitude said error signals and storing said magnitude; digital-to-analog converter means for converting said quantized magnitude into a signal for frequency controlling said local oscillator; and means responsive to the amplitude of said incident signal for blocking said analog-to-digital converter on its last



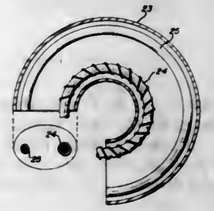
count upon said amplitude level becoming lower than a predetermined threshold and for causing said analog-to-digital converter to resume its count upon said amplitude becoming again at least equal to said threshold.

3,223,944

LASER EMPLOYING ELLIPTICAL REFLECTOR CAVITY

Clarence F. Luck, Jr., Waltham, Mass., Maxwell R. Krasno, Santa Barbara, Calif., and Mikael Ciftan, Wayland, Mass., assignors to Raytheon Company, Lexington, Mass., a corporation of Delaware

Continuation of application Ser. No. 155,651, Nov. 29, 1961. This application June 25, 1964, Ser. No. 383,538
1 Claim. (Cl. 331—94.5)

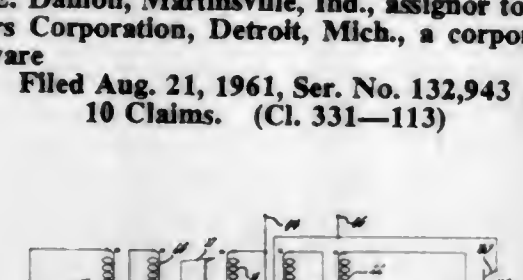


An optical maser for producing coherent electromagnetic energy, comprising a hollow cavity having the shape of a portion of an annulus and having an elliptical cross-sectional shape and further embodying two known spaced parallel focal lines of circular shape therewithin and extending longitudinally thereof, a line-like source of activating radiation of a known frequency located within the cavity along one focal line, and a line-like medium which produces coherent electromagnetic energy of a different frequency from said activating radiation when irradiated by said activating radiation located within the cavity along the other focal line, the relative size and spacing of said source with respect to said cavity being such that only a very small fraction of the total radiation from the source is intercepted by the source and all remaining radiation from the source is transmitted to said medium the interior surfaces of the cavity being highly reflective and the interior of the effective portion of the cavity being void of radiation-intercepting means whereby substantially all the radiation from the source will pass directly and by reflection from the source to the medium which produces coherent electromagnetic energy, and means for directing outwardly of said cavity substantially only said coherent electromagnetic energy.

3,223,945
CONTROLLABLE FREQUENCY MAGNETICALLY COUPLED MULTIVIBRATOR

Wayne E. Damon, Martinsville, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Aug. 21, 1961, Ser. No. 132,943
10 Claims. (Cl. 331—113)

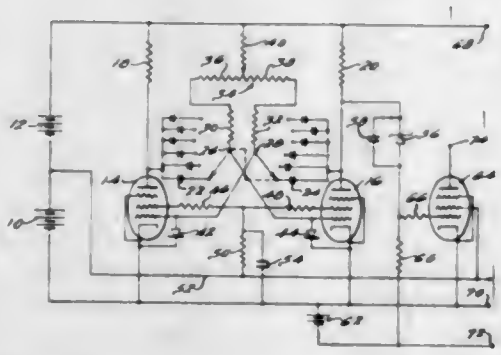


10. A magnetically coupled multivibrator comprising a pair of saturable cores, a control circuit comprising a control winding disposed on each of said cores, current control means connected in series with said control winding, primary winding means disposed on each of said cores, said primary winding means being connected in parallel, a source of energy, first and second alternately conductive electronic switching means connecting said source to said parallel connected primary winding means to provide separate paths of current flow from said source, each of said current paths including primary windings disposed on both of said cores, the current flow through said primary windings driving one of said cores to saturation while resetting the other of said cores and inducing equal and opposite voltages in said control circuit and output means responsive to the frequency of operation of said switching means.

3,223,946
WIDE RANGE MULTIVIBRATOR CIRCUIT

Robert S. Webb, 5169 Dianna Drive, Bloomfield Hills, Mich.

Filed May 26, 1961, Ser. No. 112,891
4 Claims. (Cl. 331—144)

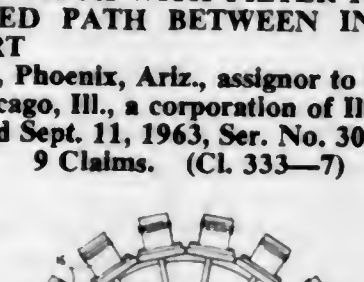


1. An astable multivibrator circuit for providing wide range ON-OFF ratio operation comprising a pair of electron switches interconnected for alternate conduction, each of said switches having a control element, an input and an output power terminal, an adjustable resistance capacitance network operatively connected to said switches for determining their relative conductive times, and at least one shunt charging diode connected between the input terminal and control element of one of said switches and connected with like polarity to said input terminal and said control element and phased to provide an electron flow in the conductive state of its associated switch.

3,223,947
BROADBAND SINGLE POLE MULTI-THROW DIODE SWITCH WITH FILTER PROVIDING MATCHED PATH BETWEEN INPUT AND ON PORT

Philip L. Clar, Phoenix, Ariz., assignor to Motorola, Inc., Chicago, Ill., a corporation of Illinois

Filed Sept. 11, 1963, Ser. No. 308,286
9 Claims. (Cl. 333—7)

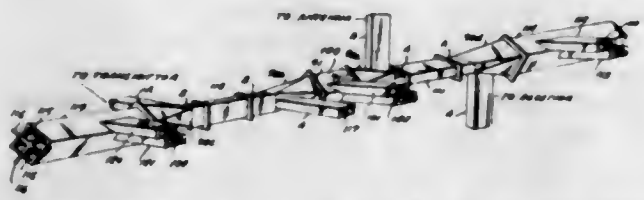


1. A switching network for completing a propagation path for electrical waves between a first port and a selected one of a plurality of other ports, said network including a common terminal, a plurality of semiconductor diodes each connected between one of said other ports and said common terminal, said diodes being adapted to be biased to alternate conductive states, with one state being transmissive and the other state being reflective to applied electrical waves, biasing means coupled to said diodes for rendering a selected diode transmissive to electrical waves and the remaining diodes reflective thereto, said selected transmissive diode presenting an equivalent series inductance to electrical waves and said reflective diodes providing shunt capacitance to a reference potential for such waves, and a transmission line section connecting said common terminal to said first port, said transmission line section having an effective inductance approximately equal to the equivalent series inductance of a transmissive diode, said equivalent series inductance of the selected transmissive diode and said effective inductance cooperating with the shunt capacitance of the remaining reflective diodes to form a filter network which provides a matched transmission path between said first port and the one of said other ports to which the transmissive diode is coupled.

3,223,948
ORTHOGONAL MODE HYBRID JUNCTION AND CIRCUIT THEREFOR

David F. Bowman, Wayne, Pa., assignor, by mesne assignments, to Washington Aluminum Co., Inc., Baltimore, Md., a corporation of Delaware

Filed July 26, 1962, Ser. No. 212,678
14 Claims. (Cl. 333—9)



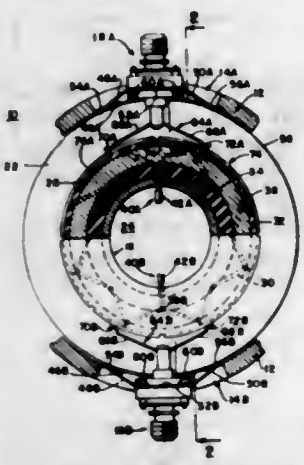
1. A microwave circuit comprising a first and second hybrid; each of said hybrids including a first, second and third channel; said first and second channels terminating at said third channel; said first channel constructed to support a first wave signal; said second channel constructed to support a second wave signal; said second wave signal being orientated 90 degrees apart in space with respect to said first wave signal; said third channel constructed to support both of said first and second wave signals; a connecting guide means between the third channels of said first and second hybrids; the

axis of said connecting guide means inclined 45 degrees with respect to the transverse axis of said third channel; and means to selectively couple to orthogonally resolved first and second components of said first and second wave signals in said connecting guid means; said first orthogonally resolved component parallel to the transverse axis of said connecting guide means, and reciprocally including in-phase components of said first and second wave signals; said second orthogonally resolved component perpendicular to the transverse axis of said connecting guide means and reciprocally including an out-of-phase component of said first wave signal and an in-phase component of said second wave signal, such that said hybrid providing out-of-phase components of said first wave signal to said first and second orthogonally resolved components, and in-phase components of said second wave signal to said first and second orthogonally resolved component, said first wave channel, third channel and connecting guide means collectively defining an E-plane Tee; and said second wave channel, third channel and connecting guide means collectively defining an H-plane Tee.

3,223,949
HIGH IMPEDANCE, HIGH FREQUENCY SLIP RING

Charles J. Lapham, Lincoln Park, N.J., assignor to Electro-Tec Corp., West Caldwell, N.J., a corporation of New Jersey

Filed June 18, 1964, Ser. No. 376,198
9 Claims. (Cl. 333—24)



3. In a slip ring assembly, an annular channel shaped rotary conductor, insulating means partially filling the said annular channel shaped conductor, annular core means embedded in said insulating means, a conductive toroidal winding on said core means, and a plurality of conductive segments, peripherally disposed about said toroidal winding separated therefrom by said insulating means, selectively and respectively electrically connected with selected convolutions of said toroidal winding.

3,223,950
WAVEGUIDE WINDOW

John S. Hickey, Jr., Scotia, N.Y., assignor to General Electric Company, a corporation of New York

Filed Apr. 17, 1964, Ser. No. 360,540
12 Claims. (Cl. 333—98)

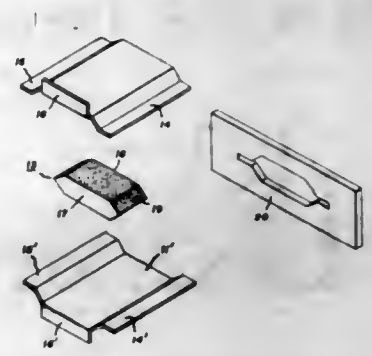
1. A waveguide window unit comprising in combination

(a) a dielectric material window having opposed face surfaces adapted to transmit electromagnetic wave energy therethrough,

(b) said opposed face surfaces defining peripheral edge surfaces tapering toward each other to define at least one end,

(c) a pair of rim members about the said edge surfaces substantially in total contact therewith and conforming to the periphery of said window,

(d) each of said rim members having an outwardly turned flange member at an end thereof to define an abutting surface along the tapered end of said window,

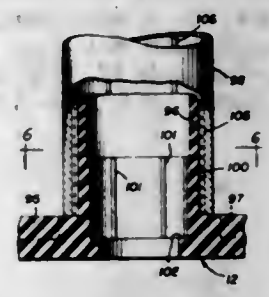


(e) and bonding means between said window and said rim members and between said flange members to join said elements into an integral waveguide window unit.

3,223,951
COIL FORM MOUNTING ARRANGEMENT FOR INDUCTANCE DEVICES

John J. Antalek, Glenview, Ill., assignor to TRW, Inc., a corporation of Ohio

Original application June 22, 1959, Ser. No. 821,802, now Patent No. 3,130,350, dated Apr. 21, 1964. Divided and this application Dec. 6, 1963, Ser. No. 328,593
1 Claim. (Cl. 336—92)



In an inductance device, a base member of insulating material, said base member having a universal coil form mounting arrangement for large and small diameter coil forms, said coil form mounting arrangement comprising a tubular sleeve formed integrally with said base member and extending upwardly therefrom, said sleeve having vertically extending coil form engaging ribs formed in the outer surface thereof so that a tubular coil form of relatively large diameter may be inserted over said sleeve and securely held against rotation with respect to said base member, said sleeve also having an inner bore defining a portion of reduced inner diameter adjacent the base of said sleeve, means defining a shoulder adjacent the bottom end of said bore, said reduced diameter portion having vertically extending coil form engaging ribs formed therein so that a tubular coil form of relatively small diameter may be inserted into said sleeve without damage thereto and seated on said shoulder.

3,223,952
TUNABLE INDUCTOR

Stephen Amram Slenker, North Billerica, Mass., assignor to Piconics, Inc., Billerica, Mass., a corporation of Massachusetts

Filed Jan. 30, 1963, Ser. No. 255,038
2 Claims. (Cl. 336—136)

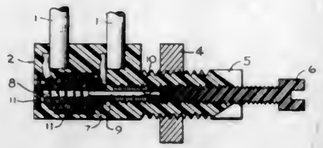
1. An encapsulated tunable inductor comprising:

(a) a plastic housing having a centrally located cylindrical cavity therein connected to the exterior by a threaded hole whose axis is colinear with the axis of said cavity;

(b) a winding with a plurality of helical turns of wire defining a cylindrical coil having an outer surface

and an inner surface, said winding being contained in said cavity with said outer surface in supporting engagement with the surface of said housing defining said cylindrical cavity;

(c) a tuning slug mounted in said coil for sliding en-



gagement with the inner surface thereof, and extending beyond said coil into said threaded hole; and

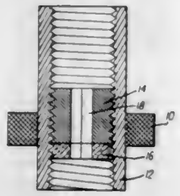
(d) a plastic screw threaded into said threaded hole and rigidly connected at one end to the end of said slug that extends beyond said coil, the threaded engagement of said screw in said threaded hole serving to seal said cavity from the exterior of said housing.

3,223,953

INDUCTANCE DEVICE WITH MOVABLE CORE HAVING RESILIENT DISC FOR RESISTING CORE MOVEMENT

Frank L. Pawlowski, Skokie, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois

Continuation of application Ser. No. 10,497, Feb. 23, 1960. This application July 12, 1963, Ser. No. 295,600
2 Claims. (Cl. 336—136)



1. An inductor device including in combination, a hollow cylindrical coil form having threads along the inside wall thereof, a coil wound on the external periphery of said coil form, and a core having a first portion with threads thereon for cooperation with said threads on said inside wall of said coil form for threaded movement of said core within said coil form, said first core portion being composed of metallic material which affects the inductance of said coil so that the position of said core may be changed to vary the inductance of said coil, said core including a second disc portion in direct engagement with and bonded to said first threaded portion, said second portion being formed of resilient non-metallic electrically insulating material having characteristics such that the inductance of said coil is substantially independent of the position of said second disc portion with respect to said coil, said disc portion having an unthreaded outer surface with a diameter substantially the same as the peak diameter of the threads of said first core portion so that said disc portion is compressed by said threads of said coil form, said disc portion causing a substantially constant value torque to resist threaded movement of said core inside said cylindrical coil form, whereby the position of said core may be changed to vary the inductance of said coil, and the position remains fixed during use so that the inductance of said coil is thereby fixed.

3,223,954

CONNECTOR HAVING AN IMPEDANCE MATCHING TRANSFORMER

Robert A. Mateer, Capitol Heights, Md., assignor to ACF Industries Incorporated, New York, N.Y., a corporation of New Jersey

Filed Nov. 14, 1962, Ser. No. 237,461
5 Claims. (Cl. 336—175)



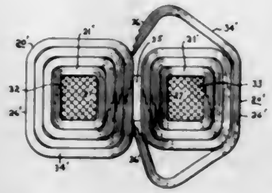
1. A circuit connector comprising first and second terminals, a first conductor extending between and connected to said terminals, a second conductor extending along said first conductor and insulated therefrom, a magnetic core having a central opening and surrounding said first conductor, and an autotransformer comprising a winding on said core each turn of which extends through the opening of the core and along the outside thereof, said winding terminating in an outside portion of a turn connected to said first conductor at a point adjacent to the core, whereby the portion of said first conductor extending through said core effectively constitutes an additional turn of said winding, the other end of said winding being connected to said second conductor, one of said terminals being an input terminal and the other terminal being an output terminal of the connector.

3,223,955

TRANSFORMER CORE CONSTRUCTION AND METHOD OF PRODUCING SAME

Willy Olsen and Howard D. Tindall, Lynchburg, Va., assignors to H. K. Porter Company, Inc., Lynchburg, Va., a corporation of Delaware

Filed Nov. 13, 1961, Ser. No. 151,655
5 Claims. (Cl. 336—211)



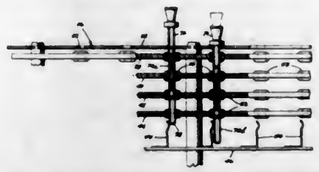
4. A nested transformer core construction having a pair of yokes and a pair of legs comprising in combination, a plurality of internested rectangular core sections each of which is formed from a plurality of internested single turn laminations which latter each have their opposite ends in aligned coplanar relation to provide therein a joint when the core section is in closed rectangular form, the joints of the laminations of each section being successively offset from one another so that they are distributed lengthwise of one of the legs of the rectangular section and conjointly define a section joint of longer length than the thickness of the core section leg in which the joint is disposed, said plurality of core sections being so internested that the section joint of the innermost section is disposed in one of the legs of the composite core while the section joints of the remaining sections are disposed in successively offset partially overlying relation in the other leg of the composite core and define a composite joint in that latter leg which is of longer length than the thickness of the composite core leg in which the composite joint is disposed.

3,223,956

INSTRUCTION APPARATUS FOR CLASSROOMS

William R. Dufendach and Merlin J. Applegate, both of Grand Rapids, Mich., assignors to American Seating Company, Grand Rapids, Mich.

Original application Sept. 12, 1960, Ser. No. 60,111, now Patent No. 3,147,555, dated Sept. 8, 1964. Divided and this application May 5, 1964, Ser. No. 365,029
8 Claims. (Cl. 339—14)



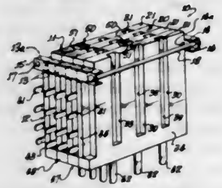
1. A matrix-switching assembly comprising four sheet-like boards of insulating material, said boards being secured together in parallel spaced-apart relationship, all of said boards having apertures therein, said apertures in in a given board being spaced apart and arranged in a predetermined pattern, the aperture patterns for the remaining boards being identical and aligned in registry with each other, said apertures being provided with contacts, the contacts of the respective boards being further arranged into a plurality of separate groups, the contacts of each group being conductively connected together, and a plurality of selector pins individually insertable through a respective set of registered apertures in the four boards, said pins being selectively movable in said apertures to first and second positions, said pins each having a circuit connector thereon which is engageable with the contacts of the respective apertures receiving the pin, means including said circuit connector for interconnecting the contacts of only two alternate boards when the pin is moved to said first position and for interconnecting the contacts of the same two as well as the contacts of the remaining two alternate boards when the pin is moved to said second position, whereby the contacts of the different boards may be connected in circuit with each other.

3,223,957

THREE-DIMENSIONAL PLUGBOARD CIRCUIT SELECTOR

John W. Cannon, 6520 W. 6th St., Los Angeles 48, Calif.

Filed July 22, 1963, Ser. No. 296,684
5 Claims. (Cl. 339—18)



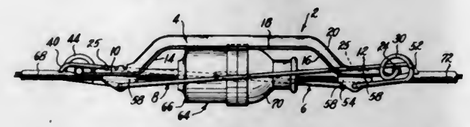
1. A plugboard circuit selector which includes: a laminated block structure comprised of an assembly in alternate arrangement of circuit boards and spacer boards, said block structure having X and Y terminal faces at right angles to said boards and to one another, and a plug-in face on the opposite side of said block structure from said X terminal face; walls in said spacer boards defining plug-in slots longitudinally normal to said plug-in face, each of said slots having an open end at said plug-in face; a plurality of parallel X connector strips, said strips being disposed at said slots in longitudinal alignment therewith and extending to terminal locations at said X terminal edges; a plurality of parallel Y connector strips, said Y connector strips being disposed transversely to said slots and said X connector strips and extending to terminal locations at said Y terminal edges; and plug interconnector means of assorted lengths adapted to be inserted into said slots at said plug-in face and interconnect a selected X connector strip with a selected Y connector strip.

3,223,958

CLAMP FOR EXTENSION CORDS

Robert F. Prohl, 4821 Willow Lane, Boise, Idaho

Filed Aug. 8, 1962, Ser. No. 215,688
19 Claims. (Cl. 339—75)



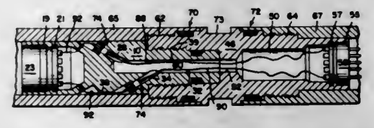
1. A clamp, comprising: an elongated frame having a clamping surface thereon near one end thereof; a resilient arm pivoted at one end thereof to said one end of said frame and having a portion extending along one longitudinal side of said frame and having its other end free to swing about the pivot of said arm; a clamping jaw pivotally mounted upon said arm and located on said arm in a position to confront said clamping surface on said frame; and means carried by the other end of said frame and engageable by the free end of said resilient arm upon flexing of said arm toward said frame about said clamping jaw as a fulcrum for releasably retaining said arm in flexed relationship with said frame, whereby said clamping jaw is continuously urged toward said clamping surface by the inherent resilience of said flexed arm.

3,223,959

SEAL AND CONNECTOR ASSEMBLY

Bennett E. Abbott, Jr., Richardson, Tex., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

Filed Sept. 26, 1963, Ser. No. 311,784
3 Claims. (Cl. 339—94)

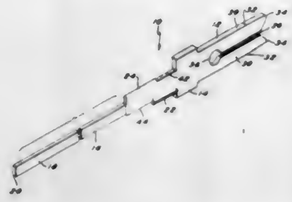


1. A combination seal and electrical connector assembly including an elongated member having first and second axially extending blind bores opening to opposite ends of said member, an annular groove in the exterior surface of said member axially positioned between said first and second bores, a plurality of ports extending between said first blind bore and said groove for permitting the passage of lead wires therebetween, a first set of transverse passages in said member, each of said transverse passages communicating at one end with said second blind bore and at the other end with said groove, a second set of transverse passages axially spaced from said first set, each of said passages of said second set communicating at one end with said second blind bore and at the other end with said exterior surface of said member, a plurality of axially extending grooves in said exterior surface extending between each of said transverse passages of said second set and said annular groove for permitting the passage of lead wires therebetween, and individual seal means positioned in each of said transverse passages for sealing respective lead wires extending therethrough.

3,223,960
CONTACT WITH WAVE SHAPED TAIL SECTIONS

Herbert E. Ruehlemann, Huntingdon Valley, Pa., assignor to Elco Corporation, Willow Grove, Pa., a corporation of Pennsylvania

Filed Dec. 7, 1962, Ser. No. 243,016
7 Claims. (Cl. 339—221)

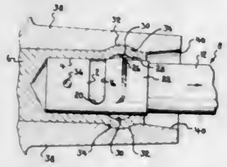


1. A substantially flat contact of rectangular cross-section, said contact comprising a body section, a mating section and a tail section projecting from said body section, said body and tail sections lying substantially in the same plane, said tail section including a substantially uniplanar root having first and second edges each extending to said body section, at least one integral locking wing extending away from at least one of said edges and lying in at least one plane inclined at an acute angle substantially less than ninety degrees with respect to the plane of said body and tail sections.

3,223,961
ELECTRICAL PLUG AND SOCKET CONNECTORS

Wilhelm C. J. Esser, Tilburg, and August L. M. Wilm, Amsterdam, Netherlands, assignors to AMP Incorporated, Harrisburg, Pa.

Filed Feb. 26, 1962, Ser. No. 175,696
Claims priority, application Germany, Feb. 27, 1961, A 16,331
2 Claims. (Cl. 339—223)



1. For use to connect electrically with a socket having an internal annular reress, a metallic plug having a plurality of detent projections or resilient cooperation with said recess to retain the plug in the socket, said projections being offset from one another along the insertion axis of the plug for sequential depression thereof upon insertion and withdrawal of the plug into and from the socket, the maximum axial spacing of the projections being less than the width of the recess in which it is intended to engage, each projection defining a tapered surface inclined towards the longitudinal axis of the plug in the insertion direction thereof which merges into another tapered surface extending in an opposite direction with respect to said first-mentioned tapered surface, the inclined surface of the projection nearest the insertion end of the plug adapted to wedgingly engage an interior wall portion of the socket adjacent said recess, the other tapered surface of the other projection adapted to engage said recess.

3,223,962
PLUG RECEIVING CONTACT

Kemper M. Hammell, Harrisburg, Pa., assignor to AMP Incorporated, Harrisburg, Pa.

Continuation of application Ser. No. 614,551, Oct. 8, 1956. This application Sept. 30, 1963, Ser. No. 313,414
3 Claims. (Cl. 339—256)



1. An electrical connector for detachably securing together electrical conductors by frictional contact between a pin contact and a pin receptacle comprising in combination a barrel portion for pressure forming about the end of an electrical conductor, a pin receptacle portion including a pair of parallel span members integrally joined together at opposite ends of one side, a pair of locking ears mounted on the ends of said spans adjacent the unjoined sides thereof, a cooperating locking slot adapted to receive therein said locking ears to securely hold the other side of said spans in proper spaced relation, an inwardly concave contact surface formed in said spans adjacent the mid-point thereof, a narrow slot in said spans on each side of said contact surfaces, said spans being spaced apart a distance such that said contact surfaces are spaced less than the diameter of the pin to be received therein and said surfaces having a radius of curvature greater than said pins.

3,223,963
ELECTRICAL CONNECTOR

Robert S. Rarey, Birmingham, Mich., and Elbert L. Johnson, Warren, Ohio, assignors, by mesne assignments, to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed May 22, 1963, Ser. No. 282,445
6 Claims. (Cl. 339—259)

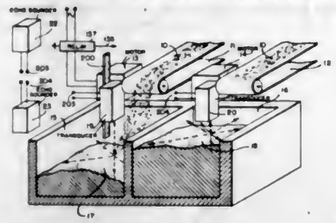
3. A detachable electrical connector for forming an electrical connection between first and second electrical terminals, comprising a first body portion adapted to be closed about said first terminal so as to be securely engaged thereto, a curled second body portion forming a generally cylindrical terminal-receiving opening adapted for the reception therein of said second terminal and being connected to said first body portion, abutment means provided on said second body portion for limiting the degree to which said curled body portion can uncurl due to forces radially directed thereagainst and occasioned during periods in which said curled body portion is being connected with or disconnected from said second terminal, and detent means slidably mounted on said second body portion for abutably engaging said second terminal, said detent means being movable axially of said curled second body portion by said second terminal as said second terminal is moved axially within said opening.

3,223,964
ULTRASONIC MATERIAL MEASURING AND CONTROL SYSTEM

Louis Stadlin, 3827 Kecoughtan Road, Hampton, Va.

Filed June 27, 1962, Ser. No. 205,707
12 Claims. (Cl. 340—1)

1. An ultrasonic material measuring and control system comprising transducer means, means mounting said transducer means in a suitable position for measuring the effective height of a quantity of material, echo sounder means connected to said transducer means having signal output means providing output signals corresponding to echoes received by said transducer means, signal discrim-

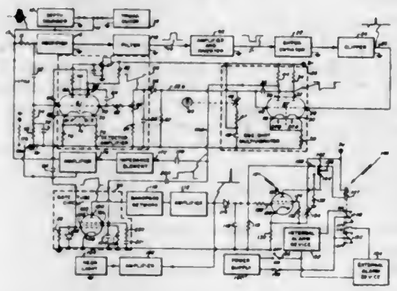


inating means connected to said signal output means for selecting output signals representing different quantities of material being measured, relay means connected to said discriminating means for operation in response to selected output signals and material delivery means controlled by said relay means.

3,223,965
SHALLOW WATER DEPTH ALARM

John N. Beebe, San Mateo, Calif., assignor to Raytheon Company, Lexington, Mass., a corporation of Delaware

Filed Jan. 23, 1963, Ser. No. 253,444
3 Claims. (Cl. 340—3)



1. In a depth alarm device having transducer means for generating an echo ranging pulse signal, the combination comprising

(a) a first means for deriving a variable width gating signal in response to the lagging edge of said echo ranging pulse signal including differentiator means for differentiating said echo ranging pulse signal and producing first and second spaced apart signal spikes and a multivibrator connected to said differentiator means for producing said variable width gating signal in response to said second signal spike,

(b) alarm means,

(c) coincidence means coupled to said first means for coupling an echo signal derived from said pulse signal, upon time coincidence between said gating signal and said echo signal, to said alarm means to activate said alarm means when the time lag between said pulse signal and said echo signal is less than a preset value,

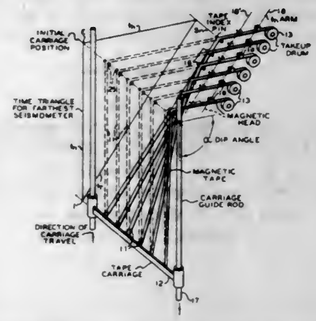
(d) means connected between said alarm and coincidence means for integrating successive signals and preventing activation of said alarm means until the rate of reception of said echo signals exceeds a predetermined value, and

(e) calibration circuit means connected to said multivibrator for testing the response of said depth alarm device including differentiator means responsive to said gating signal for producing third and fourth signal spikes spaced apart by an amount indicative of the maximum depth at which said alarm is actuated.

3,223,966
SEISMIC CORRECTIONS

Joe P. Lindsey, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Sept. 17, 1962, Ser. No. 224,055
2 Claims. (Cl. 340—15.5)

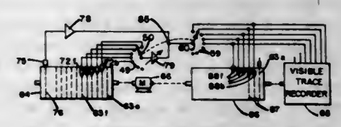


1. A method of restoring the physical attitude of subterranean reflecting beds to each of a plurality of processed seismic traces which have been corrected for normal time as measured from a single shotpoint, said method comprising the steps of recording from a plurality of transcribing stations said processed seismic traces onto a plurality of recording media; establishing normal time for each processed seismic trace as measured from each of a plurality of seismometer stations; moving the transcribing stations from their recording position a distance corresponding to the difference between the normal time of each seismic trace as measured from the shotpoint and the established normal time of each seismic trace as measured from each of the seismometer stations and passing the recording media past the said transcribing stations whereby the time occurrence of seismic events on said seismic traces will be the normal times as measured from the seismometer stations which recorded said seismic events.

3,223,967
ELIMINATING SEISMIC INTERFERENCE WAVES BY A CANCELLATION PROCEDURE

Charles C. Lash, Tulsa, Okla., assignor to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware

Filed Nov. 23, 1962, Ser. No. 239,840
7 Claims. (Cl. 340—15.5)



1. The method of substantially eliminating a seismic interference wave from one of a plurality of phonographically reproducible seismic data traces representing the seismic waves reflected from a plurality of horizontally spaced subsurface reflection points and received at a corresponding plurality of reception points spaced from each other and from a point where said seismic waves are initiated, which method comprises the steps of reproducing a plurality of said traces representing adjoining ones of said reception points and including said one point, delaying the reproduction of some of said re-

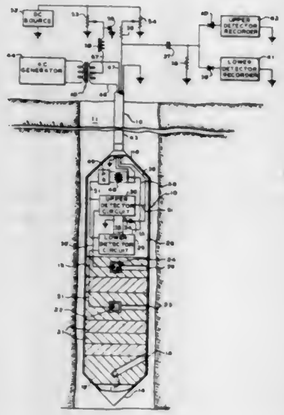
produced traces relative to others so as to bring said interference wave into substantial time coincidence on all of said reproduced traces, adding said reproduced traces together into a summation trace wherein said interference wave is maximized in amplitude and optimized in wave form, adjusting the relative amplitude of said summation trace and said one trace to bring the amplitude of said interference wave to substantially the same level therein, subtractively combining said summation trace and said one trace with said interference wave in time coincidence therein, whereby said interference wave is substantially canceled in said one trace, and displaying said one trace for interpretation of data which may have been obscured by said interference wave.

3,223,968

MULTIPLE ELECTRICAL TRANSMISSION SYSTEM UTILIZING COMMON CONDUCTORS

Earl L. De Shazo, Jr., Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Dec. 3, 1962, Ser. No. 241,973
8 Claims. (Cl. 340—18)



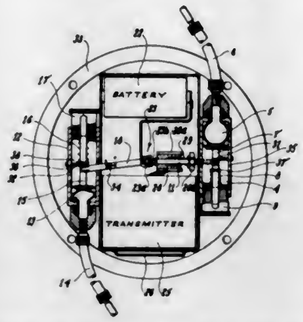
1. An electrical transmission system comprising first and second means for producing electrical pulses of opposite polarity, substantially all of the pulses produced by said first means occurring at different times from the pulses produced by said second means, each of said first and second means having first and second output terminals; one of said first and second means having a D.C. input terminal; first and second capacitors; means connecting the first output terminal of each of said first and second means to a first side of said first capacitor; a first electrical conductor connected between a second side of said first capacitor and a first side of said second capacitor; a second electrical conductor having a first end thereof connected to each of the second output terminals of said first and second means; a source of direct current connected between said first side of said second capacitor and the second end of said second electrical conductor; means connected between said second side of said first capacitor and said first end of said second electrical conductor for applying the direct current voltage between said second side of said first capacitor and said first end of said second electrical conductor to said D.C. input terminal; and means connected between the second side of said second capacitor and said second end of said second electrical conductor for receiving the pulses appearing therebetween.

3,223,969

TIRE PRESSURE INDICATING APPARATUS FOR ROAD VEHICLES

Alexander Lawrence Course, 10 Fitzroy St., East Geelong, Victoria, Australia

Filed July 22, 1963, Ser. No. 296,756
Claims priority, application Australia, July 31, 1962, 20,529/62
2 Claims. (Cl. 340—58)



1. Apparatus for indicating a loss in effective air pressure of a vehicle tire, comprising detecting means for attachment to each wheel of the vehicle to detect a loss in the pressure of the air in the tire on the respective wheel; indicating means for attachment to the vehicle near the driver's position for giving a warning indication when a loss in the pressure of the air in a tire is detected by said detecting means; and means for operatively connecting said detecting means to said indicating means and comprising an electrical circuit for each wheel of the vehicle to be mounted in association with the respective detecting means and incorporating a source of current, normally open circuit closing means to be closed by the respective detecting means when a loss in the pressure of the air in a tire is detected by the respective detecting means, and a transmitter to be rendered operative when the circuit closing means is closed by the detecting means to generate and transmit a radio frequency signal, and a receiver juxtaposed to said indicating means for receiving the radio frequency signals from said transmitters and electrically connected to said indicating means to operate said indicating means to give a warning indication when a loss of the pressure of the air in a tire is detected by any of said detecting means, each detecting means comprising a compartment, a substantially spherical bladder enclosed in said compartment near one end thereof and having a flexible tube communicating therewith and extending through an end wall of said compartment for connection to an inflating valve on a tire, a capped stem extending between the opposite end of said compartment and said spherical bladder, a spring urging the capped end of said stem against the bladder at a pressure somewhat less than the pressure of the air in the tire when the tire is fully inflated, and a lever pivotally connected at one end thereof to said stem and having its other end connected to said circuit closing means to close said circuit closing means when said spherical bladder is compressed by reason of loss of the pressure of the air in a tire and the pressure developed by said spring.

3,223,970

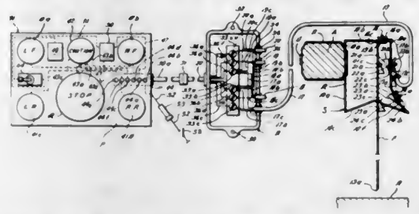
TIRE DEFLATION SIGNALLING DEVICE

James V. Lowery, 1225 N. Shepherd Drive, Houston, Tex.

Filed Aug. 19, 1963, Ser. No. 303,099
4 Claims. (Cl. 340—58)

1. A tire deflation signalling device adapted for installation on a wheeled vehicle equipped with a tire, comprising:

(a) a feeler fixedly mounted with respect to a wheel having an inflatable tire mounted thereon to extend toward the roadway without contact therewith when said inflatable tire has a standard internal pressure,
(b) a plurality of terminals mounted at various locations on said feeler,
(c) mating terminals spaced apart from said feeler with the uppermost mating terminal located so as to bear against the uppermost terminal located on said feeler on slight deflection of said feeler and the remainder of said mating terminals spaced progressively further apart from said feeler so as to bear against said terminals on greater deflection of said feeler,



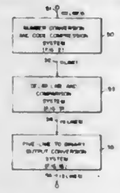
(d) means forming an electrical signal when the uppermost mating terminal bears against the uppermost terminal, said means forming different signals to indicate gradations of deflection of said feeler, and
(e) a warning device mounted on said vehicle to inform the operator of said vehicle of the internal pressure of said inflatable tire in response to signals formed by said means.

3,223,971

CHARACTER GROUP COMPARISON SYSTEM

Russell A. Rowley, Binghamton, Francis Vallee Adams, Endicott, Genung L. Clapper, Vestal, and Arthur Hamburgen, Endicott, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed June 28, 1956, Ser. No. 594,648
16 Claims. (Cl. 340—146.2)



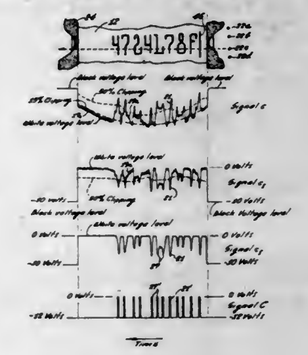
10. In a system for detecting equality between groups of information items, said items comprising numbers expressed in parallel decimal code, the combination of: means for converting said numbers into compressed binary serial form comprising plural groups of information items, each said groups sometimes containing a garble signal; means for detecting pairs of identical groups of said compressed representations, said means comprising delay line means adapted to receive said information item by item and comprising a plurality of separate delay units each adapted to store a single information item, plural comparison circuit means each responsive to the information items stored in a selected pair of said delay units and adapted to produce an output signal when identical groups of said stored information items occur, means responsive to a garble signal in each said group for disabling said plural comparison circuit means whereby no output signal will be produced, and means for combining the outputs of said comparison circuit means in groups to provide combined output signals corresponding to identities recognized by all said comparison circuit means; and means for counting said identities and for expressing the resultant count in binary notation.

3,223,972

SIGNAL INFORMATION DETECTION CIRCUITRY

Eduardo T. Ulzurrun, Hollywood, Calif., assignor to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland

Filed July 31, 1961, Ser. No. 128,086
20 Claims. (Cl. 340—146.3)



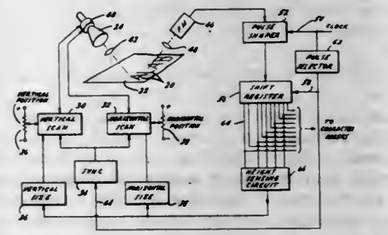
1. Detection means comprising means for deriving an electrical signal having spaced intelligence information included therein, means for automatically providing a clipping level for each information signal by clipping said electrical signal by an amount based on a predetermined percentage of the amplitude of the most recently occurring intelligence information appearing in said signal, and means for extracting said intelligence information from the clipped signal.

3,223,973

CHARACTER RECOGNITION SYSTEM EMPLOYING CHARACTER SIZE DETERMINATION APPARATUS FOR CONTROLLING SIZE OF SCANNING RASTER

John B. Chatten, Philadelphia, Pa., assignor to Philco Corporation, Philadelphia, Pa., a corporation of Delaware

Filed Jan. 15, 1962, Ser. No. 166,065
17 Claims. (Cl. 340—146.3)



6. In a character recognition system, means for providing an indication of the size of a scanned character relative to the size of the area scanned comprising means for scanning an area which includes a character to be recognized, means associated with said scanning means for generating time-spaced signals representative of the character scanned, a multistage shift register, means for setting said shift register to represent said time-spaced signals, means for repeatedly shifting the data stored in

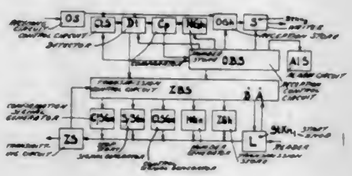
said shift register stage by stage, a plurality of sensing circuits connected to said shift register, each sensing circuit being adapted to sense the state of a selected plurality of stages of said shift register, coincidence circuit means responsive to the outputs of said plurality of sensing circuits, and means, responsive to the outputs of said coincidence circuit means, for controlling the size of the area scanned by said means for scanning.

3,223,974

TRANSCEIVERS FOR SELF-CONTROLLING CODED INFORMATION INCLUDING INFORMATION STORAGE IN THE TRANSMITTERS

Hans Kok and Franz Josef Schramel, Hilversum, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Nov. 1, 1961, Ser. No. 149,424
Claims priority, application Netherlands, Nov. 3, 1960, 257,589
5 Claims. (Cl. 340—146.1)



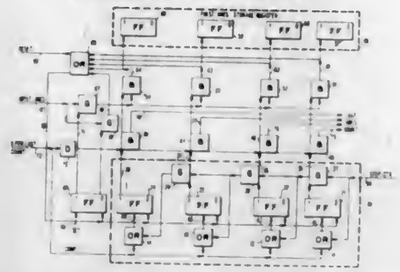
1. A system for transmitting, through a telecommunication channel, self-controlling coded digital information in the form of information blocks each comprising a predetermined number of code groups, comprising in combination: a transmitting station including an information carrier, a sensing device for reading the information on said carrier, a transmission store for storing the information, a transmission control circuit, a first detector, an overtime circuit, and a number generator, a receiving station including a receiving control circuit, a confirmation signal generator, a second detector, a comparator, and a number store, said transmission control circuit being operative to start transmission and to halt transmission after a block of information has been transmitted, said transmission control circuit controlling said number generator to provide each block of information with a service code-group occurring at the beginning thereof, which service code-group is chosen in cyclic sequence from determined code-groups, said second detector acting to detect a particular service code-group denoted an identification number, said number store having a number stored therein, said comparator comparing the identification number detected by the second detector and the number stored in the number store and signalling the result of this comparison to the receiving control circuit which increases the number stored in the number store by a predetermined amount if the comparator detects equality, said receiving control circuit also controlling the confirmation signal generator to transmit back to the transmitting station confirmation signals denoting the reception of error-containing information or of true information, said first detector being operative to detect and distinguish said confirmation signals and to signal said transmission control circuit to start said overtime circuit at the beginning or at the end of transmission of a block of information, said overtime circuit being set back to a starting position by a distinctive confirmation signal detected by said first detector within a predetermined time interval, the transmission control circuit being responsive to a distinctive confirmation signal to transmit the next block of information or to retransmit from the transmission store a block of information which was just transmitted.

3,223,975

LAST ONES COUNTER

Harold D. Thompson, Kingston, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed July 25, 1962, Ser. No. 212,193
6 Claims. (Cl. 340—146.3)



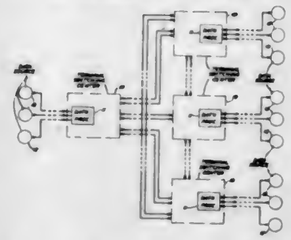
1. An apparatus for detecting the first and last indication of a character being sensed during a scanning sequence of a cathode ray tube comprising in combination
means for dividing each line scan time into a plurality of substantially equal time segments,
a binary counter,
means for stepping said counter during each of said time segments,
a storage medium,
means for selectively interconnecting said counter to said storage medium,
means responsive to said first indication of said character for transferring the contents of said counter to said storage medium,
means responsive to succeeding indications of said character for resetting said counter
and means responsive to an end of scan signal for complementing the contents of said counter whereby the complemented value defines the time of said last character sensing indication.

3,223,976

DATA COMMUNICATION SYSTEM

Henry H. Abbott, Chatham, Alfred B. Brown, Jr., Montclair, Wallace A. Depp, Mountainside, Renato D. Fracassi, Chatham, and Robert D. Williams, Parsippany-Troy Hills, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed May 26, 1961, Ser. No. 113,988
53 Claims. (Cl. 340—147)



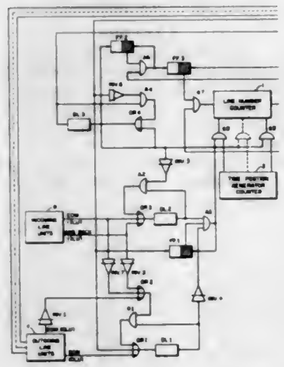
1. A data communication system comprising a plurality of switching centers, a plurality of trunks interconnecting said switching centers for transferring messages each having a plurality of data bits between said switching centers, means for connecting a source of data to a first one of said switching centers, said first switching center comprising storage means, means for transferring messages in bulk form from said source to discrete portions of said storage means, means for transferring one bit of each stored message to corresponding preselected trunks in selected discrete time intervals of a recurrent cycle of time intervals, and means for transferring to said storage means one bit of each incoming message transmitted over said trunks in other selected discrete time intervals of said recurrent cycle.

3,223,977

ROLL CALL GENERATOR

Freddy David, Rochester, N.Y., and William V. Tyrlick, Teaneck, N.J., assignors, by mesne assignments, to Stromberg-Carlson Corporation, Rochester, N.Y., a corporation of Delaware

Filed Oct. 23, 1961, Ser. No. 146,991
3 Claims. (Cl. 340—147)



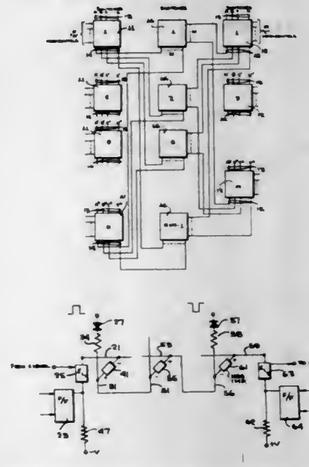
1. A roll call generator serving a plurality of different lines each of which has a predetermined number of stations associated therewith to be roll called, each separate station of any one line being identified by a different address; said generator comprising a storage device including a plurality of groups of consecutive slots, each of said lines having at least one of said groups corresponding thereto and each of said groups including at least as many consecutive slots therein as the predetermined number of stations associated with the particular line with which that group corresponds, information comprising the address of each station of each particular line being stored in a separate slot of solely each of said groups corresponding with that particular line, each of said slots having control information stored therein, and readout means for cyclically scanning each of said slots in sequence for reading out the information stored in each slot in response to that slot being scanned, said control information upon being read out providing first control signals from which the relative ordinal position of a slot being scanned within a group and the relative ordinal position of the group including the slot being scanned within a cycle may be derived, and further providing a special control signal from a single slot of each group when that single slot is being scanned; first means producing second control signals manifesting the relative ordinal position within a cycle of a given group which corresponds to the line then to be roll called; second means coupled to said first means and said readout means and responsive to said first and second control signals for producing only during a first of two successive scan cycles an output in response solely to that special control signal produced during the scan of said single slot within said given group; a bistable switch coupled to said second means and said readout means which is set by an output from said second means and reset in response to the scan of that slot which next follows said single slot of said given group; third means including normally closed address forwarding means coupled to said readout means, fourth means and fifth means, said fourth means coupled to said bistable switch and to said storage device and responsive to said first control signals and to said bistable switch having been set and said next-following slot being other than the first slot of a group for opening said forwarding means to permit forwarding of the address of the station stored in said next-following slot and for altering the control information stored in said next-following slot to provide a special control signal therefrom during subsequent scan cycles, said fifth means coupled to said bistable means and to said storage device and responsive to said first control signals and to said bistable switch having been set and said next-following slot being the first slot of a group for opening said forwarding means to permit forwarding the address of the station stored in the first slot of said given group during the second of said two successive scan cycles and for altering the control information stored in said first slot of said given group to provide a special control signal therefrom during subsequent scan cycles; and sixth means coupled to said second means and said storage device for applying only during the second of said two successive scan cycles an erase signal to said single slot of said given group to alter the control information stored therein to eliminate the providing of a special control signal therefrom during subsequent scan cycles.

3,223,978

END MARKING SWITCH MATRIX UTILIZING NEGATIVE IMPEDANCE CROSSPOINTS

Robert J. Johnson, Winter Park, Fla., assignor to Radiation Inc., Melbourne, Fla., a corporation of Florida

Filed June 8, 1962, Ser. No. 201,106
11 Claims. (Cl. 340—166)



1. In a matrix, a route of zero potential difference between an input and output terminal comprising: first, second, and third elements each having a substantially non-conductive state, a negative impedance state and a positive impedance state, said elements being connected in series between said input and output terminals, said elements normally being in said non-conductive state, each of said elements being activated through said negative impedance state into said positive impedance state only when the voltage applied thereto exceeds a predetermined amplitude; means connected across said first element for providing a first voltage thereto in excess of said predetermined amplitude to thereby activate said first element into said positive impedance state; means connected across said third element for providing a second voltage thereto in excess of said predetermined amplitude to thereby activate said third element into said positive impedance state; said first and second voltages being of substantially equal

magnitude but of opposite polarity; said second element being activated into said positive impedance state only in response to the simultaneous activation of said first and third elements into the positive impedance state.

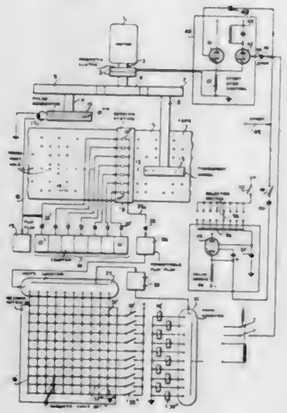
7. An end marking switch matrix comprising: N groups of N input terminals and M groups of M output terminals, where N and M are integers which are equal to or greater than 1; $N+M-1$ groups of impedance elements, the impedance elements in each of said $N+M-1$ groups being arranged in N columns and M rows; each of said impedance elements having a substantially non-conducting state and a conducting state; and means for sequentially establishing $N+M-1$ different paths between any of said input terminals and any of said output terminals, said last-mentioned means including: means for connecting any of said N input terminals of the Lth group of input terminals sequentially to the Lth columns of said $N+M-1$ groups of impedance elements, where L is an integer which is equal to or greater than 1 and equal to or less than N; and means for connecting any of said M output terminals of the Ith group of output terminals sequentially to the Ith rows of said $N+M-1$ groups of impedance elements, where I is an integer which is equal to or greater than 1 and equal to or less than M.

3,223,979

SIGNAL OPERATED CONTROL MEANS FOR KEYBOARD AND LIKE MACHINES

Gerhard Dirks, 44 Morfelder Landstrasse, Frankfurt am Main, Germany

Filed Aug. 26, 1957, Ser. No. 680,207
Claims priority, application Great Britain, Aug. 24, 1956, 25,885/56
12 Claims. (Cl. 340—172.5)



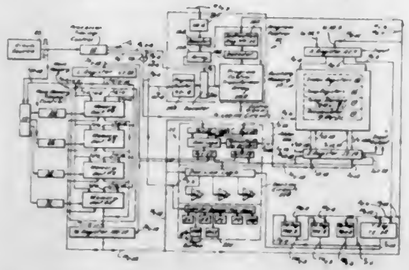
1. In an arrangement for controlling control elements of a keyboard and the like machine by signals derived from a record carrier, in combination, first conversion means for sequentially converting record marks prerecorded on the record carrier and respectively repesenting a vaiety of data, into signal sequences, the number of signals thereof representing respectively said data; a matrix type arrangement of rows and columns of a plurality of control means selectively operable by application of control signals for controlling the control elements of the keyboard machine respectively associated with said data represented by said marks on said record carrier, each of said control means being responsive only to simultaneous application of a first signal in column direction and a second signal in row direction; second conversion means connected between said first conversion means and said matrix type arrangement for converting each particular sequence of signals of said first conversion means into said first and second signals and for applying said first and second signals to that column and that row, respectively, which determine at their intersection the particular control means associated with the number of signals contained in the said particular sequence of signals and thereby with the particular data represented by such sequence of signals; and means connected with said first conversion means for intercalating a predetermined period of time between consecutive ones of said signal sequences whenever consecutive marks on said record carrier represent the same data and would therefore entail consecutively repeated actuation of the corresponding control means in said matrix arrangement.

3,223,980

COMPUTER SYSTEM

Robert O. Gunderson, Torrance, Edmund F. Klein, San Pedro, William J. Campillo, Torrance, and Tom T. Tang, Los Angeles, Calif., assignors to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland

Filed May 2, 1961, Ser. No. 107,109
43 Claims. (Cl. 340—172.5)



1. A computer system for performing logical operations upon data on successive operating cycles comprising: logical circuit means including logical storage means for performing logical operations upon data supplied thereto; data storage means, including accessing means capable of supplying data signals from any one of a plurality of locations therein to said logical circuit means during each operating cycle; control means, including accessing means capable of supplying control signals from any one of a plurality of locations therein to said logical circuit means during each operating cycle; a source of clock pulses; timing means coupled to said source to be responsive to each of said clock pulses including means for producing timing signals for simultaneously controlling the operation of said data storage means and said control means during each operating cycle to supply signals from selected locations therein to said logical circuit means; and pulse forming means connected to respond to said timing means for supplying a logical clock pulse to the logical storage means of said logical circuit means once each operating cycle to advance the logical operation thereof.

3,223,981

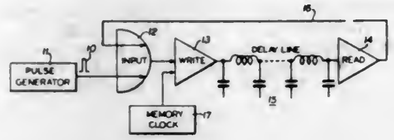
LONG TERM TIMING DEVICE AND PULSE STORAGE SYSTEM

Herbert L. Fischer, Plainview, N.Y., assignor to Logitek, Inc., Farmingdale, N.Y.

Filed Jan. 17, 1962, Ser. No. 166,846
14 Claims. (Cl. 340—172.5)

1. A long-term timing device comprising, in combination, delay line means having a time-length, between its input and output ends, equal to a first preselected number of time units; a gate having an output connected to the input end of said delay line means and a first input

connected to the output end of said delay line means; means for supplying periodic pulses to a second input of said gate, the number of said time units between successive periodic pulses being equal to said first preselected number; and a lumped constant delay line, having a time length, between its input and output ends, equal to one of said time units, said lumped constant delay line con-



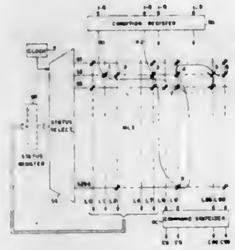
necting another output of said gate to a third input thereof for circulation of pulses with a delay equal to one time unit, said gate, upon coincidence between pulses at any two or all three of its inputs, routing a pulse through said lumped constant delay line and otherwise routing an input pulse to said delay line means; whereby to provide groups of pulses circulating through said delay line means with the pulses in each group being separated by one time unit.

3,223,982

ELECTRONIC COMPUTER WITH ABBREVIATED ADDRESSING OF DATA

Giorgio Sacerdoti, Rome, and Ottavio Guarracino, Milan, Italy, assignors to Ing. C. Olivetti & C., S.p.A., Ivrea, Italy, a corporation of Italy

Filed Apr. 6, 1962, Ser. No. 185,633
2 Claims. (Cl. 340—172.5)



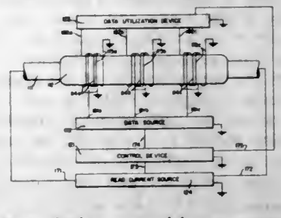
1. A digital computer comprising in combination:
(a) storage means for storing operands,
(b) means responsive to effective addresses, each one of said addresses having an ordered plurality of denominations for addressing said operands in said storage means,
(c) an address register having a corresponding plurality of denominations,
(d) program means for supplying instructions, each one of said instructions including for one of said operands an explicit address containing only those denominations of the effective address of said operand and which differ from the corresponding denominations of the effective address of the last addressed operand and the lower order denominations,
(e) means responsive to said program means for substituting the explicit address included in said supplied instruction for the previous contents of the corresponding denominations of said address register,
(f) and means for transferring the contents of said address register resulting from said substitution to said first named responsive means.

3,223,983

RETENTIVE DATA STORE AND MATERIAL

Wilbur G. Hespenheide, Malvern, Pa., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed Sept. 25, 1958, Ser. No. 763,269
11 Claims. (Cl. 340—174)



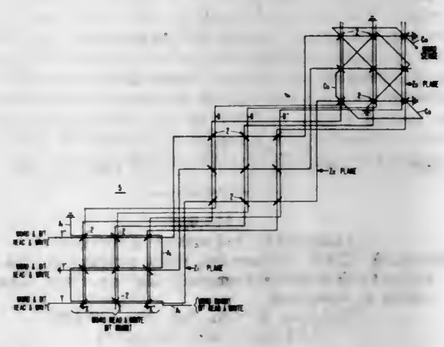
1. A storage device comprising a central conductor coated with a ferromagnetic material having an axis of preferred magnetization helical about the axis of said central conductor, means for producing a first magnetizing field parallel to the axis of said central conductor whereby said ferromagnetic coating is magnetized in either of two directions along said axis of preferred magnetization, means including a source of current controlled to provide nondestructive interrogation of said device and adapted for pulsing said central conductor, the flow of current through said central conductor producing a second magnetizing field which disturbs but does not reverse the direction of magnetization established in the coating of said central conductor by said first magnetizing field.

3,223,984

MAGNETIC CORE MEMORY

Erich Bloch, Poughkeepsie, and Herbert Gelernter, Briarcliff Manor, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

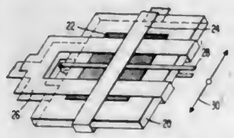
Filed May 25, 1960, Ser. No. 31,706
18 Claims. (Cl. 340—174)



9. In a magnetic core storage device, a three-dimensional storage matrix comprising a plurality of planes each made up of rows and columns of bistable magnetic core elements, individual core elements being adapted to store bit information and groups of core elements being adapted to store word information, means for writing word information into said matrix comprising *x*-axis, *y*-axis and inhibit windings inductively coupled to said groups of core elements, write drivers connected to each of said *x*-axis and *y*-axis windings, read drivers connected to each of said inhibit windings, an address register, an X decoder and a Y decoder coupled to said address register an being arranged to excite predetermined ones of said write drivers to energize the *x*-axis and *y*-axis windings of a selected group of core elements, each of said inhibit

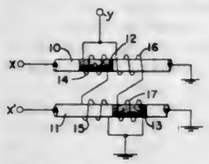
windings being connected through its associated read driver to an output terminal of a different one of a plurality of flip-flop circuits, whereby said inhibit winding read drivers may be excited to energize selected ones of said inhibit windings, means for reading word information out of said matrix comprising read drivers connected to said *x*-axis and *y*-axis windings and word sense windings inductively related to said groups of core elements, whereby the excitation of the *x*-axis and *y*-axis read drivers of a selected group of core elements produces output signals in said word sense windings in accordance with the stable conditions of the core elements of the group, means including bit sense windings coupled to said core elements for reading out of the storage matrix simultaneously the bit information stored in a plurality of said individual core elements upon excitation of selected ones of said *y*-axis and inhibit windings, and means for rewriting the readout bit information into said matrix.

3,223,985
NONDESTRUCTIVE MAGNETIC DATA STORE
Eric E. Bittmann, Downingtown, and Joseph W. Hart, Audubon, Pa., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Oct. 25, 1961, Ser. No. 147,676
19 Claims. (Cl. 340—174)



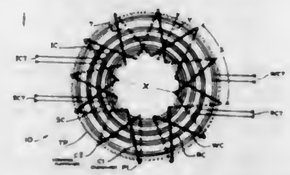
1. A data store comprising at least one ferromagnetic storage element capable of attaching opposed states of residual flux density along a preferred axis of magnetization, first means for magnetizing said element substantially in a predetermined one of said states, said element forming substantially a single large domain of said predetermined state, second means for magnetizing a narrow region of said single domain to a position nearly transverse to said preferred direction, said narrow region separating said single domain into neighboring domains of said predetermined state, the demagnetizing forces present in said neighboring domains being effective upon the termination of said second means to cause said narrow region to assume a state opposite to said predetermined state, said narrow region forming a domain of one state bordered by neighaboring domains of opposite state.

3,223,986
MAGNETIC MEMORY CIRCUIT
Robert W. Clark, Centerville, Ohio, assignor to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland
Filed Mar. 8, 1962, Ser. No. 178,395
7 Claims. (Cl. 340—174)



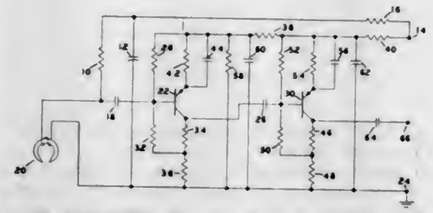
5. An electrical circuit comprising:
first and second conductors, each of said conductors having a magnetic flux path capable of assuming two stable remanent flux states and having a remanent flux therein;
output circuit means coupled to both of said conductors;
first energizing means individually coupled to said one conductor;
second energizing means individually coupled to the remaining conductor;
and means for coincidentally applying opposite polarity current pulses to said first and second energizing means.

3,223,987
INTERCEPTOR TRANSFORMER FOR MULTI-BINARY INFORMATION STORAGE
John R. Wiegand, 882 Balfour St., Valley Stream, N.Y.
Filed Apr. 2, 1964, Ser. No. 356,724
12 Claims. (Cl. 340—174)



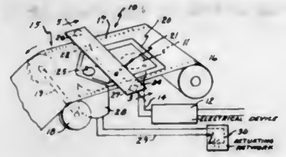
1. An interceptor transformer for binary storage and destructive readout of multi-digit binary coded information, comprising a write coil, read coil, interrogation coil and sense coil, the four coils being made of wire circularly wound into ring-like form, a first magnetic core wire helically wound in one direction with uniform pitch around the four coils, and a second magnetic core wire helically wound in an opposite direction with uniform pitch around the four coils and first core wire, the two core wires being wound around the entire circumferential extent of the ring-like form defined by the four coils, each of said coils having a pair of separate terminals for connection to external circuit means.

3,223,988
CURRENCY DETECTORS
Donald M. Danko, Parma, Ohio, assignor to National Rejectors, Inc., St. Louis, Mo., a corporation of Missouri
Filed June 10, 1960, Ser. No. 35,355
2 Claims. (Cl. 340—174.1)



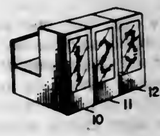
1. In a currency detector, the combination of a magnetic head that engages a bill to generate voltage variations and that has a low inductance, a resistance-capacitance network that couples said magnetic head to a transistor stage of a pre-amplifier, the capacitor of said resistance-capacitance network being connected in series relation with the coil of said magnetic head to constitute a series resonant circuit, and a second resistance-capacitance network that couples said transistor stage to a second transistor stage of said pre-amplifier, the capacitor of the first said resistance-capacitance network having a capacitance that coacts with the inductance of the coil of said magnetic head to make said capacitor and said coil constitute a series resonant circuit that resonates at a frequency below but adjacent the lower end of a desired frequency range, said series resonant circuit providing a high gain for frequencies below but adjacent said lower end of said desired frequency range, said resistance-capacitance networks passing signals within said desired frequency range but said series resonant circuit providing a high rate of rejection below the resonant frequency thereof and thus below said lower end of said desired frequency range and thereby minimizing low frequency modulation of voltage variations generated in said coil of said magnetic head as a bill engages and moves relative to said magnetic head, the first said transistor stage having an input impedance that is very much smaller than the impedance of said series resonant circuit to reduce the Q of the combination of said magnetic head and pre-amplifier, thereby preventing sharp peaking in said desired frequency range, said second transistor stage having a low input impedance that coacts with said low input impedance of the first said transistor stage to reduce the effect which noise and other transients can have upon the voltage variations generated in said coil of said magnetic head, the transistor of the first said transistor stage and the transistor of said second transistor stage coacting with the distributed capacities of said magnetic head to permit the attainment of desired gain at frequencies above said lower end of said desired frequency range and to limit the gain at frequencies adjacent the upper end of said desired frequency range, said series resonant circuit coacting with said transistors to provide a substantially flat frequency response throughout said desired frequency range, said transistors coacting with said distributed capacities and with said low input impedances of said transistor stages to increase the rate of rejection at frequencies above said desired frequency range, said capacitor of the first said resistance-capacitance network coacting with the first said transistor stage to constitute a high pass amplifier, the capacitor of said second resistance-capacitance network coacting with said second transistor stage to constitute a second high pass amplifier.

3,223,989
RECORDING METER ALARM
Edward J. Zeltlin, Peekskill, N.Y.
(657 Broadway, New York, N.Y.)
Filed May 15, 1962, Ser. No. 194,762
5 Claims. (Cl. 340—266)



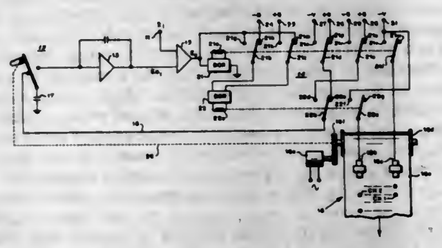
1. An alarm actuating meter comprised of a source of electric voltage, a galvanometer having an impedance of arcuate form occupying a sector of approximately 180° connected to said source of electric voltage, a non-conductive rotating needle movable in the arc of said impedance, said needle of said meter moving in response to the voltage through an electrical device under test, a solenoid, an actuating bar, said actuating bar depressed by said solenoid, said actuating bar positioned to be depressed against said rotating needle, a switch and potential electrically connected to said solenoid, an arcuate shaped bar provided with two conductive elements one on each side of said arcuate shaped bar, a conductive pad to span and be moved by said needle into contact with said two conductive faces of said arcuate shaped bar, said arcuate shaped bar positioned under said actuating bar and pivotally supported to align with said arc of said impedance and pivotally adjustable with relation to said impedance arc, said two conductive elements of said arcuate shaped bar connected to an alarm circuit to actuate an alarm when said actuating switch is closed and said actuating bar is depressed.

3,223,990
DECIMAL ACCUMULATOR AND/OR SELF-DECODING DIGITAL DISPLAY UNIT
Carl L. Clement, Santa Monica, Calif., assignor to Kauke and Company, Inc., a corporation of California
Filed Mar. 22, 1962, Ser. No. 181,683
9 Claims. (Cl. 340—324)



1. A display unit including, in combination:
a shutter plate having a plurality of transparent regions and opaque regions;
a master plate having a plurality of indicating regions of different lateral and vertical extent;
means for positioning said shutter plate and master plate in face-to-face relationship so as to lie in substantially parallel planes so that portions of said indicating regions on said master plate are visible through said transparent regions on said shutter plate; and,
means for effecting a relative successive shifting between said shutter plate and master plate in the planes of the plates through a plurality of different discrete successive positions including cam means; cam follower means secured to said master plate and engaging said cam means; and driving means for moving said cam means through discrete distances to thereby effect a movement of said cam follower means and said master plate through said discrete positions, whereby a plurality of other portions of said indicating regions on said master plate respectively become successively visible through said transparent regions on said shutter plate.

3,223,991
ANALOG TO DIGITAL TO ANALOG CONVERTER, RECORDER AND REPRODUCER
Victor F. Dosch, Ambler, Pa., and Jay W. Rabb, Accokeek, Md., assignors to the United States of America as represented by the Secretary of the Navy
Filed Mar. 20, 1961, Ser. No. 97,113
6 Claims. (Cl. 340—347)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A recorder-reproducer comprising: summing means having an output circuit and a pair of input circuits, an input terminal adapted to be coupled to a source of a signal representing an analog function, circuit means coupling one of the input circuits of said summing means to said input terminal, a relay logic unit coupled to the output circuit of said summing means operable to select one of a positive small step signal, a negative small step

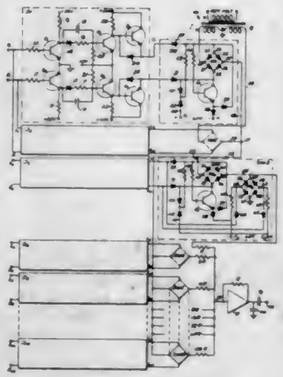
signal, a positive large step signal, or a negative large step signal depending upon the magnitude and direction of the change in the signal appearing in the output circuit of said summing means during a selected period of time, first integrating means having an input circuit and an output circuit coupled to the other input circuit of said summing means, periodically operable means coupled to apply said selected step signal to the input circuit of said first integrating means, a recording media, means coupled to said relay logic unit operable to impress said selected step signal upon said recording media during said selected period of time, output terminal means, second integrating means having an input circuit and an output circuit coupled to said output terminal means, and means coupled to the input circuit of said second integrating means operable to extract said selected step signal from said recording media.

3,223,992

ALTERNATING CURRENT DIGITAL TO ANALOG DECODER

John M. Bentley, Glen Burnle, and James H. Brown, Severna Park, Md., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed Aug. 9, 1961, Ser. No. 130,429
13 Claims. (Cl. 340—347)



1. An alternating current digital to analog decoder comprising: an alternating current reference voltage; a phase switching means coupled to said alternating current reference voltage to apply at an output thereof one of two phases of said alternating current voltage reference; a plurality of binary weighted resistors coupled in common to an amplifier; a plurality of digit switch means coupled in common to the output of said phase switching means and one each respectively to one each of said binary weighted resistors; a plurality of switch driver means adapted to have the inputs thereof coupled respectively to stages of binary digital outputs, one switch driver means adapted to have its input coupled to one binary digital output stage and its output coupled to control said phase switching means and the remaining switch driver means adapted to have their inputs coupled to one each binary digital output and their outputs coupled respectively to one each digit switch means whereby said binary weighted resistors have alternating current applied thereto in the selected order and phase by said switch driver means and digit switch means to produce on the output of said amplifier an analog alternating current voltage representative of a binary computer digital combination input.

3,223,993

NON-LINEAR DIGITAL-TO-ANALOG CONVERTER

Robert S. Dahlberg, Jr., Blue Bell, Pa., assignor, by mesne assignments, to Philco Corporation, Philadelphia, Pa., a corporation of Delaware

Filed Oct. 30, 1961, Ser. No. 148,384
2 Claims. (Cl. 340—347)



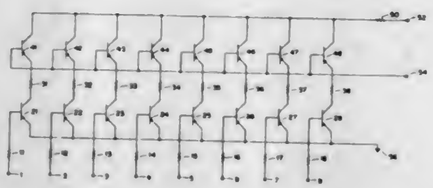
1. A non-linear digital-to-analog converter, comprising: a linear digital-to-analog converter having substantially constant internal impedance and adapted to produce an analog signal linearly related to an applied binary digital signal; a two-terminal resistance network connected across the output of said converter, said network comprising a plurality of signal paths connected in shunt between said two terminals and corresponding respectively to the digits of said applied binary signal, each of said signal paths including a series combination of a resistor and a switch operated by said applied binary signal, said resistors having the respective fixed values r, $2r$, 2^2r . . . 2^nr, n being one less than the number of digits in said applied binary signal, each of said switches being closed or opened according to whether the corresponding digit of said binary signal is ZERO or ONE, thereby to convert said analog signal to one which is non-linearly related to said applied signal; and a load connected between said two terminals of said network.

3,223,994

DIGITAL-TO-ANALOGUE CONVERTER

Jacky D. Cates, 5132 Chateau, El Paso, Tex.

Filed Sept. 10, 1962, Ser. No. 222,742
6 Claims. (Cl. 340—347)
(Granted under Title 35, U.S. Code (1952), sec. 266)



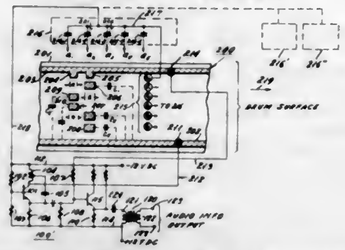
1. A digital-to-analogue converter comprising:
(a) a plurality of parallel-connected circuits;
(b) each of said circuits comprising an input terminal, a switching means, an impedance means and a constant current generating means connected in series;
(c) an output conductor having a load resistor connected thereto;
(d) each of said generating means being connected to said output conductor;
(e) each of said switching means being actuated in response to a digital input representation at each of said input terminals; and
(f) said input representation producing a proportional output analogue representation across said load resistor.

3,223,995

DATA PROGRAMMER HAVING AN INTERLEAVED CODING ARRANGEMENT

Abraham Brothman, Dumont, N.J., Stephen J. Halpern, New York, N.Y., and Richard D. Reiser, Waldwick, N.J., assignors to Transitel International Corporation, Paramus, N.J., a corporation of New Jersey

Filed Dec. 28, 1962, Ser. No. 248,106
21 Claims. (Cl. 340—347)



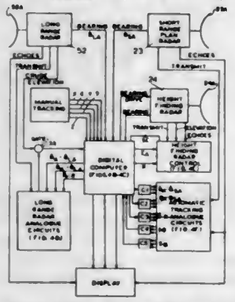
1. Transmitter means for use in a communications system employing discrete tones to represent transmitted characters comprising first means for generating tone signals; said first means comprising second means for altering the frequency of said tone signals; third means for receiving data in the form of characters to be transmitted for controlling said second means to cause said first means to generate tones of discrete frequencies; said third means including programming means for operating said second means through a predetermined sequence responsive to each character received by said programming means; said programming means comprising input means for sequentially receiving a plurality of binary coded signals arranged in groups, each group representing a character to be transmitted wherein the binary signals of each group are imposed in parallel fashion upon said input means; said programming means further comprising sequencing means for simultaneously transferring some of the signals of one group to said second means at a first instant of time; and for simultaneously transferring the reaminder of the signals of said one group to said second means at a second instant of time occurring after said first instant of time thereby generating at least two output signals representing a character, said output signals being fewer in number than the number of binary signals in each of the groups.

3,223,996

RADAR TRACKING APPARATUS

Roger Voles, London, England, assignor to Electric & Musical Industries Limited, Hayes, England, a company of Great Britain

Filed Dec. 15, 1961, Ser. No. 159,684
Claims priority, application Great Britain, Dec. 17, 1960, 43,507/60
11 Claims. (Cl. 343—7)



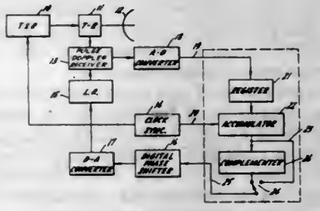
1. Tracking apparatus comprising input means for deriving successive actual-value signals representing the value of one co-ordinate of a target, digital computing means for producing a succession of discrete predicted-value signals which represent predicted values of said co-ordinate, a plurality of said discrete predicted-value signals being produced in each interval between one of said actual-value signals and the next, and extrapolating means responsive to said discrete predicted-value signals for producing a signal which continues from the last one of said discrete predicted-value signals until a new discrete predicted-value signal is produced, which extrapolated signal represents an effectively continuous prediction of the value of said co-ordinate, said digital computer being responsive to the differences between the values of said co-ordinate represented by successive actual-value signals and by said extrapolated predicted-value signal at the times of occurrence of actual value signals, to produce said discrete predicted-value signals.

3,223,997

DOPPLER CORRECTION IN A FREQUENCY DIVERSITY FREQUENCY JITTERED PULSE DOPPLER RADAR BY MEANS OF DIGITAL PHASE COMPUTATION

James O. Clark, Ellicott City, Peter Ravenhill, Baltimore, and Ralph E. Reise, Severna Park, Md., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed June 14, 1963, Ser. No. 288,055
9 Claims. (Cl. 343—8)



1. Doppler correction in a pulsed Doppler tracking radar by means of digital phase computation comprising:
a pulse Doppler radar receiver for receiving echo pulse Doppler signals of a target from transmitted pulses and converting each echo signal to digital word representative of target velocity;
a digital register coupled to receive each said digital echo word;
an accumulator coupled to said register and pulsed by a transmitter synchronizing source to sum the Doppler digital words at the pulsed rate to produce an accumulated digital word representative of the distance proportional to the movement of the target from the beginning of the dwell to the time of the pulse; and
a complementer adapted to be selectively switchable in and out of the output of said accumulator whereby the accumulator output represents the digital phase shift word produced by target movement, the digital phase shift word being selectably presented by its complement in accordance with the existence of approaching and receding targets.

3,223,998

ELECTRONIC TRACKING SYSTEM EMPLOYING SLANT RANGE MEASUREMENTS

Eddy Hose, San Diego, Calif., assignor to Cubic Corporation, San Diego, Calif., a corporation of California

Filed Apr. 6, 1962, Ser. No. 185,564
19 Claims. (Cl. 343—12)

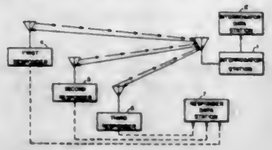
1. The electronic slant range measuring system comprising:
interrogator means transmitting a plurality of ranging

signals and sequentially transmitting a series of keying signals;

a series of responder means corresponding to said series of keying signals, respectively, each of said responder means being responsive to the receipt of the plurality of ranging signals and its corresponding keying signals for transmitting pluralities of received ranging signals;

receiver means associated with said interrogator means for receiving the plurality of ranging signals transmitted by each of said responder means;

a series of output means corresponding to said series of responder means, respectively, each of said output means being responsive to the plurality of ranging signals received by said receiver means from its corresponding responder means for producing signal

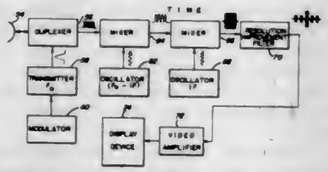


phase information corresponding to the slant range distance between said interrogator means and its corresponding responder means; and

telemetering means associated with said interrogator means and responsive to each plurality of ranging signals received by said receiver means for telemetering said plurality of ranging signals, a second series of output means corresponding to said series of responder means, respectively;

each output means of said second series of output means being responsive to the plurality of ranging signals telemetered by said telemetering means corresponding to its associated responder means for producing signal phase information which includes the slant range distance between the interrogator means and its associated responder means.

3,223,999
RESOLUTION IMPROVEMENT DEVICES
Herbert L. Groginsky, Sudbury, Mass., assignor to Raytheon Company, Lexington, Mass., a corporation of Delaware
Filed Oct. 1, 1962, Ser. No. 227,273
7 Claims. (Cl. 343—17.1)



6. A resolution improvement device capable of separating overlapping pulse echo signals, comprising:

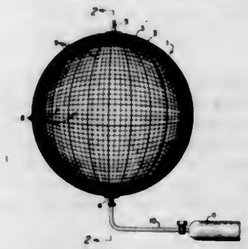
means for detecting recurrent pulse echo signals some overlapping in time;

means connected to said detector for time delaying said pulse echo signals from said detector a plurality of fixed predetermined time intervals less than the pulse width of said pulse echo signals;

a plurality of weighting means elements spaced at predetermined intervals along said time delaying means and of fixed predetermined value, at least one of said weighting elements having a greater value than at least one other, and each of said weighting means elements thereby deriving from said time delaying means portions of said recurrent pulse echo signals of a phase and amplitude predetermined by the impulse response of said detector;

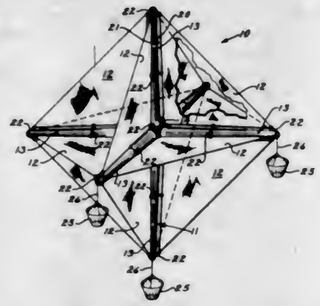
and means for combining said derived signals to produce a composite signal for each of said echo signals having a peak signal amplitude contained in a relatively narrow time interval, all of said peak signals being in spaced-apart relationship.

3,224,000
COMMUNICATION SATELLITE AND METHOD FOR MAKING SAME
Frederick Bloetscher, Cuyahoga Falls, and James O. Gibson and William B. Cross, Akron, Ohio, assignors to Goodyear Aerospace Corporation, a corporation of Delaware
Filed Mar. 18, 1963, Ser. No. 265,891
5 Claims. (Cl. 343—18)



2. A passive communications satellite comprising a fluid tight plastic bladder, a wire mesh adhesively secured to substantially and completely covering the bladder, the mesh including a plurality of finely drawn ductile wires crisscrossing each other, said wires being secured to each other wherever they cross and are in contact, and the wires being in a stretched cold-worked state, fluid pressure means internally of the bladder, and means to decompose the bladder in a space environment.

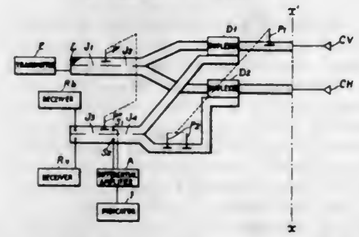
3,224,001
INFLATABLE RADAR REFLECTOR UNIT
Matthew I. Radnofsky and Glenn A. Shewmake, Houston, Tex., assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Jan. 14, 1963, Ser. No. 251,449
6 Claims. (Cl. 343—18)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A buoyant radar reflector unit comprising: a flexible corner reflector formed by a network of pliant triangular sheets having radar reflective surfaces and adapted to be disposed in three mutually perpendicular and intersecting planes in the characteristic geometry of a corner reflector, a plurality of inflatable beams which, upon inflation, extend radially from the geometric center of the reflector unit and lie longitudinally along the lines of intersection

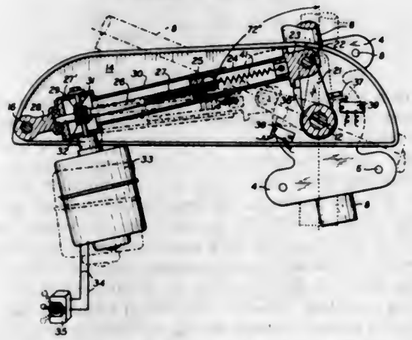
of said planes, said beams being substantially circular in cross-section and each said beam being tapered and having a diameter adjacent the geometric center of the unit which is substantially larger than its diameter adjacent its outer extremity; and means for attaching said reflective sheets to said inflatable beams whereby said reflective sheets are supported by said beams and said reflector is erected to its predetermined corner reflector form upon inflation of said beams, each said sheet being attached with one of its apices disposed adjacent the geometric center of the unit and a pair of its marginal edges attached along the length of a respective pair of said beams.

3,224,002
RADAR SYSTEMS
Roland Carré, Paris, France, assignor to C.S.F.-Compagnie Générale de Telegraphie Sans Fil, a corporation of France
Filed May 28, 1963, Ser. No. 283,910
Claims priority, application France, May 30, 1962, 899,167, Patent 1,332,066
6 Claims. (Cl. 343—18)



1. A switching arrangement for radar systems comprising a first and a second transmitting and receiving channel having respective inputs and outputs; a first energy distributing means having two inputs and two outputs respectively coupled to said inputs of said channels; means for coupling a transmitter to one of said last mentioned inputs; a second energy distributing means having two inputs, respectively coupled to said outputs of said channels, and two outputs; means for coupling said last mentioned outputs to respective receivers; and means for adjusting the relative phase-shift between the respective output signals of said channels other than those applied to said inputs of said channels.

3,224,003
APPARATUS FOR MOUNTING OF ANTENNAS ON BOATS
Max Hummel, 164—30 95th St., Howard Beach, N.Y.
Filed May 16, 1963, Ser. No. 280,810
4 Claims. (Cl. 343—709)



1. An apparatus for mounting antennas on boats comprising

a clamping member adapted to receive an antenna rod,

a housing, having two parallel substantially vertically disposed side walls,

means securing said housing to the boat,

a pivot bolt mounted in and extending across said housing,

a first shaft rotatably supported in and extending across said housing and secured to said clamping member for rotation with the latter,

an arm keyed to said first shaft and having a cross-pin secured to the free end of said arm,

a first end member pivotally secured to said cross-pin,

said first end member having a first cylindrical extension,

a nut having inner thread secured inside said cylindrical extension at the free end of the latter,

a second shaft disposed longitudinally and rotatably mounted in said housing,

said second shaft having at one of its ends an outer thread complementary to the inner thread of said nut and adjacent its other end a worm,

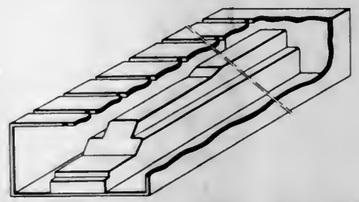
a reversible electric motor secured to said housing and having a motor shaft carrying a worm gear meshing with said worm,

a gear box receiving said worm gear and said worm and having a second cylindrical extension telescoping with said first cylindrical extension,

a second end member pivotally mounted on said bolt and secured to said gear box, and

switching means adapted to be mounted on the dashboard of the boat, in order to lift and tilt, respectively, the antenna rod by means of said reversible motor.

3,224,004
RADIATING SLOT RIDGED WAVEGUIDES
Jean Barthez, Paris, France, assignor to CSF-Compagnie Generale de Telegraphie Sans Fil, a corporation of France
Filed Mar. 29, 1962, Ser. No. 183,503
Claims priority, application France, Apr. 11, 1961, 858,340, Patent 183,503
7 Claims. (Cl. 343—771)

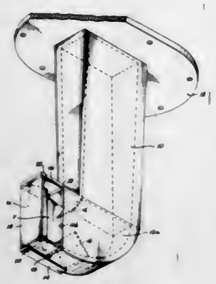


1. A waveguide portion comprising: a first and a second opposite sidewall, said first sidewall having one row of radiating slots; said second sidewall having a ridge whose height in front of said row in any cross-section along said portion is less than its maximum height in said cross-section.

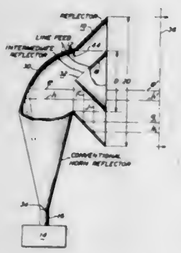
3,224,005
DUAL-APERTURE OMNIDIRECTIONAL ANTENNA
Robert C. Breithaupt, Wichita, Kans., assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware
Filed Mar. 1, 1963, Ser. No. 262,042
9 Claims. (Cl. 343—772)

1. A broadband dual-aperture omnidirectional antenna comprising a section of waveguide operable in the TE_{10} mode and having an open end at which the interior width of the guide in the E-plane thereof is approximately one quarter wavelength at the high-frequency end of the band, director means forming a pair of conductive sur-

faces diverging mutually in relation to a common plane therebetween from a minimum spacing representing a small fraction of the guide's E-plane interior width to a maximum spacing substantially equal to said E-plane interior width, said conductive surfaces having a width at least substantially equal to the guide's H-plane interior width, and means mounting said director means in alignment with the open end of the waveguide section and with its common plane substantially coincident with the H-plane of the waveguide, the angle of divergence between said surfaces increasing progressively from a small acute angle adjacent the point of minimum spacing therebetween to and terminating at an angle approximating 180° at the point of maximum spacing therebetween.



3,224,006
HORN REFLECTOR ANTENNA WITH CONCENTRIC CONICAL REFLECTORS AT MOUTH TO INCREASE EFFECTIVE APERTURE
David C. Hogg, Fair Haven, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Mar. 30, 1962, Ser. No. 183,955
6 Claims. (Cl. 343—781)



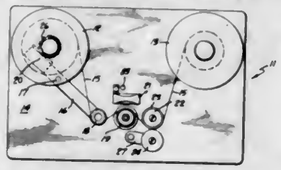
4. In an antenna system in combination with a horn reflector antenna for electromagnetic waves having a predetermined wavelength, said horn reflector antenna having a circular aperture and producing a plane wavefront, a first reflector having a reflective surface in the shape of the inside surface of a truncated circular cone, the truncated portion of said first reflector abutting the aperture of said horn reflector, and a second reflector having a reflective surface in the shape of the outside surface of a circular cone, the axis of said first reflector coinciding with the axis of said second reflector, the apex angle of said first reflector being equal to the apex angle of said second reflector, and the spacing between said first reflector and said second reflector being at least several of said wavelengths to ensure that transmission between said first reflector and said second reflector takes place in a free-space mode.

3,224,007
WIRE MESH COLLAPSIBLE DISK REFLECTOR
Clark A. Mathis, 330 5th St. SE., Washington, D.C.
Filed Jan. 31, 1961, Ser. No. 86,091
4 Claims. (Cl. 343—915)



1. An antenna reflector comprising, in combination, a reflector and supporting structure for supporting the reflector, said reflector comprising a screen defined by a plurality of tensionable metallic filaments, said filaments being interconnected to define a plurality of polygonal configurations, each of said polygonal configurations having the side portions thereof kinked intermediate the corner portions thereof, said supporting structure comprising a network of interconnected strand-like members, certain of the strand-like members each extending from a first location to a common second location disposed adjacent the central portion of the screen, other strand-like members disposed intermediate the screen and the certain strand-like members, said other strand-like members each extending between opposed locations that are spaced about the periphery of the screen, and additional strand-like members secured to and extending between the certain strand-like members and the other strand-like members at longitudinal space intervals therealong.

3,224,008
SPARK RECORDING APPARATUS AND METHOD
Jack S. Hawley, Berkeley, Calif., assignor, by mesne assignments, to Berkeley Instruments, Emeryville, Calif., a partnership
Filed Aug. 16, 1960, Ser. No. 49,878
13 Claims. (Cl. 346—74)

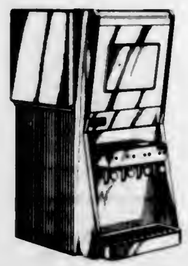


1. In a recording apparatus for recording information on paper tape, a substantially cylindrical recording head, the recording head having a plurality of discrete contact elements spaced longitudinally and circumferentially of the recording head and lying in a plurality of parallel planes at right angles to the longitudinal axis of the recording head, means for rotating the recording head, means for advancing the tape past one side of the recording head, conducting means mounted adjacent to the recording head and the other side of the tape and means for applying a voltage between the contact elements and the conducting means to create arcing between the conducting means and the recording head to burn the tape for recording data in a plurality of channels spaced laterally of the paper tape.

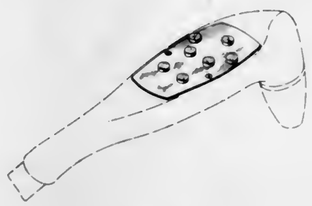
DESIGNS

DECEMBER 14, 1965

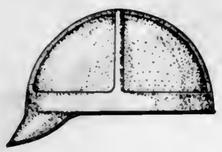
203,150
COUNTER TOP DRINK DISPENSER
Jack J. Booth and William C. Branch, both of P.O. Box 10872, Dallas, Tex.
Filed July 14, 1964, Ser. No. 80,878
Term of patent 14 years
(Cl. D2—3)



203,151
VALVE CONTROL PANEL FOR BEVERAGE DISPENSING NOZZLE
Wayne Easley, Moraga, Calif., assignor to Seven-Up Bottling Company of Oakland, Oakland, Calif., a corporation of California
Filed Nov. 18, 1964, Ser. No. 82,680
Term of patent 14 years
(Cl. D2—3)



203,152
SAFETY HELMET
John L. Marchello, Ann Arbor, Mich., assignor to Joseph Buegeleisen Company, Southfield, Mich., a corporation of Michigan
Filed Oct. 23, 1964, Ser. No. 82,295
Term of patent 14 years
(Cl. D3—13)



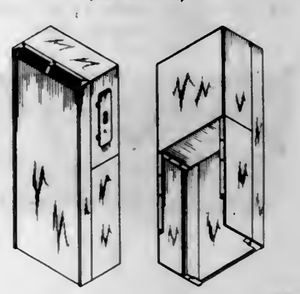
203,153
SAFETY HELMET
John L. Marchello, Ann Arbor, Mich., assignor to Joseph Buegeleisen Company, Southfield, Mich., a corporation of Michigan
Filed Oct. 23, 1964, Ser. No. 82,297
Term of patent 14 years
(Cl. D3—13)



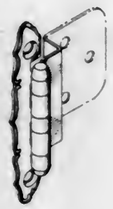
203,154
SLIDE NECKTIE
Henry A. Harry, 415 N. Country Club Drive, McHenry, Ill.
Filed July 6, 1965, Ser. No. 86,052
Term of patent 14 years
(Cl. D3—16)



203,155
COMBINATION AIR FILTERING AND COLLECTING UNIT FOR TEXTILE WASTE PRODUCTS
R. Hovan Hocutt and Thomas E. Mullinax, Charlotte, N.C., assignors to Pneumafil Corporation, Charlotte, N.C., a corporation of Delaware
Filed Feb. 14, 1964, Ser. No. 78,632
Term of patent 14 years
(Cl. D9—2)



203,156
HINGE
Raymond Tintary, Covina, and Anthony Joseph Carsello, Hollywood, Calif., assignors to Ajax Hardware Manufacturing Corp., City of Industry, Calif., a corporation of California
Filed Mar. 3, 1965, Ser. No. 84,061
Term of patent 14 years
(Cl. D10—9)



203,157
TENT
George Carl Hoehne, Bellerose Village, N.Y., assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
Filed Sept. 22, 1964, Ser. No. 81,835
Term of patent 14 years
(Cl. D13—1)



203,158
BUILDING
Arthur E. Bradley, 2138 Nottingham Drive, Salina, Kans.
Filed Oct. 23, 1964, Ser. No. 82,292
Term of patent 14 years
(Cl. D13—1)



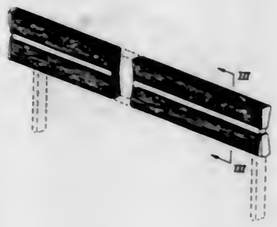
203,159
RAILING POST
Louis Blum, Pittsburgh, Pa., assignor to Blumcraft of Pittsburgh, Pittsburgh, Pa.
Filed Mar. 5, 1959, Ser. No. 54,864
Term of patent 14 years
The portion of the term of the patent subsequent to Apr. 23, 1977, has been disclaimed
(Cl. D13—7)



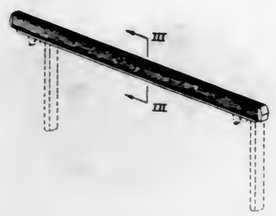
203,160
RAILING
Louis Blum, 2312 Tilbury St., and William J. Horgan, Jr., 1299 Folkstone Drive, both of Pittsburgh, Pa.
Filed Dec. 16, 1964, Ser. No. 83,050
Term of patent 14 years
(Cl. D13—7)



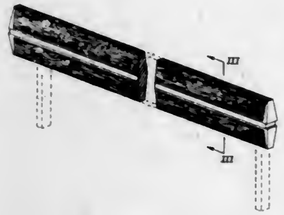
203,161
RAILING
Louis Blum, 2312 Tilbury St., and William J. Horgan, Jr., 1299 Folkstone Drive, both of Pittsburgh, Pa.
Filed Dec. 16, 1964, Ser. No. 83,051
Term of patent 14 years
(Cl. D13—7)



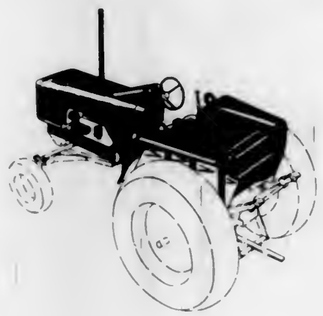
203,162
RAILING
Louis Blum, 2312 Tilbury St., and William J. Horgan, Jr., 1299 Folkstone Drive, both of Pittsburgh, Pa.
Filed Dec. 16, 1964, Ser. No. 83,054
Term of patent 14 years
(Cl. D13—7)



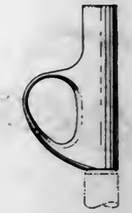
203,163
RAILING
Louis Blum, 2312 Tilbury St., and William J. Horgan, Jr., 1299 Folkstone Drive, both of Pittsburgh, Pa.
Filed Dec. 16, 1964, Ser. No. 83,060
Term of patent 14 years
(Cl. D13—7)



203,164
TRACTOR
Robert K. Stortz, Brookfield, and Gerald C. Fisher, West Allis, Wis., assignors to Allis-Chalmers Manufacturing Company, Milwaukee, Wis., a corporation of Delaware
Filed Mar. 22, 1965, Ser. No. 84,391
Term of patent 14 years
(Cl. D14—3)



203,165
TRIGGER FOR A GEAR SHIFT STICK
George H. Hurst, Jr., Abington, Pa. (341 W. Glenside Ave., Glenside, Pa.)
Filed Oct. 22, 1964, Ser. No. 82,279
Term of patent 14 years
(Cl. D14—6)



203,166
MUFFLER
Eldred G. Straw, Grass Lake, Mich., assignor to Walker Manufacturing Company, a corporation of Delaware
Filed Feb. 3, 1965, Ser. No. 83,680
Term of patent 14 years
(Cl. D14—6)



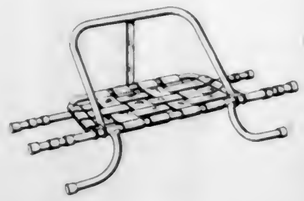
203,167
CHAIR FRAME
Ronald Beckman, New York, N.Y., and Rodney Y. Hatanaka, Montreal, Quebec, Canada, assignors to Herman Miller, Inc., Zeeland, Mich., a corporation of Michigan
Filed Jan. 25, 1963, Ser. No. 73,311
Term of patent 14 years
(Cl. D15—1)



203,168
CHAIR
Jean Paul Giacomini, York, Pa., assignor to Thonet Industries, Inc., a corporation of Delaware
Filed Feb. 11, 1965, Ser. No. 83,782
Term of patent 14 years
(Cl. D15—1)



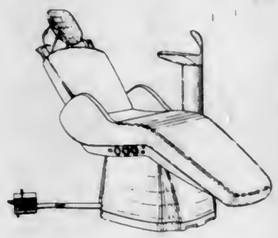
203,169
CHILD'S SAFETY SEAT FOR A BARBER'S CHAIR
Thomas J. Collier, 109 N. Hanson St., Easton, Md.
Filed Apr. 13, 1965, Ser. No. 84,756
Term of patent 14 years
(Cl. D15—1)



203,170
CHAIR FRAME
Ronald Beckman, New York, N.Y., and Rodney Y. Hatanaka, Montreal, Quebec, Canada, assignors to Herman Miller, Inc., Zeeland, Mich., a corporation of Michigan
Original design application Jan. 25, 1963, Ser. No. 73,311. Divided and this application Mar. 30, 1965, Ser. No. 84,974
Term of patent 14 years
(Cl. D15—1)



203,171
DENTAL CHAIR
Daryl Raymond Beach, Fushimi-ku, Kyoto, Japan, assignor to Kabushiki Kaisha Morita Seisakusho, Fushimi-ku, Kyoto, Japan, a corporation of Japan
Filed Mar. 19, 1964, Ser. No. 79,089
Term of patent 14 years
(Cl. D15—3)



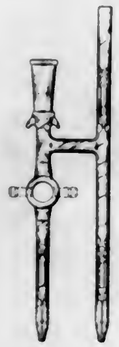
203,172
AUDITORIUM CHAIR FOR MOUNTING TO AN AUXILIARY BASE
Frank E. Kehoe, 1498 W. California Ave., St. Paul, Minn.
Filed Nov. 6, 1964, Ser. No. 82,502
Term of patent 14 years
(Cl. D15—8)



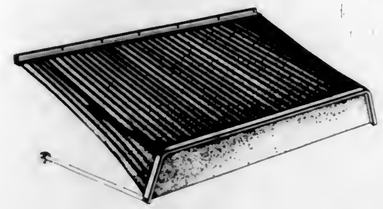
203,173
LADDER
Howard L. Chubbs, 736 Hanley St., Gary, Ind.
Filed Dec. 10, 1964, Ser. No. 82,976
Term of patent 14 years
(Cl. D15—8)



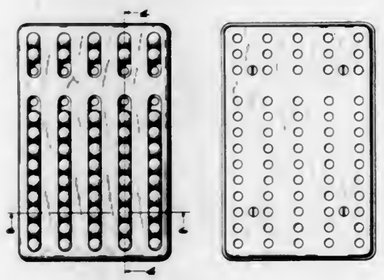
203,174
BURET OR SIMILAR ARTICLE
Ludwig Luft, Old Winter St., Lincoln, Mass.
Filed May 17, 1965, Ser. No. 85,294
Term of patent 14 years
(Cl. D16—1)



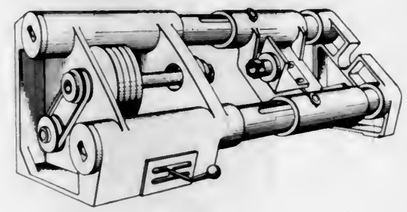
203,175
AWNING
Burton L. Siegal and Nicholas S. Kategianis, Chicago, Ill., assignors to Kenron Awning and Window Corporation, Chicago, Ill., a corporation of Illinois
Filed Mar. 16, 1964, Ser. No. 79,010
Term of patent 14 years
(Cl. D21—6)



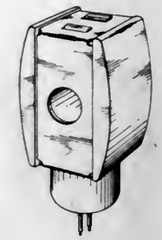
203,176
ABACUS
Gerald E. Kardach, 708 Edgewood Ave., South Milwaukee, Wis.
Filed Mar. 19, 1965, Ser. No. 84,357
Term of patent 14 years
(Cl. D25—1)



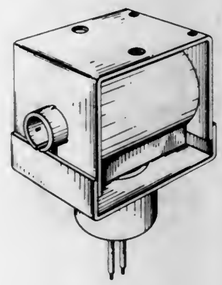
203,177
FRICTION WELDING MACHINE
James H. Edwards, Newtown, Conn., assignor to American Machine & Foundry Company, a corporation of New Jersey
Filed Oct. 2, 1963, Ser. No. 76,837
Term of patent 14 years
(Cl. D26—1)



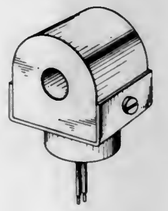
203,178
ENCAPSULATED ELECTRICAL COIL
James A. Foerster, Fort Wayne, Ind., assignor to Wabash Magnetics, Inc., Wabash, Ind., a corporation of Indiana
Filed Sept. 3, 1964, Ser. No. 81,586
Term of patent 14 years
(Cl. D26—1)



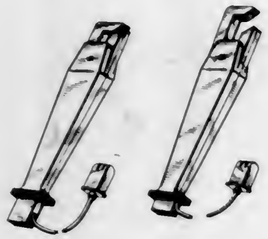
203,179
ENCAPSULATED ELECTRICAL COIL
James A. Foerster, Fort Wayne, Ind., assignor to Wabash Magnetics, Inc., Wabash, Ind., a corporation of Indiana
Filed Sept. 3, 1964, Ser. No. 81,587
Term of patent 14 years
(Cl. D26—1)



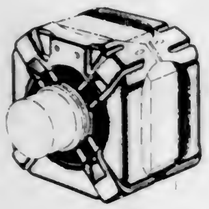
203,180
ENCAPSULATED ELECTRICAL COIL
James A. Foerster, Fort Wayne, Ind., assignor to Wabash Magnetics, Inc., Wabash, Ind., a corporation of Indiana
Filed Sept. 3, 1964, Ser. No. 81,588
Term of patent 14 years
(Cl. D26—1)



203,181
SPLIT CORE PROBE FOR AN A.C. VOLTMETER-AMMETER
Samuel J. Koch, Great Neck, N.Y., assignor to SOSS Manufacturing Company, Detroit, Mich., a corporation of Maine
Filed Dec. 29, 1964, Ser. No. 83,203
Term of patent 14 years
(Cl. D26—1)



203,182
DYNAMOELECTRIC MACHINE
Charles W. Otto, De Kalb, Ill., assignor to General Electric Company, a corporation of New York
Filed July 26, 1963, Ser. No. 75,992
Term of patent 14 years
(Cl. D26—5)



203,183
HIGH VOLTAGE CROSS-ARM ATTACHMENT FOR A TRANSMISSION LINE POLE
Paul A. Millerbernd, Winsted, Minn.
Filed Aug. 3, 1964, Ser. No. 81,142
Term of patent 14 years
(Cl. D26—12)



203,184
PUSH-BUTTON ELECTRIC SWITCH
Norman William Stevenson, Macclesfield, England, assignor to V. & E. Friedland Limited, Macclesfield, England, a British company
Continuation of design applications Ser. No. 69,206 and Ser. No. 69,210, Mar. 12, 1962. This application June 24, 1965, Ser. No. 86,191
Claims priority, application Great Britain Sept. 13, 1961
Term of patent 14 years
(Cl. D26—13)



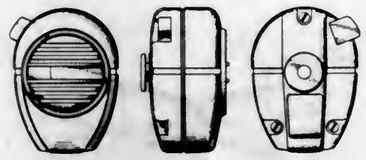
203,185
MEMO CLIP ATTACHMENT FOR A TELEPHONE OR SIMILAR ARTICLE
Norbert Leopoldi, 4180 Marine Drive, Chicago, Ill.
Filed Mar. 27, 1964, Ser. No. 79,222
Term of patent 14 years
(Cl. D26—14)



203,186
SPEAKER FOR TELEPHONE SYSTEMS
George Bruce Kamp, Springfield, Pa., assignor, by mesne assignments, to ITT Terryphone Corporation, Harrisburg, Pa., a corporation of Delaware
Filed July 9, 1964, Ser. No. 80,779
Term of patent 14 years
(Cl. D26—14)



203,187
MICROPHONE
Robert Louis Deschampe, West Chicago, Ill., assignor to Shure Brothers Incorporated, a corporation of Illinois
Filed Aug. 10, 1964, Ser. No. 81,230
Term of patent 14 years
(Cl. D26—14)



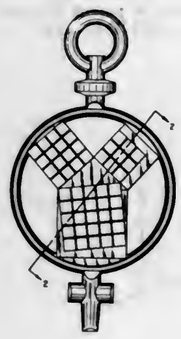
203,188
ORNAMENTAL PANEL TO SURMOUNT A FENCE
Deane L. Ackerman, 1505 Westridge Place, Casper, Wyo.
Filed Sept. 30, 1964, Ser. No. 81,940
Term of patent 14 years
(Cl. D28—1)



203,189
ORNAMENTAL PANEL TO SURMOUNT A FENCE
Deane L. Ackerman, 1505 Westridge Place, Casper, Wyo.
Filed Sept. 30, 1964, Ser. No. 81,943
Term of patent 14 years
(Cl. D28—1)



203,190
EMBLEMATIC KEY OR SIMILAR ARTICLE
James C. Eaves, 557 Culpepper Road, Lexington, Ky.
Filed Apr. 21, 1964, Ser. No. 79,635
Term of patent 14 years
(Cl. D29—6)



203,191
URN
Michael M. Kaplan, 175 Central Ave., Passaic, N.J.
Filed Apr. 7, 1965, Ser. No. 84,659
Term of patent 14 years
(Cl. D29—28)



203,192
ARTICULATED FISHING LURE
William F. Hiatt, Rte. 10, Lexington, N.C.
Filed Oct. 16, 1964, Ser. No. 82,196
Term of patent 14 years
(Cl. D31—4)



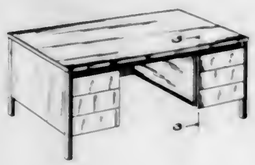
203,193
FISHING LURE
Carl Napier, 5643 3rd St., Mason, Ohio
Filed May 10, 1965, Ser. No. 85,215
Term of patent 14 years
(Cl. D31—4)



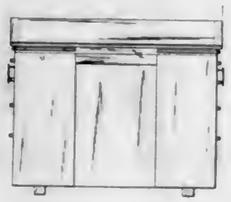
203,194
CHEST
Bert J. Klein and Andre Bus, Altavista, and John B. Thorn, Lynchburg, Va.
Filed Apr. 19, 1965, Ser. No. 84,849
Term of patent 14 years
(Cl. D33—6)



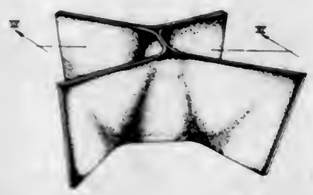
203,195
DESK
John J. Hughes, Jr., Milwaukee, Wis., assignor to Invincible Metal Furniture Company, Manitowoc, Wis., a corporation of Wisconsin
Filed Oct. 20, 1964, Ser. No. 82,247
Term of patent 14 years
(Cl. D33—7)



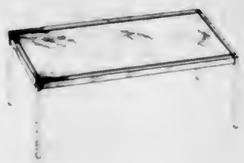
203,196
DRAWING DESK
Peter P. Druskis, 3100 Canterbury Road, Bay City, Mich.
Filed Nov. 4, 1964, Ser. No. 82,472
Term of patent 14 years
(Cl. D33—7)



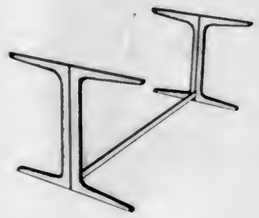
203,197
FURNITURE BASE
Ronald Beckman, New York, N.Y., and Rodney Y. Hatanaka, Montreal, Quebec, Canada, assignors to Herman Miller, Inc., Zeeland, Mich., a corporation of Michigan
Filed Jan. 25, 1963, Ser. No. 73,310
Term of patent 14 years
(Cl. D33—14)



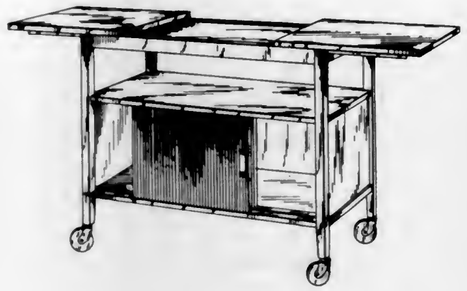
203,198
TABLE OR SIMILAR ARTICLE
Moses Richard Schultz, Barto, Pa., assignor to Knoll Associates Inc., New York, N.Y., a corporation of New York
Filed Dec. 6, 1963, Ser. No. 77,697
Term of patent 14 years
(Cl. D33—14)



203,199
FURNITURE PEDESTAL
Ronald H. Beckman, New York, N.Y., assignor to Herman Miller, Inc., Zeeland, Mich., a corporation of Michigan
Filed Nov. 27, 1964, Ser. No. 82,824
Term of patent 14 years
(Cl. D33—14)



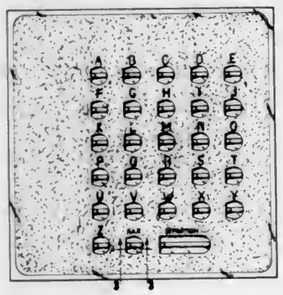
203,200
SERVING CART
Bert J. Klein and Andre Bus, Altavista, and John B. Thorn, Lynchburg, Va.
Filed Apr. 19, 1965, Ser. No. 84,862
Term of patent 14 years
(Cl. D33—14)



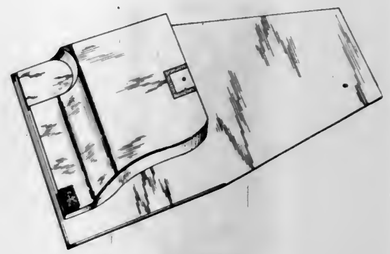
203,201
TOY ANIMAL FIGURE
Giuseppe Garella, Turin, Piedmont, Italy
Filed Apr. 26, 1965, Ser. No. 84,953
Term of patent 7 years
(Cl. D34—2)



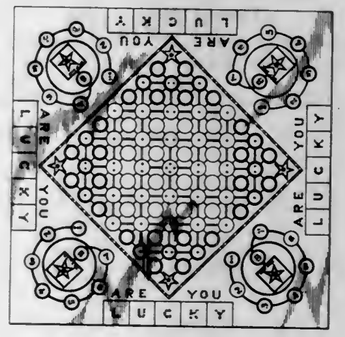
203,202
GAME BOARD
Richard G. B. Hanson, Racine, Wis., assignor to The Watkins-Strathmore Company, Racine, Wis., a corporation of Maryland
Filed May 14, 1964. Ser. No. 79,978
Term of patent 14 years
(Cl. D34—5)



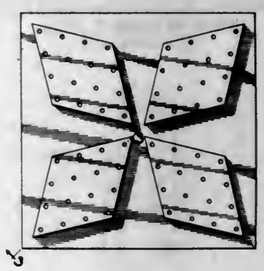
203,203
GOLF PUTTING AND DRIVING MAT
Maximilian Richard Speiser, 17 W. 60th St., New York 17, N.Y.
Filed Sept. 21, 1964, Ser. No. 81,792
Term of patent 14 years
(Cl. D34—5)



203,204
GAME BOARD
Jay Ward, Box 214, Huron, Ohio 44839
Filed Mar. 10, 1965, Ser. No. 84,186
Term of patent 14 years
(Cl. D34—5)



203,205
GAME BOARD
Axel G. Carlson, 902 Upham Road, Duluth, Minn.
Filed Mar. 15, 1965, Ser. No. 84,275
Term of patent 7 years
(Cl. D34—5)



203,206
COMBINED WATER AND PLANT FERTILIZER APPLICATOR
Joseph Cefalde, 29 Millitt Ave., Youngstown, Ohio
Filed June 24, 1964, Ser. No. 80,559
Term of patent 14 years
(Cl. D35—1)



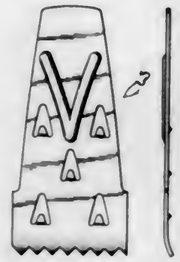
203,207
ROOT FEEDER OR THE LIKE
Ronald C. Kersh, 11 La Campana, Orinda, Calif.
Filed Apr. 20, 1965, Ser. No. 84,890
Term of patent 14 years
(Cl. D35—1)



203,208
MATTRESS CARRIER
Ernest C. Hillman, 831 S. Maryland St., Glendale, Calif.
Filed Sept. 4, 1964, Ser. No. 81,596
Term of patent 7 years
(Cl. D41—1)



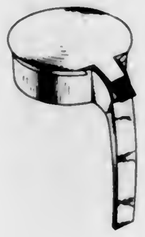
203,209
TOOL BLADE FOR CULINARY TONGS OR THE LIKE
Casimir F. Gruska, Chicago, Ill., assignor to Ekco Products Company, Chicago, Ill., a corporation of Delaware
Filed Oct. 16, 1964, Ser. No. 82,193
Term of patent 14 years
(Cl. D44—4)



203,210
COMPOTE OR THE LIKE
Walter I. Bieger, Minneapolis, Minn., assignor to Arthur Salm Inc., Chicago, Ill., a corporation of Illinois
Filed Jan. 8, 1965, Ser. No. 83,367
Term of patent 14 years
(Cl. D44—15)



203,211
COMBINED HANDLE AND POURING SPOUT
Karl Brocken, Aurora, Ill., assignor to Anfinsen Plastic Molding, Inc., a corporation of Illinois
Filed Jan. 11, 1965, Ser. No. 83,373
Term of patent 14 years
(Cl. D44—21)



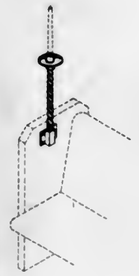
203,212
SHAKER DISPENSER OR SIMILAR ARTICLE
Angela D. Lisante, 85—60 116th St., Richmond Hill, N.Y.
Filed Feb. 1, 1965, Ser. No. 83,647
Term of patent 14 years
(Cl. D44—22)



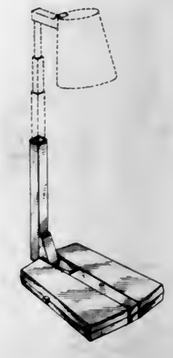
203,213
SERVING SPOON
Warren Wilson, 4633 Roxbury Road, Corona del Mar, Calif.
Filed Apr. 30, 1965, Ser. No. 85,048
Term of patent 14 years
(Cl. D44—29)



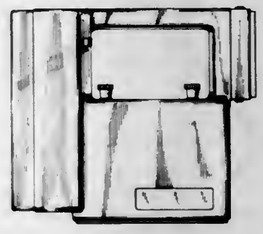
203,214
COMBINED CANDLESTICK AND BRACKET THEREFOR
Donald E. Woerner, Rochester, N.Y., assignor to Rochester Novelty Works, Inc., Rochester, N.Y., a corporation of New York
Filed Dec. 10, 1962, Ser. No. 72,788
Term of patent 14 years
(Cl. 48—2)



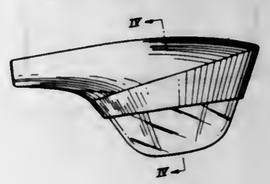
203,215
TABLE LAMP OR SIMILAR ARTICLE
Samuel J. Koch, Great Neck, N.Y., assignor to Sous Manufacturing Company, Detroit, Mich., a corporation of Nevada
Filed Apr. 22, 1965, Ser. No. 84,906
Term of patent 14 years
(Cl. D48—20)



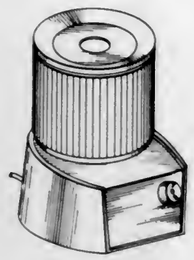
203,216
PORTABLE LANTERN
Nolan K. Rhoades, Beloit, Wis., assignor to The Electric Storage Battery Company, Philadelphia, Pa., a corporation of New Jersey
Filed Aug. 10, 1964, Ser. No. 81,229
Term of patent 14 years
(Cl. D48—24)



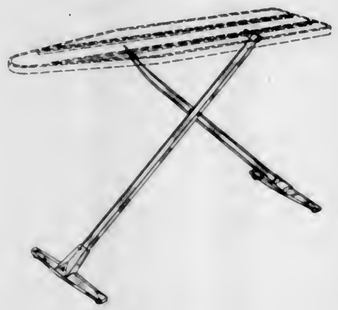
203,217
LUMINAIRE
Edmond B. Greenhaw, Memphis, Tenn., assignor to American Electric Manufacturing Corp., Southaven, Miss.
Filed Aug. 27, 1964, Ser. No. 81,478
Term of patent 14 years
(Cl. D48—31)



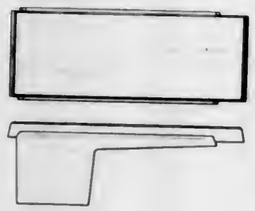
203,218
DENTURE CLEANER
Robert R. Harrison, Elyria, Ohio, assignor to The General Industries Company, Elyria, Ohio, a corporation of Ohio
Filed Oct. 9, 1964, Ser. No. 82,111
Term of patent 14 years
(Cl. D49—1)



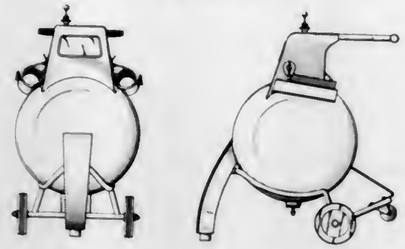
203,219
IRONING TABLE LEG UNIT
Donald J. Munson, Minneapolis, Minn., assignor to The J. R. Clark Company, Spring Park, Minn., a corporation of Minnesota
Filed Dec. 31, 1964, Ser. No. 83,242
Term of patent 14 years
(Cl. D49—1)



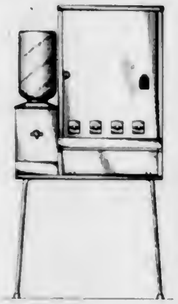
203,220
DOOR HANDLE
Leo J. Maffei, New Britain, Conn., assignor to Emhart Corporation, Bloomfield, Conn., a corporation of Connecticut
Filed Apr. 15, 1965, Ser. No. 84,804
Term of patent 14 years
(Cl. D50—3)



203,221
COMPRESSED AIR SUPPLY CART OR SIMILAR ARTICLE
Joseph A. Winger, Greenwich, Conn., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware
Filed Mar. 27, 1964, Ser. No. 79,218
Term of patent 14 years
(Cl. D52—2)



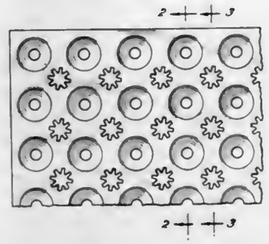
203,222
VENDING MACHINE
William C. Christine, Catasauqua, and Joseph E. Pierce, Allentown, Pa., assignors to Allen Electronics, Inc., Bethlehem, Pa., a corporation of Pennsylvania
Filed Oct. 1, 1964, Ser. No. 81,978
Term of patent 14 years
(Cl. D52—3)



203,223
CONTROLLER FOR MODEL RACING CARS OR SIMILAR ARTICLE
Henry S. Rose, Los Angeles, and James B. Russell, Altadena, Calif., assignors to American Russkit Company, Los Angeles, Calif., a corporation of California
Filed June 12, 1964, Ser. No. 80,378
Term of patent 14 years
(Cl. D52—6)



203,224
GRILLE MATERIAL
Millard Fillmore Harty, Jr., Mount Clemens, Mich., assignor to Harrington & King Perforating Co., Inc., Chicago, Ill., a corporation of Illinois
Filed Apr. 22, 1965, Ser. No. 84,913
Term of patent 14 years
(Cl. D54—2)



203,225
JUG
Martin Schnur, 220 St. Cloud Ave., West Orange, N.J., and Mel Appel, 9 Nottingham Road, Livingston, N.J.
Filed Dec. 18, 1964, Ser. No. 83,077
Term of patent 14 years
(Cl. D58—5)



203,226
JUG
Martin Schnur, 220 St. Cloud Ave., West Orange, N.J., and Mel Appel, 9 Nottingham Road, Livingston, N.J.
Filed Dec. 18, 1964, Ser. No. 83,084
Term of patent 14 years
(Cl. D58—5)



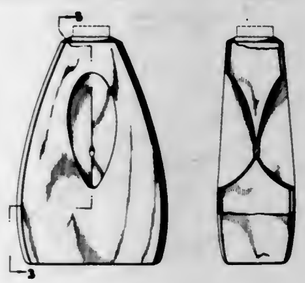
203,227
BOTTLE
George D. Utley, 197 Puritan Ave., Forest Hills, N.Y.
Filed Mar. 5, 1964, Ser. No. 78,892
Term of patent 14 years
(Cl. D58—6)



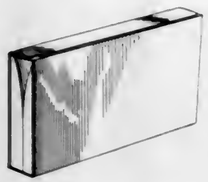
203,228
BOTTLE
John S. Frazer, Fair Lawn, N.J., assignor to Union Carbide Corporation, New York, N.Y., a corporation of New York
Filed July 2, 1964, Ser. No. 80,675
Term of patent 14 years
(Cl. D58—6)



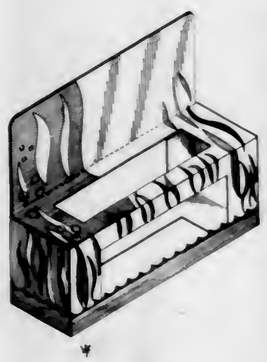
203,229
BOTTLE
John L. Szajna, Norridge, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Feb. 23, 1965, Ser. No. 83,938
Term of patent 14 years
(Cl. D58—6)



203,230
BOX OR SIMILAR ARTICLE
George A. Rutledge, Richmond, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed July 15, 1964, Ser. No. 80,880
Term of patent 14 years
(Cl. D58—12.6)



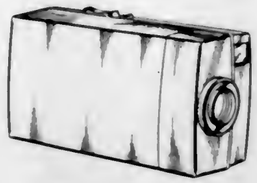
203,231
DISPLAY BOX
Albert Merrill Cohen, 3418 Edcrest Road, Baltimore, Md.
Filed Jan. 22, 1965, Ser. No. 83,573
Term of patent 7 years
(Cl. D58—12.6)



203,232
PORTABLE INSULATED CHEST
Logan W. Johnson, Minneapolis, Minn., assignor to Cronstroms Manufacturing, Inc., Minneapolis, Minn., a corporation of Minnesota
Filed Mar. 9, 1964, Ser. No. 78,908
Term of patent 14 years
(Cl. D58—17)



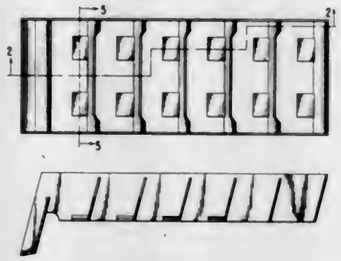
203,233
MOTION PICTURE CAMERA
Richard J. Olson, Pittsford, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Feb. 12, 1965, Ser. No. 83,796
Term of patent 14 years
(Cl. D61—1)



203,234
WRITING IMPLEMENT
Hisanao Momma, 1188 Nunodi-machi, Chofu City, Tokyo, Japan
Filed Dec. 14, 1964, Ser. No. 83,003
Claims priority, application Japan June 16, 1964
Term of patent 14 years
(Cl. D74—17)



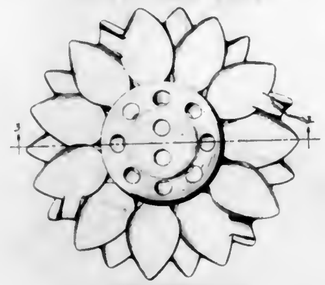
203,235
DISPLAY TRAY
Ralph A. Muscatiello, 24 Lancaster Lane, Norwood, Mass.
Filed Dec. 7, 1964, Ser. No. 82,925
Term of patent 14 years
(Cl. D80—9)



203,236
REFRIGERATED DISPLAY CASE
Oliver H. Thompson, 716 Cherry Ave., Big Rapids, Mich.
Filed Aug. 27, 1964, Ser. No. 81,480
Term of patent 14 years
(Cl. D80—11)



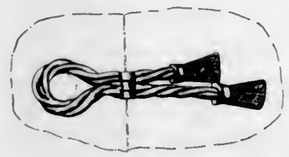
203,237
ASH TRAY
Monte M. Hoover, 509 N. Cherry St., Paulding, Ohio
Filed Sept. 16, 1964, Ser. No. 81,750
Term of patent 7 years
(Cl. D85—2)



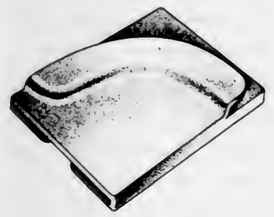
203,238
CIGARETTE HOLDER OR THE LIKE
Edith A. Kovacs, 2301 Bowmont Drive, Beverly Hills, Calif.
Filed May 18, 1964, Ser. No. 80,012
Term of patent 14 years
(Cl. D85—8)



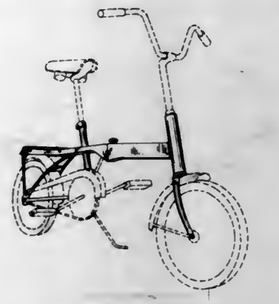
203,239
HANDBAG CLASP
Richard Koret, New York, N.Y., assignor to Koret, Inc., New York, N.Y., a corporation of New York
Filed Dec. 30, 1964, Ser. No. 83,216
Term of patent 3½ years
(Cl. D87—2)



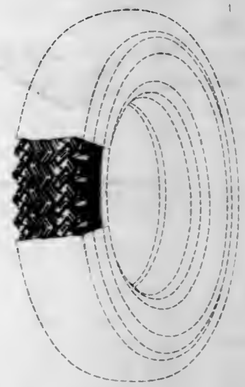
203,240
HOLDER FOR VEHICLE REGISTRATION CERTIFICATES
Paul J. McCreary, 4621 Cortland Drive, Corona del Mar, Calif.
Filed Feb. 16, 1965, Ser. No. 83,828
Term of patent 14 years
(Cl. D87—3)



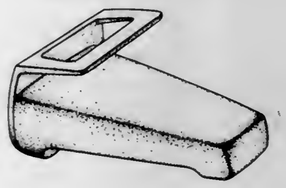
203,241
BICYCLE
Alexander B. Musichuk, Parma, Ohio, assignor to The M. T. & D. Company, a corporation of Ohio
Filed Mar. 4, 1965, Ser. No. 84,085
Term of patent 14 years
(Cl. D90—8)



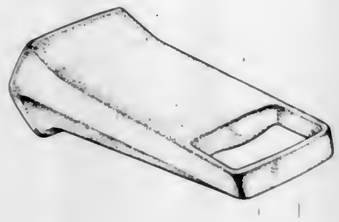
203,242
TIRE
James F. Newman, St. Clair Shores, and John W. Taylor, Grosse Pointe Farms, Mich., Arthur E. Benson, Geneva, Switzerland, and Wilhelm Rutge, Ellendorf, Aachen Germany, assignors to United States Rubber Company New York, N.Y., a corporation of New Jersey
Filed Nov. 9, 1964, Ser. No. 82,529
Term of patent 14 years
(Cl. D90—20)



203,243
COMBINED BATHTUB SPOUT AND HAND GRIP
Jack L. Bilkiss, 913 N. Los Angeles St., Santa Monica, Calif.
Filed Sept. 21, 1964, Ser. No. 81,800
Term of patent 14 years
(Cl. D91—3)



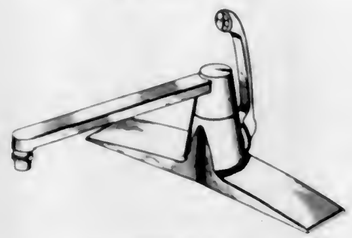
203,244
COMBINED BATHTUB SPOUT AND HAND GRIP
Jack L. Bilkiss, 913 N. Los Angeles St., Santa Monica, Calif.
Filed Sept. 21, 1964, Ser. No. 81,801
Term of patent 14 years
(Cl. D91—3)



203,245
COMBINED BATHTUB SPOUT AND HAND GRIP
Jack L. Bilkiss, 913 N. Los Angeles St., Santa Monica, Calif.
Filed Sept. 21, 1964, Ser. No. 81,802
Term of patent 14 years
(Cl. D91—3)



203,246
SINGLE LEVER VALVE FIXTURE
Homer M. Harvey, Los Angeles, and Dale H. Hart, Long Beach, Calif., assignors to Harvey Aluminum (Incorporated), Torrance, Calif., a corporation of California
Filed Oct. 27, 1964, Ser. No. 82,338
Term of patent 14 years
(Cl. D91—3)



203,247
SEAT BELT MATERIAL
Osbert C. H. Hughes, Hopewell, Va., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York
Filed Mar. 17, 1964, Ser. No. 79,047
Term of patent 14 years
(Cl. D92—26)



LIST OF REISSUE PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 14TH DAY OF DECEMBER, 1965

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

Aircoustic Co., Inc.: *See*—
Schutt, Jerome W. Re. 25,948.
Andre, Jean D.: *See*—
Andre, Noble. Re. 25,949.
Andre, Noble (deceased), by J. D. Noble, executrix, to St. Regis Paper Co. Carrier for cans. Re. 25,949, 12–14–65, Cl. 206—65.
Automatic Canteen Co. of America: *See*—
Mueller, Richard J., and Johnson. Re. 25,950.
Bain, Charles K. Method and apparatus for sinking mine shafts Re. 25,946, 12–14–65, Cl. 61—40.
Bettcher Industries, Inc.: *See*—
Bettcher, Louis A. Re. 25,947.
Bettcher, Louis A., to Bettcher Industries, Inc. Trimming and slicing device. Re. 25,947, 12–14–65, Cl. 30—276.
Brenner, Abe. Zipper foot device Re. 25,945, 12–14–65, Cl. 112—151.
Davids, John H., to Desalination Plants (Developers of Zarchine Process) Ltd. Means for freezing exposure of salt water purification system. Re. 25,940, 12–14–65, Cl. 62—123.
Desalination Plants (Developers of Zarchin Process) Ltd.: *See*—
Davids, John H. Re 25,940.
Grace, W. R. & Co.: *See*—
Gregorian, Razmic S. Re. 25,941.
Gregorian, Razmic S., to W. R. Grace & Co. Polyethylene composition and process for crosslinking Re. 25,941, 12–14–65, Cl. 260—94.9.
Hoover Co., The: *See*—
Krammes, Don C. Re. 25,939.
Johnson, James: *See*—
Mueller, Richard J., and Johnson. Re. 25,950
Krammes, Don C., to The Hoover Co. Unitary floor scrubbing and drying appliance. Re. 25,939, 12–14–65, Cl. 15—320.
Lawson, David E Foam plastic article of furniture. Re. 25,943, 12–14–65, Cl. 297—455.
Mueller, Richard J., and J. Johnson, to Automatic Canteen Co. of America. Dispensing units. Re. 25,950, 12–14–65, Cl. 62—344
Nachman Corp.: *See*—
Nachman, Fred A., Jr. Re. 25,951.
Nachman, Fred A., Jr., to Nachman Corp. Multiple coil spring assembly Re. 25,951, 12–14–65, Cl. 5—246.
North American Aviation, Inc.: *See*—
Rasor, Ned S. Re. 25,944.
Pankove, Jacques I., to Radio Corp. of America. Semi-conductor devices. Re. 25,952, 12–14–65, Cl 148—33.
Radio Corp. of America: *See*—
Pankove, Jacques I. Re. 25,952.
Rasor, Ned S. Thermionic diode converter system. Re. 25,944, 12–14–65, Cl. 318—138.
Reynolds, Elmer N. Sprinkler head Re. 25,942, 12–14–65, Cl. 239—206.
St. Regis Paper Co.: *See*—
Andre, Noble. Re. 25,949.
Schutt, Jerome W., to Aircoustic Co., Inc. Vented acoustic panel. Re. 25,948, 12–14–65, Cl. 98—40.

LIST OF DESIGN PATENTEES

Ackerman, Deane L. Ornamental panel to surmont a fence. 203,188, 12–14–65, Cl. D28—1.
Ackerman, Deane L. Ornamental panel to surmount a fence. 203,189, 12–14–65, Cl. D28—1.
Ajax Hardware Mfg. Corp.: *See*—
Tintary, Raymond, and Carsello. 203,156.
Allen Electronics, Inc.: *See*—
Christine, William C., and Pierce. 203,222.
Allied Chemical Corp.: *See*—
Hughes, Osbert C. H. 203,247.
Allis-Chalmers Mfg. Co.: *See*—
Stortz, Robert K., and Fischer. 203,164.
American Electric Mfg. Corp.: *See*—
Greenhaw, Edmond B. 203,217.
American Machine & Foundry Co.: *See*—
Edwards, James H. 203,177.
American Russkit Co.: *See*—
Rose, Henry S., and Russell. 203,223.
Anfinsen Plastic Molding, Inc.: *See*—
Brocken, Karl. 203,211.
Appell, Mel: *See*—
Schnur, Martin, and Appel. 203,225.
Schnur, Martin, and Appel. 203,226.
Beach, Daryl R., to Kabushiki Kaisha Morita Seisakusho. Dental chair. 203,171, 12–14–65, Cl. D15—3.
Beckman, Ronald, and R. Y. Hatanaka, to Herman Miller, Inc. Chair frame. 203,167, 12–14–65, Cl. D15—1.
Beckman, Ronald, and R. Y. Hatanaka, to Herman Miller, Inc. Chair frame. 203,170, 12–14–65, Cl. D15—1.
Beckman, Ronald, and R. Y. Hatanaka, to Herman Miller, Inc. Furniture base. 203,197, 12–14–65, Cl. D33—14.
Beckman, Ronald H., to Herman Miller, Inc. Furniture pedestal. 203,199, 12–14–65, Cl. D33—14.
Benson, Arthur E.: *See*—
Newman, James F., Taylor, Benson, and Rutge. 203,242.
Bieger, Walter I., to Arthur Salm, Inc. Compote or the like. 203,210, 12–14–65, Cl. D44—15.
Bilkiss, Jack L. Combined bathtub spout and hand grip. 203,243, 12–14–65, Cl. D91—3.
Bilkiss, Jack L. Combined bathtub spout and hand grip. 203,244, 12–14–65, Cl. D91—3.
Bilkiss, Jack L. Combined bathtub spout and hand grip. 203,245, 12–14–65, Cl. D91—3.
Blum, Louis, to Blumcraft of Pittsburgh. Railing post. 203,159, 12–14–65, Cl. D13—7.
Blum, Louis, and W. J. Horgan, Jr. Railing. 203,160, 12–14–65, Cl. D13—7.
Blum, Louis, and W. J. Horgan, Jr. Railing. 203,161, 12–14–65, Cl. D13—7.
Blum, Louis, and W. J. Horgan, Jr. Railing. 203,162, 12–14–65, Cl. D13—7.
Blum, Louis, and W. J. Horgan, Jr. Railing. 203,163, 12–14–65, Cl. D13—7.
Blumcraft of Pittsburgh: *See*—
Blum, Louis. 203,159.
Booth, Jack J., and W. C. Branch. Counter top drink dispenser. 203,150, 12–14–65, Cl. D2—3.
Bradley, Arthur E. Building. 203,158, 12–14–65, Cl. D13—1.
Branch, William C.: *See*—
Booth, Jack J., and Branch. 203,150.
Brocken, Karl, to Anfinsen Plastic Molding, Inc. Combined handle and pouring spout. 203,211, 12–14–65, Cl. D44—21.
Buegeleisen, Joseph, Co.: *See*—
Marchello, John L. 203,152.
Marchello, John L. 203,153.
Bus, Andre: *See*—
Klein, Bert J., Bus, and Thorn. 203,194.
Klein, Bert J., Bus, and Thorn. 203,200.
Carlson, Axel G. Game board. 203,205, 12–14–65, Cl. D34—5.
Cefalde, Joseph. Combined water and plant fertiliser applicator. 203,206, 12–14–65, Cl. D35—1.
Christine, William C., and J. E. Pierce, Allen Electronics, Inc. Vending machine. 203,222, 12–14–65, Cl. D52—3.
Chubbs, Howard L. Ladder. 203,173, 12–14–65, Cl. D15—8.
Clark, J. R., Co., The: *See*—
Munson, Donald J. 203,219.
Cohen, Albert M. Display box. 203,231, 12–14–65, Cl. D58—12.6.
Collier, Thomas J. Child's safety seat for a barber's chair. 203,169, 12–14–65, Cl. D15—1.
Continental Can Co.: *See*—
Szajna, John L. 203,229.
Cronstroms Mfg., Inc.: *See*—
Johnson, Logan W. 203,232.
Deschamps, Robert L., to Shure Brothers Inc. Microphone. 203,187, 12–14–65, Cl. D26—14.
Druskis, Peter P. Drawing desk. 203,196, 12–14–65, Cl. D33—7.
Eastman Kodak Co.: *See*—
Olson, Richard J. 203,233.
Eaves, James C. Emblematic key or similar article. 203,190, 12–14–65, Cl. D29—6.
Edwards, James H., to American Machine & Foundry Co. Friction welding machine. 203,177, 12–14–65, Cl. D26—1.
Easley, Wayne, to Seven-Up Bottling Co. of Oakland. Valve control panel for beverage dispensing nozzle. 203,151, 12–14–65, Cl. D2—3.
Ekco Products Co.: *See*—
Gruska, Casimir F. 203,209.

Electric Storage Battery Co., The: *See*—
Rhoades, Nolan K. 203,216.
Embart Corp.: *See*—
Maffei, Leo J. 203,220.
Fischer, Gerald C.: *See*—
Stortz, Robert K., and Fischer. 203,164.
Foerster, James A., to Wabash Magnetics, Inc. Encapsulated electrical coil. 203,178, 12–14–65, Cl. D26—1.
Foerster, James A., to Wabash Magnetics, Inc. Encapsulated electrical coil. 203,179, 12–14–65, Cl. D26—1.
Foerster, James A., to Wabash Magnetics, Inc. Encapsulated electrical coil. 203,180, 12–14–65, Cl. D26—1.
Frazer, John S., to Union Carbide Corp. Bottle. 203,228, 12–14–65, Cl. D58—6.
Friedland, V. & E., Ltd.: *See*—
Stevenson, Norman D. 203,184.
Garella, Giuseppe. Toy animal figure. 203,201, 12–14–65, Cl. D34—2.
General Electric Co.: *See*—
Otto, Charles W. 203,182.
General Industries Co., The: *See*—
Harrison, Robert R. 203,218.
Giacomini, Jean P., to Thonet Industries, Inc. Chair. 203,168, 12–14–65, Cl. D15—1.
Goodrich, B. F., Co., The: *See*—
Hoehne, George C. 203,157.
Greenhaw, Edmond B., to American Electric Mfg. Corp. Luminaire. 203,217, 12–14–65, Cl. D48—31.
Gruska, Casimir F., to Ekco Products Co. Tool blade for culinary tongs or the like. 203,209, 12–14–65, Cl. D44—4.
Hanson, Richard G. B., to The Watkins-Strathmore Co. Game board. 203,202, 12–14–65, Cl. D34—5.
Harrison, Robert R., to The General Industries Co. Denture cleaner. 203,218, 12–14–65, Cl. D49—1.
Harry, Henry A. Slide necktie. 203,154, 12–14–65, Cl. D3—16.
Hart, Dale H.: *See*—
Harvey, Homer M., and Hart. 203,246.
Harty, Millard F., Jr., to Perforating Co., Inc. Grille material. 203,224, 12–14–65, Cl. D54—2.
Harvey Aluminum (Inc.): *See*—
Harvey, Homer M., and Hart. 203,246.
Harvey, Homer M., and D. H. Hart, to Harvey Aluminum (Inc.). Single lever valve fixture. 203,246, 12–14–65, Cl. D91—3.
Hatanaka, Rodney Y.: *See*—
Beckman, Ronald, and Hatanaka. 203,167.
Beckman, Ronald, and Hatanaka. 203,170.
Beckman, Ronald, and Hatanaka. 203,197.
Hiatt, William F. Articulated fishing lure. 203,192, 12–14–65, Cl. D31—4.
Hillman, Ernest C. Mattress carrier. 203,208, 12–14–65, Cl. D41—1.
Hocutt, R. Hovan, and T. E. Mullinax, to Pneumafil Corp. Combination air filtering and collecting unit for textile waste products. 203,155, 12–14–65, Cl. D9—2.
Hoehne, George C., to The B. F. Goodrich Co. Tent. 203,157, 12–14–65, Cl. D13—1.
Hoover, Monte M. Ash tray. 203,237, 12–14–65, Cl. D85—2.
Horgan, William J., Jr.: *See*—
Blum, Louis, and Horgan. 203,160–3.
Hughes, John J., Jr., to Invincible Metal Furniture Co. Desk. 203,195, 12–14–65, Cl. D33—7.
Hughes, Osbert C. H., to Allied Chemical Corp. Seat belt material. 203,247, 12–14–65, Cl. D92—26.
Hurst, George H., Jr. Trigger for a gear shift stick. 203,165, 12–14–65, Cl. D14—6.
Invincible Metal Furniture Co.: *See*—
Hughes, John J., Jr. 203,195.
Itt Terryphone Corp.: *See*—
Kamp, George B. 203,186.
Johnson, Logan W., to Cronstroms Mfg., Inc. Portable insulated chest. 203,232, 12–14–65, Cl. D58—17.
Kabushiki Kaisha Morita Seisakusho: *See*—
Beach, Daryl R. 203,171.
Kamp, George B., to Itt Terryphone Corp. Speaker for telephone systems. 203,186, 12–14–65, Cl. D26—14.
Kaplan, Michael M. Urn. 203,191, 12–14–65, Cl. D29—28.
Kardach, Gerald E. Abacus. 203,176, 12–14–65, Cl. D25—1.
Kategianis, Nicholas S.: *See*—
Siegal, Burton L., and Kategianis. 203,175.
Kehoe, Frank E. Auditorium chair for mounting to an auxiliary base. 203,172, 12–14–65, Cl. D15—8.
Kenron Awning and Window Corp.: *See*—
Siegal, Burton L., and Kategianis. 203,175.
Kersh, Ronald C. Root feeder or the like. 203,207, 12–14–65, Cl. D35—1.
Klein, Bert J., A. Bus, and J. B. Thorn. Chest. 203,194, 12–14–65, Cl. D33—6.
Klein, Bert J., A. Bus, and J. B. Thorn. Serving cart. 203,200, 12–14–65, Cl. D33—14.
Knoll Associates Inc.: *See*—
Schultz, Moses R. 203,198.
Koch, Samuel J., to Soss Mfg. Co. Split core probe for an A.C. voltmeter-ammeter. 203,181, 12–14–65, Cl. D26—1.
Koch, Samuel J., to Soss Mfg. Co. Table lamp or similar article. 203,215, 12–14–65, Cl. D48—20.
Koret, Inc.: *See*—
Koret, Richard. 203,239.
Koret, Richard, to Koret, Inc. Handbag clasp. 203,239, 12–14–65, Cl. D87—2.
Kovacs, Edith A. Cigarette holder or the like. 203,238, 12–14–65, Cl. D85—3.
Leopoldi, Norbert. Memo clip attachment for a telephone or similar article. 203,185, 12–14–65, Cl. D26—14.
Lisante, Angela D. Shaker dispenser or similar article. 203,212, 12–14–65, Cl. D44—22.
Luft, Ludwig. Buret or similar article. 203,174, 12–14–65, Cl. D16—1.
M. T. & D. Co., The: *See*—
Musichuk, Alexander B. 203,241.
Maffei, Leo J., to Emhart Corp. Door handle. 203,220, 12–14–65, Cl. D50—3.
Marchello, John L., to Joseph Buegeleisen Co. Safety helmet. 203,152, 12–14–65, Cl. D3—13.
Marchello, John L., to Joseph Buegeleisen Co. Safety helmet. 203,153, 12–14–65, Cl. D3—13.
McCreary, Paul J. Holder for vehicle registration certificates. 203,240, 12–14–65, Cl. D87—3.
Miller, Herman, Inc.: *See*—
Beckman, Ronald, and Hatanaka. 203,167.
Beckman, Ronald, and Hatanaka. 203,170.
Beckman, Ronald, and Hatanaka. 203,197.
Beckman, Ronald H. 203,199.
Millerbernd, Paul A. High voltage cross-arm attachment for a transmission line pole. 203,183, 12–14–65, Cl. D26—12.
Momma, Hisanao. Writing implement. 203,234, 12–14–65, Cl. D74—17.
Munson, Donald J., to The J. R. Clark Co. Ironing table leg unit. 203,219, 12–14–65, Cl. D49—1.
Muscatiello, Ralph A. Display tray. 203,235, 12–14–65, Cl. D80—9.
Musichuk, Alexander B., to The M.T. & D. Co. Bicycle. 203,241, 12–14–65, Cl. D90—8.
Napier, Carl. Fishing lure. 203,193, 12–14–65, Cl. D31—4.
Newman, James F., J. W. Taylor, A. E. Benson, and W. Rutge, to United States Rubber Co. Tire. 203,242, 12–14–65, Cl. D90—20.
Olson, Richard J., to Eastman Kodak Co. Motion picture camera. 203,233, 12–14–65, Cl. D61—1.
Otto, Charles W., to General Electric Co. Dynamoelectric machine. 203,182, 12–14–65, Cl. D26—5.
Perforating Co., Inc.: *See*—
Harty, Millard F., Jr. 203,224.
Pierce, Joseph E.: *See*—
Christine, William C., and Pierce. 203,222.
Pneumafil Corp.: *See*—
Hocutt, R. Hovan, and Mullinax. 203,155.
Reynolds Metals Co.: *See*—
Rutledge, George A. 203,230.
Rhoades, Nolan K., to The Electric Storage Battery Co. Portable lantern. 203,216, 12–14–65, Cl. D48—24.
Rochester Novelty Works, Inc.: *See*—
Woerner, Donald E. 203,214.
Rose, Henry S., and J. B. Russell, to American Russkit Co. Controller for model racing cars or similar article. 203,223, 12–14–65, Cl. D52—6.
Russell, James B.: *See*—
Rose, Henry S., and Russell. 203,223.
Rutge, Wilhelm: *See*—
Newman, James F., Taylor, Benson, and Rutge. 203,242.
Rutledge, George A., to Reynolds Metals Co. Box or similar article. 203,230, 12–14–65, Cl. D58—12.6.
Salm, Arthur, Inc.: *See*—
Bieger, Walter I. 203,210.
Schnur, Martin, and M. Appel. Jug. 203,225, 12–14–65, Cl. D58—5.
Schnur, Martin, and M. Appel. Jug. 203,226, 12–14–65, Cl. D58—5.
Schultz, Moses R., to Knoll Associates Inc. Table or similar article. 203,198, 12–14–65, Cl. D33—14.
Seven-Up Bottling Co. of Oakland: *See*—
Easley, Wayne. 203,151.
Shure Bros. Inc.: *See*—
Deschamps, Robert L. 203,187.
Siegal, Burton L., and N. S. Kategianis, to Kenron Awning and Window Corp. Awning. 203,175, 12–14–65, Cl. D21—6.
Soss Mfg. Co.: *See*—
Koch, Samuel J. 203,181.
Koch, Samuel J. 203,215.
Speiser, Maximilian R. Golf putting and driving mat. 203,203, 12–14–65, Cl. D34—5.
Stevenson, Norman W., to V. & E. Friedland, Ltd. Push-button electric switch. 203,184, 12–14–65, Cl. D26—13.
Stortz, Robert K., and G. C. Fischer, to Allis-Chalmers Mfg. Co. Tractor. 203,164, 12–14–65, Cl. D14—3.
Straw, Eldred G., to Walker Mfg. Co. Muffler. 203,166, 12–14–65, Cl. D14—6.
Szajna, John L., to Continental Can Co. Bottle. 203,229, 12–14–65, Cl. D58—6.
Taylor, John W.: *See*—
Newman, James F., Taylor, Benson, and Rutge. 203,242.
Texaco Inc.: *See*—
Winger, Joseph A. 203,221.
Thompson, Oliver H. Refrigerated display case. 203,236, 12–14–65, Cl. D80—11.
Thonet Industries, Inc.: *See*—
Giacomini, Jean P. 203,168.
Thorn, John B.: *See*—
Klein, Bert J., Bus, and Thorn. 203,194.
Klein, Bert J., Bus, and Thorn. 203,200.
Tintary, Raymond, and A. J. Carsello, to Ajax Hardware Mfg. Corp. Hinge. 203,156, 12–14–65, Cl. D10—9.
Union Carbide Corp.: *See*—
Frazer, John S. 203,228.

United States Rubber Co.: *See*—
Newman, James F., Taylor, Benson, and Rutge. 203,242.
Utley, George D. Bottle. 203,227, 12–14–65, Cl. D58—6.
Wabash Magnetics, Inc.: *See*—
Foerster, James A. 203,178.
Foerster, James A. 203,179.
Foerster, James A. 203,180.
Walker Mfg. Co.: *See*—
Straw, Eldred G. 203,166.
Ward, Jay. Game board. 203,204, 12–14–65, Cl. D34—5.
Watkins-Strathmore Co., The: *See*—
Hanson, Richard G. B. 203,202.
Wilson, Warren. Serving spoon. 203,213, 12–14–65, Cl. D44—29.
Winger, Joseph A., to Texaco Inc. Compressed air supply cart or similar article. 203,221, 12–14–65, Cl. D52—2.
Woerner, Donald E., to Rochester Novelty Works, Inc. Combined candlestick and bracket therefor. 203,214, 12–14–65, Cl. D48—2.

LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 14TH DAY OF DECEMBER, 1965

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

ACF Industries, Inc.: *See*—
Anderson, Clifford E. 3,223,111.
Hochmuth, William R., Lowrey, and Natho. 3,223,380.
Mateer, Robert A. 3,223,954.
Nowlin, Ivan E. 3,222,782.

AG Pro Inc.: *See*—
Gribble, Donald J., and Bennett. 3,223,070.

AMP Inc.: *See*—
Esser, Wilhelm C. J., and Wilm. 3,223,961.
Hammell, Kemper M. 3,223,962.

Abate, Joseph, Jr., and M. Dreistadt, Sr., to Star Products, Inc. Brush making machine. 3,223,453, 12–14–65, Cl. 300—2.

Abbott, Bennett E., Jr., to Sun Oil Co. Seal and connector assembly. 3,223,959, 12–14–65, Cl. 339—94.

Abbott, Bert F.: *See*—
Pereue, Joseph H., Abbott, Bacon, and MacMillan. 3,222,794.

Abbott, Henry H., A. B. Brown, Jr., W. A. Depp, R. D. Fracassi, and R. D. Williams, to Bell Telephone Laboratories, Inc. Data communication system. 3,223,976, 12–14–65, Cl. 340—147.

Abramitis, Walter W., and R. A. Reck, to Armour and Co. Controlling tobacco sucker growth. 3,223,517, 12–14–65, Cl. 71—2.7.

Adam, Karl, W. Arend, R. Frick, and H. Haas, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Purification of aliphatic dinitriles. 3,223,724, 12–14–65, Cl. 260—465.8.

Adamjan, Ruben G.: *See*—
Nabiullin, Faat H., Adamjan, Gertsik, Ushko, Dolgov, Tselov, and Sharanov. 3,222,963.

Adams, Arthur R.: *See*—
Denton, Robert F. 3,223,086.

Adams, Cecil E., and G. E. DeVillers, to American Brake Shoe Co. Three-area vane type fluid pressure energy translating devices. 3,223,044, 12–14–65, Cl. 103—136.

Adams, Francis V.: *See*—
Rowley, Russell A., Adams, Clapper, and Hamburgen. 3,223,971.

Adams, Robert T., and P. S. Magee, to Chevron Research Corp. Borate ester alkylation. 3,223,744, 12–14–65, Cl. 260—671.

Adams, Roman A.: *See*—
Stone, Joseph J., Adams, Dahl, and Estock. 3,223,778.

Addor, Roger W., to American Cyanamid Co. Pesticidal monosulfur heterocyclic compositions. 3,223,585, 12–14–65, Cl. 167—33.

Adler, Arthur. Methods for improving pressed properties and characteristics of sintered powder metal compacts. 3,223,523, 12–14–65, Cl. 75—212.

Aebi, Hans: *See*—
Martin, Henry, Aebi, and Ebner. 3,223,721.

Aerojet Delft Corp.: *See*—
Knip, Dirk C. J. 3,223,235.

Aerojet-General Corp.: *See*—
Corbitt, Howard E. 3,223,859.
Sadownick, Eli M. 3,222,862.

Aeronca Mfg. Corp., The: *See*—
Wiegert, Robert E., and Byrne. 3,223,537.
Wiegert, Robert E., and Byrne. 3,223,538.

Aeroquip Corp.: *See*—
Reid, William P. 3,223,426.

Agfa Aktiengesellschaft: *See*—
Von König, Anita. 3,223,524.

Aire-Lite Industries, Inc.: *See*—
Lipof, Robert. 3,222,841.

Akin, Welling T., and I. Van Schoick, to The B/W Controller Corp. Automatic work pressure control system. 3,223,180, 12–14–65, Cl. 173—7.

Akustische u. Kino-Gerate Gesellschaft m.b.H.: *See*—
Weingartner, Bernhard. 3,223,782.

Albert Air Conveyor Corp.: *See*—
Albert, Douglas. 3,223,457.

Albert, Douglas, to Albert Air Conveyor Corp. Pneumatic fluidizing means. 3,223,457, 12–14–65, Cl. 302—53.

Albrecht, Kurt: *See*—
McKenna, James C., Albrecht, and McCracken. 3,223,646.

Albright, Franklin C., to The Bendix Corp. Overload indicating device for shock absorbers. 3,223,069, 12–14–65, Cl. 116—70.

Alderfer, Sterling W. Production of foamed plastic materials. 3,223,568, 12–14–65, Cl. 156—255.

Aldrich, Frank L., V. R. Usdn, and B. M. Vasta, to Melpar, Inc. Method of preparing immobilized serum cholinesterase and product thereof. 3,223,598, 12–14–65, Cl. 195—63.

Alexander, Fred L.: *See*—
Powers, Robert A., Thomas, and Alexander. 3,223,639.

Allen, Derek R., to Allen Medical Instrument Corp. Stethoscope with convertible receiver. 3,223,195, 12–14–65, Cl. 181—24.

Allen Medical Instrument Corp.: *See*—
Allen, Derek R. 3,223,195.

Allen, Richard C., to Continental Can Co., Inc. Snap ring closure seal for plastic containers. 3,223,278, 12–14–65, Cl. 220—60.

Allenbaugh, Howard M., 49% to D. L. Felton. Brake-housing cleaner. 3,222,707, 12–14–65, Cl. 15—345.

Allen-Bradley Co.: *See*—
Walters, Robert E. 3,223,803.

Alliance Machine Co., The: *See*—
Knikopf, Edward J. 3,223,257.

Allied Chemical Corp.: *See*—
Frazier, Thomas C. 3,223,656.
Gilbert, Everett E., and Yiannios. 3,223,516.
Templeton, Hugh E., and Summerville. 3,223,145.

Allis, Louis, Co., The: *See*—
Munson, Chester L. 3,223,864.

Allis-Chalmers Mfg. Co.: *See*—
Brill, Edward F. 3,223,860.

Allmanna Svenska Elektriska Aktiebolaget: *See*—
Helsing, Erik. 3,222,900.

Allmetal Weatherstrip Co.: *See*—
Collin, Paul N. and P. W. 3,222,836.

Alofs, Herman G. Secured slider-hook assembly. 3,222,743, 12–14–65, Cl. 24—165.

Alsman, Eugene M. Carton with dual locking flaps. 3,223,306, 12–14–65, Cl. 229—2.5.

Altman, Gerald. System of optical projection of images by reflex reflected illumination. 3,222,986, 12–14–65, Cl. 88—24.

Altobelli, John A., J. W. De Graff, and A. R. Heuser, to Interchemical Corp. Novel textile printing compositions and textile decorated therewith. 3,223,663, 12–14–65, Cl. 260—28.5.

Alvarez-Calderón, Alberto. Deflected slipstream system for aircraft. 3,223,356, 12–14–65, Cl. 244—13.

Amals Gjuteri Och Mekaniska Verstad, AB: *See*—
Gadde, Tore L. 3,223,341.

Ambler, Edward C.: *See*—
Coulter, Leland E., Ambler, Batson, Behm, Anthony, and Hamlin. 3,223,316.

American Air Filter Co., Inc.: *See*—
Hubbard, Arthur F. 3,223,155.

American Brake Shoe Co.: *See*—
Adams, Cecil E., and De Villers. 3,223,044.

American Can Co.: *See*—
Brejcha, Robert J., Bazell, and Radnik. 3,222,902.
Nicholson, Samuel S. 3,223,259.
Schniepp, Lester E. 3,223,672.
Spaulding, Harold E. 3,223,097.
Zundel, Arthur P. 3,223,277.

American Chain & Cable Co., Inc.: *See*—
Gilmore, William J., and Mesler. 3,222,858.

American Cyanamid Co.: *See*—
Addor, Roger W. 3,223,585.
Bikales, Norbert M., and Booth. 3,223,238.
Mosby, William L., and Silva. 3,223,716.
Savina, Anthony R. 3,223,543.
Savina, Anthony R. 3,223,544.

American Enka Corp.: *See*—
Busch, Max, and Hey. 3,222,893.

American Flange & Mfg. Co., Inc.: *See*—
Wheaton, Herbert F. 3,223,279.

American Instrument Co., Inc.: *See*—
Hampton, William C. 3,223,873.

American Machine & Foundry Co.: *See*—
Chen, William K.-W. 3,223,606.
Chen, William K.-W., Mintz, and Smith. 3,223,612.
Clausen, Sigurd. 3,222,969.
Fischer, Alfred O. 3,222,849.
Godfrey, Thomas A. 3,222,967.
Holloway, Robert L., and Grom. 3,223,572.
Moore, Thomas W. 3,223,894.

American Olean Tile Co., Inc.: *See*—
Schweiker, Malcolm A. 3,222,845.

American Optical Co.: *See*—
Wrigglesworth, Norman A. 3,222,987.

American Radiator & Standard Sanitary Corp.: *See*—
Anderson, Maynard E. 3,223,285.
Grahl, Darwin R. 3,223,137.
Grahl, Darwin R. 3,223,807.
Noakes, Thomas E. 3,222,690.
Noakes, Thomas E., Anderson, and Polkinghorn. 3,223,143.

American Seating Co.: *See*—
Dufendach, William R., and Applegate. 3,223,956.

American Tool Works Co., The: *See*—
Ross, Paul A., and Wessels. 3,222,955.

Amon, Maurice E. Attachments for mouthpiece of saxophones and like musical instruments. 3,222,974, 12–14–65, Cl. 84—383.

Amos-Thompson Corp.: *See*—
Kazimier, Julian C. 3,223,280.

Ampex Corp.: *See*—
Hofstad, Rolf B., and Swyryd. 3,223,929.

Amsted Industries Inc.: *See*—
Sylvester, Edmund Q. 3,222,735.

Anaconda Aluminum Co.: *See*—
Lunsford, Abner L. 3,222,898.
Smith, Addison R., II. 3,223,896.

Anaconda Wire and Cable Co.: *See*—
Morey, George W. 3,223,553.
Reynolds, Maurice, Jr. 3,222,721.

Anderson, Axel: *See*—
Lofgren, Charles O., and Anderson. 3,222,702.

Anderson, Clifford E., to ACF Industries, Inc. Integral valve and seat unit. 3,223,111, 12–14–65, Cl. 137—454.6.

Anderson, Maynard E., to American Radiator & Standard Sanitary Corp. Air-controlled liquid dispensing mechanism for washing machines. 3,223,285, 12–14–65, Cl. 222—70.

Anderson, Maynard E.: *See*—
Noakes, Thomas E., Anderson, and Polkinghorn. 3,223,143.

Anderson, William S., and J. Boor, Jr., to Shell Oil Co. Lubricants containing cyclohydrocarbon polymers and method of preparing said polymers. 3,223,638, 12–14–65, Cl. 252—59.

Andersson, Bengt I., to Nyby Bruks Aktiebolag. Method of electrolytic metal plating. 3,223,600, 12–14–65, Cl. 204—26.

Anspach, Robert, to United States of America, Navy. Double-layer warhead. 3,223,036, 12–14–65, Cl. 102—67.

Antalek, John J., to TRW Inc. Method of making a coupling device. 3,222,760, 12–14–65, Cl. 29—155.5.

Antalek, John J., to TRW, Inc. Coil form mounting arrangement for inductance devices. 3,223,951, 12–14–65, Cl. 336—92.

Anthony, John J.: *See*—
Coulter, Leland E., Ambler, Batson, Behm, Hamlin, and Anthony. 3,223,316.

Antron Mfg., Inc.: *See*—
Ryerson, Herbert R., and Busey. 3,223,915.

Apolloni, Gino M., H. A. Mackie, and W. J. Streetman, to General Motors Corp. Guided door hinge mechanism. 3,223,445, 12–14–65, Cl. 296—44.

Applegate, Merlin J.: *See*—
Dufendach, William R., and Applegate. 3,223,956.

Applied Developments Inc. of Texas: *See*—
Smith, Donald P., Zuercher, Luck, Hultsman, and Cook. 3,222,844.

Arbitman, Dorothy: *See*—
Falerni, Jack, and Arbitman. 3,223,295.

Archer-Daniels-Midland Co.: *See*—
Curtice, Gerald M., and Saunders. 3,223,659.
Fallstad, Harlan T., and Rheineck. 3,223,734.
Hansen, Louis I. 3,223,518.
Shulman, Garson P., McKillip, and Young. 3,223,730.

Arena, Guido. Torch for arc-oxygen underwater cutting and welding. 3,223,817, 12–14–65, Cl. 219—70.

Arend, Wolfgang: *See*—
Adam, Karl, Arend, Frick, and Haas. 3,223,724.

Armentrout, Everett C., and J. S. Sucro, to General Motors Corp. Variable timer switch. 3,223,798, 12–14–65, Cl. 200—61.69.

Armour and Co.: *See*—
Abramitis, Walter W., and Reck. 3,223,517.
Weprin, Harry W. 3,223,530.

Armstrong Cork Co.: *See*—
Bolgiano, Nicholas C. 3,223,678.
Brackbill, Thelma J. 3,223,675.
Eckert, Lewis W., and Celmer. 3,223,580.
Gaston, Jack E. 3,222,924.

Armstrong, Wilford J.: *See*—
Tornberg, Isidor, Broad, and Sugar. 3,222,966.

Arnall, Paul: *See*—
Greenhalgh, Norman, and Arnall. 3,223,710.

Arrowhead Engineering Corp.: *See*—
Sabo, Frank J. 3,222,761.
Sabo, Frank J. 3,223,004.

Arthur, Ronald H., to Royal Typewriter Co., Inc. Paper handling mechanism. 3,223,221, 12–14–65, Cl. 197—127.

Ashbrook, Clifford L., and W. G. Wing. Automatic control system for a piston operated valve. 3,223,112, 12–14–65, Cl. 137—458.

Ashurkoff, Peter, and W. L. Drayer, to General Motors Corp. Press-fitting apparatus having a flexural member driven by fluid operated vibrators. 3,222,767, 12–14–65, Cl. 29—252.

Ateliers de Constructions Electriques de Charleroi (ACEC): *See*—
Lejeune, Andre. 3,223,200.

Atkins, Alan J., and A. N. Bland, to Automotive Products Co. Ltd. Power transmission systems for vehicles. 3,222,947, 12–14–65, Cl. 74—336.

Atlantic Refining Co., The: *See*—
Cleary, James M. 3,223,187.

Atlantic Research Corp.: *See*—
De Groot, Walter R., and Lazerus. 3,223,171.
Robertson, Alvin J. 3,223,034.

Atomic Energy of Canada Ltd.: *See*—
Shewchenko, Alexander. 3,222,692.

Atteberry, Robert W., E. H. Keefer, and W. L. Wachtel, to Olin Mathieson Chemical Corp. Solid polysulfide rubber-decaborane high energy fuel and method of preparation. 3,223,563, 12–14–65, Cl. 149—19.

Attermeyer, Lawrence A.: *See*—
Dever, Lewis A., and Attermeyer. 3,222,956.

Aurin, Bernard J., III. Tube processing apparatus. 3,222,906, 12–14–65, Cl. 72—162.

Automatic Voting Machine Corp.: *See*—
Martin, Afton V., and Galbato. 3,223,317.

Automotive Products Co. Ltd.: *See*—
Atkins, Alan J., and Bland. 3,222,947.
Bainbridge, Wilfred N., and Bradbury. 3,223,206.
Chouings, Leslie C. 3,223,204.
Packer, Mervyn B. 3,223,459.

Ayer, Ronald M.: *See*—
Becker, William C., and Ayer. 3,223,233.
Becker, William C., and Ayer. 3,223,310.
Becker, William C., Ayer, and Watts. 3,223,311.

B/W Controller Corp., The: *See*—
Akin, Welling T., and Van Schoick. 3,223,180.

Baber, Aubrey V.: *See*—
Evans, Robert E., Prior, and Baber. 3,223,576.

Babisch, Lothar: *See*—
Elssfeld, Erich, and Babisch. 3,223,409.

Backstay Welt Co., Inc.: *See*—
Le Plae, George R. 3,222,769.

Bacon, Ernest M.: *See*—
Pereue, Joseph H., Abbott, Bacon, and MacMillan. 3,222,794.

Badin, Elmer J., to Celanese Corp. of America. Vinyl polymerization process using a cocatalyst of chromyl compound with organometallic compound. 3,222,688, 12–14–65, Cl. 260—88.7.

Badische Anilin-& Soda-Fabrik Aktiengesellschaft: *See*—
Adam, Karl, Arend, Frick, and Haas. 3,223,724.
Scholz, Heinrich, and Guenthert. 3,223,735.

Bahnson, Agnew H., Jr., deceased, by Wachovia Bank and Trust Co., executor. Electrical thrust producing device. 3,223,038, 12–14–65, Cl. 103—1.

Bainbridge, Wilfred N., and F. J. Bradbury, to Automotive Products Co. Ltd. Hydraulic locking mechanisms. 3,223,206, 12–14–65, Cl. 188—96.

Baker, Charles O., to Socony Mobil Oil Co., Inc. In situ retorting of oil shale. 3,223,158, 12–14–65, Cl. 166—11.

Baker, Clarence P. Oil burner nozzles. 3,223,331, 12–14–65, Cl. 239—464.

Baker, Eugene E., to Halliburton Co. Cementing apparatus. 3,223,160, 12–14–65, Cl. 166—27.

Baker Perkins Inc.: *See*—
Stram, George H. 3,224,556.

Baldt Anchor, Chain & Forge Division of Boston Metals Co., The: *See*—
Money, Fred B. 3,222,861.

Baldwin, D. H., Co.: *See*—
Munch, Walter, Jr., and Scherer. 3,223,768.

Baldwin-Gegenheimer Corp.: *See*—
Gegenheimer, Harold W., Stad, and Tobias. 3,223,294.

Ball, Frank J., M. S. Dimitri, and R. Schmut. Precipitated lignin and products containing same and the production thereof. 3,223,697, 12–14–65, Cl. 260—124.

Ball, Thomas M., to Chrysler Corp. Return flow carburetor. 3,223,392, 12–14–65, Cl. 261—27.

Banker, Oscar H. Selector valve. 3,223,122, 12–14–65, Cl. 137—625.4.

Banks, Ronald E.: *See*—
Hazeldine, Robert N., Banks, and McCreath. 3,223,689.

Baranowski, Leslie B.: *See*—
Topol, George J., and Baranowski. 3,223,244.

Barber, Forest C., and J. R. Smith, to S. B. Power Surgical Tools Co. Bone cutting apparatus. 3,223,088, 12–14–65, Cl. 128—310.

Barch, John J., and W. M. Kraft, to Heyden Newport Chemical Corp. Esters and compositions containing same. 3,223,637, 12–14–65, Cl. 252—56.

Barletta, John. Casting for universal joints. 3,222,887, 12–14–65, Cl. 64—32.

Barlow, Lester P., to The Barlow Vapor Cooling Co. Ebullient cooling system. 3,223,075, 12–14–65, Cl. 123—41.24.

Barlow Vapor Cooling Co., The: *See*—
Barlow, Lester P. 3,223,075.

Barnes, Charles M., to The Bendix Corp. Power amplifier. 3,223,119, 12–14–65, Cl. 137—59.6.

Barnes Engineering Co.: *See*—
Dreyfus, Marc G. 3,222,978.

Barnum, Robert E.: *See*—
Metro, Stephen J., Matuszak, and Barnum. 3,223,636.

Barogenics, Inc.: *See*—
Gerard, George, and Brayman. 3,223,003.
Gerard, George, and Brayman. 3,223,427.

Barradell-Smith, Richard, and F. W. Silverwood, to Pilkington Brothers Ltd. Manufacture of flat glass. 3,223,503, 12–14–65, Cl. 65—99.

Barradell-Smith, Richard, and F. W. Silverwood, to Pilkington Brothers Ltd. Apparatus for the manufacture of flat glass. 3,223,509, 12–14–65, Cl. 65—182.

Barth, John W., to Jacobsen Manufacturing Co. Swing-knife mounting. 3,222,854, 12–14–65, Cl. 56—294.

Barthez, Jean, to CSF-Compagnie Generale de Telegraphie Sans Fil. Radiating slot ridged waveguides. 3,224,004, 12–14–65, Cl. 343—771.

Bassett, William I., III., to Union Carbide Corp. Heat treating process for martensitic transformation alloys. 3,223,562, 12–14–65, Cl. 148—125.

Bastis, Thomas E., to Kaiser Aluminum & Chemical Corp. Knife. 3,222,785, 12–14–65, Cl. 30—355.

Batson, Bradley L.: *See*—
Coulter, Leland E., Ambler, Behm, Anthony, Hamlin, and Batson. 3,223,316.

Bauer, Hans: *See*—
Tanner, Richard, Perl, and Bauer. 3,223,074.

Baumberger & Co. A.G.: *See*—
Burri, René. 3,222,820.

Baumgartner, Walter. Portable household budget computer. 3,223,321, 12–14–65, Cl. 235—114.

Baxter Laboratories, Inc.: *See*—
Stone, Irwin M. 3,223,529.
Bazell, Seymour: *See*—
Brejcha, Robert J., Bazell, and Radnik. 3,222,902.
Bear Mfg. Co.: *See*—
Pereue, Joseph H., Abbott, Bacon, and MacMillan. 3,222,794.
Beattie-Coleman, Inc.: *See*—
Hunt, Charles J., and Swanson. 3,223,011.
Beck, Friedrich: *See*—
Ugi, Ivar, Beck, and Bottner. 3,223,709.
Beckadolph, Richard: *See*—
Niclas, Walter, and Beckadolph. 3,223,566.
Becker, Bernard B.: *See*—
Dorion, Francis W., and Becker. 3,223,192.
Becker, Hollis V. Method of binding books and product thereof. 3,223,436, 12–14–65, Cl. 281—21.
Becker, Rudolf, to Gesellschaft fur Linde's Eismaschinen Aktiengesellschaft. Method and apparatus for fractionation of air. 3,222,878, 12–14–65, Cl. 62—13.
Becker, William C., and R. M. Ayer, to Reynolds Metals Co. Container constructions and blanks for making the same or the like. 3,223,233, 12–14–65, Cl. 206—65.
Becker, William C., and R. M. Ayer, to Reynolds Metals Co. Container structure. 3,223,310, 12–14–65, Cl. 229—56.
Becker, William C., R. M. Ayer, and R. M. Watts, to Reynolds Metals Co. Container structure and closure means. 3,223,311, 12–14–65, Cl. 229—56.
Beckman Instruments, Inc.: *See*—
Kitchens, William L., and Surprenant. 3,223,851.
Reeds, John W. Jr. 3,223,609.
Taylor, Daniel D. 3,223,599.
Beckman, Johnson R.: *See*—
Reilly, Thomas A., Beckman, and Bishop. 3,223,557.
Becroft, James O. Logrolling type amusement device. 3,223,411, 12–14–65, Cl. 272—1.
Beebe, John N., to Raytheon Co. Shallow water depth alarm. 3,223,965, 12–14–65, Cl. 340—3.
Beer, Emanuel E., and A. W. Jacobson, to General Precision, Inc. Cyclic incremental display device. 3,223,320, 12–14–65, Cl. 235—108.
Behm, Norman R.: *See*—
Coulter, Leland E., Ambler, Batson, Anthony, Hamlin, and Behm. 3,223,316.
Bell Telephone Laboratories, Inc.: *See*—
Abbott, Henry H., Brown, Depp, Fracassi, and Williams. 3,223,976.
Budlong, Willis A., Drew, and Harr. 3,223,785.
Feger, Werner G. 3,223,780.
Fuss, Fred N. 3,222,751.
Hawley, Melville S., and McLellan. 3,223,788.
Hogg, David C. 3,224,006.
Inose, Hiroshi, Kawai, Koono, Takagi, Yasuda, and Yoshida. 3,223,784.
Mohr, Milton E. 3,223,931.
Pilkinton, Donald C. 3,223,786.
Schroeder, Henry C. 3,223,941.
Beloit Iron Works: *See*—
Justus, Edgar J., and Dahl. 3,223,339.
Bendix Corp., The: *See*—
Albright, Franklin C. 3,223,069.
Barnes, Charles M. 3,223,119.
Bosworth, Robert H. 3,223,364.
Brook, James E. 3,223,938.
Brown, David C. 3,223,887.
Burnett, Richard T., and Powlas. 3,223,207.
Carrossa, Louis, and Nashelsky. 3,223,850.
Digby, James J. 3,222,938.
Doniger, Jerry. 3,223,362.
Hager, Robert R. 3,222,999.
Henneman, John W. 3,222,932.
Kasten, Walter. 3,223,241.
Molnar, Robert J., and Parfomak. 3,223,848.
Bendix-Westinghouse Automotive Air Brake Co.: *See*—
Valentine, Harry M. 3,223,458.
Bening, Lucy M. Knockdown shelter. 3,222,829, 12–14–65, Cl. 52—92.
Benjamen, Lysle I. Torsion-keyed vibration damper. 3,222,963, 12–14–65, Cl. 74—574.
Bennett, Henry E.: *See*—
Gribble, Donald J., and Bennett. 3,223,070.
Bennett, John D.: *See*—
Jones, Jack W., and Bennett. 3,223,184.
Bennett, Sydney. Reinforced concrete structures having formwork embedded therein. 3,223,378, 12–14–65, Cl. 249—15.
Benninger, James A., Jr., to R. D. Werner Co., Inc. Ladder attachments. 3,223,369, 12–14–65, Cl. 248—210.
Benson, Clark K., and A. A. Caridis, to Heat and Control, Inc. Food washing and cooking apparatus. 3,223,024, 12–14–65, Cl. 99—352.
Bentley, John M., and J. H. Brown, to United States of America, Navy. Alternating current digital to analog decoder. 3,223,992, 12–14–65, Cl. 340—347.
Beran, Charles J.: *See*—
Buschman, Francis X., and Beran. 3,223,564.
Berger, Jacob: *See*—
Gottfried, Louis, and Berger. 3,223,431.
Bergman, Charles W. Power driven earth working tillers and tractors and the like. 3,223,174, 12–14–65, Cl. 172—43.
Bergstrand, Ralph B.: *See*—
Gutridge, Jack E., and Bergstrand. 3,223,052.
Bergstrom, Robert E.: *See*—
Lucich, George M., Rockwell, and Bergstrom. 3,223,319.
Berkeley Instruments: *See*—
Hawley, Jack S. 3,224,008.
Bernardini, Francesco: *See*—
Natta, Giulio, Mazzanti, Longi, and Bernardini. 3,223,686.
Bernasconi, Joseph E. Rope holddown hook and bracket therefor. 3,223,375, 12–14–65, Cl. 248—361.
Berner, Klaus: *See*—
Boedeker, Hermann, Langbein, Sommer, Zimmermann, and Berner. 3,223,470.
Bernstein, Bernard, to General Instrument Corp. Soldering of diode string. 3,223,895, 12–14–65, Cl. 317—101.
Berryhill, Gerald W.: *See*—
Ferris, Robert G., Berryhill, Boppart, and Ratajczak. 3,223,228.
Bertram, John M., E. J. Prince, and J. K. Stone, to Kaiser Industries Corp. Lance for use in a basic oxygen conversion process. 3,223,398, 12–14–65, Cl. 266—34.
Bertsch, Fritz, to Messrs. Hans Biel. Endless blank forms. 3,223,437, 12–14–65, Cl. 282—11.
Bey, Ahmet K., to F. Budreck. Variable magnet. 3,223,898, 12–14–65, Cl. 317—159.
Bianchi, Filippo, to Cartotecnica Poligrafica A. & G. Fratelli Bianchi S.p.A. Box constituted of an outer folded carton and an airtight inner casing. 3,223,230, 12–14–65, Cl. 206—45.31.
Biehl, Heinrich. Feeding trough and floor arrangement. 3,223,071, 12–14–65, Cl. 119—28.
Biel, Messrs. Hans: *See*—
Bertsch, Fritz. 3,223,437.
Bikales, Norbert M., and R. B. Booth, to American Cyanamid Co. Flotation of sulfide ores. 3,223,238, 12–14–65, Cl. 209—166.
Bindler, Jakob, and E. Model, to Geigy Chemical Corp. Antimicrobic compositions and use thereof. 3,223,647, 12–14–65, Cl. 106—316.
Bindler, Jakob, and E. Model, to Geigy Chemical Corp. Antimicrobic compositions and use thereof. 3,223,582, 12–14–65, Cl. 167—30.
Bird Machine Co.: *See*—
Dick, George M. 3,223,239.
Bishop, Donald, and J. H. Ripper, to National Research Development Corp. Linear measuring instruments. 3,222,789, 12–14–65, Cl. 33—161.
Bishop, Harry K.: *See*—
Reilly, Thomas A., Beckman, and Bishop. 3,223,557.
Bishop, Leonard J., to Mechanical Handling Systems Inc. Dumping conveyor system. 3,223,226, 12–14–65, Cl. 198—38.
Bittmann, Eric E., and J. W. Hart, to Burroughs Corp. Nondestructive magnettic data store. 3,223,985, 12–14–65, Cl. 340—174.
Blaker, Dave G.: *See*—
Van Pool, Joe, and Blaker. 3,223,749.
Bland, Albert N.: *See*—
Atkins, Alan J., and Bland. 3,222,947.
Blatt, Leland F., and F. H. Wiesenhofer. Pneumatic control system. 3,222,997, 12–14–65, Cl. 91—407.
Blaw-Knox Co.: *See*—
Lyle, David. 3,222,884.
Bleed, Theodore M., to Commercial Wire Products Co. Revolving display rack. 3,223,247, 12–14–65, Cl. 211—163.
Bliss & Laughlin, Inc.: *See*—
Butsch, Richard W. 3,222,708.
Bloch, Erich, and H. Gelernter, to International Business Machines Corp. Magnetic core memory. 3,223,984, 12–14–65, Cl. 340—174.
Bloetscher, Frederick, J. O. Gibson, and W. B. Cross, to Goodyear Aerospace Corp. Communication satellite and method for making same. 3,224,000, 12–14–65, Cl. 343—18.
Blok, Lourens, and H. S. J. Pijls, to North American Phillips Co. Inc. Apparatus for the production of ultrasonic oscillations. 3,223,907, 12–14–65, Cl. 318—118.
Blum, Pierre, and C. Moreau, to Commissariat a L'Energie Atomique. Process for the preparation of uranium monocarbide powder. 3,223,475, 12–14–65, Cl. 23—14.5.
Boardman, Harold, and R. L. Wagner, to Hercules Powder Co. Graining process. 3,223,032, 12–14–65, Cl. 101—149.2.
Bock, Calvin V.: *See*—
Bock, Wallace B. and C. V. 3,223,350.
Bock Industries Of Elkhart, Indiana, Inc.: *See*—
Bock, Wallace B. and C. V. 3,223,350.
Bock, Louis H.: *See*—
Herrick, Franklin W., and Bock. 3,223,667.
Bock, Wallace B. and C. V., to Bock Industries Of Elkhart, Indiana, Inc. Roofing dispenser. 3,223,350, 12–14–65, Cl. 242—86.52.
Bode, Ernest E.: *See*—
Holley, John D., and Bode. 3,222,803.
Bodoh, Albinus G., and W. E. Goluska, to The Seeburg Corp. Cabinet lock. 3,222,899, 12–14–65, Cl. 70—140.
Boedeker, Hermann, G. Langbein, K. Sommer, H. Zimmermann, and K. Berner, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Process for the preparation of dyeings and prints which are fast to wet processing. 3,223,470, 12–14–65, Cl. 8—39.
Boeing Co., The: *See*—
Breithaupt, Robert C. 3,224,005.
Carver, Thurman W. 3,222,926.
Dalrymple, Wayne W. 3,223,462.
Glaspie, Donald L. 3,222,883.
Klees, Garry W., Sylitebo, and Viall. 3,222,863.
Whitney, John B. 3,222,775.
Boggild, Robert, and W. L. Dale. Molding press. 3,222,723, 12–14–65, Cl. 18—16.
Bohme Fettchemie G.m.b.H.: *See*—
Plapper, Jurgen, and Teupel. 3,223,648.

Bohrer, Byron B., to Sun Oil Co. Continuous fixed bed vapor-liquid partition chromatograph. 3,223,747, 12–14–65, Cl. 260—674.
Bohrer, Byron B., to Sun Oil Co. Multi-component separation process. 3,223,748, 12–14–65, Cl. 260—674.
Bolgiano, Nicholas C., to Armstrong Cork Co. Chain shortening of polycarbonate resins using monoethanolamine or morpholine as the shortening agent. 3,223,678, 12–14–65, Cl. 260—47.
Bolinger, George N., to Sta-Rite Ginnie Lou, Inc. Brush roller having a pivoted and rotatable clamping bail. 3,223,094, 12–14–65, Cl. 132—41.
Bolton, Benjamin A., to Standard Oil Co. Polyester using bensene tribasic acid. 3,223,666, 12–14–65, Cl. 260—29.2.
Bond, Herbert M., to Minnesota Mining and Mfg. Co. Ultraviolet light stable vinyl chloride resin. 3,223,661, 12–14–65, Cl. 260—23.
Bone, Kendall F., to The Cincinnati Milling Machine Co. Bearing preload mechanism for machine tool. 3,222,991, 12–14–65, Cl. 90—11.
Boor, John, Jr.: *See*—
Anderson, William S., and Boor. 3,223,638.
Booth, Robert B.: *See*—
Bikales, Norbert M., and Booth. 3,223,238.
Boothby, Geoffrey F., K. Fearnside, and H. Pollak, to S. Smith & Sons (England) Ltd. Aircraft flight systems. 3,223,363, 12–14–65, Cl. 244—77.
Boppart, Loren: *See*—
Ferris, Robert G., Berryhill, Ratajczak, and Boppart. 3,223,228.
Borden, Jay R., to Borg-Warner Corp. Voltage regulator circuit. 3,223,922, 12–14–65, Cl. 323—66.
Borg-Warner Corp.: *See*—
Borden, Jay R. 3,223,922.
Kuivinen, William L. 3,223,214.
Pruim, Fred, and Wetzler. 3,222,693.
Troendly, Harry P. 3,223,236.
Bosch, Robert, G.m.b.H.: *See*—
Reisnecker, Ludwig. 3,223,869.
Boschi, Antonio, to Pirelli S.p.A. Molding and vulcanizing device. 3,222,729, 12–14–65, Cl. 18—36.
Bosworth, Robert H., to The Bendix Corp. Hot gas proportional control valve. 3,223,364, 12–14–66, Cl. 244—78.
Bottner, Ernest: *See*—
Ugi, Ivar, Beck, and Bottner. 3,223,709.
Bouet, Bernard. Dispensing devices. 3,223,289, 12–14–65, Cl. 222—209.
Bowcott, Roy P.: *See*—
Preece, Kenneth, and Bowcott. 3,223,863.
Bowcott, Roy P., to Joseph Lucas (Industries) Ltd. One way roller clutch with freeing shoes. 3,223,213, 12–14–65, Cl. 192—45.
Bowers, Albert, to Syntex Corp. 3,19-lactones of 3β-hydroxy-19-oic acids of the androstane and pregnane series. 3,223,702, 12–14–65, Cl. 260—239.57.
Bowers, Albert, and J. Edwards, to Syntex Corp. 16-fluoromethyl pregnene derivatives. 3,223,717, 12–14–65, Cl. 260—397.4.
Bowles, Romald E., to United States of America, Army. Binary stage. 3,223,101, 12–14–65, Cl. 137—81.5.
Bowman, David F., to Washington Aluminum Co., Inc. Orthogonal mode hybrid junction and circuit therefor. 3,223,948, 12–14–65, Cl. 333—9.
Bowser, Inc.: *See*—
Topol, George J., and Baranowski. 3,223,244.
Boyack, Gerald A., to The Upjohn Co. Cycloheximide semicarbazone emulsions. 3,223,583, 12–14–65, Cl. 167—63.
Boyden, Robert E. Sound recording and reproducing apparatus. 3,223,423, 12–14–65, Cl. 274—11.
Boylan, Francis J., and S. T. Putnam. Polymerisation emulsifiers comprising a soap of distilled rosin and an oil. 3,223,696, 12–14–65, Cl. 260—97.
Brackbill, Thelma J., to Armstrong Cork Co. Cured chlorosulfonated polyethylene compositions. 3,223,675, 12–14–65, Cl. 260—41.
Bradbury, Frederick J.: *See*—
Bainbridge, Wilfred N., and Bradbury. 3,223,206.
Braid, Murray D., to TRW Inc. Method of making valve stem retainer locks. 3,222,770, 12–14–65, Cl. 29—413.
Brandon, Richard N., ½₀ to A. Jackson, Jr. Tape reel. 3,223,342, 12–14–65, Cl. 242—74.2.
Brandstetter, Edward. Toy automatic wing folding catapult plane. 3,222,817, 12–14–65, Cl. 46—80.
Brandt, Helmut, to North American Philips Co., Inc. Dubbing circuits for magnetic recorders with means for reducing feedback. 3,223,790, 12–14–65, Cl. 179—100.2.
Brandt, Omega Louis, & Frere S.A.: *See*—
Raval, Gaston. 3,222,860.
Brannfors, Sten H.: *See*—
Langefors, Ulf M., and Brannfors. 3,222,872.
Braun, August J. Chair adaptors. 3,223,055, 12–14–65, Cl. 108—145.
Brayman, Jacob: *See*—
Gerard, George, and Brayman. 3,223,003.
Gerard, George, and Brayman. 3,223,427.
Breiss, Jean, R. Kircher, and J.-P. Zimmermann, to Societe d'Etudes Chimiques pour l'Industrie et l'Agriculture (Secpia). Method for preparing alkali metal and alkaline earth metal bromites. 3,223,477, 12–14–65, Cl. 23—85.
Breithaupt, Robert C., to The Boeing Co. Dual-aperture omnidirectional antenna. 3,224,005, 12–14–65, Cl. 343—772.
Brejcha, Robert J., S. Bazell, and J. L. Radnik, to American Can Co. Electro-hydraulic forming method and apparatus. 3,222,902, 12–14–65, Cl. 72—56.
Brewer, John H. Culturflex apparatus and flexible tubular casing therein. 3,223,595, 12–14–65, Cl. 195—139.
Brick, Robert M.: *See*—
Hansson, Ants, and Brick. 3,222,764.
Bridenstine, Delbert E.: *See*—
Hansen, Ramon D., and Bridenstine. 3,223,854.
Brigham, Ward E., to Sun Chemical Corp. Interchangeable inking unit for multi-color presses. 3,223,028, 12–14–65, Cl. 101—40.
Brigham Young University: *See*—
Childs, Fred D. 3,223,574.
Bright, John, to Joseph Lucas (Industries) Ltd. Industrial trucks. 3,223,260, 12–14–65, Cl. 214—83.1.
Brill, Edward F., to Allis-Chalmers Mfg. Co. Heat exchange system. 3,223,860, 12–14–65, Cl. 310—11.
Brixner, Lothar H., to E. I. du Pont de Nemours, and Co. Thermoelectric compositions and process for producing same. 3,223,640, 12–14–65, Cl. 252—62.3.
Broad, Harvey M.: *See*—
Tornberg, Isidor, Broad, Armstrong, and Sugar. 3,222,966.
Broadhead, James H., J. E. Hamilton, and L. E. Martine, to Utility Tool Co. Apparatus for making an annular cut in a cylindrical-like article. 3,222,961, 12–14–65, Cl. 82—70.2.
Brokke, Mervin E., to Stauffer Chemical Co. 2-(trifluorobutenylmercapto)-pyrimidines. 3,223,707, 12–14–65, Cl. 260—251.
Brook, James E., to The Bendix Corp. Emitter follower transistor amplifier. 3,223,938, 12–14–65, Cl. 330—32.
Brookey, Andrew C. Nutcracker. 3,223,133, 12–14–65, Cl. 146—16.
Brooks, Frank P. Low temperature refrigerator. 3,222,877, 12–14–65, Cl. 62—6.
Brooks & Perkins, Inc.: *See*—
Kirkpatrick, James S., and Erickson. 3,222,911.
Bross, Helmuf K., 33⅓% to F. T. Johmann. Writing instrument. 3,223,072, 12–14–65, Cl. 120—42.03.
Brothman, Abraham, S. J. Halpern, and R. D. Reiser, to Transitel International Corp. Data programmer having an interleaved coding arrangement. 3,223,995, 12–14–65, Cl. 340—347.
Broughton, Ernest, and S. R. Burns, to United Shoe Machinery Corp. Lasting machine. 3,222,703, 12–14–65, Cl. 12—12.
Brown, Alfred B., Jr.: *See*—
Abbott, Henry H., Brown, Depp, Fracassi, and Williams. 3,223,976.
Brown, Charles R.: *See*—
Nooker, Eugene L., Brown, Dietz, and Morton. 3,223,087.
Brown, Cicero C. Liner cementing method. 3,223,159, 12–14–65, Cl. 166—21.
Brown, Cicero C.: *See*—
Mott, James D. 3,223,170.
Brown, David C., to The Bendix Corp. Electrical apparatus. 3,223,887, 12–14–65, Cl. 315—223.
Brown, James H.: *See*—
Bentley, John M., and Brown. 3,223,992.
Brown, Richard W., to Honeywell Inc. Burner control apparatus. 3,223,138, 12–14–65, Cl. 158—28.
Brown, Stewart S. Kindergarten rest mat. 3,222,695, 12–14–65, Cl. 5—344.
Brown & Williamson Tobacco Corp.: *See*—
Strubel, David G., and Moll. 3,223,090.
Browning, James A., and C. A. Pratt, to Thermal Dynamics Corp. Electric arc torches. 3,223,822, 12–14–65, Cl. 219—121.
Broyles, James D.: *See*—
Sutton, Walter T., Jr., and Broyles. 3,222,882.
Bruecker-Steinkuhl, Kurt. Aircraft proportional navigation. 3,223,337, 12–14–65, Cl. 244—14.
Brundell, Per G. and K.-E. A. Jonsson. Machine for debranching felled trees. 3,223,130, 12–14–65, Cl. 144—2.
Brunswick Corp.: *See*—
Uecker, Donald F. 3,223,414.
Bryan, Harvard J. Automatic safeties for guns. 3,222,809, 12–14–65, Cl. 42—70.
Buchheit, Paul: *See*—
Nitzsche, Siegfried, and Buchheit. 3,223,474.
Buckeridge, Robert L., to True Temper Corp. Method of and means for controlling casting of a fishing line. 3,222,813, 12–14–65, Cl. 43—25.
Budjinski, Aloysius N., and J. D. Georgia, to United States of America, Navy. Gravity conveyors. 3,223,215, 12–14–65, Cl. 193—32.
Budlong, Willis A., G. G. Drew, and J. A. Harr, to Bell Telephone Laboratories, Inc. Electronic telephone switching system. 3,223,785, 12–14–65, Cl. 179—18.
Budreck, Frances: *See*—
Bey, Ahmet K. 3,223,898.
Bulgrin, Walter W.: *See*—
Parent, Gordon C. J., Luther, Bulgrin, and Parent. 3,222,765.
Bull, James T., I. M. Dow, W. E. Engle, W. J. Kellinger, J. M. O'Keefe, H. N. Schofield, and R. E. Taylor, to United States of America, Navy. Missile launching system. 3,222,988, 12–14–65, Cl. 89—1.7.
Bunze, Harry F. Dual fuel carburetion system. 3,223,390, 12–14–65, Cl. 261—18.
Bur, Armand. Car dumper sampling means. 3,222,934, 12–14–65, Cl. 73—421.
Burge, Leonard L., to Sinclair Research, Inc. Method for consolidating loose sandy material. 3,223,161, 12–14–65, Cl. 166—33.
Burge, Leonard L., to Sinclair Research, Inc. Polymerization method. 3,223,162, 12–14–65, Cl. 166—33.
Burger, Dale R.: *See*—
Shoor, Bernard A., and Burger. 3,222,919.
Burmeister, Gerhard: *See*—
Heiss, Rudolf, Burmeister, and Grewe. 3,223,783.

Burnett, Richard T., and J. J. Powlas, to The Bendix Corp. Disk brake fluid inlet and bleeding arrangement. 3,223,207, 12–14–65, Cl. 188—152.

Burns, Stuart R.: *See*—
Broughton, Ernest, and Burns. 3,222,703.

Burri, René, to Baumberger & Co. A.G. Cleaning machine for boarding planks or the like. 3,222,820, 12–14–65, Cl. 51—4.

Burroughs Corp.: *See*—
Bittmann, Eric E., and Hart. 3,223,985.
Hespenheide, Wilbur G. 3,223,983.
Makowski, Thomas G., Verdoodt, and Huntley. 3,223,031.

Burroughs Wellcome & Co. (U.S.A.) Inc.: *See*—
Wilkinson, Samuel. 3,223,587.

Busch, Max, and W. Hey, to American Enka Corp. Warp knit fabric. 3,222,893, 12–14–65, Cl. 66—192.

Buschbom, Floyd E. A., to Vandale Corp. Silo unloader structure. 3,223,256, 12–14–65, Cl. 214—17.

Buschman, Francis X., and C. J. Beran, to Tensolite Insulated Wire Co., Inc. Manufacture of polytetrafluoroethylene insulated wires. 3,223,564, 12–14–65, Cl. 156—53.

Busey, Hugh W.: *See*—
Ryerson, Herbert R., and Busey. 3,223,915.

Butler, David H., and W. C. Falk, to United States of America, National Aeronautics and Space Administration. Miniature vibration isolator. 3,223,374, 12–14–65, Cl. 248—358.

Butsch, Richard W., to Bliss & Laughlin, Inc. Anti-fouling caster. 3,222,708, 12–14–65, Cl. 16—41.

Byrne, Thomas J.: *See*—
Wiegert, Robert E., and Byrne. 3,223,537.
Wiegert, Robert E., and Byrne. 3,223,538.

CSF-Compagnie Generale de Telegraphie Sans Fil: *See*—
Barthez, Jean. 3,224,004.
Carre, Roland. 3,224,002.
Dumaire, Marc-Jean, and Vasseur. 3,223,943.

Caboni, Vittorio. Device to be added to a lathe, for spinning. 3,222,903, 12–14–65, Cl. 72—81.

Cabot Corp.: *See*—
Secord, Robert N., and Wendell. 3,222,847.

Cady, Ivan E. Indicator for determining the boom angularity of a crane. 3,223,249, 12–14–65, Cl. 212—39.

Caine, Milton. Flip-fold mail. 3,223,312, 12–14–65, Cl. 229—92.8.

Calmon, Calvin, M. E. Gilwood, and J. P. Termini, to Pfaudler Permutit Inc. Radioactive fallout treatment kit. 3,223,619, 12–14–65, Cl. 210—24.

Calvino, Louis N., and M. W. Munsell, to Esso Research and Engineering Co. Motor fuel composition. 3,223,495, 12–14–65, Cl. 44—71.

Camargo, David N. Terminal pin removing tool. 3,222,766, 12–14–65, Cl. 29—203.

Cambridge Filter Corp.: *See*—
Hart, Charles G. 3,222,850.

Camloc Fastener Corp.: *See*—
Dellith, Werner. 3,222,744.

Campillo, William J.: *See*—
Gunderson, Robert O., Klein, Tang, and Campillo. 3,223,980.

Canada, Her Majesty the Queen in right of, as represented by the Minister of National Defence: *See*—
Criddle, Ernest E. 3,223,116.

Canadian Industries Ltd.: *See*—
Murdock, James D. 3,223,655.

Cannon, John W. Three-dimensional plugboard circuit selector. 3,223,957, 12–14–65, Cl. 339—18.

Cantor, Harry A., W. B. Horback, J. A. Vona, and E. J. Kuczynski, to Celanese Corp. of America. Latices. 3,223,670, 12–14–65, Cl. 260—29.6.

Cappotto, Samuel D., and E. C. Hunter, to SCM Corp. On-off switch with cover interlock and overriding means for typewriter. 3,223,219, 12–14–65, Cl. 197—12.

Caridis, Andrew A.: *See*—
Benson, Clark K., and Caridis. 3,223,024.

Carlisle Chemicals Works, Inc.: *See*—
Hechenbleikner, Ingenuin, and Molt. 3,223,736.

Carlson, Gerald J., to General Electric Co. Magnetron having internal conductive material coated area between anode terminals. 3,223,883 12–14–65, Cl. 315—39.51.

Carlson, Harold V., to The Firestone Tire & Rubber Co. Sealing means for cracked surfaces. 3,223,005, 12–14–65, Cl. 94—17.

Carmichael, Robert, and J. Southworth, Jr., to Union Carbide Corp. Method of sealing a galvanic cell. 3,223,559, 12–14–65, Cl. 136—175.

Carpenter, Thomas J., to General Electric Co. Preionizer for use in overvoltage protective devices. 3,223,874, 12–14–65, Cl. 313—231.

Carra, Emil F., Jr., and P. D. Wenzel, to J. I. Case Co. Support mechanism for a displaceable earth moving tool. 3,223,176, 12–14–65, Cl. 172—265.

Carre, Roland, to C.S.F.-Compagnie Generale de Telegraphie Sans Fil. Radar systems. 3,224,002, 12–14–65, Cl. 343—18.

Carrozza, Louis, and L. Nashelsky, to The Bendix Corp. Phase angle difference measuring circuit employing tunnel diode signal crossover detecting circuits. 3,223,850, 12–14–65, Cl. 307—88.5.

Carruthers, J. H., & Co. Ltd.: *See*—
Cowan, William G. 3,223,039.
Cowan, William G. 3,223,248.

Carter, Richard T. Methods of removing expendable plastic patterns. 3,222,738, 12–14–65, Cl. 22—196.

Cartotecnica Poligrafica A. & G. Fratelli Bianchi S.p.A.: *See*—
Bianchi, Filippo. 3,223,230.

Carver, Thurman W., to The Boeing Co. Air mass relative motion meter. 3,222,926, 12–14–65, Cl. 73—180.

Casadio, Silvano, to Instituto de Angeli, S.p.A. Aluminum panoate. 3,223,720, 12–14–65, Cl. 260—448.

Casaroll, Eugene A.: *See*—
Welch, Russell A., Sr. 3,223,827.

Case, J. I., Co.: *See*—
Carra, Emil F., Jr., and Wenzel. 3,223,176.
Lehmann, Harold A. 3,222,866.
Miller, Raymond J. 3,222,865.

Cates, Jacky D. Digital-to-analogue converter. 3,223,994, 12–14–65, Cl. 340—347.

Cecala, Michael L., to Rixson Inc. Pivot bracket for center-hung doors. 3,222,711, 12–14–65, Cl. 16—151.

Cech, Karl, and F. Forch, to K. Vockenhuber and C. Hauser. Arrangement for the synchronization of a projector with a tape recorder. 3,223,469, 12–14–65, Cl. 352—14.

Celanese Corp. of America: *See*—
Badin, Elmer J. 3,223,688.
Cantor, Harry A., Horback, Vona, and Kuczynski. 3,223,670.

Celmer, Frank: *See*—
Eckert, Lewis W., and Celmer. 3,223,580.

Centennial Mills Inc.: *See*—
Lindley, Curtis P. 3,223,270.

Cerny, Louis L.: *See*—
Stein, Sam S., and Cerny. 3,222,713.

Chaffee, Mack R., and D. W. Leach, to International Business Machines Corp. Rotary stapler. 3,223,304, 12–14–65, Cl. 227—81.

Champion Papers Inc.: *See*—
Whitchurch, William E. 3,223,268.

Charbonnier, Roger, to Rochar Electronique. Electronic bistable circuit. 3,223,853, 12–14–65, Cl. 307—88.5.

Chase, Vernon L., and E. Messmer, to Interchemical Corp. Pigment pad-dyeing compositions and textiles decorated therewith. 3,223,669, 12–14–65, Cl. 260—29.4.

Chastain, Joe. Counterbalance means. 3,222,940, 12–14–65, Cl. 74—41.

Chatten, John B., to Philco Corp. Character recognition system employing character size determination apparatus for controlling size of scanning raster. 3,223,973, 12–14–65, Cl. 340—146.3.

Chemical Sales, Inc.: *See*—
Lipschutz, Sidney. 3,222,846.

Chemische Fabrik Kalk G.m.b.H.: *See*—
Gelersberger, Karl, Tesche, and Woltas. 3,223,481.

Chen, William K.-W., to American Machine & Foundry Co. Electrodialysis device and method of operation. 3,223,606, 12–14–65, Cl. 204—180.

Chen, William K.-W., M. S. Mintz, and R. N. Smith, to American Machine & Foundry Co. Fluid treatment. 3,223,612, 12–14–65, Cl. 204—301.

Cherry, William J., and I. H. East. Railroad switch heater. 3,223,835, 12–14–65, Cl. 246—428.

Chevron Research Corp.: *See*—
Adams, Robert T., and Magee. 3,223,744.
Hyde, Collin, and Sheets. 3,223,539.
Magge, Philip S. 3,223,615.

Chicago Pneumatic Tool Co.: *See*—
Coulter, John B., Jr., and Steen. 3,223,188.

Chicago Printed String Co.: *See*—
Kerrigan, James E., and Grikis. 3,223,299.

Chicago United Products Co., Inc.: *See*—
Sweeney, Theodore J. 3,222,838.

Childs, Elbert B., to Socony Mobil Oil Co., Inc. Borescope light. 3,223,832, 12–14–65, Cl. 240—2.18.

Childs, Fred D., to Brigham Young University. Machine for applying pressure-sensitive tape to metal sheets. 3,223,574, 12–14–65, Cl. 156—552.

Chinoin Gyogyzer- es Vegyeszeti Termekek Gyara: *See*—
Horvath, Tibor, and Vargha. 3,223,722.

Chiorri, Bartolomeo. Composable container structure consisting of sheet-like material. 3,223,309, 12–14–65, Cl. 229—49.

Chiviana Praha, narodni podnik: *See*—
Vladyka, Vilibald, and Jeřek. 3,223,087.

Choulngs, Leslie C., to Automotive Products Co. Ltd. Adjusting means for internal shoe drum brakes. 3,223,204, 12–14–65, Cl. 188—79.5.

Chromizing Corp. *See*—
Commanday, Maurice R., and Goldberg. 3,223,343.

Chrysler Corp.: *See*—
Ball, Thomas M. 3,223,892.
Shope, William H. 3,223,045.

Chyle, John J., to A. O. Smith Corp. Method of welding. 3,223,818, 12–14–65, Cl. 219—73.

Ciaccio, Peter L., to Flexible Mfg. Corp. Reel mechanism for feeding sewer cleaning tool drive rod with free-wheeling anchorage of drive rod to reel. 3,222,704, 12–14–65, Cl. 15—104.3.

Ciba Corp.: *See*—
Dreyfuss, Paul. 3,223,527.
Martin, Henry, Aebi, and Ebner. 3,223,721.

Ciftan, Mikael: *See*—
Luck, Clarence F., Jr., Krasno, and Ciftan. 3,223,944.

Cimochowski, Anthony E.: *See*—
Rutter, Donald P., and Cimochowski. 3,222,777.

Cincinnati Milling Machine Co., The: *See*—
Bone, Kendall F. 3,222,991.
Dever, Lewis A., and Attermeyer. 3,222,956.
Seidel, William B. 3,222,823.
Seidel, William B. 3,222,824.
Seidel, William B. 3,222,825.
Specht, Otto A. G. 3,222,912.
Verhoeven, John F. 3,222,998.

Cincinnati Mine Machinery Co., The: *See*—
Krekeler, Claude B. 3,223,452.

Citron, Manning: *See*—
Ryan, Jonn W., Citron, and Danielsen. 3,223,208.

Ciuffini, Aurelio, and P. J. Williams, to Stewart-Warner Corp. Self-returning chair control. 3,223,376, 12–14–65, Cl. 248—417.

Clapper, Genung L.: *See*—
Rowley, Russell A., Adams, Clapper, and Hamburgen. 3,223,971.

Clar, Philip L., to Motorola, Inc. Broadband single pole multi-throw diode switch with filter providing matched path between input and on port. 3,223,947, 12–14–65, Cl. 333—7.

Clare, C. P., & Co.: *See*—
Marks, Richard H. 3,222,758.

Clark, David B., and L. W. Langley, to General Electric Co. Collision prevention system. 3,223,225, 12–14–65, Cl. 198—37.

Clark, Frederick G., to W. Stevenson. Magnetic driving tool or implement. 3,222,959, 12–14–65, Cl. 81—177.

Clark, Harold E., G. R. Mott, and R. W. Gundlach, Xerox Corp. Xerographic developing machine and method. 3,223,548, 12–14–65, Cl. 117—17.5.

Clark, James O., P. Ravenhill, and R. E. Reise, to United States of America, Navy. Doppler correction in a frequency diversity frequency jittered pulse doppler radar by means of digital phase computation. 3,223,997, 12–14–65, Cl. 343—8.

Clark, James W., to Lake Shore, Inc. Skip bucket. 3,223,266, 12–14–65, Cl. 214—707.

Clark, Joseph C., to True Temper Corp. Spin-casting fishing reel. 3,223,347, 12–14–65, Cl. 242—84.2.

Clark, Joseph C., to True Temper Corp. Spin-cast fishing reel with level winding means. 3,223,348, 12–14–65, Cl. 242—84.21.

Clark, Robert W., to The National Cash Register Co. Magnetic memory circuit. 3,223,986, 12–14–65, Cl. 340—174.

Clausen, Sigurd, to American Machine & Foundry Co. Wide web feed for binder and wrapper die. 3,222,969, 12–14–65, Cl. 83—152.

Cleary, James M., to The Atlantic Refining Co. Means for controlling drill bit torque in rotary percussive drilling. 3,223,187, 12–14–65, Cl. 175—320.

Clement, Carl L., to Kauke and Co., Inc. Decimal accumulator and/or self-decoding digital display unit. 3,223,990, 12–14–65, Cl. 340—324.

Cleveland Crane & Engineering Co., The: *See*—
Gorjanc, Henry A. 3,223,048.

Clifford, Peter J., and R. E. Jones, to Massey-Ferguson Inc. Disc narrow. 3,223,178, 12–14–65, Cl. 172—582.

Cliftex Clothing Co., Inc.: *See*—
Nicolaci, Domenick. 3,223,432.

Cobey, Milton C., to The President and Directors of Georgetown University. Method for adhesively securing together skin and other soft tissue and bone. 3,223,083, 12–14–65, Cl. 128—92.

Coen, Richard A., to Nopco Chemical Co. Package of fragile articles. 3,223,232, 12–14–65, Cl. 206—65.

Cohen, Milton L.: *See*—
Phillips, Chester, and Cohen. 3,222,784.

Cohn, Johann G. E., A. P. Hanel, and C. D. Keith, to Engelhard Industries, Inc. Fuel cell. 3,223,556, 12–14–65, Cl. 136—86.

Collin, Paul N. and P. W., to Allmetal Weatherstrip Co. Structural element for corner construction. 3,222,836, 12–14–65, Cl. 52—281.

Collin, Paul W.: *See*—
Collin, Paul N. and P. W. 3,222,836.

Collins Radio Co.: *See*—
Fackler, Warren C., and Michel. 3,223,793.

Colln, Reimer, and G. Schrader, to Farbenfabriken Bayer Aktiengesellschaft. Alkyl mercapto alkyl esters of substituted phosphonic acids. 3,223,754, 12–14–65, Cl. 260—948.

Columbia Ribbon and Carbon Mfg. Co., Inc.: *See*—
Newman, Douglas A. 3,223,554.

Colvill, Donald E.: *See*—
Sensing, William J., Colvill, Short, and Dennis. 3,223,909.

Combustion Engineering, Inc.: *See*—
Livingston, William L. 3,223,326.

Commanday, Maurice R., and J. Z. Goldberg, to Chromizing Corp. Apparatus for forming sheet metal treating packs. 3,223,343, 12–14–65, Cl. 242—78.1.

Commercial Wire Products Co.: *See*—
Bleed, Theodore M. 3,223,247.

Commissariat a l'Energie Atomique: *See*—
Blum, Pierre, and Moreau. 3,223,475.

Conrad, Lawrence R.: *See*—
Payne, James A., and Conrad. 3,223,000.

Conlon, Ralph D., to The Procter & Gamble Co. Thermoplastic molding compositions. 3,223,664, 12–14–65, Cl. 260—29.1.

Conn, C. G., Ltd.: *See*—
McDonald, Lyell J. 3,223,937.

Connecticut Valley Chemical, Inc.: *See*—
Durham, Hobart N., Jr. 2,223,561.

Connolly, Patrick J., to Chas. Pfizer & Co., Inc. Rodenticide and feeding tray package. 3,223,231, 12–14–65, Cl. 206—47.

Conover, George W., K. L. Hulsing, and J. G. Koehler, to General Motors Corp. Oil pump and cooler assembly for an internal combustion engine. 3,223,197, 12–14–65, Cl. 184—6.

Consolidated Electrodynamics Corp.: *See*—
Paul, Herman L., Jr. 3,223,173.

Continental Can Co., Inc.: *See*—
Allen, Richard C. 3,223,278.
Hansson, Ants, and Brick. 3,222,764.
Schreiber, Warren F., and Schmidt. 3,222,921.
Weiss, Arthur J. 3,223,308.

Continental Carbon Co.: *See*—
Ruble, Theodore A., and Latham. 3,223,605.

Continental Gummi-Werke Aktiengesellschaft: *See*—
Niclas, Walter, and Beckadolph. 3,223,566.

Controls Co. of America: *See*—
Thornbery, James M., and Maas. 3,222,798.

Convery, Robert J., J. W. Loveland, and W. E. Noland, to Sun Oil Co. Production of cracking feed stocks. 3,223,618, 12–14–65, Cl. 208—247.

Cook, James A., Jr., to Westinghouse Air Brake Co. Transistor limiter amplifier circuit. 3,223,936, 12–14–65, Cl. 330—19.

Cook, Larry D.: *See*—
Smith, Donald P., Zuercher, Luck, Hultsman, and Cook. 3,222,844.

Cook, Leon R.: *See*—
Pinkalla, Hamilton A., Neuser, Korfhage, and Cook. 3,223,532.

Coons, Guy E.: *See*—
Kaar, Kenneth B., and Coons. 3,222,706.

Cooper-Weymouth, Inc.: *See*—
Weymouth, George J. 3,223,344.

Coppock, Kenneth E., and V. R. Hallenbeck, to General Motors Corp. Convertible dust boot construction and securing means. 3,223,446, 12–14–65, Cl. 296—136.

Corbitt, Howard E., to Aerojet-General Corp. A.C. magneto-hydrodynamic generator 3,223,859, 12–14–65, Cl. 310—11.

Corey, Robert J. Two-part looptakers. 3,223,060, 12–14–65, Cl. 112—228.

Corrigan, Wilfred J.: *See*—
Warner, Raymond M., Jr., Onodera, and Corrigan. 3,223,904.

Corrugated Container Co., The: *See*—
Curle, Robert J., and Hamilton. 3,223,117.

Coulter, John B., Jr., and J. B. Steen, to Chicago Pneumatic Tool Co. Roller cone rock bit. 3,223,188, 12–14–65, Cl. 175—341.

Coulter, Leland E., E. C. Ambler, B. L. Batson, N. R. Behm, J.J. Anthony, and R. B. Hamlin, to Veeder-Root Inc. Counter wheel assembly. 3,223,316, 12–14–65, Cl. 235—1.

Course, Alexander L. Tire pressure indicating apparatus for road vehicles. 3,223,969, 12–14–65, Cl. 340—58.

Cowan, William G., to J. H. Carruthers & Co. Ltd. Overhead travelling crane. 3,223,248, 12–14–65, Cl. 212—17.

Cowan, William G., to J. H. Carruthers & Co. Ltd. Suction pipes for use in pumping liquid from containers. 3,223,039, 12–14–65, Cl. 103—2.

Cox, Robert M., and R. F. Griswold, to Weston Hydraulics, Ltd. Electro-hydraulic servo valve. 3,223,104, 12–14–65, Cl. 137—85.

Crabtree, R. W., & Sons Ltd.: *See*—
Willis, Claude E. F. 3,223,340.

Craig, John T., to Imperial Chemical Industries Ltd. Recovery of diacid and diamine components of polyamide hydrolyzates. 3,223,731, 12–14–65, Cl. 260—537.

Crain, Donald L., R. F. Kleinschmidt, and J. E. Mahan, to Phillips Petroleum Co. Cyclododecadienyl mercaptans and thioethers. 3,223,738, 12–14–65, Cl. 260—609.

Craven, Dick T.: *See*—
Craven, Jack L., Hedglin, Craven, McCarville and Sweeney. 3,223,007.

Craven, Jack L., A. M. Hedglin, D. T. Craven, J. B. McCarville, and R. L. Sweeney, to Electro-Photo Corp. Apparatus for simultaneously photographing identification portrait and printed material. 3,223,007, 12–14–65, Cl. 95—1.1.

Crawford, Jack A., and W. H. Woodworth, to United States of America, Navy. Scanner system. 3,223,777, 12–14–65, Cl. 178—5.4.

Criddle, Ernest E., to Her Majesty the Queen in right of Canada, as represented by the Minister of National Defence. Pressure regulator having a crimpable valve element. 3,223,116, 12–14–65, Cl. 137—505.13.

Cross, William B.: *See*—
Bloetscher, Frederick, Gibson, and Cross. 3,224,000.

Crossen, William P.: *See*—
Senfleben, Paul W., and Crossen. 3,222,726.

Crossley Machine Co., Inc.: *See*—
Lamb, Harold W. 3,222,748.

Crouch, Mary P. Hair veiling and holding net. 3,222,685, 12–14–65, Cl. 2—207.

Crowe, Bernard F., to Cumberland Chemical Corp. Preparation of terpolymers and films. 3,223,687, 12–14–65, Cl. 260—80.5.

Crown Controls Corp.: *See*—
Stammen, Harold A. 3,223,267.

Crownover, Joseph W., to Electro Materials Corp. Multilayer ceramic body. 3,223,494, 12–14–65, Cl. 29—195.

Cryodry Corp.: *See*—
Jeppson, Morris R. 3,222,796.

Cubic Corp.: *See*—
Hose, Eddy. 3,223 998.

Cumberland Chemical Corp.: *See*—
Crowe, Bernard F. 3,223,687.

Cummings, Leslie L. Gas lift valve. 3,223,109, 12–14–65, Cl. 137—155.

Cummins, Douglas J., and P. T. Davy. Permanent magnetic reed switch. 3,223,801, 12–14–65, Cl. 200—87.

Curle, Robert J., and R. S. Hamilton, to The Corrugated Container Co. Dispensing valve. 3,223,117, 12–14–65, Cl. 137—556.6.

Curtice, Gerald M., and M. D. Saunders, to Archer-Daniels-Midland Co. Water dispersible and water soluble alkydo comprising polyalkylene glycol, monocarboxylic acid, dicarboxylic acid, and polyol. 3,223,659, 12–14–65, Cl. 260—22.

Curtis, John E.: *See*—
Nickerson, Mortimer H., Schnitzer, Curtis, and Patterson. 3,223,654.

Curtiss-Wright Corp.: *See*—
Kump, Donald J., and Lausiere. 3,222,774.

Cutler-Hammer, Inc.: *See*—
Iglehart, Marion M. 3,223,867.

Cutler Meat Products Co.: *See*—
Hutelmyer, Joseph V. 3,223,118.

Cvacho, Daniel S., and W. C. Whitaker, to Reynolds Metals Co. Method of and apparatus for splicing web material. 3,223,061, 12–14–65, Cl. 113—120.

Cypher, James H., and C. E. Valchar, to Pittsburgh Plate Glass Co. Method of bending glass sheets. 3,223,504, 12–14–65, Cl. 65—106.

Cypher, James J., and C. R. Davidson, Jr., to Pittsburgh Plate Glass Co. Method of treating and conveying glass sheets. 3,223,499, 12–14–65, Cl. 65—25.

Cyphers, Elmer B., R. F. Neblett, and C. S. Lynch, to Esso Research and Engineering Co. Colloidal molybdenum complexes and their preparation. 3,223,625, 12–14–65, Cl. 252—18.

Dahl, Carl B.: *See*—
Justus, Edgar J., and Dahl. 3,223,339.

Dahl, Henry: *See*—
Stone, Joseph J., Adams, Dahl, and Estock. 3,223,778.

Dahlberg, Robert S., Jr., to Philco Corp. Non-linear digital-to-analog converter. 3,223,993, 12–14–65, Cl. 340—347.

Daimler-Benz Aktiengesellschaft: *See*—
Nallinger, Friedrich K. H. 3,223,404.

Daitch, Maurice L. Shelving apparatus and installation thereof between wall studs. 3,223,246, 12–14–65, Cl. 211—134.

Dale, William L.: *See*—
Boggild, Robert, and Dale. 3,222,723.

Daley, Eugene J. Bathroom and kitchen molding. 3,222,837, 12–14–65, Cl. 52—288.

Dalrymple, Wayne W., to The Boeing Co. Endless track for a track laying vehicle. 3,223,462, 12–14–65, Cl. 305—34.

Damon, Wayne E., to General Motors Corp. Controllable frequency magnetically coupled multivibrator. 3,223,945, 12–14–65, Cl. 331—113.

Danielson, Berne: *See*—
Ryan, John W., Citron, and Danielson. 3,223,208.

Danko, Donald M., to National Rejectors, Inc. Currency detectors. 3,223,988, 12–14–65, Cl. 340—174.1.

David, Freddy, and W. V. Tyrlick, to Stromberg-Carlson Corp. Roll call generator. 3,223,977, 12–14–65, Cl. 340—147.

Davidson, Charles R., Jr.: *See*—
Golightly, James S., Doehlert, and Davidson. 3,223,505.
Cypher, James J., and Davidson. 3,223,499.

Davidson, Charles R., Jr., to Pittsburgh Plate Glass Co. Heat treatment of conveyed glass and apparatus therefor. 3,223,498, 12–14–65, Cl. 65—25.

Davies, Richard T.: *See*—
Smith, James D., and Davies. 3,223,139.

Davis, Frank L. Quick releasable buckle with belt length adjustments. 3,222,739, 12–14–65, Cl. 24—75.

Davis, Herbert M., and W. H. Lockwood, to United Kingdom Atomic Energy Authority. Device for detaching Mercury drops from a capillary tube. 3,222,942, 12–14–65, Cl. 74—102.

Davis, Karl A., to North American Aviation, Inc. Metal oxide concentration meter. 3,222,916, 12–14–65, Cl. 73—15.

Davison, Joseph W., to Phillips Petroleum Co. Process for dealkylation and recovery of hydrogen from refinery gases. 3,223,745, 12–14–65, Cl. 260—672.

Davy, John R., and A. J. N. Hope. Glass sandwiches primarily for windows of optical instruments. 3,223,829, 12–14–65, Cl. 219—522.

Davy, Peter T.: *See*—
Cummins, Douglas J., and Davy. 3,223,801.

DeBell & Richardson, Inc.: *See*—
Nickerson, Mortimer H., Schnitzer, Curtis, and Patterson. 3,223,654.

De Cat, Arthur H.: *See*—
Vrancken, Marcel N., De Cat, and Willems. 3,223,528.

De Censo, Herbert A., to Purolator Products, Inc. Coupling. 3,223,438, 12–14–65, Cl. 285—233.

Deckert, Oscar R., to Sir Steak Machinery, Inc. Meat tenderizing machine. 3,222,712, 12–14–65, Cl. 17—26.

Dedert, William G., to Whiting Corp. Evaporator apparatus. 3,223,144, 12–14–65, Cl. 159—18.

Deere & Co.: *See*—
Hubbard, Arthur L. 3,222,821.

De Graff, John W.: *See*—
Altobelli, John A., De Graff, and Heuser. 3,223,663.

De Groot, Walter R., and S. Laserus, to Atlantic Research Corp. Fire sprinkler head closure plug. 3,223,171, 12–14–65, Cl. 169—1.

Deinet, Adolph J., to Tenneco Chemicals, Inc. Method for the control of plant growth. 3,223,515, 12–14–65, Cl. 71—2.3.

Deist, Herbert H., to The Firestone Tire & Rubber Co. Apparatus for applying unvulcanized rubber material to a tire body. 3,223,573, 12–14–65, Cl. 156—396.

Deister, Emil E., Jr., to Deister Machine Co. Vibration isolation mount. 3,223,400, 12–14–65, Cl. 267—1.

Deister Machine Co.: *See*—
Deister, Emil E., Jr. 3,223,400.

Dell, Hugh A., to North American Philips Co., Inc. Analogue magnetic integrator. 3,223,847, 12–14–65, Cl. 307—88.

Dellith, Werner, to Camloc Fastener Corp. Panel fastener. 3,222,744, 12–14–65, Cl. 24—221.

DeMart, Le Roy S. Translational drive mechanism. 3,222,948, 12–14–65, Cl. 74—424.8.

Denhoff, Alice: *See*—
Smith, Walter H. B. 3,222,808.

Den-Tal-Ez Chair Mfg. Co.: *See*—
Naughton, John L. 3,223,448.

Denton, Robert F., to Arthur R. Adams. Air-conditioned helmet. 3,223,086, 12–14–65, Cl. 128—142.

Depp, Wallace A.: *See*—
Abbott, Henry H. Brown, Depp, Fracassi, and William. 3,223,976.

De Shazo, Earl L., Jr., to Phillips Petroleum Co. Multiple electrical transmission system utilizing common conductors. 3,223,968, 12–14–65, Cl. 340—18.

Dessonnas, Georges: *See*—
Mamin, Marcel. 3,223,073.

Dever, Lewis A., and L. A. Attermeyer, to The Cincinnati Milling Machine Co. Machine tool spindle mechanism. 3,222,956, 12–14–65, Cl. 77—4.

De Villers, Gerald E.: *See*—
Adams, Cecil E., and De Villers. 3,223,044.

De Witt, Nicklas R. Method and means for relining brakes in truck and trailer brake systems. 3,223,202, 12–14–65, Cl. 188—78.

Diamond Alkali Co.: *See*—
McKenna, James C., Albrecht, and McCracken. 3,223,646.

Di Bella, Eugene P., to Tenneco Chemicals, Inc. Process for the preparation of polychlorobensoic acids. 3,223,728, 12–14–65, Cl. 260—515.

Dick, A. B., Co.: *See*—
Stone, Joseph J., Adams, Dahl, and Estock. 3,223,778.

Dick, George M., to Bird Machine Co. Pressure type screening devices. 3,223,239, 12–14–65, Cl. 209—270.

Dieffenbach, Percy. Apparatus for making brushes. 3,223,454, 12–14–65, Cl. 300—2.

Dietert, Harry W., Co.: *See*—
Dietert, Harry W. and R. L., and Jameson, Hanna, Graham, and Steinmueller. 3,222,736.

Dietert, Harry W., H. L. Jameson, R. L. Dietert, T. H. Hanna, A. L. Graham, and R. E. Steinmueller, to H. W. Dietert Co. Properties controller for granular material. 3,222,736, 12–14–65 Cl. 22—89.

Dietert, Randolph L.: *See*—
Dietert, Harry W. and R. L., and Jameson, Hanna, Graham, Steinmueller. 3,222,736.

Dietz, Victor J.: *See*—
Nooker, Eugene L., Brown, Dietz, and Morton. 3,223,037.

Digby, James J., to The Bendix Corp. Engine starter gearing. 3,222,938, 12–14–65, Cl. 74—7.

Dimitri, Mitchell S.: *See*—
Ball, Frank J., Dimitri, and Schmut 3,223,697.

Dinger, Edward H., to General Electric Co. Tension motor control system. 3,223,906, 12–14–65, Cl. 318—7.

Dinkelkamp, Henry T., to Stewart-Warner Corp. Two component pumping and proportioning system. 3,223,040, 12–14–65, Cl. 103—11.

Dippel, Cornelis J.: *See*—
Jonker, Hendrik, and Dippel. 3,223,525.

Dirks, Gerhard. Signal operated control means for keyboard and like machines. 3,223,979, 12–14–65, Cl. 340—172.5.

Doehlert, David H.: *See*—
Golightly, James S., Doehlert, and Davidson. 3,223,505.

Dole, Charles M., Jr. Collapsible shelter construction. 3,223,098, 12–14–65, Cl. 135—4.

Dolgov, Valentin M.: *See*—
Nabiullin, Fuat H., Adamjan, Gertsik, Ushko, Dolgov, Tselov, and Sharanov. 3,222,963.

Domingos, Elba C.: *See*—
Domingos, John C. 3,224,029.

Domingos, John M.: *See*—
Domingos, John G. 3,224,029.

Domingos, Monte R.: *See*—
Domingos, John G. 3,224,029.

Doniger, Jerry, to The Bendix Corp. Flight control apparatus. 3,223,362, 12–14–65, Cl. 244—77.

Dorion, Francis W., and B. B. Becker, to Lewis-Shepard Co. Steerable power operated traction wheel unit. 3,223,192, 12–14–65, Cl. 180—13.

Dorland, Rodger M., M. M. Yan, and S. H. Baldwin. Pigment coated paper including polyvinyl alcohol binder as hardboard overlay. 3,223,579, 12–14–65, Cl. 162—123.

Dortort, Isadore K., to I-T-E Circuit Breaker Co. Protection of parallel connected D.C. sources. 3,223,892, 12–14–65, Cl. 317—43.

Dosch, Victor F., and J. W. Rabb, to United States of America, Navy. Analog to digital to analog converter, recorder and reproducer. 3,223,991, 12–14–65, Cl. 340—347.

Douros, John D.: *See*—
Marlowe, Bernard, Raymond, and Douros. 3,223,621.

Dow Chemical Co., The: *See*—
Leavitt, Frederick C. 3,223,679.

Dow Corning Corp.: *See*—
Plueddemann, Edwin P. 3,223,577.

Dow, Irving M.: *See*—
Bull, James T., Dow, Engle, Kellinger, O'Keefe, Schofield, andTaylor. 3,222,988.

Downes, Leonard O. Electrical fixture mounting system with a double flange framing member. 3,223,774, 12–14–65, Cl. 174—61.

Drager, Otto H.: *See*—
Crosskopf, Karl. 3,223,487.

Draper Corp.: *See*—
Fregeolle, Oscar, and Dube. 3,222,890.

Drayer, William L.: *See*—
Ashurkoff, Peter, and Drayer. 3,222,767.

Dreger, Albert W., to E. I. du Pont de Nemours and Co. Refined petroleum wax-ethylene vinyl acetate copolymer-chlorinated petroleum wax composition. 3,223,662, 12–14–65, Cl. 260—28.5.

Dreistadt, Michael, Sr.: *See*—
Abate, Joseph, Jr., and Dreistadt. 3,223,453.

Drew, Glen G.: *See*—
Budlong, Willis A., Drew, and Harr. 3,223,785.

Drew, Howard F., and J. G. Voss, to The Procter & Gamble Co. Mild detergent compositions. 3,223,647, 12–14–65, Cl. 252—137.

Dreyfus, Marc G., to Barnes Engineering Co. Surface roughness meter. 3,222,978, 12–14–65, Cl. 88—14.

Dreyfuss, Paul, to Ciba Corp. Process for the production of photographic images by the silver dyestuff bleaching process and photographic layers therefor. 3,223,527, 12–14–65, Cl. 96—53.

Dube, Florian C.: *See*—
Fregeolle, Oscar, and Dube. 3,222,890.

Dudte, Fred, to Harper and Saunder, Inc. Automatic feeder. 3,223,227, 12–14–65, Cl. 198—64.

Dufendach, William R., and M. J. Applegate, to American Seating Co. Instruction apparatus for classrooms. 3,223,956, 12–14–65, Cl. 339—14.

Du Grenier, Francis C., to The Seeburg Corp. Mechanical multiple coin counting and control mechanism for vending machines. 3,223,217, 12–14–65, Cl. 194—39.

Duling, Irl N., to Sun Oil Co. Process for preparing dihaloacetylenes. 3,223,740, 12–14–65, Cl. 260—654.

Dumaire, Marc-Jean, and J-P. Vasseur, to C.S.F.-Compagnie generale de Telegraphie Sans Fil. Local oscillator controlling systems using quantizing means. 3,223,943, 12–14–65, Cl. 331—17.

Dunn, Lyman D.: *See*—
Gembicki, Stanley, and Dunn. 3,223,815.

Dunn, Robert O.: *See*—
Moon, John J., and Dunn. 3,222,881.

Du Pont de Nemours, E. I., and Co.: *See*—
Brixner, Lothar H. 3,223,640.
Dreger, Albert W. 3,223,662.
Knox, Roger E. 3,223,388.
Luckenbaugh, Raymond W., and Smeltz. 3,223,584.
Owens, John E., and Vieth. 3,223,757.
Rimmer, Robert W. 3,223,755.
Shloss, Anthony L. 3,223,674.
Stiles, Alvin B. 3,223,653.
Stryker, Harvey I. 3,223,727.

Dupuy, Harold P.: *See*—
Mod, Robert R., Skau, Fore, Magne, Novak, Dupuy, Ortego, and Fisher. 3,223,708.

Durham, Hobart N., Jr., to Connecticut Valley Chemical, Inc. Soldering flux. 3,223,561, 12–14–65, Cl. 148—23.

Duro-Test Corp.: *See*—
Thorington, Luke. 3,223,273.

Du Shane, Ray N., Jr., to Northrop Architectural Systems. Latch mechanism. 3,222,897, 12–14–65, Cl. 70—97.

Duval, Bruce: *See*—
Waddington, Rogor S., and Duval. 3,223,296.

Dvorszky, Magda: *See*—
Millner, Tivader, Fukker, Martin, and Dvorszky. 3,223,607.

Dwyer, Philip M., and G. A. Jedenoff, to Far-Best Corp. Coolant and lubricant composition and method for cold working metal. 3,223,635, 12–14–65, Cl. 252—51.5.

Dyste, Neal L., and E. W. Gellersen, to The Garrett Corp. Gas turbine engine fixed boundary recuperator. 3,222,864, 12–14–65, Cl. 60—39.51.

Early, Randolph C., and A. J. Fuller, to General Electric Co. Redundant signal amplifier transmission channel. 3,223,940, 12–14–65, Cl. 330—84.

East, Ivan H.: *See*—
Cherry, William J., and East. 3,223,835.

Eaton Mfg. Co.: *See*—
Gruber, Thomas J. 3,223,198.

Eberhardt, Gert G., to Sun Oil Co. Alkylation of alkyl aromatic hydrocarbons. 3,223,742, 12–14–65, Cl. 260—668.

Ebner, Ludwig: *See*—
Martin, Henry, Aebi, and Ebner. 3,223,721.

Eckert, Lewis W., and F. Celmer, to Armstrong Cork Co. Dimensionally stable mineral wool fiberboard. 3,223,580, 12–14–65, Cl. 162—145.

Edenborough, Yule C. Air cylinders and manufacture thereof. 3,223,002, 12–14–65, Cl. 92—169.

Eder, Heinz, to Wacker-Chemie G.m.b.H. Stable aqueous emulsions of organohydrogensiloxanes containing a water-soluble aldehyde. 3,223,665, 12–14–65, Cl. 260—29.2.

Edgerton, Germeshausen & Grier, Inc.: *See*—
Hansen, Ramon D., and Bridenstine. 3,223,854.
Ward, William A. 3,223,884.

Edwards, Bryant, to Illinois Tool Works Inc. Plastic cup with fins. 3,223,305, 12–14–65, Cl. 229—1.5.

Edwards, John: *See*—
Bowers, Albert, and Edwards. 3,223,717.

Effinger, William L., Jr., and H. Struck, to The A. C. Gilbert Co. Toy powered flex wing. 3,222,816, 12–14–65, Cl. 46—78.

Efron, Theodore, W. F. Hess, and M. J. Seidmon, to Theodore Efron Mfg. Co. Shower curtain. 3,222,689, 12–14–65, Cl. 4—149.

Efron, Theodore, Mfg. Co.: *See*—
Efron, Theodore, Hess, and Seidmon. 3,222,689.

Eggers, Gerhard: *See*—
Seibold, Wilhelm O., Eggers, Riccius, and Stuessel. 3,223,354.

Eggers, Reinhold. Electric heating tube in which enlarged convolutions of filament coil act as filament supports. 3,223,875, 12–14–65, Cl. 313—273.

Egyesult Izzolampa es Villamossagi Reszvenytarsasag: *See*—
Millner, Tivadar, Fukker, Martin, and Dvorsky. 3,223,607.

Eickmann, Karl. Rotary radial piston machines. 3,223,046, 12–14–65, Cl. 103—161.

Elsafeld, Erich, and L. Babisch, to Siemens & Halske Aktiengesellschaft. Stack-forming conveyor device for data cards. 3,223,409, 12–14–65, Cl. 271—71.

Elco Corp.: *See*—
Ruehlemann, Herbert E. 3,223,960.

Electric & Musical Industries Ltd.: *See*—
Voles, Roger E. 3,223,996.

Electric Storage Battery Co., The: *See*—
Purcell, Thomas H., Jr. 3,223,558.

Electro Materials Corp.: *See*—
Crownover, Joseph W. 3,223,494.

Electro-Optical Systems, Inc.: *See*—
Todd, Hoyt H. 3,223,878.

Electro-Photo Corp.: *See*—
Craven, Jack L., Hedglin, Craven, McCarville, and Sweeney. 3,223,007.

Electro-Tec Corp.: *See*—
Lapham, Charles J. 3,223,949.

Elion, Herbert A.: *See*—
Shapiro, Louis, and Elion. 3,223,837.

Ellis, David H., to Ritzon, Inc. Door closing mechanism. 3,222,709, 12–14–65, Cl. 16—55.

Elslager, Edward F., and D. F. Worth. Salts of 4,6-diamino-1,2 - dihydro - 2 - lower alkyl-1-aryl-s-triazines. 3,223,705, 12–14–65, Cl. 260—249.9.

Emerson, Marvin R., and R. R. Lowe, to Pacific Data Systems, Inc. Switching circuit. 3,223,855, 12–14–65, Cl. 307—88.5.

Emery Industries, Inc.: *See*—
Scherr, Oscar L., and Moses. 3,223,718.

Emhart Corp.: *See*—
Rowe, George E. 3,223,511.

Endevco Corp.: *See*—
Shoor, Bernard A., and Burger. 3,222,919.

Engle, William E.: *See*—
Bull, James T., Dow, Kellinger, O'Keefe, Schofield, Taylor, and Engle. 3,222,988.

Engelhard Hanovia, Inc.: *See*—
Schneider, Irving. 3,222,896.

Engelhard Industries, Inc.: *See*—
Cohn, Johann G. E., Hauel, and Keith. 3,223,556.
Lindenthal, John W. 3,223,541.

English, Charles L. Fluid motor. 3,222,994, 12–14–65, Cl. 91—224.

Erickson, Donald L.: *See*—
Kirkpatrick, James S., and Erickson. 3,222,911.

Erickson, Elmer L. Apparatus for producing prestressed concrete article. 3,223,379, 12–14–65, Cl. 249—97.

Erickson, Henry, and R. A. Sanford, to Sinclair Research, Inc. Preparation of iron group metal catalysts. 3,223,652, 12–14–65, Cl. 252—439.

Ernco Enterprises: *See*—
Robbins, Roy F. 3,223,189.

Erne, Josef. Template for making tenon joints. 3,223,132, 12–14–65, Cl. 144—87.

Ernestus, Adolph W., to N.T.W. Missile Engineering, Inc. Method and apparatus for extrusive rolling of non-cylindrical hollow bodies. 3,222,904, 12–14–65, Cl. 72—91.

Ernestus, Adolph W., to N.T.W. Missile Engineering, Inc. Method of forming tubular metal products by extrusive rolling. 3,222,905, 12–14–65, Cl. 72—91.

Ernst, Max. Portable battery operable record player. 3,223,422, 12–14–65, Cl. 274—9.

Ernster, Louis G.: *See*—
Robbins, Roy F. 3,223,189.

Eshom, Robert N. Template for marking corner cuts of a molding. 3,222,792, 12–14–65, Cl. 33—174.

Esser, Wilhelm C. J., and A. L. M. Wilm, to AMP Inc. Electrical plug and socket connectors. 3,223,961, 12–14–65, Cl. 339—223.

Esso Products Research Co.: *See*—
Lacey, James W., Horsfield, and Welch. 3,223,157.

Esso Research and Engineering Co.: *See*—
Calvino, Louis N., and Munsell. 3,223,495.
Cyphers, Elmer B., Neblett, and Lynch. 3,223,625.
Metro, Stephen J. 3,223,726.
Metro, Stephen J., Matussak, and Barnum. 3,223,686.
Morway, Arnold J., and Ramsden. 3,223,624.
Morway, Arnold J., and Ramsden. 3,223,633.
Morway, Arnold J., and Rutkowski. 3,223,631.
Morway, Arnold J., and Argabright. 3,223,651.
Tornqvist, Erik G. M., and Argabright. 3,223,627.
Vesterdal, Hans G. 3,223,632.
Vesterdal, Hans G., and Kassinger. 3,223,690.
Wilsher, Rudolph S., Tornqvist, and Lynn. 3,223,690.

Estock, Paul J.: *See*—
Stone, Joseph J., Adams, Dahl, and Estock. 3,223,778.

Etablissement Ena: *See*—
Schlageter, Rosa. 3,223,699.

Ethyl Corp.: *See*—
Keblys, Kestutis A. 3,223,719.

Ettorre, James E., and A. C. Lindmark. Machine tool fixture. 3,222,992, 12–14–65, Cl. 90—20.

Evans, John T., to General Electric Co. Position indicating device. 3,223,830, 12–14–65, Cl. 235—92.

Evans Products Co.: *See*—
Pritchard, John S. 3,222,831.

Evans, Robert E., W. L. Prior, and A. V. Baber, to National Gypsum Co. Fibrous panels impregnated with foam plastic. 3,223,576, 12–14–65, Cl. 161—84.

Everett, Buford R., and R. Shallenberg, to K-Line Corp. Multiple disc cutter apparatus. 3,222,962, 12–14–65, Cl. 82—83.

Evering, Bernard L.: *See*—
Harris, Samuel W., and Evering. 3,223,750.

Ewers, Engelbert. Equipment for expediting the transportation of containers on rail-borne and road vehicles. 3,223,-258, 12–14–65, Cl. 214—38.

FMC Corp.: *See*—
Fry, Horace P., Jr. 3,223,762.
Rosser, Charles M. 3,223,535.

Fabricius, John H., to Sprague Electric Co. Mixed metal-ceramic capacitor. 3,223,905, 12–14–65, Cl. 317—258.

Fackler, Warren C., and C. E. Michel, to Collins Radio Co. Constant pressure type contact spring. 3,223,793, 12–14–65, Cl. 200—11.

Fairchild Hiller Corp.: *See*—
Quick, Stanley L. 3,223,358.
Quick, Stanley L., and Opdahl. 3,223,359.

Falerni, Jack, and D. Arbitman. Metered fluid dispenser. 3,223,295, 12–14–65, Cl. 222—438.

Falk, Wilbert C.: *See*—
Butler, David H., and Falk. 3,223,374.

Fallstad, Harlan T., and A. E. Rheineck, to Archer-Daniels-Midland Co. Process for producing tertiary amines. 3,223,734, 12–14–65, Cl. 260—583.

Fann, James D. Apparatus for dispensing proportioned amounts of solids and liquids. 3,223,284, 12–14–65, Cl. 222—57.

Farah, William F. Adjustable waist band construction. 3,222,686, 12–14–65, Cl. 2—237.

Farbenfabriken Bayer Aktiengesellschaft: *See*—
Colln, Reimer, and Schrader. 3,223,754.
Heiss, Rudolf, Burmeister, and Grewe. 3,223,733.
Kuth, Robert, Von Brachel, Schneider, and Quaedvlieg. 3,223,471.
Sasse, Klaus, Wegler, and Unterstenhofer. 3,223,706.
Ugi, Ivar, Beck, and Bottner. 3,223,709.

Far-Best Corp.: *See*—
Dwyer, Philip M., and Jedenoff. 3,223,635.

Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning: *See*—
Boedeker, Hermann, Langbein, Sommer, Zimmermann, and Berner. 3,233,470.

Farrar, Ralph C., Jr., to Phillips Petroleum Co. Fluidization of reaction mixture of organoalluminum-titanium tetrachloride polymerized isoprene by addition of an organometallic compound. 3,223,693, 12–14–65, Cl. 260—94.3.

Farrar, Ralph C., Jr., to Phillips Petroleum Co. Process and catalyst for production of rubbery polymers. 3,223,694, 12–14–65, Cl. 260—94.3.

Farrar, Ralph C., and F. E. Naylor, to Phillips Petroleum Co. Process for production of cis 1,4-polybutadiene. 3,223,-692, 12–14–65, Cl. 260—94.3.

Fashion Development Corp.: *See*—
Rosenzweig, William. 3,222,687.
Rosenzweig, William. 3,222,688.

Fassbender, Frederick A., to S. M. Frank & Co., Inc. Filter pipe. 3,223,091, 12–14–65, Cl. 131—206.

Fawdry, Charles F., and E. G. White, to Headley Townsend Backhouse. Suction grippers. 3,223,442, 12–14–65, Cl. 294—64.

Fayman, David L., to Oread Electronics Laboratory, Inc. Apparatus for accurately multiplying the frequency of an electrical signal of any frequency within a given range of frequencies. 3,223,928, 12–14–65, Cl. 328—23.

Fearnside, Kenneth: *See*—
Boothby, Geoffrey F., Fearnside, and Pollak. 3,223,363.

Fedock, Michael P.: *See*—
Limes, Robert W., and Fedock. 3,223,540.

Feger, Werner G., to Bell Telephone Laboratories, Inc. Method of and apparatus to monitor interconnected speech circuits for noise. 3,223,780, 12–14–65, Cl. 179—1.

Fein, C. & E., firma: *See*—
Schweizer, Benno. 3,223,210.

Feldman, Julian, and B. A. Saffer, to National Distillers and Chemical Corp. Hydrocarbon promoters for dimerization. 3,223,741, 12–14–65, Cl. 260—666.

Felton, Donald L.: *See*—
Allenbaugh, Howard M. 3,222,707.

Fenne, Kenneth R., to Motorola, Inc. Enclosure and stand therefor. 3,223,468, 12–14–65, Cl. 312—255.

Fenoglio, Charles E.: *See*—
Miller, Henry Z., Koltuniak, and Fenoglio. 3,223,921.

Ferrari, Andrea, and N. G. Kling, to Technicon Instruments Corp. Apparatus for treatment of solids for analysis. 3,223,485, 12–14–65, Cl. 23—253.

Ferris, Robert G., G. W. Berryhill, L. Boppart, and J. W. Ratajczak, to Starline, Inc. Animal feeder. 3,223,228, 12–14–65, Cl. 198—204.

Feuz, Andre, to L. P. Perraud. Life buoys. 3,222,701, 12–14–65, Cl. 9—330.

Fetzer, Frederick, to Hollymatic Corp. Stepping device. 3,222,935, 12–14–65, Cl. 74—3.52.

Fielding, Robert L. Underbody spare tire and wheel carrier. 3,223,263, 12–14–65, Cl. 214—454.

Fierce, William L.: *See*—
Welchman, Roger L., and Fierce. 3,223,723.

Findlay, Robert A., to Phillips Petroleum Co. Fractional crystallization control system. 3,222,880, 12–14–65, Cl. 62—58.

Firestone Tire & Rubber Co., The: *See*—
Carlson, Harold V. 3,223,005.
Deist, Herbert H. 3,223,573.
Maillie, James B., and Mulder. 3,223,491.
Mulder, Harry. 3,223,062.
Smith, George E. P., Jr. 3,223,684.

First Pennsylvania Banking and Trust Co., The: *See*—
Shapiro, Louis, and Elion. 3,223,837.

Fischer, Alfred O., to American Machine & Foundry Co. Short cycle regeneration. 3,222,849, 12–14–65, Cl. 55—163.

Fischer, Eugen, and S. Förster, to Johannes Erhard, H. Waldenmaier Erben, Suddeutsche Armaturenfabrik. Gate valve with resilient sealing mounted in the valve body. 3,223,381, 12–14–65, Cl. 251—328.

Fischer, Herbert L., to Logitek, Inc. Long term timing device and pulse storage system. 3,223,981, 12–14–65, Cl. 340—172.5.

Fischer, Richard F.: *See*—
Fotsch, Arthur H., Ross, and Fischer. 3,223,224.

Fischer, Wilhelm A., to Max-Planck-Institut fur Eisenforschung. Process for the production of linings for metallurgical furnaces. 3,223,758, 12–14–65, Cl. 264—30.

Fisher, Marry J.: *See*—
Mod, Robert R., Skau, Fore, Magne, Novak, Dupuy, Ortego, and Fisher. 3,223,708.

Fishtahler, Vernon F.: *See*—
Nash, Edward L., and Fishtahler. 3,223,203.

Fisk, Roy T., to Hyland Laboratories. Diagnostic procedure. 3,223,484, 12–14–65, Cl. 23—230.

Fitzsimmons, Lloyd R., to Product Engineering Co. Golf cart wheel latching structure. 3,223,430, 12–14–65, Cl. 280—42.

Flemming, Edward D., and F. Wislocker, to Weyerhaeuser Co. Compacter de-aerator. 3,223,026, 12–14–65, Cl. 100—90.

Flexible Mfg. Corp.: *See*—
Ciaccio, Peter L. 3,222,704.

Florac, William A., Jr., H. Y. Juliusburger, and A. A. Kusnick, to International Business Machines Corp. Digital data modulation device. 3,223,925, 12–14–65, Cl. 325—163.

Fluid Energy Processing and Equipment Co.: *See*—
Stephanoff, Nicholas N. 3,223,333.

Flynn, Francis E., Jr.: *See*—
Roberson, Robert C., and Flynn. 3,223,298.

Forch, Friedrich: *See*—
Cech, Karl, and Forch. 3,223,469.

Ford, Bruce, and G. E. Wells, to The Youngstown Sheet and Tube Co. Molding apparatus. 3,222,727, 12–14–65, Cl. 18—30.

Fore, Sara P.: *See*—
Mod, Robert R., Skau, Fore, Magne, Novak, Dupuy, Ortego, and Fisher. 3,223,708.

Forman, Edward W., Jr.: *See*—
Henze, Edward D., and Forman. 3,223,766.

Förster, Siegmar: *See*—
Fischer, Eugen, and Förster. 3,223,381.

Fortin, Eugene G.: *See*—
Lessoff, Howard N., and Fortin. 3,223,641.

Fosler, John R., to General Motors Corp. Motor clutch and brake control for domestic appliance. 3,223,211, 12–14–65, Cl. 192—44.

Fotsch, Arthur H., G. W. Ross, and R. F. Fischer, to Kearney & Trecker Corp. Machine tool. 3,223,224, 12–14–65, Cl. 198—19.

Fowler, Alvah W. Line drag means for a spinning reel. 3,223,346, 12–14–65, Cl. 242—84.2.

Fracassi, Renato D.: *See*—
Abbott, Henry H., Brown, Depp, Fracassi, and Williams. 3,223,976.

Francis, Gerald C. Prestressed concrete. 3,222,835, 12–14–65, Cl. 52—223.

Frank, S. M., & Co., Inc.: *See*—
Fassbender, Frederick A. 3,223,091.

Frankenstein, P., & Sons (Manchester) Ltd.: *See*—
Smith, Rex S. 3,222,700.

Franklin, Richard, to Sperry Rand Corp. Analog to digital converter and counter for fluid application. 3,223,324, 12–14–65, Cl. 235—201.

Frazier, Thomas C., to Allied Chemical Corp. Urea-formaldehyde molding compositions containing cyanuric acid as latent curing catalyst and method. 3,223,656, 12–14–65, Cl. 260—17.3.

Fredley, James C., and G. E. Sleighter, to Pittsburgh Plate Glass Co. Method and apparatus for treating glass on a pressurized fluid bed. 3,223,501, 12–14–65, Cl. 65—25.

Fredley, James C., and G. E. Sleighter, to Pittsburgh Plate Glass Co. Coating of glass sheet while deformable and supported on gas. 3,223,549, 12–14–65, Cl. 117—119.8.

Freeman, Arthur H., to General Electric Co. Lid holding means for can opener. 3,222,780, 12–14–65, Cl. 30—6.4.

Freeman, Harold M., and J. F. Toth, to Inventions, Inc. Magnetically actuated doll light. 3,223,412, 12–14–65, Cl. 272—8.

Fregeolle, Oscar, and F. G. Dube, to Draper Corp. Knitting method and apparatus. 3,222,890, 12–14–65, Cl. 66—43.

Friden, Inc.: *See*—
Mast, Lowell R. 3,223,828.

Frisbie, Marshall H., and W. A. Scholefield, to The A. C. Gilbert Co. Toy compound winch. 3,223,386, 12–14–65, Cl. 254—185.

Fritz, Harry E., R. A. Gallagher, F. M. Galloway, R. M. Kerr, F. B. Plumb, G. J. Rittenhouse, and R. H. Sinnamon, to H. K. Porter Co. Inc., and Thermoid Division. Method of making heat resistant flexible hose. 3,223,565, 12–14–65, Cl. 156—86.

Fry, Horace P., Jr., to FMC Corp. Manufacture of thin-wall tubing. 3,223,762, 12–14–65, Cl. 264—95.

Frye, William A., to General Motors Corp. Steering wheel. 3,222,952, 12–14–65, Cl. 74—552.

Fuhrmann, Ernst, to Goetzewerke Friedrich Goetze A.-G. Apparatus for automatically inspecting split rings. 3,223,-223, 12–14–65, Cl. 198—19.

Fuji Tsushinki Seizo Kabushiki Kaisha: *See*—
Yamamoto, Takuma, Makamura, and Shimada. 3,223,-783.

Fujitsu Ltd.: *See*—
Takeuchi, Sho. 3,223,338.

Fukker, Karoly: *See*—
Milliner, Tivadar, Fukker, Martin, and Dvorszky. 3,223,-607.

Fuller, Allen J.: *See*—
Early, Randolph C., and Fuller. 3,223,940.

Fuller, Merle A., and R. J. Slezak, to The B. F. Goodrich Co. Let-off apparatus. 3,223,352, 12–14–65, Cl. 242—156.2.

Fuller, Richard H., to Hammond Industries, Inc. Still with heated-air circulation for evaporating and recovering of liquid solvent. 3,223,596, 12–14–65, Cl. 202—201.

Fulton, James F., to Reynolds Metals Co. Dispenser for coiled sheet material. 3,222,972, 12–14–65, Cl. 83—564.

Fuss, Fred N., to Bell Telephone Laboratories, Inc. Preanodization of tantalum electrodes. 3,222,751, 12–14–65, Cl. 29—25.31.

Gabb Special Products, Inc.: *See*—
Roth, Wilfred. 3,222,917.

Gabler, Rudolf, and H. Muller, to W. R. Grace & Co. Preparation of linear polyurea polymers from urea and an alicyclic diamine. 3,223,682, 12–14–65, Cl. 260—77.5.

Gadde, Tore L., to Amals Gjuteri Och Mekaniska Verstad, AB. Expansible mandrel. 3,223,341, 12–14–65, Cl. 242—72.

Galbato, Anthony T.: *See*—
Martin, Afton V., and Galbato. 3,223,317.

Gallaugher, Major L., to Phillips Petroleum Co. Monoolefin polymers destaticized with alkyl polyamines. 3,223,695, 12–14–65, Cl. 260—94.9.

Gallaugher, Major L., and J. E. Pritchard, to Phillips Petroleum Co. Dialkanol amide antistatic composition for polyolefins. 3,223,545, 12–14–65, Cl. 106—287.

Galloway, Frederick M.: *See*—
Fritz, Harry E., Gallagher, Galloway, Kerr, Plumb, Rittenhouse, and Sinnamon. 3,223,563.
Fritz, Harry E., Gallagher, Galloway, Kerr, Plumb, Rittenhouse, and Sinnamon. 3,223,565.

Gannoe, Thomas E.: *See*—
Seekings, Charles D., and Gannoe. 3,223,095.

Garbe, Ewald G., and A. Likel. Bale stooking machines. 3,223,253, 12–14–65, Cl. 214—6.

Garrett Corp., The: *See*—
Dyste, Neal L., and Gellersen. 3,222,864.

Gassino, Teresio, to Ing. C. Olivetti & C., S.p.A. Automatic multiplication device for a ten key calculating machine. 3,223,318, 12–14–65, Cl. 235—60.

Gaston, Jack E., to Armstrong Cork Co. Mineral wool quality test. 3,222,924, 12–14–65, Cl. 73—159.

Gauldie, Kenneth, to Hydraulic Crushers Ltd. Balanced rotary commutating valve. 3,222,867, 12–14–65, Cl. 60—54.5.

Gault, Vincent A.: *See*—
Huntley, Keith G., Starr, and Gault. 3,222,791.

Gauthier, Alfred, G.m.b.H.: *See*—
Rentschler, Waldemar T. 3,223,012.
Rentschler, Waldemar T. 3,223,013.
Rentschler, Waldemar T. 3,223,016.
Rentschler, Waldemar T., Helber, and Straub. 3,223,015.
Rentschler, Waldemar T., and Pross. 3,223,010.
Weller, Erwin. 3,223,014.

Gea-Luftkuhler-Gesellschaft m.b.H.: *See*—
Schulenberg, Franz. 3,223,152.

Geary, Robert J., to Plant Products Corp. Peaticidal resin and method of preparing same. 3,223,513, 12–14–65, Cl. 71—2.3.

Gebhardt, Wilhelm, and H. Gibbels, to Siemens-Electrogerate Aktiengesellschaft. Door seal for household appliances. 3,223,276, 12–14–65, Cl. 220—46.

Gebo, George B. Power pulling arrangement. 3,223,384, 12–14–65, Cl. 254—134.3.

Gegenheimer, Harold W., A. N. Stad, and P. E. Tobias, to Baldwin-Gegenheimer Corp. Printing press water solution mixing and distributing mechanism. 3,223,294, 12–14–65, Cl. 222—434.

Geiersberger, Karl, K. Tesche, and G.-D. Woltas, to Chemische Fabrik Kalk G.m.b.H. Production of orthophosphates. 3,223,481, 12–14–65, Cl. 23—109.

Geigy Chemical Corp.: *See*—
Bindler, Jakob, and Model. 3,223,547.
Bindler, Jakob, and Model. 3,223,582.

Geitz, Robert C. Pressure vessel. 3,223,492, 12–14–65, Cl. 23—290.

Gelb, William G. Scanning photographic copying apparatus. 3,222,982, 12–14–65, Cl. 88—24.

Gelernter, Herbert: *See*—
Bloch, Erich, and Gelernter. 3,223,984.

Gellersen, Erich W.: *See*—
Dyste, Neal L., and Gellersen. 3,222,864.

Gellman, Allen B., to Waltham Watch Co. Lighter. 3,222,-894, 12–14–65, Cl. 67—7.1.

Gembicki, Stanley, and L. D. Dunn, to Marlan Co. Apparatus and method for welding band saw blades. 3,223,815, 12–14–65, Cl. 219—9.5.

Genbauffe, Francis S., to Robertshaw Controls Co. Clothes dryer control system. 3,223,395, 12–14–65, Cl. 263—33.

General Dynamics Corp.: *See*—
Jorgensen, Adam A. 3,223,787.
Shapiro, Harris. 3,223,043.
Shapiro, Harris. 3,223,867.

General Electric Co.: *See*—
Carlson, Gerald J. 3,223,883.
Carpenter, Thomas J. 3,223,874.
Clark, David B., and Langley. 3,223,225.
Dinger, Edward H. 3,223,906.
Early, Randolph C., and Fuller. 3,223,940.
Evans, John T. 3,223,830.
Freeman, Arthur H. 3,222,780.
Hickey, John S., Jr. 3,223,950.
Howell, Edward K. 3,223,923.
Krug, George A., Jr. 3,223,881.
Lawrence, Jackson, and Wilson. 3,223,857.
Maul, William J., Oppel, and Rathbun. 3,223,890.
McCurdy, Dudley P. 3,223,205.
Mohler, Donald, and Tragert. 3,223,899.
Schlesinger, Kurt. 3,223,871.
Stauffer, Lynn H. 3,223,885.
Thal, Herbert L., Jr. 3,223,882.
Wawrousek, Hans W. 3,223,602.

General Electric Co. Ltd., The: *See*—
Haile, James N. 3,223,930.

General Electronic Laboratories, Inc.: *See*—
Ludwig, David R., and Hewson. 3,223,918.

General Instrument Corp.: *See*—
Bernstein, Bernard. 3,223,895.

General Motors Corp.: *See*—
Apolloni, Gino M., Mackie, and Streetman. 3,223,445.
Armentrout, Everett C., and Sucro. 3,223,798.
Ashurkoff, Peter, and Drayer. 3,222,767.
Conover, George W., Hulsing, and Koehler. 3,223,197.
Coppock, Kenneth E., and Hallenbeck. 3,223,446.
Damon, Wayne E. 3,223,945.
Fosler, John R. 3,223,211.
Frye, William A. 3,222,952.
Harned, John L. 3,222,944.
Hutchinson, Richard W., and Wroby. 3,223,908.
Kuhl, Bernard A. 3,222,804.
Lawless, Norman D., and Hertz. 3,223,323.
Levenson, John J. 3,222,698.
Leyner, George A. 3,222,772.
Maugans, Terrance W. 3,223,926.
Maursey, Ethan K. 3,222,951.
Nash, Edward L., and Fishtahler. 3,223,203.
Parks, Robert R. 3,223,433.
Rarey, Robert S., and Johnson. 3,223,963.
Robbins, Samuel B. 3,223,377.
Rodaer, James A. 3,223,935.
Sensing, William J., Colvill, Short, and Dennis. 3,223,-909.
Stott, Thomas C. F. 3,223,196.
Wanlass, Bert R. 3,223,791.

General Precision, Inc.: *See*—
Beer, Emanuel E., and Jacobson. 3,223,320.
Gevas, James C. 3,222,795.

General Time Corp.: *See*—
Protzmann, Donald E. 3,223,833.

General Tire & Rubber Co., The: *See*—
Hofmann, Charles M. 3,223,134.

General Turbine Corp.: *See*—
Sawyer, James G. 3,223,286.

Geolograph Co., The: *See*—
Van Winkle, Roy L. 3,223,068.

George, Henri J. C., to Quartz & Silica S.A. Process of forming dielectric materials for condensers. 3,223,601, 12–14–65, Cl. 204—56.

Georgia, James D.: *See*—
Budjinski, Aloysius N., and Georgia. 3,223,215.

Gerard, George, and J. Brayman, to Barogenics, Inc. Sealing means responsive to fluid pressure to provide radial and axial sealing effects. 3,223,003, 12–14–65, Cl. 92—182.

Gerard, George, and J. Brayman, to Barogenics, Inc. Seal assembly for pressurized tubular joint. 3,223,427, 12–14–65, Cl. 277—176.

Gerlach, Klaus: *See*—
Sommer, Erwin, Gerlach, and Werner. 3,223,581.

Gerletz, Charles F., to National Cleveland Corp. Roll-fed thermoforming machine. 3,222,971, 12–14–65, Cl. 83—218.

Gerrard, A. J., Mfg. Co.: *See*—
Palmleaf, Herbert, and Tako. 3,222,745.

Gertsik, Efim M.: *See*—
Nabiullin, Faat H., Adamjan, Gertsik, Ushko, Dolgov, Tselov, and Sharanov. 3,222,963.

Gesellschaft fur Linde's Eismaschinen Aktiengesellschaft: *See*—
Becker, Rudolf. 3,222,878.

Gevas, James C., to General Precision, Inc. Accelerated north-seeking gyrocompassing system. 3,222,795, 12–14–65, Cl. 33—226.

Gewerkschaft Elwerath: *See*—
Peter, Siegfried. 3,223,156.

Giannini Controls Corp.: *See*—
Rochester, James R. 3,223,846.

Gibbels, Heinrich: *See*—
Gebhardt, Wilhelm, and Gibbels. 3,223,276.

Gibson, James O.: *See*—
Bloetscher, Frederick, Gibson, and Cross. 3,224,000.

Gibson, Jefferson C. Fire alarm having fail safe bimetal-magnetic means. 3,223,805, 12–14–65, Cl. 200—138.

Gilbert, A. C., Co., The: *See*—
Effinger, William L., Jr., and Struck. 3,222,816.
Frisbie, Marshall H., and Scholefield. 3,223,386.
Struck, Henry. 3,222,815.

Gilbert, Everett E., and C. N. Yiannios, to Allied Chemical Corp. Chlorofluorophenoxy herbicidal composition and method. 3,223,516, 12–14–65, Cl. 71—2.3.

Gill, John B. Arbor construction for pipe tools. 3,222,960, 12–14–65, Cl. 82—4.

Gilmore, William J., and L. L. Mesler, to American Chain & Cable Co., Inc. Twisted cable assembly and method of making the assembly. 3,222,858, 12–14–65, Cl. 57—141.

Gilwood, Martin E.: *See*—
Caimon, Calvin, Gilwood, and Termini. 3,223,619.

Gingras, William P., to Jonker Business Machines, Inc. Reader for superimposable card system. 3,222,786, 12–14–65, Cl. 33—76.

Girard, Peter F., to The Ryan Aeronautical Co. Flexible wing with integrated tail unit. 3,223,361, 12–14–65, Cl. 244—75.

Girard, Theodore A., to Tenneco Chemicals, Inc. Surface-coating compositions containing halobenzyl thiocyanates. 3,223,536, 12–14–65, Cl. 106—18.

Gladstone, Lewis. Turntable with magnetic hysteresis drive. 3,223,865, 12–14–65, Cl. 310—103.

Glaser, Herbert. Television picture screen. 3,223,886, 12–14–65, Cl. 315—151.

Glasple, Donald L., to The Boeing Co. Temperature and humidity control systems for enclosures. 3,222,883, 12–14–65, Cl. 62—172.

Glenn, Edward R. Door closer. 3,223,402, 12–14–65, Cl. 268—53.

Godfrey, Thomas A., to American Machine & Foundry Co. Tobacco die clipping collector for individual machine. 3,222,967, 12–14–65, Cl. 83—100.

Goebel, Clarence J., to Young Radiator Co. Shell-and-tube heat-exchanger. 3,223,154, 12–14–65, Cl. 165—158.

Goetti, Adam D., to McGraw-Edison Co. Evaporative cooler construction. 3,223,393, 12–14–65, Cl. 261—28.

Goetti, Adam D., and R. L. Koble, Jr., to McGraw-Edison Co. Cooler frame forming machine. 3,222,909, 12–14–65, Cl. 72—306.

Goetzewerke Friedrich Goetze A.-G.: *See*—
Fuhrmann, Ernst. 3,223,223.

Goldberg, Jacob Z.: *See*—
Commanday, Maurice R., and Goldberg. 3,223,343.

Goldberg, Julius W., and H. Peck. Applicator for cosmetics. 3,223,096, 12–14–65, Cl. 132—79.

Golightly, James S., D. H. Doehlert, and C. R. Davidson, Jr., to Pittsburgh Plate Glass Co. Method for bending glass sheets to compound curvatures. 3,223,505, 12–14–65, Cl. 65—107.

Goluska, Walter E.: *See*—
Bodoh, Albinus G., and Goluska. 3,222,899.

Goodman Mfg. Co.: *See*—
Papa, Paul H. 3,222,757.

Goodrich, B. F., Co., The: *See*—
Fuller, Merle A., and Siezak. 3,2223,352.

Goodwin, Ralph C., to The Western States Machine Co. Flow control system for continuously delivering masseculte or the like. 3,223,283, 12–14–65, Cl. 222—56.

Goodyear Aerospace Corp.: *See*—
Bloetscher, Frederick, Gibson, and Cross. 3,224,000.

Goodyear, Ellsworth S., and C. E. Thomas, to Hercules Powder Co. Smokeless powder manufacture. 3,223,756, 12–14–65, Cl. 264—3.

Gores, Kenneth W., and P. D. Kennar. Mouthguard. 3,223,085, 12–14–65, Cl. 128—136.

Gorham, Harold F. Fish line guide. 3,222,812, 12–14–65, Cl. 43—24.

Gorjanc, Henry A., to The Cleveland Crane & Engineering Co. Mono-rail track switch. 3,223,048, 12–14–65, Cl. 104—102.

Gottfried, Louis, and J. Berger. Support for a child carrying unit including a carriage body, a chair or the like. 3,223,431, 12–14–65, Cl. 280—47.38.

Grace, W. R., & Co.: *See*—
Gabler, Rudolph, and Muller. 3,223,682.
Pinkalla, Hamilton A., Neuser, Cook, and Korfhage. 3,223,542.

Gradsten, Marcel A., to Tenneco Chemicals, Inc. Process for the control of plant growth. 3,223,514, 12–14–65, Cl. 71—2.3.

Grafton, William F., to Pittsburgh Plate Glass Co. Glass bending mold with sheet guide. 3,223,512, 12–14–65, Cl. 66—290.

Gragson, James T., to Phillips Petroleum Co. Increasing the base number of calcium petroleum sulfonate. 3,223,630, 12–14–65, Cl. 252—33.

Graham, Alexander L.: *See*—
Dietert, Harry W., Jameson, Dietert, Hanna, Steinmueller, and Graham. 3,222,736.

Grahl, Darwin R., to American Radiator & Standard Sanitary Corp. Oil burner control. 3,223,137, 12–14–65, Cl. 158—28.

Grahl, Darwin R., to American Radiator & Standard Sanitary Corp. Probe type thermostatic control employing a bimetal leaf and force-transmitting lever. 3,223,807, 12–14–65, Cl. 200—138.

Grass, Albert M. Method of assembling an electrode. 3,222,755, 12–14–65, Cl. 29—155.5.

Graybeal, Warren E., and W. C. Smith. Semi-automatic conveyor control system. 3,223,255, 12–14–65, Cl. 214—11.

Greber, Henry. Lightning arrester. 3,223,893, 12–14–65, Cl. 317—65.

Green, Richard: *See*—
Kraft, William M., and Green. 3,223,715.

Greenberg, Harry, and V. L. Hansley, to National Distillers and Chemical Corp. Polymerization process. 3,223,691, 12–14–65, Cl. 260—93.5.

Greenhalgh, Norman, and P. Arnall, to Imperial Chemical Industries Ltd., and The Midland Tar Distillers Ltd. 2-β-methoxyethylpyridine and its preparation. 3,223,710, 12–14–65, Cl. 260—297.

Greenwald, Harry, ½ each to Lous Wolff, and Harry Silberglait. Reversing systems for single phase motors. 3,223,910, 12–14–65, Cl. 318—207.

Grekel, Howard: *See*—
Hunt, Elton B., and Grekel. 3,223,166.

Grewe, Ferdinand: *See*—
Heise, Rudolf, Burmeister, and Grewe. 3,223,733.

Gribble, Donald J., and H. E. Bennett, to AG Pro Inc. Dairy establishment. 3,223,070, 12–14–65, Cl. 119—16.

Grieshaber Emil W., and D. J. Newman, to Minnesota Mining and Mfg. Co. Printing processes including size reduction of graphic intelligence. 3,223,526, 12–14–65, Cl. 96—46.

Grikis, Raimonds: *See*—
Kerrigan, James E., and Grikis. 3,223,299.

Grimone, Frank H., to Sylvania Electric Products Inc. Preformed and prestressed strap frame grid. 3,223,879, 12–14–65, Cl. 313—348.

Grimshaw, Norman, to Vitafoam Ltd. Seating pad. 3,222,696, 12–14–65, Cl. 5—355.

Griswold, Hector W., to Johnson & Johnson. Sheet materials. 3,223,575, 12–14–65, Cl. 161—83.

Griswold, Ray F.: *See*—
Cox, Robert M., and Griswold. 3,223,104.

Groenweghe, Leo C. D., to Monsanto Co. Preparation of phosphines and phosphonium halides. 3,223,737, 12–14–65, Cl. 260—606.5.

Groginsky, Herbert L., to Raytheon Co. Resolution improvement devices. 3,223,999, 12–14–65, Cl. 343—17.1.

Grom, Joseph A.: *See*—
Holloway, Robert L., and Grom. 3,223,572.

Grosskopf, Karl, to O. H. Drager. Gas detection and pump therefor. 3,223,487, 12–14–65, Cl. 23—254.

Groves, Katherine B.: *See*—
Smith, Walter H. B. 3,222,808.

Grubbs, Willie P. Hoop and trundling stick therefor. 3,222,818, 12–14–65, Cl. 46—220.

Gruber, Thomas J., to Eaton Mfg. Co. Fluid pressure lubricating system indicator means. 3,223,198, 12–14–65, Cl. 184—7.

Grupen, James L. Positive-contact mercury switch. 3,223,811, 12–14–65, Cl. 200—152.

Guarracino, Ottavio: *See*—
Sacerdoti, Giorgio, and Guarracino. 3,223,982.

Gubitz, Franklyn W., to Sterling Drug Inc. 3-allylhydantoic acid. 3,223,729, 12–14–65, Cl. 260—534.

Guenthert, Paul: *See*—
Scholz, Heinrich, and Guenthert. 3,223,735.

Gulf Oil Corp.: *See*—
Stone, Virgil D. 3,223,168.

Gulf Research & Development Co.: *See*—
Walsh, Bruce R. 3,223,394.

Gunderson, Robert O., E. F. Klein, W. J. Campillo, and T. T. Tang, to The National Cash Register Co. Computer system. 3,223,980, 12–14–65, Cl. 340—172.5.

Gundlach, Robert W.: *See*—
Clark, Harold E., Mott, and Gundlach. 3,223,548.

Gunther, Karl-Georg: *See*—
Hanlein, Walter, and Gunther. 3,223,836.

Gust, Nicholas: *See*—
Wilson, Arthur O. 3,223,405.

Gutridge, Jack E., and R. B. Bergstrand, to Pullman Inc. Cushioned low level railway vehicle. 3,223,052, 12–14–65, Cl. 105—454.

Guttman, Arnold L.: *See*—
Podlipnik, John, Moyer, and Guttman. 3,223,613.

Haas, Wilson E. Building construction. 3,222,749, 12–14–65, Cl. 25—121.

Hager, Robert R., to The Bendix Corp. Fluid pressure servomotor. 3,222,999, 12–14–65, Cl. 91—434.

Hagood, Cecil C., Sr. Walking cane. 3,223,099, 12–14–65, Cl. 135—47.

Halle, James N., to The General Electric Co. Ltd. Electric gating circuits. 3,223,930, 12–14–65, Cl. 328—95.

Hallenbeck, Virgil R.: *See*—
Coppock, Kenneth E., and Hallenbeck. 3,223,446.

Halliburton Co.: *See*—
Baker, Eugene E. 3,223,160.
Koch, Ronney R., Ramos, and McLaughlin. 3,223,163.

Halpern, Stephen J.: *See*—
Brothman, Abraham, Halpern, and Reiser. 3,223,995.

Hamburgen, Arthur: *See*—
Rowley, Russel A., Adams, Clapper, and Hamburgen. 3,223,971.

Hamilton, James E.: *See*—
Broadhead, James H., Hamilton, and Martine. 3,222,961.

Hamilton, Robert S.: *See*—
Curie, Robert J., and Hamilton. 3,223,117.

Hamlin, Richard B.: *See*—
Coulter, Leland E., Ambler, Batson, Behm, Anthony, and Hamlin. 3,223,816.

Hammell, Kemper M., to AMP Inc. Plug receiving contact. 3,223,962, 12–14–65, Cl 339—256.

Hammer, Ervin J., to Hammer and Gump. Mounting means for auxiliary wheels. 3,223,455, 12–14–65, Cl. 301—36.

Hammer and Gump: *See*—
Hammer, Ervin J. 3,223,455.

Hammer, Neville A., Sr. Waterproofing preparation. 3,223,542, 12–14–65, Cl. 106—89.

Hammond, James D., and M. J. Stevens, to Socony Mobil Oil Co., Inc. High temperature heat exchange. 3,223,746, 12–14–65, Cl. 260—672.

Hammond Industries, Inc.: *See*—
Fuller, Richard H. 3,223,596.

Hammond Organ Co.: *See*—
Hanert, John M. 3,223,770.

Hampton, John L., to Petrolite Corp. Well device. 3,223,167, 12–14–65, Cl. 166—75.

Hampton, William C., to American Instrument Co., Inc. Radio frequency cell for gas chromatography. 3,223,873, 12–14–65, Cl. 313—161.

Handy, Robert W.: *See*—
Kesslin, George, Handy, and Steinmets. 3,223,718.

Hanert, John M., to Hammond Organ Co. Legato percussion apparatus for electrical musical instruments. 3,223,770, 12–14–65, Cl. 84—1.26.

Hanlein, Walter, and K.-G. Gunther, to Siemens-Schuckertwerke Aktiengesellschaft. Mass spectrometer with particular ion source for analysis of solid bodies. 3,223,886, 12–14–65, Cl. 250—41.9.

Hanna, Thomas H.: *See*—
Dietert, Harry W., Jameson, Dietert, Graham, Steinmueller, and Hanna. 3,222,736.

Hansen, Elmer K. Carton grab assembly for lift vehicles. 3,223,265, 12–14–65, Cl. 214—650.

Hansen, Louis I., to Archer-Daniels-Midland Co. Granular fertilizer having a plurality of coatings and the process of making. 3,223,518, 12–14–65, Cl. 71—64.

Hansen, Ramon D., and D. E. Bridenstine, to Edgerton, Germeshausen & Grier, Inc. Avalanche transistor circuit. 3,223,854, 12–14–65, Cl. 307—88.5.

Hansen, Robert. Cattle gate. 3,222,805, 12–14–65, Cl. 89—84.

Hansley, Virgil L.: *See*—
Greenberg, Harry, and Hansley. 3,223,691.

Hansson, Ants, and R. M. Brick, to Continental Can Co., Inc. Method of making articles having base layers and integral fins projecting therefrom. 3,222,764, 12–14–65, Cl. 29—157.3.

Harmatorf, Rudolf J. System and apparatus to place flexible pipes and cables under ground below water. 3,222,876, 12–14–65, Cl. 61—72.4.

Harned, John L., to General Motors Corp. Drive transfer mechanism. 3,222,944, 12–14–65, Cl. 74—190.5.

Harper and Saunder, Inc.: *See*—
Dudte, Fred. 3,223,227.

Harr, John A.: *See*—
Budlong, Willis A., Drew, and Harr. 3,223,785.

Harris, Edward J. Apparatus for loading green tires in a tire press. 3,222,715, 12–14–65, Cl. 18—2.

Harris, Edward J. Tire curing press and unloading apparatus therefor. 3,222,716, 12–14–65, Cl. 18—2.

Harris, Edward J. Method of loading a tire in a tire press. 3,223,767, 12–14–65, Cl. 264—326.

Harris-Intertype Corp.: *See*—
Hunstiger, Francis. 3,223,008.
O'Brien, Richard C. 3,223,017.

Harris, James L., to United States of America, Navy. Apparatus and method for detection of targets at high light levels. 3,223,880, 12–14–65, Cl. 315—12.

Harris, Samuel W., and B. L. Evering, to Standard Oil Co. Hydrocarbon conversion process. 3,223,750, 12–14–65, Cl. 260—683.65.

Harrison, James A. Automatic gas burner with variable flame port area. 3,223,142, 12–14–65, Cl. 158—117.

Harrod, Edgard B., Jr., and E. T. Stevens, to United States of America, Army. Slot type separator. 3,223,237, 12–14–65, Cl. 209—2.

Hart, Charles G., to Cambridge Filter Corp. Filter. 3,222,850, 12–14–65, Cl. 55—500.

Hart, James L., deceased, by D. G. Hawk, special administrator, to Phillips Petroleum Co. Extraction of metal values from acid solutions. 3,223,476, 12–14–65, Cl. 23—14.5.

Hart, Joseph W.: *See*—
Bittman, Eric E., and Hart. 3,223,985.

Harvey Aluminum (Inc.): *See*—
Luedloff, Vernon W., and Jonelkis. 3,222,842.

Hasiguti, Ryukiti R.: *See*—
Matsuura, Etsuyuki, Matsui, and Hasiguti. 3,223,820.

Hastings, Robert L. Foldable utility cart. 3,223,429, 12–14–65, Cl. 280—36.

Hasseldine, Robert N., R. E. Banks, and M. K. McCreath. Copolymers of fluorinated unsaturated hydrocarbons with non-fluorinated nitroso compounds and method of preparing same. 3,223,689, 12–14–65, Cl. 260—92.1.

Hauel, Anna P.: *See*—
Cohn, Johann G. E., Hauel, and Keith. 3,223,556.

Hauser, Christl: *See*—
Cech, Karl, and Forch. 3,223,469.

Hawk, Darall G.: *See*—
Hart, James L. 3,223,476.

Hawley, Jack S., to Berkeley Instruments. Spark recording apparatus and method. 3,224,008, 12–14–65, Cl. 346—74.

Hawley, Melville S., and D. W. McLellan, to Bell Telephone Laboratories, Inc. Telephone ringer circuit. 3,223,788, 12–14–65, Cl. 179—84.

Hayes, C. I., Inc.: *See*—
Thompson, Alden W. 3,223,396.

Hayes International Corp.: *See*—
Norman, Robert I., and Meullen. 3,223,418.

Haynes, James L. Combination rake and cart. 3,222,856, 12–14–65, Cl. 56—384.

Hazek, Borys: *See*—
Hoy, Leland C., and Hazek. 3,223,794.

Hazeltine Research Inc.: *See*—
La Fond, Norman R., and Wilhelmsen. 3,223,933.

Headley Townsend Backhouse: *See*—
Fawdry, Charles F., and White. 3,223,442.

Heat and Control, Inc.: *See*—
Benson, Clark K., and Caridis. 3,223,024.

Hebard, Glen G.: *See*—
Kuntz, Louis E., and Hebard. 3,222,918.

Heberlein Patent Corp.: *See*—
Rainer, Walter. 3,223,030.

Hechenbleikner, Ingenuin, and K. R. Molt, to Carlisle Chemicals Works, Inc. Preparation of alkyl phosphines from hydrocarbon phosphites and alkyl sodium compounds. 3,223,736, 12–14–65, Cl. 260—606.5.

Hedglin, Arthur M.: *See*—
Craven, Jack L., Hedglin, D. T. Craven, McCarville, and Sweeney. 3,223,007.

Heekin Can Co.: *See*—
Nyden, Robert. 3,223,332.

Hein, Charles E., to Morse Chain Co. Resilient coupling. 3,222,885, 12–14–65, Cl. 64—11.

Heise, Rudolf, G. Burmeister, and F. Grewe, to Farkenfabriken Bayer Aktiengesellschaft. O-carbamoyl-substituted acylchloride oxime. 3,223,733, 12–14–65, Cl. 260—566.

Helber, Karl F.: *See*—
Rentschler, Waldemar T., Helber, and Straub. 3,223,015.

Helm Accessories, Inc.: *See*—
Helm, Frederick A. 3,223,301.
Helm, Frederick A. 3,223,302.

Helm, Frederick A., to Helm Accessories, Inc. Car top carrier. 3,223,301, 12–14–65, Cl. 224—42.1.

Helm, Frederick A., to Helm Accessories, Inc. Car top ski rack. 3,223,302, 12–14–65, Cl. 224—42.1.

Helsing, Erik, to Allmanna Svenska Elektriska Aktiebolaget. Speed control for rocking mill stands. 3,222,900, 12–14–65, Cl. 72—21.

Hemstock, Glen A., to Minerals & Chemicals Phillipp Corp. Color-reactable inorganic adsorbent pigment and coating composition containing the same. 3,223,546, 12–14–65, Cl. 106—288.

Henneman, John W., to The Bendix Corp. Pressure responsive instrument. 3,222,932, 12–14–65, Cl. 73—386.

Henry-Baudot, Jacques, to Printed Motors Inc. A. C. printed-circuit winding. 3,223,868, 12–14–65, Cl. 310—185.

Henry-Baudot, Jacques, to Printed Motors Inc. Printed-circuit winding for rotary electric machines. 3,223,870, 12–14–65, Cl. 310—268.

Henson, George A. Handle for fishing rods. 3,222,811, 12–14–65, Cl. 43—18.

Henze, Edward D.: *See*—
Kahn, Harry A., and Henze. 3,223,764.

Henze, Edward D., and E. W. Forman, Jr., to National Distillers and Chemical Corp. Base film oscillation. 3,223,766, 12–14–65, Cl. 264—288.

Heppner, Elmore A., to Heppner Mfg. Co. Speaker magnet structure and method of forming the same. 3,222,753, 12–14–65, Cl. 29—155.5.

Heppner Mfg. Co.: *See*—
Heppner, Elmore A. 3,222,753.

Hercules Powder Co.: *See*—
Boardman, Harold, and Wagner. 3,223,032.
Goodyear, Ellsworth S., and Thomas. 3,223,756.

Herrick, Franklin W., and L. H. Bock, to Rayonier Inc. Thermosetting resin composition comprising alkali bark derivative and polymethylol phenol and adhesive prepared therefrom. 3,223,667, 12–14–65, Cl. 260—29.3.

Hersch, Paul A. Method and means for oxygen analysis of gases. 3,223,597, 12–14–65, Cl. 204—1.

Hersch, Paul A. Electrochemical gas analyzer. 3,223,608, 12–14–65, Cl. 204—195.

Hershkowitz, Philip. Color coded game card. 3,223,421, 12–14–65, Cl. 273—139.

Hertel, Heinrich L., and H. P. Krug, to Vereinigte Flugtechnische Werke Gesellschaft mit beschraenkter Haftung frueher "Weser" Flugzeugbau/Focke-Wulf/Heinkel-Flugzeugbau. VTOL aircraft jet installation. 3,223,560, 12–14–65, Cl. 244—23.

Hespenheide, Wilbur G., to Burroughs Corp. Retentive data store and material. 3,223,983, 12–14–65, Cl. 340—174.

Hess, Walter F.: *See*—
Efron, Theodore, Hess, and Seidmon. 3,222,689.

Hestad, Alfred M., to International Telephone and Telegraph Corp. Constant voltage device. 3,223,781, 12–14–65, Cl. 179—1.

Heuer, Charles A., to Olin Mathieson Chemical Corp. Method of making a hollow article. 3,222,763, 12–14–65, Cl. 29—157.3.

Heuser, Arthur R.: *See*—
Altobelli, John A., De Graff, and Heuser. 3,223,663.

Hewson, Richard R.: *See*—
Ludwig, David R., and Hewson. 3,223,918.

Hey, Willem: *See*—
Busch, Max, and Hey. 3,222,893.

Heyden Newport Chemical Corp.: *See*—
Barch, John J., and Kraft. 3,223,637.
Deinet, Adolph J. 3,223,515.
Di Bella, Eugene P. 3,223,728.

Hickey, John S., Jr., to General Electric Co. Waveguide window. 3,223,950, 12–14–65, Cl. 333—98.

Hill, Marion E., to United States of America, Navy. Preparation of esters through the use of Friedel-Crafts catalysts. 3,223,725, 12–14–65, Cl. 260—471.

Hill, William J., to Morgan Construction Co. Link mounted saw assembly. 3,222,97, 12–14–65, Cl. 83—157.

Hill, William J., to Morgan Construction Co. Rolling mill. 3,222,901, 12–14–65, Cl. 72—39.

Hill, William J., to Morgan Construction Co. Rod mill switch. 3,223,345, 12–14–65, Cl. 242—80.

Himy, Albert: *See*—
Solomon, Frank, and Himy. 3,223,555.

Hirschmann, Ralph F., to Merck & Co., Inc. Steroido-[3,2-c] pyrazoles and preparation thereof. 3,223,701, 12–14–65, Cl. 260—239.5.

Hirshfeld, Julian J., to Monsanto Co. Process for rendering thermoplastic fibers paper translucent. 3,223,550, 12–14–65, Cl. 117—138.8.

Hitchcock, John H., to Morgan Construction Co. Coiling, cutting, and transporting large rod bundles. 3,222,965, 12–14–65, Cl. 83—27.
Hochmuth, William R., W. E. Lowrey, and P. J. Natho, to ACF Industries, Inc. Stem-gate connection. 3,223,380, 12–14–65, Cl. 251—284.
Hoddy, George W., G. L. and R. A., to Universal Electric Co. Bearing structure. 3,223,464, 12–14–65, Cl. 308—72.
Hoddy, Gerald L.: *See*—
Hoddy, George W., G. L. and R. A. 3,223,464.
Hoddy, Raymond A.: *See*—
Hoddy, George W., G. L. and R. A. 3,223,464.
Hoek, Serge, to North American Philips Co., Inc. Method of producing pancreatin. 3,223,594, 12–14–65, Cl. 195—68.
Hoffmann, Gotfred O., to Tri-tech, Inc. Transfer counter. 3,223,322, 12–14–65, Cl. 235—117.
Hofmann, Charles M., to The General Tire & Rubber Co. High speed tubeless tire. 3,223,134, 12–14–65, Cl. 152—330.
Hofstad, Rolf B., and M. Swyryd, to Ampex Corp. Binary frequency modulation demodulator. 3,223,929, 12–14–65, Cl. 328—32.
Hogan Faximile Corp.: *See*—
Shaler, David, and Varrichio. 3,223,824.
Hogel, Joseph E., to Honeywell Inc. Pneumatic control apparatus 3,223,105, 12–14–65, Cl. 137—85.
Hogg, David C., to Bell Telephone Laboratories, Inc. Horn reflector antenna with concentric conical reflectors at mouth to increase effective aperture. 3,224,006, 12–14–65, Cl. 343—781.
Hogue, Paul G.: *See*—
Welch, Russell A., Sr. 3,223,827.
Holahan, Joseph M., to True Temper Corp. Drag mechanism for a spinning reel. 3,223,349, 12–14–65, Cl. 242—84.45.
Holga Metal Production Co.: *See*—
Roberts, Judson E. 3,223,466.
Holl, Walter W., Jr., and R. W. Walton, to Technicon Instruments Corp. Apparatus for treatment of solids for analysis. 3,223,486, 12–14–65, Cl. 23—253.
Holleran, Charles R., to International Business Machines Corp. Binary division apparatus. 3,223,831, 12–14–65, Cl. 235—164.
Holley, John D., and E. E. Bode, to Kershaw Mfg. Co., Inc. Ballast removing apparatus. 3,222,803, 12–14–65, Cl. 37—104.
Hollichem Corp.: *See*—
Shibe, William J., Jr., and Sittenfield. 3,223,704.
Shibe, William J., Jr., and Sittenfield. 3,223,711.
Holloway, Don C., to Hough Mfg. Corp. Acoustic type folding door. 3,223,147, 12–14–65, Cl. 160—84.
Holloway, Robert L., and J. A. Grom, to American Machine & Foundry Co. Machine for building a tread on pneumatic tires. 3,223,572, 12–14–65, Cl. 156—394.
Hollymatic Corp.: *See*—
Fetzer, Frederick. 3,222,935.
Holman, Charles G. Theft prevention device for automobile wheels. 3,222,976, 12–14–65, Cl. 85—56.
Homan, William J., to International Business Machines Corp. Method of making magnetic transducer head. 3,222,754, 12–14–65, Cl. 29—155.5.
Honeywell Inc.: *See*—
Brown, Richard W. 3,223,138.
Hogel, Joseph E. 3,223,105.
Kampf, Richard S. 3,222,945.
Rasmussen, Robert F. 3,222,993.
Reed, Wayne D. 3,222,995.
Rohmann, Charles P., Stahl, Watrous, and Wiseman. 3,223,106.
Thieme, Horst R., and Stone. 3,222,996.
Wales, Roger O. 3,223,845.
Honn, Harold L.: *See*—
Schnaidt, Harold L., and Honn. 3,222,851.
Hope, Alexander J. N.: *See*—
Davy, John R., and Hope. 3,223,829.
Hopper, Arthur J. Valve and control member therefor. 3,223,113, 12–14–65, Cl. 137—467.
Hopping, Alvin S. Electronic musical instrument employing finger-pressure means to sequentially energize oscillator means and amplifier means. 3,223,771, 12–14–65, Cl. 84—1.26.
Horan, John J. Underboard-engined boats and propulsion means therefor. 3,223,067, 12–14–65, Cl. 115—35.
Horback, William B.: *See*—
Cantor, Harry A., Horback, Vona, and Kucsynski. 3,223,670.
Horsfield, Roland: *See*—
Lacey, James W., Horsfield, and Welch. 3,223,167.
Horst, Gunter H., to Schulz Tool and Mfg. Co. Solenoid having a two-piece armature. 3,223,802, 12–14–65, Cl. 200—98.
Horvath, Tibor, and L. Vargha, to Chinoin Gyogyszer- es Vegyeszeti Termekek Gyara. 1,2,5-6-tetra(lower alkylsulfonyl) hexitols. 3,223,722, 12–14–65, Cl. 260—456.
Hose, Eddy, to Cubic Corp. Electronic tracking system employing slant range measurements. 3,223,998, 12–14–65, Cl. 343—12.
Hoshino, Shoichiro, and A. Kato, to Konishiroku Photo Industry Co., Ltd. Method for the preparation of relief images by the use of a heat-sensitive sheet. 3,223,838, 12–14–65, Cl. 250—65.
Hott, Ion V. K., to The Joyce-Cridland Co. Lift installation. 3,223,124, 12–14–65, Cl. 137—636.1.
Houdesheidt, Martin L. Wrench having a spring-biased pivoted outer jaw adjustable in a slotted guide. 3,222,958, 12–14–65, Cl. 81—109.
Hough Mfg., Corp.: *See*—
Holloway, Don C. 3,223,147.
Houghton, E. F., & Co.: *See*—
Smith, Robert K., and Kearney. 3,223,642.
Houston Chemical Corp.: *See*—
Sacken, Donald K., and Young. 3,223,490.
Hovermale, Roy M. Apparatus for forming transversely reinforced wood planks. 3,223,131, 12–14–65, Cl. 144—3.
Howard, John W. Pressure gauge for a pressurised vessel. 3,222,933, 12–14–65, Cl. 73—418.
Howell, Edward K., to General Electric Co. Pulse transformer. 3,223,923, 12–14–65, Cl. 323—76.
Hoy, Leland C., and B. Hasek, to Indak Mfg. Corp. Multiple position electrical switch with contact rails and dummy contact pressure stabilizers. 3,223,794, 12–14–65, Cl. 200—16.
Hrabal, Charles J. Snow removal apparatus. 3,223,383, 12–14–65, Cl. 254—131.5.
Hubbard, Arthur F., to American Air Filter Co., Inc. Header construction for unit heater coil. 3,223,155, 12–14–65, Cl. 165—176.
Hubbard, Arthur L., to Deere & Co. Cotton picker spindle sharpening device. 3,222,821, 12–14–65, Cl. 51—92.
Hughes Aircraft Co.: *See*—
Solomon, Raymond. 3,223,903.
Todd, Carl D. 3,223,849.
Hujsak, Karol L., to Pan American Petroleum Corp. Method for heating or igniting well formations with pyrophoric materials. 3,223,165, 12–14–65, Cl. 166—38.
Hulsing, Kenneth L.: *See*—
Conover, George W., Hulsing, and Koehler. 3,223,197.
Hultsman, Waldo E.: *See*—
Smith, Donald P., Zuercher, Luck, Hultsman, and Cook. 3,222,844.
Hummel, Max. Apparatus for mounting of antennas on boats. 3,224,003, 12–14–65, Cl. 343—709.
Hunger, Helen R.: *See*—
Kolts, Donald, and Hunger. 3,222,783.
Hunstiger, Francis, to Harris-Intertype Corp. Electrophotographic apparatus. 3,223,008, 12–14–65, Cl. 95—1.7.
Hunt, Charles J., and E. R. Swanson, to Beattie-Coleman, Inc. Roll film magazine. 3,223,011, 12–14–65, Cl. 95—34.
Hunt, Elton B., to Pan American Petroleum Corp. Bottomhole catalytic heater using heat transfer liquid. 3,223,081, 12–14–65, Cl. 126—360.
Hunt, Elton B., and H. Grekel, to Pan American Petroleum Corp. Method of controlled catalytic heating of a subsurface formation. 3,223,166, 12–14–65; Cl. 166—38.
Hunter, Everest C.: *See*—
Cappotto, Samuel D., and Hunter. 3,223,219.
Hunter, Jonathan, to Litton Systems, Inc. Tape guide for magnetic recorders. 3,223,303, 12–14–65, Cl. 226—197.
Huntington, Morgan G., to Huntington Oil Refining Co. Multivapor petroleum refining and apparatus thereof. 3,223,616, 12–14–65, Cl. 208—89.
Huntington Oil Refining Co.: *See*—
Huntington, Morgan G. 3,223,616.
Huntley, Ernest M.: *See*—
Makowski, Thomas G., Verdoodt, and Huntley. 3,223,031.
Huntley, Keith G., A. T. Starr, and V. A. Gault, to The Rank Organisation Ltd. Measuring and recording arrangements. 3,222,791, 12–14–65, Cl. 33—174.
Hutchinson, Richard W., and J. S. Wroby, to General Motors Corp. Electric vehicle control. 3,223,908, 12–14–65, Cl. 318—139.
Hutelmyer, Joseph V., to Cutler Meat Products Co. Air brake tanks. 3,223,118, 12–14–65, Cl. 137—572.
Hyde, Collin, and H. D. Sheets, Jr., to Chevron Research Co. Combustion chamber liner for well gas and air burner. 3,223,539, 12–14–65, Cl. 106—64.
Hyde, James L. Digital measuring apparatus utilising a radio-active source and detector. 3,223,842, 12–14–65, Cl. 250—83.3.
Hydraulic Crushers Ltd.: *See*—
Gauldie, Kenneth. 3,222,867.
Hyland Laboratories: *See*—
Fisk, Roy T. 3,223,484.
Hyland, Richard P.: *See*—
Saslawsky, Sheldon, and Hyland. 3,222,717.
Saslawsky, Sheldon, and Hyland. 3,222,720.
I-T-E Circuit Breaker Co.: *See*—
Dortort, Isadore K. 3,223,892.
Pokorny, Frank J., and Wilson. 3,223,799.
Ida, Noble N., to Martin-Marietta Corp. Process for retaining the ductility of metal. 3,222,778, 12–14–65, Cl. 29—528.
Iglehart, Marion M., to Cutler-Hammer, Inc. Snap-in mounting means. 3,223,367, 12–14–65, Cl. 248—27.
Illinois Tool Works Inc.: *See*—
Edwards, Bryant. 3,223,305.
Imperial Chemical Industries Ltd.: *See*—
Craig, John T. 3,223,731.
Greenhalgh, Norman, and Arnall. 3,223,710.
Indak Mfg. Corp.: *See*—
Hoy, Leland C., and Hasek. 3,223,794.
Industrial Nucleonics Corp.: *See*—
Varner, Donald E. 3,223,840.
Ingersoll-Rand Co.: *See*—
Kramer, Leo, Medesha, and Law. 3,222,957.
Schivley, George P., Jr. 3,222,886.
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Interchemical Corp.: *See*—
Altobelli, John A. De Graff, and Heuser. 3,223,663.
Chase, Vernon L., and Messmer. 3,223,669.
International Basic Economy Corp.: *See*—
Zies, Carl W. 3,222,797.
International Business Machines Corp.: *See*—
Bloch, Erich, and Gelernter. 3,223,984.
Chaffee, Mack B., and Leach. 3,223,304.
Florac, William A., Jr., Juliusburger, and Kusnick. 3,223,925.
Holleran, Charles R. 3,223,831.
Homan, William J. 3,222,754.
Kawecki, Richard J. 3,222,776.
Rowley, Russell A., Adams, Clapper, and Hamburgen. 3,223,971.
Thompson, Harold D. 3,223,975.
International Electronic Corp.: *See*—
Monahan, Frederick A. 3,222,914.
International Harvester Co.: *See*—
MacKenzie, Hugh J. 3,223,179.
Reynolds, John F., Middlesworth, and Steingas. 3,223,193.
Swift, John F. 3,223,191.
International Telephone and Telegraph Corp.: *See*—
Hestad, Alfred M. 3,223,781.
Inventions, Inc.: *See*—
Freeman, Harold M., and Toth. 3,223,412.
Irving, Alfred D. Boat structure. 3,223,066, 12–14–65, Cl. 114—66.5.
Isaac, Peter. Ski and boot relative torque indicators. 3,222,922, 12–14–65, Cl. 73—133.
Isaacs, Charles W., and H. Wade. Magnetic game apparatus. 3,223,419, 12–14–65, Cl. 273—131.
Isoda, Haruo, to Y. Yasuhito, deceased (by Y. Tadai, successor by agreement of heirs). Automatic noncompression starting device. 3,223,076, 12–14–65, Cl. 123—182.
Istituto de Angeli, S.p.A.: *See*—
Casadio, Silvano. 3,223,720.
Ivany, George E. Wall construction and module. 3,222,830, 12–14–65, Cl. 52—98.
Jackson, Ausville, Jr.: *See*—
Brandon, Richard N. 3,223,342.
Jacky, Germaine F., R. Sorenson, D. W. Shannon, and W. E. Tragert, to United States of America, Atomic Energy Commission. Method for determining the adhesion of metal plating. 3,223,598, 12–14–65, Cl. 204—1.
Jacobs, Charles D. Apparatus for producing dust. 3,223,335, 12–14–65, Cl. 241—109.
Jacobs, Herbert. Automatic feeding, sewing, cutting and stacking apparatus. 3,223,059, 12–14–65, Cl. 112—2.
Jacobs, Robert C. L.: *See*—
Wahlfeld, James A., and Jacobs. 3,222,783.
Jacobsen Mfg. Co.: *See*—
Barth, John W. 3,222,854.
Jacobson, Arvid W.: *See*—
Beer, Emanuel E., and Jacobson. 3,223,320.
Jafelice, Victor M. Pillar bracket attachment. 3,223,467, 12–14–65, Cl. 312—253.
Jameson, Howard L.: *See*—
Dietert, Harry W., Jameson, R. L. Dietert, Hanna, Graham, and Steinmueller. 3,222,736.
Jamison Cold Storage Door Co.: *See*—
Odend'Hal, Fortune. 3,223,441.
Jedenoff, George A.: *See*—
Dwyer, Philip M., and Jedenoff. 3,223,635.
Jelinek, Leonard C., to S & C Electric Co. Circuit interrupter employing polypropylene for confining and extinguishing the arc. 3,223,810, 12–14–65, Cl. 200—149.
Jeppson, Morris R., to Cryodry Corp. Method of freeze-drying foods by direct gas injection. 3,222,796, 12–14–65, Cl. 34—5.
Jerlstrom, Sven F.: *See*—
Talbot, Warren, and Jerlstrom. 3,222,936.
Jesek, Panel: *See*—
Vladyka, Vilibald, and Jesek. 3,223,087.
Jimenez, James A., and H. H. Olmsted. Tortilla machine. 3,223,053, 12–14–65, Cl. 107—4.
Johannes Erhard, H. Waldenmaier Erben, Suddeutsche Armalurenfabrik: *See*—
Fischer, Eugen, and Förster. 3,223,381.
Johmann, Frank T.: *See*—
Bross, Helmut K. 3,223,072.
Johns, Russell B. Multiple egg broiler. 3,223,025, 12–14–65, Cl. 99—377.
Johns-Manville Corp.: *See*—
Rucker, Howard L. 3,223,676.
Rutter, Donald P., and Cimochowski. 3,222,777.
Johnson, Elbert L.: *See*—
Rarey, Robert S., and Johnson. 3,223,963.
Johnson Gage Co., The: *See*—
Johnson, Stanley G. 3,222,793.
Johnson & Johnson: *See*—
Griswold, Hector W. 3,223,575.
Kalwaites, Frank. 3,222,730.
Trewella, Robert J. 3,223,567.
Johnson, Robert J., to Radiation Inc. End marking switch matrix utilizing negative impedance crosspoints. 3,223,978, 12–14–65, Cl. 340—166.
Johnson, Stanley G., to The Johnson Gage Co. Adjustable gage and gaging element mounting means. 3,222,793, 12–14–65, Cl. 33—199.
Joly, Jean A., to Societe Rhodiaceta. Crimping of yarns based on thermoplastic polymers. 3,222,859, 12–14–65, Cl. 57—160.
Joneikis, Albert E.: *See*—
Luedloff, Vernon W., and Joneikis. 3,222,842.
Jones, Alvin A., and J. W. Lattimore. Machine for forming integral sidewalks and curbs. 3,223,006, 12–14–65, Cl. 94—45.
Jones, Howard D. Bowling ball with sighting means. 3,223,408, 12–14–65, Cl. 273—63.
Jones, Jack W., and J. D. Bennett, to Sun Oil Co. Bore hole logging apparatus. 3,223,184, 12–14–65, Cl. 175—41.
Jones & Laughlin Steel Corp.: *See*—
Webster, Richard R. 3,222,979.
Jones, Oliver R. Self-controlled fuel system. 3,223,140, 12–14–65, Cl. 158—36.4.
Jones, Robert E.: *See*—
Clifford, Peter J., and Jones. 3,223,178.
Jonker Business Machines, Inc.: *See*—
Gingras, William P. 3,222,786.
Jonker, Hendrik, and C. J. Dippel, to North American Philips Co., Inc. Method of manufacturing, by photographic means, external, electrically conductive noble-metal patterns on non-metallic, electrically non-conductive, macromolecular supports and products. 3,223,525, 12–14–65, Cl. 96—35.
Jonsson, Karl-Erik A.: *See*—
Brundell, Per G., and Jonsson. 3,223,180.
Jorgensen, Adam A., to General Dynamics Corp. Telephone ringing control system. 3,223,787, 12–14–65, Cl. 179—84.
Jorgenson, John P.: *See*—
Kling, Olaf E., and Jorgenson. 3,222,741.
Joy, Ivan L. Wide range monostable multivibrator. 3,223,856, 12–14–65, Cl. 307—88.5.
Joyce-Cridland Co., The: *See*—
Hott, Ion V. K. 3,223,124.
Juliusburger, Hans Y.: *See*—
Florac, William A., Jr., Juliusburger, and Kusnick. 3,223,925.
Justus, Edgar J., and C. B. Dahl, to Beloit Iron Works. Flying splice synchronizer. 3,223,339, 12–14–65, Cl. 242—58.3.
Justus, James W. Submergible apparatus. 3,222,875, 12–14–65, Cl. 61—69.
K-Line Corp.: *See*—
Everett, Buford R., and Shallenberg. 3,222,962.
Kaar, Kenneth B., and G. E. Coons, deceased (by S. I. Coons, executrix), to Sweep-All Co., Inc. Sweeping machine. 3,222,706, 12–14–65, Cl. 15—340.
Kahn, Harry A., and E. D. Henze, to National Distillers and Chemical Corp. Process for production of biaxially oriented polypropylene film. 3,223,764, 12–14–65, Cl. 264—178.
Kaiser Aluminum & Chemical Corp.: *See*—
Bastis, Thomas E. 3,222,785.
Osment, Harry E. 3,223,483.
Zinniger, Theodore C. 3,222,779.
Kaiser Gypsum Co., Inc.: *See*—
Schuh, Francis E. 3,223,019.
Kaiser Industries Corp.: *See*—
Bertram, John M., Prince, and Stone. 3,223,898.
Kimball, Stanley. 3,222,750.
Stone, Joseph K. 3,223,521.
Walker, John. 3,223,899.
Young, James A. 3,223,897.
Kaiser Jeep Corp.: *See*—
Ordorica, Miguel A., and Merritt. 3,223,797.
Kalberg, John N., to The Procter & Gamble Co. Washing composition. 3,223,645, 12–14–65, Cl. 252—117.
Kalbitz, Wolfgang, to Siemens-Schuckertwerke Aktiengesellschaft. Contact device between a stationary current supply and a movable load. 3,223,814, 12–14–65, Cl. 200—166.
Kallman, Robert: *See*—
Kanter, Harry, and Kallman. 3,222,684.
Kalmus, Henry P. Device for accurately measuring small amounts of radiant energy. 3,222,980, 12–14–65, Cl. 88—23.
Kalmus, Henry P., and M. L. Libman. Augmented-signal mechanical wave depth gauge. 3,222,929, 12–14–65, Cl. 73—200.
Kalns, Rudolph W., and A. W. Vasel. Battery charger and voltage control means. 3,223,913, 12–14–65, Cl. 320—39.
Kalwaites, Frank, to Johnson & Johnson. Methods and apparatus for producing textile fabrics. 3,222,730, 12–14–65, Cl. 19—163.
Kamp, Ewald A., to United States of America, Army. Revolver-type gun with bolt. 3,222,989, 12–14–65, Cl. 89—155.
Kampf, Richard S., to Honeywell, Inc. Recorder. 3,222,945, 12–14–65, Cl. 74—200.
Kanter, Harry, and R. Kallman. Necktie knot device. 3,222,684, 12–14–65, Cl. 2—153.
Kapany, Narinder S., to Optics Technology, Inc. High speed photographic apparatus. 3,223,009, 12–14–65, Cl. 95—11.
Kashima, Kan: *See*—
Oshima, Motoyoshi, Maeda, and Kashima. 3,223,698.
Kassinger, Rudolph: *See*—
Vesterdal, Hans G., and Kassinger. 3,223,632.
Kasten Mfg. Corp.: *See*—
Towne, Delbert D. 3,223,264.
Kasten, Walter, to The Bendix Corp. Fuel quality testing device. 3,223,241, 12–14–65, Cl. 210—96.
Kastl, Charles L. Abrading machine tool. 3,222,826, 12–14–65, Cl. 51—358.
Kates, W. A., Co.: *See*—
Kates, Willard A. 3,223,115.
Kates, Willard A., to W. A. Kates Co. Flow regulating apparatus. 3,223,115, 12–14–65, Cl. 137—501.
Kato, Akira: *See*—
Hoshino, Shoichiro, and Kato. 3,223,838.

Kaufman, Melvin M., to United States of America, Navy. Techniques associated with inductive sensing of tunnel diode memory cells. 3,222,756, 12–14–65, Cl. 29—155.5.

Kauke and Co., Inc.: *See*—
Clement, Carl L. 3,223,990.

Kawai, Yoichi: *See*—
Inose, Hiroshi, Kawai, Koono, Takagi, Yasuda, and Yoshida. 3,223,784.

Kawecki, Richard J., to International Business Machines Corp. Method and apparatus for treating molten material. 3,222,776, 12–14–65, Cl. 29—503.

Kay-Fries Chemicals, Inc.: *See*—
Kesslin, George, Handy, and Steinmetz. 3,223,713.

Kazimier, Julian C., to Amos-Thompson Corp. Molded beverage carrier. 3,223,280, 12–14–65, Cl. 220—102.

Kearney, John A.: *See*—
Smith, Robert K., and Kearney. 3,223,642.

Kearney & Trecker Corp.: *See*—
Fotsch, Arthur H., Ross, and Fischer. 3,223,224.

Keblys, Kestutis A., to Ethyl Corp. Process for producing carboxylic esters from organo manganese compounds. 3,223,719, 12–14–65, Cl. 260—410.9.

Keefer, Edward H.: *See*—
Atteberry, Robert W., Keefer, and Wachtel. 3,223,563.

Keen, Lester K., to Raybestos-Manhattan, Inc. Method of making a metal reinforced plastic article. 3,223,763, 12–14–65, Cl. 264—112.

Keeney, Allen J., and W. Steiman, to Valve Corp. of America. Pump construction for hand-operated dispenser. 3,223,292, 12–14–65, Cl. 222—321.

Keith, Carl D.: *See*—
Cohn, Johann G. E., Hauel, and Keith. 3,223,556.

Keller, Robert J., to A. O. Smith Corp. Out-of-position burnthrough spot welding. 3,223,823, 12–14–65, Cl. 219—127.

Keller, Wolfgang, and H. Kramer, to Siemens-Schuckertwerke Aktiengesellschaft. Method of crucible-free zone-melting of semiconductor material. 3,223,493, 12–14–65, Cl. 23—301.

Kellinger, William J.: *See*—
Bull, James T., Dow, Engle, Kellinger, O'Keefe, Schofield, and Taylor. 3,222,988.

Kelly, Edgar J., to Libby, McNeill & Libby. Method for improving flavor constituents. 3,223,533, 12–14–65, Cl. 99—140.

Kelly, Edgar J., to Libby, McNeill & Libby. Method of improving flavor constituents. 3,223,534, 12–14–65, Cl. 99—140.

Kelsey-Hayes Co.: *See*—
Stelzer, William. 3,222,868.

Kennar, Patrick D.: *See*—
Gores, Kenneth W., and Kennar. 3,223,085.

Kerr, Richard M.: *See*—
Fritz, Harry E., Gallagher, Galloway, Kerr, Plumb, Rittenhouse, and Sinnamon. 3,223,563.

Kerrigan, James E., and R. Grikis, to Chicago Printed String Co. Bow-forming machine. 3,223,299, 12–14–65, Cl. 223—46.

Kershaw Mfg. Co., Inc.: *See*—
Holley, John D., and Bode. 3,222,803.

Kesslin, George, R. W. Handy, and J. Steinmetz, to Kay-Fries Chemicals, Inc. Cyclic malonaldehyde diacetals. 3,223,713, 12–14–65, Cl. 260—338.

Keusder, Walter W., U. Rachell, and G. J. Payne; said Rachell and said Payne assors. to said Keusder. Surface heater arrangement. 3,223,079, 12–14–65, Cl. 126—271.2.

Keyser, Johann J. Method of and device for treating yarns, threads, and the like with a fluid medium during the spinning or twisting operation. 3,222,857, 12–14–65, Cl. 57—3.5.

Kiernan, Henry E. Self-propelled vehicle and mounting for tool or implement. 3,222,802, 12–14–65, Cl. 37—43.

Kies, Joseph S., to Robertshaw Controls Co. Electro-pneumatic transducer. 3,223,102, 12–14–65, Cl. 137—82.

Kimball, Stanley, to Kaiser Industries Corp. Intermittent vertical sliding form panel device. 3,222,750, 12–14–65, Cl. 25—131.

Kinkopf, Edward J., to The Alliance Machine Co. Charging device for converters. 3,223,257, 12–14–65, Cl. 214—18.

Kinnear, Alan M. Gas sampling apparatus. 3,223,489, 12–14–65, Cl. 23—255.

Kinsworthy, Donald D., to The Lau Blower Co. Air moving device. 3,223,313, 12–14–65, Cl. 230—117.

Kintslaid Engineering Co. Ltd.: *See*—
Wignall, Norman. 3,222,891.

Kircher, Rene: *See*—
Breiss, Jean, Kircher, and Zimmermann. 3,223,477.

Kirkpatrick, James S., and D. L. Erickson, to Brooks & Perkins, Inc. Flexible overlay forming. 3,222,911, 12–14–65, Cl. 72—363.

Kitchens, William L., and R. J. Surprenant, to Beckman Instruments, Inc. Transition detector. 3,223,851, 12–14–65, Cl. 307—88.5.

Klavehn, Wilfrid, and H. Neumann, to Knoll A.-G. Chemische Fabriken. Glycine amides. 3,223,700, 12–14–65, Cl. 260—239.1.

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Klein, David X., to Tenneco Chemical, Inc. Lubricant compositions. 3,223,634, 12–14–65, Cl. 252—42.7.

Klein, Edmund F.: *See*—
Gunderson, Robert O., Klein, Campillo, and Tang. 3,223,980.

Kleinschmidt, Roger F.: *See*—
Crain, Donald L., Kleinschmidt, and Mahan. 3,223,738.

Kleiss, Louis D., to Phillips Petroleum Co. Analog process control apparatus. 3,223,107, 12–14–65, Cl. 137—93.

Kling, Nelson G.: *See*—
Ferrari, Andres, and Kling. 3,223,485.

Kling, Olaf E., and J. P. Jorgenson. Cable clamps. 3,222,741, 12–14–65, Cl. 24—125.

Klingelberg, W. Ferd., Sohne: *See*—
Rebeski, Hans. 3,222,990.

Kloehn, Garth A. Precision measuring syringe. 3,223,282, 12–14–65, Cl. 222—41.

Kloosterman, Cornelus U.: *See*—
Viveen, Wilhelmus J. C., and Kloosterman. 3,223,732.

Knip, Dirk C. J., to Aerojet Delft Corp. Holder for storing sheet material. 3,223,235, 12–14–65, Cl. 206—74.

Knoll A.-G. Chemische Fabriken: *See*—
Klavehn, Wilfrid, and Neumann. 3,223,700.

Knox, Roger E., to E. I. du Pont De Nemours, and Co. Apparatus for mixing. 3,223,388, 12–14–65, Cl. 259—4.

Koble, Robert L., Jr.: *See*—
Goetti, Adam D., and Koble. 3,222,909.

Koble, Robert L., Jr., to McGraw-Edison Co. Electrostatic air cleaner. 3,222,848, 12–14–65, Cl. 55—131.

Koch, Ronney R., J. Ramos, and H. C. McLaughlin, to Halliburton Co. Composition and method for stabilization of soil. 3,223,163, 12–14–65, Cl. 166—33.

Koehler, Joseph G.: *See*—
Conover, George W., Hulsing, and Koehler. 3,223,197.

Koehring Co.: *See*—
Noll, George C., and Nielsen. 3,223,250.

Koenig, Roy C., and D. A. Ruscio, to Martin-Marietta Corp. Shearable sealing mechanism for a pivoted gate valve. 3,223,100, 12–14–65, Cl. 137—68.

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Koltuniak, Michael A.: *See*—
Miller, Henry Z., Koltuniak, and Fenoglio. 3,223,921.

Konet, Henry, to Special Devices Laboratories, Inc. Gyroscope. 3,222,937, 12–14–65, Cl. 74—5.6.

Koninklijke Industrieele Maatschappij vorheen Noury & van der Lande N.V.: *See*—
Viveen, Wilhelmus J. C., and Kloosterman. 3,223,732.

Konishiroku Photo Industry Co., Ltd.: *See*—
Hoshino, Shoichiro, and Kato. 3,223,838.

Koono, Zenya: *See*—
Inose, Hiroshi, Kawai, Koono, Takagi, Yasuda, and Yoshida. 3,223,784.

Koppelmann, Floris, to Licentia Patent-Verwaltungs-G.m.b.H. Arc-preventing switching system. 3,223,888, 12–14–65, Cl. 317—11.

Korb, Louis L., and J. Metzner, to Plastics Engineering Co. Process of applying overlay design to pre-cured resin. 3,223,570, 12–14–65, Cl. 156—298.

Korfhage, Roy F.: *See*—
Pinkalla, Hamilton A., Neuser, Cook, and Korfhage. 3,223,532.

Kosinsky, Edward J.: *See*—
Wagner, Paul H., and Kosinsky. 3,222,719.

Kracke, Robert D., and A. Pfeiffer, to United States of America, Army. Apparatus for the classification and evaluation of fallout from aerosols. 3,222,925, 12–14–65, Cl. 73—170.

Kraft, William M.: *See*—
Barch, John J., and Kraft. 3,223,637.
Weisfeld, Joseph, and Kraft. 3,223,657.

Kraft, William M., to Tenneco Chemicals, Inc. Insulated electrical conductors and insulation for such conductors. 3,223,671, 12–14–65, Cl. 260—31.6.

Kraft, William M., and R. Green, to Tenneco Chemicals, Inc. Epoxidized polycarboxylates and resinous compositions containing same. 3,223,715, 12–14–65, Cl. 260—348.

Kraft, William M., and J. Weisfeld, to Tenneco Chemicals, Inc. Stable aqueous alkyd resin emulsions. 3,223,658, 12–14–65, Cl. 260—22.

Kramer, Herbert: *See*—
Keller, Wolfgang, and Kramer. 3,223,493.

Kramer, Leo, A. L. Medesha, and J. P. Law, to Ingersoll-Rand Co. Wire-stripper mechanism. 3,222,957, 12–14–65, Cl. 81—9.51.

Kramer, Rolf, to SKF Kugellagerfabriken Gesellschaft mit beschrankter Haftung. Top roller support arrangement for a textile drawing mechanism. 3,222,731, 12–14–65, Cl. 19—252.

Kramer, Walter E., to Union Oil Co. of California. Polyesters of olefinic alcohols and complex acids and their polymerized products. 3,223,680, 12–14–65, Cl. 260—75.

Krasno, Maxwell R.: *See*—
Luck, Clarence F., Jr., Krasno, and Ciftan. 3,223,944.

Kraus, Gerard, and K. W. Rollmann, to Phillips Petroleum Co. Masticating rubber with vanadium acetylacetonate as the principal peptizing agent. 3,223,673, 12–14–65, Cl. 260—34.2.

Krekeler, Claude B., to The Cincinnati Mine Machinery Co. Cutter bit and socket structures. 3,223,452, 12–14–65, Cl. 299—92.

Krug, George A., Jr., to General Electric Co. Magnetron mounting structure and output coupling. 3,223,881, 12–14–65, Cl. 315—39.

Krug, Helmut P.: *See*—
Hertel, Heinrich L., and Krug. 3,223,360.

Kubitz, Karl A., to Tenneco Chemicals, Inc. Textile lubricants. 3,223,623, 12–14–65, Cl. 252—8.6.
Kuczynski, Edward J.: *See*—
Cantor, Harry A., Horback, Vona, and Kuczynski. 3,223,670.
Kugler, Calvin N., and W. V. Marbach, to Union Carbide Corp. Method of processing continuous strands of encased sausage links and apparatus therefor. 3,223,531, 12–14–65, Cl. 99—109.
Kuhl, Bernard A., to General Motors Corp. Lift mechanism for dozer blade assembly. 3,222,804, 12–14–65, Cl. 37—144.
Kuhlman, Roy M., to PKG. Corp. Carton construction. 3,223,307, 12–14–65, Cl. 229—28.
Kuhrt, Friedrich, H. J. Lippmann, and K. Wiehl, to Siemens-Schuckertwerke Aktiengesellschaft. Apparatus for destination control of a conveyance by means of Hall generators. 3,223,353, 12–14–65, Cl. 243—29.
Kuivinen, William L., to Borg-Warner Corp. Clutch disc vibration damper. 3,223,214, 12–14–65, Cl. 192—107.
Kump, Donald J., and N. F. Lauziere, to Curtiss-Wright Corp. Method of brazing porous materials. 3,222,774, 12–14–65, Cl. 29—488.
Kuninaka, Akira: *See*—
Sakaguchi, Kinichiro, and Kuninaka. 3,223,592.
Kuntz, Louis E., and G. G. Hebard, to Phillips Petroleum Co. Measurement of specific gravity and basic sediment and water content of oil. 3,222,918, 12–14–65, Cl. 78—53.
Kurashiki Rayon Co., Ltd.: *See*—
Sakakibara, Seiichi, and Ono. 3,222,714.
Kusnick, Arthur A.: *See*—
Florac, William, Jr., Juliusburger, and Kusnick. 3,223,925.
Kuth, Robert, H. Von Brachel, O. Schneider, and M. Quaedvlieg, to Farbenfabriken Bayer Aktiengesellschaft. Process for dyeing textile materials. 3,223,471, 12–14–65, Cl. 8—88.
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L'Adressopresse, Societe Anonyme des Anciens Etablissements Klene & Cie: *See*—
Terzariol, Rene E. 3,223,218.
La Fond, Norman R., and C. R. Wilhelmsen, to Hazeltine Research Inc. Single-ended push-pull distortionless power amplifier including D.C. feedback. 3,223,933, 12–14–65, Cl. 330—15.
Lake Shore, Inc.: *See*—
Clark, James W. 3,223,266.
Lamb, Harold W., to Crossley Machine Co., Inc. Tile press mechanism. 3,222,748, 12–14–65, Cl. 25—42.
Lang, Richard E. Reversible die block. 3,222,973, 12–14–65, Cl. 83—640.
Langbein, Gerhard: *See*—
Boedeker, Hermann, Langbein, Sommer, Zimmermann, and Berner. 3,223,470.
Langdon, Jesse D. Tank welding process. 3,223,821, 12–14–65, Cl. 219—106.
Langefors, Ulf M., and S. H. Brannfors, to Nitroglycerin Aktiebolaget. Method of strengthing and sealing rock. 3,222,872, 12–14–65, Cl. 61—36.
Langguth, Robert P., to Monsanto Co. Corrosion-inhibited phosphate solutions and compositions useful for manufacturing them. 3,223,649, 12–14–65, Cl. 252—389.
Langham, Eric M. Electrical potentiometers with a second set of conductors spaced differently from an integral multiple of spacings between a first set of conductors. 3,223,919, 12–14–65, Cl. 323—48.5.
Langley, Lawrence W.: *See*—
Clark, David B., and Langley. 3,223,225.
Lansky, Zdenek J., and J. D. Wenghofer, to Parker-Hannifin Corp. Solenoid operated valve assembly. 3,223,120, 12–14–65, Cl. 137—596.16.
Lapham, Charles J., to Electro-Tec Corp. High impedance, high frequency, slip ring. 3,223,949, 12–14–65, Cl. 333—24.
LaPlante, Oscar W. Spray boom leveler apparatus. 3,223,330, 12–14–65, Cl. 239—168.
Larkin, Daniel C. Carrier for tissue containing dispensing box. 3,223,281, 12–14–65, Cl. 221—46.
Larson, Carl E., to The Producto Machine Co. Machine punch having an ejector pin. 3,222,968, 12–14–65, Cl. 83—128.
Lash, Charles C., to Pan American Petroleum Corp. Eliminating seismic interference waves by a cancellation procedure. 3,223,967, 12–14–65, Cl. 340—15.5.
Lasswell, Fred D., Jr. Harvesting spindle. 3,222,855, 12–14–65, Cl. 56—328.
Latham, Burton F., Jr.: *See*—
Ruble, Theodore A., and Latham. 3,223,605.
Lattimore, John W.: *See*—
Jones, Alvin A., and Lattimore. 3,223,006.
Lau Blower Co., The: *See*—
Kinsworthy, Donald D. 3,223,318.
Lauziere, Norman F.: *See*—
Kump, Donald J., and Lauziere. 3,222,774.
Law, Andrew B., to Rohm & Haas Co. Liquid acid-detergent-santitiser composition. 3,223,643, 12–14–65, Cl. 252—106.
Law, Andrew B., to Rohm & Haas Co. Liquid detergent-sanitizer composition. 3,223,643, 12–14–65, Cl. 252—106.
Law, John P.: *See*—
Kramer, Leo, Medesha, and Law. 3,222,957.
Lawless, Norman D., and H. R. Mertz, to General Motors Corp. Magnetic reset counter mechanism. 3,223,323, 12–14–65, Cl. 235—144.
Lawrence, Jackson, and V. C. Wilson, to General Electric Co. Thermionic converter. 3,223,857, 12–14–65, Cl. 310—4.
Lawrence, James F., Jr. Self-neutralizing drive system for push-pull radio frequency amplifiers. 3,223,939, 12–14–65, Cl. 330—55.
Lazerus, Stanley: *See*—
De Groot, Walter R., and Lazerus. 3,223,171.
Lazzari, Paolo: *See*—
Monaci, Avito, and Lazzari. 3,223,472.
Leach, David W.: *See*—
Chaffee, Mack R., and Leach. 3,223,304.
Leavitt, Frederick C., to The Dow Chemical Co. Derivatives of alkenyl aromatic polymers having pendant vinyl keto groups therein. 3,223,679, 12–14–65, Cl. 260—66.
Lebow Associates, Inc.: *See*—
Lebow, Milton J. 3,222,928.
Lebow, Milton J., to Lebow Associates, Inc. Welder transducer. 3,222,923, 12–14–65, Cl. 73—141.
Lee, Chester E., to Phillips Petroleum Co. Acid-water mixing device. 3,223,121, 12–14–65, Cl. 137—604.
Lee Engineering Co.: *See*—
Seiler, Erick F., and Seng. 3,223,911.
Lehmann, Harold A., to J. I. Case Co. Hydraulic apparatus and method. 3,222,866, 12–14–65, Cl. 60—52.
Lejeune, Andre, to Ateliers de Constructions Electriques de Charleroi (ACEC). Elevator control system employing logical elements. 3,223,200, 12–14–65, Cl. 187—29.
Leman, Arthur L. Slush pump piston rod packing assembly and packing. 3,223,425, 12–14–65, Cl. 277—115.
Lemarchand, Francis. Thead tension regulator for textile machines. 3,223,351, 12–14–65, Cl. 242—154.
Leopold, Otto. Toggle press. 3,222,913, 12–14–65, Cl. 72—429.
Le Plae, George R., to Backstay Welt Co., Inc. Methods of making strip structures. 3,222,769, 12–14–65, Cl. 29—413.
Less, Louis L., to One-In-Hand Tie Co. Necktie with suspended ornament. 3,222,683, 12–14–65, Cl. 2—150.
Lessoff, Howard N., and E. G. Fortin, to Radio Corp. of America. Square loop molybdenum modified ferrites. 3,223,641, 12–14–65, Cl. 252—62.5.
Letourneau, Jacques. Domestic heating system. 3,223,325, 12–14–65, Cl. 236—9.
Levenson, John J., to General Motors Corp. Resilient plastic seat elements. 3,222,698, 12–14–65, Cl. 5—361.
Levy, Robert A. Four spin-flip six-level doped silicon maser amplifier. 3,223,932, 12–14–65, Cl. 330—4.
Lewandowski, Raymond F., to Oak Mfg. Co. Plunger switch having contacts readily convertible between normally open and normally closed positions. 3,223,813, 12–14–65, Cl. 200—159.
Lewis, Bernard L., to Radiation, Inc. Pin hole wide-angle tracker. 3,223,841, 12–14–65, Cl. 250—83.3.
Lewis, Neil D.: *See*—
Stengel, James L., and Lewis. 3,223,415.
Lewis-Shepard Co.: *See*—
Dorion, Francis W., and Becker. 3,223,192.
Leyner, George A., to General Motors Corp. Method of mounting a first member non-rotatably and rigidly on a second member. 3,222,772, 12–14–65, Cl. 29—447.
Libby, McNeill & Libby: *See*—
Kelly, Edgar J. 3,223,533.
Kelly, Edgar J. 3,223,534.
Libman, Max L.: *See*—
Kalmus, Henry P., and Libman. 3,222,929.
Licentia Patent-Verwaltungs-G.m.b.H.: *See*—
Koppelmann, Floris. 3,223,888.
Life-Like Products Inc.: *See*—
Meyer, Gerson. 3,222,718.
Likel, Arthur: *See*—
Garbe, Ewald G., and Likel. 3,223,253.
Limes, Robert W., and M. P. Fedock, to Republic Steel Corp. Refractory composition. 3,223,540, 12–14–65, Cl. 106—65.
Lindenthal, John W., to Engelhard Industries, Inc. 3,223,541, 12–14–65, Cl. 106—69.
Lindley, Curtis P., to Centennial Mills Inc. Bulk container. 3 223 270. 12–14–65, Cl. 217—16.
Lindmark, Andrew C.: *See*—
Ettorre, James E., and Lindmark. 3,222,992.
Lindsey, Joe E., to Phillips Petroleum Co. Seismic corrections. 3,223,966, 12–14–65, Cl. 340—15.5.
Lineburg, Glenn E., to National Distillers and Chemical Corp. Method of overcoating polyolefin surfaces to be bonded to porous substrats. 3 223,578, 12–14–65, Cl. 161—254.
Lingal, Harry J., to The Mosler Safe Co. Vault door. 3,223,057, 12–14–65, Cl. 109—59.
Lipof, Robert, to Aire-Lite Industries, Inc. Screen enclosure. 3,222,841, 12–14–65, Cl. 52—371.
Lippmann, Hans J.: *See*—
Kuhrt, Friedrich, Lippmann, and Diehl. 3,223,353.
Lipschutz, Sidney, to Chemical Sales, Inc. Bag filling apparatus with clamping rack. 3,222,846, 12–14–65, Cl. 53—266.
Liscio, Maurice F., to S-F-D Laboratories, Inc. Cathode heater assembly for use in strong D.C. magnetic fields. 3,223,876, 12–14–65, Cl. 313—276.
Litt, Benjamin: *See*—
Zambrow, John L., and Litt. 3,222,773.
Litton Systems, Inc.: *See*—
Hunter, Jonathan. 3,223,303.
Livingston, William L., to Combustion Engineering, Inc. Method and apparatus for controlling combustion. 3,223,326, 12–14–65, Cl. 236—14.
Lockwood, William H.: *See*—
Davis, Herbert M., and Lockwood. 3,222,942.
Loeb, Sidney, and S. Sourirajan, to The Regents of the University of California. Seal assembly with fluid pressure relieving means. 3,223,424, 12–14–65, Cl. 277—28.

Loeffler, Donald E., to Shell Oil Co. Lubricant compositions. 3,223,628, 12–14–65, Cl. 252—28.

Loeffler, Donald E., to Shell Oil Co. Lubricant compositions. 3,223,629, 12–14–65, Cl. 252—28.

Lofgren, Charles O., and A. Anderson, to Sundstrand Corp. Machine for slotting screw heads. 3,222,702, 12–14–65, Cl. 10—6.

Logitek, Inc.: *See*—
Fischer, Herbert L. 3,223,981.

Longi, Paolo: *See*—
Natta, Giulio, Mazzanti, Longi, and Bernardini. 3,223,686.

Lorio, Angelo. Antiglare lens structure attachment for headlights. 3,223,834, 12–14–65, Cl. 240—46.57.

Loshin, Albert M. Coordinate transformation. 3,222,984, 12–14–65, Cl. 88—24.

Loveland, Junior W.: *See*—
Covery, Robert J., Loveland, and Noland. 3,223,618.

Lowe, Rodger R.: *See*—
Emerson, Marvin R., and Lowe. 3,223,855.

Lowery, James V. Tire deflation signalling device. 3,223,970, 12–14–65, Cl. 340—58.

Lowrey, William E.: *See*—
Hochmuth, William R., Lowrey, and Natho. 3,223,380.

Lucas, James W. Two-element projection lens. 3,222,981, 12–14–65, Cl. 88—24.

Lucas, Joseph, (Industries) Ltd.: *See*—
Bowcott, Roy P. 3,223,213.
Bright, John. 3,223,260.
Millington, David E. 3,223,560.
Preece, Kenneth, and Bowcott. 3,223,863.
Wright, Maurice J. 3,223,852.

Lucich, George M., J. Rockwell, Jr., R. E. Bergstrom, to United States of America, Interior. Multiple electrode detector. 3,223,319, 12–14–65, Cl. 235—98.

Luck, Clarence F., Jr., M. R. Krasno, and M. Ciftan, to Raytheon Co. Laser employing elliptical reflector cavity. 3,223,944, 12–14–65, Cl. 331—94.5.

Luck, William R., Jr.: *See*—
Smith, Donald P., Zuercher, Luck, Hultsman, and Cook. 3,222,844.

Luckenbaugh, Raymond W., and K. C. Smeltz, to E. I. du Pont de Nemours and Co. Uretidinedione fungicides. 3,223,584, 12–14–65, Cl. 167—33.

Luckey Laboratories, Inc.: *See*—
Luckey, Manley J. 3,223,488.

Luckey, Manley J., to Luckey Laboratories, Inc. Device for alcohol determination. 3,223,488, 12–14–65, Cl. 23—254.

Ludwig, David R., and R. R. Hewson, to General Electric Laboratories, Inc. Frequency multiplier. 3,223,918, 12–14–65, Cl. 321—69.

Luedloff, Vernon W., and A. E. Jonelkis, to Harvey Aluminum (Incorporated). Method for installing cemented anchors. 3,222,842, 12–14–65, Cl. 52—742.

Luft, Philip H., to Westinghouse Air Brake Co. Temperature compensated transistor amplifier circuit including failsafe means. 3,223,934, 12–14–65, Cl. 330—15.

Lummus, James L., and B. V. Randall, to Pan American Corp. Method of drilling with air or gas. 3,223,186, 12–14–65, Cl. 175—71.

Lummus, James L., P. P. Scott, Jr., and A. Park, to Pan American Petroleum Corp. Drilling mud system. 3,223,622, 12–14–65, Cl. 252—8.5.

Lunsford, Abner L., to Anaconda Aluminum Co. Lock. 3,222,898, 12–14–65, Cl. 70—134.

Luther, Karl: *See*—
Parent, Gordon C. J., Luther, Bulgrin, and MacKusick. 3,222,765.

Luther, William P., and W. Ulke, to John Oster Mfg. Co. Hair clipper. 3,222,781, 12–14–65, Cl. 30—210.

Lyle, David, to Blaw-Knox Co. Spindle coupling. 3,222,884, 12–14–65, Cl. 64—1.

Lynch, Charles S.: *See*—
Cyphers, Elmer B., Neblett, and Lynch. 3,223,625.

Lynn, John W., to Union Carbide Corp. 2-vinyloxyethyl thiocyanate and polymerization products thereof. 3,223,685, 12–14–65, Cl. 260—79.7.

Lynn, Merrill: *See*—
Wilsher, Rudolph S., Tornqvist, and Lynn. 3,223,690.

Maas, John E.: *See*—
Thornbery, James M., and Maas. 3,222,798.

Macaluso, Michael, Jr. Lamp stand. 3,223,826, 12–14–65, Cl. 219—352.

MacFarlane, Allstair C., to Monsanto Chemical Co. Dehydrogenation of ethylbenzene. 3,223,743, 12–14–65, Cl. 260—669.

MacKenzie, Hugh J., to International Harvester Co. Agricultural implement. 3,223,179, 12–14–65, Cl. 172—624.

MacKenzie, Wallace B., to Phelps Dodge Copper Products Corp. Process for fabricating a cable system. 3,222,759, 12–14–65, Cl. 29—155.5.

Mackie, Harry A.: *See*—
Apolloni, Gino M., Mackie, and Streetman. 3,223,445.

MacKusick, Meredith H.: *See*—
Parent, Gordon C. J., Luther, Bulgrin, and Parent. 3,222,765.

MacMillan, Charles W.: *See*—
Pereue, Joseph H., Abbott, Bacon, and MacMillan. 3,222,794.

Maeda, Yoshio: *See*—
Oshima, Motoyoshi, Maeda, and Kashima. 3,223,698.

Magee, Philip S.: *See*—
Adams, Robert T., and Magee. 3,223,744.

Magge, Philip S., to Chevron Research Co. Oxidative purification of n-paraffins. 3,223,615, 12–14–65, Cl. 208—27.

Magliocco, Pasquale C. Portable street barrier. 3,223,387, 12–14–65, Cl. 256—1.

Magne, Frank C.: *See*—
Mod, Robert R., Skau, Fore, Magne, Novak, Dupuy, Ortego, and Fisher. 3,223,708.

Mahan, John E.: *See*—
Crain, Donald L., Kleinschmidt, and Mahan. 3,223,738.

Maidenform, Inc.: *See*—
Schonberg, Bette K. 3,223,089.

Mallile, James B., and H. Mulder, to Firestone Tire and Rubber Co. Muffler construction. 3,223,491, 12–14–65, Cl. 23—288.

Makowski, Thomas G., M. E. Verdoodt, and E. M. Huntley, to Burroughs Corp. Printing apparatus. 3,223,031, 12–14–65, Cl. 101—109.

Malec, Robert E., to Standard Oil Co. Gasoline composition containing a multipurpose additive. 3,223,497, 12–14–65, Cl. 44—70.

Mamin, Marcel, to G. Dessonnaz. Lead-sharpener. 3,223,073, 12–14–65, Cl. 120—91.

Manly, Donald G., and J. P. O'Halloran, to The Quaker Oats Co. Process of producing furan. 3,223,714, 12–14–65, Cl. 260—346.1.

Manley, Inc.: *See*—
Thomas, Frank J. 3,223,291.

Marbach, Walter V.: *See*—
Kugler, Calvin N., and Marbach. 3,223,531.

Marcan, David. Containers for plants. 3,222,819, 12–14–65, Cl. 47—38.1.

Marks, Richard H., to C. P. Clare & Co. Method of making a switching assembly. 3,222,758, 12–14–65, Cl. 29—155.5.

Marlan Co.: *See*—
Gembicki, Stanley, and Dunn. 3,223,815.

Marlowe, Bernard, R. L. Raymond, and J. D. Douros, Jr., to Sun Oil Co. Oil well drilling fluid spoilage inhibitors. 3,223,621, 12–14–65, Cl. 252—8.5.

Marsden, Roy, to The Superheater Co. Ltd. Methods of electric arc butt welding. 3,223,816, 12–14–65, Cl. 219—61.

Marsh, Glenn A., and E. Schaschl, to Union Oil Co. of California. Unitary corrosion test probe having a tubular reference specimen. 3,222,920, 12–14–65, Cl. 73—86.

Marsh, Glenn A., and A. E. Wolter, to Union Oil Co. of California. Method and apparatus of eliminating spark hazards. 3,223,604, 12–14–65, Cl. 204—147.

Marsico, Vincent J. Means for and method of cutting hair. 3,223,092, 12–14–65, Cl. 132—7.

Martin, Afton V., and A. T. Galbato, to Automatic Voting Machine Corp. Detent pointer channel. 3,223,317, 12–14–65, Cl. 235—54.

Martin, Henry, H. Aebi, and L. Ebner, to Ciba Ltd. 1-(4-bromophenyl), 3-methoxy, 3-methyl-urea. 3,223,721, 12–14–65, Cl. 260—453.

Martin, Kornel: *See*—
Millner, Tivader, Fukker, Martin, and Dvorszky. 3,223,607.

Martin-Mariette Corp.: *See*—
Ida, Noble N. 3,222,778.

Martin Marietta Corp., The: *See*—
Koenig, Roy C., and Ruscio. 3,223,100.

Martin, Philip W., and R. W. Pringle. Apparatus for exploring geological strata utilizing a neutron source and detector. 3,223,839, 12–14–65, Cl. 250—83.1.

Martin, Wayne D. Self-closing gate. 3,222,806, 12–14–65, Cl. 39—84.

Martine, Louie E.: *See*—
Broadhead, James H., Hamilton, and Martine. 3,222,961.

Martini, William R., to North American Aviation, Inc. Regenerative thermionic converter. 3,223,858, 12–14–65, Cl. 310—4.

Martz, Arthur F., Jr., to Whirlpool Corp. Control for laundry apparatus. 3,223,108, 12–14–65, Cl. 137—93.

Marx, Louis, & Co., Inc.: *See*—
Rexford, Willis E. 3,223,220.

Maschinenfabrik ad. Schulthess & Co. AG.: *See*—
Rub, Jakob. 3,223,216.

Massey-Ferguson Inc.: *See*—
Clifford, Peter J., and Jones. 3,223,178.

Massey-Ferguson Ltd.: *See*—
Twidale, William H. 3,223,175.

Mast, Lowell R., to Friden, Inc. Ceiling mounted electric space heater. 3,223,828, 12–14–65, Cl. 219—370.

Mateer, Robert A., to ACF Industries Inc. Connector having an impedance matching transformer. 3,223,954, 12–14–65, Cl. 336—175.

Mathis, Clark A. Wire mesh collapsible disk reflector. 3,224,007, 12–14–65, Cl. 343—915.

Matsui, Keiji: *See*—
Matsuura, Etsuyuki, Matsui, and Hasiguti. 3,223,820.

Matsuura, Etsuyuki, K. Matsui, and R. R. Hasiguti. Method of ohmically connecting filament to semiconducting material. 3,223,820, 12–14–65, Cl. 219—91.

Mattel, Inc.: *See*—
Ryan, John W., Citron, and Danielsen. 3,223,208.

Matuszak, Alfred H.: *See*—
Metro, Stephen J., Matuszak, and Barnum. 3,223,636.

Matzner, Markus, to Union Carbide Corp. Process for preparing polycarbonates. 3,223,677, 12–14–65, Cl. 260—47.

Maugans, Terrance W., to General Motors Corp. Remote controlled push button tuner. 3,223,926, 12–14–65, Cl. 325—390.

Maul, William J., J. A. Oppel, and W. H. Rathbun, to General Electric Co. Electric protective equipment. 3,223,890, 12–14–65, Cl. 317—15.

Maursey, Ethan K., to General Motors Corp. Handle operating means. 3,222,951, 12–14–65, Cl. 74—543.

Max-Planck-Institut fur Eisenforschung: *See*—
Fischer, Wilhelm A. 3,223,758.

Maziuk, John, to Socony Mobil Oil Co., Inc. Catalytic hydrocarbon conversion. 3,223,617, 12–14–65, Cl. 208—138.
Mazzanti, Giorgio: *See*—
Natta, Giulio, Mazzanti, Longi, and Bernardini. 3,223,686.
McAndrew, Joseph B.: *See*—
Rausch, John J., and McAndrew. 3,223,522.
McCarville, John B.: *See*—
Craven, Jack L., Hedglin, D. T. Craven, McCarville, and Sweeney. 3,223,007.
McClung, Robert A.: *See*—
Moses, Nelson K., and McClung. 3,223,328.
McClymont, Kenneth R. Pilot-wire protection of transmission lines. 3,223,891, 12–14–65, Cl. 317—27.
McCracken, John H.: *See*—
McKenna, James C., Albrecht, and McCracken. 3,223,646.
McCreath, Michael K.: *See*—
Hasseldine, Robert N., Banks, and McCreath. 3,223,689.
McCurdy, Dudley P., to General Electric Co. Mechanism providing intermittent drive. 3,223,205, 12–14–65, Cl. 188—85.
McDonald, Lyell J., to C. G. Conn, Ltd. Multi-channel expression control for electrical musical instruments. 3,223,937, 12–14–65, Cl. 330—28.
McDonald, Russell H., to Pendleton Tool Industries, Inc. Ratcheter. 3,222,943, 12–14–65, Cl. 74—157.
McFarlane, Maynard D., to Robertshaw Controls Co. Combined frequency shift and phase shift keying. 3,223,779, 12–14–65, Cl. 178—66.
McGraw-Edison Co.: *See*—
Goettl, Adam D. 3,223,393.
Goettl, Adam D., and Koble. 3,222,909.
Koble, Robert L., Jr. 3,222,848.
McKeirnan, William R., and L. D. Schwender, to Sylvania Electric Products Inc. Application of films. 3,223,569, 12–14–65, Cl. 156—294.
McKenna, James C., K. Albrecht, and J. H. McCracken, to Diamond Alkali Co. Dry free-flowing detergent composition and method of preparation. 3,223,646, 12–14–65, Cl. 252—135.
McKillip, William J.: *See*—
Shulman, Garson P., McKillip, and Young. 3,223,730.
McLafferty, George H., to United Aircraft Corp. Gaseous reactor container. 3,223,591, 12–14–65, Cl. 176—52.
McLaughlin, Homer C.: *See*—
Koch, Ronney R., Ramos, and McLaughlin. 3,223,163.
McLellan, Donald W.: *See*—
Hawley, Melville S., and McLellan. 3,223,788.
McNeil Corp.: *See*—
Soderquist, Leslie E. 3,222,724.
McNeil, Gordon I. Method for making composite sections for use as crawler tracks and the like. 3,223,765, 12–14–65, Cl. 264—229.
Meade, Francis S.: *See*—
Murphy, George P., Jr., and Meade. 3,223,626.
Meadows, Frank W., and N. Pearce, to Service (Engineers) Ltd. Machines for operating on blanks of ceramic ware. 3,222,747, 12–14–65, Cl. 25—24.
Mechanical Handling Systems Inc.: *See*—
Bishop, Leonard J. 3,223,226.
Medesha, Alfred L.: *See*—
Kramer, Leo, Medesha, and Law. 3,222,957.
Mefina S.A.: *See*—
Simmen, Robert. 3,223,035.
Melander, Jack A. Device for forming annular body. 3,223,125, 12–14–65, Cl. 138—157.
Melpar, Inc.: *See*—
Aldrich, Frank L., Usdn. and Vasta. 3,223,593.
Mercier, Bernard: *See*—
Mercier, Jean and B. 3,223,382.
Mercier, Jean and B.; said B. Mercier assor. to Olaer Mercier Patent Corp. Hydraulic control system. 3,223,382, 12–14–65, Cl. 253—1.
Mercier, Olaer, Patent Corp.: *See*—
Mercier, Jean and B. 3,223,382.
Merck & Co., Inc.: *See*—
Hirschmann, Ralph F. 3,223,701.
Merritt, Clarence E.: *See*—
Ordorica, Miguel A., and Merritt. 3,223,797.
Mertz, Harold R.: *See*—
Lawless, Norman D., and Mertz. 3,223,323.
Mesler, Lilburn L.: *See*—
Gilmore, William J., and Mesler. 3,222,858.
Messer, Leonard. Continuous process for determining moisture content and heat of combustion of solid fuels. 3,222,927, 12–14–65, Cl. 73—190.
Messmer, Ernest: *See*—
Chase, Vernon L., and Messmer. 3,223,669.
Metallic Engineering Co., Inc.: *See*—
Valverde, David E. 3,222,740.
Metro, Stephen J., to Esso Research and Engineering Co. Fluorine containing esters of polycarboxylic acids. 3,223,726, 12–14–65, Cl. 260—485.
Metro, Stephen J., A. H. Matuszak, and R. E. Barnum, to Esso Research and Engineering Co. Lead corrosion inhibitor. 3,223,636, 12–14–65, Cl. 252—56.
Metzner, Joseph: *See*—
Korb, Louis L., and Metzner. 3,223,570.
Meullen, Norman F.: *See*—
Norman, Robert I., and Meullen. 3,223,418.
Meyer, Gerson, to Life-Like Products Inc. Mold and valve means for filling same. 3,222,718, 12–14–65, Cl. 18—5.
Meyer, Hans. Measuring instrument. 3,222,790, 12–14–65, Cl. 33—166.
Michael, Henry F. Grass and leaf baler for rotary lawn mowers. 3,222,853, 12–14–65, Cl. 56—202.
Michael, Paul L. Sonic vibration locator and indicator. 3,223,194, 12–14–65, Cl. 181—.5.
Michel, Carl E.: *See*—
Fackler, Warren C., and Michel. 3,223,793.
Middlesworth, Tommy A.: *See*—
Reynolds, John F., Middlesworth, and Steingas. 3,223,193.
Midland Tar Distillers Ltd., The: *See*—
Greenhalgh, Norman, and Arnall. 3,223,710.
Mifalei Matchet "Neger" Ltd.: *See*—
Tolnai, Daniel. 3,223,274.
Mikiya, Toshio, to Nitto Kohki Co., Ltd. Powered impact tools. 3,223,182, 12–14–65, Cl. 173—114.
Mikus, Clifford A., to Pittsburgh Plate Glass Co. Treatment of glass. 3,223,252, 12–14–65, Cl. 214—1.
Miles, Marshall, to Stewart-Warner Corp. Low power thermostatic control having independent load source. 3,223,804, 12–14–65, Cl. 200—122.
Miller, Earle F., Jr. Method for marking metal articles. 3,222,752, 12–14–65, Cl. 29—90.
Miller, Fred J. Duplex push plate assembly for swinging doors. 3,222,732, 12–14–65, Cl. 20—16.
Miller, Fred J. Bracket for supporting rails. 3,223,371, 12–14–65, Cl. 248—251.
Miller, Henry F., and T. J. Rhodes, to United States Rubber Co. Wave damping apparatus. 3,222,870, 12–14–65, Cl. 61—5.
Miller, Henry F., and T. J. Rhodes, to United States Rubber Co. Method and apparatus for transporting material in a liquid having wave propagation. 3,222,871, 12–14–65, Cl. 61—5.
Miller, Henry Z., M. A. Koltuniak, and C. E. Fenoglio, to The Udylite Corp. Saturable reactor controlled transformer system. 3,223,921, 12–14–65, Cl. 323—56.
Miller, James E. Machine for dispensing liquids. 3,223,023, 12–14–65, Cl. 99—283.
Miller, James H.: *See*—
Miller, Lorin G. and J. H. 3,223,078.
Miller, Lorin G. and J. H. Warm air furnace. 3,223,078, 12–14–65, Cl. 126—110.
Miller, Raymond J., to J. I. Case Co. Hydraulic apparatus and method. 3,222,865, 12–14–65, Cl. 60—52.
Millington, David E., to Joseph Lucas (Industries) Ltd. Semi-conductor controlled rectifier having turn-on and turn-off properties. 3,223,560, 12–14–65, Cl. 148—1.5.
Millman, Richard L.: *See*—
Ward, Walter H., and Millman. 3,222,852.
Millner, Tivadar, K. Fukker, K. Martin, and M. Dvorszky, to Egyesult Izzolampa es Villamossagi Reszvenytarsasag. Method of manufacturing electrical heating elements with improved aluminum oxide coating. 3,223,607, 12–14–65, Cl. 204—181.
Miner, Robert G., to The Trane Co. Induction unit primary air control. 3,223,149, 12–14–65, Cl. 165—33.
Minerals & Chemicals Phillipp Corp.: *See*—
Hemstock, Glen A. 3,223,546.
Minnesota Mining and Mfg. Co.: *See*—
Bond, Herbert M. 3,223,661.
Griesbaber, Emil W., and Newman. 3,223,526.
Rambosek, George M. 3,223,681.
Mintz, Milton S.: *See*—
Chen, William K.-W., Mintz, and Smith. 3,223,612.
Mischon, Lester, to The Singer Co. Dial drive for knitting machines. 3,222,889, 12–14–65, Cl. 66—28.
Misson, George W., to Pittsburgh Plate Glass Co. Handling of sheet material. 3,223,443, 12–14–65, Cl. 294—65.
Misson, George W., to Pittsburgh Plate Glass Co. Gas module systems for heat transfer and/or fluid support of glass or other sheet materials. 3,223,500, 12–14–65, Cl. 65—25.
Mobay Chemical Co.: *See*—
Scheermesser, Wilhelm. 3,222,697.
Mod, Robert R., E. L. Skau, S. P. Fore, F. C. Magne, A. F. Novak, H. P. Dupuy, J. R. Ortego, and M. J. Fisher, to United States of America, Agriculture. N-decanoyltetrahydroquinoline. 3,223,708, 12–14–65, Cl. 260—287.
Model, Ernst: *See*—
Bindler, Jakob, and Model. 3,223,547.
Bindler, Jakob, and Model. 3,223,582.
Modine Mfg. Co.: *See*—
Simpelaar, Clyde S. 3,223,153.
Moening, Robert J., to Sylvania Electric Products Inc. Leakage inhibiting supporting structure. 3,223,772, 12–14–65, Cl. 174—17.05.
Mohler, Donald, and W. E. Tragert, to General Electric Co. Electrical capacitor and tantalum-containing electrode material therefor. 3,223,899, 12–14–65, Cl. 317—230.
Mohr, Milton E., to Bell Telephone Laboratories, Inc. Impulse producing circuit. 3,223,931, 12–14–65, Cl. 328—154.
Molella, Filbert A. Method of and apparatus for fabricating metallic strips. 3,222,908, 12–14–65, Cl. 72—299.
Molinaro, Bernard J. Hanger ornament. 3,223,373, 12–14–65, Cl. 248—339.
Moll, Charles J., Jr.: *See*—
Strubel, David G., and Moll. 3,223,090.
Molnar, Robert J., and W. Parfomak, to The Bendix Corp. Quadrature rejection circuit. 3,223,848, 12–14–65, Cl. 307—88.5.
Molt, Kenneth R.: *See*—
Hechenbleikner, Ingenuin, and Molt. 3,223,736.
Monaci, Avito, and P. Lazzari, to Montecatini Societa Generale per l'Industria Mineraria e Chimica. Process for improving the tinctorial characteristics of fibers obtained from olefin polymers. 3,223,472, 12–14–65, Cl. 8.—115.5.
Monahan, Frederick A., to International Electronic Corp. Impact apparatus. 3,222,914, 12–14–65, Cl. 72—453.

Money, Fred B., to The Baldt Anchor, Chain & Forge Division of Boston Metals Co. Method for producing integral studs in link anchor-chain by projection welding. 3,222,861, 12–14–65, Cl. 59—35.
Monsanto Chemical Co.: *See*—
MacFarlane, Alistair C. 3,223,743.
Monsanto Co.: *See*—
Groenweghe, Leo C. D. 3,223,737.
Hirshfeld, Julian J. 3,223,550.
Langguth, Robert P. 3,223,649.
Sheppard, William N. 3,222,895.
Tate, Clifton W., and Scruggs. 3,223,752.
Taylor, Ernest A., Jr. 3,222,799.
Montecatini Societa Generale per l'Industria Mineraria e Chimica: *See*—
Monaci, Avito, and Lazzari. 3,223,472.
Natta, Giulio, Mazzanti, Longi, and Bernardini. 3,223,686.
Moody, Avis E.: *See*—
Moody, Eugene L. and A. E. 3,223,271.
Moody, Eugene L., deceased, by A. E. Moody, representative. Adjustable length prop apparatus. 3,223,271, 12–14–65, Cl. 217—60.
Moon, John J., and R. O. Dunn, to Phillips Petroleum Co. Fractional crystallization. 3,222,881, 12–14–65, Cl. 62—58.
Moore, Earl E.: *See*—
Moore, Martin E. and E. E. 3,223,300.
Moore, Martin E. and E. E. Combination knapsack frame. 3,223,300, 12–14–65, Cl. 224—25.
Moore, Thomas W., to American Machine & Foundry Co. Battery charging apparatus. 3,223,894, 12–14–65, Cl. 317—100.
Moravec, Alfred: *See*—
Rothe, Arthur, and Moravec. 3,223,251.
Moreau, Claude: *See*—
Blum, Pierre, and Moreau. 3,223,475.
Morey, George W., to Anaconda Wire and Cable Co. Electrical insulating glass composition and apparatus encapsulated therewith. 3,223,553, 12–14–65, Cl. 117—215.
Morgan Construction Co.: *See*—
Hill, William J. 3,222,901.
Hill, William J. 3,222,970.
Hill, William J. 3,223,345.
Hitchcock, John H. 3,222,965.
Webber, John J. 3,223,135.
Morgan, David L., to Robertshaw Controls Co. Power element assembly. 3,223,001, 12–14–65, Cl. 92—91.
Morio, Atsuo: *See*—
Sakurai, Shigeki, Watabe, and Morio. 3,223,552.
Moro, Antonio. Thermally controlled electrical switch having motion-amplifying lever means. 3,223,806, 12–14–65, Cl. 200—138.
Morse Chain Co.: *See*—
Hein, Charles E. 3,222,885.
Morse Instrument Co., The: *See*—
Waner, Donald W. 3,223,201.
Morton, Harold S.: *See*—
Nooker, Eugene L., Brown, Dietz, and Morton. 3,223,037.
Morway, Arnold J., and H. E. Ramsden, to Esso Research and Engineering Co. Lubricating grease. 3,223,624, 12–14–65, Cl. 252—18.
Morway, Arnold J., and A. J. Rutkowski, to Esso Research and Engineering Co. Lubricating composition. 3,223,631, 12–14–65, Cl. 252—33.6.
Morway, Arnold J., and H. E. Ramsden, to Esso Research and Engineering Co. Lubricant. 3,223,633, 12–14–65, Cl. 252—40.
Mosby, William L., and M.-L. Silva, to American Cyanamid Co. Triphenylphosphoranylidene - amino - 1,2-naphthoquinone. 3,223,716, 12–14–65, Cl. 260—396.
Moses, Nelson K., and R. A. McClung, to Railroad Permanent Way Products Corp. Track structure for railroads and the like. 3,223,328, 12–14–65, Cl. 238—25.
Moses, Samuel F.: *See*—
Scherr, Oscar L., and Moses. 3,223,718.
Mosler Safe Co., The: *See*—
Lingal, Harry J. 3,223,057.
Moss, James M. Firefighting apparatus. 3,223,172, 12–14–65, Cl. 169—1.
Mostertz, Ferdinand W. Spike heel construction. 3,222,801, 12–14–65, Cl. 36—39.
Motorola, Inc.: *See*—
Clar, Philip L. 3,223,947.
Fenne, Kenneth R. 3,223,468.
Pawlowski, Frank L. 3,223,953.
Warner, Raymond M., Jr., Onodora, and Corrigan. 3,223,904.
Mott, George R.: *See*—
Clark, Harold E., Mott, and Gundlach. 3,223,548.
Mott, James D., to Cicero C. Brown. Hydraulic pressure-set liner hanger. 3,223,170, 12–14–65, Cl. 166—208.
Moyer, Hallard C.: *See*—
Podlipnik, John, Moyer, and Guttman. 3,223,613.
Moyer, James D., to Textile Machine Works. Yarn severing mechanism for knitting machines. 3,222,892, 12–14–65, Cl. 66—134.
Mueller Co.: *See*—
Mueller, Frank H., and Smith. 3,223,110.
Mueller, Frank H., and J. J. Smith, to Mueller Co. Fire hydrant with self-contained detachable operating assembly with lubricant reservoir. 3,223,110, 12–14–65, Cl. 137—298.
Mulder, Harry: *See*—
Maillie, James B., and Mulder. 3,223,491.
Mulder, Harry, to The Firestone Tire & Rubber Co. Bung patch plate assembly method. 3,223,062, 12–14–65, Cl. 113—120.
Muller, Helmut: *See*—
Gabler, Rudolf, and Muller. 3,223,682.
Muller, Jacques, to Rellumit Inter, S.a.r.L. Filter cartridge for separator. 3,223,240, 12–14–65, Cl. 210—96.
Muller, Jacques. Floating separator. 3,223,243, 12–14–65, Cl. 210—242.
Munch, Walter, Jr., and R. C. Scherer, to D. H. Baldwin Co. Keying systems for electric musical instruments. 3,223,768, 12–14–65, Cl. 84—1.01.
Munsell, Monroe W.: *See*—
Calvino, Louis N., and Munsell. 3,223,495.
Munson, Chester L., to The Louis Allis Co. Magnetic clutch coolant control. 3,223,864, 12–14–65, Cl. 310—94.
Murakami, Kenkichi: *See*—
Soda, Shigenari, Murakami, and Nakashima. 3,223,027.
Murakami, Sakae. Hoist comprising automatic variable speed winding means. 3,223,385, 12–14–65, Cl. 254—173.
Murdock, James D., to Canadian Industries Ltd. Curable coating composition comprising copolymer containing grafted carboxyl or alkylolated amide groups, and amine/aldehyde condensate or epoxy resin. 3,223,655, 12–14–65, Cl. 260—4.
Murphy, George P., Jr., and F. S. Meade, to United States of America, Army. Corrosion inhibiting resin-bonded solid film lubricant. 3,223,626, 12–14–65, Cl. 252—25.
Murray Co. of Texas, Inc., The: *See*—
Wuertz, Emil S. 3,222,954.
Murray, William B. Water treating device and electrolytic cells for use therewith. 3,223,242, 12–14–65, Cl. 210—139.
Musgrave, Daniel D. Magazine loading clip. 3,222,810, 12–14–65, Cl. 42—87.
Mutchler, Paul A., to The Nu-Way Corp. Fluid fuel combustion apparatus. 3,223,136, 12–14–65, Cl. 158—11.
N.T.W. Missile Engineering, Inc.: *See*—
Ernestus, Adolph W. 3,222,904.
Ernestus, Adolph W. 3,222,905.
Nabiullin, Faat H., R. G. Adamjan, E. M. Gertsik, U. Y. Ushko, V. M. Dolgov, J. N. Tselov, and V. P. Sharanov. Device for scoring of crystalline semiconductor materials. 3,222,963, 12–14–65, Cl. 83—10.
Nakamura, Toshihiko: *See*—
Yamamoto, Takuma, Nakamura, and Shimada. 3,223,783.
Nakashima, Junichi: *See*—
Soda, Shigenari, Murakami, and Nakashima. 3,223,027.
Nalco Chemical Co.: *See*—
Oberhofer, Alfred W. 3,223,620.
Reuter, Raymond. 3,222,737.
Nallinger, Friedrich K. H., to Daimler-Benz Aktiengesellschaft. Auxiliary installation for actuation of movable body parts of motor vehicles. 3,223,404, 12–14–65, Cl. 268—125.
Nash, Edward L., and V. F. Fishtahler, to General Motors Corp. Self-adjusting brake mechanism. 3,223,203, 12–14–65, Cl. 188—78.
Nashelsky, Louis: *See*—
Carrozza, Louis, and Nashelsky. 3,223,850.
Natho, Paul J.: *See*—
Hochmuth, William R., Lowrey, and Natho. 3,223,380.
National Cash Register Co., The: *See*—
Clark, Robert W. 3,223,986.
Gunderson, Robert O., Klein, Campillo, and Tang. 3,223,980.
Ulzurrun, Eduardo T. 3,223,972.
Gerletz, Charles F. 3,222,971.
National Distillers and Chemical Corp.: *See*—
Feldman, Julian, and Saffer. 3,223,741.
Greenberg, Harry, and Hansley. 3,223,691.
Henze, Edward D., and Forman. 3,223,766.
Kahn, Harry A., and Henze. 3,223,764.
Lineburg, Glenn E. 3,223,578.
Schipperelt, George H. 3,223,519.
Evans, Robert E., Prior, and Baber. 3,223,576.
National Rejectors, Inc.: *See*—
Danko, Donald M. 3,223,988.
National Research Council: *See*—
Puddington, Ira E., and Sirianni. 3,223,482.
National Research Development Corp.: *See*—
Bishop, Donald, and Ripper. 3,222,789.
Natta, Giulio, G. Mazzanti, P. Long, and F. Bernardini, to Montecatini Societa Generale per l'Industria Mineraria e Chimica. Polymers of vinyl organic monomers and process for producing the same. 3,223,686, 12–14–65, Cl. 260—80.
Naughton, John L. Den-Tal-Ez Chair Mfg. Co. Arm support. 3,223,448, 12–14–65, Cl. 297—418.
Naylor, Floyd E.: *See*—
Farrar, Ralph C., and Naylor. 3,223,692.
Naylor, Melvin C. Turning attachment for barber or beauty type chair. 3,223,449, 12–14–65, Cl. 297—429.
Neslund, Eddie E. Dial indicator caliper gage. 3,222,788, 12–14–65, Cl. 33—148.
Newman, Douglas A., to Columbia Ribbon and Carbon Mfg. Co., Inc. Process of preparing transfer media. 3,223,554, 12–14–65, Cl. 117—217.
Navionics, Inc.: *See*—
Strother, George D., Jr. 3,223,792.
Neblett, Richard F.: *See*—
Cyphers, Elmer B., Neblett, and Lynch. 3,223,625.
Neumann, Horst: *See*—
Klavehn, Wilfrid, and Neumann. 3,223,700.
Neuser, Gerald L.: *See*—
Pinkalla, Hamilton A., Neuser, Cook, and Korfhage. 3,223,532.

Newman, Donald J.: *See*—
Grieshaber, Emil W., and Newman. 3,223,526.
Newsday, Inc.: *See*—
Tornberg, Isidor, Broad, Armstrong, and Sugar. 3,222,-966.
Nicholson, Samuel S., to American Can Co. Load handling method and apparatus therefor. 3,223,259, 12–14–65, Cl. 214—38.
Nicholson, Thomas W. Log barker-chippers. 3,223,129, 12–14–65, Cl. 144—1.
Nickerson, Mortimer H., H. S. Schnitzer, J. E. Curtis, and G. D. Patterson, to DeBell & Richardson, Inc. Epoxy resin foams and method of making same. 3,223,654, 12–14–65, Cl. 260—2.5.
Niclas, Walter, and R. Beckadolph, to Continental Gummi-Werke Aktiengesellschaft. Method of making pneumatic tires for vehicles. 3,223,566, 12–14–65, Cl. 156—123.
Nicolacl, Domenick, to Cliftex Clothing Co., Inc. Mobile carriage with vertically movable platform. 3,223,432, 12–14–65, Cl. 280—79.2.
Nielsen, John D.: *See*—
Noll, George C., and Nielsen. 3,223,250.
Nippon Telegraph & Telephone Public Corp.: *See*—
Sakurai, Shigeki, Watabe, and Morio. 3,223,552.
Nitroglycerin Aktiebolaget: *See*—
Langefors, Ulf M., and Brannfors. 3,222,872.
Nitto Kohki Co., Ltd.: *See*—
Mikiya, Toshio. 3,223,182.
Nitzsche, Siegfried, and P. Buchheit, to Wacker-Chemie G.m.b.H. Method of hydrolysing silicon chlorides. 3,223,-474, 12–14–65, Cl. 23—14.
Noakes, Thomas E., to American Radiator & Standard Sanitary Corp. Combination manual-automatic water control means for tub-shower installation. 3,222,690, 12–14–65, Cl. 4—194.
Noakes, Thomas E., M. E. Anderson, and M. W. Polkinghorn, to American Radiator & Standard Sanitary Corp. Motor driven step opening gas supply unit. 3,223,143, 12–14–65, Cl. 158—125.
Noguchi Institute, The: *See*—
Oshima, Motoyoshi, Maeda, and Kashima. 3,223,698.
Noland, Wayland E.: *See*—
Convery, Robert J., Loveland, and Noland. 3,223,618.
Noll, George C., and J. D. Nielsen, to Koehring Co. Folding back-hitch gantry. 3,223,250, 12–14–65, Cl. 212—59.
Nooker, Eugene L., C. R. Brown, V. J. Dietz, and H. S. Morton, to United States of America, Navy. Innerbody continuous rod warhead. 3,223,037, 12–14–65, Cl. 102—67.
Nopco Chemical Co.: *See*—
Coen, Richard A. 3,223,232.
Pulver, Louis J., and Thompson. 3,223,660.
Sellet, Lucien. 3,223,751.
Norman, Robert I., and N. F. Meullen, to Hayes International Corp. Subsonic and supersonic towed aerial target. 3,223,-418, 12–14–65, Cl. 273—105.3.
North American Aviation, Inc.: *See*—
Davis, Karl A. 3,222,916.
Martini, William R. 3,223,858.
North American Philips Co. Inc.: *See*—
Blok, Lourens, and Pijls. 3,223,907.
Brandt, Helmut. 3,223,790.
Dell, Hugh A. 3,223,847.
Hoek, Serge. 3,223,594.
Jonker, Hendrik, and Dippel. 3,223,525.
Kok, Hans, and Schramel. 3,223,974.
Ooms, Johan L. 3,223,789.
Smeulers, Wouter. 3,223,942.
Westerkowsky, Kurt. 3,223,843.
Northrop Architectural Systems: *See*—
Du Shane, Ray N., Jr. 3,222,897.
Novak, Arthur F.: *See*—
Mod, Robert R., Skau, Fore, Magne, Novak, Dupuy, Ortego, and Fisher. 3,223,708.
Novak, Frank J. Collapsible table and shelves. 3,223,054, 12–14–65, Cl. 108—111.
Nowlin, Ivan E., to ACF Industries, Inc. Method of forming valve seat. 3,222,762, 12–14–65, Cl. 29—157.1.
Nugent, Daniel E. Conductive clip. 3,223,775, 12–14–65, Cl. 174—84.
Nu-Way Corp., The: *See*—
Mutchler, Paul A. 3,223,136.
Nyby Bruks Aktiebolag: *See*—
Andersson, Bengt I. 3,223,600.
Nyden, Robert, to Waterbury Co., Inc. Snap acting slide lock top closure. 3,223,297, 12–14–65, Cl. 222—485.
Nyden, Robert, to Heekin Can Co. Dispensing cap for aerosol containers. 3,223,332, 12–14–65, Cl. 239—492.
Oak Mfg. Co.: *See*—
Lewandowski, Raymond F. 3,223,813.
Obenshain, David N., to West Virginia Pulp and Paper Co. Method of sheeting webs. 3,222,964, 12–14–65, Cl. 83—26.
Oberhofer, Alfred W., to Nalco Chemical Co. Corrosion inhibition. 3,223,620, 12–14–65, Cl. 210—30.
O'Brien, Richard C., to Harris-Intertype Corp. Photographic type composition. 3,223,017, 12–14–65, Cl. 95—85.
Odend'Hal, Fortune, to Jamison Cold Storage Door Co. Irremovable adjustable keeper for a door latch. 3,223,441, 12–14–65, Cl. 292—341.18.
O'Halloran, Joseph P.: *See*—
Manly, Donald G., and O'Halloran. 3,223,714.
O'Keefe, John M.: *See*—
Bull, James T., Dow, Engel, Kellinger, Schofield, Taylor, and O'Keefe. 3,222,988.
Olin Mathieson Chemical Corp.: *See*—
Atteberry, Robert W., Keefer, and Wachtel. 3,223,563.
Heuer, Charles A. 3,222,763.
Olivetti, Ing. C., & C., S.p.A.: *See*—
Gassino, Teresio. 3,223,318.
Sacerdoti, Giorgio, and Guarracino. 3,223,982.
Olmsted, Harold H.: *See*—
Jimenez, James A., and Olmsted. 3,223,053.
Olsen, Willy, and H. D. Tindall, to H. K. Porter, Co., Inc. Transformer core construction and method of producing same. 3,223,955, 12–14–65, Cl. 336—211.
One-In-Hand Tie Co.: *See*—
Less, Louis L. 3,222,683.
One, George Y., to Thompson Ramo Wooldridge Inc. Drive unit bearing assembly. 3,223,465, 12–14–65, Cl. 308—187.
Ono, Takuya: *See*—
Sakakibara, Seiichi, and Ono. 3,222,714.
Onodera, George C.: *See*—
Warner, Raymond M., Jr., Onodera, and Corrigan. 3,223,-904.
Ooms, Johan L., to North American Philips Co., Inc. Automatic control of groove spacing in phonograph records. 3,223,789, 12–14–65, Cl. 179—100.4.
Opdahl, Everett W.: *See*—
Quick, Stanley L., and Opdahl. 3,223,359.
Opfermann, Adolf. Rail section for toy and model railroads. 3,223,327, 12–14–65, Cl. 238—10.
Oppel, John A.: *See*—
Maul, William J., Oppel, and Rathbun. 3,223,890.
Optics Technology, Inc.: *See*—
Kapany, Narinder S. 3,223,009.
Ordorica, Miguel A., and C. E. Merritt, to Kaiser Jeep Corp. Horn button switch. 3,223,797, 12–14–65, Cl. 200—61.54.
Oread Electronics Laboratory, Inc.: *See*—
Fayman, David L. 3,223,928.
Orr, Fay. Cutter tip holder for roof scratching construction. 3,223,451, 12–14–65, Cl. 299—85.
Ortego, Jesse R.: *See*—
Mod, Robert R., Skau, Fore, Magne, Novak, Dupuy, Ortego, and Fisher. 3,223,708.
Orwig, Herbert L., to Yale & Towne Inc. Side dump tractor loader. 3,223,262, 12–14–65, Cl. 214—140.
Osborne, Ralph H. Bolster bracket for convertible furniture. 3,222,691, 12–14–65, Cl. 5—59.
Ose, Hideo, and K. Yoshida, to Yamanouchi Pharmaceutical Co., Ltd. Synthesis of thioctic acid and thioctic acid amide. 3,223,712, 12–14–65, Cl. 260—327.
Oshima, Motoyoshi, Y. Maeda, and K. Kashima, to The Noguchi Institute. Method for liquefying lignin. 3,223,698, 12–14–65, Cl. 260—124.
Osment, Harry E., to Kaiser Aluminum & Chemical Corp. Method of producing active alumina. 3,223,483, 12–14–65, Cl. 23—143.
Osswald, Hans. Apparatus for pressurized roasting of coffee, cocoa and the like. 3,223,021, 12–14–65, Cl. 99—236.
Östberg, Jan-Erik. Method for controlling the reactions in an arc furnace. 3,223,520, 12–14–65, Cl. 75—60.
Oster, John, Mfg. Co.: *See*—
Luther, William P., and Ulke. 3,222,781.
Sadlon, Stephen. 3,222,782.
Otis Elevator Co.: *See*—
Tucker, Benjamin W., Jr. 3,223,403.
Otis Engineering Corp.: *See*—
Roark, James T. 3,223,169.
Ott, Georg: *See*—
Steuer, Herbert, Ott, Rack, and Schrodt. 3,222,946.
Otteman, Lloyd G. Method of actuating fluid pressure operated mechanism of underwater well installation. 3,223,164, 12–14–65, Cl. 166—35.
Ouchi, Satoru. Automatic exposure timing means. 3,222,-983, 12–14–65, Cl. 88—24.
Owen, Kenneth: *See*—
Wright, Charles S., and Owen. 3,223,812.
Owens-Corning Fiberglas Corp.: *See*—
Stalego, Joseph P. 3,223,668.
Owens-Illinois Glass Co.: *See*—
Williams, Harold W. 3,223,269.
Owens, John E., and W. R. Vieth, to E. I. du Pont de Nemours and Co. Process for quenching extruded polymeric film. 3,223,757, 12–14–65, Cl. 264—22.
PKG. Corp.: *See*—
Kuhlman, Roy M. 3,223,307.
Pacific Curtainwall, Inc.: *See*—
Skromeda, Stephen A. E. 3,223,209.
Pacific Data Systems, Inc.: *See*—
Emerson, Marvin R., and Lowe. 3,223,855.
Packer, Mervyn B., to Automotive Products Co. Ltd. Liquid pressure braking systems for vehicles. 3,223,459, 12–14–65, Cl. 303—21.
Palmleaf, Herbert, and A. Tako, to A. J. Gerrard Mfg. Co. Strap buckle. 3,222,745, 12–14–65, Cl. 24—269.
Pan American Petroleum Corp.: *See*—
Hujsak, Karol L. 3,223,165.
Hunt, Elton B. 3,223,081.
Hunt, Elton B., and Grekel. 3,223,166.
Lash, Charles C. 3,223,967.
Lummus, James L., and Randall. 3,223,186.
Lummus, James L., Scott, and Park. 3,223,622.
Pantasota Co., The: *See*—
Weiss, Hugh R. 3,223,234.
Papa, Paul H., to Goodman Mfg. Co. Method of making motor shells. 3,222,757, 12–14–65, Cl. 29—155.5.
Paramount Pictures Corp.: *See*—
Raibourn, Paul. 3,223,872.
Parent, Gordon C. J., K. Luther, W. W. Bulgrin, and M. H. MacKusick. Method for producing welded disk wheels. 3,222,765, 12–14–65, Cl. 29—159.01.
Parfomak, Walter: *See*—
Molnar, Robert J., and Parfomak. 3,223,848.

Park, Arthur: *See*—
Lummus, James L., Scott, and Park. 3,223,622.
Parker-Hannifin Corp.: *See*—
Lansky, Zdenek J., and Wenghofer. 3,223,120.
Parks, Robert R., to General Motors Corp. Vehicle suspension construction. 3,223,433, 12–14–65, Cl. 280—96.2.
Patent Concern N.V.: *See*—
Van der Lely, Cornelis. 3,223,177.
Patterson, George D.: *See*—
Nickerson, Mortimer H., Schnitzer, Curtis, and Patterson. 3,223,654.
Paul, Herman L., Jr., to Consolidated Electrodynamics Corp. Self-cleaning valve mechanism. 3,223,173, 12–14–65, Cl. 169—31.
Paulson, Joseph F., to Sun Oil Co. Decolorization of waxes by dialysis. 3,223,614, 12–14–65, Cl. 208—24.
Pawlowski, Frank L., to Motorola, Inc. Inductance device with movable core having resilient disc for resisting core movement. 3,223,953, 12–14–65, Cl. 336—136.
Payne, Guy J.: *See*—
Keusder, Walter W., Rachell, and Payne. 3,223,079.
Payne, James A., and L. R. Conard, to United States of America, Army. Gun control. 3,223,000, 12–14–65, Cl. 91—448.
Payton, Leland R., to Reynolds Metals Co. Method of making a low pressure, hermetically sealed sheet metal container. 3,223,063, 12–14–65, Cl. 113—121.
Pearce, Norman: *See*—
Meadows, Frank W., and Pearce. 3,222,747.
Peck, Horace: *See*—
Goldberg, Julius W., and Peck. 3,223,096.
Pendleton Tool Industries, Inc.: *See*—
McDonald, Russell H. 3,222,943.
Pereue, Joseph H., B. F. Abbott, E. M. Bacon, and C. W. MacMillan, to Bear Mfg. Co. Wheel alinement indicator. 3,222,794, 12–14–65, Cl. 33—203.18.
Perl, Karl: *See*—
Tanner, Richard, Perl, and Bauer. 3,223,074.
Perraud, Louise Pierrette: *See*—
Fest, Andre. 3,222,701.
Persiaux, Jean, to Tractel S.A. Self-tightening clamps. 3,222,742, 12–14–65, Cl. 24—134.
Peter, Siegfried, to Gewerkschaft Elwerath. Method for the prevention of sulfur deposit in the riser pipes in the extraction of natural gases laden with hydrogen sulfide when elementary sulfur is present in the deposit. 3,223,156, 12–14–65, Cl. 166—6.
Peterka, Albert C. Disposable brush and sanitary handle. 3,222,705, 12–14–65, Cl. 15—176.
Peterson, Adolphe C. Alternative sustentation system for aircraft. 3,223,355, 12–14–65, Cl. 244—12.
Peterson, Ronald T. Control mechanism. 3,222,949, 12–14–65, Cl. 74—471.
Peterson, William H., to Pullman Inc. Split sliding sill and cushioning arrangement. 3,223,049, 12–14–65, Cl. 105—392.5.
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Peterson, William H., to Pullman Inc. Hydraulic cushion cylinder head arrangement. 3,223,401, 12–14–65, Cl. 267—1.
Petrolite Corp.: *See*—
Hampton, John L. 3,223,167.
Pfaudler Permutit Inc.: *See*—
Calmon, Calvin, Gilwood, and Termini. 3,223,619.
Pfeiffer, Albert: *See*—
Kracke, Robert D., and Pfeiffer. 3,222,925.
Pfizer, Chas., & Co., Inc.: *See*—
Connolly, Patrick J. 3,223,231.
Phelps Dodge Copper Products Corp.: *See*—
MacKenzie, Wallace B. 3,222,759.
Philco Corp.: *See*—
Chatten, John B. 3,223,973.
Dahlberg, Robert S., Jr. 3,223,993.
Phillips, Chester, and M. L. Cohen. Adjustable guided slicing knife. 3,222,784, 12–14–65, Cl. 30—293.
Phillips Petroleum Co.: *See*—
Crain, Donald L., Kleinschmidt, and Mahan. 3,223,738.
Davison, Joseph W. 3,223,745.
De Shazo, Earl L., Jr. 3,223,968.
Farrar, Ralph C., and Naylor. 3,223,692.
Farrar, Ralph C., Jr. 3,223,693.
Farrar, Ralph C., Jr. 3,223,694.
Findlay, Robert A. 3,222,880.
Gallaugher, Major L., and Pritchard. 3,223,545.
Gallaugher, Major L. 3,223,695.
Gragson, James T. 3,223,630.
Hart, James L. 3,223,476.
Kleiss, Louis D. 3,223,107.
Kraus, Gerard, and Rollmann. 3,223,673.
Kuntz, Louis E., and Hebard. 3,222,918.
Lee, Chester E. 3,223,121.
Lindsey, Joe P. 3,223,966.
Moon, John J., and Dunn. 3,222,881.
Rice, Frederic L., Jr. 3,223,275.
Van Pool, Joe, and Blaker. 3,223,749.
Van Pool, Joe. 3,223,650.
Wagner, Paul H., and Kosinsky. 3,222,719.
Wilson, Joseph F. 3,223,478.
Philpot, Arthur A. Supporting panels in frames. 3,222,839, 12–14–65, Cl. 52—498.
Piasecki, Raymond F., to The Thomas & Betts Co. Cable-tap closure device. 3,223,776, 12–14–65, Cl. 174—138.
Pickel, Frank D., to Warner-Lambert Pharmaceutical Co. Optical brightening dental compound. 3,223,588, 12–14–65, Cl. 167—98.
Piconics, Inc.: *See*—
Slenker, Stephen A. 3,223,952.
Pignon, Harold V. Plank support bracket. 3,223,370, 12–14–65, Cl. 248—214.
Pijls, Hermanus S. J.: *See*—
Blok, Lourens, and Pijls. 3,223,907.
Pilkington Bros. Ltd.: *See*—
Barradell-Smith, Richard, and Silverwood. 3,223,503.
Barradell-Smith, Richard, and Silverwood. 3,223,509.
Pilkinton, Donald C., to Bell Telephone Laboratories, Inc. Signaling circuit. 3,223,786, 12–14–65, Cl. 179—18.
Pinkalla, Hamilton A., G. L. Neuser, L. R. Cook, and R. F. Korfhage, to W. R. Grace & Co. Emulsions for food use. 3,223,532, 12–14–65, Cl. 99—123.
Pirelli S.p.A.: *See*—
Boschi, Antonio. 3,222,729.
Pirelli Societa Per Azioni: *See*—
Priaroggia, Paolo G. 3,223,773.
Pittsburgh Plate Glass Co.: *See*—
Cypher, James J., and Davidson. 3,223,499.
Cypher, James H., and Valchar. 3,223,504.
Davidson, Charles R., Jr. 3,223,498.
Fredley, James C., and Sleighter. 3,223,501.
Fredley, James C., and Sleighter. 3,223,549.
Golightly, James S., Doehlert, and Davidson. 3,223,505.
Grafton, William F. 3,223,512.
Mikus, Clifford A. 3,223,252.
Misson, George W. 3,223,443.
Misson, George W. 3,223,500.
Thomas, Dean L. 3,223,507.
Ward, Cecil R., and Rau. 3,223,502.
Ward, Cecil R. 3,223,510.
Wheeler, Robert W. 3,223,506.
Plant Products Corp.: *See*—
Geary, Robert J. 3,223,513.
Plapper, Jurgen, and M. Teupel, to Bohme Fettchemie G.m.b.H. Oils self-emulsifying in water. 3,223,648, 12–14–65, Cl. 252—312.
Plastics Engineering Co.: *See*—
Korb, Louis L., and Metzner. 3,223,570.
Playtime Equipment Corp.: *See*—
Smith, Paul A. 3,222,827.
Plueddemann, Edwin P., to Dow Corning Corp. Silylated polyepoxides. 3,223,577, 12–14–65, Cl. 161—193.
Plumb, Frank B.: *See*—
Fritz, Harry E., Gallagher, Galloway, Kerr, Plumb, Rittenhouse, and Sinnamon. 3,223,563.
Podlipnik, John, H. C. Moyer, and A. L. Guttman, to Sinclair Research, Inc. Wax coating composition. 3,223,613, 12–14–65, Cl. 208—21.
Pokorny, Frank J., and G. A. Wilson, to I-T-E Circuit Breaker Co. Stationary contact structure having blow-open, blow-closed, loop current paths. 3,223,799, 12–14–65, Cl. 200—87.
Polakowski, Natalis H. Method of rolling metal. 3,222,907, 12–14–65, Cl. 72—250.
Polkinghorn, Melvin W.: *See*—
Noakes, Thomas E., Anderson, and Polkinhorn. 3,223,143.
Pollak, Heinz: *See*—
Boothby, Geoffrey F., Fearnside, and Pollak. 3,223,363.
Pollock, Charles R. Furniture pedestal. 3,223,368, 12–14–65, Cl. 248—158.
Pollock, Charles R. Upholstered furniture. 3,223,450, 12–14–65, Cl. 297—445.
Porth, Gordon H. Machine tool spindle. 3,223,463, 12–14–65, Cl. 308—9.
Portage Electric Products, Inc.: *See*—
Wehl, Glenn E. 3,223,808.
Wehl, Glenn E. 3,223,809.
Porter, H. K., Co., Inc.: *See*—
Olsen, Willy, and Tindall. 3,223,955.
Fritz, Harry E., Gallagher, Galloway, Kerr, Plumb, Rittenhouse, and Sinnamon. 3,223,565.
Olsen, Willy, and Tindally. 3,223,955.
Potye, John J. Drapery rail apparatus. 3,222,710, 12–14–65, Cl. 16—87.2.
Potye, John J. Pleat forming apparatus. 3,223,148, 12–14–65, Cl. 160—348.
Powell, Jacob A. Smoke-heating means. 3,223,022, 12–14–65, Cl. 99—259.
Powers, Robert A., and A. B. Thomas, deceased (by F. L. Alexander, administrator), to Union Carbide Corp. Solion electrolyte. 3,223,639, 12–14–65, Cl. 252—62.2.
Powlas, James J.: *See*—
Burnett, Richard T., and Powlas. 3,223,207.
Pratt, Chapin A.: *See*—
Browning, James A., and Pratt. 3,223,822.
Preece, Kenneth, and R. P. Bowcott, to Joseph Lucas (Industries) Ltd. Electric starting mechanism for internal combustion engines. 3,223,863, 12–14–65, Cl. 310—75.
President and Directors of Georgetown University, The: *See*—
Cobey, Milton C. 3,223,083.
Presunka, Peter. Crossed lattice wall structure. 3,222,832, 12–14–65, Cl. 52—207.
Priaroggia, Paolo G., to Pirelli Societa per Azioni. High-tension cable insulated with synthetic tape and oil. 3,223,773, 12–14–65, Cl. 174—25.
Price, Vernon L. Vibrationless air hammer assembly. 3,223,181, 12–14–65, Cl. 173—18.
Prince, Edward J.: *See*—
Bertram, John M., Prince, and Stone. 3,223,398.
Pringle, Robert W.: *See*—
Martin, Philip W., and Pringle. 3,223,839.
Printed Motors Inc.: *See*—
Henry-Baudot, Jacques. 3,223,868.
Henry-Baudot, Jacques. 3,223,870.

Prior, William L.: *See*—
Evans, Robert E., Prior, and Baber. 3,223,576.
Pritchard, James E.: *See*—
Gallaugher, Major L., and Pritchard. 3,223,545.
Pritchard, John S., to Evans Products Co. Anchoring clip for overlapping wall paneling or siding. 3,222,831, 12–14–65, Cl. 52—99.
Procter & Gamble Co., The: *See*—
Conlon, Ralph D. 3,223,664.
Drew, Howard F., and Voss. 3,223,647.
Kalberg, John N. 3,223,645.
Product Engineering Co.: *See*—
Fitzsimmons, Lloyd R. 3,223,430.
Producto Machine Co., The: *See*—
Larson, Carl E. 3,222,968.
Saslawsky, Sheldon, and Hyland. 3,222,717.
Saslawsky, Sheldon, and Hyland. 3,222,720.
Prohl, Robert F. Clamp for extension cords. 3,223,958, 12–14–65, Cl. 339—75.
Pross, Willy: *See*—
Rentschler, Waldemar T., and Pross. 3,223,010.
Protzmann, Donald E., to General Time Corp. Illuminated dial. 3,223,833, 12–14–65, Cl. 240—6.43.
Pruim, Fred, and J. J. Wetzler, to Borg-Warner Corp. Adjustable bed. 3,222,693, 12–14–65, Cl. 5—68.
Pryde, Everett H., to United States of America, Agriculture. Cross-linked poly- and interpoly(amide-acetals). 3,223,683, 12–14–65, Cl. 260—78.
Puddington, Ira E., and A. F. Sirianni, to National Research Council. Process for producing readily dispersible SiO_2 and Al_2O_3 solids. 3,223,482, 12–14–65, Cl. 23—141.
Pullman Inc.: *See*—
Gutridge, Jack E., and Bergstrand. 3,223,052.
Peterson, William H. 3,223,049.
Peterson, William H. 3,223,051.
Peterson, William H. 3,223,401.
Pulver, Louis J., and H. R. Thompson, to Nopco Chemical Co. Stabilization of vinyl resins with tetrahydropyrans and organic metal salts. 3,223,660, 12–14–65, Cl. 260—23.
Punt, William. Storm window and screen installation for existing standard window frame structure. 3,222,734, 12–14–65, Cl. 20—55.
Purcell, Thomas H., Jr., to The Electric Storage Battery Co. Method of assembling and sealing an electric storage battery cell. 3,223,558, 12–14–65, Cl. 136—168.
Purex Corp., Ltd.: *See*—
Roberson, Robert C., and Flynn. 3,223,298.
Purolator Products, Inc.: *See*—
De Cenzo, Herbert A. 3,223,438.
Putnam, Stearns T.: *See*—
Boylah, Francis J., and Putnam. 3,223,696.
Pyles Industries, Inc.: *See*—
Schneider, Marvin. 3,222,843.
Quaedvieg, Mathieu: *See*—
Kuth, Robert, Von Brachel, Schneider, and Quaedvieg. 3,223,471.
Quaker Oats Co., The: *See*—
Manly, Donald G., and O'Halloran. 3,223,714.
Quartz & Silica S.A.: *See*—
George, Henri J. C. 3,223,601.
Quayle, George F., to Yale & Towne, Inc. Pallet truck coupling. 3,223,434, 12–14–65, Cl. 280—456.
Quick, Stanley L., to Fairchild Hiller Corp. Tethered helicopter. 3,223,358, 12–14–65, Cl. 244—17.17.
Quick, Stanley L., and E. W. Opdahl, to Fairchild Hiller Corp. Helicopter flight control system. 3,223,359, 12–14–65, Cl. 244—17.13.
Quinn, Frederic R., to Zyrotron Industries, Inc. Pump control system. 3,223,041, 12–14–65, Cl. 103—11.
Rabb, Jay W.: *See*—
Dosch, Victor F., and Rabb. 3,223,991.
Racheli, Ugo: *See*—
Kuesder, Walter W., Racheli, and Payne. 3,223,079.
Rack, Georg: *See*—
Steuer, Herbert, Ott, Rack, and Schrodt. 3,222,946.
Radiation Inc.: *See*—
Johnson, Robert J. 3,223,978.
Lewis, Bernard L. 3,223,841.
Radio Corp. of America: *See*—
Lessoff, Howard N., and Fortin. 3,223,641.
Simshauser, Elvin D. 3,223,029.
Wright, Jerome E., and Shellick. 3,223,902.
Radnik, Joseph L.: *See*—
Brejcha, Robert J., Bazell, and Radnik. 3,222,902.
Radnofsky, Matthew I., and G. A. Shewmake, to United States of America, National Aeronautics and Space Administration. Inflatable radar reflector unit. 3,224,001, 12–14–65, Cl. 343—18.
Raibourn, Paul, to Paramount Pictures Corp. Color screen with electron- and light-absorptive material separating adjacent color strips. 3,223,872, 12–14–65, Cl. 313—92.
Railroad Permanent Way Products Corp.: *See*—
Moses, Nelson K., and McClung. 3,223,328.
Rainer, Walter, to Heberlein Patent Corp. Apparatus for drying printing colors. 3,223,030, 12–14–65, Cl. 101—115.
Raley, Garland E., to Union Carbide Corp. Melt extrusion of multi-wall plastic tubing. 3,223,761, 12–14–65, Cl. 264—95.
Rambosek, George M., to Minnesota Mining and Mfg. Co. Polymer compositions from an alkylenimine derivative a dicarboxylic acid anhydride and water. 3,223,681, 12–14–65, Cl. 260—77.5.
Ramos, Joseph: *See*—
Koch, Ronney R., Ramos, and McLaughlin. 3,223,163.
Ramsden, Hugh E.: *See*—
Morway, Arnold J., and Ramsden. 3,223,624.
Morway, Arnold J., and Ramsden. 3,223,633.
Randall, Billy V.: *See*—
Lummus, James L., and Randall. 3,223,186.
Rank Organization Ltd., The: *See*—
Huntley, Keith G., Starr, and Gault. 3,222,791.
Rarey, Robert S., and E. L. Johnson, to General Motors Corp. Electrical connector. 3,223,963, 12–14–65, Cl. 339—259.
Rasmussen, Robert F., to Honeywell Inc. Control apparatus. 3,222,993, 12–14–65, Cl. 91—20.
Ratajczak, Jan W.: *See*—
Ferris, Robert G., Berryhill, Boppart, and Ratajczak. 3,223,228.
Rathbun, William H.: *See*—
Maul, William J., Oppel, and Rathbun. 3,223,890.
Rau, Frank J.: *See*—
Ward, Cecil R., and Rau. 3,223,502.
Rausch, John J., and J. B. McAndrew, to United States of America, Navy. Chromium, tungsten cobalt base alloys containing additions of tantalum, titanium and niobium. 3,223,522, 12–14–65, Cl. 75—171.
Raval, Gaston, to Omega Louis Brandt & Frere S.A. Reserve power indicating system in a timepiece. 3,222,860, 12–14–65, Cl. 58—152.
Ravenhill, Peter: *See*—
Clark, James O., Ravenhill, and Reise. 3,223,997.
Raybestos-Manhattan, Inc.: *See*—
Keen, Lester K. 3,223,763.
Raymond Corp., The: *See*—
Shebeen, Shay J. 3,223,912.
Raymond, Richard L.: *See*—
Marlowe, Bernard, Raymond, and Douros. 3,223,621.
Rayonier Inc.: *See*—
Herrick, Franklin W., and Bock. 3,223,667.
Raytheon Co.: *See*—
Beebe, John N. 3,223,965.
Groginsky, Herbert L. 3,223,999.
Luck, Clarence F., Jr., Krasno, and Ciftan. 3,223,944.
Rebeski, Hans, to W. Ferd, Klingelberg Sohn. Method of separating roughing and finishing bevel gears. 3,222,990, 12–14–65, Cl. 90—5.
Reck, Richard A.: *See*—
Abramitis, Walter W., and Reck. 3,223,517.
Reed, Wayne D., to Honeywell Inc. Controlling apparatus. 3,222,995, 12–14–65, Cl. 91—359.
Reeds, John W., Jr., to Beckman Instruments, Inc. Hygrometer. 3,223,609, 12–14–65, Cl. 204—195.
Reid, Robert D.: *See*—
Kolar, Robert T., and Reid. 3,223,064.
Reid, William P., to Aeroquip Corp. Sealing ring. 3,223,426, 12–14–65, Cl. 277—153.
Reifenhauser, Friedrich A., to Reifenhauser K.G. Apparatus for extruding elongated plastic bodies. 3,222,722, 12–14–65, Cl. 18—13.
Reifenhauser K.G.: *See*—
Reifenhauser, Friedrich A. 3,222,722.
Reilly, Thomas A., J. R. Beckman, and H. K. Bishop, to Union Carbide Corp. Leak-resistant dry cell. 3,223,557, 12–14–65, Cl. 136—133.
Reimers Getriebe K.G.: *See*—
Steuer, Herbert, Ott, Rack, and Schrodt. 3,222,946.
Reise, Ralph E.: *See*—
Clark, James O., Ravenhill, and Reise. 3,223,997.
Reiser, Richard D.: *See*—
Brothman, Abraham, Halpern, and Reiser. 3,223,995.
Reisnecker, Ludwig, to Robert Bosch, G.m.b.H. Commutator for an electric motor. 3,223,869, 12–14–65, Cl. 310—234.
Rellumit Inter, S.a.r.L.: *See*—
Muller, Jacques. 3,223,240.
Remesat, Armin. Projection photographic color printing apparatus. 3,222,985, 12–14–65, Cl. 88—24.
Renner, Goodsell H.: *See*—
Wessels, Diana A., and Renner. 3,223,146.
Rentschler, Waldemar T., and W. Pross, to Alfred Gauthier, G.m.b.H. Photographic camera with retractable photoflash reflector. 3,223,010, 12–14–65, Cl. 95—11.
Rentschler, Waldemar T., to Alfred Gauthier, G.m.b.H. Cable release. 3,223,012, 12–14–65, Cl. 95—53.
Rentschler, Waldemar T., to Alfred Gauthier, G.m.b.H. Photographic camera with built-in or attachable delayed-action device. 3,223,013, 12–14–65, Cl. 95—53.3.
Rentschler, Waldemar T., K. F. Helber, and H. Straub, to Alfred Gauthier, G.m.b.H. Photographic shutter. 3,223,015, 12–14–65, Cl. 95—62.
Rentschler, Waldemar T., to Alfred Gauthier, G.m.b.H. Photographic intra-lens shutter with delayed-action device. 3,223,016, 12–14–65, Cl. 95—63.
Republic Steel Corp.: *See*—
Limes, Robert W., and Fedock. 3,223,540.
Reuter, Raymond, to Nalco Chemical Co. Method of preparing ceramic molds. 3,222,787, 12–14–65, Cl. 22—196.
Rexford, Willis E., to Louis Marx & Co., Inc. Typewriter having sliding universal member. 3,223,220, 12–14–65, Cl. 197—22.
Reynolds, John F., T. A. Middlesworth, and R. R. Steingas, to International Harvester Co. Vehicle with reversible controls. 3,223,193, 12–14–65, Cl. 180—77.
Reynolds, Maurice, Jr., to Anaconda Wire and Cable Co. Dual extrusion apparatus. 3,222,721, 12–14–65, Cl. 18—13.
Reynolds Metals Co.: *See*—
Becker, William C., and Ayer. 3,223,233.
Becker, William C., and Ayer. 3,223,310.
Becker, William C., Ayer, and Watts. 3,223,311.
Cvacho, Daniel S., and Whitaker. 3,223,061.
Fulton, James F. 3,222,972.
Payton, Leland R. 3,223,063.

Rheineck, Alfred E.: *See*—
Fallstad, Harlan T., and Rheineck. 3,223,734.
Rhodes, Thomas J.: *See*—
Miller, Henry F., and Rhodes. 3,222,870.
Miller, Henry F., and Rhodes. 3,222,871.
Riccius, Rolf R. B.: *See*—
Seibold, Wilhelm O., Eggers, Riccius, and Stuessel. 3,223,354.
Rice, Frederic L., Jr., to Phillips Petroleum Co. Cigarette box. 3,223,275, 12–14–65, Cl. 220—31.
Rickenbach, Hugo. Valve mechanism particularly adapted for shelters and the like. 3,223,020, 12–14–65, Cl. 98—119.
Riley, Joseph J., to The Taylor-Winfield Corp. Rectifier assembly having balanced impedance paths for parallel connected diodes. 3,223,901, 12–14–65, Cl. 317—234.
Rimmer, Robert W., to E. I. du Pont de Nemours and Co. Process for the bromination of allyl esters. 3,223,755, 12–14–65, Cl. 261—986.
Ripper, Jonathan H.: *See*—
Bishop, Donald, and Ripper. 3,222,789.
Riso, Nicholas P. Racing game. 3,223,417, 12–14–65, Cl. 273—86.
Rittenhouse, Godfrey J.: *See*—
Fritz, Harry E., Gallagher, Galloway, Kerr, Plumb, Rittenhouse, and Sinnamon. 3,223,563.
Rixson Inc.: *See*—
Cecala, Michael L. 3,222,711.
Ellis, David H. 3,22,709.
Roark, James T., to Otis Engineering Corp. Retrievable well packer. 3,223,169, 12–14–65, Cl. 166—129.
Robbins, Roy F., to Louis G., Ernster, d.b.a. Ernco Enterprises. Weigh scale for fish landing nets. 3,223,189, 12–14–65, Cl. 177—149.
Robbins, Samuel B., to General Motors Corp. Memory system for powered seat. 3,223,377, 12–14–65, Cl. 248—419.
Roberson, Robert C., and F. E. Flynn, Jr., to Purex Corp., Ltd. Bottle cap. 3,223,298, 12–14–65, Cl. 222—541.
Roberts, Fred T., and R. E., to Fred T. Roberts & Co. Apparatus for making molded flexible hose. 3,222,728, 12–14–65, Cl. 18—35.
Roberts, Fred T., and R. E., to Fred T. Roberts & Co. Method of making hose. 3,223,760, 12–14–65, Cl. 264—94.
Roberts, Fred T., & Co.: *See*—
Roberts, Fred T., and R. E. 3,222,728.
Roberts, Fred T., and R. E. 3,223,760.
Roberts, Judson E., to Holga Metal Production Co. Filing cabinet. 3,223,466. 12–14–65, Cl. 312—220.
Roberts, Robert E.: *See*—
Roberts, Fred T., and R. E. 3,222,728.
Roberts, Fred T., and R. E. 3,223,760.
Robertshaw Controls Co.: *See*—
McFarlane, Maynard D. 3,223,779.
Morgan, David L. 3,223,001.
Genbauffe, Francis S. 3,223,395.
Kies, Joseph S. 3,223,102.
Robertson, Alvin J., to Atlantic Research Corp. Rocket fin assembly. 3,223,034. 12–14–65, Cl. 102—50.
Rochar Electronique: *See*—
Charbonnier, Roger. 3,223,853.
Rochester, James R., to Giannini Controls Corp. Photosensitive optical fluid stream direction indicator. 3,223,846, 12–14–65. Cl. 250—234.
Rockwell, Edward A. Dual hydraulic brake systems and brake booster mechanisms therefor. 3,222,869, 12–14–65, Cl. 60—54.6.
Rockwell, Julius, Jr.: *See*—
Lucich, George M., Rockwell, and Bergstrom. 3,223,319.
Rodaer, James A., to General Motors Corp. Plural channel amplifier with automatic cut off means. 3,223,935, 12–14–65, Cl. 330—19.
Rohm & Haas Co.: *See*—
Law, Andrew B. 3,223,643.
Law, Andrew B. 3,223,644.
Rohmann, Charles P., W. F. Stahl, R. B. Watrous, and J. H. Wiseman, Jr., to Honeywell Inc. Controller. 3,223,106, 12–14–65. Cl. 137—86.
Rollmann, Kent W.: *See*—
Kraus, Gerard, and Rollmann. 3,223,673.
Ronson Corp.: *See*—
Smith, James D., and Davies. 3,223,139.
Roper, Ralph E., to Wallace Expanding Machines, Inc. Method of forming metallic sheet members. 3,222,910, 12–14–65, Cl. 72—332.
Rosenfeld, Morton M. Wall structure and building block therefor. 3,222,840, 12–14–65, Cl. 52—561.
Rosenzweig, William, to Fashion Development Corp. Adjustable strap. 3,222,687, 12–14–65, Cl. 2—323.
Rosenzweig, William, to Fashion Development Corp. Adjustable strap. 3,222,688, 12–14–65, Cl. 2—323.
Rosenzweig, William. Method of making an adjustable loop bow and resultant product. 3,223,440, 12–14–65, Cl. 289—1.2.
Rosa, Adolph W.: *See*—
Ross, Ronald A., A. W. and M. E. 3,223,329.
Ross, Gilbert W.: *See*—
Fotsch, Arthur H., Ross, and Fischer. 3,223,224.
Ross, Marie E.: *See*—
Ross, Ronald A., A. W. and M. E. 3,223,329.
Ross, Paul A., and C. M. Wessels, to The American Tool Works Co. Indexing device. 3,222,955, 12–14–65, Cl. 74—826.
Ross, Ronald A., A. W. and M. E. Flocking apparatus. 3,223,329, 12–14–65, Cl. 239—142.
Rosser, Charles M., to FMC Corp. Package having noncockling food wrapper. 3,223,535, 12–14–65, Cl. 99—171.
Rossman, Michael. Fishing tackles. 3,222,814, 12–14–65, Cl. 43—36.
Roth, Wilfred, to Gabb Special Products, Inc. Nondestructive testing of objects. 3,222,917, 12–14–65, Cl. 73—15.
Rothe, Arthur, and A. Moravec, to Vereinigte Flugtechnische Werke Gesellschaft mit beschraenkter Haftung frueher "Weser" Flugzeugbau/Focke-Wulf/Heinkel - Flugzeugbau. Displaceable jack for automotive vehicles. 3,223,251, 12–14–65, Cl. 214—1.
Rowe, George E., to Embart Corp. Glassware forming machine. 3,223,511, 12–14–65, Cl. 65—240.
Rowley, Russell A., F. V. Adams, G. L. Clapper, and A. Hamburgen, to International Business Machines Corp. Character group comparison system. 3,223,971, 12–14–65, Cl. 340—146.2.
Royal Typewriter Co., Inc.: *See*—
Arthur, Ronald H. 3,223,221.
Rub, Jakob, to Maschinenfabrik ad. Schulthess & Co. AG. Programme selection circuits with coin slot machines for self-service lauderettes. 3,223,216, 12–14–65, Cl. 194—1.
Ruble, Theodore A., and B. F. Latham, Jr., to Continental Carbon Co. Manufacture of carbon black. 3,223,605, 12–14–65, Cl. 204—173.
Rucker, Howard L., to Johns-Manville Corp. Process for producing a molded-gasket from polytetrafluoroethylene and a butadiene-acrylonitrile elastomer. 3,223,676, 12–14–65, Cl. 260—41.5.
Ruehlemann, Herbert E., to Elco Corp. Contact with wave shaped tail sections. 3,223,960, 12–14–65, Cl. 339—221.
Ruscio, Donald A.: *See*—
Koenig, Roy C., and Ruscio. 3,223,100.
Rutkowski, Alfred J.: *See*—
Morway, Arnold J., and Rutkowski. 3,223,631.
Rutter, Donald P., and A. E. Cimochowski, to Johns-Manville Corp. Method for forming a miter joint for pipe insulation. 3,222,777, 12–14–65, Cl. 29—526.
Ryan Aeronautical Co., The: *See*—
Girard, Peter F. 3,223,361.
Ryan, John W., M. Citron, and B. Danielsen, to Mattel, Inc. Governor. 3,223,208, 12–14–65, Cl. 188—184.
Ryerson, Herbert R., and H. W. Busey, to Antron Mfg., Inc. Regulated power supply. 3,223,915, 12–14–65, Cl. 321—18.
S. B. Power Surgical Tools Co.: *See*—
Barber, Forest C., and Smith. 3,223,088.
S & C Electric Co.: *See*—
Jelinek, Leonard C. 3,223,810.
SCM Corp.: *See*—
Cappotto, Samuel D., and Hunter. 3,223,219.
S-F-D Laboratories, Inc.: *See*—
Liscio, Maurice F. 3,223,876.
SKF Kugellagerfabriken Gesellschaft mit beschrankter Haftung: *See*—
Kramer, Rolf. 3,222,731.
Sabo, Frank J., to Arrowhead Engineering Corp. Process of forming cup-shaped articles. 3,222,761, 12–14–65, Cl. 29—156.5.
Sabo, Frank J., to Arrowhead Engineering Corp. Cup-shaped articles. 3,223,004, 12–14–65, Cl. 92—222.
Sacerdoti, Giorgio, and O. Guarracino, to Olivetti, Ing. C., & C., S.p.A. Electronic computer with abbreviated addressing of data. 3,223,982, 12–14–65, Cl. 340—172.5.
Sacken, Donald K., and T. R. Young, to Houston Chemical Corp. Catalyst loader and method of filling tubes. 3,223,490, 12–14–65, Cl. 23—288.
Sadlon, Stephen, to John Oster Mfg. Co. Cutting head for hair clipper. 3,222,782, 12–14–65, Cl. 30—223.
Sadownick, Eli M., to Aerojet-General Corp. High temperature nozzle for rocket motor. 3,222,862, 12–14–65, Cl. 60—35.6.
Saffer, Bernard A.: *See*—
Feldman, Julian, and Saffer. 3,223,741.
Safford, Donald E., to Sinclair Research, Inc. Liquid fuel burner with combustion aid. 3,223,141, 12–14–65, Cl. 158—73.
Sagarin, Philip H., to Valve Corp. of America. Molded one-piece actuator cap for aerosol devices. 3,223,287, 12–14–65, Cl. 222—182.
Sahakian, Vahak K.: *See*—
Wilson, John H., Vogt, and Sahakian. 3,223,410.
Sakaguchi, Kinichiro, and A. Kuninaka, to Yamasa Shoyu Kabushiki Kaisha (d.b.a. Yamasa Shoyu Co., Ltd.). Production of 5′-nucleotides. 3,223,592, 12–14–65, Cl. 195—28.
Sakakibara, Seiichi, and T. Ono, to Kurashiki Rayon Co., Ltd. Apparatus for smoothing polyvinyl alcohol film during conditioning of said film in a controlled atmosphere chamber. 3,222,714, 12–14–65, Cl. 18—1.
Sakurai, Shigeki, S. Watabe, and A. Morio, to Nippon Telegraph & Telephone Public Corp. Method for producing thin titano-ceramic film. 3,223,552, 12–14–65, Cl. 117—200.
Sanford, Robert A.: *See*—
Erickson, Henry, and Sanford. 3,223,652.
Sasaki, Shiro. Noise suppressing transformer. 3,223,920, 12–14–65, Cl. 323—44.
Saslawsky, Sheldon, and R. P. Hyland, to The Producto Machine Co. Blow molding system. 3,222,717, 12–14–65, Cl. 18—5.
Saslawsky, Sheldon, and R. P. Hyland, to The Producto Machine Co. Heater indicating means for extrusion system. 3,222,720, 12–14–65, Cl. 18—12.
Sasse, Klaus, R. Wegler, and G. Unterstenhofer, to Farbenfabriken Bayer Atkiengesellschaft. 2,3-dimercapto-quinoxalines. 3,223,706, 12–14–65, Cl. 260—250.
Saunders, Milton D.: *See*—
Curtice, Gerald M., and Saunders. 3,223,659.
Savina, Anthony R., to American Cyanamid Co. Paper sizing emulsion. 3,223,543, 12–14–65, Cl. 106—213.

Savina, Anthony R., to American Cyanamid Co. Manufacture of cationic paper sizing ketene dimer emulsions. 3,223,544, 12–14–65, Cl. 106—213.

Sawyer, James G., to General Turbine Corp. Portable sprayer with air operated mixing means. 3,223,286, 12–14–65, Cl. 222—175.

Schaschl, Edward: *See*—
Marsh, Glenn A., and Schaschl. 3,222,920.

Scheermesser, Wilhelm, to Mobay Chemical Co. Profiled polyurethane foam articles of manufacture. 3,222,697, 12–14–65, Cl. 5—361.

Scherer, Robert C.: *See*—
Munch, Walter, Jr., and Scherer. 3,223,768.

Schering Corp.: *See*—
Viliani, Frank J. 3,223,586.

Scherr, Oscar L., and S. F. Moses, to Emery Industries, Inc. Fatty acid-hydroxyethyl-quaternary ammonium compounds and preparation thereof. 3,223,718, 12–14–65, Cl. 260—404.

Schick, William F. Portable seat cushion. 3,222,694, 12–14–65, Cl. 5—338.

Schipperelt, George H., to National Distillers and Chemical Corp. Induction furnace. 3,223,519, 12–14–65, Cl. 75—10.

Schivley, George P., Jr., to Ingersoll-Rand Co. Spindle blade. 3,222,886, 12–14–65, Cl. 64—26.

Schlageter, Rosa, to Ena Etablissement. Process for preparing alkylated polysaccharide binding agents. 3,223,699, 12–14–65, Cl. 260—209.

Schlesinger, Kurt, to General Electric Co. Electron optical system. 3,223,871, 12–14–65, Cl. 313—83.

Schlosser & Co., G.m.b.H.: *See*—
Wolf, Erich. 3,223,508.

Schmidt, James M.: *See*—
Schreiber, Warren F., and Schmidt. 3,222,921.

Schmit Jongbloed, Lodewijk J., and N. H. van Lingen, to Shell Oil Co. Method of drilling in permeable formations. 3,223,185, 12–14–65, Cl. 175—65.

Schmut, Rudolf: *See*—
Ball, Frank J., Dimitri, and Schmut. 3,223,697.

Schnaidt, Harold L., and H. L. Honn. Automatic picker head elevation control. 3,222,851, 12–14–65, Cl. 56—11.

Schneider, Irving, to Engelhard Hanovia, Inc. Dry cleaning machine. 3,222,896, 12–14–65, Cl. 68—12.

Schneider, Marvin, to Pyles Industries, Inc. Foam packaging method and construction. 3,222,843, 12–14–65, Cl. 53—27.

Schneider, Otto: *See*—
Kuth, Robert, Von Brachel, Quaedvlieg, and Schneider. 3,223,471.

Schniepp, Lester E., to American Can Co. Polyurethane solution and method of making same. 3,223,672, 12–14–65, Cl. 260—32.4.

Schnitzer, Herbert S.: *See*—
Nickerson, Mortimer H., Schnitzer, Curtis, and Patterson. 3,223,654.

Schoen, Walter F., to Sinclair Research, Inc. Light stabilized hydrocarbon fuel. 3,223,496, 12–14–65, Cl. 44—63.

Schofield, Henry N.: *See*—
Bull, James T., Dow, Engle, Kellinger, O'Keefe, Taylor, and Schofield. 3,222,988.

Scholefield, William A.: *See*—
Frisbie, Marshall H., and Scholefield. 3,223,386.

Scholz, Heinrich, and P. Guenthert, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Production of 1,3-propylene diamine. 3,223,735, 12–14–65, Cl. 260—583.

Schonberg, Bette K., to Maidenform, Inc. Girdle. 3,223,089, 12–14–65, Cl. 128—541.

Schrader, Gerhard: *See*—
Colin, Reimer, and Schrader. 3,223,754.

Schramel, Franz J.: *See*—
Kok, Hans, and Schramel. 3,223,974.

Schreiber, Warren F., and J. M. Schmidt, to Continental Can Co., Inc. Double seam testing device. 3,222,921, 12–14–65, Cl. 73—94.

Schrodt, Rudolf: *See*—
Steuer, Herbert, Ott, Rack, and Schrodt. 3,222,946.

Schroeder, Henry C., to Bell Telephone Laboratories, Inc. Adjustable frequency bridge circuit. 3,223,941, 12–14–65, Cl. 330—109.

Schuh, Francis R., to Kaiser Gypsum Co., Inc. Lineal air diffuser. 3,223,019, 12–14–65, Cl. 98—40.

Schulenberg, Franz, to Gea-Luftkuhler-Gesellschaft m.b.H. Surface condenser. 3,223,152, 12–14–65, Cl. 165—146.

Schuld, Leo A. Bottom discharge container with agitator. 3,223,290, 12–14–65, Cl. 222—228.

Schulz Tool and Mfg. Co.: *See*—
Horst, Gunter H. 3,223,802.

Schwehr, Leo C. Scaffolding hoist. 3,223,199, 12–14–65, Cl. 187—2.

Schweiker, Malcolm A., to American Olean Tile Co., Inc. Apparatus for stacking tiles in magazines. 3,222,845, 12–14–65, Cl. 53—245.

Schweitzer, Edmund O., Jr. Means for protecting power circuits and the like. 3,223,889, 12–14–65, Cl. 317—14.

Schweitzer, Edmund O., Jr. Electric current conversion with a non-linear resistance bridge circuit. 3,223,914, 12–14–65, Cl. 321—8.

Schweitzer, Edmund O., Jr. Magnetic frequency doubler with means for producing a unidirectional magnetic flux in said doubler. 3,223,917, 12–14–65, Cl. 321—68.

Schweizer, Benno, to C. & E. Fein, firma. Percussion or impact device. 3,223,210, 12–14–65, Cl. 192—.02.

Schwender, Leonard D.: *See*—
McKeirnan, William R., and Schwender. 3,223,569.

Schwinghamer, Robert J. Method of securing objects together by magnetic deformation. 3,222,771, 12–14–65, Cl. 29—421.

Scott, Piatho P., Jr.: *See*—
Lummus, James L., Scott, and Park. 3,223,622.

Scott, Robert E. Expansible fastener. 3,222,975, 12–14–65, Cl. 85—37.

Scruggs, Jack G.: *See*—
Tate, Cilton W., and Scruggs. 3,223,752.

Seaquist, Nels W., to Seaquist Valve Co., Division of Pittsburgh Railways Co. Aerosol valve with secure attaching means for dip tube. 3,223,293, 12–14–65, Cl. 222—394.

Seaquist Valve Co., Division of Pittsburgh Railways Co.: *See*—
Seaquist, Nels W. 3,223,293.

Secord, Robert N., and C. B. Wendell, to Cabot Corp. Process of spraying and cooling a gas. 3,222,847, 12–14–65, Cl. 55—71.

Security First National Bank: *See*—
Talbot, Warren, and Jerlstrom. 3,222,936.

Seeburg Corp., The: *See*—
Bodoh, Albinus G., and Goluska. 3,222,899.
Du Grenier, Francis C. 3,223,217.

Seekings, Charles D., and T. E. Gannoe, to Sylvania Electric Products Inc. Pin curl clip. 3,223,095, 12–14–65, Cl. 132—46.

Seibold, Wilhelm O., G. Eggers, R. R. B. Riecius, and R. Stuessel, to Vereinigte Flugtechnische Werke Gesellschaft mit beschraenkter Haftung frueher "Wesser" Flugzeugbau/Focke-Wulf/Heinkel-Flugzeubau. Vertical take off and landing aircraft. 3,223,354, 12–14–65, Cl. 244—12.

Seidel, William B., to The Cincinnati Milling Machine Co. Grinding machine truing compensation mechanism. 3,222,823, 12–14–65, Cl. 51—165.

Seidel, William B., to The Cincinnati Milling Machine Co. Machine tool positioning mechanism. 3,222,824, 12–14–65, Cl. 51—165.

Seidel, William B., to The Cincinnati Milling Machine Co. Machine tool with workpiece transporting headstock. 3,222,825, 12–14–65, Cl. 51—215.

Seidmon, Maynard J.: *See*—
Efron, Theodore, Hess, and Seidmon. 3,222,689.

Seiler, Erick F., and R. A. Seng, to Lee Engineering Co. Motor speed control system. 3,223,911, 12–14–65, Cl. 318—325.

Sekisui Kagaku Kogyo Kabushiki Kaisha: *See*—
Soda, Shigenari, Murakami, and Nakashima. 3,223,027.

Sellet, Lucien, to Nopco Chemical Co. Treating agents comprising carboxyl containing copolymers and amino resin or amino resin base. 3,223,751, 12–14–65, Cl. 260—855.

Senfleben, Paul W., and W. P. Grossen, to United Shoe Machinery Corp. Injection sole molding machines. 3,222,726, 12–14–65, Cl. 18—30.

Seng, Robert A.: *See*—
Seiler, Erick F., and Seng. 3,223,911.

Sensing, William J., D. E. Colvill, B. H. Short, and D. S. Dennis, to General Motors Corp. Electric motor control system. 3,223,909, 12–14–65, Cl. 318—139.

Service, Engineers Ltd.: *See*—
Meadows, Frank W., and Pearce. 3,222,747.

Shafer, Homer J. Automatic shut-off for pipeline. 3,223,114, 12–14–65, Cl. 137—494.

Shafranek, Robert J., and J. Tiltins, to TRW Inc. Brushless rotary inverter. 3,223,916, 12–14–65, Cl. 321—28.

Shaler, David, and R. A. Varrichio, to Hogan Faximile Corp. Recorder drying mechanism. 3,223,824, 12–14–65, Cl. 219—200.

Shallenberg, Robert: *See*—
Everett, Buford R., and Shallenberg. 3,222,962.

Shannon, Donald W.: *See*—
Jacky, Germaine F., Sorenson, Shannon, and Tragert. 3,223 598.

Shapiro, Harris, to General Dynamics Corp. Axial air gap motor adapted for canned pump. 3,223,043, 12–14–65, Cl. 103—87.

Shapiro, Harris, to General Dynamics Corp. Axial air gap motor. 3,223,867, 12–14–65, Cl. 310—166.

Shapiro, Louis, and H. A. Ellon, to The First Pennsylvania Banking and Trust Co. Beam probe system and apparatus. 3,223,837 12–14–65, Cl. 250—49.5.

Sharanov, Valentin P.: *See*—
Nabiullin, Faat Hatovich, Adamjan, Gertsik, Ushko, Dolgov, Tselov, and Sharanov. 3,222,963.

Sheets, Herbert D., Jr.: *See*—
Hyde, Collin, and Sheets. 3,223,539.

Sheheen, Shay J., to The Raymond Corp. Pulse-width modulated D.C. control system. 3,223,912, 12–14–65, Cl. 318—341.

Shell Oil Co.: *See*—
Anderson, William S., and Boor. 3,223,638.
Barrett, Maurice L., Jr. 3,224,247.
Loeffler, Donald E. 3,223,628.
Loeffler, Donald E. 3,223,629.
Schmit Jongbloed, Lodewijk, and Van Lingen. 3,223,185.

Shellick, Joseph: *See*—
Wright, Jerome E., and Shellick. 3,223,902.

Shepard, Francis H., Jr. Electromagnetic clutch-brake system. 3,223,212, 12–14–65, Cl. 192—18.

Shepherd, Warner B., Jr. Carburetor. 3,223,391, 12–14–65, Cl. 261—23.

Sheppard, William N., to Monsanto Co. Apparatus for treatment of napped fabric. 3,222,895, 12–14–65, Cl. 68—5.

Shewchenko, Alexander, to Atomic Energy of Canada Ltd. Support for therapy equipment. 3,222,692, 12–14–65, Cl. 5—66.

Shewmake, Glenn A.: *See*—
Radnofsky, Matthew I., and Shewmake. 3,224,001.

Shibe, William J., Jr., and M. Sittenfield, to Hollichem Corp. Quaternary ammonium sulfamates. 3,223,704, 12–14–65, Cl. 260—247.1.

Shibe, William J., Jr., and M. Sittenfield, to Hollichem Corp. Cyclic imide addition products. 3,223,711, 12–14–65, Cl. 260—299.

Shimada, Ryosaku: *See*—
Yamamoto, Takuma, Nakamura, and Shimada. 3,223,783.

Shionogi & Co., Ltd.: *See*—
Nakagawa, Kunio, and Tsuji. 3,225,080.

Shloss, Anthony L., to E. I. du Pont de Nemours and Co. Process for promoting the cure of clay-containing elastomeric copolymer compositions. 3,223,674, 12–14–65, Cl. 260—41.

Shoemaker, Montgomery J. Mounting arrangement for coin tubes and the like. 3,223,314, 12–14–65, Cl. 232—5.

Shoor, Bernard A., and D. R. Burger, to Endevco Corp. Mechanical impedance measuring system. 3,222,919, 12–14–65, Cl. 73—67.1.

Shope, William H., to Chrysler Corp. Fuel pump. 3,223,045, 12–14–65, Cl. 103—150.

Shulman, Garson P., W. J. McKillip, and F. M. Young, to Archer-Daniels-Midland Co. Preparation of sulfone diacetic acid. 3,223,730, 12–14–65, Cl. 260—537.

Sidebottom, Lewis A. Measuring glass drainage tray. 3,223,127, 12–14–65, Cl. 141—364.

Siegel, Martin, and S. Zelnick, to Weldotron Corp. Apparatus for shrinking wrappers of packages. 3,222,800, 12–14–65, Cl. 34—212.

Siemens & Halske Aktiengesellschaft: *See*—
Eissfeld, Erich, and Babisch. 3,223,409.

Siemens-Electrogerate Aktiengesellschaft: *See*—
Gebhardt, Wilhelm, and Gibbels. 3,223,276.

Siemens-Schuckertwerke Aktiengesellschaft: *See*—
Henlein, Walter, and Gunther. 3,223,836.
Kalbitz, Wolfgang. 3,223,814.
Keller, Wolfgang, and Kramer. 3,223,493.
Kuhrt, Friedrich, Lippmann, and Wiehl. 3,223,353.
Sonnenschein, Hans. 3,223,456.
Traeger, Hans-Georg. 3,223,406.
Troeger, Herbert. 3,223,590.
Wittemann, Hans K. 3,223,819.
Wittwer, Erwin. 3,223,900.
Ziegler, Albert. 3,223,589.

Silberglait, Harry: *See*—
Greenwald, Harry. 3,223,910.

Silva, Mary-Louise: *See*—
Mosby, William L., and Silva. 3,223,716.

Silverwood, Frederick W.: *See*—
Barradell-Smith, Richard, and Silverwood. 3,223,503.
Barradell-Smith, Richard, and Silverwood. 3,223,509.

Simmen, Robert, to Mefina S.A. Hand grenade. 3,223,035, 12–14–65, Cl. 102—64.

Simmonds, Clyde S. Paint mixer. 3,223,389, 12–14–65, Cl. 259—106.

Simpelaar, Clyde S., to Modine Mfg. Co. Fin and tube type heat exchanger. 3,223,153, 12–14–65, Cl. 165—152.

Simshauser, Elvin D., to Radio Corp. of America. Information translating apparatus. 3,223,029, 12–14–65, Cl. 101—93.

Sinclair Research, Inc.: *See*—
Burge, Leonard L. 3,223,161.
Burge, Leonard L. 3,223,162.
Erickson, Henry, and Sanford. 3,223,652.
Podlipnik, John, Moyer, and Guttman. 3,223,613.
Safford, Donald E. 3,223,141.
Schoen, Walter F. 3,223,496.
Watkins, Franklin M. 3,223,080.

Singer Co., The: *See*—
Mischon, Lester. 3,222,889.

Sinnamon, Robert H.: *See*—
Fritz, Harry E., Gallagher, Galloway, Kerr, Plumb, Rittenhouse, and Sinnamon. 3,223,563.

Sir Steak Machinery, Inc.: *See*—
Deckert, Oscar R. 3,222,712.

Sirianni, Aurelio F.: *See*—
Puddington, Ira E., and Sirianni. 3,223,482.

Sittenfield, Marcus: *See*—
Shibe, William J., Jr., and Sittenfield. 3,223,704.
Shibe, William J., Jr., and Sittenfield. 3,223,711.

Skau, Evald L.: *See*—
Mod, Robert R., Skau, Fore, Magne, Novak, Dupuy, Ortego, and Fisher. 3,223,708.

Skromeda, Stephen A. E., to Pacific Curtainwall, Inc. Sealed frame cross joint. 3,223,209, 12–14–65, Cl. 189—36.

Sleighter, George E.: *See*—
Fredley, James C., and Sleighter. 3,223,501.
Fredley, James C., and Sleighter. 3,223,549.

Slenker, Stephen A., to Piconics, Inc. Tunable inductor. 3,223,952, 12–14–65, Cl. 336—136.

Slezak, Raymond J.: *See*—
Fuller, Merle A., and Slezak. 3,223,352.

Smeltz, Kenneth C.: *See*—
Luckenbaugh, Raymond W., and Smeltz. 3,223,584.

Smeulers, Wouter, to North American Philips Co., Inc. Means for increasing the catch range of a phase detector in an AFC circuit. 3,223,942, 12–14–65, Cl. 331—8.

Smith, A. O., Corp.: *See*—
Chyle, John J. 3,223,818.
Keller, Robert J. 3,223,823.

Smith, Addison R., II, to Anaconda Aluminum Co. Aluminum strip roll for forming electrical coils. 3,223,896, 12–14–65, Cl. 317—158.

Smith, David F. Plaster of Paris products and their manufacture. 3,223,082, 12–14–65, Cl. 128—91.

Smith, Donald P., R. A. Zuercher, W. R. Luck, Jr., W. E. Hultsman, and L. D. Cook, to Applied Developments Inc. of Texas. Method and machine for wrapping continuously moving products with a flexible overwrap. 3,222,844, 12–14–65, Cl. 53—32.

Smith, George E. P., Jr., to The Firestone Tire & Rubber Co. N-(propynyl)-2-(thiazole)sulfenamides as rubber accelerators. 3,223,684, 12–14–65, Cl. 260—79.5.

Smith, James D., and R. T. Davies, to Ronson Corp. Torch attachment. 3,223,139, 12–14–65, Cl. 158—33.

Smith, James R.: *See*—
Barber, Forest C., and Smith. 3,223,088.

Smith, John J.: *See*—
Mueller, Frank H., and Smith. 3,223,110.

Smith, Millard F. Molding process and apparatus. 3,222,725, 12–14–65, Cl. 18—26.

Smith, Paul A., to Playtime Equipment Corp. Grandstand construction. 3,222,827, 12–14–65, Cl. 52—9.

Smith, Rex S., to P. Frankenstein & Sons (Manchester) Ltd. Inflatable liferafts. 3,222,700, 12–14–65, Cl. 9—11.

Smith, Richard N.: *See*—
Chen, William K.-W., Mintz, and Smith. 3,223,612.

Smith, Robert K., and J. A. Kearney, to E. F. Houghton & Co. Fluorinated reaction product useful as a functional fluid. 3,223,642, 12–14–65, Cl. 252—78.

Smith, S., & Sons (England) Ltd.: *See*—
Boothby, Geoffrey F., Fearnside, and Pollak. 3,223,363.

Smith, Walter H. B., deceased, by K. B. Groves, executrix, to A. Denhoff, substitute executrix. Shotgun frame and block assembly. 3,222,808, 12–14–65, Cl. 42—44.

Smith, Warren K. Spectropyrometer apparatus and method. 3,222,930, 12–14–65, Cl. 73—355.

Smith, Watt V. Unitized centrifugal separator. 3,223,315, 12–14–65, Cl. 233—24.

Smith, William C.: *See*—
Graybeal, Warren E., and Smith. 3,223,255.

Snaper, Alvin A. Pulverizer having ultrasonic drive means. 3,223,337, 12–14–65, Cl. 241—262.

Snaper, Alvin A. Multiple electric switch formed from magnetic elements. 3,223,800, 12–14–65, Cl. 200—87.

Snook, William R., Jr. Control mechanism. 3,223,365, 12–14–65, Cl. 244—90.

Snook, William R., Jr. Control mechanism. 3,223,366, 12–14–65, Cl. 244—90.

Societe d'Etudes Chimiques pour l'Industrie et l'Agriculture (Secpia): *See*—
Breisa, Jean, Kircher, and Zimmermann. 3,223,477.

Societe Nationale d'Etude et de Construction de Moteurs d'Aviation: *See*—
Trinkler, Alfred. 3,223,103.

Societe Rhodiaceta: *See*—
Joly, Jean A. 3,222,859.

Socony Mobil Oil Co., Inc.: *See*—
Baker, Charles O. 3,223,158.
Childs, Elbert B. 3,223,832.
Hammond, James D., and Stevens. 3,223,746.
Maziuk, John. 3,223,617.
Weber, Harry R. 3,223,844.

Soda, Shigenari, K. Murakami, and J. Nakashima, to Sekisui Kagaku Kogyo Kabushiki Kaisha. Processing method and device of synthetic resin sheet. 3,223,027, 12–14–65, Cl. 100—93.

Soderquist, Leslie E., to McNeil Corporation. Apparatus for shaping and curing tires. 3,222,724, 12–14–65, Cl. 18—17.

Solomon, Frank, and A. Himy, to Yardney International Corp. Sealed battery stacked electrode assembly. 3,223,555, 12–14–65, Cl. 136—14.

Solomon, Raymond, to Hughes Aircraft Co. Point contact semiconductor device with a lead having low effective ratio of length to diameter. 3,223,903, 12–14–65, Cl. 317—235.

Sommer, Erwin, K. Gerlach, and H. Werner, to Vereinigte Glanzstoff-Fabriken AG. Process for the production of a sheet of synthetic polymer fibrous material. 3,223,581, 12–14–65, Cl. 162—157.

Sommer, Karl: *See*—
Boedeker, Hermann, Langbein, Zimmermann, Berner, and Sommer. 3,223,470.

Sonnenschein, Hans, to Siemens-Schuckertwerke Aktiengesellschaft. Conveying apparatus for fine-granular material. 3,223,456, 12–14–65, Cl. 302—17.

Sorenson, Robert: *See*—
Jacky, Germaine F., Sorenson, Shannon, and Tragert. 3,223,398.

Sourirajan, Srinivasa: *See*—
Loeb, Sidney, and Sourirajan. 3,223,424.

South African Farm Implement Mfrs. Ltd.: *See*—
Ward, Walter H., and Millman. 3,222,852.

Southworth, James, Jr.: *See*—
Carmichael, Robert, and Southworth. 3,223,559.

Spagnolo, Nicolas O. Automatic brake valve including quick service means. 3,223,460, 12–14–65, Cl. 303—38.

Spaulding, Harold E., to American Can Co. Tray dumper and washer. 3,223,097, 12–14–65, Cl. 134—46.

Specht, Otto A. G., to The Cincinnati Milling Machine Co. Swaging machine with adjustable stroke. 3,222,912, 12–14–65, Cl. 72—402.

Special Devices Laboratories, Inc.: *See*—
Konet, Henry. 3,222,937.

Sperry Rand Corp.: *See*—
Franklin, Richard. 3,223,324.
Toy, William W. 3,223,047.

Sprague Electric Co.: *See*—
Fabricius, John H. 3,223,905.

Stad, Andrew N.: *See*—
Gegenheimer, Harold W., Stad, and Tobias. 3,223,294.

Stadlin, Louis. Ultrasonic material measuring and control system. 3,223,964, 12–14–65, Cl. 340—1.

Staeger, Rudolf. Kitchen appliance drive unit. 3,222,939, 12–14–65, Cl. 74—16.

Stahl, William F.: *See*—
Rohmann, Charles P., Stahl, Watrous, and Wiseman. 3,223,106.

Stalego, Joseph P., to Owens-Corning Fiberglas Corp. Phenol-aldehyde, dicyandiamide binder composition. 3,223,668, 12–14–65, Cl. 260—29.3.
Stallings, William H. Adjustable saw blade control system for end trimmer apparatus. 3,223,128, 12–14–65, Cl. 143—37.
Stammen, Harold A., to Crown Controls Corp. Lift truck. 3,223,267, 12–14–65, Cl. 214—730.
Standard Oil Co. (Indiana) : *See*—
Bolton, Benjamin A. 3,223,666.
Harris, Samuel W., and Evering. 3,223,750.
Malec, Robert E. 3,223,497.
Star Products, Inc. : *See*—
Abate, Joseph, Jr., and Dreistadt. 3,223,453.
Sta-Rite Ginnie Lou, Inc. : *See*—
Bolinger, George N. 3,223,094.
Starline, Inc. : *See*—
Ferris, Robert G., Berryhill, Boppart, and Ratajczak. 3,223,228.
Starr, Arthur T. : *See*—
Huntley, Keith G., Starr, and Gault. 3,222,791.
Stauffer Chemical Co. : *See*—
Brokke, Mervin E. 3,223,707.
Szabo, Karoly. 3,223,753.
Vanstrom, Reginald E. 3,223,479.
Vanstrom, Reginald E. 3,223,480.
Stauffer, Lynn H., to General Electric Co. Stabilization circuit for electron beam apparatus. 3,223,885, 12–14–65, Cl. 315—111.
Steelcraft Mfg. Co., The : *See*—
Woodrum, Harold L. 3,222,833.
Steen, James B. : *See*—
Coulter, John B., Jr., and Steen. 3,223,188.
Steiman, Wolf : *See*—
Keeney, Allen J., and Steiman. 3,223,292.
Stein, Sam, Associates Inc. : *See*—
Stein, Sam S., and Cerny. 3,222,713.
Stein, Sam S., and L. L. Cerny, to Sam Stein Associates Inc. Meat scoring machine. 3,222,713, 12–14–65, Cl. 17—26.
Steingas, Richard R. : *See*—
Reynolds, John F., Middlesworth, and Steingas. 3,223,193.
Steinmetz, James : *See*—
Kesslin, George, Handy, and Steinmetz. 3,223,713.
Steinmueller, Ralph E. : *See*—
Dietert, Harry W., Jameson, R. L. Dietert, Hanna, Graham, and Steinmueller. 3,222,736.
Stelzer, William, to Kelsey-Hayes Co. Brake operating mechanism. 3,222,868, 12–14–65, Cl. 60—54.6.
Stengel, James L., and N. D. Lewis. Granite bowling lane. 3,223,415, 12–14–65, Cl. 273—51.
Stephanoff, Nicholas N., to Fluid Energy Processing and Equipment Co. Method for preparing liquid slurries, and for dispersement thereof in polymeric substances. 3,223,333, 12–14–65, Cl. 241—5.
Sterling Drug Inc. : *See*—
Gubitz, Franklyn W. 3,223,729.
Stern, Hans. Handling of granular material. 3,223,288, 12–14–65, Cl. 222—194.
Steuer, Herbert, G. Ott, G. Rack, and R. Schrodt, to Reimers Getriebe K.G. Link chain with transversely slidable sets of segments mounted in cages. 3,222,946, 12–14–65, Cl. 74—236.
Stevens, Edgar T. : *See*—
Harrod, Edgard B., Jr., and Stevens. 3,223,237.
Stevens, J. P., & Co. Inc. : *See*—
Von Bergen, Werner, and Wolf. 3,223,473.
Stevens, Murray J. : *See*—
Hammond, James D., and Stevens. 3,223,746.
Stevens, William E. Pipe joint. 3,223,439, 12–14–65, Cl. 285—373.
Stevenson, Wade : *See*—
Clark, Frederick G. 3,222,959.
Stewart, Gordie. Cross tie unloader. 3,223,254, 12–14–65, Cl. 214—8.5.
Stewart-Warner Corp. : *See*—
Ciuffini, Aurelio, and Williams. 3,223,376.
Dinkelkamp, Henry T. 3,223,040.
Miles, Marshall. 3,223,804.
Tramontini, Vernon N. 3,223,150.
Tramontini, Vernon N. 3,223,151.
Stiles, Alvin B., to E. I. du Pont de Nemours and Co. Mangano-chromia-manganite catalysts containing vanadates. 3,223,653, 12–14–65, Cl. 252—464.
Stoklosinski, Roman. Recovery of krypton and xenon from air separation plants. 3,222,879, 12–14–65, Cl. 62—22.
Stone, Albert E. : *See*—
Thieme, Horst R., and Stone. 3,222,996.
Stone, Irwin M., to Baxter Laboratories, Inc. Composition for improving foam of malt beverages. 3,223,529, 12–14–65, Cl. 99—48.
Stone, Joseph J., R. A. Adams, H. Dahl, and P. J. Estock, to A. B. Dick Co. Facsimile system. 3,223,778, 12–14–65, Cl. 178—7.1.
Stone, Joseph K. : *See*—
Bertram, John M., Prince, and Stone. 3,223,898.
Stone, Joseph K., to Kaiser Industries Corp. Methods for increasing the proportion of scrap metal charged to basic oxygen conversion processes. 3,223,521, 12–14–65, Cl. 75—43.
Stone, Virgil D., to Gulf Oil Corp. Well head apparatus. 3,223,168, 12–14–65, Cl. 166—89.
Stott, Thomas C. F., to General Motors Corp. Motor vehicle gearbox and pump. 3,223,196, 12–14–65, Cl. 184—6.
Stout, William H. Ambulatory irrigation system. 3,223,461, 12–14–65, Cl. 305—2.
Straub, Helmut : *See*—
Rentschler, Waldemar T., Helber, and Straub. 3,223,015.
Straughan, Clemens F. Apparatus for applying a plastic film wrapping to a pipe line. 3,223,571, 12–14–65, Cl. 156—392.
Streetman, William J. : *See*—
Apolloni, Gino M., Mackie, and Streetman. 3,223,445.
Stromberg-Carlson Corp. : *See*—
David, Freddy, and Tyrlick. 3,223,977.
Strother, George W., Jr., to Navionics, Inc. Electric switch with universal pivot actuator. 3,223,792, 12–14–65, Cl. 200—6.
Strubel, David G., and C. J. Moll, Jr., to Brown & Williamson Tobacco Corp. Reconstituted tobacco products and method of making same. 3,223,090, 12–14–65, Cl. 131—140.
Struck, Henry : *See*—
Effinger, William L., Jr., and Struck. 3,222,816.
Struck, Henry, to The A. C. Gilbert Co. Tethered model airplane for stunt performance. 3,222,815, 12–14–65, Cl. 46—77.
Stryker, Harvey I., to E. I. du Pont de Nemours and Co. Reduction of aromatic nitro and nitroso compounds. 3,223,727, 12–14–65, Cl. 260—510.
Stuessel, Rolf : *See*—
Selbold, Wilhelm O., Eggers, Riccius, and Stuessel. 3,223,354.
Sucro, Jost S. : *See*—
Armentrout, Everett C., and Sucro. 3,223,798.
Sugar, Odon E. : *See*—
Tornberg, Isidor, Broad, Armstrong, and Sugar. 3,222,966.
Sullivan, Ralph T., to Varian Associates. Apparatus for adjusting the configuration of a magnetic field. 3,223,897. 12–14–65, Cl. 317—158.
Summerville, Robert N. : *See*—
Templeton, Hugh E., and Summerville. 3,223,145.
Sun Chemical Corp. : *See*—
Brigham, Ward E. 3,223,028.
Sun Oil Co. : *See*—
Abbott, Bennett E., Jr. 3,223,959.
Bohrer, Byron B. 3,223,747.
Bohrer, Byron B. 3,223,748.
Convery, Robert J., Loveland, and Noland. 3,223,618.
Duling, Irl N. 3,223,740.
Eberhardt, Gert G. 3,223,742.
Jones, Jack W., and Bennett. 3,223,184.
Marlowe, Bernard, Raymond, and Douros. 3,223,621.
Paulson, Joseph F. 3,223,614.
Walker, William F. 3,222,928.
Young, Einar T. 3,223,123.
Sundblad, Gunnar E., to Svenska Dataregister AB. Recording assembly having character and code markings. 3,223,033, 12–14–65, Cl. 101—368.
Sundstrand Corp. : *See*—
Lofgren, Charles O., and Anderson. 3,222,702.
Superheater Co. Ltd., The : *See*—
Marsden, Roy. 3,223,816.
Surprenant, Ronald J. : *See*—
Kitchens, William L., and Surprenant. 3,223,851.
Sutton, Walter T., Jr., and J. D. Broyles, to Texas Instruments Inc. Refrigeration temperature and frost control. 3,222,882, 12–14–65, Cl. 62—80.
Svenska Dataregister AB : *See*—
Sundblad, Gunnar E. 3,223,033.
Swank, Richard E. Panel display apparatus. 3,222,807, 12–14–65, Cl. 40—36.
Swanson, Elwood R. : *See*—
Hunt, Charles J., and Swanson. 3,223,011.
Sweeney, Roy L. : *See*—
Craven, Jack L., Hedglin, D. T. Craven, McCarville, and Sweeney. 3,223,007.
Sweeney, Theodore J., to Chicago United Products Co., Inc. Plastic edging for trim strip. 3,222,838, 12–14–65, Cl. 52—403.
Sweep-All Co., Inc. : *See*—
Kaar, Kenneth B., and Coons. 3,222,706.
Swift, John F., to International Harvester Co. Final drive for crawler type tractor. 3,223,191, 12–14–65, Cl. 180—6.48.
Swisher, Samuel M. Sheet metal puller. 3,222,915, 12–14–65, Cl. 72—457.
Swyryd, Miroslav : *See*—
Hofstad, Rolf B., and Swyryd. 3,223,929.
Syltebo, Bjarne E. : *See*—
Klees, Garry W., Syltebo, and Viall. 3,222,863.
Sylvania Electric Products Inc. : *See*—
Grimone, Frank H. 3,223,879.
Moening, Robert J. 3,223,772.
Seekings, Charles D., and Gannoe. 3,223,095.
McKeirnan, William R., and Schwender. 3,223,569.
Weiss, Mortimer E. 3,223,877.
Zambrow, John L., and Litt. 3,222,773.
Sylvester, Edmund Q., to Amsted Industries Inc. Pressure casting apparatus with gas-permeable chill assembly. 3,222,735, 12–14–65, Cl. 22—69.
Symington Wayne Corp. : *See*—
Warnock, Ernest J. 3,223,050.
Syntex Corp. : *See*—
Bowers, Albert. 3,223,702.
Bowers, Albert, and Edwards. 3,223,717.
Szabo, Karoly, to Stauffer Chemical Co. Phosphonodithioic acid esters. 3,223,753, 12–14–65, Cl. 260—928.
TRW Inc. : *See*—
Antalek, John J. 3,222,760.
Antalek, John J. 3,223,951.
Tiltins, Janis. 3,223,866.
Braid, Murray D. 3,222,770.
Shafranek, Robert J., and Tiltins. 3,223,916.

Taft, William G. Carpet retaining means. 3,222,834, 12–14–65, Cl. 52—221.

Takagi, Mikio: *See*—
Inose, Hiroshi, Kawai, Koono, Takagi, Yasuda, and Yoshida. 3,223,784.

Takata, Tadashi. Target for golf driving practice. 3,222,931, 12–14–65, Cl. 73—379.

Takeuchi, Sho, to Fujitsu Ltd. Tape drive mechanism. 3,223,338, 12–14–65, Cl. 242—55.12.

Tako, Anthony: *See*—
Palmleaf, Herbert, and Tako. 3,222,745.

Talbot, Warren, and S. F. Jerlstrom, to Security First National Bank. Damper means for single-axis gyroscope. 3,222,936, 12–14–65, Cl. 74—5.5.

Tang, Tom T.: *See*—
Gunderson, Robert O., Klein, Campillo, and Tang. 3,223,980.

Tanner, Richard, to Von Roll AG. Method and installation for the production of steam, particularly through the combustion of refuse and other low quality fuels. 3,223,058, 12–14–65, Cl. 110—10.

Tanner, Richard, K. Perl, and H. Bauer, to Von Roll A.G. Method and boiler plant for combustion of fuels. 3,223,074, 12–14–65, Cl. 122—2.

Tart, Jasper B. Tobacco harvester. 3,223,444, 12–14–65, Cl. 296—26.

Tate, Cilton W., and J. G. Scruggs, to Monsanto Co. Dyeable polyolefin containing modified polyester. 3,223,752, 12–14–65, Cl. 260—873.

Taylor, Daniel D., to Beckman Instruments, Inc. Holding plate for electroplating a detonator plug. 3,223,599, 12–14–65, Cl. 204—15.

Taylor, Ernest A., Jr., to Monsanto Co. Apparatus for treating filaments. 3,222,799, 12–14–65, Cl. 34—122.

Taylor, Richard N.: *See*—
Bull, James T., Dow, Engle, Kellinger, O'Keefe, Schofield, and Taylor. 3,222,988.

Taylor-Winfield Corp., The: *See*—
Riley, Joseph J. 3,223,901.

Technicon Instruments Corp.: *See*—
Ferrari, Andres, and Kling. 3,223,485.
Holl, Walter W., Jr., and Walton. 3,223,486.

Tele Cam Inc.: *See*—
Ferber, Robert R., Smith, and Trimmer. 3,225,140.

Templeton, Hugh E., and R. N. Summerville, to Allied Chemical Corp. Evaporative concentration of aqueous urea. 3,223,145, 12–14–65, Cl. 159—47.

Tenneco Chemicals, Inc.: *See*—
Deinet, Adolph J. 3,223,515.
Di Bella, Eugene P. 3,223,728.
Girard, Theodore A. 3,223,536.
Gradsten, Marcel A. 3,223,514.
Klein, David X. 3,223,634.
Kraft, William M. 3,223,671.
Kraft, William M., and Green. 3,223,715.
Kraft, William M., and Weisfeld. 3,223,658.
Kubitz, Karl A. 3,223,623.
Weisfeld, Joseph, and Kraft. 3,223,657.

Tensolite Insulated Wire Co., Inc.: *See*—
Buschman, Francis X., and Beran. 3,223,564.

Termini, John P.: *See*—
Calmon, Calvin, Gilwood, and Termini. 3,223,619.

Terracini, Vittorio, to Tewit Gestione Brevetti S.r.L. Back rest attachment for motor vehicle seats. 3,223,447, 12–14–65, Cl. 297—397.

Terzariol, Rene E., to l'Adressopresse, Societe Anonyme des Anciens Etablissements Klene & Cie. Stamping device for embossing characters on plates. 3,223,218, 12–14–65, Cl. 197—6.

Tesche, Kurt: *See*—
Geiersberger, Karl, Tesche, and Woitas. 3,223,481.

Teumac, Fred N. Polymerization of tetrafluoroethylene and preparation of fluorocarbon waxes. 3,223,739, 12–14–65, Cl. 260—653.1.

Teupel, Manfred: *See*—
Plapper, Jurgen, and Teupel. 3,223,648.

Texas Instruments Inc.: *See*—
Sutton, Walter T., Jr., and Broyles. 3,222,882.

Tewit Gestione Brevetti S.r.L.: *See*—
Terracini, Vittorio. 3,223,447.

Textile Machine Works: *See*—
Moyer, James D. 3,222,892.

Thomas & Betts Co., The: *See*—
Piasecki, Raymond F. 3,223,776.

Thal, Herbert L., Jr., to General Electric Co. Traveling wave electric discharge oscillator with directional coupling connections to a traveling wave structure wherein the number of coupling connections times the phase shift between adjacent connections equal an integral number of wavelengths. 3,223,882, 12–14–65, Cl. 315—39.3.

Thermal Dynamics Corp.: *See*—
Browning, James A., and Pratt. 3,223,822.

Thieme, Horst R., and A. E. Stone, to Honeywell Inc. Controlling apparatus. 3,222,996, 12–14–65, Cl. 91—382.

Thomas, Alvin B.: *See*—
Powers, Robert A., and Thomas. 3,223,639.

Thomas, Charles E.: 3,223,756.

Thomas, Dean L., to Pittsburgh Plate Glass Co. Method of heat treating glass sheets. 3,223,507, 12–14–65, Cl. 65—114.

Thomas, Frank J., to Manley, Inc. Measured charge dispenser. 3,223,291, 12–14–65, Cl. 222—249.

Thompson, Alden W., to C. I. Hayes, Inc. Heat treatment apparatus. 3,223,396, 12–14–65, Cl. 266—5.

Thompson, Harold D., to International Business Machines Corp. Last ones counter. 3,223,975, 12–14–65, Cl. 340—146.3.

Thompson, Henry R.: *See*—
Pulver, Louis J., and Thompson. 3,223,660.

Thorington, Luke, to Duro-Test Corp. Reinforced envelope for light source and method of making. 3,223,273, 12–14–65, Cl. 220—2.1.

Thornbery, James M., and J. E. Maas, to Controls Co. of America. Dryer sensing device. 3,222,798, 12–14–65, Cl. 34—45.

Thresher, Griffith N., to Frank Wheatley Corp. Multi-piston variable stroke pump. 3,223,042, 12–14–65, Cl. 103—38.

Tietge, Fred R. Postage scale weight and volume measure. 3,223,190, 12–14–65, Cl. 177—207.

Tiltins, Janis: *See*—
Shafranek, Robert J., and Tiltins. 3,223,916.

Tiltins, Janis, to TRW Inc. Alternator. 3,223,866, 12–14–65, Cl. 310—155.

Tindall, Howard D.: *See*—
Olsen, Willy, and Tindall. 3,223,955.

Tobias, Philip E.: *See*—
Gegenheimer, Harold W., Stad, and Tobias. 3,223,294.

Todd, Carl D., to Hughes Aircraft Co. Circuits having negative resistance characteristics. 3,223,849, 12–14–65, Cl. 307—88.5.

Todd, Hoyt H., to Electro-Optical Systems, Inc. Method of fabricating fine grids. 3,223,878, 12–14–65, Cl. 313—348.

Tolnai, Daniel, ½ to Mifalei Matehet "Neger" Ltd. Collapsible container. 3,223,274, 12–14–65, Cl. 220—7.

Topol, George J., and L. B. Baranowski, to Bowser, Inc. Filter and dehydrator. 3,223,244, 12–14–65, Cl. 210—247.

Tornberg, Isidor, H. M. Broad, W. J. Armstrong, and O. E. Sugar, to Newsday, Inc. High speed web punching device. 3,222,966, 12–14–65, Cl. 83—98.

Tornqvist, Erik: *See*—
Wilsher, Rudolph S., Tornqvist, and Lynn. 3,223,690.

Tornqvist, Erik G. M., and P. A. Argabright, to Esso Research and Engineering Co. Cocrystallized vanadium-titanium-aluminum halide catalyst system. 3,223,651, 12–14–65, Cl. 252—429.

Toth, John F.: *See*—
Freeman, Harold M., and Toth. 3,223,412.

Towne, Delbert D., to Kasten Mfg. Corp. Forage wagon with rotating key clutch. 3,223,264, 12–14–65, Cl. 214—519.

Toy, William W., to Sperry Rand Corp. Power transmission. 3,223,047, 12–14–65, Cl. 103—162.

Tractel S.A.: *See*—
Persiaux, Jean. 3,222,742.

Traeger, Hans-Georg, to Siemens-Schuckertwerke Aktiengesellschaft. Device for producing thermoelectric battery blocks. 3,223,406, 12–14–65, Cl. 269—153.

Tragert, William E.: *See*—
Jacky, Germaine F., Sorenson, Shannon, and Tragert. 3,223,598.
Mohler, Donald, and Tragert. 3,223,899.

Tramontini, Vernon N., to Stewart-Warner Corp. Heat exchange. 3,223,150, 12–14–65, Cl. 165—34.

Tramontini, Vernon N., to Stewart-Warner Corp. Thermostatically controlled heat exchanger. 3,228,151, 12–14–65, Cl. 165—39.

Trane Co., The: *See*—
Miner, Robert G. 3,223,149.

Transitel International Corp.: *See*—
Brothman, Abraham, Halpern, and Reiser. 3,223,995.

Trewella, Robert J., to Johnson & Johnson. Methods of making a non-adherent dressing. 3,223,567, 12–14–65, Cl. 156—253.

Trinkler, Alfred, to Societe Nationale d'Etude et de Construction de Moteurs d'Aviation. Regulating device including a distributor having double-acting knife-edges. 3,223,103, 12–14–65, Cl. 137—83.

Tri-tech, Inc.: *See*—
Hoffmann, Gotfred O. 3,223,322.

Troeger, Herbert, to Siemens-Schuckertwerke Aktiengesellschaft. Electric protection system for nuclear reactors. 3,223,590, 12–14–65, Cl. 176—24.

Troendly, Harry P., to Borg-Warner Corp. Seat belt demonstrator. 3,223,236, 12–14–65, Cl. 206—82.

True Temper Corp.: *See*—
Buckeridge, Robert L. 3,222,813.
Clark, Joseph C. 3,223,347.
Clark, Joseph C. 3,223,348.
Holahan, Joseph M. 3,223,349.

Tsakos, Peter S. Charcoal grill. 3,223,077, 12–14–65, Cl. 126—25.

Tselov, Jury N.: *See*—
Nabiullin, Faat H., Adamjan, Gertsik, Ushko, Dolgov, Tselov, and Sharanov. 3,222,963.

Tu, Shu-Tung, to United Shoe Machinery Corp. Leather-like material and method of making the same. 3,223,551, 12–14–65, Cl. 117—140.

Tucakovic, Ilia. Extrusion machinery. 3,222,746, 12–14–65, Cl. 25—14.

Tucker, Benjamin W., Jr., to Otis Elevator Co. Closure operating mechanism. 3,223,403, 12–14–65, Cl. 268—53.

Tucker, Emmitt M., Sr., deceased; R. Tucker, executrix. Building structure with air circulation means. 3,223,018, 12–14–65, Cl. 98—31.

Tucker, Radina: *See*—
Tucker, Emmitt M., Sr. 3,223,018.

Turner, Bernard M. Methods and apparatus for manufacturing interlocked looped fabric. 3,222,888, 12–14–65, Cl. 66—1.

Turner, Richard L. Solar system travel game. 3,223,420, 12–14–65, Cl. 273—134.

Twidale, William H., to Massey-Ferguson Ltd. Cultivator spring trip mounted assembly. 3,223,175, 12–14–65, Cl. 172—264.

Tyrlick, William V.: *See*—
David, Freddy, and Tyrlick. 3,223,977.

Udylite Corp., The: *See*—
Miller, Henry Z., Koltuniak, and Fenoglio. 3,223,921.

Uecker, Donald F., to Brunswick Corp. Pinfall detection means. 3,223,414, 12–14–65, Cl. 273—52.

Ugi, Ivar, F. Beck, and E. Bottner, to Farbenfabriken Bayer Aktiengesellschaft. Dihydroquinoline-carboxylic acid amides and a process for their preparation. 3,223,709, 12–14–65, Cl. 260—287.

Ulke, William: *See*—
Luther, William P., and Ulke. 3,222,781.

Ulzurrun, Eduardo T., to The National Cash Register Co. Signal information detection circuitry. 3,223,972, 12–14–65, Cl. 340—146.3.

Union Carbide Corp.: *See*—
Bassett, William I., III. 3,223,562.
Carmichael, Robert, and Southworth. 3,223,559.
Kugler, Calvin N., and Marbach. 3,223,531.
Lynn, John W. 3,223,685.
Matzner, Markus. 3,223,677.
Powers, Robert A., and Thomas. 3,223,639.
Raley, Garland E. 3,223,761.
Reilly, Thomas A., Beckman, and Bishop. 3,223,557.

Union Oil Co. of California: *See*—
Kramer, Walter E. 3,223,680.
Marsh, Glenn A., and Schaschl. 3,222,920.
Marsh, Glenn A., and Wolter. 3,223,604.
Welchman, Roger L., and Fierce. 3,223,723.

United Aircraft Corp.: *See*—
McLafferty, George H. 3,223,591.

United Kingdom Atomic Energy Authority: *See*—
Davis, Herbert M., and Lockwood. 3,222,942.

United Shoe Machinery Corp.: *See*—
Broughton, Ernest, and Burns. 3,222,703.
Senfleben, Paul W., and Crossen. 3,222,726.
Tu, Shu-Tung. 3,223,551.

United States of America
Agriculture: *See*—
Mod, Robert R., Skau, Fore, Magne, Novak, Dupuy, Ortego, and Fisher. 3,223,708.
Pryde, Everett H. 3,223,683.
Army: *See*—
Bowles, Romald E. 3,223,101.
Harrod, Edgard B., Jr., and Stevens. 3,223,237.
Kamp, Ewald A. 3,222,989.
Kracke, Robert D., and Pfeiffer. 3,222,925.
Murphy, George P., Jr., and Meade. 3,223,626.
Payne, James A., and Conard. 3,223,000.
Atomic Energy Commission: *See*—
Jacky, Germaine, F., Sorenson, Shannon, and Tragert. 3,223,598.
Interior: *See*—
Lucich, George M., Rockwell, and Bergstrom. 3,223,319.
National Aeronautics and Space Administration: *See*—
Butler, David H., and Falk. 3,223,374.
Radnofsky, Matthew I., and Shewmake. 3,224,001.
Navy: *See*—
Anspach, Robert. 3,223,036.
Bentley, John M., and Brown. 3,223,992.
Budjinski, Aloysius N., and Georgia. 3,223,215.
Bull, James T., Dow, Engle, Kellinger, O'Keefe, Schofield, and Taylor. 3,222,988.
Clark, James O., Ravenhill, and Reise. 3,223,997.
Crawford, Jack A., and Woodworth. 3,223,777.
Dosch, Victor F., and Rabb. 3,223,991.
Harris, James L. 3,223,880.
Hill, Marion E. 3,223,725.
Kaufman, Melvin M. 3,222,756.
Nooker, Eugene L., Brown, Dietz, and Morton. 3,223,037.
Rausch, John J., and McAndrew. 3,223,522.
Wieder, Harry H. 3,223,924.

United States Rubber Co.: *See*—
Miller, Henry F., and Rhodes. 3,222,870.
Miller, Henry F., and Rhodes. 3,222,871.

Universal Electric Co.: *See*—
Hoddy, George W., G. L. and R. A. 3,223,464.

University of California, The, Regents of the: *See*—
Loeb, Sidney, and Sourirajan. 3,223,424.

Unterstenhofer, Gunter: *See*—
Sasse, Klaus, Wegler, and Unterstenhofer. 3,223,706.

Upjohn Co., The: *See*—
Boyack, Gerald A. 3,223,583.
Wright, John B. 3,223,703.

Usdn, Vera R.: *See*—
Aldrich, Frank L., Usdn, and Vasta. 3,223,593.

Ushko, Ustin Y.: *See*—
Nabiullin, Faat Hatovich, Adamjan, Gertsik, Ushko, Dolgov, Tselov, and Sharanov. 3,222,963.

Utility Tool Co.: *See*—
Broadhead, James H., Hamilton, and Martine. 3,222,961.

Valchar, Clement E.: *See*—
Cypber, James H., and Valchar. 3,223,504.

Valentine, Harry M., to Bendix-Westinghouse Automotive Air Brake Co. Brake mechanism. 3,223,458 12–14–65, Cl. 303—6.

Valve Corp. of America: *See*—
Keeney, Allen J., and Steiman. 3,223,292.
Sagarin, Philip H. 3,223,287.

Valverde, David E., to Metallic Engineering Co., Inc. Sun screens. 3,222,740, 12–14–65, Cl. 24—83.

Van der Lely, Cornelis, to Patent Concern N.V. Sway limiting means for a tool mounted on a mast type hitch. 3,223,177, 12–14–65, Cl. 172—449.

Van Pool, Joe, to Phillips Petroleum Co. Regeneration of contact material. 3,223,650, 12–14–65, Cl. 252—418.

Van Pool, Joe, and D. G. Blaker, to Phillips Petroleum Co. HF alkylation and acid rerun process. 3,223,749, 12–14–65, Cl. 260—683.48.

Van Winkle, Roy L., to The Geolograph Co. Warning systems. 3,223,068, 12–14–65, Cl. 116—65.

Vandale Corp.: *See*—
Buschbom, Floyd E. 3,223,256.

Van Lingen, Nicolaas H.: *See*—
Schmit Jongbloed, Lodewijk J., and Van Lingen. 3,223,185.

Van Scholck, Ivan: *See*—
Akin, Welling T., and Van Scholck. 3,223,180.

Vanstrom, Reginald E., to Stauffer Chemical Co. Leavening compound. 3,223,479, 12–14–65, Cl. 23—107.

Vanstrom, Reginald E., to Stauffer Chemical Co. Chemical leavening acid. 3,223,480, 12–14–65, Cl. 23—107.

Vargha, Laszlo: *See*—
Horvath, Tibor, and Vargha. 3,223,722.

Varian Associates: *See*—
Sullivan, Ralph T. 3,223,897.

Varner, Donald E., to Industrial Nucleonics Corp. Method and apparatus for measuring the property of a magnetizable work piece using nuclear radiation. 3,223,840, 12–14–65, Cl. 250—83.3.

Varney, Justin A. Well drilling apparatus. 3,223,183, 12–14–65, Cl. 175—27.

Varrichio, Ralph A.: *See*—
Shaler, David, and Varrichio. 3,223,824.

Vasel, Alfred W.: *See*—
Kalns, Rudolph W., and Vasel. 3,223,913.

Vasseur, Jean-Pierre: *See*—
Dumaire, Marc-Jean, and Vasseur. 3,223,943.

Vasta, Bruno M.: *See*—
Aldrich, Frank L., Usdn, and Vasta. 3,223,593.

Vaughn, Rudolph M. Three piece blind fastener. 3,222,977, 12–14–65, Cl. 85—72.

Veeder-Root Inc.: *See*—
Coulter, Leland E., Ambler, Batson, Behm, Anthony, and Hamlin. 3,223,316.

Verdoodt, Marcel E.: *See*—
Makowski, Thomas G., Verdoodt, and Huntley. 3,223,031.

Vereinigte Flugtechnische Werke Gesellschaft mit beschraenkter Haftung frueher "Weser" Flugzeugbau/Focke-Wulf/Heinkel-Flugzeugbau: *See*—
Hertel, Heinrich L., and Krug. 3,223,360.
Rothe, Arthur, and Moravec. 3,223,251.
Seibold, Wilhelm O., Eggers, Riccius, and Stuessel. 3,223,354.

Vereinigte Glanzstoff-Fabriken AG.: *See*—
Sommer, Erwin, Gerlach, and Werner. 3,223,581.

Verhoeven, John F., to The Cincinnati Milling Machine Co. Two dimensional hydraulic tracing system. 3,222,998, 12–14–65, Cl. 91—413.

Vernon, Everett L. Can for flux. 3,223,272, 12–14–65, Cl. 220—1.

Vesterdal, Hans G., to Esso Research and Engineering Co. Lubricating compositions containing metal salt of benzoic acid. 3,223,627, 12–14–65, Cl. 252—25.

Vesterdal, Hans G., and R. Kassinger, to Esso Research and Engineering Co. Lubricating compositions containing metal salt of a bicyclo carboxylic acid. 3,223,632, 12–14–65, Cl. 252—33.6.

Viall, Wilton S.: *See*—
Klees, Garry W., Syltebo, and Viall. 3,222,863.

Vieth, Wolf R.: *See*—
Owens, John E., and Vieth. 3,223,757.

Villani, Frank J., to Schering Corp. Anti-depressant compositions and methods. 3,223,586, 12–14–65, Cl. 167—65.

Vitafoam Ltd.: *See*—
Grimshaw, Norman. 3,222,696.

Viveen, Wilhelmus J. C., and C. U. Kloosterman, to Koninklijke Industrieele Maatschappij vorheen Noury & van der Lande N.V. Triacetyl- and tetraacetylmethylenediamine and process. 3,223,732, 12–14–65, Cl. 260—561.

Vladyka, Vilibald, and P. Ješek, to Chiviana Praha, narodni podnik. Stereotaxic device. 3,223,087, 12–14–65, Cl. 128—303.13.

Vockenhuber, Karl: *See*—
Cech, Karl, and Forch. 3,223,469.

Vogt, Noland E.: *See*—
Wilson, John H., Vogt, and Sahakian. 3,223,410.

Voles, Roger E., to Electric & Musical Industries Ltd. Radar tracking apparatus. 3,223,996, 12–14–65, Cl. 343—7.

Von Bergen, Werner, and H. W. Wolf, to J. P. Stevens & Co., Inc. Method of controlling wool shrinkage and products thereof. 3,223,473, 12–14–65, Cl. 8—128.

Von Brachel, Hanswilli: *See*—
Kuth, Robert, Von Brachel, Schneider, and Quaedvlieg. 3,223,471.

Von König, Anita, to Agfa Aktiengesellschaft. Process for the production of planographic printing plates having an aluminum support. 3,223,524, 12–14–65, Cl. 96—29.

Von Roll AG.: *See*—
Tanner, Richard. 3,223,058.
Tanner, Richard, Perl, and Bauer. 3,223,074.
Wüthrich, Fritz. 3,223,334.

Vona, Joseph A.: *See*—
Cantor, Harry A., Horback, Vona, and Kuczynski. 3,223,670.

Voss, Jack G.: *See*—
Drew, Howard F., and Voss. 3,223,647.
Vrancken, Marcel N., A. H. De Cat, and J. F. Willems. Gelatin derivatives and photographic silver halide emulsion layers. 3,223,528, 12–14–65, Cl. 96—94.
Wachovia Bank and Trust Co.: *See*—
Babnson, Agnew H., Jr. 3,223,038.
Wachtel, William L.: *See*—
Atteberry, Robert W., Keefer, and Wachtel. 3,223,663.
Wacker-Chemie G.m.b.H.: *See*—
Eder, Heins. 3,223,665.
Nitzsche, Siegfried, and Buchheit. 3,223,474.
Waddington & Duval (Holdings) Ltd.: *See*—
Waddington, Rogor S., and Duval. 3,223,296.
Waddington, Rogor S., and B. Duval, to Waddington & Duval (Holdings) Ltd. Liquid handling devices. 3,223,296, 12–14–65, Cl. 222—442.
Wade, Harry: *See*—
Isaacs, Charles W., and Wade. 3,223,419.
Wagner, Paul H., and E. J. Kosinsky, to Phillips Petroleum Co. Extrusion apparatus. 3,222,719, 12–14–65, Cl. 18—12.
Wagner, Richard L.: *See*—
Boardman, Harold, and Wagner. 3,223,032.
Wahlfeld, James A., and R. C. L. Jacobs, to Wahlfeld Mfg. Co. Removable sash window. 3,222,733, 12–14–65, Cl. 20—52.2.
Wahlfeld Mfg. Co.: *See*—
Wahlfeld, James A., and Jacobs. 3,222,733.
Wales, Roger O., to Honeywell Inc. Optical transducer for measuring distance. 3,223,845, 12–14–65, Cl. 250—220.
Walker, John, to Kaiser Industries Corp. Apparatus for oxygen conversion of iron to steel. 3,223,399, 12–14–65, Cl. 266—36.
Walker, Robert K. Auxiliary jaws for chuck tools. 3,223,428, 12–14–65, Cl. 279—36.
Walker, William F., to Sun Oil Co. Tank gauge apparatus. 3,222,928, 12–14–65, Cl. 73—224.
Wallace Expanding Machines, Inc.: *See*—
Roper, Ralph E. 3,222,910.
Walsh, Bruce R., to Gulf Research & Development Co. Aspirator for a carburetor. 3,223,394, 12–14–65, Cl. 261—78.
Walters, Robert E., to Allen-Bradley Co. Multi-pole protective relay. 3,223,803, 12–14–65, Cl. 200—116.
Waltham Watch Co.: *See*—
Geilman, Allen B. 3,222,894.
Walton, Richard W.: *See*—
Holl, Walter W., Jr., and Walton. 3,223,486.
Waner, Donald W., to The Morse Instrument Co. Brake for a push-pull control cable. 3,223,201, 12–14–65, Cl. 188—67.
Wanlass, Bert R., to General Motors Corp. Six-way seat adjuster switch with spring biased centering means and gyrational pivot structure. 3,223,791, 12–14–65, Cl. 200—6.
Ward, Cecil R., and F. J. Rau, to Pittsburgh Plate Glass Co. Method and apparatus for drawing glass sheet. 3,223,502, 12–14–65, Cl. 65—29.
Ward, Cecil R., to Pittsburgh Plate Glass Co. Apparatus for drawing sheet glass. 3,223,510, 12–14–65, Cl. 65—203.
Ward, Percy M. Plastic holder. 3,223,372, 12–14–65, Cl. 248—313.
Ward, Walter H., and R. L. Millman, to South African Farm Implement Manufacturers Ltd. Snapping roll assembly for corn harvesters. 3,222,852, 12–14–65, Cl. 56—104.
Ward, William A., to Edgerton, Germeshausen & Grier, Inc. Gaseous-discharge device. 3,223,884, 12–14–65, Cl. 315—60.
Warner, Raymond M., Jr., G. C. Onodera, and W. J. Corrigan, to Motorola, Inc. Field effect device and method of manufacturing the same. 3,223,904, 12–14–65, Cl. 317—235.
Warner-Lambert Pharmaceutical Co.: *See*—
Pickel, Frank D. 3,223,588.
Warnock, Ernest J., to Symington Wayne Corp. Underframe end. 3,223,050, 12–14–65, Cl. 105—420.
Washington Aluminum Co., Inc.: *See*—
Bowman, David F. 3,223,948.
Watabe, Shijio: *See*—
Sakurai, Shigeki, Watabe, and Morio. 3,223,552.
Waterbury Co., Inc.: *See*—
Nyden, Robert. 3,223,297.
Watkins, Franklin M., to Sinclair Research, Inc. Snow melting apparatus. 3,223,080, 12–14–65, Cl. 126—343.5.
Watrous, Robert B.: *See*—
Rohmann, Charles P., Stahl, Watrous, and Wiseman. 3,223,106.
Watts, Richard M.: *See*—
Becker, William C., Ayer, and Watts. 3,223,311.
Wawrousek, Hans W., to General Electric Co. Iron-silicon alloys and treatment thereof. 3,223,602, 12–14–65, Cl. 204—140.5.
Webb, Edward F. D. Electric servo motors. 3,223,862, 12–14–65, Cl. 310—68.
Webb, Robert S. Wide range multivibrator circuit. 3,223,946, 12–14–65, Cl. 331—144.
Webber, John J., to Morgan Construction Co. Combustion air heater for regenerative furnace. 3,223,135, 12–14–65, Cl. 158—4.5.
Weber, Harry R., to Socony Mobil Oil Co., Inc. Method and apparatus for photoelectric rating of throttle tube deposits. 3,223,844, 12–14–65, Cl. 250—218.
Webster, Richard R., to Jones & Laughlin Steel Corp. Noncontacting dimensional gaging of objects with an electron-optics device. 3,222,979, 12–14–65, Cl. 88—14.
Wegler, Richard: *See*—
Sasse, Klaus, Wegler, and Unterstenhöfer. 3,223,706.
Wehl, Glenn E., to Portage Electric Products, Inc. Precalibrated thermostatic switches. 3,223,808, 12–14–65, Cl. 200—138.
Wehl, Glenn E., to Portage Electric Products, Inc. Mounting contact strip means for thermostatic switches. 3,223,809, 12–14–65, Cl. 200—138.
Weichman, Roger L., and W. L. Fierce, to Union Oil Co. of California. Process for the preparation of cyanobenzoic acid. 3,223,723, 12–14–65, Cl. 260—465.
Weinert, Fritz O. Grinding apparatus. 3,223,386, 12–14–65, Cl. 241—172.
Weingartner, Bernhard, to Akustische u. Kino-Gerate Gesellschaft m.b.H. Directional microphone with distance control. 3,223,782, 12–14–65, Cl. 179—1.
Weinstein, Bernard. Warning device for radio receivers. 3,223,927, 12–14–65, Cl. 325—401.
Weisfeld, Joseph: *See*—
Kraft, William M., and Weisfeld. 3,223,658.
Weisfeld, Joseph, and W. M. Kraft, to Tenneco Chemicals, Inc. Resinous composition comprising an epoxidized ester of a neopentyl polyhydric alcohol. 3,223,657, 12–14–65, Cl. 260—18.
Weiss, Arthur J., to Continental Can Co., Inc. Can carrier with reinforcing means. 3,223,308, 12–14–65, Cl. 229—40.
Weiss, Hugh R., to The Pantasota Co. End support for fragile tubular articles. 3,223,234, 12–14–65, Cl. 206—65.
Weiss, Mortimer E., to Sylvanie Electric Products Inc. Electron discharge device having filamentary cathode tensioning means. 3,223,877, 12–14–65, Cl. 313—278.
Weitzman, Norman G. Mounting and display stand for a plurality of vending machines. 3,223,245, 12–14–65, Cl. 211—4.
Welch, Robert V.: *See*—
Lacey, James W., Horsfield, and Welch. 3,223,157.
Welch, Russell A., Sr., 45% to E. A. Casaroll, and 5% to P. G. Hogue. Electric convection heater. 3,223,827, 12–14–65, Cl. 219—365.
Weldotron Corp.: *See*—
Siegel, Martin, and Zelnick. 3,222,800.
Welin-Berger, Guy J. O. Package for brewing a beverage. 3,223,229, 12–14–65, Cl. 206—5.
Weller, Erwin, to Alfred Gauthier, G.m.b.H. Photographic single-lens reflex camera having intra-lens shutter provided with swing-through blades. 3,223,014, 12–14–65, Cl. 95—61.
Wells, George E.: *See*—
Ford, Bruce, and Wells. 3,222,727.
Wells, Kergan and W. K., to W. W. Wells, Ltd. Anode basket with dangler for electrolytic plating. 3,223,611, 12–14–65, Cl. 204—297.
Wells, W. W. Ltd.: *See*—
Wells, Kergan and W. K. 3,223,611.
Wells, William K.: *See*—
Wells, Kergan, and W. K. 3,223,611.
Wendell, Charles B.: *See*—
Secord, Robert N., and Wendell. 3,222,847.
Wenghofer, Joseph D.: *See*—
Lansky, Zdenek J., and Wenghofer. 3,223,120.
Wenzel, Philip D.: *See*—
Carra, Emil F., Jr., and Wenzel. 3,223,176.
Weprin, Harry W., to Armour and Co. Process for preparing sausage. 3,223,530, 12–14–65, Cl. 99—109.
Werner, Helmut: *See*—
Sommer, Erwin, Gerlach, and Werner. 3,223,581.
Werner, R. D., Co., Inc.: *See*—
Benninger, James A., Jr. 3,223,369.
Wessels, Cletus M.: *See*—
Ross, Paul A., and Wessels. 3,222,955.
Wessels, Diana A., and G. H. Renner. Combination valance and support for window hangings. 3,223,146, 12–14–65, Cl. 160—38.
West Virginia Pulp and Paper Co.: *See*—
Obenshain, David N. 3,222,964.
Westerkowsky, Kurt, to North American Philips Co., Inc Circuit arrangement for radiation dose-measurement. 3,223,843, 12–14–65, Cl. 250—83.6.
Western States Machine Co., The: *See*—
Goodwin, Ralph C. 3,223,283.
Westinghouse Air Brake Co.: *See*—
Cook, James A., Jr. 3,223,936.
Luft, Philip H. 3,223,934.
Weston Hydraulics, Ltd.: *See*—
Cox, Robert M., and Griswold. 3,223,104.
Wetzler, Justin J.: *See*—
Pruim, Fred, and Wetzler. 3,222,693.
Weyerhaeuser Co.: *See*—
Flemming, Edward D., and Wislocker. 3,223,026.
Weymouth, George J., to Cooper-Weymouth, Inc. Coiled stock cradle feeders. 3,223,344, 12–14–65, Cl. 242—78.7.
Wheatley, Frank, Corp.: *See*—
Thresher, Griffith N. 3,223,042.
Wheaton, Herbert F., to American Flange & Mfg. Co., Inc. Snap-on closure assembly. 3,223,279, 12–14–65, Cl. 220—60.
Wheeler, Robert W., to Pittsburgh Plate Glass Co. Method and apparatus for vertically supporting and heat treating a glass sheet. 3,223,506, 12–14–65, Cl. 65—114.
Whirlpool Corp.: *See*—
Martz, Arthur F., Jr. 3,223,108.
Whitaker, William C.: *See*—
Cvacho, Daniel S., and Whitaker. 3,223,061.
Whitchurch, William E., to Champion Papers Inc. Bottle cap and method of applying. 3,223,268, 12–14–65, Cl. 215—38.

White, Ernest G.: *See*—
Fawdry, Charles F., and White. 3,223,442.
White, Wilfrid G. Sailing rig. 3,223,064, 12–14–65, Cl. 114—39.
Whiting Corp.: *See*—
Dedert, William G. 3,223,144.
Whitney, John B., to The Boeing Co. Method of bonding sheets of metal. 3,222,775, 12–14–65, Cl. 29—497.
Whitney, Lawrence H. Dual occupant velocipede for tug-of-war contests. 3,223,413, 12–14–65, Cl. 273—1.
Wieder, Harry H., to United States of America, Navy. Hall effect stroboscope and magnetometer. 3,223,924, 12–14–65, Cl. 324—45.
Wiegand, John R. Interceptor transformer for multi-binary information storage. 3,223,987, 12–14–65, Cl. 340—174.
Wiegert, Robert E., and T. J. Byrne, to The Aeronca Mfg. Corp. Method for preparing foamed insulating material. 3,223,537, 12–14–65, Cl. 106—40.
Wiegert, Robert E., and T. J. Byrne, to The Aeronca Mfg. Corp. Foamed zirconia insulating material. 3,223,538, 12–14–65, Cl. 106—40.
Wiehl, Klemens: *See*—
Kuhrt, Friedrich, Lippmann, and Wiehl. 3,223,353.
Wignall, Norman, to Kintslaid Engineering Co. Ltd. Compound needle. 3,222,891, 12–14–65, Cl. 66—121.
Wilburn Co.: *See*—
Wilburn, William N. 3,223,056.
Wilburn, William N., to Wilburn Co. Table construction. 3,223,056, 12–14–65, Cl. 108—150.
Wilhelmsen, Carl R.: *See*—
La Fond, Norman R., and Wilhelmsen. 3,223,933.
Wilkinson, Samuel, to Burroughs Wellcome & Co. (U.S.A.) Inc. Cardiac active acyl cymarols. 3,223,587, 12–14–65, Cl. 167—65.
Willems, Josef F.: *See*—
Vrancken, Marcel N., De Cat, and Willems. 3,223,528.
Williams, Chester I. Groutable rock anchor. 3,222,873, 12–14–65, Cl. 61—45.
Williams, Chester I. Electric grid floor heating system. 3,223,825, 12–14–65, Cl. 219—213.
Williams, Harold W., to Owens-Illinois Glass Co. Snap-on closure. 3,223,269, 12–14–65, Cl. 215—43.
Williams, Philip J.: *See*—
Ciuffini, Aurelio, and Williams. 3,223,376.
Williams, Robert D.: *See*—
Abbott, Henry H., Brown, Depp, Fracassi, and Williams. 3,223,976.
Williamson, Charles S., III. Method of fabricating structures. 3,223,759, 12–14–65, Cl. 264—34.
Willis, Claude E. F., to R. W. Crabtree & Sons Ltd. Web renewing mechanism. 3,223,340, 12–14–65, Cl. 242—58.3.
Willoughby, Francis E., to Willoughby Mfg. Co. Insulated electric fence wire structure. 3,223,796, 12–14–65, Cl. 200—61.41.
Willoughby Mfg. Co.: *See*—
Willoughby, Francis E. 3,223,796.
Wills, Marvin. Precision vise. 3,223,407, 12–14–65, Cl. 269—240.
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Esser, Wilhelm C. J., and Wilm. 3,223,961.
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Yamasa Shoyu Kabushiki Kaisha (d.b.a. Yamasa Shoyu Co., Ltd.): *See*—
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Yiannios, Christ N.: *See*—
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4–149 : 3,222,689
194 : 3,222,690
5– 59 : 3,222,691
66 : 3,222,692
68 : 3,222,693
246 : RE.25,951
338 : 3,222,694
344 : 3,222,695
355 : 3,222,696
361 : 3,222,697
3,222,698
7– 14.55: 3,222,699
8– 39 : 3,223,470
88 : 3,223,471
115.5 : 3,223,472
128 : 3,223,473
9– 11 : 3,222,700
330 : 3,222,701
10– 6 : 3,222,702
12– 12 : 3,222,703
15–104.3 : 3,222,704
176 : 3,222,705
320 : RE.25,939
340 : 3,222,706
345 : 3,222,707
16– 41 : 3,222,708
55 : 3,222,709
87.2 : 3,222,710
151 : 3,222,711
17– 26 : 3,222,712
3,222,713
18– 1 : 3,222,714
2 : 3,222,715
3,222,716
5 : 3,222,717
3,222,718
12 : 3,222,719
3,222,720
13 : 3,222,721
3,222,722
16 : 3,222,723
17 : 3,222,724
26 : 3,222,725
30 : 3,222,726
3,222,727
35 : 3,222,728
36 : 3,222,729
19–163 : 3,222,730
252 : 3,222,731
20– 16 : 3,222,732
52.2 : 3,222,733
55 : 3,222,734
22– 69 : 3,222,735
89 : 3,222,736
196 : 3,222,737
3,222,738
23– 14 : 3,223,474
14.5 : 3,223,475
85 : 3,223,477
103 : 3,223,478
107 : 3,223,479
3,223,480
109 : 3,223,481
141 : 3,223,482
143 : 3,223,483
3,223,484
253 : 3,223,485
3,223,486
254 : 3,223,487
3,223,488
255 : 3,223,489
288 : 3,223,490
3,223,491
290 : 3,223,492
301 : 3,223,493
24– 75 : 3,222,739
83 : 3,222,740
125 : 3,222,741
134 : 3,222,742
165 : 3,222,743
221 : 3,222,744
269 : 3,222,745
25– 14 : 3,222,746
24 : 3,222,747

25– 42 : 3,222,748
121 : 3,222,749
131 : 3,222,750
29– 25.31: 3,222,751
90 : 3,222,752
155.5 : 3,222,753
3,222,754
3,222,755
3,222,756
3,222,757
3,222,758
3,222,759
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157.1 : 3,222,762
157.3 : 3,222,763
3,222,764
159.01: 3,222,765
195 : 3,223,494
203 : 3,222,766
252 : 3,222,767
410 : 3,222,768
413 : 3,222,769
3,222,770
421 : 3,222,771
447 : 3,222,772
474.3 : 3,222,773
488 : 3,222,774
497 : 3,222,775
503 : 3,222,776
526 : 3,222,777
528 : 3,222,778
566 : 3,222,779
30– 6.4 : 3,222,780
210 : 3,222,781
223 : 3,222,782
230 : 3,222,783
276 : RE.25,947
293 : 3,222,784
355 : 3,222,785
33– 76 : 3,222,786
86 : 3,222,787
148 : 3,222,788
161 : 3,222,789
166 : 3,222,790
174 : 3,222,791
3,222,792
199 : 3,222,793
203.18: 3,222,794
226 : 3,222,795
34– 5 : 3,222,796
17 : 3,222,797
45 : 3,222,798
122 : 3,222,799
212 : 3,222,800
36– 39 : 3,222,801
37– 43 : 3,222,802
104 : 3,222,803
144 : 3,222,804
39– 84 : 3,222,805
3,222,806
40– 36 : 3,222,807
42– 44 : 3,222,808
70 : 3,222,809
87 : 3,222,810
43– 18 : 3,222,811
24 : 3,222,812
25 : 3,222,813
36 : 3,222,814
44– 63 : 3,223,496
70 : 3,223,497
71 : 3,223,495
46– 77 : 3,222,815
78 : 3,222,816
80 : 3,222,817
220 : 3,222,818
47– 38.1 : 3,222,819
51– 4 : 3,222,820
92 : 3,222,821
144 : 3,222,822
165 : 3,222,823
3,222,824
215 : 3,222,825
358 : 3,222,826
52– 9 : 3,222,827
11 : 3,222,828
92 : 3,222,829
98 : 3,222,830
99 : 3,222,831
207 : 3,222,832

52–211 : 3,222,833
221 : 3,222,834
223 : 3,222,835
281 : 3,222,836
288 : 3,222,837
403 : 3,222,838
498 : 3,222,839
561 : 3,222,840
731 : 3,222,841
742 : 3,222,842
53– 27 : 3,222,843
32 : 3,222,844
245 : 3,222,845
266 : 3,222,846
55– 71 : 3,222,847
131 : 3,222,848
163 : 3,222,849
500 : 3,222,850
56– 11 : 3,222,851
104 : 3,222,852
202 : 3,222,853
294 : 3,222,854
328 : 3,222,855
384 : 3,222,856
57– 35 : 3,222,857
141 : 3,222,858
160 : 3,222,859
58–152 : 3,222,860
59– 35 : 3,222,861
60– 35.6 : 3,222,862
3,222,863
39.51: 3,222,864
52 : 3,222,865
3,222,866
54.5 : 3,222,867
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3,222,869
61– 5 : 3,222,870
3,222,871
36 : 3,222,872
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45 : 3,222,873
48 : 3,222,874
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72.4 : 3,222,876
62– 6 : 3,222,877
13 : 3,222,878
22 : 3,222,879
58 : 3,222,880
3,222,881
80 : 3,222,882
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172 : 3,222,883
344 : RE.25,950
64– 1 : 3,222,884
11 : 3,222,885
26 : 3,222,886
32 : 3,222,887
65– 25 : 3,223,498
3,223,499
3,223,500
3,223,501
29 : 3,223,502
99 : 3,223,503
106 : 3,223,504
107 : 3,223,505
114 : 3,223,506
3,223,507
142 : 3,223,508
182 : 3,223,509
203 : 3,223,510
240 : 3,223,511
290 : 3,223,512
66– 1 : 3,222,888
28 : 3,222,889
43 : 3,222,890
121 : 3,222,891
134 : 3,222,892
192 : 3,222,893
67– 7.1 : 3,222,894
68– 5 : 3,222,895
12 : 3,222,896
70– 97 : 3,222,897
134 : 3,222,898
140 : 3,222,899
71– 2.3 : 3,223,513
3,223,514
3,223,515
3,223,516
2.7 : 3,223,517

71– 64 : 3,223,518
72– 21 : 3,222,900
39 : 3,222,901
56 : 3,222,902
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3,222,905
162 : 3,222,906
250 : 3,222,907
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332 : 3,222,910
363 : 3,222,911
402 : 3,222,912
429 : 3,222,913
453 : 3,222,914
457 : 3,222,915
73– 15 : 3,222,916
3,222,917
53 : 3,222,918
67.1 : 3,222,919
86 : 3,222,920
94 : 3,222,921
133 : 3,222,922
141 : 3,222,923
159 : 3,222,924
170 : 3,222,925
180 : 3,222,926
190 : 3,222,927
224 : 3,222,928
290 : 3,222,929
355 : 3,222,930
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74– 3.52: 3,222,935
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5.6 : 3,222,937
7 : 3,222,938
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190.5 : 3,222,944
200 : 3,222,945
236 : 3,222,946
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424.8 : 3,222,948
471 : 3,222,949
519 : 3,222,950
543 : 3,222,951
552 : 3,222,952
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801 : 3,222,954
826 : 3,222,955
75– 10 : 3,223,519
43 : 3,223,521
60 : 3,223,520
171 : 3,223,522
212 : 3,223,523
77– 4 : 3,222,956
81– 9.51: 3,222,957
109 : 3,222,958
177 : 3,222,959
82– 4 : 3,222,960
70.2 : 3,222,961
83 : 3,222,962
83– 10 : 3,222,963
26 : 3,222,964
27 : 3,222,965
98 : 3,222,966
100 : 3,222,967
128 : 3,222,968
152 : 3,222,969
157 : 3,222,970
218 : 3,222,971
564 : 3,222,972
640 : 3,222,973
84– 1.01: 3,223,768
1.18: 3,223,769
1.26: 3,223,770
3,223,771
383 : 3,222,974
85– 37 : 3,222,975
56 : 3,222,976
72 : 3,222,977
88– 14 : 3,222,978
3,222,979

88– 23 : 3,222,980
24 : 3,222,981
3,222,982
3,222,983
3,222,984
3,222,985
3,222,986
32 : 3,222,987
89– 1.7 : 3,222,988
155 : 3,222,989
90– 5 : 3,222,990
11 : 3,222,991
20 : 3,222,992
91– 20 : 3,222,993
224 : 3,222,994
359 : 3,222,995
382 : 3,222,996
407 : 3,222,997
413 : 3,222,998
434 : 3,222,999
448 : 3,223,000
92– 91 : 3,223,001
169 : 3,223,002
182 : 3,223,003
222 : 3,223,004
94– 17 : 3,223,005
45 : 3,223,006
95– 1.1 : 3,223,007
1.7 : 3,223,008
11 : 3,223,009
3,223,010
34 : 3,223,011
53 : 3,223,012
53.3 : 3,223,013
61 : 3,223,014
62 : 3,223,015
63 : 3,223,016
85 : 3,223,017
96– 29 : 3,223,524
35 : 3,223,525
46 : 3,223,526
53 : 3,223,527
94 : 3,223,528
98– 31 : 3,223,018
40 : RE.25,948
3,223,019
119 : 3,223,020
99– 48 : 3,223,529
109 : 3,223,530
3,223,531
123 : 3,223,532
140 : 3,223,533
3,223,534
171 : 3,223,535
236 : 3,223,021
259 : 3,223,022
283 : 3,223,023
352 : 3,223,024
377 : 3,223,025
100– 90 : 3,223,026
93 : 3,223,027
101– 40 : 3,223,028
93 : 3,223,029
109 : 3,223,031
115 : 3,223,030
149.2 : 3,223,032
368 : 3,223,033
102– 50 : 3,223,034
64 : 3,223,035
67 : 3,223,036
3,223,037
103– 1 : 3,223,038
2 : 3,223,039
11 : 3,223,040
3,223,041
38 : 3,223,042
87 : 3,223,043
136 : 3,223,044
150 : 3,223,045
161 : 3,223,046
162 : 3,223,047
104–102 : 3,223,048
105–392.5 : 3,223,049
420 : 3,223,050
454 : 3,223,051
3,223,052
106– 18 : 3,223,536
40 : 3,223,537
3,223,538
64 : 3,223,539

106– 65 : 3,223,540
69 : 3,223,541
89 : 3,223,542
213 : 3,223,543
3,223,544
287 : 3,223,545
288 : 3,223,546
316 : 3,223,547
107– 4 : 3,223,053
108–111 : 3,223,054
145 : 3,223,055
150 : 3,223,056
109– 59 : 3,223,057
110– 10 : 3,223,058
112– 2 : 3,223,059
151 : RE.25,945
228 : 3,223,060
113–120 : 3,223,061
3,223,062
121 : 3,223,063
114– 39 : 3,223,064
3,223,065
66.5 : 3,223,066
115– 35 : 3,223,067
116– 65 : 3,223,068
70 : 3,223,069
117– 17.5 : 3,223,548
119.8 : 3,223,549
138.8 : 3,223,550
140 : 3,223,551
200 : 3,223,552
215 : 3,223,553
217 : 3,223,554
119– 16 : 3,223,070
28 : 3,223,071
120– 42.03: 3,223,072
91 : 3,223,073
122– 2 : 3,223,074
123– 41.24: 3,223,075
182 : 3,223,076
126– 25 : 3,223,077
110 : 3,223,078
271.2 : 3,223,079
343.5 : 3,223,080
360 : 3,223,081
128– 91 : 3,223,082
92 : 3,223,083
134 : 3,223,084
136 : 3,223,085
142 : 3,223,086
303.13: 3,223,087
310 : 3,223,088
541 : 3,223,089
131–140 : 3,223,090
206 : 3,223,091
132– 7 : 3,223,092
38 : 3,223,093
41 : 3,223,094
46 : 3,223,095
79 : 3,223,096
134– 46 : 3,223,097
135– 4 : 3,223,098
47 : 3,223,099
136– 14 : 3,223,555
86 : 3,223,556
133 : 3,223,557
168 : 3,223,558
175 : 3,223,559
137– 68 : 3,223,100
81.5 : 3,223,101
82 : 3,223,102
83 : 3,223,103
85 : 3,223,104
3,223,105
86 : 3,223,106
93 : 3,223,107
3,223,108
155 : 3,223,109
298 : 3,223,110
454.6 : 3,223,111
458 : 3,223,112
467 : 3,223,113
494 : 3,223,114
501 : 3,223,115
505.13: 3,223,116
556.6 : 3,223,117
572 : 3,223,118
596 : 3,223,119
596.16: 3,223,120
604 : 3,223,121

137–625.4 : 3,223,122
625.46: 3,223,123
636.1 : 3,223,124
138–157 : 3,223,125
140– 3 : 3,223,126
141–364 : 3,223,127
143– 37 : 3,223,128
144– 1 : 3,223,129
2 : 3,223,130
3 : 3,223,131
87 : 3,223,132
146– 16 : 3,223,133
148– 1.5 : 3,223,560
23 : 3,223,561
33 : RE.25,952
125 : 3,223,562
149– 19 : 3,223,563
152–330 : 3,223,134
156– 53 : 3,223,564
86 : 3,223,565
123 : 3,223,566
253 : 3,223,567
255 : 3,223,568
294 : 3,223,569
298 : 3,223,570
392 : 3,223,571
394 : 3,223,572
396 : 3,223,573
552 : 3,223,574
158– 4.5 : 3,223,135
11 : 3,223,136
28 : 3,223,137
3,223,138
33 : 3,223,139
36.4 : 3,223,140
73 : 3,223,141
117 : 3,223,142
125 : 3,223,143
159– 13 : 3,223,144
47 : 3,223,145
160– 38 : 3,223,146
84 : 3,223,147
348 : 3,223,148
161– 83 : 3,223,575
84 : 3,223,576
193 : 3,223,577
254 : 3,223,578
162–123 : 3,223,579
145 : 3,223,580
157 : 3,223,581
165– 33 : 3,223,149
34 : 3,223,150
39 : 3,223,151
146 : 3,223,152
152 : 3,223,153
158 : 3,223,154
176 : 3,223,155
166– 6 : 3,223,156
7 : 3,223,157
11 : 3,223,158
21 : 3,223,159
27 : 3,223,160
33 : 3,223,161
3,223,162
3,223,163
35 : 3,223,164
38 : 3,223,165
3,223,166
75 : 3,223,167
89 : 3,223,168
120 : 3,223,169
208 : 3,223,170
167– 30 : 3,223,582
33 : 3,223,583
3,223,584
3,223,585
65 : 3,223,586
3,223,587
93 : 3,223,588
169– 1 : 3,223,171
3,223,172
31 : 3,223,173
172– 43 : 3,223,174
264 : 3,223,175
265 : 3,223,176
449 : 3,223,177
582 : 3,223,178
624 : 3,223,179
173– 7 : 3,223,180
18 : 3,223,181
114 : 3,223,182
174– 17.05: 3,223,772
25 : 3,223,773
61 : 3,223,774
84 : 3,223,775
138 : 3,223,776
175– 27 : 3,223,183
41 : 3,223,184
65 : 3,223,185
71 : 3,223,186
320 : 3,223,187

175–341 : 3,223,188
176– 22 : 3,223,589
24 : 3,223,590
52 : 3,223,591
177–149 : 3,223,189
207 : 3,223,190
178– 5.4 : 3,223,777
7.1 : 3,223,778
66 : 3,223,779
179– 1 : 3,223,780
3,223,781
3,223,782
15 : 3,223,783
3,223,784
18 : 3,223,785
3,223,786
84 : 3,223,787
3,223,788
100.2 : 3,223,790
100.4 : 3,223,789
180– 6.48: 3,223,191
13 : 3,223,192
77 : 3,223,193
181– .5 : 3,223,194
24 : 3,223,195
184– 6 : 3,223,196
3,223,197
7 : 3,223,198
187– 2 : 3,223,199
29 : 3,223,200
188– 67 : 3,223,201
78 : 3,223,202
3,223,203
79.5 : 3,223,204
85 : 3,223,205
96 : 3,223,206
152 : 3,223,207
184 : 3,223,208
189– 36 : 3,223,209
192– .02: 3,223,210
.044 3,223,211
18 : 3,223,212
45 : 3,223,213
107 : 3,223,214
193– 32 : 3,223,215
194– 1 : 3,223,216
39 : 3,223,217
195– 28 : 3,223,592
63 : 3,223,593
68 : 3,223,594
139 : 3,223,595
197– 6 : 3,223,218
12 : 3,223,219
22 : 3,223,220
127 : 3,223,221
151 : 3,223,222
198– 19 : 3,223,223
3,223,224
37 : 3,223,225
38 : 3,223,226
64 : 3,223,227
204 : 3,223,228
200– 6 : 3,223,791
3,223,792
11 : 3,223,793
16 : 3,223,794
61.4 : 3,223,795
61.41: 3,223,796
61.54: 3,223,797
61.69: 3,223,798
87 : 3,223,799
3,223,800
3,223,801
98 : 3,223,802
116 : 3,223,803
122 : 3,223,804
138 : 3,223,805
3,223,806
3,223,807
3,223,808
3,223,809
149 : 3,223,810
152 : 3,223,811
153 : 3,223,812
159 : 3,223,813
166 : 3,223,814
202–201 : 3,223,596
204– 1 : 3,223,597
3,223,598
15 : 3,223,599
26 : 3,223,600
56 : 3,223,601
140.5 : 3,223,602
143 : 3,223,603
147 : 3,223,604
173 : 3,223,605
180 : 3,223,606
181 : 3,223,607
195 : 3,223,608
3,223,609
224 : 3,223,610

204–297 : 3,223,611
301 : 3,223,612
206– .5 : 3,223,229
45.31: 3,223,230
47 : 3,223,231
65 : RE.25,949
3,223,232
3,223,233
3,223,234
74 : 3,223,235
82 : 3,223,236
208– 21 : 3,223,613
24 : 3,223,614
27 : 3,223,615
89 : 3,223,616
138 : 3,223,617
247 : 3,223,618
209– 2 : 3,223,237
166 : 3,223,238
270 : 3,223,239
210– 24 : 3,223,619
30 : 3,223,620
96 : 3,223,240
3,223,241
139 : 3,223,242
242 : 3,223,243
247 : 3,223,244
211– 4 : 3,223,245
134 : 3,223,246
163 : 3,223,247
212– 17 : 3,223,248
39 : 3,223,249
59 : 3,223,250
214– 1 : 3,223,251
3,223,252
6 : 3,223,253
8.5 : 3,223,254
11 : 3,223,255
17 : 3,223,256
18 : 3,223,257
38 : 3,223,258
3,223,259
83.1 : 3,223,260
132 : 3,223,261
140 : 3,223,262
454 : 3,223,263
519 : 3,223,264
650 : 3,223,265
707 : 3,223,266
730 : 3,223,267
215– 38 : 3,223,268
43 : 3,223,269
217– 16 : 3,223,270
60 : 3,223,271
219– 9.5 : 3,223,815
61 : 3,223,816
70 : 3,223,817
73 : 3,223,818
74 : 3,223,819
91 : 3,223,820
106 : 3,223,821
121 : 3,223,822
127 : 3,223,823
200 : 3,223,824
213 : 3,223,825
352 : 3,223,826
365 : 3,223,827
370 : 3,223,828
522 : 3,223,829
220– 1 : 3,223,272
2.1 : 3,223,273
7 : 3,223,274
31 : 3,223,275
46 : 3,223,276
53 : 3,223,277
60 : 3,223,278
3,223,279
102 : 3,223,280
221– 46 : 3,223,281
222– 41 : 3,223,282
56 : 3,223,283
57 : 3,223,284
70 : 3,223,285
175 : 3,223,286
182 : 3,223,287
194 : 3,223,288
209 : 3,223,289
228 : 3,223,290
249 : 3,223,291
321 : 3,223,292
394 : 3,223,293
434 : 3,223,294
438 : 3,223,295
442 : 3,223,296
485 : 3,223,297
541 : 3,223,298
223– 46 : 3,223,299
224– 25 : 3,223,300
42.1 : 3,223,301
3,223,302
226–197 : 3,223,303

227– 81 : 3,223,304
229– 1.5 : 3,223,305
2.5 : 3,223,306
28 : 3,223,307
40 : 3,223,308
49 : 3,223,309
56 : 3,223,310
3,223,311
92.8 : 3,223,312
230–117 : 3,223,313
145 : 3,223,476
232– 5 : 3,223,314
233– 24 : 3,223,315
235– 1 : 3,223,316
54 : 3,223,317
60 : 3,223,318
92 : 3,223,830
98 : 3,223,319
108 : 3,223,320
114 : 3,223,321
117 : 3,223,322
144 : 3,223,323
164 : 3,223,831
201 : 3,223,324
236– 9 : 3,223,325
14 : 3,223,326
238– 10 : 3,223,327
25 : 3,223,328
239–142 : 3,223,329
168 : 3,223,330
206 : RE.25,942
464 : 3,223,331
492 : 3,223,332
240– 2.18: 3,223,832
6.43: 3,223,833
46.57: 3,223,834
241– 5 : 3,223,333
36 : 3,223,334
109 : 3,223,335
172 : 3,223,336
262 : 3,223,337
242– 55.12: 3,223,338
58.3 : 3,223,339
3,223,340
72 : 3,223,341
74.2 : 3,223,342
78.1 : 3,223,343
78.7 : 3,223,344
80 : 3,223,345
84.2 : 3,223,346
3,223,347
84.21: 3,223,348
84.45: 3,223,349
86.52: 3,223,350
154 : 3,223,351
156.2 : 3,223,352
243– 29 : 3,223,353
244– 12 : 3,223,354
3,223,355
13 : 3,223,356
14 : 3,223,357
17.13: 3,223,359
17.17: 3,223,358
23 : 3,223,360
75 : 3,223,361
77 : 3,223,362
3,223,363
78 : 3,223,364
90 : 3,223,365
3,223,366
246–428 : 3,223,835
248– 27 : 3,223,367
158 : 3,223,368
210 : 3,223,369
214 : 3,223,370
251 : 3,223,371
313 : 3,223,372
339 : 3,223,373
358 : 3,223,374
361 : 3,223,375
417 : 3,223,376
419 : 3,223,377
249– 15 : 3,223,378
97 : 3,223,379
250– 41.9 : 3,223,836
49.5 : 3,223,837
65 : 3,223,838
83.1 : 3,223,839
83.3-: 3,223,840
3,223,841
3,223,842
83.6 : 3,223,843
218 : 3,223,844
220 : 3,223,845
234 : 3,223,846
251–284 : 3,223,380
328 : 3,223,381
252– 8.5 : 3,223,621
8.6 : 3,223,623
18 : 3,223,624

252– 18 : 3,223,625
25 : 3,223,626
3,223,627
28 : 3,223,628
3,223,629
33 : 3,223,630
33.6 : 3,223,631
3,223,632
40 : 3,223,633
42.7 : 3,223,634
51.5 : 3,223,635
56 : 3,223,636
3,223,637
59 : 3,223,638
62.2 : 3,223,639
62.3 : 3,223,640
62.5 : 3,223,641
78 : 3,223,642
106 : 3,223,643
3,223,644
3,223,645
117 : 3,223,646
135 : 3,223,647
137 : 3,223,648
312 : 3,223,649
389 : 3,223,650
418 : 3,223,651
429 : 3,223,653
439 : 3,223,652
464 : 3,223,653
253– 1 : 3,223,382
254–131.5 : 3,223,383
134.3 : 3,223,384
173 : 3,223,385
185 : 3,223,386
256– 1 : 3,223,387
259– 4 : 3,223,388
106 : 3,223,389
260– 2.5 : 3,223,654
4 : 3,223,655
17.3 : 3,223,656
18 : 3,223,657
22 : 3,223,658
3,223,659
23 : 3,223,660
3,223,661
28.5 : 3,223,662
3,223,663
29.1 : 3,223,664
29.2 : 3,223,665
3,223,666
29.3 : 3,223,667
3,223,668
29.4 : 3,223,669
29.6 : 3,223,670
31.6 : 3,223,671
32.4 : 3,223,672
34.2 : 3,223,673
41 : 3,223,674
3,223,675
41.5 : 3,223,676
47 : 3,223,677
3,223,678
66 : 3,223,679
75 : 3,223,680
77.5 : 3,223,681
3,223,682
78 : 3,223,683
79.5 : 3,223,684
79.7 : 3,223,685
80 : 3,223,686
80.5 : 3,223,687
88.7 : 3,223,688
92.1 : 3,223,689
93.5 : 3,223,690
3,223,691
94.3 : 3,223,692
3,223,693
3,223,694
94.9 : RE.25,941
3,223,695
97 : 3,223,696
124 : 3,223,697
3,223,698
209 : 3,223,699
239.1 : 3,223,700
239.5 : 3,223,701
239.57: 3,223,702
243 : 3,223,703
247.1 : 3,223,704
249.9 : 3,223,705
250 : 3,223,706
251 : 3,223,707
287 : 3,223,708
3,223,709
297 : 3,223,710
299 : 3,223,711
327 : 3,223,712
338 : 3,223,713
346.1 : 3,223,714
348 : 3,223,715
396 : 3,223,716

260–397.4 : 3,223,717
404 : 3,223,718
410.9 : 3,223,719
448 : 3,223,720
453 : 3,223,721
456 : 3,223,722
465 : 3,223,723
465.8 : 3,223,724
471 : 3,223,725
485 : 3,223,726
510 : 3,223,727
515 : 3,223,728
534 : 3,223,729
537 : 3,223,730
3,223,731
561 : 3,223,732
566 : 3,223,733
583 : 3,223,734
3,223,735
606.5 : 3,223,736
3,223,737
609 : 3,223,738
653.1 : 3,223,739
654 : 3,223,740
666 : 3,223,741
668 : 3,223,742
669 : 3,223,743
671 : 3,223,744
672 : 3,223,745
3,223,746
674 : 3,223,747
3,223,748
683.48: 3,223,749
683.65: 3,223,750
855 : 3,223,751
873 : 3,223,752
928 : 3,223,753
948 : 3,223,754
986 : 3,223,755
261– 18 : 3,223,390
23 : 3,223,391
27 : 3,223,392
28 : 3,223,393
78 : 3,223,394
263– 33 : 3,223,395
264– 3 : 3,223,756
22 : 3,223,757
30 : 3,223,758
34 : 3,223,759
94 : 3,223,760
95 : 3,223,761
3,223,762
112 : 3,223,763
178 : 3,223,764
229 : 3,223,765
288 : 3,223,766
326 : 3,223,767
266– 5 : 3,223,396
34 : 3,223,397
3,223,398
36 : 3,223,399
267– 1 : 3,223,400
3,223,401
268– 53 : 3,223,402
3,223,403
125 : 3,223,404
269–137 : 3,223,405
153 : 3,223,406
240 : 3,223,407
271– 71 : 3,223,409
89 : 3,223,410
272– 1 : 3,223,411
8 : 3,223,412
273– 1 : 3,223,413
51 : 3,223,415
52 : 3,223,414
54 : 3,223,416
63 : 3,223,408
86 : 3,223,417
105.3 : 3,223,418
131 : 3,223,419
134 : 3,223,420
139 : 3,223,421
274– 9 : 3,223,422
11 : 3,223,423
277– 23 : 3,223,424
115 : 3,223,425
153 : 3,223,426
176 : 3,223,427
279– 36 : 3,223,428
280– 36 : 3,223,429
42 : 3,223,430
47.38: 3,223,431
79.2 : 3,223,432
96.2 : 3,223,433
456 : 3,223,434
489 : 3,223,435
281– 21 : 3,223,436
282– 11.5 : 3,223,437
285–233 : 3,223,438
373 : 3,223,439

289– 1.2 : 3,223,440
292–341.18: 3,223,441
294– 64 : 3,223,442
65 : 3,223,443
296– 26 : 3,223,444
44 : 3,223,445
136 : 3,223,446
297–397 : 3,223,447
418 : 3,223,448
429 : 3,223,449
445 : 3,223,450
455 : RE.25,943
299– 85 : 3,223,451
92 : 3,223,452
300– 2 : 3,223,453
3,223,454
301– 36 : 3,223,455
302– 17 : 3,223,456
53 : 3,223,457
303– 6 : 3,223,458
21 : 3,223,459
38 : 3,223,460
305– 2 : 3,223,461
34 : 3,223,462
307– 88 : 3,223,847
88.5 : 3,223,848
3,223,849
3,223,850
3,223,851
3,223,852
3,223,853
3,223,854
3,223,855

307– 88.5 : 3,223,856
308– 9 : 3,223,463
72 : 3,223,464
187 : 3,223,465
310– 4 : 3,223,857
3,223,858
11 : 3,223,859
3,223,860
21 : 3,223,861
68 : 3,223,862
75 : 3,223,863
94 : 3,223,864
103 : 3,223,865
155 : 3,223,866
166 : 3,223,867
185 : 3,223,868
234 : 3,223,869
268 : 3,223,870
312–220 : 3,223,466
253 : 3,223,467
255 : 3,223,468
313– 83 : 3,223,871
92 : 3,223,872
161 : 3,223,873
231 : 3,223,874
273 : 3,223,875
276 : 3,223,876
278 : 3,223,877
348 : 3,223,878
3,223,879
315– 12 : 3,223,880
39 : 3,223,881
39.3 : 3,223,882

315– 39.51: 3,223,883
60 : 3,223,884
111 : 3,223,885
151 : 3,223,886
223 : 3,223,887
317– 11 : 3,223,888
14 : 3,223,889
15 : 3,223,890
27 : 3,223,891
43 : 3,223,892
65 : 3,223,893
100 : 3,223,894
101 : 3,223,895
158 : 3,223,896
3,223,897
159 : 3,223,898
230 : 3,223,899
234 : 3,223,900
3,223,901
3,223,902
235 : 3,223,903
3,223,904
258 : 3,223,905
318– 7 : 3,223,906
118 : 3,223,907
138 : RE.25,944
139 : 3,223,908
3,223,909
207 : 3,223,910
325 : 3,223,911
341 : 3,223,912
320– 39 : 3,223,913

321– 8 : 3,223,914
18 : 3,223,915
28 : 3,223,916
68 : 3,223,917
69 : 3,223,918
323– 43.5 : 3,223,919
44 : 3,223,920
56 : 3,223,921
66 : 3,223,922
76 : 3,223,923
324– 45 : 3,223,924
325–163 : 3,223,925
390 : 3,223,926
401 : 3,223,927
328– 23 : 3,223,928
32 : 3,223,929
95 : 3,223,930
154 : 3,223,931
330– 4 : 3,223,932
15 : 3,223,933
3,223,934
19 : 3,223,935
3,223,936
28 : 3,223,937
32 : 3,223,938
55 : 3,223,939
84 : 3,223,940
109 : 3,223,941
331– 8 : 3,223,942
17 : 3,223,943
94.5 : 3,223,944
113 : 3,223,945

331–144 : 3,223,946
333– 7 : 3,223,947
9 : 3,223,948
24 : 3,223,949
98 : 3,223,950
336– 92 : 3,223,951
136 : 3,223,952
3,223,953
3,223,954
211 : 3,223,955
339– 14 : 3,223,956
18 : 3,223,957
75 : 3,223,958
94 : 3,223,959
221 : 3,223,960
223 : 3,223,961
256 : 3,223,962
259 : 3,223,963
340– 1 : 3,223,964
3 : 3,223,965
15.5 : 3,223,966
3,223,967
18 : 3,223,968
58 : 3,223,969
3,223,970
146.1 : 3,223,974
146.2 : 3,223,971
146.3 : 3,223,972
3,223,973
3,223,975
147 : 3,223,976
3,223,977

340–166 : 3,223,978
172.5 : 3,223,979
3,223,980
3,223,981
3,223,982
174 : 3,223,983
3,223,984
3,223,985
3,223,986
3,223,987
174.1 : 3,223,988
266 : 3,223,989
324 : 3,223,990
347 : 3,223,991
3,223,992
3,223,993
3,223,994
3,223,995
343– 7 : 3,223,996
8 : 3,223,997
12 : 3,223,998
17.1 : 3,223,999
18 : 3,224,000
3,224,001
3,224,002
709 : 3,224,003
771 : 3,224,004
772 : 3,224,005
781 : 3,224,006
915 : 3,224,007
346– 74 : 3,224,008
352– 14 : 3,223,469

CLASSIFICATION OF DESIGNS

D 2– 3 : 203,150
203,151
D 3– 13 : 203,152
203,153
16 : 203,154
D 9– 2 : 203,155
D10– 9 : 203,156
D13– 1 : 203,157
203,158
7 : 203,159
203,160
203,161
203,162
203,163
D14– 3 : 203,164
6 : 203,165
203,166

D15– 1 : 203,167
203,168
203,169
203,170
3 : 203,171
8 : 203,172
203,173
D16– 1 : 203,174
D21– 6 : 203,175
D25– 1 : 203,176
D26– 1 : 203,177
203,178
203,179
203,180
203,181
203,182
5 : 203,182
12 : 203,183

D26– 13 : 203,184
14 : 203,185
203,186
203,187
D28– 1 : 203,188
203,189
D29– 6 : 203,190
28 : 203,191
D31– 4 : 203,192
203,193
D33– 6 : 203,194
7 : 203,195
14 : 203,197
203,198
203,199

D33– 14 : 203,200
D34– 2 : 203,201
5 : 203,202
203,203
203,204
203,205
D35– 1 : 203,206
203,207
D41– 1 : 203,208
D44– 4 : 203,209
15 : 203,210
21 : 203,211
22 : 203,212
29 : 203,213
D48– 2 : 203,214
20 : 203,215

D48– 24 : 203,216
31 : 203,217
D49– 1 : 203,218
203,219
D50– 3 : 203,220
D52– 2 : 203,221
3 : 203,222
6 : 203,223
D54– 2 : 203,224
D58– 5 : 203,225
203,226
6 : 203,227
12.6 : 203,230
203,231

D58– 17 : 203,232
D61– 1 : 203,233
D74– 17 : 203,234
D80– 9 : 203,235
11 : 203,236
D85– 2 : 203,237
8 : 203,238
D87– 2 : 203,239
3 : 203,240
D90– 8 : 203,241
20 : 203,242
D91– 3 : 203,243
203,244
203,245
203,246
D92– 26 : 203,247

GEOGRAPHICAL INDEX OF RESIDENCE OF INVENTORS

(U.S. States, Territories and Armed Forces, the Commonwealth of Puerto Rico, and the Canal Zone)

Alabama	1	Louisiana	17	Pennsylvania	37
Alaska	53	Maine	18	Puerto Rico	51
Arizona	2	Maryland	19	Rhode Island	38
Arkansas	3	Massachusetts	20	South Carolina	39
California	4	Michigan	21	South Dakota	40
Canal Zone	57	Minnesota	22	Tennessee	41
Colorado	5	Mississippi	23	Texas	42
Connecticut	6	Missouri	24	U.S. Army	55
Delaware	7	Montana	25	U.S. Air Force	54
District of Columbia	8	Nebraska	26	U.S. Navy	56
Florida	9	Nevada	27	U.S. Samoa	59
Georgia	10	New Hampshire	28	Utah	43
Guam	58	New Jersey	29	Vermont	44
Hawaii	50	New Mexico	30	Virgin Islands	52
Idaho	11	New York	31	Virginia	45
Illinois	12	North Carolina	32	Washington	46
Indiana	13	North Dakota	33	West Virginia	47
Iowa	14	Ohio	34	Wisconsin	48
Kansas	15	Oklahoma	35	Wyoming	49
Kentucky	16	Oregon	36		

(First number in listing denotes location according to above key. Refer to patent number in body of the Official Gazette to obtain details as to inventor name, location, etc.)

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1 : 3,222,771
3,222,799
3,222,803
3,222,961
3,222,988
3,223,099
3,223,418
3,223,550
2 : 3,222,705
3,222,788
3,222,806
3,222,826
3,222,848
3,222,909
3,223,006
3,223,393
3,223,410
3,223,904
3,223,947
4 : RE.25,942
RE.25,948
RE.25,949
3,222,691
3,222,695
3,222,704
3,222,707
3,222,732
3,222,749
3,222,750
3,222,754
3,222,766
3,222,779
3,222,783
3,222,785
3,222,796
3,222,812
3,222,829
3,222,837
3,222,842
3,222,851
3,222,862
3,222,864
3,222,869
3,222,887
3,222,897
3,222,904
3,222,905
3,222,914
3,222,916
3,222,919
3,222,930
3,222,933
3,222,936
3,222,943
4 : 3,222,960
3,222,976
3,222,977
3,222,981
3,223,007
3,223,009
3,223,011
3,223,019
3,223,022
3,223,024
3,223,034
3,223,053
3,223,070
3,223,079
3,223,084
3,223,086
3,223,104
3,223,127
3,223,131
3,223,178
3,223,181
3,223,183
3,223,190
3,223,195
3,223,202
3,223,208
3,223,209
3,223,242
3,223,245
3,223,246
3,223,263
3,223,282
3,223,298
3,223,300
3,223,303
3,223,321
3,223,337
3,223,343
3,223,356
3,223,361
3,223,371
3,223,372
3,223,384
3,223,387
3,223,389
3,223,390
3,223,397
3,223,398
3,223,399
3,223,402
3,223,405
3,223,423
3,223,424
3,223,426
4 : 3,223,438
3,223,457
3,223,466
3,223,488
3,223,494
3,223,521
3,223,533
3,223,562
3,223,597
3,223,599
3,223,608
3,223,609
3,223,615
3,223,628
3,223,629
3,223,635
3,223,638
3,223,707
3,223,718
3,223,744
3,223,777
3,223,779
3,223,795
3,223,800
3,223,802
3,223,811
3,223,839
3,223,846
3,223,849
3,223,851
3,223,855
3,223,858
3,223,859
3,223,861
3,223,878
3,223,880
3,223,897
3,223,903
3,223,922
3,223,924
3,223,929
3,223,939
3,223,957
3,223,965
3,223,972
3,223,980
3,223,990
3,223,998
3,224,008
5 : 3,222,778
3,222,811
3,222,945
3,223,100
3,223,407
6 : 3,222,717
3,222,720
3,222,725
3,222,728
3,222,793
3,222,815
3,222,816
3,222,917
3,222,921
3,222,971
3,222,978
3,222,992
3,223,001
3,223,075
3,223,096
3,223,098
3,223,221
3,223,287
3,223,292
3,223,294
3,223,316
3,223,322
3,223,324
3,223,326
3,223,344
3,223,373
3,223,376
3,223,386
3,223,411
3,223,416
3,223,492
3,223,511
3,223,543
3,223,544
3,223,591
3,223,606
3,223,612
3,223,760
3,223,872
7 : 3,223,032
3,223,388
3,223,614
3,223,618
3,223,674
3,223,696
3,223,757
8 : 3,222,929
3,222,980
3,223,083
3,223,319
3,223,616
3,224,006
3,224,007
9 : 3,222,740
3,222,841
3,222,855
3,222,875
3,222,889
3,222,895
3,223,093
3,223,254
3,223,335
3,223,347
3,223,348
3,223,439
3,223,513
3,223,623
3,223,841
3,223,978
10 : 3,222,818
3,222,898
3,223,833
11 : 3,223,375
12 : RE.25,950
RE.25,951
3,222,689
3,222,693
3,222,702
3,222,709
3,222,710
3,222,711
3,222,733
3,222,737
3,222,741
3,222,745
3,222,753
3,222,757
3,222,758
3,222,760
3,222,763
3,222,764
3,222,794
3,222,798
3,222,834
3,222,836
3,222,874
3,222,894
3,222,899
3,222,902
3,222,907
3,222,920
3,222,932
3,222,962
3,222,989
3,223,040
3,223,049
3,223,051
3,223,055
9 : 3,223,080
3,223,094
3,223,105
3,223,110
3,223,115
3,223,120
3,223,136
3,223,141
3,223,144
3,223,148
3,223,155
3,223,176
3,223,191
3,223,193
3,223,214
3,223,228
3,223,236
3,223,247
3,223,268
3,223,277
3,223,278
3,223,293
3,223,299
3,223,305
3,223,329
3,223,383
3,223,401
3,223,468
3,223,479
3,223,480
3,223,496
3,223,497
3,223,517
3,223,522
3,223,530
3,223,531
3,223,534
3,223,578
3,223,604
3,223,613
3,223,620
3,223,626
3,223,652
3,223,672
3,223,680
3,223,683
3,223,714
3,223,723
3,223,750
3,223,770
3,223,775
3,223,778
3,223,781
3,223,794
12 : 3,223,804
3,223,805
3,223,810
3,223,813
3,223,815
3,223,889
3,223,898
3,223,914
3,223,917
3,223,934
3,223,951
3,223,953
13 : 3,222,708
3,222,721
3,222,761
3,222,772
3,222,910
3,222,915
3,222,999
3,223,004
3,223,023
3,223,052
3,223,069
3,223,102
3,223,146
3,223,150
3,223,151
3,223,207
3,223,280
3,223,307
3,223,350
3,223,400
3,223,429
3,223,435
3,223,436
3,223,666
3,223,761
3,223,909
3,223,926
3,223,935
3,223,937
3,223,945
14 : 3,222,683
3,222,685
3,222,821
3,222,958
3,223,265
3,223,448
3,223,793
3,223,958
15 : 3,222,752
3,222,775
3,222,805
3,222,926
3,222,949
3,223,227
3,223,272
3,223,291
3,223,365
3,223,366
3,223,462
3,223,856
3,223,928
3,224,005
16 : 3,222,787
3,222,882
3,223,090
3,223,768
3,223,896
17 : 3,222,849
3,222,883
3,223,164
3,223,168
3,223,483
3,223,484
3,223,708
3,223,759
18 : 3,223,064
3,223,205
19 : RE.25,941
3,222,718
3,222,786
3,222,810
3,222,814
3,222,925
3,222,964
3,223,036
3,223,037
3,223,101
3,223,237
3,223,315
3,223,358
3,223,359
3,223,441
3,223,553
3,223,595
3,223,725
3,223,873
3,223,954
3,223,992
3,223,997
20 : RE.25,944
3,222,712
3,222,726
3,222,755
3,222,847
3,222,877
3,222,901
3,222,954
3,222,965
3,222,970
3,222,986
3,223,135
3,223,192
3,223,345
3,223,432
3,223,551
3,223,602
3,223,641
3,223,654
3,223,679
3,223,874
3,223,884
3,223,913
3,223,918
3,223,927
3,223,944
3,223,952
3,223,999
21 : 3,222,690
3,222,698
3,222,734
3,222,736
3,222,743
3,222,767
3,222,769
3,222,807
3,222,835
3,222,838
3,222,858
3,222,868
3,222,873
3,222,911
3,222,923
3,222,944
3,222,950
3,222,951
3,222,953
3,222,975
3,222,982
3,222,997
3,223,000
3,223,031
3,223,045
3,223,047
3,223,056
3,223,078
3,223,119
3,223,137
3,223,142
3,223,143
3,223,174
3,223,180
3,223,197
3,223,203
3,223,226
3,223,241
3,223,266
3,223,271
3,223,281
3,223,285
3,223,301
3,223,302
3,223,323
3,223,377
3,223,392
3,223,408
3,223,412
3,223,413
3,223,414
3,223,433
3,223,445
3,223,446
3,223,463
3,223,464
3,223,577
3,223,583
3,223,703
3,223,705
3,223,719
3,223,774
3,223,791
3,223,797
3,223,807
3,223,825
3,223,827
3,223,831
3,223,908
3,223,921
3,223,946
3,223,956
3,223,963
22 : 3,222,822
3,222,993
3,223,138
3,223,189
3,223,255
3,223,256
3,223,264
3,223,330
3,223,355
3,223,518
3,223,526
3,223,659
3,223,661
3,223,681
3,223,730
3,223,734
3,223,845
24 : RE.25,946
3,222,856
3,223,370
3,223,419
3,223,451
3,223,596
3,223,649
3,223,737
25 : 3,223,199
3,223,379
26 : 3,222,706
3,223,796
27 : 3,223,854
28 : 3,222,738
3,222,751
3,223,217
3,223,822
29 : RE.25,952
3,222,730
3,222,744
3,222,748
3,222,756
3,222,768
3,222,777
3,222,795
3,222,800
3,222,861
3,222,870
3,222,871
3,222,896
3,222,937
3,222,957
3,222,966
3,222,984
3,223,028
3,223,029
3,223,043
3,223,060
3,223,082
3,223,089
3,223,091
3,223,108
3,223,212
3,223,215
3,223,222
3,223,232
3,223,234
3,223,238
3,223,259
3,223,273
3,223,279
3,223,308
3,223,362
3,223,364
3,223,403
3,223,473
3,223,486
3,223,495
3,223,514
3,223,515
3,223,516
3,223,536
3,223,541
3,223,546
3,223,556
3,223,567
3,223,575
3,223,585
3,223,586
3,223,617
3,223,619
3,223,624
3,223,625
3,223,627
3,223,631
3,223,632
3,223,633
3,223,634
3,223,636
3,223,651
3,223,657
3,223,658
3,223,660
3,223,662
29 : 3,223,669
3,223,670
3,223,671
3,223,676
3,223,677
3,223,687
3,223,688
3,223,690
3,223,701
3,223,704
3,223,711
3,223,713
3,223,715
3,223,716
3,223,726
3,223,727
3,223,728
3,223,746
3,223,751
3,223,755
3,223,756
3,223,771
3,223,776
3,223,780
3,223,785
3,223,786
3,223,788
3,223,824
3,223,837
3,223,844
3,223,850
3,223,867
3,223,876
3,223,890
3,223,902
3,223,931
3,223,938
3,223,941
3,223,949
3,223,976
3,223,995
30 : 3,223,561
31 : RE.25,945
3,222,684
3,222,687
3,222,688
3,222,694
3,222,739
3,222,759
3,222,773
3,222,776
3,222,780
3,222,784
3,222,802
3,222,808
3,222,817
3,222,840
3,222,850
3,222,885
3,222,908
3,222,938
3,222,959
3,222,967
3,222,968
3,222,969
3,222,972
3,222,985
3,222,987
3,223,003
3,223,017
3,223,041
3,223,050
3,223,077
3,223,125
3,223,172
3,223,173
3,223,219
3,223,231
3,223,249
3,223,262
3,223,269
3,223,286
3,223,295
3,223,297
3,223,304
3,223,312
3,223,314
3,223,320
3,223,332
3,223,336
3,223,368
3,223,382
3,223,417
3,223,421
3,223,427
3,223,431
3,223,440
3,223,450
3,223,485
3,223,529
3,223,548
31 : 3,223,554
3,223,555
3,223,563
3,223,564
3,223,572
3,223,588
3,223,637
3,223,663
3,223,729
3,223,753
3,223,764
3,223,766
3,223,769
3,223,787
3,223,821
3,223,826
3,223,828
3,223,832
3,223,834
3,223,848
3,223,857
3,223,865
3,223,871
3,223,877
3,223,881
3,223,882
3,223,883
3,223,885
3,223,887
3,223,893
3,223,895
3,223,899
3,223,910
3,223,912
3,223,925
3,223,933
3,223,950
3,223,971
3,223,975
3,223,977
3,223,981
3,223,984
3,223,987
3,223,989
3,224,003
32 : 3,223,038
3,223,128
3,223,444
3,223,558
3,223,752
3,223,923
34 : RE.25,939
RE.25,943
RE.25,947
3,222,699
3,222,713
3,222,715
3,222,716
3,222,723
3,222,724
3,222,735
3,222,765
3,222,770
3,222,797
3,222,804
3,222,823
3,222,824
3,222,825
3,222,830
3,222,833
3,222,912
3,222,934
3,222,935
3,222,948
3,222,952
3,222,955
3,222,956
3,222,974
3,222,991
3,222,998
3,223,005
3,223,008
3,223,025
3,223,044
3,223,048
3,223,054
3,223,057
3,223,062
3,223,092
3,223,114
3,223,117
3,223,122
3,223,124
3,223,126
3,223,134
3,223,198
3,223,201
3,223,211
3,223,250
3,223,257
3,223,267
34 : 3,223,283
3,223,313
3,223,317
3,223,328
3,223,349
3,223,352
3,223,452
3,223,455
3,223,458
3,223,465
3,223,491
3,223,507
3,223,519
3,223,537
3,223,538
3,223,539
3,223,540
3,223,557
3,223,559
3,223,568
3,223,573
3,223,576
3,223,639
3,223,645
3,223,646
3,223,647
3,223,664
3,223,668
3,223,684
3,223,691
3,223,736
3,223,741
3,223,765
3,223,767
3,223,772
3,223,798
3,223,808
3,223,809
3,223,840
3,223,866
3,223,894
3,223,901
3,223,915
3,223,916
3,223,986
3,223,988
3,224,000
35 : 3,222,727
3,222,880
3,222,881
3,222,918
3,222,994
3,223,042
3,223,068
3,223,081
3,223,121
3,223,160
3,223,161
3,223,162
3,223,163
3,223,165
3,223,166
3,223,186
3,223,275
3,223,428
3,223,476
3,223,478
3,223,545
3,223,571
3,223,622
3,223,630
3,223,650
3,223,673
3,223,692
3,223,693
3,223,694
3,223,695
3,223,738
3,223,745
3,223,749
3,223,842
3,223,966
3,223,967
3,223,968
36 : 3,222,831
3,223,018
3,223,270
3,223,306
3,223,331
3,223,430
3,223,461
37 : 3,222,774
3,222,801
3,222,827
3,222,843
3,222,845
3,222,846
3,222,884
3,222,886
3,222,892
3,222,906

37 : 3,222,924
3,222,927
3,222,973
3,222,979
3,222,995
3,222,996
3,223,059
3,223,067
3,223,095
3,223,097
3,223,106
3,223,113
3,223,118
3,223,123
3,223,139
3,223,194
3,223,220
3,223,252
3,223,333
3,223,369
3,223,391
3,223,394
3,223,395
3,223,434
3,223,443
3,223,453
3,223,454
3,223,498

37 : 3,223,499
3,223,500
3,223,501
3,223,502
3,223,504
3,223,505
3,223,506
3,223,510
3,223,512
3,223,523
3,223,535
3,223,549
3,223,565
3,223,569
3,223,580
3,223,621
3,223,640
3,223,642
3,223,643
3,223,644
3,223,675
3,223,678
3,223,740
3,223,742
3,223,747
3,223,748
3,223,762
3,223,763

37 : 3,223,799
3,223,879
3,223,892
3,223,936
3,223,948
3,223,960
3,223,962
3,223,973
3,223,983
3,223,985
3,223,991
3,223,993
38 : 3,222,890
3,223,396
39 : 3,222,941
3,223,697
40 : 3,222,853
3,223,415
41 : 3,223,542
42 : 3,222,686
3,222,719
3,222,762
3,222,809
3,222,844
3,222,928
3,222,940
3,223,088
3,223,107

42 : 3,223,109
3,223,111
3,223,112
3,223,133
3,223,140
3,223,158
3,223,159
3,223,167
3,223,169
3,223,170
3,223,184
3,223,187
3,223,188
3,223,284
3,223,346
3,223,380
3,223,425
3,223,490
3,223,605
3,223,739
3,223,743
3,223,932
3,223,959
3,223,970
3,223,994
3,224,001
43 : 3,223,449

43 : 3,223,574
44 : 3,223,905
45 : 3,223,061
3,223,063
3,223,065
3,223,171
3,223,225
3,223,233
3,223,310
3,223,311
3,223,342
3,223,374
3,223,593
3,223,656
3,223,792
3,223,812
3,223,830
3,223,835
3,223,906
3,223,940
3,223,955
3,223,964
46 : 3,222,792
3,222,863
3,223,026
3,223,085
3,223,129

46 : 3,223,420
3,223,598
3,223,667
47 : 3,223,653
3,223,685
48 : RE.25,940
3,222,781
3,222,782
3,222,854
3,222,865
3,222,866
3,223,147
3,223,149
3,223,153
3,223,154
3,223,224
3,223,290
3,223,339
3,223,367
3,223,532
3,223,570
3,223,803
3,223,818
3,223,823
3,223,860
3,223,864
3,223,911

DESIGN PATENTS

4 : 203,151
203,156
203,207
203,208
203,213
203,223
203,238
203,240
203,243
203,244
203,245
203,246
6 : 203,177
203,220
203,221
12 : 203,154

12 : 203,175
203,182
203,185
203,187
203,209
203,211
203,229
13 : 203,173
203,178
203,179
203,180
15 : 203,158
16 : 203,190
19 : 203,169
203,231
20 : 203,174

20 : 203,235
21 : 203,152
203,153
203,166
203,196
203,224
203,236
203,242
22 : 203,172
203,183
203,205
203,210
203,219
203,232
27 : 203,159
29 : 203,191

29 : 203,225
203,226
203,228
31 : 203,157
203,167
203,170
203,181
203,197
203,199
203,203
203,212
203,214
203,215
203,227
203,233
203,239

32 : 203,155
203,192
34 : 203,193
203,204
203,206
203,218
203,237
203,241
37 : 203,160
203,161
203,162
203,163
203,165
203,168
203,186

37 : 203,198
203,222
41 : 203,217
42 : 203,150
45 : 203,194
203,200
203,230
203,247
48 : 203,164
203,176
203,195
203,202
203,216
49 : 203,188
203,189

U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

December 14, 1965 Volume 821 Number 2

TRADEMARKS

NOTICES

Notice of Tentative Recordation of a Trade Name

[T.D. 56491]

Tentative recordation of trade name under section 42, Trademark Act of 1946, and section 11.16, Customs Regulations

TREASURY DEPARTMENT,
OFFICE OF THE COMMISSIONER OF CUSTOMS,
Washington, D.C., Sept. 27, 1965.

To Collectors of Customs and Others Concerned:

An application has been filed in the Treasury Department for the recordation of the following-described trade name under the provisions of section 42, Trademark Act of 1946, and section 11.16, Customs Regulations:

"DUETEENO ORIGINALS," a trade name used by Swiss-knit Manufacturing, Inc., a corporation organized under and by virtue of the laws of the State of New York, located and doing business at 112 West 34th Street, New York, New York. The trade name is associated with imported children's wearing apparel manufactured in various Far-Eastern areas.

Any person who on or before November 15, 1965, notifies the Commissioner of Customs, Washington, D.C., 20226, of his opposition to the recordation of the trade name described above will be furnished with a copy of the application for recordation, the documents filed in support of the application, and instructions as to the procedure to be followed to file a formal notice of such opposition. The customs officers concerned will be advised of the filing of any opposition proceeding.

Until December 1, 1965, or until final determination has been made in any case in which notice has been received of the filing of an opposition proceeding, any article of foreign manufacture which bears a name or mark copying or simulating the trade name described above shall be detained, without seizure. Thereafter, the articles so detained shall be treated in accordance with the provisions of section 11.17 of the Customs Regulations.

LESTER D. JOHNSON,
Commissioner of Customs.

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 95,990 (CHEVROLET), Chevrolet Motor Company, Automobiles, motor-vehicles, and parts thereof; **Reg.**

CONDITION OF TRADEMARK APPLICATIONS AS OF OCTOBER 31, 1965

Total number of applications awaiting action [excluding renewals and Sec. 12 (c)]	17,985
Date of oldest new application	Mar. 17, 1965
Date of oldest amended application	Mar. 1, 1965

C. M. WENDT, Director, Trademark Examining Operation

TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application: New	Oldest Application: Amended
(I) L. J. BETTENDORF (Acting), Classes 2, 4, 5, 8, 11, 12, 13, 14, 15, 16, 17, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 39, 41, 42, 43, 44	3-17-65	8-1-65
(II) H. E. KASCHUB, Classes 1, 3, 6, 7, 9, 10, 18, 22, 27, 38, 40, 45, 46, 47, 48, 49, 50, 51, 52; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, 107; Collective Membership Marks, Class 200; Certification Marks, Classes A and B	4-12-65	4-2-65
Renewals (All Classes)	10-5-65	
Sec. 12 (c) Publications (All Classes)	10-13-65	

Applications filed during the month of October 1965—2,989

Registrations Issued	431—No. 800,101 to No. 800,531
Renewals Issued	60

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, $12.00 per annum, foreign mailing $4.00 additional; single copies, 25 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 20 cents each. Address orders to the Commissioner of Patents, Washington, D.C., 20231.

No. 190,028 (CHEVROLET AND DESIGN), General Motors Corporation, same; **Reg. No. 216,070** (CHEVROLET), same, Automobiles; **Reg. No. 222,073** (PONTIAC), same; **Reg. No. 288,418** (CHEVROLET AND DESIGN), Chevrolet Motor Company, Combined automobile body polish and cleaner in liquid form; **Reg. No. 570,912** (OK AND DESIGN), General Motors Corporation, Used automobiles and trucks; **Reg. No. 647,235** (CHEVROLET), same, Maintenance and repair service for automotive vehicles, parts, and accessories; **Reg. No. 647,236** (CHEVROLET AND DESIGN), same; **Reg. No. 647,239** (PONTIAC), same; **Reg. No. 745,083** (CHEVY), same, Automobiles, **filed** Apr. 24, 1964, D.C., N.D. Ill. (Chicago), Doc. 64c708, *General Motors Corporation* v. *Chev-Villa Motors, Inc. et al.* Stipulation dismissing complaint without prejudice and counterclaim with prejudice May 5, 1965.

Reg. No. 190,028. (See Reg. No. 95,990.)

Reg. No. 216,070. (See Reg. No. 95,990.)

Reg. No. 222,073. (See Reg. No. 95,990.)

Reg. No. 252,161 (SWITZERLAND CHEESE AND DESIGN), Fred Haeberli, Cheese made in Switzerland; **Reg. No. 266,078** (SWITZERLAND AND DESIGN), Switzerland Cheese Association, Inc., same; **Reg. No. 268,576** (SWITZERLAND CHEESE AND DESIGN), same; **Reg. No. 303,388** (SWITZERLAND CHEESE ETC. AND DESIGN), same; **Reg. No. 745,911** (SWITZERLAND AND DESIGN), same; **Reg. No. 749,477** (SWITZERLAND ETC. AND DESIGN), same; **Reg. No. 749,478** (MADE IN SWITZERLAND AND DESIGN), same, Cheese, **filed** July 23, 1963, D.C., S.D.N.Y., Doc. 63/2192, *Switzerland Cheese Association, Inc.* v. *William Faehndrich, Inc.* Consent judgment; defendant enjoined Oct. 27, 1965.

Reg. No. 266,078. (See Reg. No. 252,161.)

Reg. No. 268,576. (See Reg. No. 252,161.)

Reg. No. 288,418. (See Reg. No. 95,990.)

Reg. No. 303,388. (See Reg. No. 252,161.)

Reg. No. 311,858 (REGINA), Ellena Bros., Wines; **Reg. No. 438,046**, same, Brandy; **Reg. No. 550,732** (REGINA AND DESIGN), same, Cooking wines; **Reg. No. 614,140** (EB REGINA AND DESIGN), same, Wine vinegar; **Reg. No. 614,141**, same, Wine vinegar with garlic, **filed** Mar. 22, 1962, D.C., N.D. Calif. (San Francisco), Doc. 40595, *Regina Grape Products Co.* v. *Artichoke Industries, Inc.* Consent judgment; defendant enjoined Oct. 12, 1965.

Reg. No. 438,046. (See Reg. No. 311,858.)

Reg. No. 507,914 (MALT-A-PLENTY), Malt-A-Plenty, Inc., Non-alcoholic semi-frozen dairy food beverage and a preparation for making the same, composed of milk products, sugars, gelatins, and flavoring, **filed** June 6, 1964, D.C., N.D. Ill. (Chicago), Doc. 64c1026, *Malt-A-Plenty, Inc.* v. *Foremost Dairies, Inc.* Stipulation dismissing cause with prejudice May 6, 1965.

Reg. No. 550,732. (See Reg. No. 311,858.)

Reg. No. 561,401 (SWIX), Aktiebolaget Wallco, Ski waxes; **Reg. No. 764,178** (SWIS SKI), Augsburg Haus, Ltd., Ski wax in areosol form, **filed** Oct. 26, 1965, D.C. Colo. (Denver), Doc. 9457, *Aktiebolaget Wallco* v. *Augsburg Haus, Ltd.*

Reg. No. 570,912. (See Reg. No. 95,990.)

Reg. No. 614,140. (See Reg. No. 311,858.)

Reg. No. 614,141. (See Reg. No. 311,858.)

Reg. No. 647,235. (See Reg. No. 95,990.)

Reg. No. 647,236. (See Reg. No. 95,990.)

Reg. No. 647,239. (See Reg. No. 95,990.)

Reg. No. 684,664(a) (T.L.C.), Polychem Corporation, Medicated emollient for topical application, **filed** May 26, 1965, D.C., S.D.N.Y., Doc. 65/1618, *Polychem Corp.* v. *Colgate-Palmolive Co.* Stipulation and order of dismissal without prejudice Oct. 15, 1965.

Reg. No. 684,664(b); **Reg. No. 686,468** (TLC TENDER LOVING CARE), Paul F. Beich Company, Liquid detergent, **filed** May 28, 1965, D.C., N.D. Ill. (Chicago), Doc. 65c867, *Polychem Corporation* v. *Paul F. Beich Company.* Stipulation and order dismissing this action, including all claims, without prejudice Oct. 19, 1965.

Reg. No. 686,468. (See Reg. No. 684,664(b).)

Reg. No. 708,201 (E-Z MELT), East Coast Soap Corp., Compound for snow and ice removal, **filed** Sept. 25, 1964, D.C.N.J. (Newark), Doc. 893–64, *East Coast Soap Corporation* v. *Seaboard Industries, Inc.* Order of dismissal on settlement Oct. 26, 1965.

Reg. No. 709,256 (MEDI-QUIK), Lehn & Fink Products Corporation, Preparation for the treatment of minor cuts, scrapes, scratches, burns, etc., **filed** Oct. 21, 1965, D.C., E.D.N.Y. (Brooklyn), Doc. 65C–1085, *Lehn & Fink Products Corp.* v. *United States Pharmacal Co., Inc.* Consent judgment for injunction Nov. 12, 1965.

Reg. No. 745,083. (See Reg. No. 95,990.)

Reg. No. 745,911. (See Reg. No. 252,161.)

Reg. No. 749,477. (See Reg. No. 252,161.)

Reg. No. 749,478. (See Reg. No. 252,161.)

Reg. No. 764,178. (See Reg. No. 561,401.)

Reg. No. 786,885 (LA CUMBRE), Jaime M. Dickter, doing business as Mexican Import Co., Canned peppers, **filed** Oct. 27, 1965, D.C., S.D. Tex. (Laredo), Doc. 65–L–20, *H. J. Heinz Company et al.* v. *Mexican Import Co. et al.* Consent judgment; trademark held invalid Oct. 29, 1965.

Reg. No. 795,944 (HAPPY HERMAN AND DESIGN), Larami Corporation, Dolls, **filed** Oct. 25, 1965, D.C., S.D.N.Y., Doc. 65/3185, *Larami Corp.* v. *Dan Brechner & Co., Inc.*

United States Adopted Names

List No. 12

July 1, 1965–October 31, 1965

The following nonproprietary names for the drugs described have been adopted by the USAN Council (the nomenclature committee sponsored by the American Medical Association, the American Pharmaceutical Association, and the United States Pharmacopeia) in cooperation with the interested manufacturers. The designation "United States Adopted Names" (U.S.A.N.) has been coined to distinguish these formally adopted nonproprietary names from other nonproprietary names. Adoption of such names does not imply endorsement of the products involved by the A.M.A. Council on Drugs, the USP, or the National Formulary.

Any comments or suggestions should be addressed to Doctor Joseph B. Jerome, Assistant Secretary, Council on Drugs, American Medical Association, 535 N. Dearborn St., Chicago, Ill., 60610.

alverine citrate: spasmolytic agent
anagestone acetate: progestin
azacosterol hydrochloride: hypocholesteremic
biphastic insulin: hypoglycemic
bolandiol dipropionate: anabolic agent
bunamidine hydrochloride: veterinary anthelmintic
butalbital: sedative and hypnotic
butriptyline hydrochloride: antidepressant
carbazocine: analgesic
chromonar hydrochloride: coronary vasodilator
clamoxyquin hydrochloride: amoebacide
clocortolone acetate: glucocorticoid
clofucarban: antiseptic
clothiapine: tranquilizer
cyprolidol hydrochloride: psychotherapeutic drug
dioxybenzone: sunscreen agent
doxycycline: antibiotic
edrofuradene: antibacterial agent
estradiol enanthate: estrogen
estrazinol hydrobromide: estrogen
etafurazone: poultry histomonastat
etomide hydrochloride: analgesic
felypressin: vasoconstrictor
fenamole: anti-inflammatory agent
fenethylline hydrochloride: central stimulant
fenimide: tranquilizer
gualapate: antitussive
guaithylline: antiasthmatic
guanoctine hydrochloride: antihypertensive
guanoxyfen sulfate: hypotensive and anti-depressant
haloperidol: tranquilizer
imidoline hydrochloride: tranquilizer
iron sorbitex: intramuscular hematinic
lactulose: laxative
metofurone: antimycotic agent
neomycin palmitate: antibiotic
neomycin undecylenate: antibacterial and antifungal agent
oxybenzone: sunscreen agent

prolintane hydrochloride: antidepressant
proxazole: antispasmodic, analgesic, anti-inflammatory
quinetolate: antiasthmatic
sodium icthosylate: antiseptic
sulfomyxin: antibiotic
suloxybenzone: sunscreen agent
terodiline hydrochloride: coronary dilator
thiothixene: pyschotherapeutic agent
trifluperidol: tranquilizer
urokinase: plasminogen activator

United States Adopted Names (USAN) and United States Adopted Names (Proposed) (USAN)

QUARTERLY CUMULATIVE LIST

January 1, 1965–September 30, 1965

This is a revised alphabetical listing of the nonproprietary names *proposed for adoption* by the USAN Council which were published in the Trademark Bureau Bulletin during the period indicated. The listing also incorporates the revised lists of *adopted* nonproprietary names issued by the USAN Council, but not published in the Bulletin.

The Quarterly Cumulative List is intended to supplement USAN Cumulative List 3, 1961–1964, published annually for the Council by the United States Pharmacopeia; it is distributed with an issue of the Trademark Bureau Bulletin.

An asterisk (*) before a name indicates an *adopted name;* all other names on the list are *proposed for adoption.*

Since Q.C.L. is cumulative, only the latest issue need be consulted. All preceding lists may be discarded.

Any comments or protests regarding proposed names should be brought promptly to the attention of the USAN Council, American Medical Association, 535 N. Dearborn St., Chicago, Ill., 60610.

*algeldrate: antacid
*alverine citrate: spasmolytic
amfetyline hydrochloride: central stimulant
*anagestone acetate: progestin
*azacosterol hydrochloride: hypocholesteremic
*bamethan sulfate: vasodilator
bamifylline hydrochloride: antispasmodic
*bensydamine hydrochloride: analgesic; anti-inflammatory; antipyretic
*biphasic insulin: hypoglycemic
*bolandiol dipropionate: anabolic
*bolmantalate: anabolic agent
*buformin: oral hypoglycemic
*bunamidine hydrochloride: veterinary anthelmintic
*buquinolate: poultry coccidiostat
*butalbital: sedative and hypnotic
*butoxamine hydrochloride: inhibitor of fatty acid mobilisation
*butriptyline hydrochloride: antidepressant
*calcium polycarbophil: antidiarrheal
*candicidin: antifungal antibiotic
*carbazocine: analgesic
*chromonar hydrochloride: coronary vasodilator
clobensepam: anti-allergic agent
*clocortolone acetate: glucocorticoid
*clofucarban: antiseptic
*clopenthixol: tranquilizer
*clorophene: disinfectant
*coumermycin: antibiotic
cyclofynol: tranquilizer
cyclophenasine hydrochloride: tranquilizer
*cyprazepam: tranquilizer
*cyprolidol hydrochloride: psychotherapeutic agent
*cyproterone acetate: antiandrogen
*debrisoquin sulfate: hypotensive agent
*dextran 40: blood suspension stabilizer (flow improver)
*dextran 45: blood plasma volume extender in extracorporeal circulation; antithrombogenic agent
*dextran 75: blood plasma volume extender
*dicloxacillin: antibiotic
*dihydroergotamine mesylate: sympatholytic
*dimethisterone: progestin
*dimethyl sulfoxide: anti-inflammatory agent
*dioxybenzone: sunscreen agent
*doxycycline: antibiotic
*edrofuradene: antibacterial agent
*encyprate: antidepressant
*estradiol undecylate: estrogen
*estrazinol hydrobromide: estrogen
*etafurazone: poultry histomonastat
*ethiodized oil I 131: anti-oncotic agent
*ethynerone: progestin
*etomide hydrochloride: analgesic
*felypressin: vasoconstrictor
*fenamole: anti-inflammatory agent
fenethylline hydrochloride: central stimulant
*fenfluramine hydrochloride: sympathomimetic (anorexic)
fenimide: tranquilizer
*floxuridine: antiviral agent
*flubanilate hydrochloride: antidepressant
*fluocortolone: glucocorticoid
*fluocortolone caproate: glucocorticoid
*flurogestone acetate: progestin
*gestonorone caproate: progestin
*glyhexamide: hypoglycemic
gualapate: antitussive
*guaithylline: antiasthmatic
*guanoctine hydrochloride: antihypertensive
*guanoxyfen sulfate: hypotensive and antidepressant
*hamycin: antifungal agent
*hetacillin: antibiotic
*hexedine: antibacterial
*hydroxyurea: antineoplastic
*imidoline hydrochloride: tranquilizer
*indoxole: anti-inflammatory and antipyretic
*iron sorbitex: hematinic
lactulose: laxative
*levofuraltadone: antibacterial
*lypressin: antidiuretic
*mecloqualone: sedative and hypnotic
*medrysone: topical anti-inflammatory
*meprednisone: glucocorticoid
*medisoprol Hg 197: diagnostic agent
*mesoridazine: tranquilizer
*metabromsalan: disinfectant
*metazamide: analgesic
*metofurone: antimycotic agent
*mithramycin: antineoplastic
*nafoxidine hydrochloride: antifertility agent and cholesterol lowering agent
*namoxyrate: analgesic
*nandrolone decanoate: long-acting anabolic
*neutral insulin: hypoglycemic
*nitralamine hydrochloride: fungicide
*nogalamycin: antineoplastic
*oxfuradene: antibacterial
*oxybenzone: sunscreen agent
*pipobroman: antineoplastic
*piposulfan: antineoplastic
*poloxalene: surfactant
prolintane hydrochloride: antidepressant
*propranolol hydrochloride: antiarrythmic agent
proxazole: antispasmodic
*puromycin: antibiotic
*pyrroliphene hydrochloride: analgesic
*quindecamine acetate: topical anti-infective
*quinetolate: antiasthmatic
*rolitetracycline nitrate: antibiotic
*sodium actinoquinol: treatment of flash burns (opthalmic)
*sodium glymidine: oral hypoglycemic
*sodium icthosylate: antiseptic
*sodium metrisoate: contrast medium
sodium polymixate: antibiotic
*sulfalene: antibacterial agent
*sulfametin: antibacterial
sulisobenzone: sunscreen agent
*suloxybenzone: sunscreen agent
*terodiline hydrochloride: coronary dilator
*testosterone ketolaurate: androgen
*testosterone phenylacetate: androgen
*thioguanine: antineoplastic
*thiothixene: psychotherapeutic agent
*triclocarban: disinfectant
*trifluperidol: tranquilizer
*trimolide: sedative
*trioxsalen: pigmenting agent
*urokinase: plasminogen activator
*vinglycinate sulfate: antineoplastic
viridomycin: antifungal antibiotic

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 158,140. Brecher Brothers, Inc., New York, N.Y. Filed Nov. 29, 1962.

TOMMY TRAVELER

Owner of Reg. No. 421,517.

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

For Natural and Artificial Leather Goods—Namely, Brief Bags; Portfolios; Sample Cases; Unfitted Toilet Kits; Card Cases; Bowling Bags; Club Bags; Business Cases; Hand Bags; Attaché Cases; Fitted Toilet and Cosmetic Cases; Liquor Cases; Game Cases for Checkers, Dominoes and Chess; Luggage; Tote Bags; Duffle Bags; and Men's and Women's Vanity Cases.

Class 39—Clothing

For Men's and Women's Coats, Jackets, Toppers, Slacks, and Raincoats.

First use August 1944.

SN 163,355. Gilbert Associates, Inc., Reading Pa. Filed Feb. 25, 1963.

GAI

Class 100—Miscellaneous

For Planning for Future Needs of Municipalities and Various Types of Public Utilities, Making Feasibility Studies for Public Utilities and Industries, Consulting Engineering in All Major Fields Including Civil, Structural, Mechanical, Electrical, Nuclear, Chemical, Electronics, Hydraulics, and Sanitary Engineering.

Class 101—Advertising and Business

For Managing Construction Projects for Others, and Managing and Operating Public Utilities for Others.

Class 102—Insurance and Financial

For Appraisal of Real Estate, Machinery and Equipment for Others.

First use Mar. 3, 1943.

SN 184,787. Eddie Bauer, Seattle, Wash. Filed Jan. 17, 1964.

Eddie Bauer

Owner of Reg. No. 579,398.

Class 22—Games, Toys, and Sporting Goods

For Sleeping Bags.

Class 39—Clothing

For Insulated Outer Clothing—Namely, Sleeping Robes, Coats, Vests, Parkas, Jackets, Pants, Caps, Mittens, Muffs, and Insulated Underwear.

First use about May 15, 1961; about 1922 in a different form.

SN 186,527. Gottlob Widmann & Sohne K.G., Schwenningen, Neckar, Germany. Filed Feb. 12, 1964.

WIGO

Owner of German Reg. No. 788,013, dated Aug. 14, 1962.

Class 21—Electrical Apparatus, Machines, and Supplies

For Electrical Household Machines and Devices, Electrical Kitchen Apparatus for Comminuting, Cutting, and Chopping, Coffee and Tea Making Machines, Coffee Mills, and Hand Electrically Driven Stirring and Kneading Devices.

Class 44—Dental, Medical, and Surgical Appliances

For Hair Driers.

First use May 28, 1928; in commerce Sept. 10, 1929.

SN 198,579. OECO Corporation, Portland, Oreg. Filed July 27, 1964.

OECO

Class 21—Electrical Apparatus, Machines, and Supplies

For Transformers (Fixed and Variable Ratio), Reactors, Coils, Magnetic Amplifiers, Power Supplies (With Electronic and Electromechanical Rectifiers), Choppers, Silicon Controlled Rectifiers, Light Dimmers, and Electrical Resistances.

Class 26—Measuring and Scientific Appliances

For Ratio Metering Devices.

First use May 1954.

SN 200,358. Lafayette Radio Electronics Corporation, Syosset N.Y. Filed Aug. 21, 1964.

decor-ette

Class 21—Electrical Apparatus, Machines, and Supplies

For Speakers, Speaker Systems for Phonographs.
First use Aug. 22, 1962.

Class 32—Furniture and Upholstery

For Cabinets for Phonographs, Speakers, and Speaker Systems.
First use Aug. 22, 1962.

Class 36—Musical Instruments and Supplies

For Phonographs.
First use Aug. 31, 1963.

SN 200,713. The Flexible Tubing Corporation, Guilford Conn. Filed Aug. 27, 1964.

KENYON

Class 5—Adhesives

For Waterproof Tape.
First use June 1946.

Class 26—Measuring and Scientific Appliances

For Marine Instruments—Namely, Compasses and Speedometers.
First use Sept. 1, 1939.

SN 202,206. T/P Protective Coatings, Inc., Cleveland, Ohio, by change of name from Tropical Paint Company, Cleveland, Ohio. Filed Sept. 21, 1964.

TROPICAL

Owner of Reg. Nos. 270,831, 283,131, and others.

Class 5—Adhesives

For Cement Bonding Materials and Adhesives for Securing Roofing.
First use at least as early as May 1956.

Class 6—Chemicals and Chemical Compositions

For Chemical Materials for Conditioning Metal Surfaces Preparatory to Further Treatment and Compositions for Etching Concrete Surfaces.
First use at least as early as November 1952.

SN 205,366. Stanley Home Products, Inc., Westfield, Mass. Filed Nov. 2, 1964.

ISLANDER

Class 51—Cosmetics and Toilet Preparations

For Men's Cologne in Liquid and Solid Form, After Shave Lotion, After Shave Talc, Personal Deodorant, Hair Dressing, Skin Lotion, and Shaving Cream.

Class 52—Detergents and Soaps

For Hair Shampoo and Toilet Soap.

First use Feb. 17, 1964.

SN 216,463. Little Brute Company, Monticello, Iowa. Filed Apr. 14, 1965.



Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Hand-Operated Tools and Accessories—Namely, Crankshaft Straightener, Seal Puller, Engine Positioner, Adapter, Flywheel, Magneto Flywheel Knocker, Carburetor Adjuster Tool, Coil Spring Booster, Bicycle Front Fork Straightener, and Small Engine Repair Stand.
First use Apr. 1, 1960.

Class 26—Measuring and Scientific Appliances

For Flywheel Magneto Tester, Compression Gauge, and Condenser and Coil Tester.
First use Apr. 1, 1961.

SN 217,072. The Cambridge Wire Cloth Company, Cambridge, Md. Filed Apr. 22, 1965.

CAMBRIDGE

Class 7—Cordage

For Cargo Lifting Slings and Load Binders.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Wire Cloth and Screening for General Industrial Use.

Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires

For Metal Mesh Conveyor Belts, Flat Wire Conveyor Belting, and Rod-Type Conveyor Belting.

First use 1941.

SN 217,583. The Wander Company, Chicago, Ill. Filed Apr. 28, 1965.

NAPPIES

Class 18—Medicines and Pharmaceutical Preparations

For Diaper Rash Preparation.

Class 51—Cosmetics and Toilet Preparations

For Baby Lotion and Baby Powder.

First use Mar. 5, 1965.

SN 219,851. Calumet & Hecla, Inc., Calumet, Mich. Filed May 27, 1965.

CALHARD

Class 4—Abrasives and Polishing Materials

For Grinding Balls for Use as an Abrasive in Grinding Mills.

Class 14—Metals and Metal Castings and Forgings

For Metal Castings of Hard Wear-Resisting Martensitic White Iron Alloy for Industrial Use Such as a Wear Casting Used in a Cement Mixer as a Paddle for Mixing Cement.

First use Mar. 25, 1965.

SN 221,327. Dunhill Tailored Clothes, Inc., New York, N.Y. Filed June 17, 1965.

DUNHILL TAILORS

Applicant claims use of the mark provided, however, that when applicant makes any use of "Dunhill Tailors" on the goods, the word "Tailors" shall always be horizontally juxtaposed to "Dunhill" and shall always be in the same form, font, style, size and color and as prominent as "Dunhill," and provided further that applicant shall not use "Dunhill Tailors" in lowercase type. Owner of Reg. No. 773,223.

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

For Traveling Bags and Luggages, Wallets, Brief Cases, Dispatch Cases, Cases for Physicians' Equipment, Passport Cases, Journalist Cases, Toilet Cases, Key Cases, Writing Cases, Map Cases, Credit Card and Business Card Cases, and Money Holders.
First use 1923.

Class 28—Jewelry and Precious-Metal Ware

For Men's Jewelry and Other Wares for Men Made of Gold and Sterling Silver—Namely, Cuff Links, Tie Clasps and Pins, Key Chains and Holders, Dress and Pearl Studs Pill Boxes, Blazer Buttons, Toothpicks, Collar Stays, Money Clips, Check Book Holders, and Identification Bracelets.
First use 1924.

Class 32—Furniture and Upholstery

For Silent Valets, Also Known as Valet Stands.
First use in or about 1927.

Class 51—Cosmetics and Toilet Preparations

For Eau de Cologne for Men.
First use 1927.
Subj. to Concurrent Use Proceeding with Alfred Dunhill of London Inc.

SN 223,098. Discovery Film International, Inc., New York, N.Y. Filed July 12, 1965.

DFI

Class 26—Measuring and Scientific Appliances

For Sensitized Undeveloped Motion Picture Films.

Class 38—Prints and Publications

For Developed Motion Picture Films.
First use April 1965.

SN 226,228. Fairway Foods, Inc., St. Paul, Minn. Filed Aug. 23, 1965.

FAIRWAY

Owner of Reg. Nos. 197,673, 513,494, and others.

Class 6—Chemicals and Chemical Compositions

For Household Ammonia.
First use 1932.

Class 52—Detergents and Soaps

For Liquid Detergent for Fabrics and Dishes and Hair Shampoo.
First use June 1, 1962.
Subj. to Intf. with SN 197,291.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.
A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 199,898. Fleming-Joffe, Ltd., New York, N.Y. Filed Aug. 14, 1964.

SEVENTH HEAVEN

For Decorated Leather for Handbags, Shoes, and the Like.
First use Apr. 15, 1964.

SN 204,760. Celanese Corporation of America, New York, N.Y. Filed Oct. 26, 1964.

STARSET

Owner of Reg. No. 795,327.
For Man Made Fibrous Materials Intended for Fabrics To Be Made Into Home Furnishings Such as Draperies, Bedspreads, Slip Covers, and the Like, and Into Apparel Such as Dresses, Blouses, Lingerie, Shirts, and the Like.
First use Oct. 15, 1964.

SN 208,253. Johns-Manville Corporation, New York, N.Y. Filed Dec. 16, 1964.

PLASTIBEST

For Asbestos Fiber Sold Especially for Use as an Ingredient of Plastics.
First use at least on or about Sept. 14, 1959.

SN 215,341. Loewengart & Co., Inc., New York, N.Y. Filed Mar. 30, 1965.

GAHNA GOUCHO COWHIDE

The word "Cowhide" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 389,256, 722,719, and others.
For Leather in the Piece.
First use Sept. 15, 1964.

SN 216,415. E. J. Lavino and Company, Philadelphia, Pa. Filed Apr. 13, 1965.

REGAL

For Foundry Materials—Namely, Molding Sand and Mold Wash, Both Comprised of Chromite or Olivine.
First use Mar. 24, 1965.

SN 217,440. R. Brandt & Co. (Manufacturing) Limited, Stanmore, Middlesex, England. Filed Apr. 27, 1965.

PERMACURL

For Synthetic Monofilaments for Use in the Manufacture of Artificial Eyelashes and Artificial Hairpieces.
First use Nov. 5, 1964; in commerce Nov. 5, 1964.

SN 220,669. Koppers Company, Inc., Pittsburgh, Pa. Filed June 8, 1965.

KOPREZ

For Amino Resins for Industrial Use.
First use Apr. 9, 1964.

SN 227,064. Paxton Processing Co., Inc., Paxton, Ill. Filed Sept. 2, 1965.

PEL-E-CEL

For Animal Waste Absorbent.
First use Sept. 18, 1961.

SN 227,099. Chason Bros. Inc., New York, N.Y. Filed Sept. 1, 1965.

ALABASTER

For Raw or Dressed Mink Skins.
First use Feb. 15, 1965.

SN 227,476. Blue-Lite, Inc., Wichita Falls, Tex. Filed Sept. 9, 1965.

BLUE LITE

For Charcoal Lighter Composition.
First use June 23, 1965.

SN 227,588. Interchemical Corporation, New York, N.Y. Filed Sept. 10, 1965.

INTRIGUE

Owner of Reg. No. 780,095.
For Polymeric Material Used for Heel Covers, Sock Linings, Shoe Uppers, Handbags, Belts, and the Like.
First use on or about June 8, 1965.

SN 227,804. Allied Kid Company, Boston, Mass. Filed Sept. 16, 1965.

WEATHER-GUARD

For Leather.
First use July 1, 1965.

Class 2—Receptacles

SN 159,887. The Flintkote Company, New York, N.Y. Filed Dec. 28, 1962.

BATH-PAK

For Corrugated Paperboard and Wood Shipping Containers for Bath Tubs and the Like.
First use Mar. 9, 1962.

SN 179,884. Embart Corporation, New Britain Conn., by merger and change of name from The American Hardware Corporation, New Britain, Conn. Filed Oct. 21, 1963.

kwikosee

For Transparent Display Packages Which Incorporate Hardware Therein.
First use Sept. 23, 1963.

SN 204,525. Tuffilte Plastics, Incorporated, Ballston Spa, N.Y. Filed Oct. 21, 1964.

TUFFY

For Seed Flats Made of Plastic—Namely, Foam Polystyrene.
First use Aug. 28, 1964.

SN 206,940. General Plastic Corporation of America, Philadelphia, Pa. Filed Nov. 25, 1964.

TOPPET

For Plastic Pet Feeding Dishes, Litter Trays, Litter Liners, and Turtle Bowls.
First use on or about Oct. 20, 1964.

SN 211,965. Morgan Paper Company, Inc., Lititz, Pa. Filed Feb. 12, 1965.

SIMPLEX

For Toilet Paper and Paper Towel Cabinets.
First use Aug. 28, 1961.

SN 212,356. A. O. Smith Corporation, Milwaukee, Wis. Filed Feb. 18, 1965.

MULTILAYER

For Closed Vessels for High Pressure Processes and Storage Requirements for Use With Corrosive and Non-Corrosive Gases and Liquids.
First use Mar. 17, 1958.

SN 213,115. Holiday Inns of America, Inc., Memphis, Tenn. Filed Mar. 2, 1965.

YOUR HOST FROM COAST TO COAST

Owner of Reg. Nos. 657,302 and 740,862.
For Plastic Utility and Stationery Bags, Paper Bags, Paper Glass Wrappers, Paper Coasters, Litter Bags, Ice Tubs, Ice Buckets, Waste Baskets, and Waste Cans.
First use at least as early as Aug. 1, 1957.

SN 213,122. Holiday Inns of America, Inc., Memphis, Tenn. Filed Mar. 2, 1965.



Owner of Reg. Nos. 592,539, 748,127, and others.
For Plastic Utility and Stationery Bags, Paper Bags, Paper Glass Wrappers, Paper Coasters, Litter Bags, Ice Tubs, Ice Buckets, Waste Baskets, and Waste Cans.
First use at least as early as Aug. 1, 1957.

SN 214,656. Keyes Fibre Company, Waterville, Maine. Filed Mar. 22, 1965.

DUO-PAK

Owner of Reg. No. 612,800.
For Packing Trays of Molded Pulp.
First use Mar. 9, 1965.

SN 215,265. Pro-phy-lac-tic Brush Company, Florence, Mass. Filed Mar. 29, 1965.

Beverly

For Plastic Dinnerware.
First use prior to May 1956.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

SN 181,321. Chicago Travelwear Co., Inc., Chicago, Ill. Filed Nov. 18, 1963.

Velvetouch

For Leather and Leather Substitutes as a Component of Finished Articles—Namely, Travel Bags for Toilet Articles.
First use Jan. 16, 1962.

SN 223,102. Droutman Manufacturing Company, Inc., New York, N.Y. Filed July 12, 1965.

ARGONAUT

For Luggage.
First use June 4, 1965.

Class 4 — Abrasives and Polishing Materials

SN 221,996. Churchill Chemical Company, Galesburg, Ill. Filed June 25, 1965.

ARM-A-COTE

For Protective Finishing Compound in the Nature of a Polish for Use on Floors, Furniture, and Automobiles.
First use in or about the year 1930.

Class 5 — Adhesives

SN 228,892. The Joseph Dixon Crucible Company, Jersey City, N.J. Filed Sept. 29, 1965.



For Adhesive Paste.
First use 1914.

Class 6 — Chemicals and Chemical Compositions

SN 167,404. National Polychemicals, Inc., Wilmington, Mass., assignee of National Polychemicals, Inc., Wilmington, Mass. Filed Apr. 23, 1963.



Owner of Reg. No. 626,738.
For Chemicals—Namely, Blowing Agents, Plasticizers, Antioxidants, Activators for Blowing Agents, Pigments, Dispersants, Curing Agents, Retarders and Accelerators for Natural and Synthetic Elastomers, Metal Soaps, and Stabilizers.
First use Sept. 5, 1962.

SN 181,667. R. J. Neill, d.b.a. Southern Automotive Products, Fort Lauderdale, Fla. Filed Nov. 21, 1963.



The drawing is lined for the color brown, but no claim is made to color as a part of the mark.
For Metallic Radiator Seal, and Cooling System Conditioner.
First use Sept. 1, 1963.

SN 218,440. S. C. Johnson & Son, Inc., Racine, Wis. Filed May 10, 1965.

RAID

Owner of Reg. Nos. 628,506 and 757,090.
For Insecticides; a Germicide, Deodorizer, Fungicide; and an Herbicide—Namely, Insecticides for Use in the House, in the Garden and in Commercial, Institutional and Industrial Establishments; Flying Insect Killer; Insect Spray; Roach and Ant Killer; Moth Proofer for Control of Moths and Carpet Beetles; an Insecticidal Ingredient for Floor Wax; Spray for Killing Insects and Germs and Preventing Molds and Mildews; and a Weed Killer.
First use on or about Feb. 24, 1955.

SN 221,174. Hardman & Holden Limited, Manchester, England. Filed June 15, 1965.

COZIRC

Owner of British Reg. No. 860,591, dated Feb. 22, 1964.
For Chemical Products Used in Industry, Being Compounds of Cobalt and Zirconium Used as Catalytic Oxidative Driers in Paints.

Class 8 — Smokers' Artides, Not Including Tobacco Products

SN 213,116. Holiday Inns of America, Inc., Memphis, Tenn. Filed Mar. 2, 1965.

YOUR HOST FROM COAST TO COAST

Owner of Reg. Nos. 657,302 and 740,362.
For Cigarette Lighters and Ash Trays.
First use at least as early as 1957.

SN 213,123. Holiday Inns of America, Inc., Memphis, Tenn. Filed Mar. 2, 1965.



Owner of Reg. Nos. 592,539, 748,127, and others.
For Cigarette Lighters and Ash Trays.
First use at least as early as Aug. 1, 1957.

SN 213,904. Snap-On Tools Corporation, Kenosha, Wis. Filed Mar. 11, 1965.

SNAP-ON

For Cigarette Lighters, Ash Trays, and Smokers' Accessories.
First use sometime in 1929.

SN 219,332. Filto Pipes, Incorporated, Burgaw, N.C. Filed May 20, 1965.

RETRO-FLOW

For Filters for Smoking Pipes.
First use Apr. 1, 1965.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

SN 213,117. Holiday Inns of America, Inc., Memphis, Tenn. Filed Mar. 2, 1965.

YOUR HOST FROM COAST TO COAST

Owner of Reg. Nos. 657,302 and 740,362.
For Matches.
First use at least as early as Aug. 1, 1957.

SN 213,124. Holiday Inns of America, Inc., Memphis, Tenn. Filed Mar. 2, 1965.



Owner of Reg. Nos. 592,539, 748,127, and others.
For Matches.
First use at least as early as Aug. 1, 1957.

Class 10 — Fertilizers

SN 192,731. Macmillan Ring-Free Oil Co., Inc., New York, N.Y. Filed May 5, 1964.

WEATHERGARD SEED SET

No claim is made to the wording "Seed Set," except in the association shown, without waiver of applicant's common-law rights therein. Owner of Reg. Nos. 745,311 and 753,607.
For Composition Whether in the Form of Dry Powders, Solutions, Emulsions, or Dispersions, for Application to the Soil To Impart Erosion Resistance Thereto, and To Absorb Atmospheric Moisture and Impart It to Seeds or Other Planted Materials To Assist in the Sprouting and Growing Thereof.
First use Apr. 6, 1964.

SN 203,639. American Hardware Supply Company, East Butler, Pa. Filed Oct. 9, 1964.

VILLAGE PARK

For Fertilizer and Lawn Foods.
First use Jan. 24, 1961.

SN 215,946. Continental Oil Company, Ponca City, Okla. Filed Apr. 7, 1965.

CONOCO

Owner of Reg. Nos. 653,963, 653,964, and others.
For Fertilizers.
First use on or about Feb. 23, 1965.

SN 215,947. Continental Oil Company, Ponca City, Okla. Filed Apr. 7, 1965.



The drawing is lined for red. Owner of Reg. Nos. 653,963, 653,964, and others.
For Fertilizers.
First use on or about Feb. 23, 1965.

SN 221,821. Hartzell Industries, Inc., Piqua, Ohio. Filed June 23, 1965.

Harbark

For Comminuted Wood Waste Material for Use as a Mulch Material.
First use Mar. 29, 1965.

Class 12 — Construction Materials

SN 179,498. Weyerhaeuser Company, Tacoma, Wash. Filed Oct. 21, 1963.



The drawing is lined for blue and gold. However, no claim is made to a particular color apart of the mark.
For Wooden Doors.
First use Aug. 7, 1958.

SN 188,799. Ren Plastics, Inc., Lansing, Mich. Filed Mar. 16, 1964.

REN-CELL

Owner of Reg. Nos. 641,938, 718,450, and others.
For Rigid Construction Sheets Made of Plastic Facing on Aluminum Core for Use in the Fabrication of Plastic Tooling in the Automotive, Aircraft, Aerospace, Marine, and Tooling Industries.
First use Feb. 20, 1962.

SN 189,228. Variperm Company, Long Beach, Calif. Filed Mar. 20, 1964.

PYRO-PERM

For High Temperature Resistant Concrete Pipe.
First use Feb. 17, 1964.

SN 194,633. Meridian Brick Corp. of N.Y., Mineola, N.Y. Filed June 1, 1964.

CLIP-ON

For Veneering Bricks.
First use on or about Dec. 29, 1962.

SN 201,106. Commonwealth Homes Corporation, Manassas, Va. Filed Sept. 2, 1964.

PIEDMONT HOMES

The word "Homes" is disclaimed apart from the mark as shown.
For Packaged or Pre-Cut Homes.
First use Apr. 5, 1958.

SN 201,605. Mastic Corporation, South Bend, Ind. Filed Sept. 10, 1964.

PVC-3

No claim is made to the exclusive right to use of "PVC" apart from the mark as shown.
For Aluminum Building Siding Material Coated With Synthetic Resin.
First use Aug. 14, 1964.

SN 202,688. Robert Haws Company, Melvindale, Mich. Filed Sept. 25, 1964.

SEAL-O-MATIC

For Portable Metal, Plastic, and Wood Faced Panel Partitions With Manually Actuated Floor and Ceiling Sealing Means for Interior Use in Such Buildings as Schools, Hotels, Hospitals, Offices, etc.
First use Mar. 30, 1964.

SN 203,681. National Gypsum Company, Buffalo, N.Y. Filed Oct. 9, 1964.

THERM-O-TEC

For Asbestos-Cement Board.
First use Sept. 1, 1960.

SN 203,795. The S. Obermayer Co., Chicago, Ill. Filed Oct. 12, 1964.

HOTT PATCH

For Bonding Mortar for Furnace Linings.
First use prior to 1934.

SN 204,764. Cen-Vi-Ro Pipe Corporation, Shafter, Calif. Filed Oct. 26, 1964.

EPOX-E-END

For Sealed Joints for Pipes.
First use October 1962.

SN 206,116. Weyerhaeuser Company, Tacoma, Wash. Filed Nov. 13, 1964.

SILVACOUSTIC

For Acoustical Batts Manufactured From Cellulosic Fibers.
First use Sept. 25, 1964.

SN 206,642. The S. Obermayer Co., Chicago, Ill. Filed Nov. 20, 1964.

WASP

For Moldable Refractory Material in Plastic Form Used in Foundries, Hearths, Ovens, Furnaces, Oil Stills, and Boilers.
First use prior to 1944.

SN 207,944. Corhart Refractories Company, Louisville, Ky. Filed Dec. 11, 1964.

COR-GUARD

Owner of Reg. Nos. 246,879, 579,615, and others.
For Abrasion-Resistant Lining Materials Consisting of Tiles, Bricks, and Blocks.
First use Sept. 8, 1964.

SN 209,974. Worth Buildings Limited, Donnington, Wellington, England. Filed Dec. 24, 1964.

CEDARWORTH

Owner of British Reg. No. 805,041, dated Apr. 26, 1960.
For Prefabricated Buildings and Dwellings, Greenhouses, Horticultural Frames and Garden Arbours All Made Wholly or Principally of Cedar.

SN 214,216. Wood Fibreboard Company, d.b.a. Duraflake Company, Portland, Oreg. Filed Mar. 15, 1965.

TRUFLOR

For Wood Particle Board for Use as Interior Underlayment.
First use on or about Jan. 14, 1965.

SN 214,973. M. C. Gill Corporation, El Monte, Calif. Filed Mar. 25, 1965.

GILLCLAD BALSA

The word "Balsa" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 667,584, 743,647, and others.
For Lightweight Sandwich Panels, Comprising Polyester-Fiberglass Cloth Laminates Bonded to Balsa Wood To Make a Sandwich Panel.
First use Apr. 1, 1964.

SN 214,988. Ickes-Braun Glasshouses, Inc., Chicago, Ill. Filed Mar. 25, 1965.

GLAS-BOND

For Glazing Sealant.
First use Apr. 21, 1964.

SN 215,601. G. & W. H. Corson, Incorporated, Plymouth Meeting, Pa. Filed Apr. 2, 1965.

MIRACLE

Owner of Reg. No. 385,860.
For Hydrated Lime for Use as a Construction and Building Material.
First use July 28, 1939.

SN 216,217. United States Gypsum Company, Chicago, Ill. Filed Apr. 9, 1965.

IMPERIAL

Owner of Reg. Nos. 160,711 and 377,398.
For Plaster Partition Components—Namely, Plaster Base, Joint Re-Inforcing Tape, and Catalyst To Control Set of Plaster.
First use Nov. 2, 1964.

SN 216,264. Calcinator Corporation, Bay City, Mich. Filed Apr. 12, 1965.

CARETAKER

For Prefabricated Steel Buildings.
First use Mar. 29, 1965.

SN 216,608. J. A. Nearing Co., Inc., Brentwood, Md. Filed Apr. 15, 1965.

JANCO

For Greenhouse and Components Thereof.
First use Oct. 15, 1960.

SN 217,529. The Eagle-Pitcher Company, Cicero, Ill. Filed Apr. 28, 1965.

LUSTERLITE

Owner of Reg. No. 150,292.
For Pre-Engineered, Manufactured Structural Steel Buildings and Component Parts Thereof.
First use May 1951.

SN 217,561. Bob Pool, d.b.a. Republic Glass Company, Tulsa, Okla. Filed Apr. 28, 1965.

SPACE SHIELD

For Insulating Glass for Windows and Doors.
First use Apr. 7, 1965.

SN 217,647. Mid-State Tile Company, Lexington, N.C. Filed Apr. 29, 1965.



For Ceramic Wall and Floor Tile.
First use Aug. 21, 1959.

SN 219,420. Fraser-Edwards Co., San Francisco, Calif. Filed May 21, 1965.

TERRA-GARDE

For Decorative Thinset Resin Terrazzo for Floors.
First use March 1963.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

SN 205,945. L. E. Johnson Products, Inc., Elkhart, Ind. Filed Nov. 10, 1964.



For Sliding and Folding Door Hardware.
First use Aug. 17, 1959.

SN 212,166. Titan Eisenwarenfabrik Gesellschaft mit beschrankter Haftung, Schwelm, Westphalia, Germany. Filed Feb. 16, 1965.

TITAN

Owner of U.S. Reg. Nos. 671,076 and 671,077.
For Metal and Steel Banding, Closure Sleeves, Seals, and Buckles.
First use Apr. 5, 1933; in commerce July 1, 1949.

SN 216,539. Speakman Company, Wilmington, Del. Filed Apr. 14, 1965.

DIAMOND 75

For Fittings, Lavatory, Shower, and Bath.
First use Mar. 19, 1965.

SN 219,061. The Patent Button Company, Waterbury, Conn. Filed May 17, 1965.

PATWIN

Owner of Reg. Nos. 570,319 and 571,411.
For Rivets and Burrs.
First use in or before April 1965.

SN 219,383. Yuba Consolidated Industries, Inc., San Francisco, Calif. Filed May 20, 1965.

EXPANSIONETTE

For Slip-Type Expansion Joints.
First use Mar. 24, 1965.

SN 222,414. Regal Ware, Inc., Kewaskum, Wis. Filed June 30, 1965.

CORDON BLEU

For Cooking Utensils.
First use on or about Oct. 19, 1960.

SN 223,077. Calumet & Hecla, Inc., Allen Park, Mich. Filed July 12, 1965.

NITROGENEERED

For Nitrogen-Filled Copper Tubing for Use in Refrigeration Circuits.
First use June 1, 1965.

SN 223,090. Continental Industries, Inc., Tulsa, Okla. Filed July 12, 1965.

THERM-O-COUPLING

For Pipe Couplings.
First use June 1, 1960.

SN 223,351. Ric-Wil, Incorporated, Barberton, Ohio. Filed July 14, 1965.

INSTANT

For Prefabricated Manholes.
First use in or about January 1965.

SN 223,547. Fastener Corporation, Franklin Park, Ill. Filed July 16, 1965.

DUO-FAST

Owner of Reg. Nos. 402,567, 765,026 and others.
For Staples, Nails, Brads, Tacks, and the Like, for Use in Stapling, Nailing, or Tacking Tools.
First use on or about Apr. 15, 1940, on staples.

SN 223,610. Wittek Manufacturing Co., Chicago, Ill. Filed July 16, 1965.

CLAMP-TITE

Owner of Reg. Nos. 611,313 and 693,049.
For Hose Clamps.
First use on or about Mar. 8, 1965.

SN 223,673. Illinois Tool Works, Inc., Chicago, Ill. Filed July 19, 1965.



For Cold-Headed Fasteners, Sheet Metal Fasteners, and Plastic Fasteners.
First use on or before May 1, 1965.

SN 223,674. Illinois Tool Works Inc., Chicago, Ill. Filed July 19, 1965.

"RAMP-LOK"

For Rotary Fasteners, Washers and Assemblies for Rotary Fasteners, and Washers.
First use on or before June 25, 1965.

SN 223,880. Earnest Machine Products Company, Cleveland, Ohio. Filed July 21, 1965.

EARNALLOY

For Nuts, Screws, and Bolts.
First use on or about Sept. 1, 1963.

SN 223,915. Herbert H. Stam, d.b.a. Stam Manufacturing Co., Watseka, Ill. Filed July 21, 1965.

TRU-LOCK

For Unidirectionally Locking Devices for Valves.
First use on or about Apr. 1, 1964.

SN 224,819. VSI Corporation, Pasadena, Calif. Filed Aug. 2, 1965.

WEIGHT/MASTER

For Locknuts.
First use Nov. 2, 1959.

SN 224,906. "Automatic" Sprinkler Corporation of America, Youngstown, Ohio. Filed Aug. 4, 1965.

"Automatic" Sprinkler

Owner of Reg. No. 667,538 and others.
For Automatic Sprinkler Systems and Parts Thereof for Fire Protection.
First use Apr. 15, 1957.

SN 225,221. Trefileries Leon Bekaert, SPRL, Zwevegem, Belgium. Filed June 29, 1965.

KLIMATOR

Owner of Belgian Reg. No. 3,654, dated July 3, 1964.
For Wire Netting and Wire Cloth Made Out of Iron and Steel Wires.

SN 225,222. Trefileries Leon Bekaert, SPRL, Zwevegem, Belgium. Filed June 29, 1965.

GARDINET

Owner of Belgian Reg. No. 8,657, dated July 3, 1964.
For Wire and Steel Wire, Plastic Coated or Not; Wire Netting and Wire Cloth Made Out of These Wires.

SN 225,223. Trefileries Leon Bekaert, SPRL, Zwevegem, Belgium. Filed June 29, 1965.

GALITOR

Owner of Belgian Reg. No. 3,700, dated Jan. 8, 1965.
For Wire Netting Made Out of Galvanized Wire.

Class 14 — Metals and Metal Castings and Forgings

SN 215,053. Container Graphics Corporation, Toledo, Ohio. Filed Mar. 26, 1965.

PERFA-TYPE

For Marking Devices in the Nature of Metal Type for Producing Indicia Such as Letters of the Alphabet and Numbers on Corrugated Board and the Like.
First use Dec. 18, 1964.

SN 224,095. Harvey Aluminum (Incorporated), Torrance, Calif. Filed July 23, 1965.

VIRAL

For Sheet Aluminum.
First use as early as Apr. 30, 1965.

Class 15 — Oils and Greases

SN 206,571. Reed Schuster, d.b.a. Reed Schuster and Company, Cincinnati, Ohio. Filed Nov. 19, 1964.

Scent-ment

For Colored Scented Lamp Oil.
First use Nov. 30, 1963.

SN 221,286. The Meta-Therm Corporation, New York, N.Y. Filed June 16, 1965.

META-SPRAY

For Lubricating Liquid Oils and Solid and Semi-Solid Greases.
First use May 3, 1965.

Class 16 — Protective and Decorative Coatings

SN 196,591. Automotive Associates, Inc., New York, N.Y. Filed June 29, 1964.

DOUBLE A

Owner of Reg. Nos. 701,606 and 701,607.
For Spray Paint.
First use May 16, 1960.

SN 198,770. Radio Shack Corporation, Boston, Mass. Filed July 29, 1964.

ARCHER

Owner of Reg. Nos. 613,835 and 742,628.
For Clear Acrylic Spray Protective Coating With High Voltage Insulating Properties for Electronic Equipment and Electrical Work and Auto Ignition Systems.
First use May 29, 1964.

SN 217,014. Cook Paint & Varnish Company, Kansas City, Mo. Filed Apr. 21, 1965.

A-KRYL-X

For Ready-Mixed Exterior House Paint.
First use Sept. 23, 1957.

SN 219,317. W. R. Bonsal Company, Lilesville, N.C. Filed May 20, 1965.

Flexaglas

For Acrylic Paints for Exterior and Interior Surfaces of Homes, Commercial and Public Buildings, Factories, and the Like.
First use Dec. 8, 1964.

SN 221,113. Stits Aircraft Corporation, Riverside, Calif. Filed June 14, 1965.

POLY-DOPE

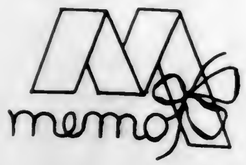
For Synthetic Resin Sealant and Protective Coating, Primarily for Use on Cloth-Covered Aircraft Surfaces.
First use Apr. 8, 1965.

SN 221,175. Hardman & Holden Limited, Manchester, England. Filed June 15, 1965.

COZIRC

Owner of British Reg. No. 862,399, dated Apr. 3, 1964.
For Driers for Paints and Varnishes.

SN 221,259. Evans Specialty Company, Inc., Richmond, Va. Filed June 16, 1965.



For Spray-On Plastic Coating Composition To Protect Book Covers, Artwork, Blueprints, Wallpaper, and the Like.
First use Mar. 3, 1965.

SN 221,906. Dow Corning Corporation, Midland, Mich. Filed June 24, 1965.

PYROBOND

For Epoxy Pipe Coating Powder.
First use Feb. 25, 1964.

SN 222,411. Peterson Paint, Inc., Rockford, Ill. Filed June 30, 1965.

COLOR-BLAZE

For Latex and Oil Base Paints, for Interior and Exterior Use.
First use May 15, 1965.

SN 223,031. Interchemical Corporation, New York, N.Y. Filed July 9, 1965.

COILFLEX

For Baking Enamels for Use on Metal Coils.
First use on or about Apr. 2, 1965.

Class 17—Tobacco Products

SN 169,596. Carreras Limited, Basildon, Essex, England. Filed Mar. 22, 1965.



Owner of British Reg. No. 822,537, dated June 30, 1961.
For Cigarettes.

Class 18—Medicines and Pharmaceutical Preparations

SN 198,802. Aloe Creme Laboratories, Inc., Fort Lauderdale, Fla. Filed July 30, 1964.



Without waiving any common law rights and solely for purposes of this registration, applicant hereby disclaims the term "Alo" and the representation of an aloe vera plant except as shown.
For Ointment for Healing Treatment of Minor Burns, Cuts, and Skin Irritations.
First use Feb. 8, 1953.

SN 206,428. The Dow Chemical Company, Midland, Mich. Filed Nov. 18, 1964.

VETROPOLYCIN

Owner of Reg. Nos. 564,445 and 659,235.
For Antibiotic, Anti-Inflammatory, Anesthetic Preparation for Veterinary Use.
First use Sept. 2, 1964.

SN 208,490. Olin Mathieson Chemical Corporation, New York, N.Y. Filed Dec. 18, 1964.

MERPRANE

For Radioactive Diagnostic Agent.
First use Sept. 14, 1964.

SN 209,606. International Minerals & Chemical Corporation, Skokie, Ill. Filed Jan. 8, 1965.

LACTO-FERM

For Animal Feed Supplement Containing Vitamins, Minerals, and Other Ingredients.
First use July 9, 1964.

SN 209,607. International Minerals & Chemical Corporation, Skokie, Ill. Filed Jan. 8, 1965.

DYNA-FERM

Owner of Reg. No. 616,094.
For Animal Feed Supplement Containing Vitamins, Minerals, and Other Ingredients.
First use July 9, 1964.

SN 210,280. Dome Chemicals, Inc., New York, N.Y. Filed Jan. 21, 1965.

NEO-NYSTA-CORT

For Dermatological Preparation.
First use on or before Apr. 30, 1962.

SN 213,082. Thomson Research Associates Limited, Toronto, Ontario, Canada. Filed Mar. 1, 1965.

STERI-SEPTIC

Owner of Canadian Reg. No. 130,426, dated Apr. 5, 1963.
For Bactericidal and Fungicidal Compositions for Use in the Treatment of Feet and Shoes.

SN 214,223. Acme Markets, Inc., Philadelphia, Pa. Filed Mar. 16, 1965.



For Multiple Vitamins.
First use Jan. 14, 1964.

SN 217,281. California Institutional Supply Co., Inc., Hollywood, Calif. Filed Apr. 26, 1965.

CAL-JER-TOL

For Vitamin Mineral Dietary Supplement.
First use on or about Mar. 18, 1964.

SN 217,696. Barnes-Hind Ophthalmic Products, Sunnyvale, Calif. Filed Apr. 30, 1965.

ALBUCID

For Anti-Infection Ophthalmic Cream Drop Preparation.
First use Feb. 8, 1965.

SN 217,697. Barnes-Hind Ophthalmic Products, Sunnyvale, Calif. Filed Apr. 30, 1965.

CORTUCID

For Anti-Infection Ophthalmic Cream Drop Preparation.
First use Feb. 8, 1965.

SN 217,699. Barnes-Hind Laboratories, Sunnyvale, Calif. Filed Apr. 30, 1965.

TINVER

For Lotion for Use in the Treatment of Tinea Versicolor Infections.
First use Mar. 5, 1965.

SN 218,997. International Latex Corporation, Dover, Del. Filed May 17, 1965.

TRISTAMAL

Owner of Reg. No. 779,360.
For Pharmaceutical Preparation for Treatment of Discomforts of Colds, Sinus Congestion, Allergies, and Similar Ailments.
First use Apr. 30, 1965.

SN 219,444. McKesson & Robbins, Incorporated, New York, N.Y. Filed May 21, 1965.

KESSODRATE

Owner of Reg. No. 386,076.
For Chloral Hydrate, a Sedative.
First use May 5, 1965.

SN 220,152. Richardson-Merrell Inc., New York, N.Y. Filed June 1, 1965.

MYOFACTIN

For Multi-Vitamin Dietary Supplement.
First use Apr. 27, 1965.

SN 220,420. Syntex Laboratories, Inc., Palo Alto, Calif. Filed June 4, 1965.

GROWMATE

For Estrogenic Steroid Hormone Preparation for Veterinary Systemic Use.
First use May 18, 1965.

SN 220,714. The Upjohn Company, Kalamazoo, Mich. Filed June 8, 1965.

TETRA-DELTA F

Owner of Reg. No. 672,404.
For Hormonal Preparation for Veterinary Use.
First use May 25, 1965.

SN 221,311. Supreme Pharmaceutical Co., Inc., Jersey City, N.J. Filed June 16, 1965.

pasiderm

For Multi-Purpose Skin Cream for Use as an Antiseptic, Anesthetic, Astringent, and Anti-Itch Preparation.
First use June 1950.

SN 222,116. The Central Pharmacal Company, Seymour, Ind. Filed June 28, 1965.

NIFEREX

For Medical Preparations, and in Particular, Non-Ionic Polysaccharideiron Complex for Treatment of Anemia.
First use June 9, 1965.

SN 222,643. American Cyanamid Company, Wayne, N.J. Filed July 6, 1965.

LEDERSTATIN

Owner of Reg. Nos. 280,833, 754,934, and others.
For Antibiotic Preparation.
First use June 22, 1965.

SN 226,892. Blistex Company, Seattle, Wash. Filed Sept. 1, 1965.

BLISTEX

Owner of Reg. No. 658,707.
For Ointment for Topical Application to Lips and Skin in Treatment of Cold Sores and the Like.
First use July 1, 1939.

Class 19—Vehides

SN 196,592. Automotive Associates, Inc., New York, N.Y. Filed June 29, 1964.

DOUBLE A

Owner of Reg. Nos. 701,606 and 701,607.
For Automotive Parts and Equipment—Namely, Floor Mats of Both Rubber and Plastic, Seat Belts, and Shock Absorbers.
First use Jan. 19, 1962, on floor mats.

SN 200,426. The Eagle-Picher Company, Cincinnati, Ohio. Filed Aug. 24, 1964.

P.F.E.

For Automotive Seat and Trim Material.
First use Feb. 3, 1963.

SN 203,123. Hawker Siddeley Canada Ltd., St. Pierre, Montreal, Quebec, Canada. Filed Oct. 1, 1964.

CAN-CAR

Owner of Canadian Reg. No. 131,191, dated May 31, 1963.
For Railway Freight Cars, Aircraft, Motor Driven Passenger Buses, Highway Trailers and Semi-Trailers for the Hauling of Goods, and Motor Driven Trucks.

SN 210,405. Automotive Conversion Company, Birmingham, Mich. Filed Jan. 22, 1965.

RESCU-ALL

For Automotive Vehicles Converted and Outfitted for Emergency Call Service.
First use during the year 1963.

Class 20—Linoleum and Oiled Cloth

SN 217,619. The Firestone Tire & Rubber Company, Akron, Ohio. Filed Apr. 29, 1965.

RICH WALL

Applicant disclaims the word "Wall" apart from the complete Mark as shown.
For Textured Multi-Ply Vinyl Wall Covering.
First use Oct. 11, 1955.

Class 21—Electrical Apparatus, Machines, and Supplies

SN 163,654. Packard-Bell Electronics Corporation, Los Angeles, Calif. Filed Feb. 28, 1963.

STEREO MUSIC MATES

The words "Stereo" and "Music" are disclaimed apart from the mark as shown.
For Stereophonic Combination Radio Receiving and Phonographic Equipment.
First use Aug. 27, 1962.

SN 181,460. Alice R. Cooper, d.b.a. Signal-U Manufacturing Company, Canfield, Ohio. Filed Nov. 19, 1963.

ATTENDORE

For Electrical Floor Mat Signals.
First use April 1961.

SN 190,392. Kleer-Vu Industries, Inc., New York, N.Y. Filed Apr. 6, 1964.

VIBRA-SEAL

For Ultrasonic Equipment for Sealing Plastics Ultrasonically.
First use Mar. 15, 1964.

SN 198,769. Radio Shack Corporation, Boston, Mass. Filed July 29, 1964.

ARCHER
SPACE PATROL

Owner of Reg. Nos. 613,835 and 742,628.
For Two-Way Wireless Walkie-Talkie.
First use June 30, 1964.

SN 202,307. Purex Corporation, Ltd., Lakewood, Calif. Filed Sept. 21, 1964.

BACTO-VAC

For Vacuum Machine Used by a Janitorial Force in the Cleaning of Industrial Plants and Institutional Buildings.
First use July 6, 1964.

SN 203,810. Plastics, Inc., St. Paul, Minn. Filed Oct. 12, 1964.

VIZA SWITCH

Exclusive use of the word "Switch" is disclaimed apart from the mark.
For Single Contact, High Voltage Series Street Light Circuit Control.
First use Dec. 17, 1963.

SN 204,192. Polytronics Laboratories, Inc., West Caldwell, N.J. Filed Oct. 16, 1964.

POLY-VERTER

For Power Converters.
First use Sept. 17, 1964.

SN 204,278. Nelson Neon, Richmond, Calif. Filed Oct. 19, 1964.

NELSON

Owner of Reg. No. 671,772.
For Electric Display Signs.
First use in or about January 1946.

SN 205,081. Miller Electric Mfg. Co., Appleton, Wis. Filed Oct. 29, 1964.



The drawing is lined for the color gold.
For Selenium Rectifiers.
First use August 1957.

SN 207,573. Cooke Engineering Company, Alexandria, Va. Filed Dec. 7, 1964.

CO-TERM

For Coaxial Switch and Terminating Jacks.
First use Nov. 30, 1964.

SN 208,290. Tradco/Detroit, Inc., Detroit, Mich. Filed Dec. 16, 1964.

GRAND PRIX *Lumière*

The word "Lumiere" is disclaimed apart from the mark as a whole.
For Electrical Lighting Fixtures and Incandescent Light Bulbs Other Than Automotive.
First use Feb. 4, 1964.

SN 209,730. Robosonics, Inc., Bronx, N.Y. Filed Jan. 11, 1965.

TELE-KEY

For Pocket-Size Remote Control Decoding Transmitter Used in Connection With a Telephone Answering and Monitoring Apparatus.
First use September 1964.

SN 210,541. Dimplex Limited, Millbrook, Southampton, England. Filed Jan. 25, 1965.

dimplex

Owner of British Reg. No. 849,781, dated May 29, 1963; and U.S. Reg. Nos. 634,388 and 766,286.
For Kettles Incorporating an Electrical Unit.

SN 211,212. Triangle Conduit & Cable Co., Inc., New Brunswick, N.J. Filed Feb. 2, 1965.

TRIANGLEDUCT

Owner of Reg. Nos. 514,842, 718,887, and others.
For Raceways for Electrical Conductors.
First use Sept. 1, 1964.

SN 211,443. Lutron Electronics Company, Inc., Emmaus, Pa. Filed Feb. 5, 1965.

POWERDIAL

For Electrical Voltage Control Devices in Which One or More Silicon Controlled Rectifiers Are Connected Between Input and Output Terminals of the Voltage Controlled Device.
First use March 1963.

SN 211,445. Lutron Electronics Company, Inc., Emmaus, Pa. Filed Feb. 5, 1965.

SPEEDIAL

For Electrical Motor Controllers in Which Semiconductor Devices Are Connected Between the Input and Output Terminals of the Device To Obtain Variable Output Voltage Through the Coordination of a Switch and a Control Potentiometer.
First use November 1962.

SN 211,720. Elox Corporation of Michigan, Troy, Mich. Filed Feb. 10, 1965.

ELOGRAPH

For Material for Making Electrical Discharge Machining Electrodes Comprising Essentially a Machinable Graphite-Type Electrode.
First use on or about Sept. 1, 1964.

SN 213,394. The Louis Allis Company, Milwaukee, Wis. Filed Mar. 5, 1965.



Owner of Reg. Nos. 180,349, 571,280, and others.
For Electric Motors and Drives.
First use Nov. 30, 1960.

SN 219,150. Syntronic of America, Incorporated, Boston, Mass. Filed May 18, 1965.

S-TRON

For Fire Alarm Unit for Detecting Smoke and Heat.
First use on or about Mar. 13, 1965.

SN 219,367. Talon, Inc., Meadville, Pa. Filed May 20, 1965.

ATOMICLAD

For Electrical Contact Elements.
First use Jan. 20, 1962.

SN 225,080. United Press International, Inc., New York, N.Y. Filed Aug. 5, 1965.

AUTOEDIT

For Automatically Receiving, Storing and Selectively Retrieving Unit for Teletypesetter Tape.
First use Apr. 21, 1965.

Class 22—Games, Toys, and Sporting Goods

SN 157,310. Thomas H. Magness, Jr., Arlington, Va. Filed Nov. 15, 1962.

MASTER-BRIDGE

For Equipment Comprising a Card Suit Indicator for Use in Playing a Bridge-Type Card Game.
First use Nov. 1, 1962.

SN 171,185. Sifo Company, St. Paul, Minn. Filed June 17, 1963.

HAPPY HUMPTY DUMPTY

No claim of exclusive right is made to the name "Humpty Dumpty" for the goods recited.
For Toy Building Blocks and Wooden Egg Representation of Nursery Rhyme Figure.
First use Jan. 1, 1963.

SN 184,311. Edward J. Smith, d.b.a. World Wide Originals, Milwaukee, Wis. Filed Jan. 9, 1964.

Miss MaDonna

For Spinning Toys.
First use on or about Oct. 15, 1963.

SN 192,920. P. Mauborgne & Cie, Société Anonyme, Bernouville (Eure), France. Filed May 7, 1964.

RELAX

Owner of French Reg. No. 1,261, dated Jan. 3, 1963 (Evreux); Natl. Inst. No. 199,231.
For Fishing Reels.

SN 196,341. Arthur Beneckson, d.b.a. Mannson Toys, Baltimore, Md. Filed June 24, 1964.

YUT

For Equipment Sold as a Unit for Playing a Board-Type Game.
First use Sept. 7, 1960.

SN 196,594. Automotive Associates, Inc., New York, N.Y. Filed June 29, 1964.



Owner of Reg. Nos. 701,606 and 701,607.
For Toy Wagons and Coaster Wagons and Tricycles.
First use Feb. 9, 1961.

SN 201,449. Mattel, Inc., Hawthorne, Calif. Filed Sept. 8, 1964.

ANIMAL TALK

For Apparatus Sold as a Unit for Playing a Children's Board Game.
First use Jan. 22, 1964.

SN 207,539. Wells Fargo & Company, New York, N.Y. Filed Dec. 4, 1964.

PONY EXPRESS

Owner of Reg. No. 708,532.
For Toy Pistols and Holsters.
First use Dec. 14, 1963.

SN 208,057. Etablissements Rublex, Paris, France. Filed Dec. 14, 1964.

SPICKY

Owner of French Reg. No. 499,296, dated Oct. 12, 1961.
For Fishing Equipment—Namely, Spoons and Lures.

SN 211,545. Mattel, Inc., Hawthorne, Calif. Filed Feb. 8, 1965.

SONIC-BLASTER

For Toy Gun.
First use Dec. 18, 1964.
Subj. to Intf. with SN 217,860.

SN 213,126. Holiday Inns of America, Inc., Memphis, Tenn. Filed Mar. 2, 1965.



Owner of Reg. Nos. 592,539, 748,127, and others.
For Playing Cards, and Golf Balls
First use at least as early as May 17, 1961.

SN 213,720. Serendipity 3, Inc., New York, N.Y. Filed Mar. 9, 1965.

serendipity 3

For Children's Puzzles, Board Games, Card Games, Rag Dolls, and Wooden Walking Toys.
First use Nov. 15, 1963.

SN 215,283. Storm Manufacturing Co., Norman, Okla. Filed Mar. 29, 1965.

GLOP!

For Fishing Lures.
First use June 17, 1964.

SN 217,860. Daisy Manufacturing Company, Rogers, Ark. Filed May 3, 1965.

SONIC

For Toy Popguns.
First use Feb. 1, 1965.
Subj. to Intf. with SN 211,545.

SN 218,362. AJ Industries Corporation, Delavan, Wis. Filed May 10, 1965.

RIM-RING

For Golf Club Storage Tubes.
First use on or before Aug. 1, 1964.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

SN 182,493. Millers Falls Company, Greenfield, Mass. Filed Dec. 6, 1963.

AUTO/POWER

For Rotary, Reciprocating, Oscillating and Impact Type Electrically, Hydraulically, and Compressed Air and Gas Driven, Hand Held and Stand Mounted Drills, Sanders, Grinders, Polishers, Wire Brushes, Wrenches, Saws, Cutters, Screwdrivers, Stud Removers, Parts Thereof, and Accessories and Attachments Therefor; Vises, and Grinder and Drill Press Stands; Taps, Countersinks, and Twist Drills; and Screwdrivers, Wrenches, Saws, Scribers, Punches, Peins, and Chisels.
First use Oct. 21, 1963.

SN 184,925. Imperial Knife Associated Companies, Inc., Providence, R.I. Filed Jan. 20, 1964.

RAZOR BLADE STAINLESS

The word "Stainless" is disclaimed apart from the mark as shown.
For Kitchen Knives.
First use Dec. 15, 1963.

SN 188,070. Bliss & Laughlin Industries Incorporated, Harvey, Ill., by change of name from Bliss & Laughlin, Incorporated, Harvey, Ill. Filed Mar. 6, 1964.

AMES

Applicant's related company owner of Reg. No. 766,179.
For Automatic and Non-Automatic Taping Machines, and Attachments Therefor—Namely, Corner Rollers, Corner Finishers, Flat Finishers, Corner and Flat Applicators, Nail Spotters, Mastic Spreaders, Loading Pumps, Block Sanders, Universal Sanders, Plastic and Metal Taper Pans and Replacement Blades Therefor, Knives, Scrapers, Trowels, Hawks, Inside and Outside Corner Tools, Tape and Pan Holders, Mud Beaters, General Purpose Mixers Adapted To Be Driven by Power Drills, and Saws.
First use at least as early as Apr. 1, 1955, on universal sanders.

SN 188,975. Gee-Whiz Tool Corporation, Memphis, Tenn. Filed Mar. 18, 1964.

GEE-WHIZ

For Hand Tool for Many Purposes—Namely, Edging Lawns, Pruning, and the Like.
First use May 5, 1961.

SN 190,894. John Coonts, d.b.a. Coonts Implement and Manufacturing Company, Kiowa, Kans. Filed Apr. 13, 1964.

DUZ-ALL

For Earth Mover Attachment and a Bulldozer Attachment for Use With Riding, Farm or Wheeled Tractors.
First use Jan. 1, 1962.

SN 192,151. The Bloomfield Manufacturing Company, d.b.a. Hi-Lift Jack Company, Bloomfield, Ind. Filed Apr. 28, 1964.

Hi-Lift

For Hand Operated Mechanical Jack Pulling and Lifting Device Serving Selectively as a Spreader, Stretcher, Clamp, and Hoist.
First use on or about Apr. 1, 1963.

SN 193,151. Jeffrey Galion Manufacturing Company, Columbus, Ohio. Filed May 11, 1964.

E-Z OUT

For Industrial Material Handling Equipment Comprising Spiral Conveyors and Parts Thereof.
First use on or about Feb. 14, 1964.

SN 196,595. Automotive Associates, Inc., New York, N.Y. Filed June 29, 1964.



Owner of Reg. Nos. 701,606 and 701,607.
For Automotive Parts and Equipment—Namely, Fuel Pumps, and Exhaust Systems (Mufflers and Parts Therefor).
First use Feb. 1, 1957.

SN 198,082. The A. J. Sackett and Sons Company, Baltimore, Md. Filed July 17, 1964.

MAN-U-PAK

For Fertilizer and Plant Food Producing Processing Plants.
First use Sept. 13, 1963.

SN 204,650. Fitchburg Paper Company, Fitchburg, Mass. Filed Oct. 23, 1964.



For Apparatus for Supplying Paper Pulp to a Paper-Making Machine.
First use Aug. 13, 1964.

SN 207,222. Leesona Corporation, Warwick, R.I. Filed Dec. 1, 1964.

No. 512

For Textile Machinery—Namely, Winding and Twisting Machinery.
First use on or about Feb. 3, 1958.

SN 208,049. Dashew Business Machines, Inc., Los Angeles, Calif. Filed Dec. 14, 1964.

LABEL-MATE

For Tape Embossing Machines and Embossing Kits.
First use Nov. 10, 1964.

SN 209,797. The Navarre Corporation, Chattanooga, Tenn. Filed Jan. 12, 1965.

POST-MASTER

For Soft Drink Beverage Vending Machines.
First use Apr. 30, 1964.

SN 211,567. Penn-Union Electric Corporation, Erie, Pa. Filed Feb. 8, 1965.

POSI-MATIC

For Machine for Applying Terminals to Electrical Conductors.
First use Oct. 9, 1961.

SN 211,568. Penn-Union Electric Corporation, Erie, Pa. Filed Feb. 8, 1965.

FAB-N-CRIMP

For Machine for Forming Electrical Terminals and Applying Same to Electrical Conductors.
First use Oct. 9, 1961.

SN 213,776. Itek Corporation, Lexington, Mass. Filed Mar. 10, 1965.

Itek

Owner of Reg. Nos. 741,406 and 751,978.
For Offset Duplicating Machines.
First use on or about Feb. 18, 1965.

SN 214,073. Breuer Electric Mfg. Co., Chicago, Ill. Filed Mar. 15, 1965.

FLOORKEEPER

For Electrically Driven Vacuum Cleaner and Scrubber for Floors.
First use Feb. 16, 1965.

SN 215,016. W. S. Shamban & Co., Culver City, Calif. Filed Mar. 25, 1965.

TURCITE

For Self-Lubricated Bearings.
First use Feb. 17, 1965.

SN 217,639. Maxam, Incorporated, Auburn, Maine. Filed Apr. 29, 1965.

MAXAMARKER

Owner of Reg. No. 709,313.
For Machines for Heat-Marking, Embossing, Heat-Sealing, Perforating and Marking, Pleating and Forming Components Used in the Shoe, Rubber, and Paper Industries.
First use June 1959.

SN 217,739. Jeffrey Galion Manufacturing Company, Columbus, Ohio. Filed Apr. 30, 1965.

ROOF-O-MATIC

Owner of Reg. Nos. 608,712 and 626,176.
For Mine Roof Support Equipment, Such as Self-Advancing Supports, Posts, Chocks, Props and Shields, and Parts Thereof.
First use on or about Dec. 12, 1964.

SN 219,206. Paul E. Hawkinson Company, Minneapolis, Minn. Filed May 19, 1965.

CONTINENTAL

For Pneumatic Tire Retreading Molds and Presses.
First use May 8, 1959.

SN 219,261. Projecting AB, Stockholm, Sweden. Filed May 19, 1965.

RADICLONE

Owner of U.S. Reg. No. 784,361.
For Centrifugal Separators for Separating Discrete Particles From Gaseous and Liquid Fluids; Centrifugal Particle Separators for Separating Discrete Particles in Suspensions; Hydrocyclone Separators for Separating Discrete Particles in Gaseous and Liquid Fluids; Screening Devices for Screening Out Discrete Particles in Gaseous and Liquid Fluids; and Parts of the Aforelisted Types of Separators and Screening Devices.
First use September 1962; in commerce June 1963.

SN 219,529. David A. Carter, d.b.a. Office Products Company, St. Louis, Mo. Filed May 24, 1965.

MAGNA-STRIP

For Stamp Racks.
First use Apr. 16, 1965.

SN 219,837. Viking Drill and Tool Co., Inc., d.b.a. North American-Viking Drill Corporation, St. Paul, Minn. Filed May 26, 1965.

NAVCO

For Twist Drills, Masonry Drills, Boring Bits, and Related Drill Products.
First use Jan. 15, 1965.

SN 219,981. The General Tire & Rubber Company, Akron, Ohio. Filed May 28, 1965.

GENSLIP

For Bearings.
First use prior to May 18, 1965.

SN 219,986. Hanson Equipment Company, South Beloit, Ill. Filed May 28, 1965.

HANDI-JET

For Power Operated Sprayers and Accessories Therefor.
First use Jan. 28, 1957.

SN 220,039. Syracuse Supply Company, Syracuse, N.Y. Filed May 28, 1965.

ASSEMBLY-VEYOR

For Material Handling Conveyor.
First use Mar. 16, 1965.

SN 220,081. Damascus Steel Products Corporation, Rockford, Ill. Filed June 1, 1965.

Dasco

Owner of Reg. No. 165,567.
For Cutlery and Tools—Namely, Cutting Nippers, Tile Nippers, Paring Nippers, Wire Nippers, Carpenters' Pincers, Moulding Tools, Cotter-Pin Tools, Wrecking Bars, Ripping Bars, Claw Bars, Lining Bars, Paring Knives, Steak Knives, Pocket-Knives, Cold Chisels, Cape Chisels, Round-Nose Cape Chisels, Diamond-Point Chisels, Steel Wood Chisels, Ripping Chisels, Masons' Chisels, Tooth Chisels, Plugging Chisels, Concrete Chisels, Floor Chisels, Soil Pipe Chisels, Tuck Point Rakes, Round-Point Solid Punches, Pin Punches, Drift Punches, Square-Point Punches, Prick Punches, Center Punches, Sheet Metal Punches, Machine Punches, Mower Section Punches, Flat-Face Punches, Punch Sets, Gouges, Nail Sets, Rivet Sets, Brick Sets, Rivet Busters, Star Drills, Sled Run Jointers, Tapered Jointers, Pitching Tools, Calking Irons, Yarning Irons, Screw Drivers, Screw-Driver Bits, Countersinks, Hammers Including Brick Hammers, Tile Hammers, and Staple Pullers, Snips, Shears, and Farriers' Tools Including Hoof Hammers, Hoof Parers, Hoof Nippers, Cutting Nippers, Hoof Rasps, and Hoof Knives.
First use January 1922.

SN 220,087. Eversharp, Inc., Milford, Conn. Filed June 1, 1965.

BEEP-BEEP

For Safety Razor Blades.
First use May 14, 1965.

SN 221,540. Vacuum Cleaner Corporation of America, Philadelphia, Pa. Filed June 18, 1965.

CORDOMATIC

Owner of Reg. Nos. 318,396, 410,926, and 613,065.
For Non-Electrical Cord-Reels and Cable-Reels and More Particularly Clothes-Line Reels, Dog-Tethering Reels, Counterbalancing Reels for Tools and Appliances, and General-Purpose Reels for Retracting and Paying Out Non-Electrical Cables, Cords, and Other Lines.
First use Feb. 17, 1949, on clothes-line reels.

SN 221,790. Capital Tool & Manufacturing Company, Inc., College, Park, Md. Filed June 23, 1965.

CAPCO

For Equipment Used as Part of or in Conjunction With Printing Presses—Namely, Portable Ink Fountains, Grinders for Grinding and Polishing Printing Rollers, Color Separators, Printing Paper Rewinders, Core Strippers for Use in Removing Paper Remaining on Cores, and Type Screening Machines for Reproducing Engraved Type Screen Patterns.
First use 1948 on rewinders.

SN 221,849. Rawl Engineering & Mfg. Co., Inc., Providence, R.I. Filed June 23, 1965.

GASPARK

For Mechanical Ball-and-Socket Joints.
First use 1928.

SN 222,635. Vogel Tool & Die Corporation, Stone Park, Ill. Filed July 2, 1965.

VOGO-MATIC

For Machines for Cutting Tubing.
First use June 12, 1963.

SN 222,840. Finish Engineering Company, Inc., Erie, Pa. Filed July 7, 1965.

ROTOMATIC

For Automatic Painting and Coating Machines, Masks, Mask Washers, Roller Coaters, Paint Wiping Machines, and Plating Machines.
First use January 1960.

SN 223,247. Link-Belt Company, Chicago, Ill. Filed July 13, 1965.

BELTGARD

Owner of Reg. No. 789,963.
For Belt Conveyor Pulleys.
First use June 11, 1965.

SN 224,831. Alto Corporation, Harrisburg, Pa. Filed Aug. 3, 1965.

AIRGRIP

Owner of Reg. Nos. 586,471, 698,956, and 699,386.
For Bakery Machinery, Including Bun Depanners for Removing Dough Products From Pans—Namely, Bread and Rolls.
First use July 21, 1965.

SN 224,993. Westinghouse Air Brake Company, Pittsburgh, Pa. Filed Aug. 4, 1965.

LE ROI

Owner of Reg. Nos. 392,952, 675,552, and others.
For Air Compressors and Parts Thereof and Attachments Therefor.
First use on or about Aug. 1, 1957.

SN 225,020. The Halvorfold-Kwikprint Company, Jacksonville, Fla. Filed Aug. 5, 1965.

KWIKPRINT

For Stamping and Embossing Machines for Leather, Plastics, Wood, Fabrics, Fiberboard, and the Like.
First use in or about 1922.

SN 225,028. H. D. Hudson Manufacturing Company, Chicago, Ill. Filed Aug. 5, 1965.

THRUST-NOT

For Spray Control Valve.
First use in or about December 1964.

Class 24 — Laundry Appliances and Machines

SN 212,377. Ametek, Inc., East Moline, Ill. Filed Feb. 19, 1965.

CAREFREE

For Machines for Dispensing Laundering Ingredients Such as Soaps, Blueing, Bleaches, etc., Into Commercial Laundry Machines, Such Dispensing Machines Being Incorporated Into and Sold as a Component Part of the Laundry Machine.
First use Jan. 13, 1965.

SN 225,090. Samuel Yuter, d.b.a. Jayson's, Philadelphia, Pa. Filed Aug. 5, 1965.

FLANNAIRE

For Pressing Machine Padding.
First use Jan. 24, 1963.

Class 26 — Measuring and Scientific Appliances

SN 186,396. Sartorius-Werke, Aktiengesellschaft (vormals Göttinger Präzisionswaagenfabrik G.m.b.H.), Gottingen, Germany. Filed Feb. 10, 1964.

sartorius

Owner of German Reg. No. 760,336, dated Apr. 10, 1962; and U.S. Reg. Nos. 575,710 and 618,799.
For Precision Scales, Scales for Analysis, Electronic Scales, and Electronic Analytical Balances.

SN 188,343. The Eastern Company, Naugatuck, Conn. Filed Mar. 10, 1964.

THE MARK OF SAFETY AFLOAT

The slogan "The Mark of Safety Afloat" is disclaimed apart from the mark as shown and with full reservation of applicant's common law rights in which it believes to be its distinctive slogan.
For Marine Equipment—Namely, Compasses, Depth Sounders, Barometers, Electronic Fog Horns, and Listening Devices.
First use June 1961.

SN 194,686. Visual Graphics Corp., New York, N.Y. Filed June 1, 1964.

TRIXTER

For Photographic Cameras.
First use Apr. 22, 1964.

SN 199,791. Chemco Photoproducts Company, Inc., Glen Cove, N.Y. Filed Aug. 13, 1964.

PRISMADOT

For Photographic Film.
First use June 1, 1964.

SN 203,865. Elbert H. Ebersole, Pasadena, Calif. Filed Oct. 13, 1964.

VISORETTE

For Shade for Eyeglasses.
First use Apr. 30, 1956.

SN 203,881. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed Oct. 13, 1964.

QUADRANT

For Microfilm Reader-Printer.
First use Sept. 18, 1964.

SN 207,622. Mattel, Inc., Hawthorne, Calif. Filed Dec. 7, 1964.

BARBIE

Owner of Reg. Nos. 689,055 and 772,298.
For Paper Items, Specifically, Paper Patterns for Doll Clothes.
First use Oct. 30, 1963.

SN 212,389. Carolina Biological Supply Company, Burlington, N.C. Filed Feb. 19, 1965.

WOLFE

For Optical Instruments—Namely, Prism Binoculars, Microscopes, Microscope Optics, Illuminators, and Stages.
First use Feb. 15, 1960.

SN 214,219. Reproduction Engineering Corporation, Essex, Conn. Filed Mar. 9, 1965.

BLU-RAY

The drawing is lined for the color blue. Owner of Reg. No. 705,960.
For Reproduction Equipment—Namely, Diazo Direct Processing Whiteprint Machines.
First use Sept. 15, 1957.

SN 217,904. Leeds Travelwear, Inc., New York, N.Y. Filed May 3, 1965.

CAMR-PAK

For Carrying Cases or Bags for Cameras, Films, and Photographic Supplies.
First use Aug. 1, 1948.

SN 220,442. Ambeo Electronics, Los Angeles, Calif. Filed June 7, 1965.

CLINIMETER

For Instruments in the Nuclear Field, Specifically an Instrument for Measuring Radiation in Blood Samples.
First use July 31, 1964.

SN 221,172. Gulton Industries, Inc., Metuchen, N.J. Filed June 15, 1965.

THERMIST-O-METER

For Temperature Indicating Meter Using an Electric Bridge Circuit With a Thermistor Sensing Element.
First use December 1964.

SN 221,791. Capital Tool & Manufacturing Company, Inc., College Park, Md. Filed June 23, 1965.

CAPCO

For Plate Gauges—Namely, Stereotype and Tubular Plate Gauges.
First use 1952.

SN 222,862. Optische Werke G. Rodenstock, Munich, Germany. Filed July 7, 1965.

TILO

For Eyeglass Frames.
First use at least February 1965; in commerce May 1965.

SN 225,465. Automation Products, Inc., Houston, Tex. Filed Aug. 11, 1965.

RED GOOSE

For Fluid Sampling Apparatus.
First use Dec. 16, 1963.

SN 225,917. American Optical Company, Southbridge, Mass. Filed Aug. 18, 1965.

PRESIDENT

For Ophthalmic Frames.
First use Nov. 11, 1963.

SN 226,216. The Brearley Company, Rockford, Ill. Filed Aug. 23, 1965.

mayfair

For Weighing Scales.
First use July 20, 1965.

SN 226,883. American Hoist & Derrick Company, St. Paul, Minn. Filed Sept. 1, 1965.

TEMP-O-TROL

For Sensing Device That Electrically Measures the Rate of Temperature Change Caused by Varying Aggregate Conditions and That Automatically Controls the Rate of Increase or Decrease of Fuel Consumption by Aggregate Driers.
First use July 31, 1963.

Class 27 — Horological Instruments

SN 223,824. Queens Watch Case Corporation, Jamaica, N.Y. Filed July 20, 1965.

QUEENS

For Watch Cases.
First use Aug. 1, 1964.

SN 223,825. Queens Watch Case Corporation, Jamaica, N.Y. Filed July 20, 1965.

QUEENS

For Watch Cases.
First use Sept. 1, 1954.

SN 224,706. Benrus Watch Company, Inc., New York, N.Y. Filed Aug. 2, 1965.

PATRIOT

For Watches.
First use Jan. 31, 1964.

Class 28 — Jewelry and Precious-Metal Ware

SN 220,311. Marvella, Inc., New York, N.Y. Filed June 3, 1965.

CHIFFON

For Jewelry.
First use January 1941.

SN 223,689. Nathan Kusnitz, d.b.a. Kayen Jewelry Co., New York, N.Y. Filed July 16, 1965.

KAYEN

For Jewelry.
First use November 1964.

SNI 223,842. Towle Manufacturing Company, Newburyport, Mass. Filed July 20, 1965.



Owner of Reg. No. 47,551.
For Silver Plated Hollowware.
First use June 17, 1965.

Class 29 — Brooms, Brushes, and Dusters

SN 213,118. Holiday Inns of America, Inc., Memphis, Tenn. Filed Mar. 2, 1965.

YOUR HOST FROM COAST TO COAST

Owner of Reg. Nos. 657,302 and 740,362.
For Shoe Shine Cloths.
First use at least as early as Aug. 1, 1957.

SN 213,127. Holiday Inns of America, Inc., Memphis Tenn. Filed Mar. 2, 1965.



Owner of Reg. Nos. 592,539, 748,127, and others.
For Shoe Shine Cloths.
First use at least as early as Aug. 1, 1957.

Class 31 — Filters and Refrigerators

SN 213,604. Rockwell-Standard Corporation, Pittsburgh, Pa. Filed Mar. 8, 1965.

ROLL-A-MAZE

For Roll Type Air Filters.
First use about Feb. 22, 1965.

SN 214,677. Millipore Filter Corporation, Bedford, Mass. Filed Mar. 22, 1965.

POLYVIC

For Membrane Filters.
First use Mar. 2, 1965.

SN 214,678. Millipore Filter Corporation, Bedford, Mass. Filed Mar. 22, 1965.

DESIPORE

For Membrane Filters.
First use Mar. 2, 1965.

SN 214,679. Millipore Filter Corporation, Bedford, Mass. Filed Mar. 22, 1965.

CELOTATE

For Membrane Filters.
First use Mar. 2, 1965.

Class 32 — Furniture and Upholstery

SN 187,441. The Seng Company (Delaware corporation), Chicago, Ill., by merger and change of name from The Seng Company (Illinois corporation), Chicago, Ill. Filed Feb. 25, 1964.

STYLE-PLUS

For Folding Bed Frames for Convertible Furniture.
First use Sept. 19, 1963.

SN 218,398. Dayco Corporation, Dayton, Ohio. Filed May 10, 1965.

DAYCO

Owner of Reg. Nos. 315,408, 762,993, and others.
For Pillows, Mattresses, and Cushions.
First use on or about Apr. 1, 1960.

SN 219,471. Simmons Company, New York, N.Y. Filed May 21, 1965.

SIM-CLAD

For Decorative and Protective Plastic Film Incorporated in Finished Furniture as a Surface Laminate Over Wood, Plastic, Steel, and So Forth.
First use May 10, 1965.

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 158,313. Baker Perkins Inc., Saginaw, Mich. Filed Dec. 3, 1962.



The drawing is lined for blue.
For Bake Ovens.
First use Apr. 19, 1962; August 1922 to "Baker Perkins."

SN 205,077. Miller Electric Mfg. Co., Appleton, Wis. Filed Oct. 29, 1964.

memco

For Electric Arc Welders, Power Supplies, and Other Parts Therefor.
First use June 1961.

SN 205,083. Miller Electric Mfg. Co., Appleton, Wis. Filed Oct. 29, 1964.

LECTRO-SPOT

For Electric Spot Welders With Built-In Timing Control.
First use Apr. 24, 1958.

SN 214,207. Unitek Corporation, Monrovia, Calif. Filed Mar. 15, 1965.

AUTOBOND

For Welding Systems and Components of Welding Systems.
First use Sept. 17, 1964.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 196,597. Automotive Associates, Inc., New York, N.Y. Filed June 29, 1964.



Owner of Reg. Nos. 701,606 and 701,607.
For Automotive Fan Belts, Radiator and Heater Hoses and Gaskets Therefor, Fractional Horsepower Belts, and Garden Hose.
First use Nov. 29, 1962, on automotive fan belts.

SN 216,690. The B. F. Goodrich Company, Akron, Ohio. Filed Apr. 16, 1965.

RIBFLEX

For Conveyor Belting.
First use Oct. 16, 1953.

SN 217,117. Hoffman Tire Company, Inc., Philadelphia, Pa. Filed Apr. 22, 1965.

CARIBBEAN

For Tires.
First use Apr. 8, 1965.

Class 36 — Musical Instruments and Supplies

SN 207,477. Connoisseur Record Corporation, Kearny, N.J. Filed Dec. 4, 1964.



Applicant hereby disclaims the generic word "Records" apart from the mark as shown.
For Phonograph Records.
First use July 15, 1964.

SN 214,297. Harold J. Thompson, Boston, Mass. Filed Mar. 16, 1965.

T-BOOM

For Drum Beater.
First use Nov. 14, 1964.

SN 214,315. Alkro Musical Supplies Co., Inc., New York, N.Y. Filed Mar. 17, 1965.

RANGER

For String Musical Instruments and Strings Therefor.
First use Dec. 4, 1964.

SN 214,702. The Seeburg Corporation, Chicago, Ill. Filed Mar. 22, 1965.

DISCOTEEN

For Phonograph Records.
First use Mar. 3, 1965.

SN 216,749. Pancordion, Inc., New York, N.Y., assignee of Traficante, Inc., Minneapolis, Minn. Filed Apr. 16, 1965.

VICTORIA

For Accordions.
First use June 1960.

Class 37 — Paper and Stationery

SN 193,885. The Mead Corporation, Dayton, Ohio. Filed May 20, 1964.

OLD HICKORY

For Envelope Paper.
First use as early as April 1923.

SN 205,313. Michigan Carton Co., Battle Creek, Mich. Filed Nov. 2, 1964.

ROYAL TWINCOTE

Owner of Reg. No. 744,087.
For Paperboard Particularly Adapted for the Making of Cartons and the Like.
First use Oct. 13, 1964.

SN 208,287. Richard Arlen Taylor, d.b.a. Millstone Graphic Arts, Cranbury, N.J. Filed Dec. 16, 1964.

KITCHEN-MINDER

For Partially Printed Cards, Forms, Memo Pads, and Containers Therefor.
First use Dec. 9, 1963.

SN 208,670. Color-Aid Corporation, New York, N.Y. Filed Dec. 22, 1964.

PHOTO-COMP

For Art Paper.
First use July 9, 1964.

SN 210,423. Emissaries of Divine Light, Loveland, Colo. Filed Jan. 22, 1965.



For Paper and Stationery.
First use May 30, 1964.

SN 210,726. American Can Company, New York, N.Y. Filed Jan. 27, 1965.

ECONO-PRINT

For Waxed and/or Plastic Coated Paper for Wrapping of Frosen Foods.
First use Nov. 25, 1964.

SN 213,119. Holiday Inns of America, Inc., Memphis, Tenn. Filed Mar. 2, 1965.

YOUR HOST FROM COAST TO COAST

Owner of Reg. Nos. 657,302 and 740,362.
For Paper Toilet Seat Bands, Paper Napkins, Paper Wash Cloths, Paper Towels, and Pens.
First use at least as early as December 1962.

SN 213,128. Holiday Inns of America, Inc., Memphis, Tenn. Filed Mar. 2, 1965.



Owner of Reg. Nos. 592,539, 748,127, and others.
For Paper Toilet Seat Bands, Paper Napkins, Paper Towels, and Paper Wash Cloths, and Pens.
First use at least as early as Aug. 1, 1957.

SN 214,154. Natser Corporation, d.b.a. Acco Products, Ogdensburg, N.Y. Filed Mar. 15, 1965.

Fastback

For File Folders.
First use Feb. 17, 1965.
Subj. to Intf. with SN 223,654.

SN 214,565. Sav-A-Stop, Incorporated, Jacksonville, Fla. Filed Mar. 19, 1965.

SAV-A-STOP

Owner of Reg. No. 733,678.
For Paper and Paper Products—Namely, Writing and Typing Papers in Bundle Form, Tablets, Composition Books, Envelopes, and Filing Cards.
First use at least as early as Feb. 15, 1953.

SN 214,783. Orchard Paper Company, St. Louis, Mo. Filed Mar. 23, 1965.

GIFT HOUSE

For Gift Wrapping Paper.
First use September 1964.

SN 214,784. Orchard Paper Company, St. Louis, Mo. Filed Mar. 23, 1965.

ORCHARD HOUSE

For Gift Wrapping Paper.
First use August 1964.

SN 219,549. Fox River Paper Corporation, Appleton, Wis. Filed May 24, 1965.

SILVERMIST

Owner of Reg. No. 282,178.
For Writing Paper.
First use Dec. 1, 1930.

SN 219,550. Fox River Paper Corporation, Appleton, Wis. Filed May 24, 1965.

RAVINIA

Owner of Reg. No. 164,209.
For Writing Paper.
First use Mar. 14, 1921.

SN 219,552. Fox River Paper Corporation, Appleton, Wis. Filed May 24, 1965.

FOX RIVER-100

Owner of Reg. No. 272,333.
For Writing Paper.
First use May 1925.

SN 223,654. Marion Donovan, d.b.a. Marion Donovan & Associates, New York, N.Y. Filed July 19, 1965.

FAST BACK

For Two-Way Envelopes and Return Envelopes.
First use June 7, 1965.
Subj. to Intf. with SN 214,154.

SN 229,077. The Joseph Dixon Crucible Company, Jersey City, N.J. Filed Oct. 1, 1965.

PASTELLO

For Crayons—Namely, Pastel Crayons.
First use 1902.

Class 38 — Prints and Publications

SN 198,929. Bibliographisches Institut AG, Mannheim, Germany. Filed July 31, 1964.



Priority claimed under Sec. 44(d) on German application filed Feb. 27, 1964; Reg. No. 791,590, dated July 22, 1964. A translation of the German word "Hochschultaschenbucher" is "university pocket books." The word "Hochschultaschenbucher" is disclaimed apart from the mark as shown.
For Books of Small Size.

SN 203,385. Editorial Labor, S.A., Barcelona, Spain. Filed Oct. 6, 1964.

Editorial "LABOR"

Owner of Spanish Reg. No. 27,269, dated Apr. 19, 1916.
For Books, Magazines, Newspapers, Novels, Advertisement Handbills, Leaflets, Prospectuses, and All Kinds of Literary Work.

SN 204,717. Springer Publishing Company, Inc., New York, N.Y. Filed Oct. 23, 1964.

SPRINGER

For Books.
First use in or about November 1951.

SN 205,750. The Webb Publishing Company, St. Paul, Minn. Filed Nov. 6, 1964.



For Record Keeping Booklets.
First use 1945.

SN 209,806. Sernoll, Inc., Iowa City, Iowa. Filed Jan. 12, 1965.



For Textbooks.
First use Oct. 12, 1964.

SN 216,936. Cowles Educational Books, Inc., New York, N.Y. Filed Apr. 20, 1965.



For Reference Books of an Encyclopedic Nature.
First use Dec. 23, 1964.

SN 217,034. The Institute of Electrical and Electronics Engineers, Incorporated, New York, N.Y. Filed Apr. 21, 1965.

PROCEEDINGS OF THE IEEE

For Monthly Magazine on New Advances of Electrical and Electronics Engineering.
First use January 1963.

SN 217,542. Honeywell Inc., Minneapolis, Minn. Filed Apr. 28, 1965.

HOTLINE

For Dealer Newsletter Pertaining to the Field of Photography.
First use January 1965.

SN 218,036. U.S. Industries, Inc., New York, N.Y. Filed May 4, 1965.

TUTORCOURSE

Owner of Reg. Nos. 681,855, 773,199, and others.
For Printed and Filmed Programs for Use With Applicant's Educational or Teaching Apparatus.
First use Mar. 19, 1965.

SN 218,464. National Periodical Publications, Inc., New York, N.Y. Filed May 10, 1965.



For Comic Magazines.
First use Jan. 21, 1965.

SN 222,858. Norcross, Inc., New York, N.Y. Filed July 7, 1965.

TISHU CAMELLIA

For Greeting Cards.
First use Apr. 14, 1965.

SN 225,185. Norcross, Inc., New York, N.Y. Filed Aug. 6, 1965.

BLUEBERRY

For Greeting Cards.
First use July 13, 1965.

SN 225,186. Norcross, Inc., New York, N.Y. Filed Aug. 6, 1965.

CARAMEL

For Greeting Cards.
First use July 13, 1965.

SN 225,187. Norcross, Inc., New York, N.Y. Filed Aug. 6, 1965.

COCOA

For Greeting Cards.
First use July 13, 1965.

SN 225,188. Norcross, Inc., New York, N.Y. Filed Aug. 6, 1965.

LEMON DROP

For Greeting Cards.
First use July 13, 1965.

SN 225,189. Norcross, Inc., New York, N.Y. Filed Aug. 6, 1965.

SUGAR 'N SPICE

For Greeting Cards.
First use July 13, 1965.

SN 225,193. Norcross, Inc., New York, N.Y. Filed Aug. 6, 1965.

CLOVER

For Greeting Cards.
First use July 13, 1965.

Class 39 — Clothing

SN 179,284. Western Fashions, Inc., Denver, Colo. Filed Oct. 17, 1963.



The words "Western Fashions" are disclaimed apart from the mark as shown.
For Ladies' and Children's Dresses and Shirts.
First use Mar. 25, 1959.

SN 180,349. Admiral Shoe Corporation, d.b.a. Mutual Shoe Sales Co., Manchester, N.H. Filed Nov. 4, 1963.



The word "Miniatures" is disclaimed apart from the mark as whole. Owner of Reg. No. 686,698.
For Women's and Misses' Shoes.
First use Oct. 24, 1963.

SN 190,181. International Shoe Company, St. Louis, Mo. Filed Apr. 2, 1964.

HY-TEST

For Shoes.
First use Aug. 29, 1932.

SN 193,639. Dixon-Bartlett, Inc., Baltimore, Md., by change of name and assignment of Dixon-Bartlett Company, Baltimore, Md. Filed May 18, 1964.

MISS DALE

Owner of Reg. No. 535,080.
For Ladies' Shoes.
First use May 5, 1964.

SN 193,681. Marianne Lee, d.b.a. X-Pants Mfg. Co., Carnegie, Pa. Filed May 18, 1964.



For Diapers.
First use Dec. 19, 1963.

SN 193,816. Sarong, Inc., Dover, Del. Filed May 19, 1964.

PLUSH-EVER

For Edging Which Forms Part of an Undergarment, e.g., a Girdle.
First use as early as January 1961.

SN 196,328. Wright Manufacturing Company, Toccoa, Ga. Filed June 23, 1964.



The figuration appearing in the drawing is a fanciful "W" and applicant disclaims the right to the exclusive use of the representation of a pair of slacks except in the relation and association shown.
For Slacks.
First use June 8, 1964.

SN 196,917. Surprise Brassiere Co., Inc., New York, N.Y. Filed July 1, 1964.

'LADY FINGERS'

For Girdles and Panty Girdles.
First use June 1, 1964.

SN 197,047. A–1 Kotzin Co., Los Angeles, Calif. Filed July 6, 1964.



The wording "No-Iron" is disclaimed apart from the mark as shown.
For Trousers.
First use June 10, 1964.

SN 199,585. Little Women Inc., Newnan, Ga. Filed Aug. 10, 1964.

LITTLE WOMEN

For Children's Panties, Slips, Robes, Pajamas, Petti Panties, and Gowns.
First use May 21, 1957.
Subj. to Intf. with SN 201,585.

SN 200,941. The Kendall Company, Walpole, Mass. Filed Aug. 31, 1964.

Curity

Owner of Reg. Nos. 133,720 and 591,265.
For Knitwear—Namely, Infants' and Toddlers' Shirts, Gowns, Kimonos, Sacques, Training Pants, Coveralls, Creepers, Sacque and Panty Sets, Loafers, and Other Garments Worn by Toddlers and Crawling Infants.
First use on or before Sept. 1, 1955.

SN 201,021. Exquisite Form Industries, Inc., New York, N.Y. Filed Sept. 1, 1964.

BARELY BARE

For Brassieres.
First use Apr. 28, 1964.

SN 201,535. Kenero, Inc., Luthersville, Ga. Filed Sept. 9, 1964.

Little Women

For Children's Sleepwear and Lingerie.
First use July 20, 1963.
Subj. to Intf. with SN 199,585.

SN 202,026. J. J. Haggarty Stores, Inc., Beverly Hills, Calif. Filed Sept. 16, 1964.



For Wearing Apparel, Including Specifically Suits, Coats, Furs, Dresses, Scarves, Handkerchiefs, Raincoats, Jackets, Slacks, Shirts, Shorts, Blouses, T-Shirts, Skirts, Sweaters, Swimwear, Shoes, Slippers, Hosiery, Lingerie, Millinery, Gloves, and Robes.
First use on or about June 16, 1964.

SN 202,260. Odette Glueck, d.b.a. A l'Etoile, New York, N.Y. Filed Sept. 21, 1964.

A L'ETOILE

For Dresses, Coats, Costumes, Blouses, and Lingerie.
First use Sept. 10, 1964.

SN 204,739. Aldens Shoppers World, Inc., Chicago, Ill. Filed Oct. 26, 1964.

SHOPPERS WORLD

Owner of Reg. Nos. 730,023 and 738,674.
For Clothing for Men, Women, Boys, Girls, and Infants—Namely, Socks, Underwear, Shirts, Pants, Skirts, Blouses, Coats, and Jackets.
First use Mar. 6, 1956.

SN 205,729. Ralph D. Simon, d.b.a. Mister Raphael, Chicago, Ill. Filed Nov. 6, 1964.

MISTER RAPHAEL

For Female Sportswear—Namely, Slacks, Shirts, Jackets, Blouses, Skirts, Dresses, and Suits.
First use in or about January 1956.

SN 205,860. Helene Scott Fashions, Englewood, N.J. Filed Nov. 9, 1964.

HELENE SCOTT FASHIONS

The word "Fashion" is disclaimed apart from the mark as shown.
For Women's Dresses, Coats and Suits.
First use September 1964.

SN 205,921. Bramson, Inc., Chicago, Ill. Filed Nov. 10, 1964.

CONTESSA DI VARZI

For Ladies', Juniors', and Girls' Clothes—Namely, Dresses, Coats and Suits.
First use Feb. 22, 1962.

SN 207,004. Blair Fashions, Inc., Chicago, Ill. Filed Nov. 27, 1964.

LAMINEX

For Elastic Fabrics Made Into Panty Girdles.
First use Nov. 16, 1964.

SN 207,963. Ph. Horowitz, Inc., New York, N.Y. Filed Dec. 11, 1964.

SLIMSVILLE

For Men's, Women's, and Boys' Pants, Slacks and Trousers.
First use Nov. 18, 1964.

SN 210,787. International Latex Corporation, Dover, Del. Filed Jan. 27, 1965.

WHITE MAGIC

Owner of Reg. Nos. 665,114, 671,880, and 719,371.
For Foundation Garments.
First use about Sept. 23, 1951.

SN 211,096. Puritan Fashions Corporation, New York, N.Y. Filed Feb. 1, 1965.

AYWON

For Men's and Boys' Dress, Work, and Sports Clothing—Namely, Shirts, Pants, Underwear, Pajamas, Overalls, Walk Shorts, Deck Pants, Dungarees, Jackets, Slacks and Slack Suits.
First use Feb. 1, 1920.

SN 211,774. Vanity Fair Mills, Inc., Reading, Pa. Filed Feb. 10, 1965.

LITTLE DIAMONDS

For Foundation Garments—Namely, Girdles.
First use Jan. 18, 1965.

SN 212,128. Maidenform, Inc., New York, N.Y. Filed Feb. 16, 1965.

THISTLEDOWN

For Foundation Garments.
First use Jan. 15, 1965.

SN 213,048. Regal Apparel, Ltd., New York, N.Y. Filed Mar. 1, 1965.

Eaton's OF CALIFORNIA

The expression "Of California" is disclaimed apart from the mark as shown.
For Dress and Sport Shirts.
First use at least as early as 1946.

SN 213,120. Holiday Inns of America, Inc., Memphis, Tenn. Filed Mar. 2, 1965.

YOUR HOST FROM COAST TO COAST

Owner of Reg. Nos. 657,302 and 740,362.
For Shower Caps, Plastic Bibs, and Handkerchiefs.
First use at least as early as July 1, 1960.

SN 213,129. Holiday Inns of America, Inc., Memphis, Tenn. Filed Mar. 2, 1965.



Owner of Reg. Nos. 592,539, 748,127, and others.
For Plastic Bibs, Shower Caps, and Handkerchiefs.
First use at least as early as July 1, 1960.

SN 213,447. Matsil Brothers, Inc., New York, N.Y. Filed Mar. 5, 1965.

THICK 'n THIRSTY

For Men's, Boys', and Children's Terry Cloth Robes, Terry Cloth Beach Jackets, and Wrap Arounds.
First use December 1957.

SN 213,448. Matsil Brothers, Inc., New York, N.Y. Filed Mar. 5, 1965.

TOWN FASHION

Applicant hereby disclaims the word "Fashion" apart from the mark as a whole.
For Men's, Boys', and Children's Robes and Beachwear.
First use Mar. 1, 1949.

SN 213,821. Vanity Fair Mills, Inc., Reading, Pa. Filed Mar. 10, 1965.

BEAUTY SHELL

For Foundation Garments—Namely, Brassieres.
First use Feb. 24, 1965.

SN 214,116. Charles Horowitz & Sons Inc., New York, N.Y. Filed Mar. 15, 1965.

VKL
RONI

Applicant disclaims on the record and rights and interest in and to the abbreviation "VKL."
For Shoes, Toe Pieces and Top Lifts for Ladies' Heels.
First use Sept. 1, 1964.

SN 214,874. Joseph Dress Corporation, New York, N.Y. Filed Mar. 24, 1965.

BIGI

For Women's Wearing Apparel—Namely, Dresses, Suits, Jackets, Skirts, and Coats.
First use on or about Mar. 11, 1965.

SN 217,119. Jacobson Stores Inc., Jackson, Mich. Filed Apr. 22, 1965.

NORTHRIDGE

For Men's Suits.
First use Feb. 27, 1965.

SN 217,344. Jacques Isler Corp., New York, N.Y. Filed Apr. 26, 1965.

SPLENDIDE

For Hats, Hat Bodies, and/or Hat Hoods.
First use Feb. 28, 1952.

SN 217,394. Queen Knitting Mills, Inc., Philadelphia, Pa. Filed Apr. 26, 1965.

QUEEN-PRESS

For Women's Sportswear, Particularly Shirts, Shorts, Slacks, and Blouses.
First use Mar. 5, 1965.

SN 217,445. Caressa, Inc., Miami, Fla. Filed Apr. 27, 1965.

INCREDIBLES

For Women's and Misses' Shoes.
First use Mar. 29, 1965.

SN 217,458. Firma Adidas-Sportschuhfabriken Adi Dassler K.G., Hersogenaurach, near Nuremberg, Germany. Filed Apr. 27, 1965.



Priority claimed under Sec. 44(d) on German application filed Dec. 18, 1964; Reg. No. 803,104, dated Apr. 15, 1965.
For Athletic Shoes.
First use Dec. 22, 1964; in commerce Dec. 22, 1964.

SN 217,491. Ray J. Pastene, d.b.a. Pastene & Co., San Francisco, Calif. Filed Apr. 27, 1965.

MEDITERRANEAN WALK

Owner of Reg. Nos. 624,103, 698,068, and others.
For Men's, Women's, and Children's Sandals.
First use Apr. 20, 1965.

SN 217,492. Ray J. Pastene, d.b.a. Pastene & Co., San Francisco, Calif. Filed Apr. 27, 1965.

SURF WALK

Owner of Reg. Nos. 624,103, 698,068, and others.
For Men's, Women's, and Children's Sandals.
First use Apr. 20, 1965.

SN 217,507. H. C. Williams, d.b.a. Williams & Company, Charlotte, N.C. Filed Apr. 27, 1965.

FOREST BELLE

For Ladies' Hosiery.
First use as early as 1938.

SN 217,710. Carlette Juniors Inc., New York, N.Y. Filed Apr. 30, 1965.

FARMER GILES

For Ladies' Dresses.
First use Apr. 17, 1965.

SN 217,752. Melville Shoe Corporation, New York, N.Y. Filed Apr. 30, 1965.



"Thom McAn" is a fanciful name. Owner of Reg. Nos. 170,095 and 268,176.
For Shoes.
First use Dec. 1, 1961; Aug. 30, 1922, as to "Thom McAn."

SN 217,898. International Shoe Company, d.b.a. The Florsheim Shoe Company, Chicago, Ill. Filed May 3, 1965.

FLORETTE

Owner of Reg. No. 280,390.
For Women's Shoes.
First use Sept. 15, 1930.

SN 218,022. Puritan Fashions Corporation, New York, N.Y. Filed May 4, 1965.

YOUTHQUAKE

For Women's Dresses.
First use Apr. 2, 1965.

SN 218,197. International Latex Corporation, Dover, Del. Filed May 6, 1965.

MAGIC-X

For Foundation Garments, e.g., Brassieres.
First use Apr. 13, 1965.

SN 218,202. Lilyette Brassiere Co., Inc., New York, N.Y. Filed May 6, 1965.

OPEN-SECRET

For Brassieres.
First use Jan. 15, 1965.

SN 220,182. Bronston Hat Company, Inc., Plainfield, N.J. Filed May 28, 1965.

RAINTEX

Owner of Reg. No. 242,145.
For Men's Straw Hats Made of Woven Straw Fabrics in the Piece.
First use Jan. 1, 1927.

SN 222,071. Societe Rhodiaceta, Paris, France. Filed June 25, 1965.

CETRYL

Priority claimed under Sec. 44(d) on French Reg. No. 529,494, dated Mar. 25, 1965 (Paris); Natl. Inst. No. 244,086. Owner of U.S. Reg. Nos. 699,205 and 699,412.
For Wearing Apparel for Men, Women, and Children—Namely, Dresses, Robes, Suits, Coats, Undergarments, Lingerie, Sweaters, Vests and Waist-Coats, Slacks, Shirts, Blouses, and Including Boots, Shoes, and Slippers.

SN 224,093. Hanes Corporation, Winston-Salem, N.C. Filed July 23, 1965.

LEGLITES

For Hosiery.
First use June 9, 1965; May 13, 1965, as to the mark "Leglite."

Class 40—Fancy Goods, Furnishings, and Notions

SN 173,769. Mildred M. Kintner, Mishawaka, Ind. Filed July 25, 1963.

VEL-SNAP

For Fastener of the Hook and Loop Type Used Primarily on Clothing and Other Fabrics and on Leather and Plastic Materials.
First use middle of June 1963.

SN 205,024. Wilson Manufacturing Corporation, Sunbury, Pa. Filed Oct. 28, 1964.

Wil-hold

Owner of Reg. No. 621,826.
For Bobby Pins; Hair Rollers; Hair Clips; Barrettes; Hair Bands; Ring Combs; and Hair Roller Retaining Picks.
First use at least as early as September 1961.

SN 215,314. Streamline Button, Inc., New York, N.Y. Filed Mar. 29, 1965.

Button Beauties

The applicant makes no claim to the word "Button" apart from mark as shown.
For Buttons.
First use in the year 1956.

SN 216,275. Danal Jewelry Company, Providence, R.I. Filed Apr. 12, 1965.

DANAL

For Hair Ornaments—Namely, Ornamental Headbands, Ornamental Bobby Pins, Ornamental Hair Clips, Ornamental Hair Combs, Ornamental Barrettes, and Ornamental Tiaras.
First use in or about January 1956.

SN 216,796. Harry Camp Millinery Company, San Francisco, Calif. Filed Apr. 19, 1965.

PATRICE

Owner of Reg. No. 515,409.
For Wigs, Wiglets, Chignons, and Switches, all of the Foregoing Made of Human or Artificial Hair.
First use on or about Jan. 15, 1965.

SN 217,441. R. Brandt & Co. (Manufacturing) Limited, Stanmore, Middlesex, England. Filed Apr. 27, 1965.

PERMACURL

For Artificial Eyelashes.
First use Jan. 4, 1965; in commerce Jan. 4, 1965.

SN 217,955. Treville Inc., Clifton, N.J. Filed May 3, 1965.

CLIFF

For Hair Combs.
First use July 1, 1956.

SN 219,071. Louise Schwartz and Nathan Schwartz, d.b.a. Bangle Band by Lady Louise, Chicago, Ill. Filed May 17, 1965.

BANGLE BAND

The term "Band" is disclaimed apart from the mark as shown.
For Hair Bands.
First use Mar. 16, 1965.

SN 219,285. Top Kick Inc., New York, N.Y. Filed May 19, 1965.

TOP KICK

For Men's Hairpieces.
First use Mar. 22, 1965.

SN 219,840. Quality Enterprises, Inc., Shawnee, Kans. Filed May 26, 1965.

CELEBRITY

Owner of Reg. No. 782,437.
For Wigs and Hairpieces.
First use Feb. 20, 1965.

Class 41—Canes, Parasols, and Umbrellas

SN 213,130. Holiday Inns of America, Inc., Memphis, Tenn. Filed Mar. 2, 1965.



Owner of Reg. Nos. 592,539, 748,127, and others.
For Umbrellas.
First use at least as early as January 1964.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 195,540. Minkplastic Corporation, New York, N.Y. Filed June 12, 1964.



For Crib Mattress Covers.
First use June 1954.

SN 200,120. Slumbertime Comforters, Inc., Brooklyn, N.Y. Filed Aug. 18, 1964.

SLUMBERTIME

For Infants' Accessories—Namely, Comforters, Blankets, Buntings, and Carriage Covers.
First use as least as early as 1943.

SN 213,131. Holiday Inns of America, Inc., Memphis, Tenn. Filed Mar. 2, 1965.



Owner of Reg. Nos. 592,539, 748,127, and others.
For Carpets and Bedspreads.
First use at least as early as April 1960.

SN 215,704. Collins & Aikman Corporation, New York, N.Y. Filed Apr. 5, 1965.

CLOUD 10

Owner of Reg. Nos. 625,943 and 731,598.
For Brushed Nylon Tricot Fabric.
First use Aug. 20, 1964.

SN 215,705. Collins & Aikman Corporation, New York, N.Y. Filed Apr. 5, 1965.

Sköl

For Velour Pile Fabric.
First use Mar. 2, 1965.

SN 217,094. Collins & Aikman Corporation, New York, N.Y. Filed Apr. 22, 1965.

SCULPTRIQUE

For Chemically Quilted Fabrics.
First use Feb. 8, 1965.

SN 217,990. Collins & Aikman Corporation, New York, N.Y. Filed May 4, 1965.

CREPE PRIMAVERA

No claim is made to the word "Crepe" except in combination with the mark as shown.
For Tricot Fabric for the Manufacture of Apparel Garments.
First use Mar. 8, 1963.

SN 221,958. J. P. Stevens & Co., Inc., New York, N.Y. Filed June 24, 1965.

ALLURA-PLUS

For Piece Goods of one or More Natural Fibers Including Wool and Cotton, or of Synthetic Fibers or of Blends of the Foregoing.
First use June 17, 1965.

SN 222,478. Fieldcrest Mills, Inc., Spray, N.C. Filed July 1, 1965.

Madreau

For Textile Rugs and Carpeting.
First use June 16, 1965.

SN 222,646. Beacon Manufacturing Company, Swannanoa, N.C. Filed July 6, 1965.

INTRIGUE

For Blankets and Blanketing.
First use June 22, 1965.

SN 222,674. DHJ Industries, Inc., New York, N.Y. Filed July 6, 1965.

MELLO-PRESS

For Woven Linings, Inter-Linings and Inter-Facings Manufactured and Produced From Cotton Fibers for Use in Men's and Women's Shirts, Blouses, Shorts, and Various Types of Sportswear and Swimwear.
First use May 25, 1965.

SN 223,051. Stacy Fabrics Corp., New York, N.Y. Filed July 9, 1965.

BRAVO

For Woven Interfacing and Underlining Fabric Made of Synthetic and Animal Fibers, Used in the Making of Men's, Women's, and Children's Garments.
First use June 22, 1965.

SN 223,052. Stacy Fabrics Corp., New York, N.Y. Filed July 9, 1965.

BRAVO-SET

For Woven Interfacing and Underlining Fabric Made of Synthetic and Animal Fibers, Used in the Making of Men's, Women's, and Children's Garments.
First use June 22, 1965.

Class 43 — Thread and Yarn

SN 222,073. Societe Rhodiaceta, Paris, France. Filed June 25, 1965.

CETRYL

Priority claimed under Sec. 44(d) on French Reg. No. 529,494, dated Mar. 25, 1965 (Paris); Natl. Inst. No. 244,086. Owner of U.S. Reg. Nos. 699,205 and 699,412.
For Threads and Yarns of Synthetic Fibers.

SN 222,879. Threads, Incorporated, Gastonia, N.C. Filed July 7, 1965.

S-CORE

For Sewing Thread.
First use June 23, 1964.

Class 44 — Dental, Medical, and Surgical Appliances

SN 183,543. Abbott Laboratories, North Chicago, Ill. Filed Dec. 26, 1963.

TWIN-SITE

For Disposable Venoclysis and Transfusion Unit for the Parenteral Administration of One or More Fluid Preparations.
First use Sept. 27, 1957.

SN 193,766. EDCO Surgical Supply Co., Inc., New York, N.Y. Filed May 19, 1964.

EDCO

For Surgical and Patient Aid Items—Namely, Walkers, Seats, Crutches, and Canes.
First use Apr. 1, 1962.

SN 197,344. Sodeco Société des Compteurs de Geneve, Geneva, Switzerland. Filed May 11, 1964.

vibrosan

Owner of Swiss Reg. No. 200,731, dated Nov. 15, 1963; and U.S. Reg. No. 353,381.
For Manually Operated, Portable, Electric Vibrating Massage Instrument.

SN 207,739. Sales Research Development Co., Salt Lake City, Utah. Filed Dec. 8, 1964.



Applicant disclaims the words "Whirlpool-Bath" apart from the mark as shown.

For Mechanical, Portable, Hydrotherapy Massage Whirlpool Baths.

First use Nov. 9, 1964.

SN 208,156. Bird Corporation, Richmond, Calif. Filed Dec. 11, 1964.



The word "Corporation" is disclaimed except when used as a part of the mark as shown. Owner of Reg. No. 706,080.

For Pulmonary Therapy Equipment for Applying Anesthetic Agents and for Ventilating Mammals—Namely, Medical Positive Phase Respirators; Medical Positive-Negative Phase Respirators; Medical Automatic Leak-Compensating Respirators; Physiological Volume Limiting Respirators for Intensive Care; Complete Volume Limiting Ventilators for Intensive Care, Including Sensing Device Connected to the Patient; Anesthesia Ventilators, Including Accessories; Portable Respirators and Air Compressors; Humidifiers and Nebulizers; Automatic Resuscitators; Emergency Hand Resuscitators; Masks; Tracheotomy Fittings; Endotracheal Adapters; Intubation Adapters; Pressure Reducing Regulators; Intensive Care Stands; Infant and Adult Breathing Circles; Wall Outlet Valves; Pedestals; Wheel Sets; Support Arms; Cooling and Filtration Coils; Spirometers; Portable Cases; Dispensing Bottles, and Component Parts and Accessories.

First use on or about May 4, 1959; on or before Jan. 1, 1958 as to the word "Bird."

SN 220,999. Avionics Research Products Corporation, Los Angeles, Calif. Filed June 14, 1965.

CARDIOGUARD

For Instrument Panels for Use in Heart Rate Alarm Systems.

First use Feb. 11, 1965.

SN 221,338. Biological Research, Inc., Bridgeton, Mo. Filed June 17, 1965.

BACTI-CINERATOR

For Electrically Heated Bacterial Loop Sterilizers.

First use Feb. 1, 1965.

SN 221,466. Cardiosonics Medical Instruments Corporation, Cambridge, Mass. Filed June 18, 1965.

NURSESCOPE

For Stethoscopes.

First use June 2, 1965.

Class 45—Soft Drinks and Carbonated Waters

SN 205,566. Beverage Canners, Inc., Hialeah, Fla. Filed Nov. 5, 1964.



For Soft Drinks.

First use Oct. 19, 1964.

Class 46—Foods and Ingredients of Foods

SN 185,720. Rogers Nut Products Co., Inc., Toledo, Ohio. Filed Jan. 30, 1964.

ROGERS

For Shelled and Unshelled Nuts, Candy, Smoked Sausage, Pork Rinds, Sardines, and Cheese.

First use in or about April 1945.

SN 188,699. The Cudahy Packing Company, Omaha, Nebr., assignee of American Salt Corporation, Omaha, Nebr. Filed Mar. 16, 1964.

REX

Owner of Reg. No. 28,558.

For Multi-Mineral Salt Product for Use as a Feed Supplement for Livestock Such as Cattle, Sheep, and Hogs.

First use on or about Dec. 1, 1951.

SN 191,030. Better Foods Foundation Cooperative, Assn., d.b.a. Better Foods Co-Op. Assoc., Greencastle, Pa. Filed Apr. 14, 1964.



For Bread, Fluid Non-Fat Milk, Dried Soybeans, Rye Flour, and Honey.

First use December 1962.

SN 204,781. Exeter Grape Growers, Exeter, Calif. Filed Oct. 26, 1964.

FULL PAK

Owner of Reg. No. 298,930.
For Fresh Grapes.
First use Nov. 12, 1929.

SN 204,972. Anthony Fichera, d.b.a. Duke's Fish and Chips, Hazel Park, Mich. Filed Oct. 28, 1964.

PIZZA DOG



Without waiving his common law rights and for purposes of this registration only, applicant makes no claim to the word "Pizza" apart from the mark as shown.
For Frozen Pizza Product in the Form of a Sandwich Utilising a Bread Crust in the Shape of a Hot Dog Bun.
First use Oct. 1, 1962.

SN 206,398. Albumina Supply Co. Inc., New York, N.Y. Filed Nov. 18, 1964.

PERUVIAN QUEEN

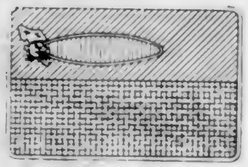
For Fish Meal as an Additive to Animal Food.
First use May 4, 1964.

SN 207,465. Armour and Company, Chicago, Ill. Filed Dec. 4, 1964.

TREET

Owner of Reg. No. 373,712.
For Deviled Luncheon Meat Spread and Luncheon Meat.
First use May 27, 1939.

SN 209,118. The Sugardale Provision Company, Canton, Ohio. Filed Dec. 30, 1964.



The drawing is lined for red, brown, and yellow.
For Refrigerated Cuts of Prepared Meats, Pre-Packed Sausage, Bulk Sausage, Wieners, Bologna, Bacon, Cooked Hams, Smoked Hams, Pork Cuts, Lard, and Sandwich Spread.
First use on or about Apr. 2, 1962.

SN 209,420. Consolidated Foods Corporation, Chicago, Ill. Filed Jan. 6, 1965.

CHEF'S CHOICE

Owner of Reg. No. 585,900.
For Turkey Sausage.
First use Aug. 1, 1963.

SN 212,873. Firma Mönnich K.G., Kassel-Bettenhausen, Germany. Filed Feb. 26, 1965.

QUICKJETS

Owner of German Reg. No. 765,751, dated Oct. 10, 1961.
For Dextrose, and Dextrose in Combination With Edible Matter for Use as Food Sweeteners and for Other Food Purposes.

SN 215,238. S. Martinelli & Company, Watsonville, Calif. Filed Mar. 29, 1965.

Martinelli's GOLD MEDAL

For Bottled Apple Cider, Apple Juice, and Apple-Prune Juice.
First use Jan. 1, 1895; 1868 as to "Martinelli's."

SN 215,638. National Biscuit Company, New York, N.Y. Filed Apr. 2, 1965.

ZINGS

For Pretzels.
First use Dec. 15, 1964.

SN 215,868. General Foods Corporation, White Plains, N.Y. Filed Apr. 7, 1965.

UNIFLAKE

For Gelatinized Degermed Yellow Corn Flour in Flake Form.
First use Mar. 24, 1965.

SN 216,597. Interstate Potato Packers Corporation, Boise, Idaho. Filed Apr. 15, 1965.

INTERSTATE

The drawing is lined for red and gold, but color is not an element of the mark.
For Frozen Processed Potatoes.
First use Nov. 18, 1964.

SN 217,012. Continental Custom Products Corporation, Greenwich, Conn. Filed May 24, 1965.

FLOR-I-D'OR

For Fruit Juice Drinks in Crystal (Powder) Form.
First use Apr. 20, 1965.

SN 217,096. Crescent Macaroni & Cracker Co., Davenport, Iowa. Filed Apr. 22, 1965.

Lady Crescent

Owner of Reg. No. 796,515.
For Cookies.
First use Aug. 20, 1964.

SN 217,510. Castle & Cooke, Inc., Honolulu, Hawaii. Filed Apr. 12, 1965.



For Macadamia Nuts and Macadamia Nut Candies.
First use 1956.

SN 217,543. Geo. A. Hormel & Co., Austin, Minn. Filed Apr. 28, 1965.

JIGGLES

For Gelatin Dessert.
First use Apr. 15, 1965.
Subj. to Intf. with SN 218,020.

SN 218,020. The Pillsbury Company, Minneapolis, Minn. Filed May 4, 1965.

JIGGLY

For Gelatin Dessert Mixes.
First use Apr. 22, 1965.
Subj. to Intf. with SN 217,543.

SN 219,422. General Foods Corporation, White Plains, N.Y. Filed May 21, 1965.

YOUTH

For Cereal Breakfast Foods.
First use May 5, 1965.

SN 219,518. Beatrice Foods Co., Chicago, Ill. Filed May 24, 1965.

MAMA COW

Owner of Reg. Nos. 265,010, 283,921, and 724,894.
For Candy.
First use May 19, 1965.

SN 219,628. Standard Milling Company, Kansas City, Mo. Filed May 24, 1965.

DIPLOMAT

For Wheat Flour.
First use in or about September 1914.

SN 219,909. Purepak Foods, Inc., New York, N.Y. Filed May 27, 1965.

PUREPAK

Owner of Reg. No. 412,781.
For Caviar.
First use December 1952.

SN 219,942. Abbott Laboratories, North Chicago, Ill. Filed May 28, 1965.

SWEETNESS & LIGHT

For Low Calorie Artificial Sweetener.
First use Feb. 16, 1965.

SN 220,410. A. O. Smith Harvestore Products, Inc., Arlington Heights, Ill. Filed June 4, 1965.

Cornlage

Owner of Reg. No. 768,258.
For 35–55 Percent Moisture Mature Grain Type Varieties of Corn for Feed for Livestock.
First use May 11, 1965.

SN 228,590. All American Nut Company, Inc., Downey, Calif. Filed Sept. 27, 1965.



For Shelled and Unshelled Nuts, Sunflower Seeds, and Peanut Butter.
First use Dec. 5, 1957.

Class 48 — Malt Beverages and Liquors

SN 142,526. Metropolis Brewery of N.J., Inc., Trenton, N.J. Filed Apr. 18, 1962.

ALTBRAU

For Beer.
First use 1950.

SN 142,529. Metropolis Brewery of N.J., Inc., Trenton, N.J. Filed Apr. 18, 1962.

OLBRAU

For Beer.
First use 1947.

Class 49 — Distilled Alcoholic Liquors

SN 196,291. Old Boone Distillery Co., Louisville, Ky. Filed June 23, 1964.

Distiller's Mark

No claim is made to the word "Mark" apart from the mark as shown.
For Whiskey.
First use June 9, 1961.

SN 198,286. L. J. McGuinness & Co. Limited, Mimico, Ontario, Canada. Filed July 21, 1964.

GOLD TASSEL

Owner of Canadian Reg. No. 179/N.S. 45,520, dated June 10, 1953; and U.S. Reg. No. 602,809.
For Whisky.

SN 199,500. Senior & Co. Incorporated, Curacao, Netherlands Antilles. Filed Aug. 7, 1964.



For Liqueurs.
First use at least as early as 1905; in commerce at least as early as 1905.

SN 206,822. Sidney H. Cohen, d.b.a. Highlander & Lord Company, Baltimore, Md. Filed Nov. 24, 1964.

BRIGHTON

For Scotch Whisky.
First use Sept. 9, 1964.

SN 206,824. Sidney H. Cohen, d.b.a. Highlander & Lord Company, Baltimore, Md. Filed Nov. 24, 1964.

HONOURS

For Scotch Whisky.
First use Sept. 9, 1964.

SN 206,825. Sidney H. Cohen, d.b.a. Highlander & Lord Company, Baltimore, Md. Filed Nov. 24, 1964.

HI-LO

For Scotch Whisky.
First use Sept. 9, 1964.

SN 206,826. Sidney H. Cohen, d.b.a. Highlander & Lord Company, Baltimore, Md. Filed Nov. 24, 1964.

DUN ROBIN

For Scotch Whisky.
First use Sept. 9, 1964.

Class 50 — Merchandise Not Otherwise Classified

SN 165,374. Products Packaging, Inc., Cleveland, Ohio. Filed Mar. 25, 1963.

BRUSH TOP

Owner of Reg. No. 549,213.
For Receptacle Closure Structures.
First use 1934.

SN 213,121. Holiday Inns of America, Inc., Memphis, Tenn. Filed Mar. 2, 1965.

YOUR HOST FROM COAST TO COAST

Owner of Reg. Nos. 657,302 and 740,362.
For Identification Badges, Plastic Stirrers, and Picks.
First use at least as early as Aug. 1, 1957.

SN 219,327. Harry M. Devane, Oxnard, Calif. Filed May 20, 1965.

AUTO-MATE

For Removable Signs for Truck and Passenger Vehicle Doors.
First use May 4, 1965.

SN 221,192. J. Allen Locke, d.b.a. The Locke Hosiery Mills, Philadelphia, Pa. Filed June 15, 1965.



The words "Dampening Cover" are disclaimed apart from the mark.
For Dampening Cover for Lithograph Rollers.
First use Mar. 5, 1965.

SN 226,969. Adler Silhouette Letter Co., Los Angeles, Calif. Filed Sept. 2, 1965.

ADLERTISING

For 3-Dimensional Changeable Letters, Signs and Displays.
First use Aug. 11, 1965.

SN 227,188. Stranglas Corporation, Evansville, Ind. Filed Sept. 3, 1965.

STRANMAT

For Bitumen-Impregnated Glass-Fiber Mats for Lining of Ditches and Other Erosion Control.
First use on or about July 15, 1965.

Class 51 — Cosmetics and Toilet Preparations

SN 161,574. Cardinal Laboratories, Inc., d.b.a. Westwood Laboratories, Los Angeles, Calif. Filed Jan. 28, 1963.

NO TANGLE

Owner of Reg. No. 737,369.
For Animal Grooming Formulations of the Rinse Type.
First use Sept. 30, 1955.

SN 204,371. Lentheric Inc., New York, N.Y., assignee of Helene Curtis Industries, Inc., d.b.a. LKM Division, Chicago, Ill. Filed Oct. 20, 1964.

STEAK & ALE

For After Shave Lotion.
First use on or about Sept. 10, 1964.

SN 206,014. Dusharme Products, Inc., Minneapolis, Minn. Filed Nov. 12, 1964.

LONDON MIST

For Cologne for Men.
First use Oct. 30, 1964.

SN 206,015. Dusharme Products, Inc., Minneapolis, Minn. Filed Nov. 12, 1964.

LONDON FOG

For Personal Deodorant.
First use Oct. 30, 1964.

SN 212,161. Textron Inc., Providence, R.I. Filed Feb. 16, 1965.

BRITISH STERLING

No claim is made to the word "British" apart from the mark as shown.
For Men's Cologne, After Shave Lotion, Shaving Cream, Talcum Powder, and Deodorant.
First use Feb. 4, 1965.

SN 212,693. Osborne, Garrett, Nagele, Limited, Soho, London, England. Filed Feb. 24, 1965.

PLASTISET

Owner of British Reg. No. 752,682, dated Apr. 9, 1956.
For Hair Setting Lotion.

SN 214,212. The Wander Company, Chicago, Ill. Filed Mar. 15, 1965.

KERA-NU

For Preparation for the Treatment of Broken, Chipped or Split Fingernails.
First use Mar. 3, 1965.

SN 214,213. The Wander Company, Chicago, Ill. Filed Mar. 15, 1965.

KREATE

For Preparation for the Treatment of Broken, Chipped or Split Fingernails.
First use Mar. 3, 1965.

SN 214,286. Ravel Perfume Corp., d.b.a. Ravel N.Y., New York, N.Y. Filed Mar. 16, 1965.

MY FAIR LADY

Owner of Reg. No. 653,179.
For Bath Oils, Face and Body Powders, Skin Cleansing Creams, Skin Toning Creams, Foundation Creams, Facial Make-Up Creams, Hand and Body Lotions, Skin Moisturizers, and Lipsticks.
First use on or about Mar. 2, 1962, on lipstick.

SN 214,746. A. Ward Allen, d.b.a. Defy, New Bern, N.C. Filed Mar. 23, 1965.

DE-FI

For Hair and Scalp Preparation.
First use June 10, 1963.
Subj. to intf. with SN 189,754.

SN 214,764. Hudson National, Inc., d.b.a. Hudson Toiletries Division, New York, N.Y. Filed Mar. 23, 1965.

RELY-ON

For Personal Deodorant.
First use Mar. 16, 1965.

SN 215,901. Scandia Cosmetics Corp., New York, N.Y. Filed Apr. 6, 1965.

GALORE

For Bath Oil, Body Lotion, and Powder Mist.
First use Mar. 29, 1965.

SN 216,696. Richard Hudnut, Morris Plains, N.J. Filed Apr. 16, 1965.



Owner of Reg. Nos. 392,112, 420,638, and others.
For After Shave for Men, Pre-Electric Shave Lotion, and Cologne for Men.
First use May 1964.

SN 222,265. Ennex Corporation, New York, N.Y. Filed June 29, 1965.

NOLYTIC

For Fingernail Conditioner.
First use May 22, 1965.

Class 52 — Detergents and Soaps

SN 165,422. Feinseifenwerk Walter Rau & Company, Stuttgart-Mohringen, Germany. Filed Mar. 26, 1963.



"Walter Rau" is the name of a member of applicant's partnership.
For Toilet Soap.
First use Apr. 23, 1929; in commerce Sept. 25, 1952.

SN 213,132. Holiday Inns of America, Inc., Memphis, Tenn. Filed Mar. 2, 1965.



Owner of Reg. Nos. 592,539, 748,127, and others.
For Soaps.
First use at least as early as Aug. 1, 1957.

SN 218,531. Block Drug Company, Inc., Jersey City, N.J. Filed May 11, 1965.

SUPERSAN

For Comb and Brush Cleaner.
First use on or about May 7, 1965.

SN 223,479. Vernitron Corporation, d.b.a. Medical Products Division, Torrance, Calif. Filed July 15, 1965.



For Blood Solvent, Specifically a Laboratory Equipment and Surgical Instrument Cleaner.
First use May 20, 1965.

SN 225,941. Emcor, Inc., Des Plaines, Ill. Filed Aug. 18, 1965.

POW-X

For Powdered Hand Cleaner.
First use May 19, 1965.

SN 225,943. Emcor, Inc., Des Plaines, Ill. Filed Aug. 18, 1965.

POW-C

For Powdered Hand Cleaner.
First use Feb. 18, 1965.

SN 225,944. Emcor, Inc., Des Plaines, Ill. Filed Aug. 18, 1965.

MANI-LAV

For Liquid Hand Soap.
First use Apr. 15, 1965.

SERVICE MARKS

Class 100 — Miscellaneous

SN 185,578. Collier Carbon and Chemical Corporation, Los Angeles, Calif. Filed Jan. 29, 1964.

GREEN TOUCH

For Testing, Statistical, and Advisory Services Rendered to Commercial Growers for the Purpose of Improving Crop Growth and Harvest Yield.
First use March 1963.

SN 198,496. Servix, Inc., Louisville, Ky. Filed July 24, 1964.

SERVIX

For Vending Machine Supply Service on a Contract Basis—Namely, the Dispensing of Bottled Beverages in Industrial and Commercial Establishments by Means of Vending Machines.
First use 1946.

SN 200,988. The Travelodge Corporation, El Cajon, Calif. Filed Aug. 31, 1964.



The words "Mobile Home Parks" are disclaimed apart from the mark as shown. Owner of Reg. No. 576,271.
For Operating Areas for Parking Mobile Homes and Travel Trailers, and Recreation and Utility Centers Therefor.
First use July 6, 1961.

SN 213,599. PKI Foods Inc., New York, N.Y., by change of name from Pancake Kitchens Inc., New York, N.Y. Filed Mar. 8, 1965.



For Restaurant Services.
First use Dec. 15, 1963.

SN 217,266. Glenn W. Bostrom, d.b.a. Associated Management Services Co., Dayton, Ohio. Filed Apr. 26, 1965.



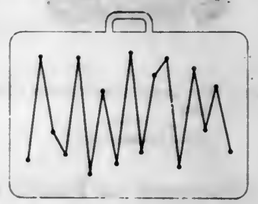
Without waiver of common law rights, applicant makes no claim to any of the terms "Marketing," "Merchandising," "Public Relations," "Employee Relations" or "Trade Ass'n Management" used apart from the mark as shown.
For General Management Consulting Services.
First use March 1956.

SN 219,496. AMF Tuboscope, Inc., Houston, Tex. Filed May 24, 1965.

LINALOG

For Locating, Testing, Evaluating, and Recording Internal and External Pipe Corrosion.
First use about or before Feb. 16, 1965.

SN 220,941. Hooker Chemical Corporation, Niagara Falls, N.Y. Filed June 11, 1965.



For Advisory and Consultation Services Rendered Relative to Various Manufacturing Uses, Processes, and Problems Involving Synthetic Resins.
First use September 1964.

Class 101 — Advertising and Business

SN 182,804. W. H. Long Marketing, Inc., Greensboro, N.C. Filed Dec. 11, 1963.

ASSOCIATED PROFESSIONAL TALENT

For Employment Services—Namely, Compiling Registers of Qualified Advertising Personnel, and Furnishing Specialized Lists to Prospective Employers.
First use Sept. 9, 1963.

SN 211,415. C.S.T. Co., Louisville, Ky. Filed Feb. 5, 1965.



No registration rights are claimed for the words "Key to Collection Problems" apart from the mark as shown, but applicant waives none of its common law rights in the mark shown.

For Collecting Delinquent Accounts of Others.
First use Sept. 1, 1958.

SN 215,080. Alma Jett, d.b.a. Jett's Petting Zoo, Denver, Colo. Filed Mar. 26, 1965.

JETT'S PETTING ZOO

No claim is made to the word "Jett's" or the word "Zoo" apart from the mark as shown.

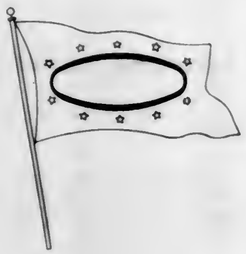
For Advertising Goods and Services of Others by Exhibition of Unusual Animals.
First use on or about Dec. 14, 1962.

SN 218,062. Martha Bossie, d.b.a. Martha Bossie, Advertising, Milwaukee, Wis. Filed May 5, 1965.

For Advertising the Goods and Services of Others.
First use Apr. 2, 1965.

Class 102 — Insurance and Financial

SN 201,710. Lumbermens Mutual Casualty Company, Chicago, Ill. Filed Sept. 11, 1964.



Owner of Reg. Nos. 708,525 and 708,526.

For Underwriting of Insurance and Fidelity and Surety Bonds.
First use May 20, 1964.

SN 216,435. The Presidential Life Insurance Company of America, Chicago, Ill. Filed Apr. 13, 1965.

PRESIDENTIAL

For Insurance Underwriting Service.
First use Nov. 6, 1959.

SN 217,455. Fidelity Union Life Insurance Company, Dallas, Tex. Filed Apr. 27, 1965.

HEALTH MASTER

No exclusive claim is made to the word "Health" apart from the mark as shown.

Owner of Reg. No. 763,684.
For Health Insurance Underwriting Service.
First use Aug. 1, 1963.

SN 217,456. Fidelity Union Life Insurance Company, Dallas, Tex. Filed Apr. 27, 1965.



No exclusive claim is made to the word "Health" apart from the mark as shown.

Owner of Reg. No. 763,684.
For Health Insurance Underwriting Service.
First use Aug. 1, 1963.

SN 218,478. Professional Adjusting Systems, Inc., d.b.a. Professional Adjusting System of America, Minneapolis, Minn. Filed May 10, 1965.



For Insurance Adjusting.
First use Oct. 29, 1964.

Class 103 — Construction and Repair

SN 188,071. Bliss & Laughlin Industries Incorporated, Harvey, Ill., by change of name from Bliss & Laughlin, Incorporated, Harvey, Ill. Filed Mar. 6, 1964.

AMES

Applicant's related company owner of Reg. No. 766,179.

For Rental of Automatic Taping Machines Used in Taping and Finishing Gypsum Drywall Joints to the Construction Industry and Specially Designed Corner Rollers, Corner Finishers, Flat Finishers, Corner and Flat Applicators, Nail Spotters, Mastic Spreaders and Loading Pumps Used Therewith.
First use Dec. 1, 1955.

SN 198,788. Volkswagenwerk Aktiengesellschaft, Wofsburg, Germany, Filed July 29, 1964.



Owner of Reg. No. 631,649.

For Repair and Reconditioning of Motor Vehicles, Aircraft and Boats.
First use 1949; in commerce July 1, 1950.

SN 212,674. Hilts Mold & Mfg., Inc., Burbank, Calif. Filed Feb. 24, 1965.



For Custom Manufacturing and Repairing of Die Cast Molds and Plastic Molds.
First use on or before May 21, 1964.

Class 105 — Transportation and Storage

SN 210,384. United Tours Inc., Miami, Fla. Filed Jan. 21, 1965.

CARIBBEAN
a la Carte

For Arranging and Conducting Travel Tours.
First use Dec. 3, 1964.

Class 107 — Education and Entertainment

SN 216,002. The Principia Corporation, St. Louis, Mo. Filed Apr. 7, 1965.

PRINCIPIA

Owner of Reg. No. 194,064.

For Educational Services—Namely, Conducting Various Instructional and Cultural Programs; Providing Residence Facilities for Boarding Pupils, and Transportation Services for Day Pupils.
First use on or about Sept. 15, 1898.

SN 216,609. Newhoff-Blumberg Advertising Agency, Inc., Baltimore, Md. Filed Apr. 15, 1965.

DIALING FOR DOLLARS

For Title of Television and Radio Programs—Namely, a Show Commonly Designated as a Giveaway Program.
First use 1939.

COLLECTIVE MEMBERSHIP MARKS

SN 193,987. Quality Courts Motels, Inc., Daytona Beach, Fla. Filed May 21, 1964.

QUALITY
COURTS

Applicant makes no claim to the exclusive right to use of the word "Courts" apart from the mark as shown. Owner of Reg. Nos. 578,820, 791,972, and others.

For Indicating Membership in Applicant's Organization.
First use December 1939.

SN 199,278. National Registry of Orthopedic Shoe Fitters, Assn., Dubuque, Iowa. Filed Aug. 5, 1964.



For Indicating Membership in Applicant.
First use Feb. 4, 1964.

TRADEMARK REGISTRATIONS ISSUED
PRINCIPAL REGISTER

Class 1 — Raw or Partly Prepared Materials

800,101. MOCKO CROCCO. Fleming-Joffe Ltd. SN 191,157. Pub. 9–28–65. Filed 4–15–64.

800,102. CONGO CROCCO. Fleming-Joffe Ltd. SN 191,158. Pub. 9–28–65. Filed 4–15–64.

800,103. RHODIASTELLE. Societe des Usines Chimiques Rhone-Poulenc. SN 197,341. Pub. 9–28–65. Filed 7–7–64.

800,104. A–35. Ed. F. Mangelsdorf & Bro., Inc. SN 199,906. Pub. 9–28–65. Filed 8–14–64.

800,105. OAK BUBBLE BASE AND DESIGN. L. A. Dreyfus Company. SN 203,585. Pub. 9–28–65. Filed 10–8–64.

800,106. EMBRO AND DESIGN. Ed. F. Mangelsdorf & Bro., Inc. SN 208,596. Pub. 9–28–65. Filed 12–21–64.

800,107. INDAKOLOR. Whitehead Brothers Company. SN 210,497. Pub. 9–28–65. Filed 1–22–65.

800,108. THON'S. Thon's Garden Mums. SN 215,657. Pub. 9–28–65. Filed 4–2–65.

800,109. LUNARAINE. EMBA Mink Breeders Association. SN 216,492. COLLECTIVE MARK. Pub. 9–28–65. Filed 4–14–65.

800,110. RAMADA. Armour and Company. SN 217,252. Pub. 9–28–65. Filed 4–26–65.

800,111. ALOMER. Armour and Company. SN 217,257. Pub. 9–28–65. Filed 4–26–65.

800,112. SAHARA FOR HEAT AND DESIGN. Sahara Coal Company, Inc. SN 218,485. Pub. 9–28–65. Filed 4–26–65.

Class 2 — Receptacles

800,113. MIX-N-STOR. Rexall Drug and Chemical Company, d.b.a. Tupperware. SN 203,032. Pub. 9–28–65. Filed 9–30–64.

800,114. GAYLORD. Gaylord Bros., Inc. SN 204,651. Pub. 7–13–65. Filed 10–23–64.

800,115. BOUTIQUE. Lion Packaging Products Co., Inc. SN 208,365. Pub. 9–28–65. Filed 12–17–64.

800,116. WHIT-LOC. Whitman Publishing Company. SN 211,132. Pub. 9–28–65. Filed 2–1–65.

Class 4 — Abrasives and Polishing Materials

800,117. SS SILICONE SHINE. M. J. Gordon Company. SN 199,466. Pub. 9–28–65. Filed 8–7–64.

Class 5 — Adhesives

800,118. DEXALL. Deshler Products, Inc. SN 211,421. Pub. 9–28–65. Filed 2–5–65.

Class 6 — Chemicals and Chemical Compositions

800,119. MISCELLANEOUS DESIGN. Eaton Chemical Corporation. SN 168,721. Pub. 5–4–65. Filed 5–13–63.

800,120. HYDROMATE. Heller Laboratories, Inc. SN 185,777. Pub. 9–28–65. Filed 1–31–64.

800,121. PERI AND DESIGN. Photo-Engravers Research Institute Incorporated. MULTIPLE CLASS (Classes 6 and 106). SN 186,392. COLLECTIVE MARK. Pub. 9–28–65. Filed 2–10–64.

800,122. THIOCRON. Ciba Limited. SN 186,498. Pub. 3–9–65. Filed 1–2–64.

800,123. ATH·O·MED AND DESIGN. The Chattanooga Medicine Company, d.b.a. Ath-O-Med Co. MULTIPLE CLASS (Classes 6, 18, and 22). SN 186,598. Pub. 9–28–65. Filed 2–13–64.

800,124. CHECK PEST AND DESIGN. Wood Treating Chemicals Co. SN 193,245. Pub. 9–28–65. Filed 5–11–64.

800,125. SELLEGAL. Geigy Chemical Corporation. SN 196,654. Pub. 7–13–65. Filed 6–29–64.

800,126. METRONICS. Metronics Associates, Inc. MULTIPLE CLASS (Classes 6 and 26). SN 199,212. Pub. 9–28–65. Filed 8–4–64.

800,127. KAMATRO. The Dow Chemical Company. SN 199,977. Pub. 9–28–65. Filed 8–17–64.

800,128. CAST-EASE. Lester H. Roth. SN 202,960. Pub. 9–28–65. Filed 9–29–64.

800,129. SILVOXAL. Societe Francaise d'Organo-Synthese. SN 204,413. Pub. 9–28–65. Filed 10–20–64.

800,130. SALEM. Salem Chemical Corporation. SN 208,118. Pub. 9–28–65. Filed 12–14–64.

800,131. PERMOX. The Eagle-Picher Company. SN 213,424. Pub. 9–28–65. Filed 3–5–65.

800,132. KESSCO. Armour and Company. SN 214,319. Pub. 9–28–65. Filed 3–17–65.

800,133. NANOGRADE. Mallinckrodt Chemical Works. SN 214,353. Pub. 9–28–65. Filed 3–17–65.

800,134. POLYCLAR. General Aniline & Film Corporation. SN 214,435. Pub. 9–28–65. Filed 3–18–65.

800,135. TEMPO. Tempo Products Company. SN 214,482. Pub. 9–28–65. Filed 3–18–65.

800,136. TREATO. Chevron Research Company, by change of name from California Research Corporation. SN 214,608. Pub. 9–28–65. Filed 3–22–65.

800,137. TI-SO-LITE. The New Jersey Zinc Company. SN 214,775. Pub. 9–28–65. Filed 3–23–65.

800,138. FREEZE-GUARD. General Fire Extinguisher Corp. SN 214,862. Pub. 9–28–65. Filed 3–24–65.

800,139. GUARDIAN. Jefferson Chemical Company, Inc. SN 214,991. Pub. 9–28–65. Filed 3–25–65.

800,140. JEFFCOOL. Jefferson Chemical Company, Inc. SN 214,992. Pub. 9–28–65. Filed 3–25–65.

800,141. JET PAK. Sprayon Products, Inc. SN 215,020. Pub. 9–28–65. Filed 3–25–65.

800,142. ANTHIUM. International Dioxcide, Inc. SN 215,078. Pub. 9–28–65. Filed 3–26–65.

800,143. VI TARD. National Starch and Chemical Corporation. SN 215,111. Pub. 9–28–65. Filed 3–26–65.

800,144. VANZAK. R. T. Vanderbilt Company, Inc. SN 215,297. Pub. 9–28–65. Filed 3–29–65.

800,145. ANTADANT. General Aniline & Film Corporation. SN 215,403. Pub. 9–28–65. Filed 3–31–65.

800,146. GANADANT. General Aniline & Film Corporation. SN 215,404. Pub. 9–28–65. Filed 3–31–65.

800,147. GANADOX. General Aniline & Film Corporation. SN 215,405. Pub. 9–28–65. Filed 3–31–65.

800,148. NONAROX. General Aniline & Film Corporation. SN 215,407. Pub. 9–28–65. Filed 3–31–65.

800,149. 7. E. I. du Pont de Nemours and Company. SN 216,150. Pub. 9–28–65. Filed 4–9–65.

Class 7 — Cordage

800,150. MISCELLANEOUS DESIGN. Royal Industries, Inc. SN 206,569. Pub. 9–28–65. Filed 11–19–64.

800,151. CHIMES. Chicago Printed String Co. SN 214,840. Pub. 9–28–65. Filed 3–24–65.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

800,152. HOPPE'S AND DESIGN. Frank A. Hoppe, Inc. SN 206,621. Pub. 9–28–65. Filed 11–20–64.

Class 10 — Fertilizers

800,153. TEARDROP AND SYMBOLIC TREE DESIGN. "Na-Churs" Plant Food Company. SN 214,358. Pub. 9–28–65. Filed 8–17–65.

Class 11 — Inks and Inking Materials

800,154. SMICO. Universal Match Corporation. SN 210,385. Pub. 9–28–65. Filed 1–21–65.

800,155. HECTOFAX. Standard Duplicating Machines Corporation. SN 210,907. Pub. 9–28–65. Filed 1–28–65.

Class 12 — Construction Materials

800,156. APTON. Dexion Limited. SN 168,074. Pub. 9–28–65. Filed 5–3–63.

800,157. RUBBAIR C-THRU. Stic-Klip Manufacturing Company, Inc. SN 179,163. Pub. 9–28–65. Filed 10–16–63.

800,158. WIDEX. The Bostwick Steel Lath Company. SN 199,013. Pub. 9–28–65. Filed 8–3–64.

800,159. MONO LASTO·MERIC. The Tremco Manufacturing Company. SN 200,682. Pub. 9–28–65. Filed 8–26–64.

800,160. CAPELLA. Capella Corporation. SN 214,951. Pub. 9–28–65. Filed 3–25–65.

800,161. THERMOCLAVE. Domine Builders Supply Corp. SN 214,962. Pub. 9–28–65. Filed 3–25–65.

800,162. RIBCLAD. Aluminum Company of America. SN 215,040. Pub. 9–28–65. Filed 3–26–65.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

800,163. PAN AMERICAN. P. L. Robertson Mfg. Co. Limited. SN 159,662. Pub. 9–28–65. Filed 12–24–62.

800,164. COMPRIKIT. Binswanger Glass Co. SN 186,323. Pub. 9–28–65. Filed 2–10–64.

800,165. ISODISC. Gebr. Bohler & Co., Aktiengesellschaft. SN 193,654. Pub. 9–28–65. Filed 5–18–64.

800,166. SHUR-LOK AND DESIGN. Shur-Lok Corporation. SN 211,196. Pub. 9–28–65. Filed 2–2–65.

800,167. SHUR-LOK. Shur-Lok Corporation. SN 211,197. Pub. 9–28–65. Filed 2–2–65.

800,168. SHUR-LOK AND DESIGN. Shur-Lok Corporation. SN 211,199. Pub. 9–28–65. Filed 2–2–65.

800,169. SABCOA. Screw and Bolt Corporation of America. SN 215,278. Pub. 9–28–65. Filed 3–29–65.

800,170. COLORTEMP. Speakman Company. SN 215,282. Pub. 9–28–65. Filed 3–29–65.

800,171. ORANGE COLORED END FACE OF PIPE AND TUBING (DESIGN). The Youngstown Sheet and Tube Company. SN 215,308. Pub. 9–28–65. Filed 3–29–65.

800,172. ORANGE BAND ABOUT BUNDLE OF PIPE OR TUBING (DESIGN). The Youngstown Sheet and Tube Company. SN 215,309. Pub. 9–28–65. Filed 3–29–65.

800,173. BLYNUT. Reddi Car Corp. SN 215,441. Pub. 9–28–65. Filed 3–31–65.

Class 14 — Metals and Metal Castings and Forgings

800,174. STONEBOR·HARD·TRIM· AND DESIGN. Lester Horace Stone, d.b.a. Stone Instrument & Supply Co. SN 200,525. Pub. 9–28–65. Filed 8–24–64.

800,175. WP. Wyckoff Steel Company. SN 203,846. Pub. 9–28–65. Filed 10–12–64.

800,176. MD. A. Finkl & Sons Company. SN 205,807. Pub. 5–4–65. Filed 11–9–64.

800,177. S AND DESIGN. Fuji Seitetsu Kabushiki Kaisha (Fuji Iron & Steel Co., Ltd). SN 217,463. Pub. 9–28–65. Filed 4–27–65.

Class 15 — Oils and Greases

800,178. GO 12345 AND DESIGN. Murphy Oil Corporation. SN 191,202. Pub. 9–28–65. Filed 4–15–64.

800,179. 7. E. I. du Pont de Nemours and Company. SN 216,151. Pub. 9–28–65. Filed 4–9–65.

800,180. 7. E. I. du Pont de Nemours and Company. SN 216,152. Pub. 9–28–65. Filed 4–9–65.

800,181. SPIT FIRE. Wynn Oil Company. SN 217,070. Pub. 9–28–65. Filed 4–21–65.

800,182. SAPPHIRE. Gessner Products Company, Inc. SN 217,107. Pub. 9–28–65. Filed 4–22–65.

Class 16 — Protective and Decorative Coatings

800,183. BRINDLESHINE. The Flood Company. SN 172,381. Pub. 9–28–65. Filed 7–3–63.

800,184. VERTRON. Vertron Corporation. SN 184,409. Pub. 9–28–65. Filed 1–10–64.

800,185. BAR-THIN-OL. The Pure Oil Company. SN 193,813. Pub. 9–28–65. Filed 5–19–64.

800,186. FORMSHIELD. W. R. Grace & Co. SN 196,147. Pub. 9–28–65. Filed 6–22–64.

800,187. SET. Set Products, Inc. SN 196,398. Pub. 9–28–65. Filed 6–24–64.

800,188. FIRST MATE. Clifton B. Saxton, Jr., d.b.a. Camden Paint Mfg. Co. SN 205,100. Pub. 9–28–65. Filed 10–29–64.

800,189. ACRA-SEAL AND DESIGN. Radiator Specialty Company. SN 206,761. Pub. 9–28–65. Filed 11–23–64.

800,190. WIN-GEL. Winsor & Newton Inc. SN 207,097. Pub. 9–28–65. Filed 11–27–64.

800,191. HBP. General Electric Company. SN 209,434. Pub. 9–28–65. Filed 1–6–65.

Class 17 — Tobacco Products

800,192. 24 KARAT AND DESIGN. W. H. Snyder & Sons Incorporated. SN 206,301. Pub. 9–28–65. Filed 11–16–64.

800,193. BATTLEFORCE. Moss & Lowenbaupt Cigar Co. SN 214,152. Pub. 9-28-65. Filed 3-15-65.

800,194. THOROUGHBRED. R. J. Reynolds Tobacco Company. SN 215,894. Pub. 9-28-65. Filed 4-6-65.

800,195. OUR PLANTATION. R. J. Reynolds Tobacco Company. SN 215,896. Pub. 9-28-65. Filed 4-6-65.

Class 18 — Medicines and Pharmaceutical Preparations

800,123. (See Class 6 for this trademark.)

800,196. GELCEPTOR F. Eisai Company Ltd. SN 170,305. Pub. 9-28-65. Filed 6-4-63.

800,197. HEXALIN. Rabin-Winters Corporation. SN 192,517. Pub. 9-28-65. Filed 5-1-64.

800,198. INSTASAN. Instasan Pharmakon Laboratories. SN 195,228. Pub. 9-28-65. Filed 6-9-64.

800,199. BACTINE. Miles Laboratories, Inc. SN 201,719. Pub. 9-28-65. Filed 9-11-64.

800,200. SUL-O-LET. Philips Roxane, Inc. SN 206,876. Pub. 9-28-65. Filed 11-24-64.

800,201. DRY-MAST. Philips Roxane, Inc. SN 206,877. Pub. 9-28-65. Filed 11-24-64.

800,202. NION. Nion Corporation. SN 208,842. Pub. 9-28-65. Filed 12-24-64.

800,203. DUPHAVAC. N.V. Philips-Duphar. SN 209,024. Pub. 9-28-65. Filed 12-29-64.

800,204. HALITOSINE. Allan Pharmaceutical Company, Inc., d.b.a. The Halitosine Company. SN 210,724. Pub. 9-28-65. Filed 1-27-65.

800,205. SENSIVAL. Aktieselskabet Pharmacia. SN 213,509. Pub. 9-28-65. Filed 3-8-65.

800,206. PYRIDOSCORBINE. Les Laboratoires Dausse, Société Anonyme. SN 214,993. Pub. 9-28-65. Filed 3-25-65.

800,207. LONGULES. Carter-Wallace, Inc., by change of name from Carter Products, Inc. SN 217,005. Pub. 9-21-65. Filed 4-21-65.

800,208. RESISCAL. Thomed Corporation. SN 217,150. Pub. 9-28-65. Filed 4-22-65.

800,209. LONGIPENT. American Home Products Corporation. SN 217,170. Pub. 9-28-65. Filed 4-23-65.

800,210. TODDY-VITE. California Institutional Supply Co., Inc. SN 217,270. Pub. 9-28-65. Filed 4-26-65.

Class 19 — Vehicles

800,211. GROTESQUE FIGURE (DESIGN). Automatic Radio Mfg. Co., Inc. SN 186,316. Pub. 9-28-65. Filed 2-10-64.

800,212. FLIGHT WING. Mallard Coach Corporation. SN 210,218. Pub. 9-28-65. Filed 1-19-65.

800,213. KH. Kelsey-Hayes Company. SN 211,817. Pub. 9-28-65. Filed 2-11-65.

800,214. ESSEX. D. P. Harris Hardware & Manufacturing Co., Inc. SN 212,408. Pub. 9-28-65. Filed 2-19-65.

800,215. KARSPAT. Kumficar (Sales) Limited. SN 213,329. Pub. 9-28-65. Filed 3-4-65.

800,216. EL CAMINO. The Huffman Manufacturing Company. SN 213,564. Pub. 9-28-65. Filed 3-8-65.

800,217. AMERICANA. The Huffman Manufacturing Company. SN 213,566. Pub. 9-28-65. Filed 3-8-65.

800,218. IMPALA. The Huffman Manufacturing Company. SN 213,568. Pub. 9-28-65. Filed 3-8-65.

Class 20 — Linoleum and Oiled Cloth

800,219. AEGEAN. Armstrong Cork Company. SN 211,412. Pub. 9-28-65. Filed 2-5-65.

Class 21 — Electrical Apparatus, Machines, and Supplies

800,220. PANASONIC AND DESIGN. Matsushita Electric Industrial Co., Ltd. MULTIPLE CLASS (Classes 21, 34, and 36). SN 176,554. Pub. 3-16-65. Filed 9-9-63.

800,221. SYST-O-MAT. Uster Corporation. SN 184,318. Pub. 9-28-65. Filed 1-9-64.

800,222. CROVEN. Cardinal Electronics Company of Canada Limited. SN 185,656. Pub. 9-28-65. Filed 1-30-64.

800,223. O AND DESIGN. Cardinal Electronics Company of Canada Limited. SN 185,657. Pub. 9-28-65. Filed 1-30-64.

800,224. AUTO GROUP AND DESIGN. General Elevator Company, Inc. SN 193,157. Pub. 9-28-65. Filed 5-11-64.

800,225. MCRT. Sydney Himmelstein, d.b.a. S. Himmelstein and Company. SN 194,388. Pub. 9-28-65. Filed 5-27-64.

800,226. BLITZ. Portable Electric Tools, Inc. SN 194,514. Pub. 9-28-65. Filed 5-28-64.

800,227. ISORET. Ault Incorporated. SN 198,312. Pub. 9-28-65. Filed 7-22-64.

800,228. AUTOCONSTANT. Automatic Control Company. SN 199,003. Pub. 9-28-65. Filed 8-3-64.

800,229. REVERSOMATIC. NRM Corporation. SN 199,090. Pub. 9-28-65. Filed 8-3-64.

800,230. MAGNETOUCH. NRM Corporation. SN 199,091. Pub. 9-28-65. Filed 8-3-64.

800,231. DURATRONIC. Curtis Noll Corporation, assignee of Curtis Industries, Inc. SN 199,270. Pub. 9-28-65. Filed 8-5-64.

800,232. INMANCO POLYMAT. Inmanco, Inc. SN 203,296. Pub. 9-28-65. Filed 10-5-64.

800,233. ROTEX AND DESIGN. Snook Manufacturing Company, Inc. SN 205,114. Pub. 9-28-65. Filed 10-29-64.

800,234. ROTEX. Snook Manufacturing Company, Inc. SN 205,115. Pub. 9-28-65. Filed 10-29-64.

800,235. JL. William Bank, d.b.a. Jewelite Signs. SN 205,240. Pub. 9-28-65. Filed 11-2-64.

800,236. K-GRIP JR. Kings Electronics Company, Inc. SN 205,592. Pub. 9-28-65. Filed 11-5-64.

800,237. KADOR. Vidor Limited. SN 205,638. Pub. 9-28-65. Filed 11-5-64.

800,238. IMPACT-DUCER. Valpey Corporation. SN 205,891. Pub. 9-28-65. Filed 11-9-64.

800,239. ECHOPLEX. Market Electronics Company. SN 205,950. Pub. 9-28-65. Filed 11-10-64.

800,240. PAL-LUX. Pacific Associated Lighting, Inc. SN 206,074. Pub. 9-28-65. Filed 11-12-64.

800,241. PARAFLECTOR. Scala Radio Corporation. SN 206,082. Pub. 9-28-65. Filed 11-12-64.

800,242. NEET KLEET. Lloyd H. Leonard, d.b.a. Leonard Industries. SN 206,628. Pub. 9-28-65. Filed 11-20-64.

800,243. PEDALIGHT. Paul H. MacMahon. SN 208,091. Pub. 9-28-65. Filed 12-14-64.

800,244. ADUP. Jackson Brothers (London) Limited. SN 210,790. Pub. 9-28-65. Filed 1-27-65.

800,245. SPEEDIMITE. Woodward-Schumacher Electric Corporation. SN 210,836. Pub. 9-28-65. Filed 1-27-65.

800,246. PEDALITE. Paul H. MacMahon. SN 211,288. Pub. 9-28-65. Filed 2-3-65.

Class 22 — Games, Toys, and Sporting Goods

800,123. (See Class 6 for this trademark.)

800,247. MILLER. Earl Andrew Miller. MULTIPLE CLASS (Classes 22 and 39). SN 148,514. Pub. 9-28-65. Filed 7-6-62.

800,248. STARDUST AND DESIGN. Standard Packaging Corporation. SN 170,232. Pub. 1-7-64. Filed 6-3-63.

800,249. LIL' BASS. Fred Arbogast Company, Inc. SN 183,551. Pub. 9-28-65. Filed 12-26-63.

800,250. HUMOROUS BONE. Items Incorporated. SN 190,933. Pub. 9-28-65. Filed 4-13-64.

800,251. POKEY. Uneeda Doll Co., Inc. SN 191,462. Pub. 6-8-65. Filed 4-17-64.

800,252. TEMPTATION 42 AND DESIGN. Charles E. Robinette. SN 192,757. Pub. 9-28-65. Filed 5-5-64.

800,253. CHECKMATE. Crisloid Plastics Inc. SN 192,794. Pub. 9-28-65. Filed 5-6-64.

800,254. FLIP-A-BASKET. Hassenfeld Bros., Inc. SN 195,098. Pub. 9-28-65. Filed 6-8-64.

800,255. DINKY. Meccano Limited. SN 196,175. Pub. 9-28-65. Filed 6-22-64.

800,256. LE BOEUF CREEPER. W. E. Beckwith, d.b.a. W. E. Beckwith Sporting Goods. SN 196,838. Pub. 9-28-65. Filed 7-1-64.

800,257. TE LA AND DESIGN. Rolen Diversified Investors, Inc. SN 198,224. Pub. 9-28-65. Filed 7-20-64.

800,258. LIFT OFF AND DESIGN. George P. Dunlevy, Jr. SN 198,336. Pub. 9-28-65. Filed 7-22-64.

800,259. GRIP TRIPLER. Grip Tripler, Inc. SN 198,416. Pub. 9-28-65. Filed 7-23-64.

800,260. GRAND PRIX. American Machine & Foundry Company. SN 198,522. Pub. 9-28-65. Filed 7-27-64.

800,261. U-DRIVE. The Lionel Toy Corporation. SN 200,267. Pub. 9-28-65. Filed 8-20-64.

800,262. ROYAL FLUSH AND DESIGN. Herman E. Wuestenfeld. SN 204,480. Pub. 9-28-65. Filed 10-20-64.

800,263. KADET. C. L. Parris. SN 208,103. Pub. 9-28-65. Filed 12-14-64.

800,264. COVERBACK. Marty Gilman, Incorporated. SN 209,851. Pub. 9-28-65. Filed 1-13-65.

800,265. ROCK 'EM SOCK 'EM ROBOTS. Louis Marx & Co. Inc. SN 210,211. Pub. 9-28-65. Filed 1-19-65.

800,266. PRO-SURFER. New Jersey Aluminum Extrusion Co., Inc. SN 210,222. Pub. 9-28-65. Filed 1-19-65.

800,267. BIG BOSS. Louis Marx & Co. Inc. SN 210,455. Pub. 9-28-65. Filed 1-22-65.

800,268. PORT-A-PIT. Gordon & Roth Co., Inc. SN 210,670. Pub. 9-28-65. Filed 1-26-65.

800,269. COMFICIENT. South Bend Tackle Company, Inc. SN 210,903. Pub. 9-28-65. Filed 1-28-65.

800,270. MONSTER MAGNET. Wham-O Mfg. Co. SN 211,131. Pub. 9-28-65. Filed 2-1-65.

800,271. "STONEWALL" SMITH. Louis Marx & Co., Inc. SN 211,178. Pub. 9-28-65. Filed 2-2-65.

800,272. STONY. Louis Marx & Co., Inc. SN 211,179. Pub. 9-28-65. Filed 2-2-65.

800,273. BOTTLTOOT. Crest Services, Inc. SN 212,655. Pub. 9-28-65. Filed 2-24-65.

800,274. HE-NIK. Uneeda Doll Co., Inc. SN 212,714. Pub. 9-28-65. Filed 2-24-65.

800,275. WEE-NIK. Uneeda Doll Co., Inc. SN 212,715. Pub. 9-28-65. Filed 2-24-65.

800,276. BATTABOUT. Harts Mountain Products Corp. SN 212,773. Pub. 9-28-65. Filed 2-25-65.

800,277. LIMPER. Pflueger Corporation. SN 213,351. Pub. 9-28-65. Filed 3-4-65.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

800,278. HIDE-A-WAY-JAX. Hide-A-Way-Jax, Inc. SN 181,890. Pub. 9-28-65. Filed 11-26-63.

800,279. VORTEC AND DESIGN. Douglas Aircraft Company, Inc. MULTIPLE CLASS (Classes 23 and 26). SN 186,162. Pub. 9-28-65. Filed 2-6-64.

800,280. MISCELLANEOUS DESIGN. Aircraft Armaments, Inc. SN 190,572. Pub. 9-28-65. Filed 4-8-64.

800,281. MADEMOISELLE AND DESIGN. Brother International Corporation. SN 195,060. Pub. 9-28-65. Filed 6-8-64.

800,282. DIAMONITE. United States Ceramic Tile Company. SN 204,326. Pub. 9-28-65. Filed 10-19-64.

800,283. HOLLOWAVE. Utica Cutlery Company. SN 204,861. Pub. 9-28-65. Filed 10-26-64.

800,284. COWLES AND DESIGN. The Cowles Dissolver Company, Inc. SN 204,890. Pub. 9-28-65. Filed 10-27-64.

800,285. RING (DESIGN). The Ridge Tool Company. SN 205,097. Pub. 9-28-65. Filed 10-29-64.

800,286. CAR-MATIC. Vail Spring Works, Inc. SN 205,374. Pub. 9-28-65. Filed 11-2-64.

800,287. MOUNTAIN LOGGER. Mountain Manufacturing Company, Inc. SN 205,597. Pub. 9-28-65. Filed 11-5-64.

800,288. THE WET-BACK. Drilprodco, Inc. SN 205,678. Pub. 9-28-65. Filed 11-6-64.

800,289. HI FEED. The Valeron Corporation. SN 206,789. Pub. 9-28-65. Filed 11-23-64.

800,290. CEFF AND DESIGN. Fairchild Camera and Instrument Corporation. SN 210,426. Pub. 9-28-65. Filed 1-22-65.

800,291. ROTO FORM. Pines Engineering Co. Inc. SN 210,982. Pub. 9-28-65. Filed 1-29-65.

800,292. HAS THE EDGE . . . AND KEEPS IT. J. Wiss and Sons Co. SN 211,133. Pub. 9-28-65. Filed 2-1-65.

800,293. AUSCO. Auto Specialties Manufacturing Company. SN 211,338. Pub. 9-28-65. Filed 2-4-65.

800,294. RAINCAT. Layne & Bowler Pump Company. SN 212,017. Pub. 9-28-65. Filed 2-15-65.

800,295. POWERITER. SCM Corporation. SN 212,060. Pub. 9-28-65. Filed 2-15-65.

800,296. IRON BRIGADE. Fleet Wholesale Supply Co., Inc. SN 212,209. Pub. 9-28-65. Filed 2-17-65.

800,297. BRITEBORE. The Fafnir Bearing Company. SN 213,428. Pub. 9-28-65. Filed 3-5-65.

800,298. Q-T. Airmatic Valve, Inc. SN 214,496. Pub. 9-8-65. Filed 3-19-65.

800,299. MAGNAPRON AND DESIGN. Phillocraft Company. SN 215,350. Pub. 9-28-65. Filed 3-30-65.

800,300. MAGNASTEEL AND DESIGN. Phillocraft Company. SN 215,351. Pub. 9-28-65. Filed 3-30-65.

800,301. MAGNATRAX AND DESIGN. Phillocraft Company. SN 215,352. Pub. 9-28-65. Filed 3-30-65.

800,302. HOME-TAP CO/2 AND CIRCLE DESIGN. Home-Tap Company, d.b.a. Home Tap Co. SN 216,409. Pub. 9-28-65. Filed 4-13-65.

Class 24 — Laundry Appliances and Machines

800,303. AM AMERICAN MOTORS CORPORATION. American Motors Corporation. CONSOLIDATED CERTIFICATE. SN 218,257, pub. 9-21-65, filed 5-7-65, Cl. 24; SN 218,258, pub. 9-21-65, filed 5-7-65, Cl. 31.

Class 26 — Measuring and Scientific Appliances

800,126. (See Class 6 for this trademark.)

800,279. (See Class 23 for this trademark.)

800,304. C-THRU. The C-Thru Ruler Company. SN 164,814. Pub. 10–20–64. Filed 3–18–63.

800,305. MISCELLANEOUS DESIGN. Opticks, Inc. MULTIPLE CLASS (Classes 26 and 106). SN 189,929. Pub. 9–28–65. Filed 3–30–64.

800,306. WHITE STAR AND DESIGN. Canadian White Star Products Limited. SN 194,268. Pub. 9–28–65. Filed 3–30–64.

800,307. MASTER NAVIGATOR AND DESIGN. Edwin N. Hauber, d.b.a. Master Navigator. SN 194,980. Pub. 9–28–65. Filed 6–5–64.

800,308. AUTOGRIP. Hewlett-Packard Company, assignee of F. L. Moseley Company. SN 198,490. Pub. 9–28–65. Filed 7–24–64.

800,309. HEAT-TUFF. The Southern Optical Company. SN 199,411. Pub. 9–28–65. Filed 8–6–64.

800,310. KE AND DESIGN. Keuffel & Esser Company. SN 200,446. Pub. 9–28–65. Filed 8–24–64.

800,311. PRECIFIX. Rohde & Schwarz. SN 201,619. Pub. 9–28–65. Filed 9–10–64.

800,312. S/U AND DESIGN. Smith-Urban Corporation. SN 205,113. Pub. 9–28–65. Filed 10–29–64.

800,313. WATTCHER. Bird Electronic Corp. SN 205,245. Pub. 9–28–65. Filed 11–2–64.

800,314. MEGAFLEX. All-State Blue Print & Photo Copy Co. SN 205,760. Pub. 9–28–65. Filed 11–9–64.

800,315. CHECKMATE AND DESIGN. Electro-Nite Engineering Co., assignee of Electro-Nite, Inc. SN 205,788. Pub. 8–17–65. Filed 11–9–64.

800,316. GEM-TEMP. Ultra-Violet Products, Inc. SN 207,677. Pub. 9–28–65. Filed 12–7–64.

800,317. VICOSTAT. The Victoreen Instrument Company. SN 208,148. Pub. 9–28–65. Filed 12–14–64.

800,318. THERMA TABS. Camwil Inc. SN 209,487. Pub. 9–28–65. Filed 1–7–65.

800,319. CREDAC. Mechanical Enterprises, Inc. SN 210,890. Pub. 9–28–65. Filed 1–28–65.

800,320. ROLOR TRANS FLO ETC. AND DESIGN. The Rolor Corporation. SN 212,588. Pub. 9–28–65. Filed 2–23–65.

800,321. TRAPCAT. Litton Systems, Inc. SN 213,687. Pub. 9–28–65. Filed 3–9–65.

800,322. TARE-MATIC. Sanitary Scale Company. SN 213,715. Pub. 9–28–65. Filed 3–9–65.

800,323. HEMOGRAPH. Mead Johnson & Company. SN 213,780. Pub. 9–28–65. Filed 3–10–65.

800,324. WAXSTAT. Western Thomson Controls Limited. SN 214,491. Pub. 9–28–65. Filed 3–18–65.

800,325. EXPANDOMATIC. Beckman Instruments, Inc. SN 214,603. Pub. 9–28–65. Filed 3–22–65.

800,326. VERTAFLEX. United States Banknote Corporation, by merger of and change of name from Lanston Industries, Incorporated. SN 214,660. Pub. 9–28–65. Filed 3–22–65.

800,327. QTA. Dynatech Corporation. SN 214,852. Pub. 9–28–65. Filed 3–24–65.

800,328. ENCLAD. Engelhard Industries, Inc. SN 214,855. Pub. 9–28–65. Filed 3–24–65.

800,329. PRINTACHROME. General Aniline & Film Corporation. SN 214,859. Pub. 9–28–65. Filed 3–24–65.

800,330. MASTER. Master Rule Manufacturing Company, Inc. SN 214,887. Pub. 9–28–65. Filed 3–24–65.

800,331. CHROMAGRAM. Eastman Kodak Company. SN 214,965. Pub. 9–28–65. Filed 3–25–65.

800,332. GG (REVERSE DESIGN). The Gaertner Scientific Corporation. SN 215,205. Pub. 9–28–65. Filed 3–29–65.

800,333. TERRAMETRICS. Patrick Harrison, Inc. SN 215,214. Pub. 9–28–65. Filed 3–29–65.

800,334. QUARASIL. Precision Cells, Inc. SN 215,263. Pub. 9–28–65. Filed 3–29–65.

800,335. PHD. Borg-Warner Corporation. SN 215,382. Pub. 9–28–65. Filed 3–31–65.

800,336. SURFACTOMETER. Millipore Filter Corporation. SN 215,429. Pub. 9–28–65. Filed 3–31–65.

800,337. MR. DIRTCHECK AND DESIGN. Gardner Laboratory Inc. SN 215,495. Pub. 9–28–65. Filed 4–1–65.

800,338. LEICAFLEX. E. Leitz, Inc. SN 215,513. Pub. 9–28–65. Filed 4–1–65.

800,339. ANA-VENT. Techni-Rite Electronics, Inc. SN 215,675. Pub. 9–28–65. Filed 4–1–65.

800,340. TRANSMATIC. SCM Corporation. SN 215,783. Pub. 9–28–65. Filed 4–5–65.

800,341. MISCELLANEOUS DESIGN. Winsco Instruments & Controls Company, Inc. SN 216,230. Pub. 9–28–65. Filed 4–9–65.

Class 28 — Jewelry and Precious-Metal Ware

800,342. WOL. Woodward & Lothrop, Incorporated. SN 207,184. Pub. 9–28–65. Filed 11–27–64.

800,343. KUM-A-PART. Swank, Inc. SN 212,707. Pub. 9–28–65. Filed 2–24–65.

800,344. PRECIOUS POSTS. Nomo Products, Inc. SN 217,380. Pub. 9–28–65. Filed 4–26–65.

Class 29 — Brooms, Brushes, and Dusters

800,345. MARY CARTERS. Mary Carter Paint Co. SN 202,012. Pub. 9–28–65. Filed 9–16–64.

Class 30 — Crockery, Earthenware, and Porcelain

800,346. IRON STONE KOKURA WARE. Toyotoki Kaisha, Ltd., d.b.a. Toyotoki Company, Ltd. SN 174,249. Pub. 9–28–65. Filed 8–1–63.

Class 31 — Filters and Refrigerators

800,303. CONSOLIDATED CERTIFICATE. See Class 24.

800,347. PRESSURATOR AND DESIGN. Pressurators, Inc. SN 186,890. Pub. 9–28–65. Filed 2–17–64.

Class 32 — Furniture and Upholstery

800,348. MISCELLANEOUS DESIGN. The Preservation Society of Newport County. SN 116,071. Pub. 9–28–65. Filed 3–20–61.

800,349. GAYLORD. Gaylord Bros., Inc. SN 204,664. Pub. 7–6–65. Filed 10–23–64.

800,350. KANT-MAR. Kinzee Products Inc. SN 209,354. Pub. 9–28–65. Filed 1–5–65.

800,351. AMERICAN BEAUTY. Chas. S. Martin Distributing Company, Inc. SN 212,689. Pub. 9–28–65. Filed 2–24–65.

800,352. CHIRO-REST. Amco Atlas Mattress, Inc. SN 215,374. Pub. 9–28–65. Filed 3–31–65.

800,353. D & B AND DESIGN. The Berkline Corporation. SN 215,380. Pub. 9–28–65. Filed 3–31–65.

Class 34 — Heating, Lighting, and Ventilating Apparatus

800,220. (See Class 21 for this trademark.)

800,354. TRANSFERTHERM. Cleaver-Brooks Company. SN 172,155. Pub. 9–28–65. Filed 7–1–63.

800,355. STEAMILIZER. Cereal Processing Company Limited. SN 196,352. Pub. 9–28–65. Filed 6–24–64.

800,356. KRESKY. Kresky Manufacturing Company, Inc. SN 201,034. Pub. 9–28–65. Filed 9–1–64.

800,357. PURITAN. Hamilton Watch Company. SN 210,012. Pub. 9–28–65. Filed 1–15–65.

800,358. BRONZOCHROM. Eutectic Welding Alloys Corporation. SN 211,268. Pub. 9–28–65. Filed 2–3–65.

800,359. SUPERTRODE. Stone Manganese Marine Limited. SN 211,475. Pub. 9–28–65. Filed 2–5–65.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

800,360. MISCELLANEOUS DESIGN. United Manufacturing Company, d.b.a. Zebra Brake Company. SN 196,995. Pub. 9–28–65. Filed 7–2–64.

800,361. KRALY AND DESIGN. John Kraly. SN 203,595. Pub. 9–28–65. Filed 10–8–64.

800,362. ELIMINATOR. Interstate Tire & Brake Stores, Inc. SN 212,121. Pub. 9–28–65. Filed 2–16–65.

800,363. HI-TRAK. Sivon Manufacturing Company. SN 212,604. Pub. 9–28–65. Filed 2–23–65.

800,364. ALUM-N. Wolverine Fabricating & Mfg. Co. Inc. SN 212,620. Pub. 9–28–65. Filed 2–23–65.

800,365. FLEXVIN. Recon (Pipelines) Limited. SN 212,812. Pub. 9–28–65. Filed 2–25–65.

Class 36 — Musical Instruments and Supplies

800,220. (See Class 21 for this trademark.)

800,366. DISCOMATIC CHANTAL. Jean Foufounis. SN 172,549. Pub. 9–28–65. Filed 7–5–63.

800,367. AJAHA AND DESIGN. The Fred. Gretsch Mfg. Co. SN 193,357. Pub. 9–28–65. Filed 5–13–64.

800,368. GAYLORD. Gaylord Bros., Inc. SN 204,665. Pub. 8–10–65. Filed 10–23–64.

800,369. RINGO AND DESIGN. Horizon Associates, Inc. SN 209,932. Pub. 9–28–65. Filed 1–14–65.

Class 37 — Paper and Stationery

800,370. DOVEPRINTS. Swanee Paper Corporation, assignee of The Sanitary Paper Mills, Incorporated. SN 154,442. Pub. 2–25–64. Filed 10–3–62.

800,371. HISTORIC NEWPORT. The Preservation Society of Newport County. SN 181,679. Pub. 9–28–65. Filed 11–21–63.

800,372. CLEARERASE. Esleeck Manufacturing Company. SN 183,166. Pub. 8–3–65. Filed 12–17–63.

800,373. SOABAR. Soabar Company. SN 199,766. Pub. 9–28–65. Filed 8–12–64.

800,374. TIOPAKE. International Paper Company. SN 200,353. Pub. 9–28–65. Filed 8–21–64.

800,375. DIAMOND. Eberhard Faber Inc. SN 201,399. Pub. 8–3–65. Filed 9–8–64.

800,376. SEND ME A MAN WHO READS! International Paper Company. SN 202,273. Pub. 9–28–65. Filed 9–21–64.

800,377. INTERNATIONAL PAPER AND DESIGN. International Paper Company. SN 208,899. Pub. 9–28–65. Filed 10–6–64.

800,378. OTIS. International Paper Company. SN 207,299. Pub. 9–28–65. Filed 12–2–64.

800,379. RANGELEY. International Paper Company. SN 207,302. Pub. 9–28–65. Filed 12–2–64.

800,380. HUDSON. International Paper Company. SN 207,303. Pub. 9–28–65. Filed 12–2–64.

800,381. HAMMERMILL HY-O-LITE AND DESIGN. Hammermill Paper Company. SN 208,823. Pub. 9–28–65. Filed 12–24–64.

800,382. YORKTOWN. Union Bag-Camp Paper Corporation. SN 210,238. Pub. 9–28–65. Filed 1–19–65.

800,383. STIK-O-MATIC. Albert Shernov. SN 210,479. Pub. 9–28–65. Filed 1–22–65.

Class 38 — Prints and Publications

800,384. REPRESENTATION OF WORLD GLOBE SURROUNDED BY FIGURES BEARING GIFTS. World Gift Company. SN 177,133. Pub. 9–28–65. Filed 9–16–63.

800,385. AMAX AND DESIGN. American Metal Climax, Inc. SN 195,911. Pub. 9–28–65. Filed 6–18–64.

800,386. AEROGRAPH RESEARCH NOTES AND DESIGN. Wilkens Instrument & Research, Inc. SN 198,390. Pub. 9–28–65. Filed 7–22–64.

800,387. AEROGRAPH PREVIEWS & REVIEWS AND DESIGN. Wilkens Instrument & Research, Inc. SN 198,391. Pub. 9–28–65. Filed 7–22–64.

800,388. MASTERPIECE STUDIOS. The Process Corporation. SN 200,485. Pub. 9–28–65. Filed 8–24–64.

800,389. FANCIFUL T (DESIGN). Patrick A. Toensmeier, d.b.a. Patrick A. Toensmeier and Associates. SN 201,066. Pub. 9–28–65. Filed 9–1–64.

800,390. PIONEER. United States Borax & Chemical Corporation. SN 205,888. Pub. 9–28–65. Filed 11–9–64.

800,391. WISDOM. Wisdom Associates, Inc. SN 207,543. Pub. 9–28–65. Filed 12–4–64.

800,392. NEW YORK STATE PSYCHOLOGIST ETC. AND DESIGN. New York State Psychological Assoc., Inc. SN 210,893. Pub. 9–28–65. Filed 1–28–65.

800,393. QUOTA INTERNATIONAL INCORPORATED AND DESIGN. Quota International, Incorporated. MULTIPLE CLASS (Classes 38, 100, and 200). SN 211,231. Pub. 9–28–65. Filed 2–3–65.

800,394. THE QUOTARIAN. Quota International, Incorporated. SN 211,309. Pub. 9–28–65. Filed 2–3–65.

800,395. NATIONAL CAPITOL HISTORICAL MUSEUM OF TRANSPORTATION, INC. AND DESIGN. The National Capitol Historical Museum of Transportation, Incorporated. SN 211,830. Pub. 9–28–65. Filed 2–11–65.

800,396. VOTER'S VOICE IN CONGRESS. Bancroft Services, Inc. SN 211,858. Pub. 9–28–65. Filed 2–12–65.

800,397. THE HEADWAY RECORDER. The National Capitol Historical Museum of Transportation, Incorporated. SN 212,134. Pub. 9–28–65. Filed 2–16–65.

800,398. HAPLESS HARRY. Chicago Tribune-New York News Syndicate, Inc. SN 212,972. Pub. 9–28–65. Filed 3–1–65.

800,399. AUDIOFAN. St. Regis Publications, Inc. SN 214,178. Pub. 9–28–65. Filed 3–15–65.

800,400. BOSTON GLOBE SUNDAY MAGAZINE AND DESIGN. Globe Newspaper Company. SN 214,436. Pub. 9–28–65. Filed 3–18–65.

800,401. ACADEMIE ART. The Sangamon Company. SN 214,564. Pub. 9–28–65. Filed 3–19–65.

800,402. OPEN BOOK WITH A SHIELD INSIDE THE BOOK AND FIVE POINTED STAR, ETC. (DESIGN). Illinois Law Enforcement Officers Law Bulletin, Inc. SN 214,650. Pub. 9–28–65. Filed 3–22–65.

800,403. PANOPTICON PRESS. Arthur L. H. Rubin. SN 214,918. Pub. 9–28–65. Filed 3–24–65.

Class 39 — Clothing

800,247. (See Class 22 for this trademark.)

800,404. THE DESIGNERS COLLECTION AND DESIGN. Genesco Inc., assignee of The Formfit Company. SN 146,179. Pub. 9–28–65. Filed 6–5–62.

800,405. HY-TEST. International Shoe Company, assignee of Powerhouse, Inc. SN 146,512. Pub. 3–3–64. Filed 6–8–62.

800,406. COMFY TOPS BY TOPAZ. Topaz Hosiery Mills, Inc. SN 172,784. Pub. 9–28–65. Filed 7–10–63.

800,407. U AND DESIGN. Joseph F. Corcoran Shoe Co., Inc. SN 178,175. Pub. 9–28–65. Filed 10–2–63.

800,408. DREAM DOOZY. Asti Products, Inc. SN 187,551. Pub. 9–28–65. Filed 2–27–64.

800,409. PARCON. Bay-Bee Shoe Company, Inc. SN 197,812. Pub. 9–28–65. Filed 7–14–64.

800,410. CLAN-KNITS. Huntley Knitting Mills, Inc., d.b.a. Trend Fashions. SN 198,175. Pub. 9–28–65. Filed 7–20–64.

800,411. LE BARON. Stedman Manufacturing Company. SN 199,130. Pub. 9–28–65. Filed 8–3–64.

800,412. STRUTTERS. Atlas Underwear Corporation. SN 200,536. Pub. 9–28–65. Filed 8–25–64.

800,413. BABYCARE. Riegel Textile Corporation. SN 200,785. Pub. 9–28–65. Filed 8–27–64.

800,414. APRES-SEA. Jack Winter Inc. SN 201,991. Pub. 9–28–65. Filed 9–15–64.

800,415. APRES-SWIM. Jack Winter Inc. SN 201,992. Pub. 9–28–65. Filed 9–15–64.

800,416. GBO. Gerbo Footwear Corporation. SN 202,473. Pub. 9–28–65. Filed 9–23–64.

800,417. BARROW. Barrow Manufacturing Company. SN 205,992. Pub. 9–28–65. Filed 11–12–64.

800,418. TAM-ITALIA ETC. AND DESIGN. Tami Sportswear. SN 207,347. Pub. 9–28–65. Filed 12–2–64.

800,419. THE PERFECT LOOK. The Perfect Garment Company. SN 208,768. Pub. 9–28–65. Filed 12–23–64.

800,420. ACTION KNOT. Wembley, Inc. SN 211,606. Pub. 9–28–65. Filed 2–8–65.

800,421. SPOT-PRESS. Spotwood Apparel Inc. SN 212,066. Pub. 9–28–65. Filed 2–15–65.

800,422. DURA BRITE. The Manhattan Shirt Company. SN 213,587. Pub. 9–28–65. Filed 3–8–65.

800,423. DURA WITE. The Manhattan Shirt Company. SN 213,588. Pub. 9–28–65. Filed 3–8–65.

800,424. HAYETTE. Hayette, Inc. SN 213,673. Pub. 9–28–65. Filed 3–9–65.

800,425. SPRINGBUK. Thomson Company. SN 213,817. Pub. 9–28–65. Filed 3–10–65.

800,426. QM'S. Quality Mills, Incorporated. SN 213,886. Pub. 9–28–65. Filed 3–11–65.

800,427. HAARUBIAN. Goodstein Bros. & Co., Inc. SN 214,109. Pub. 9–28–65. Filed 3–15–65.

800,428. EDEN PARK. Washington Manufacturing Company. SN 214,301. Pub. 9–28–65. Filed 3–16–65.

800,429. SWINGWEAVE. Palm Beach Company. SN 214,367. Pub. 9–28–65. Filed 3–17–65.

800,430. MEGGI. Meggi Strickmoden G.m.b.H. & Co. K.G. SN 214,668. Pub. 9–28–65. Filed 3–22–65.

800,431. ALBEROY. Alberoy, Inc. SN 214,744. Pub. 9–28–65. Filed 3–23–65.

800,432. ABBOTT EAST. Junior Accent, Inc. SN 214,875. Pub. 9–28–65. Filed 3–24–65.

800,433. SKINTEES. A. H. Schreiber Co. Incorporated. SN 215,122. Pub. 9–28–65. Filed 3–26–65.

800,434. GOLDEN LUXURY SLACKS AND DESIGN. Klayman Pants Company. SN 215,505. Pub. 9–28–65. Filed 4–1–65.

800,435. JAMI. Kadet-Kruger & Co. SN 216,600. Pub. 9–28–65. Filed 4–15–65.

800,436. LTP. The H. D. Lee Company, Incorporated. SN 216,841. Pub. 9–28–65. Filed 4–19–65.

800,437. DISCO. Sportswear Corporation of America. SN 216,879. Pub. 9–28–65. Filed 4–19–65.

800,438. BUDGE-EASE. Budget Uniform Center, Inc., d.b.a. Budget Uniform Bazaar. SN 217,836. Pub. 9–28–65. Filed 5–3–65.

Class 40 — Fancy Goods, Furnishings, and Notions

800,439. INSTANT BUTTON-ONS. Dyno Merchandise Corp. SN 200,835. Pub. 9–28–65. Filed 8–28–64.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

800,440. DESIGN OF THREE POINTED STAR IN CIRCLE. Daimler-Benz Aktiengesellschaft. SN 45,026. Pub. 9–28–65. Filed 1–31–58.

800,441. MISCELLANEOUS DESIGN. The Preservation Society of Newport County. SN 116,070. Pub. 9–28–65. Filed 3–20–61.

800,442. L'ORIEL. Greenwood Mills, Inc. SN 191,284. Pub. 9–28–65. Filed 4–16–64.

800,443. SUPER LACE LASTIQUE. Liberty Fabrics of New York, Inc. SN 198,566. Pub. 9–28–65. Filed 7–27–64.

800,444. "VACUMAT." Southern Mills, Inc. SN 202,857. Pub. 9–28–65. Filed 9–28–64.

800,445. MADRALINED. Sani Distributors, Inc. SN 205,461. Pub. 9–28–65. Filed 11–3–64.

800,446. CORDRIDGE. Bigelow-Sanford, Inc. SN 209,398. Pub. 9–28–65. Filed 1–6–65.

800,447. CHARING CROSS. Bigelow-Sanford, Inc. SN 209,399. Pub. 9–28–65. Filed 1–6–65.

800,448. FASSLUX. M. J. Fassler & Co., Inc. SN 212,518. Pub. 9–28–65. Filed 2–23–65.

800,449. VICTOIRE. Jeanne, a.k.a. Victoire Therond, nee Devis. SN 212,753. Pub. 9–28–65. Filed 2–25–65.

800,450. KUAN YIN. Ehniger Mills, Inc. SN 212,756. Pub. 9–28–65. Filed 2–25–65.

Class 43 — Thread and Yarn

800,451. FIBER 45. FMC Corporation. SN 210,760. Pub. 9–28–65. Filed 1–27–65.

800,452. VICTOIRE. Jeanne, a.k.a. Victoire Therond, nee Devis. SN 212,754. Pub. 9–28–65. Filed 2–25–65.

800,453. PLUSKROME. J. P. Stevens & Co., Inc. SN 216,110. Pub. 9–28–65. Filed 4–8–65.

Class 44 — Dental, Medical, and Surgical Appliances

800,454. NO-GLOVES-CATH. Rowlax Laboratories Co. SN 190,832. Pub. 9–28–65. Filed 4–10–64.

800,455. BRANT. The Schuemann-Jones Company, d.b.a. The Brant Mfg. Co. SN 215,276. Pub. 9–28–65. Filed 3–29–65.

Class 45 — Soft Drinks and Carbonated Waters

800,456. INJUN ORANGE. The Pillsbury Company. SN 196,303. Pub. 9–28–65. Filed 6–23–64.

800,457. GOOFY GRAPE. The Pillsbury Company. SN 196,304. Pub. 9–28–65. Filed 6–23–64.

800,458. ROOTIN'-TOOTIN' RASPBERRY. The Pillsbury Company. SN 196,305. Pub. 9–28–65. Filed 6–23–64.

Class 46 — Foods and Ingredients of Foods

800,459. HAROLD SPARLING'S. Harold Sparling Co. SN 173,518. Pub. 9–28–65. Filed 7–22–63.

800,460. JOLLY ROGER. Bercut-Richards Packing Co., assignee of Northwest Oyster Farms, Inc. SN 179,058. Pub. 9–28–65. Filed 10–15–63.

800,461. HERTA. L. Schweisfurth Inh. Karl Schweisfurth. SN 179,948. Pub. 9–28–65. Filed 10–28–63.

800,462. HERTA AND DESIGN. L. Schweisfurth Inh. Karl Schweisfurth. SN 179,949. Pub. 9–28–65. Filed 10–28–63.

800,463. FIGUR-TRIM. The W. E. Long Co., Independent Bakers' Cooperative. SN 190,524. COLLECTIVE MARK. Pub. 9–28–65. Filed 4–7–64.

800,464. PARADE. Hoody Peanut Products Company. SN 194,618. Pub. 9–28–65. Filed 6–1–64.

800,465. "SIPPIN SOUP." Fred W. Jamison. SN 194,614. Pub. 9–28–65. Filed 6–1–64.

800,466. EZ/D. Mark Morris Associates, Inc. SN 196,974. Pub. 9–28–65. Filed 7–2–64.

800,467. YE OLDE TAVERN. Cheese Products Co., Inc., d.b.a. Ye Olde Tavern Cheese Products. SN 199,881. Pub. 8–3–65. Filed 8–14–64.

800,468. ROYAL GARNET. North Pacific Canners & Packers, Inc. SN 201,045. Pub. 9–28–65. Filed 9–1–64.

800,469. FESTIVAL MAPLENUT AND DESIGN. Festival Foods. SN 203,491. Pub. 7–13–65. Filed 10–7–64.

800,470. CHEF PREPARED. The Rath Packing Company. SN 207,424. Pub. 9–28–65. Filed 12–3–64.

800,471. FLEVO. Koninklijke Fabrieken C. J. van Houten & Zoon N.V., by change of name from C. J. van Houten & Zoon N.V. SN 208,006. Pub. 9–28–65. Filed 12–11–64.

800,472. CORINGA. Brasil Oiticica S.A. SN 208,335. Pub. 9–28–65. Filed 12–17–64.

800,473. SPUR. The Cudahy Packing Company. SN 208,448. Pub. 9–28–65. Filed 12–18–64.

800,474. DENTLER MAID AND DESIGN. Geo. H. Dentler & Sons. SN 208,720. Pub. 9–28–65. Filed 12–23–64.

800,475. ERG. Ellsworth R. Goslin. SN 209,258. Pub. 9–28–65. Filed 1–4–65.

800,476. MR. NORTH AND DESIGN. Ohio Potato Growers Association. SN 209,450. Pub. 9–28–65. Filed 1–6–65.

800,477. BENIFLEX. Mead Johnson & Company. SN 209,874. Pub. 9–28–65. Filed 1–13–65.

800,478. GARDEN DELIGHT AND DESIGN. The Frozen Food Forum Inc. SN 211,055. Pub. 9–28–65. Filed 2–1–65.

800,479. CHIP N' DIP. Roberts Dairy Company. SN 212,449. Pub. 9–28–65. Filed 2–19–65.

800,480. BURG-O-WICH. Kermin Frozen Food Company. SN 213,987. Pub. 9–28–65. Filed 3–12–65.

800,481. DEAUVILLE. Lindsay Ripe Olive Company, d.b.a. Deauville Gourmet Foods. SN 216,957. Pub. 9–28–65. Filed 4–20–65.

800,482. YAMY. Baumer Foods, Inc. SN 217,980. Pub. 9–28–65. Filed 5–4–65.

Class 48 — Malt Beverages and Liquors

800,483. KOCH'S AND DESIGN. Fred Koch Brewery. SN 200,265. Pub. 9–28–65. Filed 8–20–64.

Class 49 — Distilled Alcoholic Liquors

800,484. ESBECO. Esbeco Distilling Corporation. SN 209,154. Pub. 9–28–65. Filed 12–31–64.

800,485. FLEET STREET. Old Florida Rum Company, d.b.a. Fleet Street of Florida. SN 214,458. Pub. 9–28–65. Filed 3–18–65.

Class 50 — Merchandise Not Otherwise Classified

800,486. AUTO GRAM VIP AND DESIGN. Auto-Gram, Inc. SN 208,805. Pub. 9–28–65. Filed 12–24–64.

800,487. PORKMASTER. Floyd O. Nelson, d.b.a. Nelson Products Co. SN 209,190. Pub. 9–28–65. Filed 12–31–64.

800,488. DYNAPERT. Management Technology Inc. SN 218,560. Pub. 9–28–65. Filed 5–11–65.

Class 51 — Cosmetics and Toilet Preparations

800,489. CIEL D'OR. Elisabeth Arden Sales Corporation. SN 166,356. Pub. 9–28–65. Filed 4–9–63.

800,490. HAND VEL. Kohler's Bon Pharmacy, Inc., d.b.a. M.A.P. Laboratories. SN 175,291. Pub. 9–28–65. Filed 8–19–63.

800,491. SVBG. Mattie Porter. SN 179,260. Pub. 9–28–65. Filed 10–17–63.

800,492. HEMERA. Laboratoires du Dr. N. G. Payot Etablissement. SN 197,402. Pub. 9–28–65. Filed 7–8–64.

800,493. FRENESI. Fibah Corporation, d.b.a. Perfumeria Fibah, assignee of Maurice Habif, d.b.a. Perfumeria Fibah. SN 200,947. Pub. 9–28–65. Filed 8–31–64.

800,494. UVAL AND DESIGN. Pharmafac, Inc. SN 201,234. Pub. 9–28–65. Filed 9–3–64.

800,495. BACTINE. Miles Laboratories, Inc. SN 201,720. Pub. 9–28–65. Filed 9–11–64.

800,496. BLUSHETTE. Chas. Pfizer & Co., Inc. SN 209,034. Pub. 9–28–65. Filed 12–29–64.

800,497. BLUSH ACCENT. Chas. Pfizer & Co., Inc. SN 209,035. Pub. 9–28–65. Filed 12–29–64.

800,498. SATIN MIST. J. Briskin, Inc. SN 209,234. Pub. 9–28–65. Filed 1–4–65.

800,499. TAJI. Shulton, Inc. SN 209,460. Pub. 9–28–65. Filed 1–6–65.

Class 52 — Detergents and Soaps

800,500. REEFER SWEET. Joseph B. Kennington, d.b.a. Reefer Sweet Company. SN 195,116. Pub. 7–6–65. Filed 6–8–64.

800,501. PREVENTION PLUS. Dorex, Inc. SN 210,000. Pub. 9–28–65. Filed 1–15–65.

800,502. SLIMFIT. B. Altman & Co. SN 214,316. Pub. 9–28–65. Filed 3–17–65.

800,503. CREVAT. Sep-Ko Chemicals, Inc., d.b.a. Monarch Chemicals, Inc. SN 214,793. Pub. 9–28–65. Filed 3–23–65.

800,504. RESPONSE. Colgate-Palmolive Company. SN 215,387. Pub. 9–28–65. Filed 3–31–65.

Service Marks

Class 100 — Miscellaneous

800,393. (See Class 38 for this trademark.)

800,505. TOMORROW'S RESEARCH TODAY. Polan Industries Incorporated. SN 146,414. Pub. 9–28–65. Filed 6–7–62.

800,506. HORNE'S ETC. AND DESIGN. Horne's Enterprises, Inc. SN 186,534. Pub. 9–28–65. Filed 2–12–64.

800,507. RRS. Howard Johnson's Motor Lodges, Inc. SN 192,397. Pub. 9–28–65. Filed 4–30–64.

800,508. CASTLE ETC. AND DESIGN. Ernest C. Cassill, d.b.a. Castle Motor Inn. SN 192,563. Pub. 9–28–65. Filed 5–4–64.

800,509. RED GARTER. Dupen Enterprises, Inc. SN 192,809. Pub. 9–28–65. Filed 5–6–64.

800,510. MISCELLANEOUS DESIGN. Law Research Service/Inc. SN 196,533. Pub. 9–28–65. Filed 6–26–64.

800,511. AMPAC AND DESIGN. American Medical Political Action Committee, d.b.a. AMPAC. SN 202,723. Pub. 9–28–65. Filed 9–3–64.

800,512. MULTI/FACTURING. Garlock Inc. SN 211,430. Pub. 9–28–65. Filed 2–5–65.

800,513. IR FUND AND DESIGN. Investors Research Company. SN 214,444. Pub. 9–28–65. Filed 3–18–65.

Class 101 — Advertising and Business

800,514. GIV-A-GIFT AND DESIGN. Giv-A-Gift, Inc. SN 180,730. Pub. 9–28–65. Filed 11–8–63.

800,515. NPDC AND DESIGN. National Projects Development Corporation. SN 182,197. Pub. 9–28–65. Filed 12–2–63.

800,516. MISCELLANEOUS DESIGNS. Midwest Credit Corporation. SN 194,059. Pub. 9–28–65. Filed 5–22–64.

800,517. NEDA ETC. AND DESIGN. National Electronic Distributors Association, Inc. SN 212,345. Pub. 9–28–65. Filed 2–18–65.

800,518. EXPO 67. Canadian Corporation for the 1967 World Exhibition. SN 212,929. Pub. 9–28–65. Filed 3–2–65.

Class 102 — Insurance and Financial

800,519. PHOTOGRAPHIC REPRESENTATION OF 4 CLASPED HANDS (DESIGN). Oppenheimer Fund, Inc. SN 207,832. Pub. 9–28–65. Filed 12–9–64.

800,520. ART RENDERING OF 4 CLASPED HANDS (DESIGN). Oppenheimer Fund, Inc. SN 207,834. Pub. 9–28–65. Filed 12–9–64.

800,521. MISCELLANEOUS DESIGN. Northwestern National Life Insurance Company. SN 211,459. Pub. 9–28–65. Filed 2–5–65.

Class 103 — Construction and Repair

800,522. PESTOP. Pestop Corporation. SN 185,618. Pub. 9–28–65. Filed 1–29–64.

800,523. RAZOR KLEENS. Roto-Rooter Corporation. SN 214,012. Pub. 9–28–65. Filed 3–12–65.

Class 105 — Transportation and Storage

800,524. NAI ETC. AND DESIGN. North American Van Lines, Inc. SN 203,421. Pub. 9–28–65. Filed 10–6–64.

Class 106 — Material Treatment

800,121. (See Class 6 for this trademark.)

800,305. (See Class 26 for this trademark.)

800,525. BRILYANT. Aluminum Processing Corp. (New Jersey corporation), by assignment of and change of name from Aluminum Processing Corp. (Massachusetts corporation). SN 167,188. Pub. 9–28–65. Filed 4–22–63.

800,526. MDP AND DESIGN. Massachusetts Dental Prosthetics, Inc. SN 195,313. Pub. 9–28–65. Filed 6–10–64.

Class 107 — Education and Entertainment

800,527. WORLD'S BOWL DE GRAS OMAHA 1963 AND DESIGN. Bernhardt Stahmer. SN 167,952. Pub. 9–28–65. Filed 5–1–63.

800,528. IT'S TIME TRUTH SPEAKS. Andrew R. Leak, d.b.a. A. R. Leak Colonial Chapels. SN 206,554. Pub. 9–28–65. Filed 11–19–64.

Collective Membership Marks

Class 200

800,393. (See Class 38 for this trademark.)

800,529. AMPAC AND DESIGN. American Medical Political Action Committee, d.b.a. AMPAC. SN 202,725. Pub. 9–28–65. Filed 9–3–64.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

Class 1 — Raw or Partly Prepared Materials

800,530. International Minerals & Chemical Corporation, Skokie, Ill. SN 201,440. Filed P.R. 9–8–64; Am. S.R. 10–21–65.

CUSTOMIX

For Foundry Sand Additive, Specifically a Mixture of Two or More Typical Sand Additives Such as Calcium Bentonite, Sodium Bentonite, Fire Clay, Corncob Flour, Sea Coal, Pitch, Wood Flour, Cereal Flour and So Forth.

First use July 7, 1964.

Class 38 — Prints and Publications

800,531. Center for Information Resources, Inc., Washington, D.C. SN 204,761. Filed P.R. 10–26–64; Am. S.R. 10–20–65.

WHO'S DOING WHAT IN BIOMEDICINE

For Booklet Issued From Time to Time.
First use Aug. 10, 1964.

TRADEMARK REGISTRATIONS RENEWED

47,694. PEARL TOP AND DESIGN. Cl. 34. 11–14–05.
47,698. THERMO AND DESIGN. Cl. 34. 11–14–65.
47,878. OLD HONESTY SOAP. Cl. 52. 11–28–05.
48,088. VUDOR. Cl. 32. 12–12–05.
50,283. TREADEASY. Cl. 39. 3–6–06.
200,935. LES DRAGEES DE COTY. Cl. 51. 7–14–25.
201,613. ST. DENIS. Cl. 51. 8–4–25.
204,779. GOLDEN SQUARE. Cl. 39. 10–27–25.
205,145. AUTOPULSE. Cl. 23. 11–3–25.
205,233. G AND DESIGN. Cl. 28. 11–5–25.
205,915. PATSY'S ORIGINAL. Cl. 46. 11–17–25.
207,205. THRILL. Cl. 45. 12–22–25.
207,596. KLOK-LAX AND DESIGN. Cl. 18. 1–5–26.
209,848. RACER. Cl. 2. 3–2–26.
210,907. DIANTHEOL. Cl. 51. 3–30–26.
210,910. FLORENTINOL. Cl. 51. 3–30–26.
210,911. AROMANTHEME. Cl. 51. 3–30–26.
210,912. MAIALIS. Cl. 51. 3–30–26.
210,916. SYLVESTRAL. Cl. 51. 3–30–26.
210,917. CNCIE AND DESIGN. Cl. 51. 3–30–26.
210,918. CHIRONIAX. Cl. 51. 3–30–26.
210,922. CHEIRIA. Cl. 51. 3–30–26.
210,968. OPOPANOL. Cl. 51. 3–30–26.
210,971. HELIOTROPOL. Cl. 51. 3–30–26.
210,972. OLNICERA. Cl. 51. 3–30–26.
210,978. CRYSTAL BROOK. Cl. 46. 3–30–26.
415,818. GROTESQUE FIGURE. Cl. 48. 8–14–45.
416,104. DIRIGO. Cl. 26. 8–28–45.
416,134. CLIPPER AND DESIGN. Cl. 17. 8–28–45.
416,874. THE COMPANION POCKET CROSS. Cl. 50. 10–2–45.
416,995. REV. Cl. 16. 10–9–45.
417,198. DONNKENNY. Cl. 39. 10–16–45.
417,252. FIBERGLAS. Cl. 43. 10–16–45.
417,290. TAPERWELD. Cl. 12. 10–23–45.
417,439. TIMES ROMAN. Cl. 50. 10–30–45.
417,606. AMERA-MAG. Cl. 14. 11–6–45.
417,849. ADELE SIMPSON. Cl. 39. 11–20–45.
418,260. L AND CROWN DESIGN. Cl. 51. 12–11–45.
418,261. GERMITEX. Cl. 6. 12–11–45.
418,345. COPREIN. Cl. 6. 12–18–45.
418,347. W AND DESIGN. Cl. 21. 12–18–45.
418,663. VISEGRIP. Cl. 13. 1–8–46.
418,894. DRESINOL. Cl. 1. 1–15–46.
418,985. PHOTOFLURE. Cl. 26. 1–15–46.
418,986. VERSATOL. Cl. 6. 1–15–46.
419,054. TECHNICAL SERVICE AND DESIGN. Cl. 6. 2–5–46.
419,110. PERMI-BOND. Cl. 5. 2–5–46.
419,146. CARBODENT. Cl. 44. 2–5–46.
419,334. McQUADE. Cl. 16. 2–12–46.
419,348. DURO TEST AND DESIGN. Cl. 21. 2–12–46.
419,379. REDUSOL. Cl. 16. 2–12–46.
419,380. WOODLIFE. Cl. 16. 2–12–46.
419,382. CELOKAL. Cl. 16. 2–12–46.
419,486. DEEDETENE. Cl. 6. 2–19–46.
419,533. WIZARD. Cl. 31. 2–19–46.
419,784. RUST-FOE. Cl. 6. 3–5–46.
419,794. RUGGARDS. Cl. 39. 3–6–46.
419,924. TIE–TIE AND DESIGN. Cl. 37. 3–12–46.
419,984. REPRESENTATION OF EAGLE AND GLOBE. Cl. 16. 3–19–46.
420,301. PROTAVENE. Cl. 46. 4–2–46.

TRADEMARK REGISTRATIONS CANCELED

Section 7(d)

797,212. BREEZE ILLINOIS AND DESIGN. Cl. 34. 10–5–65.
613,689. BRIGGS AND DESIGN. Cl. 46. 10–4–65.

Section 8

The following registrations issued Oct. 27, 1959

687,029. RUTANG ZIP AND DESIGN. Cl. 4.
687,033. NOLANE. Cl. 6.
687,034. 3M. Cl. 6.
687,038. SAVOY. Cl. 8.
687,044. TENNSOLOAM AND DESIGN. Cl. 10.
687,047. MIDWEST HOUSES. Cl. 12.
687,048. MIDWEST HOUSES M AND DESIGN. Cl. 12.
687,054. COLORVENT. Cl. 12.
687,062. TATUM RASCA. Cl. 13.
687,080. F-X AND DESIGN. Cl. 16.
598,057. SHOE CASE. Cl. 3.
687,094. STYPTO. Cl. 18.
687,096. TRAVEL-VITE VITAMINS AND DESIGN. Cl. 18.
687,098. LOMUPREN. Cl. 18.
687,099. ALTEFUR. Cl. 16.
687,101. PACIVET. Cl. 18.
687,103. VORALEX. Cl. 18.
687,105. SURGE. Cl. 18.
687,107. MARSILID. Cl. 18.
687,108. AMCO. Cl. 18.
687,122. ETRYNIT. Cl. 18.
687,124. TENPATH. Cl. 18.
687,127. CALORIMUL. Cl. 18.
687,133. NORMALIN. Cl. 18.
687,135. COMPAGESIC. Cl. 18.
687,136. WIZARD AND DESIGN. Cl. 19.
687,138. THE NORTHWESTERN AND DESIGN. Cl. 19.
687,145. TELAFLASH. Cl. 21.
687,148. DOUBLE T ETC. AND DESIGN. Cl. 21.
687,150. CHEMROD. Cl. 21.
687,151. ETERNA. Cl. 21.
687,163. AQUA-BUOY. Cl. 22.
687,164. MAG NET BOW. Cl. 22.
687,171. SUPER GLO. Cl. 23.
687,173. ROCK & ROLL. Cl. 23.
687,174. ANDERSON. Cl. 23.
687,177. SYLFLEX. Cl. 23.
687,182. THE TAKE-UP RAKE. Cl. 23.
687,183. TURBULAIRE-DOYLE. Cl. 23.
687,184. MANOR HOUSE. Cl. 23.
687,186. TOKE. Cl. 23.
687,187. CUSTOMATIC. Cl. 23.
687,190. NEPTUNE. Cl. 26.
687,192. EARLY AMERICAN. Cl. 26.
687,195. CHLORINJECTOR. Cl. 26.
687,196. CLASSIMAT. Cl. 26.
687,205. SAFE T KASE AND DESIGN. Cl. 26.
687,206. A ANSUL LINE FLO AND DESIGN. Cl. 26.
687,210. HELBROS COMMAND PERFORMANCE AND DESIGN. Cl. 27.
687,218. GRIDIRON. Cl. 28.
687,222. STEELASTIC. Cl. 32.
687,225. TRANQUILIZER. Cl. 32.
687,233. CORELLI. Cl. 36.
687,235. HOLLAND. Cl. 36.
687,237. SCOTCH. Cl. 36.
687,253. T.M. CO-ORDINATOR. Cl. 38.
687,255. I.N.P. AND DESIGN. Cl. 38.
687,259. TRENDLINE SECURITIES SERVICE. Cl. 38.
687,260. MacKAY-SHIELDS ECONOGRAPH AND DESIGN. Cl. 38.
687,261. GRIMROSE GRAMMAR. Cl. 38.
687,263. GUY. Cl. 38.
687,264. O ARAUTO DA CHRISTIAN SCIENCE. Cl. 38.
687,265. CARTE BLANCHE. Cl. 38.
687,266. DIAMOND RANCH. Cl. 39.
687,284. CASHLON. Cl. 42.

687,287. NORWALK. Cl. 42.
687,289. CENTURI. Cl. 42.
687,293. MILI. Cl. 44.
687,299. SUGAR LOAF MIX. Cl. 46.
687,306. ROD'S OLD QUEBEC. Cl. 46.
687,307. CACTUS. Cl. 46.
687,308. BELLE ISLE. Cl. 46.
687,309. IGLOO ETC. AND DESIGN. Cl. 46.
687,310. THE BIG F. Cl. 46.
687,322. NUTRISPREAD AND DESIGN. Cl. 46.
687,323. SUNSET AND DESIGN. Cl. 46.
687,336. SHOPPER'S FAIR. Cl. 50.
687,338. B-GAY PLAQUES AND DESIGN. Cl. 50.
687,340. AUTOPOND. Cl. 50.
687,341. SAVE-A-LIFE ETC. AND DESIGN. Cl. 50.
687,346. F29 : 31. Cl. 51.
687,348. RANDI. Cl. 51.
687,349. CUPIDON. Cl. 51.
687,352. NURTONE. Cl. 51.
687,354. BIOTICIAN. Cl. 51.
687,359. BRUSH-GLO. Cl. 52.
687,362. WOOL-O-LENE. Cl. 52.
687,369. BLUE CROWN. Cl. 52.
687,374. FIRSTAMERICA. Cl. 101.
687,375. SUNNY NODAK AND DESIGN. Cl. 101.
687,376. SAS. Cl. 101.
687,377. M. C. BURNS ETC. AND DESIGN. Cl. 101.
687,379. BIG CHIEF AND DESIGN. Cl. 101.
687,385. OFP (DESIGN). Cl. 102.
687,388. COLD CRACKER AND DESIGN. Cl. 103.
687,395. ENDURA SET. Cl. 106.
687,409. A GOOD PRACTICES STATION (WITH MUSICAL ACCOMPANIMENT). Cl. B.
687,411. MOLDED FIBER GLASS ETC. AND DESIGN. Cl. 19.
687,412. LINK LETTERS. Cl. 22.
687,418. JUNIOR DYNAMITE BLASTER. Cl. 22.
687,414. BETTER BUILDING MAINTENANCE. Cl. 38.

TRADEMARK REGISTRATIONS AMENDED, DISCLAIMED, CORRECTED, ETC.

48,188. NR. Cl. 18. 12–12–05. The A. H. Lewis Medicine Co. Lewis-Howe Company, St. Louis, Mo. Amended: In the certificate, lines 9 and 10, in the heading, and in the statement, column 2, lines 3 and 4, the description of goods is deleted and *laxatives* is inserted.

197,695. VICTOR. Cl. 9. 4–21–25. The Peters Cartridge Company. Remington Arms Company, Inc., Bridgeport, Conn. Amended to appear:

VICTOR

199,639. JOHN KING & SON LTD. Cl. 42. 6–16–25. John King & Son. John King & Son Limited, Gloegow, Scotland. Amended: In the statement, column 1, line 7, after "Britain", *now owned by John King & Son Limited, a limited liability company organized according to the laws of Great Britain, doing business at 142 West Nile Street, Glasgow, Scotland,* is inserted, and the drawing is amended to appear:

JOHN KING & SON LTD

205,627. ALAMO. Cl. 6. 11–10–25. Wm. Schield Mfg. Co. B. T. Babbitt, Inc., Albany, N.Y. Amended to appear:

ALAMO

439,858. ALTOIDS. Cl. 6. 7–27–48. Smith & Company. Smith Kendon Limited, London, England. Amended to appear:

ALTOIDS

601,552. PEET'S. Cl. 18. 2–1–55. E. M. Peet Manufacturing Company. Peet's Feeds, Inc., Council Bluffs, Iowa. Amended: In the certificate, lines 5 and 16 and in the statement, column 1, line 1, after "Company", *now by change of name Peet's Feeds, Inc.* is inserted.

745,053. CPC AND DESIGN. Cl. 12. 2–12–63. Collins Pine Company, Chester, Calif. Corrected: In the statement, column 1, line 1, "California" should be deleted and *Oregon* should be inserted.

745,810. CENTEX. Cl. 26. 2–26–63. Sterling Automotive Manufacturing Co., Inc., Elk Grove Village, Ill. Corrected: In the statement, column 1, line 1, "Company" should be deleted and *Co., Inc.* should be inserted.

788,730. SDS. Cl. 26. 4–27–65. Scientific Data Systems, Inc., Santa Monica, Calif. Corrected: In the statement, column 1, line 1, "California" should be deleted and *Delaware* should be inserted.

794,685. CLOUD 9. Cls. 17 and 29. 8–24–65. Sanford S. Wendel, doing business as Sanford S. Wendel Co., Los Angeles, Calif. Corrected: In the statement, column 1, line 1, "Wendell" both occurrences should be deleted and *Wendel* should be inserted.

794,696. TEGOPEN. Cl. 18. 8–24–65. Bristol-Myers Company, New York, N.Y. Corrected: In the statement, column 1, line 1, "Meyers" should be deleted and *Myers* should be inserted.

796,652. ECHOPHENYLINE. Cl. 18. 9–28–65. American Home Products Corporation, New York, N.Y. Corrected: In the statement, column 2, line 1, "sedative" should be deleted and *ophthalmic* should be inserted.

796,738. GROCERMAT. Cl. 31. 9–28–65. K. G. Brown Manufacturing Co., Inc., Mattituck, N.Y. Corrected: In the heading, "1954" should be deleted and *1964* should be inserted.

797,069. MOTHER-UP. Cl. 18. 10–5–65. American Home Products Corporation, New York, N.Y. Corrected: In the statement, column 2, line 2, after "spray" *type* should be inserted.

TRADEMARK REGISTRATIONS—NEW CERTIFICATES

New Certificates issued under sections 7(c), 7(f), 7(g) of the Trademark Act of 1946 for the unexpired term of the original registrations.

363,827. ROYALTY LUGGAGE AND DESIGN. Cl. 3. Ingham & Company. 12–3–40. New Cert. Sec. 7(c) to Jacy Leather Goods Company, Boston, Mass.

628,792. BRIGGS AND DESIGN. Cl. 46. Briggs & Company. 6–12–56. New Cert. Sec. 7(c) to Wilson & Co., Inc., Chicago, Ill.

680,750. NORWOOD. Cl. 16. W. W. Lawrence & Company. 7–17–56. New Cert. Sec. 7(c) to John Lucas & Company, Incorporated, Philadelphia, Pa.

739,372. BALBOA. Cl. 34. Hoyt Heater Company. 10–16–62. New Cert. Sec. 7(c) to Pioneer Manufacturing Co., Los Angeles, Calif.

763,950. PYRO-MATIC. Cl. 34. Hoyt Heater Company. 1–28–64. New Cert. Sec. 7(c) to Pioneer Manufacturing Co., Los Angeles, Calif.

767,570. COMET GLAS. Cl. 34. Hoyt Heater Company. 3–31–64. New Cert. Sec. 7(c) to Pioneer Manufacturing Co., Los Angeles, Calif.

INDEX OF REGISTRANTS

DECEMBER 14, 1965

(Registered; Renewed; Canceled; Amended, Disclaimed, Corrected, etc.; New Certificates; 12c Publications.)

Abbott Laboratories, North Chicago, Ill. 687,127, canc. Cl. 18.
Advance Bag and Paper Co., Inc., Boston, Mass., to Continental Can Co., Inc., New York, N.Y. 209,848, ren. 12–14–65. Cl. 2.
Aircraft Armaments, Inc., Cockeysville, Md. 800,280, pub. 9–28–65. Cl. 23.
Airmatic Valve, Inc., Cleveland, Ohio. 800,298, pub. 8–3–65. Cl. 23.
Alberoy, Inc., New York, N.Y. 800,431, pub. 9–28–65. Cl. 39.
All-State Blue Print & Photo Copy Co., Columbus, Ohio. 800,314, pub. 9–28–65. Cl. 26.
Aktiebolaget Bofors, Bofors, Sweden. 687,122, canc. Cl. 18.
Aktiengesellschaft fur Lizenzverwertungen Alvex, Coire, Postplats, Switzerland. 687,346, canc. Cl. 51.
Aktieselskabet Pharmacia, Copenhagen, Denmark. 800,205, pub. 9–28–65. Cl. 18.
Allan Pharmaceutical Co., Inc., d.b.a. The Halitosine Co., St. Louis, Mo. 800,204, pub. 9–28–65. Cl. 18.
Allen-Squire Co., Spencer, Mass., to Dunham Brothers Co., Brattleboro, Vt. 419,794, ren. 12–14–65. Cl. 39.
Allied Research Products, Inc.: *See*—
Rheem Research Products Inc.
Allied Stores Corp., New York, N.Y. 687,184, canc. Cl. 23.
Altman, B., & Co., New York, N.Y. 800,502, pub. 9–28–65. Cl. 52.
Aluminum Co. of America, Pittsburgh, Pa. 800,162, pub. 9–28–65. Cl. 12.
Aluminum Processing Corp.: *See*—
Sheldon Metal Products Co., Inc.
Amco Atlas Mattress, Inc., Springfield, Ill. 800,852, pub. 9–28–65. Cl. 32.
Amco Laboratorios, S.A., Mexico City, Mexico. 687,108, canc. Cl. 18.
American Cyanamid Co., New York, N.Y. 687,124, canc. Cl. 18.
American Home Products Corp., New York, N.Y. 797,069, cor. Cl. 18.
American Home Products Corp., New York, N.Y. 796,652, cor. Cl. 18.
American Home Products Corp., New York, N.Y. 800,209, pub. 9–28–65. Cl. 18.
American Hospital Supply Corp.: *See*—
Staunt, Martin.
American Machine & Foundry Co., New York, N.Y. 800,260, pub. 9–28–65. Cl. 22.
American Medical Political Action Committee, d.b.a. Ampac, Chicago, Ill. 800,511, pub. 9–28–65. Cl. 100.
American Medical Political Action Committee, d.b.a. Ampac, Chicago, Ill. 800,529, pub. 9–28–65. Cl. 200.
American Metal Climax, Inc., New York, N.Y. 800,385, pub. 9–28–65. Cl. 38.
American Motors Corp., Detroit, Mich. 800,303, pub. 9–21–65. Multiple Class (Classes 24 and 31).
American Sign and Indicator Corp., Spokane, Wash. 687,148, canc. Cl. 21.
American Tank and Fabricating Co., The, Cleveland, Ohio. 417,606, ren. 12–14–65. Cl. 14.
Ampac: *See*—
American Medical Political Action Committee.
Anderson, H. E., Co., The, Muskogee, Okla. 687,195, canc. Cl. 26.
Anderson Machine and Tool Works, Inc., Chaska, Minn. 687,-174, canc. Cl. 23.
Ansul Chemical Co., Marinette, Wis. 687,206, canc. Cl. 26.
Arbogast, Fred, Co., Inc., Akron, Ohio. 800,249, pub. 9–28–65. Cl. 22.
Arden, Elizabeth, Sales Corp., New York, N.Y. 800,489, pub. 9–28–65. Cl. 51.
Armour and Co., Chicago, Ill. 800,110–11, pub. 9–28–65. Cl. 1.
Armour and Co., Chicago, Ill. 800,132, pub. 9–28–65. Cl. 6.
Armstrong Cork Co., Lancaster, Pa. 800,219, pub. 9–28–65. Cl. 20.
Arrick & Gray, Miami, Fla. 687,338, canc. Cl. 50.
Asti Products, Inc., New York, N.Y. 800,408, pub. 9–28–65. Cl. 39.
Ath-O-Med Co.: *See*—
Chattanooga Medicine Co., The.
Atlas Underwear Corp., Piqua, Ohio. 800,412, pub. 9–28–65. Cl. 39.
Ault Inc., Minneapolis, Minn. 800,227, pub. 9–28–65. Cl. 21.
Auto-Gram, Inc., Hollywood, Fla. 800,486, pub. 9–28–65. Cl. 50.
Auto Specialties Mfg. Co., St. Joseph, Mich. 800,293, pub. 9–28–65. Cl. 23.
Automatic Control Co., St. Paul, Minn. 800,228, pub. 9–28–65. Cl. 21.
Automatic Radio Mfg. Co., Inc., Boston, Mass. 800,211, pub. 9–28–65. Cl. 19.
Babbitt, B. T., Inc.: *See*—
Schield, Wm., Mfg. Co.
Bancroft Services, Inc., New York, N.Y. 800,396, pub. 9–28–65. Cl. 38.
Bank, William, d.b.a. Jewelite Signs, New York, N.Y. 800,235, pub. 9–28–65. Cl. 21.
Banner Magazines, Inc., New York, N.Y. 687,263, canc. Cl. 38.
Barrow Mfg. Co., Winder, Ga. 800,417, pub. 9–28–65. Cl. 39.
Baumer Foods, Inc., New Orleans, La. 800,482, pub. 9–28–65. Cl. 46.
Bay-Bee Shoe Co., Inc., Dresden, Tenn. 800,409, pub. 9–28–65. Cl. 39.
Beckman Instruments, Inc., Fullerton, Calif. 800,325, pub. 9–28–65. Cl. 26.
Beckwith, W. E., Sporting Goods: *See*—
Beckwith, W. E.
Beckwith, W. E., d.b.a. W. E. Beckwith Sporting Goods, Erie, Pa. 800,256, pub. 9–28–65. Cl. 22.
Benger Laboratories Ltd., Cheshire, England. 687,098, canc. Cl. 18.
Bercut-Richards Packing Co., Sacramento, Calif., from Northwest Oyster Farms, Inc., Nahcotta, Wash. 800,460, pub. 9–28–65. Cl. 46.
Berkline Corp., The, West Springfield, Mass. 800,353, pub. 9–28–65. Cl. 32.
Big Chief Savings Stamps, Inc., Lubbock, Tex. 687,379, canc. Cl. 101.
Bigelow-Sanford, Inc., New York, N.Y. 800,446–7, pub. 9–28–65. Cl. 42.
Binswanger Glass Co., Memphis, Tenn. 800,164, pub. 9–28–65. Cl. 13.
Birchfield, Jesse J., Memphis, Tenn. 687,173, canc. Cl. 23.
Bird Electronic Corp., Cleveland, Ohio. 800,313, pub. 9–28–65. Cl. 26.
Bohler, Gebr., & Co., Aktiengesellschaft, Vienna, Austria. 800,165, pub. 9–28–65. Cl. 13.
Book Craftsmen Associates, Inc., New York, N.Y. 687,376, canc. Cl. 101.
Borg-Warner Corp., Chicago, Ill. 800,335, pub. 9–28–65. Cl. 26.
Borofsky, M. J., & Sons, Inc., Boston, Mass. 687,284, canc. Cl. 42.
Bostwick Steel Lath Co., The, Niles, Ohio. 800,158, pub. 9–28–65. Cl. 12.
Brant Mfg. Co., The: *See*—
Schuemann-Jones Co., The.
Brasil Oiticica S.A., Rio de Janiero, Brazil. 800,472, pub. 9–28–65. Cl. 46.
Breeze Illinois Inc., Wyoming, Ill. 797,212, canc. Cl. 34.
Breneman-Hartshorn Inc.: *See*—
Hough Shade Corp.
Briggs & Co., to Wilson & Co., Inc., Chicago, Ill. 628,792, new cert. Cl. 46.
Briggs Ice Cream Co., Washington, D.C. 613,689, canc. Cl. 46.
Briskin, J., Inc., Sherman Oaks, Calif. 800,498, pub. 9–28–65. Cl. 51.
Bristol-Myers Co., New York, N.Y. 794,696, cor. Cl. 18.
Brother International Corp., New York, N.Y. 800,281, pub. 9–28–65. Cl. 23.
Budget Uniform Bazaar: *See*—
Budget Uniform Center, Inc.
Budget Uniform Center, Inc., d.b.a. Budget Uniform Bazaar, Philadelphia, Pa. 800,438, pub. 9–28–65. Cl. 39.
Buegeleisen & Jacobson, Inc., New York, N.Y. 687,233, canc. Cl. 36.
Builder's Research and Chemical Co., Denver, Colo. 687,080, canc. Cl. 16.
Burns, Martin C., Pearl River, N.Y. 687,377, canc. Cl. 101.
C-Thru Ruller Co., The, Hartford, Conn. 800,804, pub. 10–20–64. Cl. 26.
California Institutional Supply Co., Inc., Hollywood, Calif. 800,210, pub. 9–28–65. Cl. 18.
California Research Corp.: *See*—
Chevron Research Co.
Camden Paint Mfg. Co.: *See*—
Saxton, Clifton B., Jr.
Camwil Inc., Los Angeles, Calif. 800,318, pub. 9–28–65. Cl. 26.
Canadian Corp. for the 1967 World Exhibition, Montreal, Quebec, Canada. 800,518, pub. 9–28–65. Cl. 101.
Canadian White Star Products Ltd., Montreal, Quebec, Canada. 800,306, pub. 9–28–65. Cl. 26.
Capella Corp., Eugene, Oreg. 800,160, pub. 9–28–65. Cl. 12.
Cardinal Electronics Co. of Canada Ltd., Whitby, Ontario, Canada. 800,222, pub. 9–28–65. Cl. 21.
Cardinal Electronics Co. of Canada Ltd., Whitby, Ontario, Canada. 800,223, pub. 9–28–65. Cl. 21.
Carter, Mary, Paint Co., Tampa, Fla. 800,345, pub. 9–28–65. Cl. 29.
Carter Products, Inc.: *See*—
Carter-Wallace, Inc.
Carter-Wallace, Inc., from Carter Products, Inc., New York, N.Y. 800,207, pub. 9–21–65. Cl. 18.

Cassill, Ernest C., d.b.a. Castle Motor Inn, Pompano Beach, Fla. 800,508, pub. 9–28–65. Cl. 100.
Castle Motor Inn: *See*—
Cassill, Ernest C.
Center for Information Resources, Inc., Washington, D.C. 800,531. Cl. 38.
Cereal Processing Co. Ltd., Lingfield, Surrey, England. 800,-355, pub. 9–28–65. Cl. 34.
Chattanooga Medicine Co., The, d.b.a. Ath-O-Med Co., Chattanooga, Tenn. 800,123, pub. 9–28–65. Multiple Class (Classes 6, 18, and 22).
Chattanooga Medicine Co., The, Chattanooga, Tenn. 687,133, canc. Cl. 18.
Cheese Products Co., Inc., d.b.a. Ye Olde Tavern Cheese Products, Chicago, Ill. 800,467, pub. 8–3–65. Cl. 46.
Chemfab Corp., Long Island City, N.Y. 687,150, canc. Cl. 21.
Chemical Corp., The, Springfield, Mass. 419,054, ren. 12–14–65. Cl. 6.
Chevron Research Co., from California Research Corp., San Francisco, Calif. 800,136, pub. 9–28–65. Cl. 6.
Chicago Printed String Co., Chicago, Ill. 800,151, pub. 9–28–65. Cl. 7.
Chicago Printed String Co., to Chicago Printed String Co., Chicago, Ill. 419,924, ren. 12–14–65. Cl. 37.
Chicago Tribune-New York News Syndicate, Inc., New York, N.Y. 800,398, pub. 9–28–65. Cl. 38.
Christian Science Publishing Society, The, Boston, Mass. 687,264, canc. Cl. 38.
Ciba Ltd., Basel, Switzerland. 800,122, pub. 3–9–65. Cl. 6.
Cleaver-Brooks Co., Milwaukee, Wis. 800,354, pub. 9–28–65. Cl. 34.
Colgate-Palmolive Co., New York, N.Y. 800,504, pub. 9–28–65. Cl. 52.
Collins-Dietz-Morris Co., Oklahoma City, Okla. 687,308, canc. Cl. 46.
Collins Pine Co., Chester, Calif. 745,053, cor. Cl. 12.
Consumers Foodcraft Corp., Brooklyn, N.Y. 420,301, ren. 12–14–65. Cl. 46.
Contier, Marcel, Paris, France. 687,354, canc. Cl. 51.
Continental Can Co., Inc.: *See*—
Advance Bag and Paper Co., Inc.
Corcoran, Joseph F., Shoe Co., Inc., Stoughton, Mass. 800,-407, pub. 9–28–65. Cl. 39.
Corn Products Co.: *See*—
Corn Products Refining Co.
Corn Products Refining Co., to Corn Products Co., New York, N.Y. 418,345, ren. 12–14–65. Cl. 6.
Corning Glass Works: *See*—
Macbeth-Evans Glass Co.
Coty, Inc., Wilmington, Del., & New York, N.Y., to Chas. Pfizer & Co., Inc., New York, N.Y. 200,935, ren. 12–14–65. Cl. 51.
Country Gardens, Inc.: *See*—
Gillett Canning Co.
Cowles Dissolver Co., Inc., The, Trackside, N.Y. 800,284, pub. 9–28–65. Cl. 23.
Crescent Chemical Corp., Philadelphia, Pa., to Texize Chemicals, Inc., Greenville, S.C. 418,261, ren. 12–14–65. Cl. 6.
Crest Services, Inc., Clifton, N.J. 800,273, pub. 9–28–65. Cl. 22.
Crisloid Plastics Inc., Providence, R.I. 800,253, pub. 9–28–65. Cl. 22.
Cudahy Packing Co., The, Omaha, Nebr. 800,473, pub. 9–28–65. Cl. 46.
Curtis Industries, Inc.: *See*—
Noll, Curtis, Corp.
Daimler-Benz Aktiengesellschaft, Stuttgart-Untertuerkheim, Germany. 800,440, pub. 9–28–65. Cl. 42.
Dansk Designs, Inc., Great Neck, N.Y. 687,186, canc. Cl. 23.
Deauville Gourmet Foods: *See*—
Lindsay Ripe Olive Co.
Dentler, Geo. H., & Sons, Houston, Tex. 800,474, pub. 9–28–65. Cl. 46.
Deshler Products, Inc., Deshler, Ohio. 800,118, pub. 9–28–65. Cl. 5.
Design Engineers, Rockford, Ill. 687,145, canc. Cl. 21.
Dexion Ltd., Middlesex, England. 800,156, pub. 9–28–65. Cl. 12.
Dine, Norman, New York, N.Y. 687,225, canc. Cl. 32.
Dirigo Compass & Instrument Cooperation Assoc., Auburn, Wash., to Ralph E. Swenson, d.b.a. The Multicraft Co., Bellevue, Wash. 416,104, ren. 12–14–65. Cl. 26.
Dodgeville Finishing Co., Inc., Attleboro, Mass. 687,395, canc. Cl. 106.
Domine Builders Supply Corp., Rochester, N.Y. 800,161, pub. 9–28–65. Cl. 12.
Donnkenny, Inc.: *See*—
Donnkenny Sportswear Co.
Donnkenny Sportswear Co., to Donnkenny, Inc., New York, N.Y. 417,198, ren. 12–14–65. Cl. 39.
Dorex, Inc., Madison, Wis. 800,501, pub. 9–28–65. Cl. 52.
Douglas Aircraft Co., Inc., Santa Monica, Calif. 800,279, pub. 9–28–65. Multiple Class (Classes 23 and 26).
Dow Chemical Co., The, Midland, Mich. 800,127, pub. 9–28–65. Cl. 6.
Dow Corning Corp., Midland, Mich. 687,177, canc. Cl. 23.
Dreyfus, L. A., Co., South Plainfield, N.J. 800,105, pub. 9–28–65. Cl. 1.
Drilprodco, Inc., Hobbs, N. Mex. 800,288, pub. 9–28–65. Cl. 23.
Dumac, Inc., Elizabeth, N.J. 687,054, canc. Cl. 12.
Dunham Brothers Co.: *See*—
Allen-Squire Co.
Dunlevy, George P., Jr., Pompano Beach, Fla. 800,258, pub. 9–28–65. Cl. 22.
Dupen Enterprises, Inc., San Francisco, Calif. 800,509, pub. 9–28–65. Cl. 100.
Du Pont de Nemours, E. I., and Co., Wilmington, Del. 800,-149, pub. 9–28–65. Cl. 6.
Du Pont de Nemours, E. I., and Co., Wilmington, Del. 800,-179, pub. 9–28–65. Cl. 15.
Du Pont de Nemours, E. I., and Co., Wilmington, Del. 800,-180, pub. 9–28–65. Cl. 15.
Duro-Test Corp., North Bergen, N.J. 419,348, ren. 12–14–65. Cl. 21.
Dynatech Corp., Cambridge, Mass. 800,327, pub. 9–28–65. Cl. 26.
Dyno Merchandise Corp., New York, N.Y. 800,439, pub. 9–28–65. Cl. 40.
Eagle-Picher Co., The, Cincinnati, Ohio. 800,131, pub. 9–28–65. Cl. 6.
Eastman Kodak Co., Rochester, N.Y. 800,331, pub. 9–28–65. Cl. 26.
Eastman Kodak Co., Rochester, N.Y. 418,985–6, ren. 12–14–65. Cl. 26.
Eaton Chemical Corp., Detroit, Mich. 800,119, pub. 5–4–65. Cl. 6.
Eaton Laboratories: *See*—
Norwich Pharmacal Co., The.
Etniger Mills, Inc., New York, N.Y. 800,450, pub. 9–28–65. Cl. 42.
Eisai Co. Ltd., Tokyo, Japan. 800,196, pub. 9–28–65. Cl. 18.
Ekco Products Co., Chicago, Ill. 687,171, canc. Cl. 23.
Electro-Nite, Inc.: *See*—
Electro-Nite Engineering Co.
Electro-Nite Engineering Co., Philadelphia, Pa. 800,315, pub. 8–17–65. Cl. 26.
Elixe Mercantile of New York, Inc., New York, N.Y. 687,-151, canc. Cl. 21.
Eltra Corp.: *See*—
Mergenthaler Linotype Co.
Emba Mink Breeders Association, Racine, Wis. 800,109, pub. 9–28–65. Cl. 1.
Emergency Equipment Enterprises Co., St. Paul, Minn. 687,-341, canc. Cl. 50.
Engelhard Industries, Inc., Newark, N.J. 800,328, pub. 9–28–65. Cl. 26.
Esbeco Distilling Corp., Stamford, Conn. 800,484, pub. 9–28–65. Cl. 49.
Esleeck Mfg. Co., Turners Falls, Mass. 800,372, pub. 8–3–65. Cl. 37.
Eutectic Welding Alloys Corp., Flushing, N.Y. 800,358, pub. 9–28–65. Cl. 34.
FMC Corp., Philadelphia, Pa. 800,451, pub. 9–28–65. Cl. 43.
Faber, Eberhard, Inc., Wilkes-Barre, Pa. 800,375, pub. 8–3–65. Cl. 37.
Fafnir Bearing Co., The, New Britain, Conn. 800,297, pub. 9–28–65. Cl. 23.
Fairchild Camera and Instrument Corp., Syosset, N.Y. 800,-290, pub. 9–28–65. Cl. 23.
Falck, F. L., & Co., Allegheny, to F. L. Falck & Co., Pittsburgh, Pa. 47,878, ren. 12–14–65. Cl. 52.
Fassler, M. J., & Co., Inc., Brooklyn, N.Y. 800,448, pub. 9–28–65. Cl. 42.
Festival Foods, Los Angeles, Calif. 800,469, pub. 7–13–65. Cl. 46.
Fibah Corp., d.b.a. Perfumeria Fibah, from M. Habif, d.b.a. Perfumeria Fibah, Hato Rey, Puerto Rico. 800,493, pub. 9–28–65. Cl. 51.
Fibre Conduit Co., The, Orangeburg, to The Flintkote Co., New York, N.Y. 417,290, ren. 12–14–65. Cl. 12.
Finny Foods Co.: *See*—
Klepinger, Herbert V.
Finkl, A., & Sons, Chicago, Ill. 800,176, pub. 5–4–65. Cl. 14.
Fino Farms: *See*—
Finocchiaro, Peter.
Finocchiaro, Peter, d.b.a. Fino Farms, Delano, Calif. 687,310, canc. Cl. 46.
Firmenich Inc.: *See*—
Naef, M., & Cie.
Firstamerica Corp., from Transamerica Corp., San Francisco, Calif. 687,374, canc. Cl. 101.
Fleet Street of Florida: *See*—
Old Florida Rum Co.
Fleet Wholesale Supply Co., Inc., Appleton, Wis. 800,296, pub. 9–28–65. Cl. 23.
Fleming-Joffe Ltd., New York, N.Y. 800,101–2, pub. 9–28–65. Cl. 1.
Flintkote Co., The: *See*—
Fibre Conduit Co., The.
Flood Co., The, Hudson, Ohio. 800,183, pub. 9–28–65. Cl. 16.
Foufounis, Jean, Prilly (Vaud), Switzerland. 800,366, pub. 9–28–65. Cl. 36.
Formfit Co., The: *See*—
Genesco Inc.
Frozen Food Forum Inc., The, Atlanta, Ga. 800,478, pub. 9–28–65. Cl. 46.
Fuji Seitetsu Kabushiki Kaisha (Fuji Iron & Steel Co., Ltd.), Marunouchi, Chiyoda-ku, Tokyo, Japan. 800,177, pub. 9–28–65. Cl. 14.
Gaertner Scientific Corp., The, Chicago, Ill. 800,332, pub. 9–28–65. Cl. 26.
Garden Queen Tool Corp., Somerville, Mass. 687,182, canc. Cl. 23.
Gardner Laboratory Inc., Bethesda, Md. 800,337, pub. 9–28–65. Cl. 26.

Gaylord Bros., Inc., Syracuse, N.Y. 800,349, pub. 7–6–65. Cl. 32.
Gaylord Bros., Inc., Syracuse, N.Y. 800,368, pub. 8–10–65. Cl. 36.
Geigy Chemical Corp., Ardsley, N.Y. 800,125, pub. 7–13–65. Cl. 6.
General Aniline & Film Corp., New York, N.Y. 800,329, pub. 9–28–65. Cl. 26.
General Aniline & Film Corp., New York, N.Y. 800,145, pub. 9–28–65. Cl. 6.
General Aniline & Film Corp., New York, N.Y. 800,146–8, pub. 9–28–65. Cl. 6.
General Aniline & Film Corp., New York, N.Y. 800,134, pub. 9–28–65. Cl. 6.
General Electric Co., Schenectady, N.Y. 800,191, pub. 9–28–65. Cl. 16.
General Elevator Co., Inc., Baltimore, Md. 800,224, pub. 9–28–65. Cl. 21.
General Fire Extinguisher Corp., Detroit, Mich. 800,138, pub. 9–28–65. Cl. 6.
General Motors Corp., Detroit, Mich. 687,359, canc. Cl. 52.
Georgia-Carolina Oil Co., Macon, Ga. 419,486, ren. 12–14–65. Cl. 6.
Gerbo Footwear Corp., Huntingdon, Pa. 800,416, pub. 9–28–65. Cl. 39.
Gessner Products Co., Inc., Ambler, Pa. 800,182, pub. 9–28–65. Cl. 15.
Gillett Canning Co., Gillett, to Country Gardens, Inc., Milwaukee, Wis. 210,978, ren. 12–14–65. Cl. 46.
Gilman, Marty, Inc., Gilman, Conn. 800,264, pub. 9–28–65. Cl. 22.
Giv-A-Gift, Inc., Miami, Fla. 800,514, pub. 9–28–65. Cl. 101.
Globe Newspaper Co., Boston, Mass. 800,400, pub. 9–28–65. Cl. 38.
Goodman Mfg. Co., to Westinghouse Air Brake Co., Chicago, Ill. 205,233, ren. 12–14–65. Cl. 23.
Goodstein Bros. & Co., Inc., New York, N.Y. 800,427, pub. 9–28–65. Cl. 39.
Gordon, M. J., Co., Wall (Wilmerding), Pa. 800,117, pub. 9–28–65. Cl. 4.
Gordon & Roth Co., Inc., Temple City, Calif. 800,268, pub. 9–28–65. Cl. 22.
Goslin, Ellsworth R., Phoenix, Ariz. 800,475, pub. 9–28–65. Cl. 46.
Grace Bros. Brewing Co., to Grace Bros. Brewing Co., Santa Rosa, Calif. 415,818, ren. 12–14–65. Cl. 48.
Grace, W. R., & Co., Cambridge, Mass. 800,186, pub. 9–28–65. Cl. 16.
Grabam, Walter A.: *See*—
Korab, Frank H.
Greater North Dakota Association, Fargo, N. Dak. 687,375, canc. Cl. 101.
Green & Green, Inc.: *See*—
Green & Green.
Greenwood Mills, Inc., New York, N.Y. 800,442, pub. 9–28–65. Cl. 42.
Green & Green, to Green & Green, Inc., Houston, Tex. 207,-205, ren. 12–14–65. Cl. 45.
Gretsch, Fred., Mfg. Co., The, Brooklyn, N.Y. 800,367, pub. 9–28–65. Cl. 36.
Grip Tripler, Inc., Milwaukee, Wis. 800,259, pub. 9–28–65. Cl. 22.
Habif, Maurice: *See*—
Fibah Corp.
Hale Laboratories, Inc., Los Angeles, Calif. 687,322, canc. Cl. 46.
Halitosine Co., The: *See*—
Allan Pharmaceutical Co., Inc.
Hall Pharmacal Co., Inc., Brooklyn, N.Y. 687,096, canc. Cl. 18.
Hamilton Watch Co., Lancaster, Pa. 800,357, pub. 9–28–65. Cl. 34.
Hammermill Paper Co., Erie, Pa. 800,381, pub. 9–28–65. Cl. 37.
Harris, D. P., Hardware & Mfg. Co., Inc., New York, N.Y. 800,214, pub. 9–28–65. Cl. 19.
Harrison Den Co.: *See*—
Korab, Frank H.
Harrison, Patrick, Inc., Golden, Colo. 800,333, pub. 9–28–65. Cl. 26.
Harts Mountain Products Corp., New York, N.Y. 800,276, pub. 9–28–65. Cl. 22.
Hassenfeld Bros., Inc., Central Falls, R.I. 687,412, canc. Cl. 22.
Hassenfeld Bros., Inc., Pawtucket, R.I. 800,254, pub. 9–28–65. Cl. 22.
Hauber, Edwin N., d.b.a. Master Navigator, Bradenton, Fla. 800,307, pub. 9–28–65. Cl. 26.
Hayette, Inc., New York, N.Y. 800,424, pub. 9–28–65. Cl. 39.
Helbros Watch Co., Inc., New York, N.Y. 687,210, canc. Cl. 27.
Heller Laboratories, Inc., Leonia, N.J. 800,120, pub. 9–28–65. Cl. 6.
Hercules Powder Co., Wilmington, Del. 418,894, ren. 12–14–65. Cl. 1.
Hewlett-Packard Co., from F. L. Moseley Co., Pasadena, Calif. 800,308, pub. 9–28–65. Cl. 26.
Hide-A-Way-Jax, Inc., Fort Wayne, Ind. 800,278, pub. 9–28–65. Cl. 23.
Himmelstein, S., and Co.: *See*—
Himmelstein, Sydney.
Himmelstein, Sydney, d.b.a. S. Himmelstein and Co., Chicago, Ill. 800,225, pub. 9–28–65. Cl. 21.
Hoffmann-La Roche Inc., Nutley, N.J. 687,107, canc. Cl. 18.
Holland Records, Inc., New York, N.Y. 687,235, canc. Cl. 36.
Home-Tap Co., d.b.a. Home Tap Co., Chicago, Ill. 800,302, pub. 9–28–65. Cl. 23.
Hoody Peanut Products Co., Portland, Oreg. 800,464, pub. 9–28–65. Cl. 46.
Hoppe, Frank A., Inc., Philadelphia, Pa. 800,152, pub. 9–28–65. Cl. 9.
Horizon Associates, Inc., Yonkers, N.Y. 800,369, pub. 9–28–65. Cl. 36.
Horne's Enterprises, Inc., Bayard, Fla. 800,506, pub. 9–28–65. Cl. 100.
Hough Shade Corp., Janesville, Wis., to Breneman-Hartsborn Inc., Cincinnati, Ohio. 48,088, ren. 12–14–65. Cl. 32.
Howard Johnson's Motor Lodges, Inc., Wollaston, Mass. 800,-507, pub. 9–28–65. Cl. 100.
Hoyt Heater Co., to Pioneer Mfg. Co., Los Angeles, Calif. 739,372, new cert. Cl. 34.
Hoyt Heater Co., Los Angeles, Calif. 763,950, new cert. Cl. 34.
Hoyt Heater Co., to Pioneer Mfg. Co., Los Angeles, Calif. 767,570, new cert. Cl. 34.
Hoyt Heater Co., to Pioneer Mfg. Co., Los Angeles, Calif. 763,950, new cert. Cl. 34.
Huntley Knitting Mills, Inc., d.b.a. Trend Fashions, York, S.C. 800,410, pub. 9–28–65. Cl. 39.
Huffman Mfg. Co., The, Miamisburg, Ohio. 800,216–8, pub. 9–28–65. Cl. 19.
Illinois Law Enforcement Officers Law Bulletin Inc., Chicago, Ill. 800,402, pub. 9–28–65. Cl. 38.
Ingham & Co., to Jacy Leather Goods Co., Boston, Mass. 383,-527, new cert. Cl. 3.
Inmanco, Inc., Chicago, Ill. 800,232, pub. 9–28–65. Cl. 21.
Instasan Pharmakon Laboratories, Detroit, Mich. 800,198, pub. 9–28–65. Cl. 18.
International Bank, Washington, D.C. 687,385, canc. Cl. 102.
International Dioxcide, Inc., New York, N.Y. 800,142, pub. 9–28–65. Cl. 6.
International Minerals & Chemical Corp., Skokie, Ill. 800,-530. Cl. 1.
International Shoe Co., St. Louis, Mo., from Powerhouse, Inc., New Brunswick, N.J. 800,405, pub. 3–3–64. Cl. 39.
International Paper Co., New York, N.Y. 800,376–80, pub. 9–28–65. Cl. 37.
International Paper Co., New York, N.Y. 800,374, pub. 9–28–65. Cl. 37.
Interstate Tire & Brake Stores, Inc., Springfield, Mass. 800,-362, pub. 9–28–65. Cl. 35.
Investors Research Co., Santa Barbara, Calif. 800,513, pub. 9–28–65. Cl. 100.
Ireland & Matthews Mfg. Co., The, Detroit, Mich., to Walbro Corp., Cass City, Mich. 205,145, ren. 12–14–65. Cl. 23.
Items Inc., St. Louis, Mo. 800,250, pub. 9–28–65. Cl. 22.
Jack-Winter Inc., New York, N.Y. 800,414–15, pub. 9–28–65. Cl. 39.
Jackson Brothers (London) Ltd., Kingsway, Waddon Croydon Surrey, England. 800,244, pub. 9–28–65. Cl. 21.
Jacy Leather Goods Co.: *See*—
Ingham & Co.
Jamison, Fred W., Monroeville, Pa. 800,465, pub. 9–28–65. Cl. 46.
Jeanne AKA Victoire Therond nee Devis, Paris, Seine, France. 800,452, pub. 9–28–65. Cl. 43.
Jeanne, AKA Victoire Therond nee Devis, Paris, Seine, France. 800,449, pub. 9–28–65. Cl. 42.
Jefferson Chemical Co., Inc., Houston, Tex. 800,139, pub. 9–28–65. Cl. 6.
Jefferson Chemical Co., Inc., Houston, Tex. 800,140, pub. 9–28–65. Cl. 6.
Jewelite Signs: *See*—
Bank, William.
Junior Accent, Inc., New York, N.Y. 800,432, pub. 9–28–65. Cl. 39.
Kadet-Kruger & Co., Chicago, Ill. 800,435, pub. 9–28–65. Cl. 39.
Kelsey-Hayes Co., Romulus, Mich. 800,213, pub. 9–28–65. Cl. 19.
Kennington, Joseph B., d.b.a. Reefer Sweet Co., Livermore, Calif. 800,500, pub. 7–6–65. Cl. 52.
Kermin Frozen Food Co., Los Angeles, Calif. 800,480, pub. 9–28–65. Cl. 46.
Keuffel & Esser Co., Hoboken, N.J. 800,310, pub. 9–28–65. Cl. 26.
Kilgore, Inc., Westerville, Ohio. 687,413, canc. Cl. 22.
King, John, & Son Ltd.: *See*—
King, John, & Son.
King, John, & Son. John King & Son Ltd., Glasgow, Scotland. 199,639. Am. 7(d). Cl. 42.
Kings Electronics Co., Inc., Tuckahoe, N.Y. 800,236, pub. 9–28–65. Cl. 21.
Kinzee Products Inc., Saddle Brook, N.J. 800,350, pub. 9–28–65. Cl. 32.
Klayman Pants Co., St. Louis, Mo. 800,434, pub. 9–28–65. Cl. 39.
Klepinger, Herbert V., d.b.a. Finny Foods Co., West Alexandria, Ohio. 687,340, canc. Cl. 50.
Koch, Fred, Brewery, Dunkirk, N.Y. 800,483, pub. 9–28–65. Cl. 48.
Kohler's Bon Pharmacy, Inc., d.b.a. M.A.P. Laboratories, Colorado Springs, Colo. 800,490, pub. 9–28–65. Cl. 51.
Koninklijke Fabrieken C. J. van Houten & Zoon N.V., from C. J. van Houten & Zoon N.V., Weesp, Netherlands. 800,-471, pub. 9–28–65. Cl. 46.
Korab, Frank H., d.b.a. Harrison Den Co., Kansas City, Kans., to W. A. Graham, Wadley, Ala. 416,874, ren. 12–14–65. Cl. 50.

Kraly, John, Cicero, Ill. 800,361, pub. 9–28–65. Cl. 35.
Kresky Mfg. Co., Inc., Petaluma, Calif. 800,356, pub. 9–28–65. Cl. 34.
Kumficar (Sales) Ltd., Yorkshire, England. 800,215, pub. 9–28–65. Cl. 19.
Laboratoires du Dr. N. G. Payot Etablissement, Vaduz, Liechtenstein. 800,492, pub. 9–28–65. Cl. 51.
Lamar Mfg. and Sales Co., The: *See*—
Martin, Laurence H.
Lanston Industries, Inc.: *See*—
United States Banknote Corp.
Law Research Service, Inc., New York, N.Y. 800,510, pub. 9–28–65. Cl. 100.
Lawrence, W. W., & Co., to John Lucas & Co., Inc., Philadelphia, Pa. 630,750, new cert. Cl. 16.
Layne & Bowler Pump Co., City of Industry, Calif. 800,294, pub. 9–28–65. Cl. 23.
Leak, A. R., Colonial Chapels: *See*—
Leak, Andrew R.
Leak, Andrew R., d.b.a. A. R. Leak Colonial Chapels, Chicago, Ill. 800,528, pub. 9–28–65. Cl. 107.
Lee, H. D., Co., Inc., The, Kansas City, Mo. 800,436, pub. 9–28–65. Cl. 39.
Lee, Mary, Inc., to Adele Simpson, Inc., New York, N.Y. 417,849, ren. 12–14–65. Cl. 39.
Leeds Chemical Products, Inc., Chicago, Ill. 687,362, canc. Cl. 52.
Leitz, E., Inc., New York, N.Y. 800,338, pub. 9–28–65. Cl. 26.
Leitz, Ernst, G.m.b.H., Wetzlar (Lahn), Germany. 687,196, canc. Cl. 26.
Lentheric, Inc., to Lentheric Inc., New York, N.Y. 418,260, ren. 12–14–65. Cl. 51.
Leonard Industries: *See*—
Leonard, Lloyd H.
Leonard, Lloyd H., d.b.a. Leonard Industries, Sherman Oaks, Calif. 800,242, pub. 9–28–65. Cl. 21.
Les Laboratoires Dausse, Societe Anonyme, Paris, France. 800,206, pub. 9–28–65. Cl. 18.
Lewis, A. H., Medicine Co., The, Lewis-Howe Co., St. Louis, Mo. 48,188. Am. 7(d). Cl. 18.
Lewis-Howe Co.: *See*—
Lewis, A. H., Medicine Co., The.
Liberty Fabrics of New York, Inc., New York, N.Y. 800,443, pub. 9–28–65. Cl. 42.
Lindsay Ripe Olive Co., d.b.a. Deauville Gourmet Foods, Lindsay, Calif. 800,481, pub. 9–28–65. Cl. 46.
Lion Packaging Products Co., Inc., Hicksville, N.Y. 800,115, pub. 9–28–65. Cl. 2.
Lionel Toy Corp., The, Wilmington, Del. 800,261, pub. 9–28–65. Cl. 22.
Litton Systems, Inc., Beverly Hills, Calif. 800,321, pub. 9–28–65. Cl. 26.
Lonergan, J. E., Co., Philadelphia, Pa. 687,205, canc. Cl. 26.
Long, W. E., Co., The, Independent Bakers' Cooperative, Chicago, Ill. 800,463, pub. 9–28–65. Cl. 46.
Lucas, John, & Co.: *See*—
Lawrence, W. W., & Co.
M.A.P. Laboratories: *See*—
Kohler's Bon Pharmacy, Inc.
Macbeth-Evans Glass Co., Pittsburgh, Pa., to Corning Glass Works, Corning, N.Y. 47,694, ren. 12–14–65. Cl. 34.
Macbeth-Evans Glass Co., Pittsburgh, Pa., to Corning Glass Works, Corning, N.Y. 47,698, ren. 12–14–65. Cl. 34.
MacKay-Shields Associates, Inc., New York, N.Y. 687,260, canc. Cl. 38.
MacMahon, Paul H., Alexandria, Va. 800,243, pub. 9–28–65. Cl. 21.
MacMahon, Paul H., Alexandria, Va. 800,246, pub. 9–28–65. Cl. 21.
Mallard Coach Corp., West Bend, Wis. 800,212, pub. 9–28–65. Cl. 19.
Mallinckrodt Chemical Works, St. Louis, Mo. 800,133, pub. 9–28–65. Cl. 6.
Management Technology Inc., Los Angeles, Calif. 800,488, pub. 9–28–65. Cl. 50.
Mangel Stores Corp., New York, N.Y. 687,336, canc. Cl. 50.
Mangelsdorf, Ed. F., & Bro., Inc., St. Louis, Mo. 800,104, pub. 9–28–65. Cl. 1.
Mangelsdorf, Ed. F., & Bro., Inc., St. Louis, Mo. 800,106, pub. 9–28–65. Cl. 1.
Manhattan Shirt Co., The, New York, N.Y. 800,422–3, pub. 9–28–65. Cl. 39.
Market Electronics Co., Cleveland, Ohio. 800,239, pub. 9–28–65. Cl. 21.
Martin, Chas. S., Distributing Co., Inc., Atlanta, Ga. 800,351, pub. 9–28–65. Cl. 32.
Martin, Laurence H., d.b.a. The Lamar Mfg. and Sales Co., Des Moines, Iowa. 598,057, canc. Cl. 3.
Marubeni-Iida (America), Inc., from Marubeni-Iida Co. (New York), Inc., New York, N.Y. 687,266, canc. Cl. 39.
Marubeni-Iida Co. (New York), Inc.: *See*—
Marubeni-Iida (America), Inc.
Marx, Louis, & Co. Inc., New York, N.Y. 800,265, pub. 9–28–65. Cl. 22.
Marx, Louis, & Co. Inc., New York, N.Y. 800,267, pub. 9–28–65. Cl. 22.
Marx, Louis, & Co., Inc., New York, N.Y. 800,271–2, pub. 9–28–65. Cl. 22.
Massachusetts Dental Prosthetics, Inc., Boston, Mass. 800,526, pub. 9–28–65. Cl. 106.
Master Navigator: *See*—
Hauber, Edwin N.
Master Rule Mfg. Co., Inc., Middletown, N.Y. 800,330, pub. 9–28–65. Cl. 26.
Matsushita Electric Industrial Co., Ltd. Japanese Co., Kita-kawachi-cun, Osaka, Japan. 800,220, pub. 3–16–65. Multiple Class (Classes 21, 34, and 36).
McAdam, John C., Wollaston, Mass. 687,164, canc. Cl. 22.
McQuade, John, & Co., Inc., to Sapolin Paints, Inc., New York, N.Y. 419,334, ren. 12–14–65. Cl. 16.
McQuade, John, & Co., Inc., to Sapolin Paints, Inc., New York, N.Y. 419,379–80, ren. 12–14–65. Cl. 16.
Mead Johnson & Co., Evansville, Ind. 800,323, pub. 9–28–65. Cl. 26.
Mead Johnson & Co., Evansville, Ind. 800,477, pub. 9–28–65. Cl. 46.
Meccano Ltd., Liverpool, England. 800,255, pub. 9–28–65. Cl. 22.
Mechanical Enterprises, Inc., Alexandria, Va. 800,319, pub. 9–28–65. Cl. 26.
Meggi Strickmoden G.m.b.H. & Co. K.G., Kaufbeuren/Allgaeu, Germany. 800,430, pub. 9–28–65. Cl. 39.
Mergenthaler Linotype Co., to Eltra Corp., Brooklyn, N.Y. 417,439, ren. 12–14–65. Cl. 50.
Metronics Associates, Inc., Palo Alto, Calif. 800,126, pub. 9–28–65. Multiple Class (Classes 6 and 26).
Midwest Credit Corp., Creston, Iowa. 800,516, pub. 9–28–65. Cl. 101.
Midwest Dental Mfg. Co.: *See*—
Staunt, Martin.
Midwest Houses, Inc., Mansfield, Ohio. 687,047–8, canc. Cl. 12.
Miles Laboratories, Inc., Elkhart, Ind. 800,199, pub. 9–28–65. Cl. 18.
Miles Laboratories, Inc., Elkhart, Ind. 800,495, pub. 9–28–65. Cl. 51.
Miller, Earl A., Orem, Utah. 800,247, pub. 9–28–65. Multiple Class (Classes 22 and 39).
Millipore Filter Corp., Bedford, Mass. 800,336, pub. 9–28–65. Cl. 26.
Minneapolis-Moline Co., Hopkins, Minn. 687,187, canc. Cl. 23.
Minnesota Mining and Mfg. Co., St. Paul, Minn. 687,034, canc. Cl. 6.
Minnesota Mining and Mfg. Co., St. Paul, Minn. 687,237, canc. Cl. 36.
Minor, P. W., & Son, to P. W. Minor & Son, Inc., Batavia, N.Y. 50,283, ren. 12–14–65. Cl. 39.
Mobil Finishes Co., Inc.: *See*—
Sewall Paint & Varnish Co.
Molded Fiber Glass Boat Co., Union City, Pa. 687,411, canc. Cl. 19.
Monarch Chemicals, Inc.: *See*—
Sep-Ko Chemicals, Inc.
Monarch Rug Mills, Inc., Dalton, Ga. 687,289, canc. Cl. 42.
Morris, Mark, Associates, Inc., Topeka, Kans. 800,466, pub. 9–28–65. Cl. 46.
Moscany, Steven, Arcadia, Calif. 419,110, ren. 12–14–65. Cl. 5.
Moseley, F. L., Co.: *See*—
Hewlett-Packard Co.
Moss & Lowenhaupt Cigar Co., St. Louis, Mo. 800,193, pub. 9–28–65. Cl. 17.
Mountain Mfg. Co., Inc., Kalispell, Mont. 800,287, pub. 9–28–65. Cl. 23.
Multicraft Co., The: *See*—
Dirigo Compass & Instrument Cooperation Assoc.
Murphy Oil Corp., El Dorado, Ark. 800,178, pub. 9–28–65. Cl. 15.
Murray, Samuel P., and Anthony J. Gruszka, Milwaukee, Wis. 687,253, canc. Cl. 38.
NRM Corp., Akron, Ohio. 800,229–30, pub. 9–28–65. Cl. 21.
N.V. Philips-Duphar, Amsterdam, Netherlands. 800,203, pub. 9–28–65. Cl. 18.
N.V. Vriesproducten Industrie "Kristal," Rotterdam, Netherlands. 687,309, canc. Cl. 46.
"Na-Churs" Plant Food Co., Marion, Ohio. 800,153, pub. 9–28–65. Cl. 10.
Naef, M., & Cie. Geneva, Switzerland, to Firmenich, Inc., New York, N.Y. 210,907, ren. 12–14–65. Cl. 51.
Naef, M., & Cie. Geneva, Switzerland, to Firmenich, Inc., New York, N.Y. 210,910–12, ren. 12–14–65. Cl. 51.
Naef, M., & Cie. Geneva, Switzerland, to Firmenich, Inc., New York, N.Y. 210,916–18, ren. 12–14–65. Cl. 51.
Naef, M., & Cie. Geneva, Switzerland, to Firmenich, Inc., New York, N.Y. 210,922, ren. 12–14–65. Cl. 51.
Naef, M., & Cie. Geneva, Switzerland, to Firmenich, Inc., New York, N.Y. 210,968, ren. 12–14–65. Cl. 51.
Naef, M., & Cie. Geneva, Switzerland, to Firmenich, Inc., New York, N.Y. 210,971–2, ren. 12–14–65. Cl. 51.
Natcon Chemical Co. Inc., Bethpage, N.Y. 687,352, canc. Cl. 51.
National Association of Broadcasters, The, Washington, D.C. 687,409, canc. Cl. B.
National Capitol Historical Museum of Transportation, Inc., The, Washington, D.C. 800,395, pub. 9–28–65. Cl. 38.
National Capitol Historical Museum of Transportation, Inc., The, Washington, D.C. 800,397, pub. 9–28–65. Cl. 38.
National Electronic Distributors Association, Inc., Chicago, Ill. 800,517, pub. 9–28–65. Cl. 101.
National Lacquer & Paint Co., Chicago, Ill. 419,984, ren. 12–14–65. Cl. 16.
National Projects Development Corp., Washington, D.C. 800,515, pub. 9–28–65. Cl. 101.
National Starch and Chemical Corp., New York, N.Y. 800,143, pub. 9–28–65. Cl. 6.
Nelson, Floyd O., d.b.a. Nelson Products Co., Sioux Rapids, Iowa. 800,487, pub. 9–28–65. Cl. 50.
Nelson Products Co.: *See*—
Nelson, Floyd O.

New Jersey Aluminum Extrusion Co., Inc., North Brunswick, N.J. 800,266, pub. 9–28–65. Cl. 22.
New Jersey Zinc Co., The, New York, N.Y. 800,137, pub. 9–28–65. Cl. 6.
New York Herald Tribune Inc., New York, N.Y. 687,261, canc. Cl. 38.
New York State Psychological Assoc., Inc., New York, N.Y. 800,392, pub. 9–28–65. Cl. 38.
Nicoll, R. C., d.b.a. Valerie Jean Date Shop, Thermal, Calif. 687,307, canc. Cl. 46.
Nion Corp., Los Angeles, Calif. 800,202, pub. 9–28–65. Cl. 18.
Niswonger, Howard W.: *See*—
Osborn, Carl R.
Noll, Curtis, Corp., Cleveland, from Curtis Industries, Inc., Eastlake, Ohio. 800,231, pub. 9–28–65. Cl. 21.
Nomo Products, Inc., Johnston, R.I. 800,344, pub. 9–28–65. Cl. 28.
North American Van Lines, Inc., Fort Wayne, Ind. 800,524, pub. 9–28–65. Cl. 105.
North Pacific Canners & Packers, Inc., Portland, Oreg. 800,468, pub. 9–28–65. Cl. 46.
Northwest Oyster Farms, Inc.: *See*—
Bercut-Richards Packing Co.
Northwestern Mobile Homes Inc., Veradale, Wash. 687,138, canc. Cl. 19.
Northwestern National Life Insurance Co., Minneapolis, Minn. 800,521, pub. 9–28–65. Cl. 102.
Norwich Pharmacal Co., The, d.b.a. Eaton Laboratories, Norwich, N.Y. 687,099, canc. Cl. 18.
Nutrisearch Laboratories, Inc., New York, N.Y. 687,105, canc. Cl. 18.
Odence, Charles, Co., Inc.: *See*—
Odence Mfg. Co.
Odence Mfg. Co., Boston, to Charles Odence Co., Inc., Hyannis, Mass. 416,134, ren. 12–14–65. Cl. 17.
Ohio Potato Growers Association, Columbus, Ohio. 800,476, pub. 9–28–65. Cl. 46.
Old Florida Rum Co., d.b.a. Fleet Street of Florida, Miami, Fla. 800,485, pub. 9–28–65. Cl. 49.
Oppenheimer Fund, Inc., New York, N.Y. 800,519, pub. 9–28–65. Cl. 102.
Oppenheimer Fund, Inc., New York, N.Y. 800,520, pub. 9–28–65. Cl. 102.
Opticks, Inc., Dallas, Tex. 800,305, pub. 9–28–65. Multiple Class (Classes 26 and 106).
Osborn, Carl R., to H. W. Niswonger, Colorado Springs, Colo. 205,915, ren. 12–14–65. Cl. 46.
Owens-Corning Fiberglas Corp., Toledo, Ohio. 417,252, ren. 12–14–65. Cl. 43.
Ox Greeting Cards, Inc., New York, N.Y. 687,265, canc. Cl. 38.
Pacific Associated Lighting, Inc., San Francisco, Calif. 800,240, pub. 9–28–65. Cl. 21.
Palm Beach Co., Portland, Maine. 800,429, pub. 9–28–65. Cl. 39.
Pan Avion, Inc., Miami, Fla. 687,163, canc. Cl. 22.
Parfumerie St. Denis, New York, N.Y., to Shulton, Inc., Clifton, N.J. 201,613, ren. 12–14–65. Cl. 51.
Parris, C. L., Savannah, Tenn. 800,263, pub. 9–28–65. Cl. 22.
Peet, E. M., Mfg. Co. Peet's Feeds, Inc., Council Bluffs, Iowa. 601,552. Am. 7(d). Cl. 18.
Peet's Feeds, Inc.: *See*—
Peet, E. M., Mfg. Co.
Penick, S. B., and Co., New York, N.Y. 687,033, canc. Cl. 6.
Perfect Garment Co., The, Baltimore, Md. 800,419, pub. 9–28–65. Cl. 39.
Perfumeria Fibah: *See*—
Fibah Corp.
Pestop Corp., Greensburg, Pa. 800,522, pub. 9–28–65. Cl. 103.
Peters Cartridge Co., The. Remington Arms Co., Inc., Bridgeport, Conn. 197,695. Am. 7(d). Cl. 9.
Pfizer, Chas., & Co., Inc.: *See*—
Coty, Inc.
Pfizer, Chas., & Co., Inc., Brooklyn, N.Y. 687,101, canc. Cl. 18.
Pfizer, Chas., & Co., Inc., New York, N.Y. 800,496–7, pub. 9–28–65. Cl. 51.
Pflueger Corp., Akron, Ohio. 800,277, pub. 9–28–65. Cl. 22.
Pharmaceuticals, Inc., New York, N.Y. 687,103, canc. Cl. 18.
Pharmafac, Inc., Austin, Tex. 800,494, pub. 9–28–65. Cl. 51.
Philliocraft Co., Fort Washington, Pa. 800,299–301, pub. 9–28–65. Cl. 23.
Photo-Engravers Research Institute Inc., Savannah, Ga. 800,121, pub. 9–28–65. Multiple Class (Classes 6 and 106).
Pillsbury Co., The, Minneapolis, Minn. 800,456–8, pub. 9–28–65. Cl. 45.
Pines Engineering Co. Inc., Aurora, Ill. 800,291, pub. 9–28–65. Cl. 23.
Pioneer Mfg. Co.: *See*—
Hoyt Heater Co.
Polan Industries Inc., Huntington, W. Va. 800,505, pub. 9–28–65. Cl. 100.
Portable Electric Tools, Inc., Geneva, Ill. 800,226, pub. 9–28–65. Cl. 21.
Porter, Mattie, Chicago, Ill. 800,491, pub. 9–28–65. Cl. 51.
Powerhouse, Inc.: *See*—
International Shoe Co.
Precision Cells, Inc., New York, N.Y. 800,334, pub. 9–28–65. Cl. 26.
Preservation Society of Newport County, The, Newport, R.I. 800,348, pub. 9–28–65. Cl. 32.
Preservation Society of Newport County, The, Newport, R.I. 800,371, pub. 9–28–65. Cl. 37.
Preservation Society of Newport County, The, Newport, R.I. 800,441, pub. 9–28–65. Cl. 42.
Pressurators, Inc., Sarasota, Fla. 800,347, pub. 9–28–65. Cl. 31.
Process Corp., The, Chicago, Ill. 800,388, pub. 9–28–65. Cl. 38.
Products Sales, Inc., Cleveland, Ohio. 687,369, canc. Cl. 52.
Pure Oil Co., The, Palatine, Ohio. 600,185, pub. 9–28–65. Cl. 16.
Quality Mills, Inc., Mt. Airy, N.C. 800,426, pub. 9–28–65. Cl. 39.
Quota International Inc., Washington, D.C. 800,393–4, pub. 9–28–65. Multiple Class (Classes 38, 100, and 200).
Rabin-Winters Corp., El Segundo, Calif. 800,197, pub. 9–28–65. Cl. 18.
Radiator Specialty Co., Charlotte, N.C. 800,189, pub. 9–28–65. Cl. 16.
Randi Distributing Co., Inc., Chicago, Ill. 687,348, canc. Cl. 51.
Rapp Foreign Trade Corp., New York, N.Y. 687,190, canc. Cl. 26.
Rath Packing Co., The, Waterloo, Iowa. 800,470, pub. 9–28–65. Cl. 46.
Recon (Pipelines) Ltd., Sheerwater, Woking, England. 800,365, pub. 9–28–65. Cl. 35.
Reddi Car Corp., Commack, N.Y. 800,173, pub. 9–28–65. Cl. 13.
Reefer Sweet Co.: *See*—
Kennington, Joseph B.
Regal Stationery Co. Ltd., Toronto, Ontario, Canada. 687,349, canc. Cl. 51.
Remington Arms Co., Inc.: *See*—
Peters Cartridge Co., The.
Rexall Drug and Chemical Co., d.b.a. Tupperware, Los Angeles, Calif. 800,113, 9–28–65. Cl. 2.
Reynolds, R. J., Tobacco Co., Winston-Salem, N.C. 800,194–5, pub. 9–28–65. Cl. 17.
Rheem Research Products Inc., to Allied Research Products, Inc., Baltimore, Md. 419,784, ren. 12–14–65. Cl. 6.
Ridge Tool Co., The, Elyria, Ohio. 800,285, pub. 9–28–65. Cl. 23.
Riegel Textile Corp., New York, N.Y. 800,413, pub. 9–28–65. Cl. 39.
Rieke Metal Products Corp., Auburn, Ind. 418,663, ren. 12–14–65. Cl. 13.
Roberts Dairy Co., Omaha, Nebr. 800,479, pub. 9–28–65. Cl. 46.
Robertson, P. L., Mfg. Co. Ltd., Milton, Ontario, Canada. 800,163, pub. 9–28–65. Cl. 13.
Robinette, Charles E., Shreveport, La. 800,252, pub. 9–28–65. Cl. 22.
Rod's Food Products, Inc., Los Angeles, Calif. 687,306, canc. Cl. 46.
Rohde & Schwarz, Munich, Germany. 800,311, pub. 9–28–65. Cl. 26.
Rolen Diversified Investors, Inc., Stockton, Calif. 800,257, pub. 9–28–65. Cl. 22.
Rolor Corp., The, Syosset, N.Y. 800,320, pub. 9–28–65. Cl. 26.
Roth, Lester H., Pittsburgh, Pa. 800,128, pub. 9–28–65. Cl. 6.
Roto-Rooter Corp., Des Moines, Iowa. 800,523, pub. 9–28–65. Cl. 103.
Rowlax Laboratories Co., New York, N.Y. 800,454, pub. 9–28–65. Cl. 44.
Roxane, Philips, Inc., New York, N.Y. 800,200–1, pub. 9–28–65. Cl. 18.
Royal Industries, Inc., Pasadena, Calif. 800,150, pub. 9–28–65. Cl. 7.
Rubin, Arthur L. H., New York, N.Y. 800,403, pub. 9–28–65. Cl. 38.
Rutang Corp., The, Miami, Fla. 687,029, canc. Cl. 4.
SCM Corp., New York, N.Y. 800,295, pub. 9–28–65. Cl. 23.
SCM Corp., New York, N.Y. 800,340, pub. 9–28–65. Cl. 26.
S.S.S. Co.: *See*—
Swift Specific Co., The.
Sahara Coal Co., Inc., Chicago, Ill. 800,112, pub. 9–28–65. Cl. 1.
St. Regis Publications, Inc., New York, N.Y. 800,399, pub. 9–28–65. Cl. 38.
Salem Chemical Corp., Kilgore, Tex. 800,130, pub. 9–28–65. Cl. 6.
Sangamon Co., The, Taylorville, Ill. 800,401, pub. 9–28–65. Cl. 38.
Sani Distributors, Inc., New York, N.Y. 800,445, pub. 9–28–65. Cl. 42.
Sanitary Paper Mills, Inc.: *See*—
Swanee Paper Corp.
Sanitary Scale Co., Belvidere, Ill. 800,322, pub. 9–28–65. Cl. 26.
Sapolin Co. Inc., to Sapolin Paints Inc., New York, N.Y. 419,382, ren. 12–14–65. Cl. 16.
Sapolin Paints, Inc.: *See*—
McQuade, John, & Co., Inc.
Savoy of London Ltd., New York, N.Y. 687,038, canc. Cl. 8.
Saxton, Clifton B., Jr., d.b.a. Camden Paint Mfg. Co., Cherry Hill, N.J. 800,188, pub. 9–28–65. Cl. 16.
Scala Radio Corp., San Leandro, Calif. 800,241, pub. 9–28–65. Cl. 21.
Schield, Wm., Mfg. Co., B. T. Babbitt, Inc., Albany, N.Y. 205,527. Am. 7(d). Cl. 6.
Schnadig Corp., Chicago, Ill. 687,222, canc. Cl. 32.
Schoeneman, J., Inc., Baltimore, Md., to J. Schoeneman, Inc., Owing's Mills, Md. 204,779, ren. 12–14–65. Cl. 39.
Schreiber, A. H., Co., Inc., New York, N.Y. 800,433, pub. 9–28–65. Cl. 39.

Schuemann-Jones Co., The, d.b.a. The Brant Mfg. Co., Cleveland, Ohio. 800,455, pub. 9–28–65. Cl. 44.
Schweisfurth, L., Inh. Karl Schweisfurth, Herten, Westphalia, Germany. 800,461–2, pub. 9–28–65. Cl. 46.
Scientific Data Systems, Inc., Santa Monica, Calif. 788,730, cor. Cl. 26.
Screw and Bolt Corp. of America, Pittsburgh, Pa. 800,169, pub. 9–28–65. Cl. 13.
Sep-Ko Chemicals, Inc., d.b.a. Monarch Chemicals, Inc., Minneapolis, Minn. 800,503, pub. 9–28–65. Cl. 52.
Set Products, Inc., Cleveland, Ohio. 800,187, pub. 9–28–65. Cl. 16.
Sewall Paint & Varnish Co., Kansas City, Mo., to Mobil Finishes Co., Inc., New York, N.Y. 416,995, ren. 12–14–65. Cl. 16.
Sheldon Metal Products Co., Inc., Jersey City, N.J., to Aluminum Processing Corp., Fall River, Mass. 800,525, pub. 9–28–65. Cl. 106.
Shernov, Albert, New York, N.Y. 800,383, pub. 9–28–65. Cl. 37.
Shulton, Inc.: *See*—
Parfumerie St. Denis.
Shulton, Inc., Clifton, N.J. 800,499, pub. 9–28–65. Cl. 51.
Shur-Lok Corp., Santa Ana, Calif. 800,166–8, pub. 9–28–65. Cl. 13.
Simpson, Adele, Inc.: *See*—
Lee, Mary, Inc.
Sivon Mfg. Co., Painesville, Ohio. 800,363, pub. 9–28–65. Cl. 35.
Smith & Co. Smith Kendon Ltd., London, England. 439,858. Am. 7(d). Cl. 6.
Smith Kline & French Laboratories, Philadelphia, Pa. 687,-135, canc. Cl. 18.
Smith-Urban Corp., Stamford, Conn. 800,312, pub. 9–28–65. Cl. 26.
Snook Mfg. Co., Inc., Palo Alto, Calif. 800,333–4, pub. 9–28–65. Cl. 21.
Snyder, W. H., & Sons Inc., Windsor, Pa. 800,192, pub. 9–28–65. Cl. 17.
Soabar Co., Philadelphia, Pa. 800,373, pub. 9–28–65. Cl. 37.
Societe des Usines Chimiques Rhone-Poulenc, Paris, France. 800,103, pub. 9–28–65. Cl. 1.
Societe Francaise d'Organo-Synthese, Gennevilliers (Seine), France. 800,129, pub. 9–28–65. Cl. 6.
South Bend Tackle Co., Inc., South Bend, Ind. 800,269, pub. 9–28–65. Cl. 22.
Southern Mills, Inc., Atlanta, Ga. 800,444, pub. 9–28–65. Cl. 42.
Southern Optical Co., The, Louisville, Ky. 800,309, pub. 9–28–65. Cl. 26.
Sparling, Harold, Co., Glendale, Calif. 800,459, pub. 9–28–65. Cl. 46.
Speakman Co., Wilmington, Del. 800,170, pub. 9–28–65. Cl. 13.
Speidel Corp., Providence, R.I. 687,218, canc. Cl. 28.
Sportswear Corp. of America, St. Louis, Mo. 800,437, pub. 9–28–65. Cl. 39.
Spotwood Apparel Inc., New York, N.Y. 800,421, pub. 9–28–65. Cl. 39.
Sprayon Products, Inc., Bedford Heights, Ohio. 800,141, pub. 9–28–65. Cl. 6.
Springfield Instrument Co., Inc., New York, N.Y. 687,192, canc. Cl. 26.
Stahmer, Bernhardt, Omaha, Nebr. 800,527, pub. 9–28–65. Cl. 107.
Standard Duplicating Machines Corp., Everett, Mass. 800,-155, pub. 9–28–65. Cl. 11.
Standard Packaging Corp., New York, N.Y. 800,248, pub. 1–7–64. Cl. 22.
Staunt, Martin, d.b.a. Midwest Dental Mfg. Co., Chicago, to American Hospital Supply Corp., Evanston, Ill. 419,146, ren. 12–14–65. Cl. 44.
Stedman Mfg. Co., Asheboro, N.C. 800,411, pub. 9–28–65. Cl. 39.
Sterling Automotive Mfg. Co., Inc., Elk Grove Village, Ill. 745,810, cor. Cl. 26.
Stevens, J. P., & Co., Inc., New York, N.Y. 687,287, canc. Cl. 42.
Stevens, J. P., & Co., Inc., New York, N.Y. 800,453, pub. 9–28–65. Cl. 43.
Stic-Klip Mfg. Co., Inc., Cambridge, Mass. 800,157, pub. 9–28–65. Cl. 12.
Stone Instrument & Supply Co.: *See*—
Stone, Lester H.
Stone, Lester H., d.b.a. Stone Instrument & Supply Co., Houston, Tex. 800,174, pub. 9–28–65. Cl. 14.
Stone Manganese Marine Ltd., London, England. 800,359, pub. 9–28–65. Cl. 34.
Sunset-Sternau Food Co., Modesto, Calif. 687,323, canc. Cl. 46.
Swanee Paper Corp., New York, N.Y., from The Sanitary Paper Mills, Inc., East Hartford, Conn. 800,370, pub. 2–25–64. Cl. 37.
Swank, Inc., Attleboro, Mass. 800,343, pub. 9–28–65. Cl. 28.
Swenson, Ralph E.: *See*—
Dirigo Compass & Instrument Cooperation Assoc.
Swift Specific Co., The, to S.S.S. Co., Atlanta, Ga. 207,596, ren. 12–14–65. Cl. 18.
Tami Sportswear, San Francisco, Calif. 800,418, pub. 9–28–65. Cl. 39.
Techni-Rite Electronics, Inc., Warwick, R.I. 800,339, pub. 9–28–65. Cl. 26.
Tennessee Products & Chemical Corp., Nashville, Tenn. 687,-044, canc. Cl. 10.
Texize Chemicals, Inc.: *See*—
Crescent Chemical Corp.
Thomed Corp., New York, N.Y. 800,208, pub. 9–28–65. Cl. 18.
Thomson Co., Thomson, Ga. 800,425, pub. 9–28–65. Cl. 39.
Thon's Garden Mums, Arlington Heights, Ill. 800,108, pub. 9–28–65. Cl. 1.
Toensmeier, Patrick A., and Associates: *See*—
Toensmeier, Patrick A.
Toensmeier, Patrick A., d.b.a. Patrick A. Toensmeier and Associates, Hamden, Conn. 800,389, pub. 9–28–65. Cl. 38.
Topaz Hosiery Mills, Inc., New York, N.Y. 800,406, pub. 9–28–65. Cl. 39.
Toyotoki Co., Ltd.: *See*—
Toyotoki Kaisha, Ltd.
Toyotoki Kaisha, Ltd., d.b.a. Toyotoki Co., Ltd., Kitakyushushi, Japan. 800,346, pub. 9–28–65. Cl. 30.
Trade Press Publishing Co., Milwaukee, Wis. 687,414, canc. Cl. 38.
Transamerica Corp.: *See*—
Firstamerica Corp.
Tremco Mfg. Co., The, Cleveland, Ohio. 800,159, pub. 9–28–65. Cl. 12.
Tempo Products Co., Solon, Ohio. 800,135, pub. 9–28–65. Cl. 6.
Trendline Corp., New York, N.Y. 687,259, canc. Cl. 38.
Trend Fashions: *See*—
Huntley Knitting Mills, Inc.
Tupperware: *See*—
Rexall Drug and Chemical Co.
Ultra-Violet Products, Inc., San Gabriel, Calif. 800,316, pub. 9–28–65. Cl. 26.
Union Bag-Camp Paper Corp., New York, N.Y. 800,382, pub. 9–28–65. Cl. 37.
United Mfg. Co., Wheeling, W. Va. 800,360, pub. 9–28–65. Cl. 35.
United States Banknote Corp., from Lanston Industries, Inc., Philadelphia, Pa. 800,326, pub. 9–28–65. Cl. 26.
United States Borax & Chemical Corp., Los Angeles, Calif. 800,390, pub. 9–28–65. Cl. 38.
United States Ceramic Tile Co., Canton, Ohio. 800,282, pub. 9–28–65. Cl. 23.
Universal Match Corp., St. Louis, Mo. 800,154, pub. 9–28–65. Cl. 11.
Utica Cutlery Co., Utica, N.Y. 800,283, pub. 9–28–65. Cl. 23.
Vail Spring Works, Inc., Norfolk, Va. 800,286, pub. 9–28–65. Cl. 23.
Valerie Jean Date Shop: *See*—
Nicoll, R. C.
Valeron Corp., The, Detroit, Mich. 800,289, pub. 9–28–65. Cl. 23.
Valpey Corp., Holliston, Mass. 800,238, pub. 9–28–65. Cl. 21.
Van Houten, C. J., & Zoon N.V.: *See*—
Koninklijke Fabrieken C. J. van Houten & Zoon N.V.
Van Vlack, Dale E., Inglewood, Calif. 687,094, canc. Cl. 18.
Vanderbilt, R. T., Co., Inc., New York, N.Y. 800,144, pub. 9–28–65. Cl. 6.
Vetron Corp., Orange, Calif. 800,184, pub. 9–28–65. Cl. 16.
Victoreen Instrument Co., The, Cleveland, Ohio. 800,317, pub. 9–28–65. Cl. 26.
Vidor Ltd., Byfleet, Surrey, England. 800,237, pub. 9–28–65. Cl. 21.
Walbro Corp.: *See*—
Ireland & Matthews Mfg. Co., The.
Washington Mfg. Co., Nashville, Tenn. 800,428, pub. 9–28–65. Cl. 39.
Welch, James O., Co., Cambridge, Mass. 687,299, canc. Cl. 46.
Well Production Services, Inc., Chicago, Ill. 687,388, canc. Cl. 103.
Wembley, Inc., New Orleans, La. 800,420, pub. 9–28–65. Cl. 39.
Wendel, Sanford S., Co.: *See*—
Wendel, Sanford S.
Wendel, Sanford S., d.b.a. Sanford S. Wendel Co., Los Angeles, Calif. 794,685, cor. Cl. 17.
Western Auto Supply Co., to Western Auto Supply Co., Kansas City, Mo. 419,533, ren. 12–14–65. Cl. 31.
Western Precipitation Corp., Los Angeles, Calif. 687,183, canc. Cl. 23.
Western Thomson Controls Ltd., Reading, England. 800,324, pub. 9–28–65. Cl. 26.
Westinghouse Air Brake Co.: *See*—
Goodman Mfg. Co.
Wham-O Mfg. Co., San Gabriel, Calif. 800,270, pub. 9–28–65. Cl. 22.
White-Horn, North Hollywood, Calif. 687,293, canc. Cl. 44.
Whitehead Brothers Co., New York, N.Y. 800,107, pub. 9–28–65. Cl. 1.
Whitman Publishing Co., Racine, Wis. 800,116, pub. 9–28–65. Cl. 2.
Wilcox Electric Co., Inc., Kansas City, Mo. 418,347, ren. 12–14–65. Cl. 21.
Wilkens Instrument & Research, Inc., Walnut Creek, Calif. 800,386–7, pub. 9–28–65. Cl. 38.
Wilson & Co., Inc.: *See*—
Briggs & Co.
Wilson Jones Co., Chicago, Ill. 687,062, canc. Cl. 13.
Winsco Instruments & Controls Co., Inc., Santa Monica, Calif. 800,341, pub. 9–28–65. Cl. 26.
Winsor & Newton Inc., New York, N.Y. 800,190, pub. 9–28–65. Cl. 16.
Wisdom Associates, Inc., New York, N.Y. 800,391, pub. 9–28–65. Cl. 38.

Wiss, J., and Sons Co., Newark, N.J. 800,292, pub. 9–28–65. Cl. 23.
Wizard Boats, Inc., Costa Mesa, Calif. 687,136, canc. Cl. 19.
Wolverine Fabricating & Mfg. Co. Inc., Inster, Mich. 800,-364, pub. 9–28–65. Cl. 35.
Wood Treating Chemicals Co., St. Louis, Mo. 800,124, pub. 9–28–65. Cl. 6.
Woodward & Lothrop, Inc., Washington, D.C. 800,342, pub. 9–28–65. Cl. 28.
Woodward-Schumacher Electric Corp., Chicago, Ill. 800,245, pub. 9–28–65. Cl. 21.
World Gift Co., Dallas, Tex. 800,384, pub. 9–28–65. Cl. 38.
Wuestenfeld, Herman E., Jerseyville, Ill. 800,262, pub. 9–28–65. Cl. 22.
Wyckoff Steel Co., Chicago, Ill. 800,175, pub. 9–28–65. Cl. 14.
Ye Olde Tavern Cheese Products: *See*—
Cheese Products Co., Inc.
Youngstown Sheet and Tube Co., The, Boardman, Ohio. 800,-172, pub. 9–28–65. Cl. 13.
Youngstown Sheet and Tube Co., The, Boardman, Ohio. 800,-171, pub. 9–28–65. Cl. 13.

U.S. GOVERNMENT PRINTING OFFICE:O—1965

U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
December 21, 1965 Volume 821 Number 3

PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of November 1965

Examiner affirmed	225
Examiner affirmed in part	46
Examiner reversed	86
Total	357

Amendment to U.S. Court of Customs and Patent Appeals Rules

Rule 5 of the rules of this court is amended in accordance with the following order entered November 1, 1965.

Effective December 1, 1965, the fee to be charged an applicant for admission to the bar of this court with a certificate under seal shall be $10.00. A duplicate certificate of admission to the bar under seal shall be $5.00.

Notice of Tentative Recordation of a Trade Name

[T.D. 56491]

Tentative recordation of trade name under section 42, Trademark Act of 1946, and section 11.16, Customs Regulations

TREASURY DEPARTMENT,
OFFICE OF THE COMMISSIONER OF CUSTOMS,
Washington, D.C., Sept. 27, 1965.

To Collectors of Customs and Others Concerned:

An application has been filed in the Treasury Department for the recordation of the following-described trade name under the provisions of section 42, Trademark Act of 1946, and section 11.16, Customs Regulations:

"DUETEENO ORIGINALS," a trade name used by Swissknit Manufacturing, Inc., a corporation organized under and by virtue of the laws of the State of New York, located and doing business at 112 West 34th Street, New York, New York. The trade name is associated with imported children's wearing apparel manufactured in various Far-Eastern areas.

Any person who on or before November 15, 1965, notifies the Commissioner of Customs, Washington, D.C., 20226, of his opposition to the recordation of the trade name described above will be furnished with a copy of the application for recordation, the documents filed in support of the application, and instructions as to the procedure to be followed to file a formal notice of such opposition. The customs officers concerned will be advised of the filing of any opposition proceeding.

Until December 1, 1965, or until final determination has been made in any case in which notice has been received of the filing of an opposition proceeding, any article of foreign manufacture which bears a name or mark copying or simulating the trade name described above shall be detained, without seizure. Thereafter, the articles so detained shall be treated in accordance with the provisions of section 11.17 of the Customs Regulations.

LESTER D. JOHNSON,
Commissioner of Customs.

Classification Order No. 376

Classification Order No. 376, dated November 18, 1965, incorporates changes in the following classes:

235, REGISTERS
260, CHEMISTRY, CARBON COMPOUNDS

All of the above changes will be incorporated in the Manual of Classification replacement pages dated January 1966.

G. A. GORECKI,
Director, Office of Patent Classification.

Public Law 89-332

[89TH CONGRESS, S. 1758]

November 8, 1965

[79 Stat. 1281]

AN ACT

To provide for the right of persons to be represented in matters before Federal agencies.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That—

(a) Any person who is a member in good standing of the bar of the highest court of any State, possession, territory, Commonwealth, or the District of Columbia may represent others before any agency upon filing with the agency a written declaration that he is currently qualified as provided by this subsection and is authorized to represent the particular party in whose behalf he acts.

(b) Any person who is duly qualified to practice as a certified public accountant in any State, possession, territory, Commonwealth, or the District of Columbia may represent others before the Internal Revenue Service of the Treasury

New Applications Received During October 1965

Patents	13,820
Designs	708
Plant Patents	21
Reissues	34
Total	14,583

Issue—December 21, 1965

Patents	1347	No. 3,224,009 to No. 3,225,355, incl.
Designs	80	No. 203,248 to No. 203,327, incl.
Plant Patents	1	No. 2,580
Total	1428	

Department upon filing with that agency a written declaration that he is currently qualified as provided by this subsection and is authorized to represent the particular party in whose behalf he acts.

(c) Nothing herein shall be construed (i) to grant or deny to any person who is not qualified as provided by subsection (a) or (b) the right to appear for or represent others before any agency or in any agency proceeding; (ii) to authorize or limit the discipline, including disbarment, of persons who appear in a representative capacity before any agency; (iii) to authorize any person who is a former officer or employee of an agency to represent others before an agency where such representation is prohibited by statute or regulation; or (iv) to prevent an agency from requiring a power of attorney as a condition to the settlement of any controversy involving the payment of money.

(d) This section shall not be applicable to practice before the Patent Office with respect to patent matters which shall continue to be covered by chapter 3 (sections 31 to 33) of title 35 of the United States Code.

SEC. 2. When any participant in any matter before an agency is represented by a person qualified pursuant to subsection (a) or (b) of section 1, any notice or other written communication required or permitted to be given to such participant in such matter shall be given to such representative in addition to any other service specifically required by statute. If a participant is represented by more than one such qualified representative, service upon any one of such representatives shall be sufficient.

SEC. 3. As used in this Act, "agency" shall have the same meaning as it does in section 2(a) of the Administrative Procedure Act, as amended (60 Stat. 237, as amended).

Approved November 8, 1965.

Erratum

In the OFFICIAL GAZETTE, issue of Aug. 31, 1965, page 1898, before Patent Number 3,203,956 insert the following:

ERRATUM

For Class 260—248 see:
Patent No. 3,203,550

Disclaimer

2,967,985.—*William Shockley* and *Robert N. Noyce*, Los Altos, Calif. TRANSISTOR STRUCTURE. Patent dated Jan. 10, 1961. Disclaimer filed Nov. 12, 1965, by the inventors; the assignee, *International Telephone and Telegraph Corporation*, assenting.

Hereby enter this disclaimer to claims 1 and 2 of said patent.

PATENT EXAMINING CORPS

R. A. WAHL, Superintendent

CONDITION OF PATENT APPLICATIONS AS OF NOVEMBER 1, 1965

PATENT EXAMINING OPERATIONS AND GROUPS	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
CHEMICAL EXAMINING OPERATION—I. MARCUS, Acting Director.		
GENERAL CHEMISTRY, GROUP 110—W. B. KNIGHT, Acting Manager Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries.	7-11-62	2-18-59
GENERAL ORGANIC CHEMISTRY, GROUP 120—G. D. MITCHELL, Acting Manager Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids.	12- 7-62	8-12-60
PETROLEUM CHEMISTRY, GROUP 130—J. R. LIBERMAN, Manager Hydrocarbons; Halogenated Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices; Organic Chemistry (Part) e.g.: Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	2- 5-63	7-14-61
HIGH POLYMER CHEMISTRY, GROUP 140—L. H. GASTON, Acting Manager Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins: Reclaiming; Pore-Forming.	1- 2-63	3- 2-60
COMPOSITIONS AND MOLDING, GROUP 150—L. H. GASTON, Manager Compositions (Part) e.g.: Coating; Molding; Adhesive Compositions; Abrading; Liquid Purification or Separation; Gas Separation; Special Utility; Molding Processes.	9-11-62	2-26-60
COATING AND LAMINATING, GROUP 160—J. REBOLD, Manager Coating: Processes, Apparatus and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Ornamentation; Adhesive Bonding; Special Manufactures	7-25-62	9-22-60
SPECIALIZED CHEMICAL ARTS AND INDUSTRIES, GROUP 170—W. B. KNIGHT, Manager Bleaching and Dyeing; Fertilizers; Foods; Fermentation; Photography; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Metallurgical Apparatus; Gas, Heating and Illuminating; Cleaning Processes; Liquid Purification; Thermolytic Distillation; Preserving.	10- 1-62	11-25-60
CHEMICAL ENGINEERING, GROUP 180—G. D. MITCHELL, Manager Gas, Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Distillation; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	12-18-62	10-30-61
ELECTRICAL EXAMINING OPERATION—N. H. EVANS, Director.		
POWER, GROUP 210—M. L. LEVY, Manager Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art.	11-26-62	11-22-60
SECURITY, GROUP 220—S. BOYD, Manager Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedos, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	1- 3-63	10-21-60
INFORMATION TRANSMISSION, GROUP 230—S. W. CAPELLI, Manager Communications; Multiplexing Techniques; Facsimile and Related Art.	10-22-62	2-26-60
INFORMATION STORAGE AND RETRIEVAL, GROUP 240—W. W. BURNS, Manager Data Processing, Computation and Conversion; Storage Devices and Related Art.	7- 5-62	4-26-61
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—B. G. MILLER, Manager Semi-Conducter and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks.	10- 4-62	8- 1-60
RADIATION AND INSTRUMENTS, GROUP 260—F. M. STRADER, Manager Optics; Radiant Energy; Measuring.	9-27-62	8-26-60
ELEMENTS, GROUP 270—E. J. SAX, Manager Conductors; Switches; Miscellaneous.	2-21-63	12-20-61

Total number of pending applications (excluding Designs)	197,288
Total number of Design applications pending	4,847
Total number of applications awaiting action (excluding Designs)	151,692
Total number of Design applications awaiting action	2,448
Date of oldest new application awaiting action	July 5, 1962
Date of oldest amended application awaiting action	Feb. 18, 1959

EXPIRATION OF PATENTS

The patents within the range of numbers indicated below expire during December 1965, except those which may have been extended under the provisions of the Veterans Patent Extension Act (64 Stat. 316 as amended by 66 Stat. 321) and those which may have expired earlier due to shortened terms under the provisions of Public Law 600. A list of Veterans' patents which have been extended appears in the *Annual Index of Patents—1965*.

Patents ..... Numbers 2,455,847, to 2,457,796 inclusive
Plant Patents ..... Numbers 813 to 817, inclusive

PATENT EXAMINING OPERATIONS AND GROUPS (Continued)	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
MECHANICAL ENGINEERING EXAMINING OPERATION—F. H. BRONAUGH, Director.		
MATERIAL HANDLING, GROUP 310—A. BERLIN, Manager Material or Article Handling and Dispensing; Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Fluid Sprinkling and Fire Extinguishers; Coin Handling and Check Controlled Apparatus; Classifying and Assorting Solids.	9- 9-63	9-26-62
MANUFACTURING; METAL AND PLASTICS WORKING, GROUP 320—N. BERGER, Manager Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus.	11- 2-62	2-14-61
MACHINE TOOLS, MECHANISMS AND ELEMENTS, GROUP 340—A. M. HORTON, Manager Machine Tools for Shaping or Dividing Involving Cutting or Breaking; Machine Elements Including Power Transmission Components, Work and Tool Holders.	4-26-63	1-16-61
TOOLS, JOINTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Manager Miscellaneous Hardware; Tools; Joints; Cutlery; Locks; Fasteners; Rod Pipe and Electrical Connectors; Buckles; Buttons, Clasps, Etc.; Pushing and Pulling.	5-27-63	4-18-62
FLUID HANDLING, GROUP 360—E. PAUL, Manager Fluid Handling; Valves; Pipes and Tubular Conduits; Fluent Material Handling; Lubrication; Baths, Closets and Sinks; Joint Packing; Centrifugal Bowl Separators.	4-26-63	12-15-61
POWER PLANTS, MOTORS AND PUMPS, GROUP 370—C. F. GAREAU, Manager Power Plants, Combustion Power Plants, Expansible Chamber Motors, Rotary Motors and Rotary Expansible Chamber Motors, Expansible Chamber Devices and Internal Combustion Engines, Pumps and Pump Regulation.	10-14-63	11-20-62
HEAT GENERATION, TRANSFER AND UTILIZATION, GROUP 380—P. L. PATRICK, Manager Furnaces, Liquid Heaters and Vaporizers, Burners, Heat Exchange, Automatic Temperature and Humidity Regulation; Refrigeration; Drying; Ventilation; and Illumination.	5-13-63	5-25-61
GENERAL ENGINEERING AND INDUSTRIAL ARTS EXAMINING OPERATION—J. A. MANIAN, Director.		
AMUSEMENT, HUSBANDRY AND PERSONAL TREATMENT, GROUP 410—A. RUEGG, Manager Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery and Toiletry.	4- 8-63	12- 4-61
CIVIL ENGINEERING, GROUP 420—B. BENDETT, Manager Building Structures; Bridges, Closures; Closure Operators; Safes; Earth Engineering; Drilling; Mining.	3-22-63	4-19-61
PHYSICS, GROUP 430—R. L. EVANS, Manager Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	3-11-63	12-20-61
TEXTILES AND APPAREL, GROUP 440—W. S. COLE, Manager Textiles, Winding and Reeling; Tying Strands; Apparel; Boot and Shoe Making; Sewing Machines.	2-25-63	10-18-60
TRANSPORTATION, GROUP 450—P. ARNOLD, Manager Railways and Rolling Stock; Brakes; Land Vehicles; Aeronautics; Ships.	3-28-63	7-25-61
FURNITURE AND RECEPTACLES, GROUP 460—W. S. COLE, Manager Furniture; Supports; Cabinet Structures; Receptacles; Baggage.	6- 6-63	2-16-62
PRINTING, STATIONERY AND MATERIAL TREATMENT, GROUP 470—L. W. VARNER, Manager Printing; Typewriters; Stationery; Material Treatment.	9- 6-62	7-28-60
DESIGNS, GROUP 490—J. A. MANIAN, Manager Industrial Arts; Household, Personal and Fine Arts.	1-27-65	1-25-63

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

IN RE HARRY TANCZYN

No. 7380. Decided July 8, 1965

[52 CCPA —; 347 F.2d 830; 146 USPQ 298]

1. PATENTABILITY—AFFIDAVIT UNDER RULE 131—ANTICIPATION—35 U.S.C. 102 (a)—*In re Stempel* CONSTRUED.

"When a rejection under 35 U.S.C. 102(a) is involved, we have held that 'under the law all the applicant can be required to show is priority with respect to so much of the claimed invention as the reference happens to show.' *In re Stempel*, 44 CCPA at 826, 241 F.2d at 759, 113 USPQ at 81. In *Stempel* the claims under appeal were drawn to *chemical compounds*. Both genus and species claims were present. One of the claimed species was disclosed in a U.S. patent. The reference was antedated by affidavits under Rule 131 which established that appellant had made the species disclosed in the reference before the effective date of the reference. The Board of Appeals held that establishing priority to a common species was not sufficient to obtain allowance of a generic claim. This court reversed the Board, holding that a Rule 131 affidavit need not show the invention *'defined in the claim the applicant is asking for * * *.'* 44 CCPA at 825, 214 F.2d at 759, 113 USPQ at 81."

2. SAME—SAME—SAME—SAME—SAME.

"In *Stempel* the applicant successfully overcame the reference as to both generic and species claims by showing priority only as to the species shown by the reference. It was, however, a species *of the claimed generic invention*. The species of the reference and affidavit was sufficient to anticipate the generic claims of the application. Thus, in addition to establishing priority as to the species of the reference, the Stempel affidavit also disclosed completion of the invention, although admittedly not in the broad generic form. The reduction to practice shown was a species of the invention within the generic claims."

3. SAME—SAME—OBVIOUSNESS—PURPOSE OF AFFIDAVIT IS TO SHOW PRIORITY AS TO CLAIMED INVENTION—35 U.S.C. 103.

"A different situation may prevail when the rejection is based upon 35 U.S.C. 103. In such a case the purpose of an affidavit is to establish that the claimed invention was made by the applicant before the effective date of a reference relied upon to show that the invention was obvious. By so doing, the applicant may prove, by eliminating a reference, that at the time the invention was made 'the subject matter as a whole would [not] have been obvious * * *.'"

4. SAME—SAME—SAME—SAME—SAME.

"The mere fact that an applicant has previously produced that which is disclosed by a reference * * * may have no bearing on the problem of whether he made his invention or a patentable portion of it before the date of a reference."

5. SAME—SAME—*In re Stempel* MODIFIED.

"We never intended by the language used in *Stempel* to authorize the overcoming of references by affidavits showing that the applicant had invented, prior to the reference date, a part, some parts, or even a combination of parts, used to create an embodiment of his claimed invention, where the part or parts are not within the scope of the claims being sought, as the species of Stempel shown by the reference was within his generic claims."

6. SAME—SAME—AFFIDAVIT MUST ESTABLISH POSSESSION OF CLAIMED INVENTION.

In refusing to sanction, as contrary to *Stempel*, such a broad rule as "that not only must the affidavit show everything the reference shows but also that the *entire* claimed invention must be shown in *all cases* except the genus-species situation," *Held* that "The primary consideration is whether, in addition to showing what the reference shows, the affidavit also establishes possession of either the *whole* invention claimed or something falling *within* the claim, in the sense that the claim as a whole reads on it."

7. SAME—SAME—SAME.

"It is not sufficient to show in a Rule 131 affidavit that an invention wholly outside of that being claimed was made prior to the reference date. Such fact is irrelevant."

8. SAME—PARTICULAR SUBJECT MATTER—"STAINLESS STEEL AND METHOD."

The refusal of all claims in an application entitled "Stainless Steel and Method," as unpatentable over the prior art, is reversed.

APPEAL from the Patent Office. Serial No. 854,226.

REVERSED.

John Howard Joynt for appellant.

Clarence W. Moore (*Fred W. Sherling* of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, JR., *Associate Judges*

ALMOND, *J.*, delivered the opinion of the court.

Harry Tanczyn appeals from a decision of the Board of Appeals affirming the rejection of all claims in appellant's application.[1] Appellant's invention relates to a stainless steel of which claim 1 reproduced below is illustrative.

A chromium-nickel-aluminum stainless steel susceptible to precipitation-hardening by double heat-treatment from a soft, workable austenitic condition to give great strength in combination with good ductility, said steel consisting essentially of 9.00% to 20.00% chromium, 2.50% to 8.00% nickel, .70% to 2.50% aluminum, 1% to 5% molybdenum, with the sum of the chromium and molybdenum contents 14% to 21%, .10% to .40% nitrogen, carbon .12% maximum, manganese 8.00% maximum, with manganese inversely proportioned with respect to the nickel content, silicon 2.00% maximum, phosphorus .050% maximum, sulphur .050% maximum, and remainder substantially all iron.

Appellant's steel differs from the prior art in that it contains both nitrogen and molybdenum. The references relied upon by the Examiner are:

Goller, 2,505,763, May 2, 1950.
Walton, 2,892,702, June 30, 1959.

Goller discloses a stainless steel having the same composition as appellant's except that it contains no nitrogen. Walton discloses a stainless steel which differs from appellant's steel only in the fact that it does not contain molybdenum. The Examiner's rejection was that a molybdenum and nitrogen containing steel would be obvious in view of Goller and Walton.

Appellant filed an affidavit under Rule 131 in an attempt to antedate the Walton reference. The Board held that the affidavit was not effective to antedate the reference because it did not show "completion of the claimed invention or any part thereof * * *." It is clear that if the Board erred in this holding the decision must be reversed since a rejection on Goller alone cannot be sustained. Thus, we shall first consider the adequacy of the affidavit.

The Rule 131 Affidavit

The affidavit establishes that prior to January 4, 1955, the filing date of the Walton patent, appellant made a nitrogen containing stainless steel having the same composition as that disclosed by Walton. The affidavit does not disclose completion of the *claimed* invention prior to the date when both Goller and Walton were available.

[1] Serial No. 854,226, filed November 20, 1959, for "Stainless Steel and Method."

The Examiner, citing *Ex parte Blair*, 129 USPQ 424 (P.O.B.A. 1957), held that the affidavit was directed to an invention which differs in kind from the claimed invention and therefore that no weight could be attached to the affidavit. It is the appellant's position that *Blair* "merely harked back to the views of the Board, as reversed by this court" in *In re Stempel*, 44 CCPA 820, 241 F.2d 755, 113 USPQ 77.

[1] When a rejection under 35 U.S.C. 102(a) is involved, we have held that "under the law all the applicant can be required to show is priority with respect to so much of the claimed invention as the reference happens to show." *In re Stempel*, 44 CCPA at 826, 241 F.2d at 759, 113 USPQ at 81. In *Stempel* the claims under appeal were drawn to *chemical compounds*. Both genus and species claims were present. One of the claimed species was disclosed in a U.S. patent. The reference was antedated by affidavits under Rule 131 which established that appellant had made the species disclosed in the reference before the effective date of the reference. The Board of Appeals held that establishing priority to a common species was not sufficient to obtain allowance of a generic claim. This court reversed the Board, holding that a Rule 131 affidavit need not show the invention "*defined in the claim the applicant is asking for* * * *." 44 CCPA at 825, 214 F.2d at 759, 113 USPQ at 81.

[2] In *Stempel* the applicant successfully overcame the reference as to both generic and species claims by showing priority only as to the species shown by the reference. It was, however, a species *of the claimed generic invention*. The species of the reference and affidavit was sufficient to anticipate the generic claims of the application. Thus, in addition to establishing priority as to the species of the reference, the Stempel affidavit also disclosed completion of the invention, although admittedly not in the broad generic form. The reduction to practice shown was of a species of the invention within the generic claims.

[3] A different situation may prevail when the rejection is based upon 35 U.S.C. 103. In such a case the purpose of an affidavit is to establish that the claimed invention was made by the applicant before the effective date of a reference relied upon to show that the invention was obvious. By so doing, the applicant may prove, by eliminating a reference, that at the time the invention was made "the subject matter as a whole would [not] have been obvious * * *."

In *Ex parte Blair*, supra, a rejection on a combination of two references under 35 U.S.C. 103 was involved. By a Rule 131 affidavit, the applicant antedated one of the references. Although the affidavit did not show completion of the claimed invention, it did show completion of that "part" of the claimed invention which the reference showed. The appellant argued that such a showing was sufficient under *Stempel*. The Board held the affidavit ineffective, stating:

It seems to us that the mere fact that an inventor may have invented the combination, A, B, and C, for example, before a patentee does not in itself prove that he has also invented the combination, A, B, C, and D at the same time (D representing the extra pair or pairs of fingers over the ten pairs shown by Schon).

In our opinion, the term "invention" in Rule 131 is used in the same sense as in the Patent Statute to mean that which is *claimed* as new and patentably useful, 35 U.S.C. sections 101, 102, 103, and 112. Section 112 requires that:

> "The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention."

and *it is this claimed "invention" which we think was intended in Rule 131.* It does not appear to us logical that one should be permitted to dissect the invention, in this instance the claimed *combination, into several parts* and then say because he has invented *one* such *part* prior to a *reference disclosing that part* that he has also invented the entire combination prior to that reference, even though other references combined therewith to meet "the invention" bear an earlier date. [Emphasis added.]

We are in general agreement with the reasoning of the Board although not necessarily with its precise language. It must be remembered that in *Stempel* the dispute was whether it was completion of the *claimed* invention—specifically, the genus of the generic claims—that had to be established prior to the date of the reference, and we held that it did not where the reference did not disclose that invention but only a species within it.

[4] The mere fact that an applicant has previously produced that which is disclosed by a reference, however, may have no bearing on the problem of whether he made his invention or a patentable portion of it before the date of a reference.

In retrospect and in the light of the facts now before us, it seems necessary to comment on and to restrict somewhat certain broad language in *Stempel*, particularly the two following statements:

We are convinced that under the law all the applicant can be required to show is priority with respect to so much of the claimed invention as the reference happens to show. When he has done that he has disposed of the reference.

* * * * * * *

In the case of a reference, it is fundamental that it is valid only for what it discloses and if the applicant establishes priority with respect to that disclosure, and there is no statutory bar, it is of no effect at all.

Those statements were entirely valid, we still think, *as applied to the facts in Stempel* where the reference showed a species of the generic invention being claimed in the appealed claims. As frequently happens, however, the statements are broad enough to encompass the very different situation we now have before us and which was present in *Blair*. There is a difficulty in discussing it because of the ambiguity of the word "part" in speaking of "part of an invention." It can mean such a "part" as the species which Stempel invented, which was part of his claimed genus. It can mean an element or subcombination of elements forming part of a larger combination of elements making up a machine such as the bowling pin spotting device of *Blair*. Or it can mean an alloying ingredient or an alloy containing all but one of the essential ingredients, as here. In one sense, a stainless steel alloy containing nitrogen but no molybdenum is a part, even a large part, of appellant's alloy; in a more accurate sense, however, it is not a "part" *of his invention* at all because his invention does not exist at all until there is an alloy containing *both* nitrogen and molybdenum.

[5] We never intended by the language used in *Stempel* to authorize the overcoming of references by affidavits showing that the applicant had invented, prior to the reference date, a part, some parts, or even a combination of parts, used to create an embodiment of his claimed invention, where the part or parts are not within the scope of the claims being sought, as the species of Stempel shown by the reference was within his generic claims.

In our view, appellant was never in possession of any "part" of his claimed invention until he was in possession of the stainless steel alloy

combination containing both nitrogen and molybdenum. Using the term "part" in that same sense, neither reference shows "part" of his invention.

For these reasons we are in general agreement with the Board's disposition of the issue and with its statement that:

The instant case does not involve a genus-species relationship. It is abundantly clear from appellant's specification and claims that his invention is in the combined addition of molybdenum and nitrogen to a hardenable chromium-nickel aluminum stainless steel of low carbon content which is not disclosed in the affidavit.

[6] While this succinct statement of the Board's position appears correct, it might be read to imply that not only must the affidavit show everything the reference shows but also that the *entire* claimed invention must be shown in *all cases* except the genus-species situation. We will not now sanction such a broad rule. It is contrary to *Stempel*. The primary consideration is whether, in addition to showing what the reference shows, the affidavit also establishes possession of either the *whole* invention claimed or something falling *within* the claim, in the sense that the claim as a whole reads on it.

[7] It is not sufficient to show in a Rule 131 affidavit that an invention wholly outside of that being claimed was made prior to the reference date. Such fact is irrelevant. We therefore hold the Rule 131 affidavit herein to be ineffective to overcome the Walton reference [2] and turn to the question of obviousness, taking that reference into consideration.

Obviousness

We must now consider whether appellant's claimed invention is obvious within the meaning of 35 U.S.C. 103.

Both references disclose chromium-nickel stainless steel. Goller discloses that the stainless steel may contain

* * * anywhere from about 0.02% to 0.12% carbon, aluminum from about 0.50% to 2.50%, from incidental amounts up to about 8.0% manganese, from incidental amounts up to approximately 2.0% silicon, with or without molybdenum ranging up to about 3.0% illustratively to enhance corrosion resistance of the steel, and the remainder substantially all iron. * * *

The Walton stainless steel contains from 0.12% to 0.18% nitrogen to "prevent hardening following solution annealing and render the same uniformily responsive to transforming and precipitation hardening treatments."

The Board held that appellant's claimed invention was obvious, stating:

Goller discloses a hardenable chromium-nickel-aluminum stainless steel in which a portion of the chromium content may be replaced with molybdenum to enhance its corrosion resistance. In our view it would be obvious to a person of ordinary skill in the art to replace a portion of the chromium in the similar stainless steel alloy of Walton et al. for the purpose described by Goller. Conversely, Walton et al. disclose that the addition of nitrogen to a hardenable chromium-nickel aluminum stainless steel will prevent undesirable hardening following solution annealing and it appears to us that the addition of nitrogen to the similar alloy of Goller for the same purpose would also be obvious.

Appellant points out that his invention is not a chromium-nickel stainless steel having outstanding corrosion resistance but rather is a

[2] See Pearlman, "Plea for a Realistic Approach to Rule 131 Practice," 43 JPOS 844 (1961), which we have considered and also the Drake commentary thereon at 44 JPOS 212, to which Pearlman replied at 44 JPOS 424.

stainless steel which possesses a combination of strength and ductility. The disclosed properties of apellant's steel and the reference steels are as follows:

Property	Appellant	Walton	Goller
Tensile strength, p.s.i.	200,000	165,000	214,000
Elongation, percent	16	8	6
Reduction in Area, percent	54	.....	21

Appellant argues that a steel having these properties is not obvious from the cited references. The Board did not answer this contention directly but rather found fault with the comparison as follows:

We are not impressed with this comparison because there is no direct basis for comparing appellant's steel with those of the references. The heat treatment employed by Goller is different from the heat treatment used in hardening the steels of appellant's Table II. Walton et al. do not disclose the specific heat treatment employed in obtaining the values given. • • •

The appellant rebuts this criticism as follows:

There is nothing in either of the reference citations, or indeed in appellant's disclosure, pointing to any criticality in the heat treatments employed; they all use the combination of solution treatment, preliminary hardening treatment, and final precipitation-hardening treatment wherein a *range* of treating temperatures and a range of time of treatment are acceptable. In Goller the solution annealing is conducted at 1800° to 2000° F., the preliminary hardening at 1200° to 1600° F., preferably 1400° F., and the final hardening at 750° to 1000° F. • • •; in Walton et al. these three treatments are respectively conducted at 1800° to 2000° F., 1300° to 1500° F. and 700° to 1100° F. • • •; and in appellant's disclosure the three are conducted at 1800° to 2100° F., 1400° F., and 750° to 1100° F., respectively • • •.

We agree with appellant that the Board has presented no convincing reason why the alloys cannot be compared. Although differences in heat treatment do exist, there is nothing before us to suggest that these slight differences would affect both strength and ductility.

The Solicitor treats the improved properties in a somewhat different manner, stating:

Certainly, the references show that it is known that steels containing either molybdenum or nitrogen have good elongation, and appellant has not shown that the improved elongation of his steel is anything other than the expected additive effects of molybdenum and nitrogen. • • •

We are at a loss to know where the references indicate that the additive effect of molybdenum and nitrogen is improved elongation. We are of the view that the combination of strength and ductility would be unexpected from the cited prior art.

The Solicitor further argues that even if the elongation is unexpected, the claimed alloy is obvious because it is obvious to make an alloy containing both nitrogen and molybdenum for their desired property. In this regard we note in reading the references cited by the Patent Office that the formulation of a suitable alloy cannot be done merely by adding one element characterized as a strength additive or another as an elongation additive. For example, Goller notes that aluminum has been recognized as a deoxidizing material. However, aluminum was considered to impair hardenability but in the Goller composition aluminum aided hardening. Two columns in the Goller patent describe various additives that may be included and the delicate balance that must be maintained between these additives.

Walton teaches that the response of various alloys to aging treatments varies widely for reasons unknown. In view of this reported difficulty in balancing the properties and compositions of alloys, it appears that the Solicitor's approach is unrealistic.

In the absence of either a suggestion in the cited art that nitrogen and molybdenum should be combined in one alloy or of an alloy having properties similar to appellant's, we hold that the claimed composition is unobvious within the meaning of 35 U.S.C. 103.

[8] The decision of the Board is reversed.

REVERSED.

U.S. Court of Customs and Patent Appeals

IN RE HUBERT T. HENDERSON

[52 CCPA —; 348 F.2d 550; 146 USPQ 372]

[52 CCPA —; — F.2d —; — USPQ —]

1. WORDS AND PHRASES—COMPOSITION OF MATTER.

"From the standpoint of the patent law, a composition of matter is, as stated in Robinson on Patents, § 193: '• • • always a true combination. Each of its ingredients is itself a means whose operative forces manifest themselves through the chemical or mechanical properties by which it is distinguished. • • • It differs from all other combinations in that its ingredients, or elemental means, when once united in the combination, often become individually undiscernible by human sense, and can be recovered and distinguished only by the destruction of the combination as a whole. • • •'."

2. SAME—GASOLINE COMPOSITION.

"• • • at least in the patent law context, a gasoline *composition* as here claimed is necessarily a complete and separate entity whose existence as such entity is distinct from the substances of which it is composed. Even though these substances may be old, the *composition* may be new. The character of a new *composition* of individually old substances cannot, therefore, be determined from an examination of its component elements alone. It must be judged rather by the intrinsic attributes of the composition as a new *combination*."

3. PATENTABILITY—OBVIOUSNESS—GASOLINE COMPOSITION—35 U.S.C. 103.

"• • • while the references would teach one of ordinary skill in this art that the blending of appellant's ethers and base gasolines would result in octane numbers for the blend falling somewhere in between the individual octane numbers for the individual components, they contain absolutely no information which would suggest that the *sensitivity* factor of the resulting blend would be *lower* than the sensitivity factor of either of the individual components. In brief, the art does not show that it would have been obvious to one of ordinary skill in this art, under the test of section 103, to combine known ingredients to produce a new gasoline composition which is characterized by the unique and unobvious combination of high anti-knock properties with decreased sensitivity to engine operating conditions."

4. SAME—SAME—SAME—SAME.

"We are not impressed by the Board's view, here urged by the Solicitor, that because the ether additives would 'inherently function' to produce the decreased sensitivity, the claimed blends are therefore obvious. Indeed, can it not be said that *all* functions of a substance are 'inherent'? The fact remains that appellant has *discovered* that when certain ethers are blended with certain gasolines, the sensitivity of the resulting gasoline composition is less than the sensitivity of either the ether or the gasoline alone. The mere notion that such discovery would 'flow naturally' from what *appellant* did does not mean that the discovery could be *predicted* from what the *art* had done."

5. SAME—SAME—SAME—SAME.

"• • • we find that the reduced sensitivity of appellant's claimed gasoline composition, along with its high octane numbers, is cogent evidence that the claimed composition is an entity distinct from its individual components and

we thus find that such a combination would not have been obvious from the teachings of the prior art. This combination of properties is so totally unexpected from the art and is of such significance that we think that the Board erred in sustaining the rejection of the appealed claims."

6. SAME—PARTICULAR SUBJECT MATTER—"GASOLINE COMPOSITION."

The decision of the Board of Appeals, refusing the claims in an application entitled "Gasoline Composition," as unpatentable over the prior art, is reversed.

APPEAL from the Patent Office. Serial No. 799,483.

REVERSED.

Don O. Winslow, *Edward B. Beale*, *Arthur B. Bakalar* for appellant.

Clarence W. Moore (*Raymond E. Martin* of counsel) for the Commissioner of Patents.

Before RICH, *Acting Chief Judge*, and MARTIN, SMITH, and ALMOND, Jr., *Associate Judges*

SMITH, *J.*, delivered the opinion of the court.

On March 16, 1959, appellant filed application Serial No. 799,483, entitled "Gasoline Composition." This appeal is from a decision of the Board sustaining the Examiner's rejection of all the remaining claims, 2–13. Claim 2 is typical and reads:

2. A gasoline composition consisting essentially of a branched chain di-lower-alkyl ether having from 4 through 8 carbon atoms in a mixture of naphthene, aromatic and paraffin gasoline boiling range hydrocarbons in which mixture the concentration of naphthenes is from about 2% to about 25% by volume, the concentration of aromatics is at least 15% and no more than 75% by volume and which mixture contains no more than about 10% by volume of olefins, the concentration of ether in the composition being no more than about 50% by volume.

[1] It will be seen that what appellant is claiming is a gasoline composition. The position of the Patent Office here suggests the necessity for some basic thinking about the character of compositions of matter. From the standpoint of the patent law, a composition of matter is, as stated in Robinson on Patents, § 193:

• • • always a true combination. Each of its ingredients is itself a means whose operative forces manifest themselves through the chemical or mechanical properties by which it is distinguished. • • • It differs from all other combinations in that its ingredients, or elemental means, when once united in the combination, often become individually undiscernible by human sense, and can be recovered and distinguished only by the destruction of the combination as a whole. • • •

[2] Thus, at least in the patent law context, a gasoline *composition* as here claimed is necessarily a complete and separate entity whose existence as such entity is distinct from the substances of which it is composed. Even though these substances may be old, the *composition* may be new. The character of a new *composition* of individually old substances cannot, therefore, be determined from an examination of its component elements alone. It must be judged rather by the intrinsic attributes of the composition as a new *combination*. See *Robinson*, supra, § 194.

The gasoline composition as here claimed is but an embodiment of appellant's invention which resulted from an appreciation of an existing problem in the compounding of gasoline compositions and the knowledgeable selection of particular substances or ingredients named in the claims which, when blended within the limits clearly set forth in the claims, provided the new combination for which appellant seeks a patent.

These general observations take on particular significance in the context of the art to which the present invention relates. Gasoline compositions are readily evaluated for their so-called anti-knock properties by standardized testing procedures from which an octane number is derived. Two accepted and standardized laboratory tests in general use to determine such octane numbers are: (1) The Research Method, which tests knock resistance under relatively mild, low-speed operating conditions (at 600 r.p.m. with the air-fuel mixture entering at 125° F.); and (2) the Motor Method, which measures the octane number of a fuel under more extreme operating conditions (at 900 r.p.m. with the air-fuel mixture at 300° F.).

While these measurements of the anti-knock properties of gasoline compositions provide a satisfactory rating scale, they do not tell the whole story. A gasoline composition may show very satisfactory octane numbers by each method and yet may be unsatisfactory as an automobile motor fuel, since it may be utilized under widely varying operating conditions which may not be accurately reflected in either the Research Method or the Motor Method of octane number determination. The same gasoline composition usually has different octane numbers when tested by the foregoing test methods. It has been found that the difference between the two (Research octane number minus the Motor octane number) may be used as a quantitative measure of the "sensitivity" of the gasoline, i.e., its performance under conditions other than those simulated in these two methods. Thus, a gasoline having a Research Method number of 99 and a Motor Method number of 91 has a sensitivity of 8. In evaluating sensitivity, the rule is that the lower the sensitivity number, the better is the over-all performance of the gasoline composition.

As automotive fuel octane ratings have risen to conform to the modern trend toward high-compression engines, so has the sensitivity. Appellant's specification contains a table which purports to show the national average octane numbers and sensitivity of premium automotive gasolines for a number of years. This table shows the persistence of a problem in this art. It shows that as the octane numbers of the gasolines were increased, the sensitivity number also increased. Thus as the octane numbers increased from 85.2 (Research) in 1941–42 to 98.4 in 1957–58, and from 79.7 (Motor) in 1941–42 to 87.9 in 1957–58, this increase resulted in a progressive increase of "sensitivity" of from 5.5 in 1941–42 to 10.5 in 1957–58.

The significance of this progressive increase in gasoline sensitivity is apparent in view of modern design trends in automotive internal combustion engines. This is referred to in appellant's specification which points out that the "result of all these factors is that modern automotive engines are not only coming to require fuels of increased knock-resistance but are coming to require fuels of reduced sensitivity also." Appellant then goes on to state:

The principal object of the present invention is to provide a commercially practical high-octane-number gasoline of low sensitivity. • • •

Appellant asserts that he is able to attain the objective of decreased sensitivity by adding a branched chain di-lower-alkyl ether to a particular gasoline mixture, to form a gasoline composition as claimed. In an experiment described in the specification, 20 parts by volume of methyl tertiary-butyl ether were blended with 80 parts of a base gasoline containing 20% by volume of naphthenes, 47% by volume of

aromatics, 1% by volume of olefins and 32% by volume of paraffins. Pure methyl tertiary-butyl ether alone has a Research Method octane number of 110.1, a Motor Method number of 100.6, and therefore has sensitivity factor of 9.5. The corresponding numbers for the base gasoline mixture alone were found to be 97.1, 88.0 and 9.1 respectively. However, when the combination of these materials was tested, the Research Method number was found to be 101.4, the Motor Method number was 93.6, and the sensitivity factor was 7.8. Appellant comments upon these results as follows:

> It is, of course, not surprising that the higher octane number ether raised both the Research and Motor Method octane numbers. However, it was unexpected to observe that the ether, having a *higher* sensitivity than the base gasoline, *lowered* the sensitivity of the base gasoline instead of raising it further, as is usually the case with conventional hydrocarbon blending gasoline components. But what is most surprising is the fact that the sensitivity of the blend was lower than *either* that of the ether or the base gasoline separately.

The Examiner based his rejection of the appealed claims upon the following references:

Buc, 2,046,243, June 30, 1936.
Ross et al., 2,360,585, October 17, 1944.
Evans et al., 2,409,746, October 22, 1946.
Sachanen, The Chemical Constituents of Petroleum 260 (1945).
Wagner et al., "Improved Motor Fuels Through Selective Blending," pp. 8–13 (paper presented before American Petroleum Institute, Nov. 7, 1941).
Morris, "Effect of Gasoline Sensitivity on Road Octane Number," The Oil and Gas Journal, Nov. 26, 1956, pp. 33–34.

All the claims were rejected, in the words of the Examiner:

> • • • as being unpatentable over Buc and Evans et al. in view of Ross et al., Wagner et al., Sachanen, and Morris. Buc and Evans et al. teach the use of the claimed alkyl ethers as octane improvers and anti-knock agents in lead [-ed] and unleaded gasolines. Wagner et al., Ross et al., and Sachanen show the claimed gasoline blends to be old. Morris and Wagner et al. show fuel sensitivity and problems related thereto to be old and well known. Hence, in view of these comprehensive teachings, it would not involve invention [1] to improve the octane and lower the sensitivity of the gasolines shown by Wagner et al., Ross et al., and Sachanen by adding the alkyl ethers of Buc and Evans et al. to them.

The Board of Appeals affirmed the Examiner's rejection and stated the essence of its position as follows:

> • • • We are of the opinion that the Buc and Evans et al. ether additives for gasolines would *inherently function* in the gasolines of Ross et al. or Wagner et al. to give the additional benefit of reduced sensitivity set forth in appellant's specification. The mere determination or discovery of the latter benefit which would *flow naturally* from following the teachings of the applied references does not render the claimed gasoline composition unobvious and patentable. [Emphasis added.]

We agree with the Patent Office that the prior art shows that the octane number of gasoline motor fuels can be improved by the addition of ethers of the type defined in appellant's claims. We also agree that the references show the base gasolines of appellant's claims to be old.

[3] We note, however, that none of the references relied on by the Patent Office provide the slightest teaching to one of ordinary skill in this art as to what might happen to the sensitivity factor in a

[1] We interpret this to mean that the Examiner felt it would have been *obvious* "to improve the octane and lower the sensitivity of the gasolines • • • by adding the alkyl ethers • • • to them." 35 U.S.C. 103.

gasoline composition consisting of such ethers with such base gasolines. Thus, while the references would teach one of ordinary skill in this art that the blending of appellant's ethers and base gasolines would result in octane numbers for the blend falling somewhere in between the individual octane numbers for the individual components, they contain absolutely no information which would suggest that the *sensitivity* factor of the resulting blend would be *lower* than the sensitivity factor of either of the individual components. In brief, the art does not show that it would have been obvious to one of ordinary skill in this art, under the test of section 103, to combine known ingredients to produce a new gasoline composition which is characterized by the unique and unobvious combination of high antiknock properties with decreased sensitivity to engine operating conditions.

[4] We are not impressed by the Board's view, here urged by the Solicitor, that because the ether additives would "inherently function" to produce the decreased sensitivity, the claimed blends are therefore obvious. Indeed, can it not be said that *all* functions of a substance are "inherent"? The fact remains that appellant has *discovered* that when certain ethers are blended with certain gasolines, the sensitivity of the resulting gasoline composition is less than the sensitivity of either the ether or the gasoline alone. The mere notion that such discovery would "flow naturally" from what *appellant* did does not mean that the discovery could be *predicted* from what the *art* had done. As we said in *In re Papesch*, 50 CCPA 1084, 315 F.2d 381, 137 USPQ 43: "From the standpoint of patent law, a compound and all of its properties are inseparable; they are one and the same thing." Or, as we stated recently in *In re Huellmantel*, 51 CCPA 845, 324 F.2d 998, 139 USPQ 496:

> • • • This court has frequently stated that properties of chemical compounds must be considered in determining obviousness under 35 U.S.C. 103. • • • We think this also applies to such compositions as we have here, i.e., admixtures of two or more compounds. Therefore, the issue of obviousness in this case can be resolved only after considering the differences between the prior art and the claimed compositions chemically *and* in view of their pharmaceutical properties. • • •

And, in a footnote to the foregoing statment:

> • • • The Examiner concedes that appellant's composition "shows improved results." The Board accepts this as "fact," but concludes it is immaterial since "it is obvious *to at least try*" (our emphasis) to substitute one steroid for another in the prior art composition.
>
> We believe this reasoning, insofar as it negates consideration of properties in determining obviousness under section 103, flys in the face of the plain language of the statute as interpreted by this court • • •. Section 103 says, inter alia, "the subject matter as a whole would have been obvious • • •." Nothing is said about "obvious *to try*." Consideration of the subject matter "as a whole" in chemical cases requires comparison of properties, pharmaceutical or otherwise, as well as comparison of chemical structures.
>
> We do not mean to imply that every variance in property of a new compound or composition will tip the balance for patentability where otherwise closely related compounds or compositions are involved. However, all relevant property differences *must be considered* in the light of the facts of each case in the determination of statutory obviousness.

To the foregoing pronouncements of this court, we would add the pertinent statement of the court in *Schering Corp.* v. *Gilbert*, 153 F.2d 428, 68 USPQ 84 (2d Cir. 1946) that:

> • • • The utter novelty of this product makes the seemingly slight departure

from the old deceptive unless it is kept in mind that such things must be evaluated not alone by the degree of the change but also by reference to the purpose sought to be accomplished.

[5] Steering our determination of this appeal by the guidelines laid down in *Huellmantel*, we find that the reduced sensitivity of appellant's claimed gasoline composition, along with its high octane numbers, is cogent evidence that the claimed composition is an entity distinct from its individual components and we thus find that such a combination would not have been obvious from the teachings of the prior art. This combination of properties is so totally unexpected from the art and is of such significance that we think that the Board erred in sustaining the rejection of the appealed claims. [6] The decision of the Board is accordingly reversed.

REVERSED.

MARTIN, *J.*, dissenting.

Assuming arguendo that the decrease in sensitivity factor is unexpected, I cannot agree with the legal conclusion reached by the majority opinion since it fails to adequately weigh *all* the evidence in the case. Finding a single unexpected result to be conclusive of non-obviousness without weighing contrary evidence is an approach opposite to that so recently taken by this court in *In re Cline*, 52 CCPA —, — F.2d —, 145 USPQ 610, *In re Montmollin*, 52 CCPA —, — F.2d —, — USPQ —, and *In re Graf*, 52 CCPA 1206, 343 F.2d 774, 145 USPQ 197.

Both the appellant and the majority agree that (1) the very ethers used in the composition are old, (2) that the base gasolines used are also old, (3) that the concept of the combination is old, i.e., the concept of combining those ethers with *other* gasolines is old, and (4) that it is entirely expected that the ethers raise *both* the Research and Motor Method octane numbers.

What the majority finds conclusive of non-obviousness is the relative unexpectedness of the drop in sensitivity factor, that the ether has raised the Motor Method octane number more than the Research Method number, or, the latter less than the former, over the base gasoline, although it is acknowledged to be expected to raise both. While the amount of the reduction in sensitivity factor, about 1.5 points,[2] goes to whether it is unexpected or not, I do not think that that single factor set against the others above listed is of such significance as to be conclusive of non-obviousness.

The majority opinion in effect stands for the proposition that a single unexpected result is conclusive of non-obviousness, even where the concept of combining the components, i.e., the ether with an equivalent gasoline, is old, and one, if not two, of the resultant properties are acknowledged to be entirely expected. That approach of the

[2] Mark's Mechanical Engineers Handbook, 5th edition (1951), p. 1216, indicates that:

> The *precision* of rating motor fuels by either the research or the motor method is about ±0.4 O.N. [octane numbers]. Probability indicates once in ten times a single rating may be in error by 0.65 O.N. The precision of rating aviation fuels is such that once in ten times a single rating may be in error by 3 percent of the true performance number of the fuel when using the aviation method • • •.

Further, at page 1215, Mark's states:

> The Army-Navy *performance number* scale for aviation gasolines • • • [the method disclosed by appellant for determining the octane numbers of the ether] is designed to relate fuel rating to average knock-limited performance (I.M.E.P.). A gasoline of the 100/130 grade indicates that in the aviation test (lean mixture, normally-aspirated) the fuel is equivalent to iso-octane in I.M.E.P. while in the supercharge test (rich mixture) it permits an I.M.E.P. of 130 percent of that of iso-octane.

Appellant discloses that the method for determining the Research and Motor Octane numbers of the ether, and thus the sensitivity factor of the ether, is not the same as that for either the base gasoline or the blend.

majority opinion does not give due weight to each and every bit of evidence, contrary to what I understand to be the law. *In re Cline*, supra, *In re Montmollin*, supra, *In re Graf*, supra. Thus, upon weighing the total circumstances of this case, I am compelled to say that the rejections made were proper and should be affirmed.

But further, I do not agree that the unexpectedness of the reduction in sensitivity is as clear as the majority assumes it to be.

The sensitivity factor would be of some significance if the "rule," "that the lower the sensitivity number, the better is the over-all performance of the gasoline composition," were not extremely general. The statement would be more accurate if the two gasolines compared had the same research octane number. Since it is common knowledge that the cars of today rarely operate at 600 r.p.m., most *idling* around or above that figure, the Motor Method octane number is the better index of all-around performance. Clearly if two gasolines have the same research octane number but one is less sensitive, that one will give superior over-all road performance since the Motor Method octane is higher.[3] Yet the ethers used herein are acknowledged to raise the Motor Method octane number, as is entirely expected. Appellant states:

> It is, of course, not surprising that the higher octane number ether raised both the Research and Motor Method octane numbers. • • •

The sensitivity factor, to me becomes more and more unreal as a truly significant factor, on which non-obviousness here is pegged.

The Evans et al. reference (not described in the majority opinion) is admitted by appellant to show the use of the claimed di-lower-alkyl ethers in gasoline. Evans et al. blend with a motor fuel:

> • • • an agent which tends to *reduce the knocking* of the fuel in supercharged gasoline engines. [Emphasis mine.]

"Methyl tertiary butyl ether" is disclosed therein as such an agent; compare appellant's claim 5. The ether amount in the Evans et al. blend varies from "5% to 50% • • •." Evans et al. state:

> We have now found that certain blends of ethers with hydrocarbons, which blends possess octane numbers not substantially greater than those of the hydrocarbons alone prove vastly superior to the straight hydrocarbons in supercharged engines. • • •
>
> • • • • • • • •
>
> As is known, supercharging is one method of markedly raising the power output of gasoline engines. This method comprises boosting the intake pressures to above atmospheric pressure, thus increasing the compression pressures. *The degree of supercharging is limited by the knocking property of the fuel, for all fuels have a critical compression pressure above which they detonate spontaneously.* Obviously the fuel which permits the highest degree of supercharging is the most desirable.
>
> • • • • • • •
>
> It will be seen that the *addition of* various quantities of *our ethers*, while failing to improve the octane rating, markedly increases the allowable boosting of the intake pressure *without causing knocking*. [Emphasis mine.]

Thus it is clear to me that Evans et al. teach that the addition of appellant's ethers to a gasoline would be expected to reduce knocking under severe engine operating conditions (albeit conditions different than those of appellant's). The Evans et al. *base* gasolines, ether, and blend *all* have about the same octane number (about 100) based on an "ASTM" method. Regardless of which ASTM method is used in determining the same octane numbers for base gasoline

[3] See the Morris reference of record.

and blend, the fact that the Evans et al. blend (gasoline plus ether) then endures an *increase* in severity of engine conditions which causes the reference iso-octane fuel to knock, clearly indicates *the fundamental result Evans et al. teach is the same as that here* on which nonobviousness solely depends. That is, Evans et al. teach that under engine conditions which more nearly approximate the rigors of true performance the blend of gasoline plus ether will perform better in terms of its resistance to knocking. Compare that to the fundamental result appellant seeks:

> • • • when testing two gasolines of different compositions in the same engine one may find that both gasolines have just adquate knock-resistance in the engine at low speeds and that as the speed of the engine is increased, resulting in higher combustion chamber temperatures, one of the fuels is still adequately knock-resistant while the other detonates or knocks. The term "sensitivity" is used to define this difference among gasoline fuels; in this example the second gasoline has a higher "sensitivity" than the first gasoline, i.e., it is more "sensitive" to a change in the engine operation toward conditions of greater stress on the fuel.

Both Evans et al. and appellant show the same fundamental result attained by the addition of the ether, and I see no magic in defining it in terms of sensitivity factor. *Cf. In re Summerson*, 52 CCPA —, 345 F.2d 222, 145 USPQ 493. Since I have not been shown that the Board clearly erred in its weighing of all the facts, I would affirm.

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

2,659,212, G. M. Lees, METHOD OF AND MEANS FOR FORMING FLAKE ICE; **2,712,734**, same, ICE MAKING MACHINE, **filed** Oct. 27, 1965, D.C., E.D. Tex. (Tyler), Doc. 4515, *V & S Ice Machine Co., Inc.* v. *Eastex Poultry Company.*

2,706,697, P. Eisler, MANUFACTURE OF ELECTRIC CIRCUIT COMPONENTS; **Re. 24,165**, same, **filed** Jan. 16, 1963, D.C., N.D. Ohio (Cleveland), Doc. C63–35, *Technograph Printed Circuits, Ltd. et al.* v. *North Electric Co.* Consent decree dismissing case as to Patent Re. No. 24,165, with prejudice and as to Patent No. 2,706,697 without prejudice (notice Sept. 7, 1965).

2,712,734. (See 2,659,212.)

2,721,955, Fan and Kuchinsky, MULTI-POSITION BEAM TUBE; **2,764,711**, S. Kuchinsky, MULTIPLE POSITION BEAM TUBE; **2,804,568**, same, PROTECTIVE DEVICE FOR VACUUM TUBES; **2,874,320**, H. J. Hampel, INDICATING DEVICE; **2,878,407**, J. H. Engelman et al., ION CONTROL MEANS; **2,891,185**, Peterson and Shesser, INDICATOR TUBE; **2,906,906**, McCauley and Bethke, INDICATOR TUBE; **2,980,244**, V. J. Le Gendre, PACKAGE; **2,990,061**, J. H. McCauley, INDICATOR TUBE; **2,991,387**, same, **filed** Oct. 2, 1963, D.C., E.D.N.Y. (Brooklyn), Doc. 63C–1094, *Burroughs Corporation* v. *Amperex Electronic Corp.* Order of dismissal without prejudice Sept. 9, 1965.

2,742,462, G. Gever, NEW N-(5-NITRO-2-FURFURYLIDENE)-3-AMINO-2-OXAZOLIDONES, **filed** Aug. 23, 1965, D.C., N.D. Miss. (Oxford), Doc. EC6563, *The Norwich Pharmacal Co.* v. *Tri-State Sales.* **Same, filed** June 21, 1965, D.C., N.D. Ala. (Birmingham), Doc. 65–422, *The Norwich Pharmacal Company* v. *Dixie Grain Company, Inc.* Consent judgment; defendant enjoined Sept. 27, 1965. **Same, filed** Sept. 30, 1965, D.C., N.D. Ala. (Birmingham), Doc. 65–628, *The Norwich Pharmacal Company* v. *E. L. Turner.* **Same, filed** Oct. 1, 1965, D.C., E.D. Tex. (Tyler), Doc. 4498, *The Norwich Pharmacal Company* v. *Morris S. Gatewood, Sr.*

2,752,527, Ropiequet and Moulton, METHOD OF MAGNIFYING WAVEFORMS ON A CATHODE-RAY TUBE AND CIRCUIT THEREFOR; **2,769,904**, R. L. Ropiequet, GATED SWEEP GENERATOR; **2,769,905**, same, SWEEP CIRCUIT; **2,804,571**, J. R. Kobbe, UNBLANKING CIRCUIT FOR CATHODE RAY TUBES; **2,826,694**, R. L. Ropiequet, FREE-RUNNING MULTIVIBRATOR; **2,836,807**, Goodfellow and Davis, CERAMIC TERMINAL MOUNT; **2,853,609**, R. L. Ropiequet, MULTIVIBRATOR HOLD OFF CIRCUIT; **2,883,619**, Kobbe and Polits, ELECTRICAL PROBE; **2,930,986**, same, DISTRIBUTED AMPLIFIER, **filed** Mar. 2, 1961, Ct. Cls., Doc. 79–61, *Tektronix, Inc.* v. *The United States.* Plaintiff's motion for summary judgment is granted; defendant's counterclaim dismissed; case remanded to trial commissioner for trial upon the issues presented in plaintiff's petition and defendant's answer Oct. 15, 1965.

2,764,711. (See 2,721,955.)

2,769,904. (See 2,752,527.)

2,769,905. (See 2,752,527.)

2,772,419, M. Silverstein, LADIES' UNDERGARMENT, **filed** Sept. 29, 1965, D.C., S.D.N.Y., Doc. 65/2911, *Murray Silverstein* v. *Berklif Corp. et al.* **Same,** Doc. 65/2912, *Murray Silverstein* v. *Milco Undergarment Co., Inc. et ano.* **Same,** Doc. 65/2913, *Murray Silverstein* v. *Son-Jay Mills, Inc.*

2,777,928, A. A. Bernard, ARC WELDING METHOD AND MEANS; **2,902,587**, same, ARC WELDING PROCESS AND APPARATUS; **3,051,822**, A. A. Bernard et al., WELDING WITH BLANKET AND GAS ARC-SHIELD, **filed** Sept. 23, 1964, D.C., N.D. Ill. (Chicago), Doc. 64c1617, *Chemetron Corporation* v. *The McKay Company et al.* Order dismissing complaint and counterclaim July 2, 1965. **Same, filed** Oct. 26, 1964, D.C., M.D. Pa. (Scranton), Doc. 8712, *A. O. Smith Corporation* v. *Chemetron Corporation.* Consent judgment; patents held valid and infringed by plaintiff; declaratory judgment suit dismissed with prejudice; defendant's second and third counterclaims dismissed without prejudice Oct. 14, 1965.

2,804,568. (See 2,721,955.)
2,804,571. (See 2,752,527.)
2,826,694. (See 2,752,527.)
2,836,807. (See 2,752,527.)
2,853,609. (See 2,752,527.)
2,874,320. (See 2,721,955.)
2,878,407. (See 2,721,955.)
2,883,619. (See 2,752,527.)

2,891,185. (See 2,721,955.)
2,902,587. (See 2,777,928.)
2,906,906. (See 2,721,955.)
2,930,986. (See 2,752,527.)
2,980,244. (See 2,721,955.)
2,990,061. (See 2,721,955.)
2,991,387. (See 2,721,955.)
3,051,822. (See 2,777,928.)
Re. 24,165. (See 2,706,697.)

Re. 25,005 (of 2,932,913), D. F. Hannon, IDENTIFICATION CARD, **filed** June 9, 1964, D.C., N.D. Ill. (Chicago), Doc. 64c996, *Laminators Incorporated* v. *General Binding Corporation.* Stipulation of dismissal without prejudice Mar. 12, 1965.

Re. 25,100, R. S. Chapin, OBJECT DETECTORS, **filed** Sept. 2, 1965, D.C., E.D. Mich. (Detroit), Doc. 27316, *Pinkerton's, Inc.* v. *Radar Devices Mfg. Corp. et al.*

Re. 25,249, G. P. Kelley, ADJUSTABLE DOCKBOARD, **filed** Sept. 30, 1965, D.C., N.D. Calif. (San Francisco), Doc. 44180, *Kelley Company, Inc.* v. *Heco Pacific Manufacturing Company.*

Re. 25,737, W. E. Brainard et al., MACHINE TOOL WITH MECHANICAL CUTTING TOOL CHANGER; **Re. 25,812**, M. Morgan, AUTOMATIC MACHINE TOOL, **filed** Sept. 14, 1965, D.C., S.D. Ohio (Cincinnati), Doc. 6019, *The Cincinnati Milling Machine Company* v. *Kearney & Trecker Corporation.*

Re. 25,812. (See Reg. 25,737.)

Des. 190,783, J. P. Heilweil, HEATED FOOD DISPLAY CASE, **filed** Sept. 10, 1965, D.C. Md. (Baltimore), Doc. 16704, *Star Metal Corporation* v. *Victor Products Corporation.*

Des. 198,502, J. J. F. March, PRUNING SHEAR, **filed** Sept. 3, 1965, D.C. Minn. (Minneapolis), Doc. 4–65/282, *The Stanley Works* v. *Globemaster, Inc.*

PLANT PATENTS

GRANTED DECEMBER 21, 1965

Illustrations for plant patents are usually in color and therefore it is not practicable to reproduce the drawing.

2,580
NECTARINE PLANT
David L. Armstrong and Herbert C. Swim, Ontario, Calif., assignors to Armstrong Nurseries, Inc., Ontario, Calif., a corporation of California
Filed June 1, 1964, Ser. No. 371,860
1 Claim. (Cl. Plt.—41)

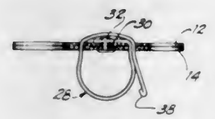
A new and distinct variety of nectarine tree of the yellow-fleshed, free-stone, fruit-bearing type, substantially as herein shown and described, characterized particularly as to novelty by the unique combination of a vigorous tree habit, with a chilling requirement between that of "Robin" peach (Plant Patent No. 529) and that of "June Gold" peach (Plant Patent No. 1,884), production of large fruit crops, a very early fruit-ripening habit, usually occurring several days later than "Robin" peach in southern California, distinctive and attractive colored fruit when fully ripe, said fruit being heavily blushed with red over a yellow-green base color, a very attractive, uniform and nearly round fruit shape, with no beak and relatively insignificant and smooth suture lines, a characteristically smooth skin and lack of pubescence which differentiates the nectarine from the peach, yellow fruit flesh, with no trace of red at the stone, an essentially free-stone habit when the fruit is fully ripe, despite a strong tendency of the flesh to initially adhere to the stone because of the early ripening habit, and a particularly good quality and good flavor for a nectarine of the early-ripening class.

PATENTS

GRANTED DECEMBER 21, 1965

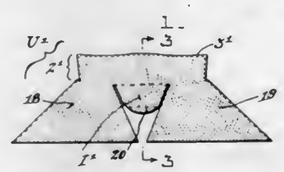
GENERAL AND MECHANICAL

3,224,009
ARCHER'S FINGER TAB
Earl H. Hoyt, Jr., 11510 Natural Bridge Road, Bridgeton, Mo.
Filed June 23, 1964, Ser. No. 377,216
4 Claims. (Cl. 2—21)



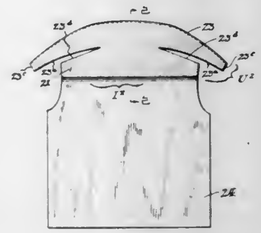
1. In an archer's finger tab having a base portion adapted to overlie the base portion of the middle finger of the hand, a pair of spaced apertures in said base portion, a strip of elastic material attached at one end to one side of said tab base portion, said strip extending from its attached end to one of said apertures, through said one aperture to the other side of said base portion, across said other side of said tab base portion to the other of said apertures, through said other aperture back to said one side of said tab base portion, across said one side of said tab base portion to said one aperture, and again through said one aperture to said other side of said tab base portion and projecting as a free end from said other side of said tab base portion, that portion of said strip extending across said other side of said tab base portion between said apertures being formed as a loop to receive the middle finger of the hand and said one aperture being of such size relative to the sectional dimensions of said strip portions passing therethrough as to prevent slippage of said strip portions therein under the tension required to hold the tab in position in use but permitting slippage of said strip portions in said one aperture when said strip is stretched sufficiently, whereby an adjusted loop size is maintained under conditions of use of the tab and whereby said loop size may be readily adjusted by stretching said elastic strip.

3,224,010
COLLAR INCLUDING GARMENTS
Ely Lesavoy, 621 N. 30th St., Allentown, Pa.
Original application Sept. 12, 1960, Ser. No. 55,431, now Patent No. 3,107,357, dated Oct. 22, 1963. Divided and this application Mar. 18, 1963, Ser. No. 266,472
1 Claim. (Cl. 2—116)



A garment of the character described comprising: a fabric structure forming a front body portion of the garment; a fabric structure forming a rear body portion of the garment which rear fabric structure is provided at its upper end with an attaching edge, and which rear fabric structure is connected with said front fabric structure of the garment; a fabric unit having at its upper end an upstanding collar that includes two material sections forming inner and outer components of said collar, the outer collar component being integrally formed with the fabric structure forming said front body portion of the garment and said outer collar component being provided at its lower end with an attaching edge in corresponding with the attaching edge at the upper end of the fabric structure forming said rear body portion of the garment; means connecting said attaching edges; and a shield-like element integrally formed with the inner component of said upstanding collar, which element extends downwardly beyond the connected attaching edges of said rear body portion of the garment and outer collar component.

3,224,011
COLLAR INCLUDING GARMENTS
Ely Lesavoy, 621 N. 30th St., Allentown, Pa.
Original application Sept. 12, 1960, Ser. No. 55,431, now Patent No. 3,107,357, dated Oct. 22, 1963. Divided and this application Mar. 18, 1963, Ser. No. 266,473
2 Claims. (Cl. 2—116)

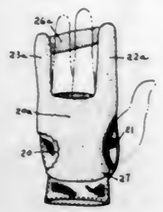


1. A garment of the character described comprising; a fabric structure forming a front body portion of the garment; a fabric structure forming a rear body portion of the garment which rear fabric structure extends across the full width of the garment and is connected with said front fabric structure of the garment; said front fabric structure being provided at its upper end with vertically extending attaching edges for a placket forming portion; a fabric unit having a collar formation at its upper end that is integrally formed with said fabric structure forming said rear body portion of the garment which extends across the full width of the garment and said fabric unit having along the front thereof an integral placket forming portion provided with vertical attaching edges in correspondence with the vertical attaching edges at the upper end of said fabric structure forming the front body portion of the garment; and means connecting said attaching edges.

3,224,012
BOWLING DEVICE
James A. Hamm, Bethlehem, Pa., assignor to James Industries, Inc., Philadelphia, Pa., a corporation of Pennsylvania
Filed Mar. 18, 1963, Ser. No. 265,622
5 Claims. (Cl. 2—161)

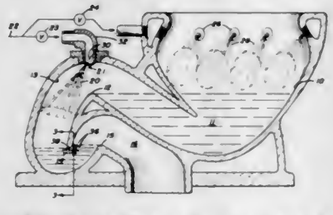
1. A bowling device, comprising in combination, means detachably securable to the index finger of the bowling hand of a bowler, means detachably securable to the little

finger of the bowling hand of a bowler, and bridging means secured to and extending between said first two



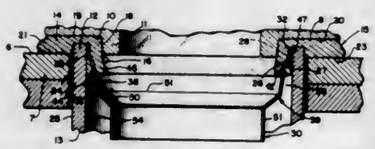
named means effective to maintain substantially constant the spacing between the ends of said index and little fingers when the bowling ball is grasped by the bowler.

3,224,013
SIPHONIC FLUSH COMMODE
Elton H. Tubbs, 162 N. Portage St., Westfield, N.Y.
Filed Mar. 18, 1964, Ser. No. 352,832
12 Claims. (Cl. 4—69)



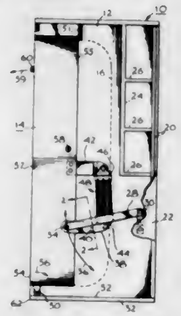
1. In combination with a toilet bowl, a siphon forming outlet, comprising:
a water trap means for maintaining water in the bowl;
a generally circular, relatively large diameter conduit communicating with said water trap means to receive fluids from the bowl during flushing thereof;
a rim flushing means for washing down and refilling the bowl;
a nozzle in said conduit downstream of said trap for directing a conical sheath of water into said conduit in a direction away from said trap means, said nozzle being adjustable to provide a substantially continuous sheath surface whereby air pressure within the sheath becomes substantially greater than that between the sheath and said trap means, both the bowl and said conduit being at substantially atmospheric pressure whereby a pressure differential developed by the sheath flushes the bowl; and
valve means for supplying water to said nozzle at full tap pressure whereby the pressure differential is substantial.

3,224,014
BOWL GASKET SLEEVE ASSEMBLY
Henry S. Pietrzak, 3821 W. Touhy Ave., Lincolnwood, Ill.
Filed Dec. 16, 1964, Ser. No. 421,744
9 Claims. (Cl. 4—252)



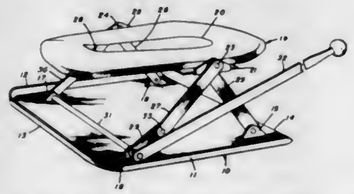
1. In a sealing gasket for a toilet bowl, the combination which comprises a ring of pliable and flowable material and having axially spaced sides and inner and outer peripheral surface, a sleeve having axially spaced portions, one portion being diametrically larger than the other, said one of said portions imbedded in said ring through one of said sides intermediate said surfaces, and relatively highly yieldable means extending transaxially of the sleeve and interconnecting said portions within said ring and, providing with said portions passageways accommodating interflow of the material of the ring between opposite sides of the sleeve.

3,224,015
CABINET BED ARRANGEMENT
Charles Schneider, 585 N. Rossmore, Apt. 5, Hollywood, Calif.
Filed Aug. 31, 1962, Ser. No. 220,704
6 Claims. (Cl. 5—2)



3. In combination:
a cabinet member having walls defining a tray member receiving cavity;
a tray member adapted to fit within said cavity in a first position and extend from said cavity in a second position;
roller means intermediate said cabinet member and said tray member for providing rolling contact engagement of said tray member with said cabinet member during transition between said first position and said second position;
arm means having a first end pivotally coupled to said cabinet member and a second end pivotally coupled to said tray member;
striker means for engaging said arm means at a preselected location thereon; and
spring means for resiliently maintaining said striker means in engagement with said arm means during at least a portion of the movement of said tray member between said first position and said second position.

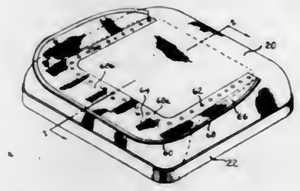
3,224,016
DEVICE FOR LIFTING BED PATIENTS
Howard A. Anderson, 2278 Meadow Road, Pittsburgh 37, Pa., and Richard W. Herring, 1447 Wilson SW., Grand Rapids, Mich.
Filed Aug. 31, 1962, Ser. No. 221,007
4 Claims. (Cl. 5—327)



1. A device for elevating a bed patient, said device comprising:
a base;

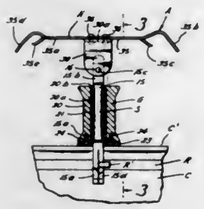
a seat provided with a central opening, said seat being movable with respect to said base; and
elevating means for raising said seat from a position adjacent said base and freely pivotally supporting the same on a lateral axis, and for simultaneously rearwardly displacing said seat with respect to said base, said elevating means including
links on opposite sides of said seat member pivotally connected to said seat and said base, respectively,
toggle means on opposite sides of said seat and connecting links and said base, and
actuating means for positioning said toggle means, said actuating means including
a shaft connecting corresponding members of said opposite toggle means, and a handle for positioning said shaft.

3,224,017
VEHICLE SEAT
Louis J. Zerbee, 301 Chillicothe Ave., Bellefontaine, Ohio
Filed Sept. 11, 1963, Ser. No. 308,249
7 Claims. (Cl. 5—351)



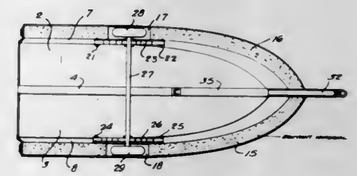
1. A woven wire screen type seat having an arcuate resilient main screen member, wherein the margins are directed downwardly and held in position, said seat being characterized by a U-shaped resilient screen member having the inner margin fastened to the top of the arcuate resilient screen member, the U-shaped member having the margins extending outwardly and the side margins flaring upwardly, the legs of the U-shaped member extending along the sides of the arcuate seat member and the bight of the U-shaped member overlying the forward edge of the main screen member to provide a flexible leading portion of the seat.

3,224,018
DEVICE FOR KITCHEN TOOLS AND THE LIKE
Earl L. Chadwick, P.O. Box 4100, Portland 8, Oreg.
Filed Feb. 28, 1962, Ser. No. 177,932
4 Claims. (Cl. 7—14.25)



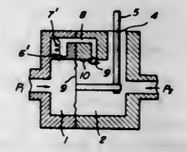
1. A device for removing removable portions from containers and the like, comprising
(a) a tool having stripping means therewith for engaging a part of a removable portion of a container for effecting a removal thereof from the container upon a rotation of said means,
(b) a shaft above said tool,
(c) connection means releasably attaching said tool to said shaft,
(d) an ejecting member having a hollow bore through which said shaft extends,
(e) said ejecting member being longitudinally movable relative to said shaft for ejecting a stripped removable portion from said stripping means,
(f) said connection means including a release sleeve and a laterally movable projection adapted to be moved into and out of locking contact with said tool, and
(g) rotatable connecting means on said release sleeve and said ejecting member rotatably mounting said release sleeve as a part of said ejecting member for releasing and locking said tool by the inward and outward movement of said projection.

3,224,019
BOAT TRAILER
Clark Gudmundson, 260 North 500 West, Bountiful, Utah
Filed Feb. 5, 1964, Ser. No. 342,653
8 Claims. (Cl. 9—1)



1. A towable boat trailer comprising a body having a bottom, a pair of sides extending from opposite edges of said bottom, a pair of upper portions each extending laterally from one of said sides, and a pair of skirts each extending from one of said upper portions providing a well with its upper portion and connected side, a tow bar fixedly connected to said body bottom, a pair of angle bars each fixedly connected to said body bottom and one of said sides at a medial portion thereof, wheels resiliently connected to said angle bars and each extending into one of said wells.

3,224,020
DIFFERENTAL PRESSURE TRANSDUCERS
Ryutaro Mori and Akira Kurabayashi, Tokyo, Japan, assignors to Hitachi Ltd., Tokyo, Japan, a corporation of Japan
Filed Dec. 31, 1962, Ser. No. 248,797
Claims priority, application Japan, Jan. 5, 1962, 37/99
1 Claim. (Cl. 91—165)



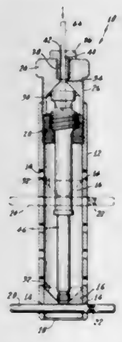
A differential pressure transducer comprising high and low pressure chambers disposed within a single housing and in communication with the upstream side and the downstream side, respectively, of an orifice, a diaphragm separating said chambers being distortable in response to the difference in pressure therebetween, a fluid passage formed within said housing and interconnecting the high and low pressure chambers on either side of said diaphragm, a first relief valve arranged within said fluid pas-

sage at the connection of the fluid passage to the high pressure chamber and normally biased toward the high pressure chamber side of said fluid passage by a spring mounted within said fluid passage, a second relief valve arranged within said low pressure chamber and normally biased against said fluid passage at the low pressure chamber side of said fluid passage by a plate spring mounted to the wall of said low pressure chamber, and output means connected to said diaphragm for movement in response to pressure differential.

3,224,021
COMBINATION DRILLING AND TAPPING JIG

Robert E. Curran, 56 Grandview St., Huntington, N.Y.

Filed Sept. 9, 1963, Ser. No. 307,520
6 Claims. (Cl. 10—1)



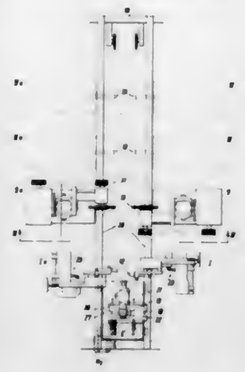
1. In a jig for performing work on variably sized faucet stems, a unitary elongated body to accommodate stems of different lengths therein, a base in said body, a top in said body, said base and top each having a conical surface facing the other and being movable relative to each other to engage and hold the opposite ends of a stem centered therebetween and from movement relative to said body, engaging means between said base and body releasable to permit said base to be moved in said body relative to said top to accommodate faucet stems of different sizes between said conical surfaces, said engaging means being engageable with said body to support said base in said body to limit it in its movement relative to said top, and said top having a through opening defined therein to enable the insertion of a tool therethrough for working cooperation with the stem.

3,224,022
MACHINE FOR BURRING AND CLEANING WORKPIECES

Günter Kehr, Klaus-Groth-Strasse 59, Bremen, Germany

Filed May 22, 1963, Ser. No. 283,662
Claims priority, application Germany, May 25, 1962, K 46,838
7 Claims. (Cl. 15—4)

1. A machine for burring and cleaning workpieces, such as gear wheels, pinion spindles, disks or the like, comprising a substantially straight runway, a plurality of tools mounted above said runway and respectively arranged in a plurality of work positions spaced from each other in longitudinal direction of said runway, a carriage movable along said runway, a work-locating member rotatably mounted on said carriage, means for rotating said work-locating member at all points along said runway except when located at a setup position near one end of said runway, work-clamping means on said work-locating member and including a work clamping member, at least one spring for maintaining said work-clamping member in work-clamping position and a slide rod slidable within said work-locating member engaged by said spring and connected to said work-clamping member, a stationary cam member disposed within the area of said setup position, said slide rod adapted to engage within said area

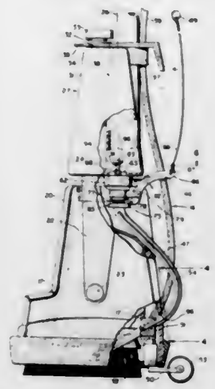


with said cam member to release said work-clamping means against the action of said spring, and means for moving said carriage back and forth along said runway and for passing a workpiece on said work clamping means successively to said tools.

3,224,023
FLOOR POLISHING AND SCRUBBING MACHINES WITH LIQUID DISPENSERS

Kenneth G. Brodie, Greenville, S.C., assignor to The Singer Company, New York, N.Y., a corporation of New Jersey

Filed Apr. 29, 1964, Ser. No. 363,410
5 Claims. (Cl. 15—50)

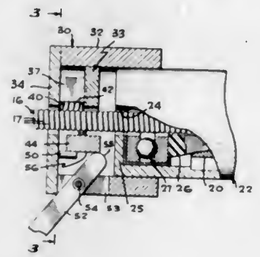


1. A floor polishing and scrubbing machine comprising a housing having a recess formed to accommodate a cylindrical tube having oppositely disposed ribs, an appearance cover surrounding said housing, a pair of vertical axis brushes rotatably mounted on the lower end of said housing, a handle pivotally mounted on said housing, a liquid container carried by said handle, a valve connected to said container, a tube having a first end connected to said valve and having a second end closed except for a pair of transversely extending outlet ports, said second end being positioned between said pair of brushes, a pair of ribs formed on opposite sides of the external surface of said tube, a block having a recess, said last named recess being complemental to the recess in said housing, means clamping said block and thereby clamping said tube and said ribs to said housing, the complemental recesses in said housing and in said block holding said tube and the outlet ports thereof in a position to direct the flow of liquid from said outlet ports in directions sidewise of said polishing and scrubbing machine and laterally toward said rotating brushes.

3,224,024
FEED MEANS FOR PLUMBERS' TOOL

Robert G. Hunt, Los Angeles, Calif., assignor to Marco Products Company, Los Angeles, Calif., a firm

Filed Mar. 23, 1964, Ser. No. 353,906
7 Claims. (Cl. 15—104.3)

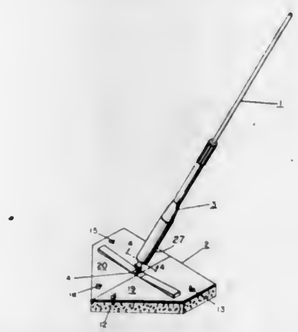


1. A feed device for a plumbers' tool having a helically coiled spring wire plumbers' snake and power means for rotating the snake, comprising a body adapted to be attached to the plumbers' tool and through which the snake passes, at least one generally cylindrical feed roller mounted in said body for rotation no an axis parallel to the axis of the snake, said roller having a peripheral surface characterized by a helical groove of a size and pitch substantially to mesh with the snake, and means movably mounted in said body adapted to be brought into engagement with said snake in a position and manner such as to move the snake laterally into mesh with said feed roller.

3,224,025
SCRUBBING AND POLISHING DEVICE

Gordon M. Altrock, 1584 Fama Drive NE., Atlanta 6, Ga.

Filed Oct. 14, 1963, Ser. No. 315,885
13 Claims. (Cl. 15—119)

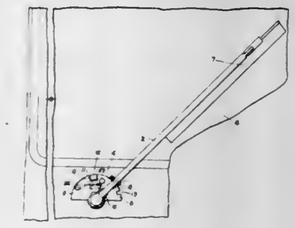


3. A mop comprising a sponge, a pair of backing plates secured to the top of said sponge and hingedly connected to each other, a handle, means defining a universal connection between said backing plates and said handle, and an elongated separate operating element having a slotted inner end and movable independently of said backing plates and slidably mounted on said handle and engageable with said backing plates to impart swinging movement thereto about their hinged connections in coordination with envelopment of the hinged connection between said backing plates by the slotted end of said operating element thereby to squeeze said sponge.

3,224,026
WINDSCREEN WIPERS OF MOTOR VEHICLES

Marian Trzebinski, 15 Melton Road, West Bridgford, Nottingham, England

Filed Feb. 14, 1964, Ser. No. 344,990
14 Claims. (Cl. 15—250.19)

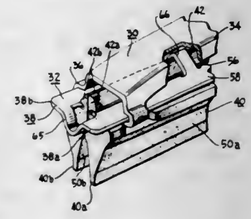


2. A windscreen wiper comprising a wiper arm mounted on an oscillating shaft, a substantially semi-circular plate fixed concentric with the shaft, a bracket movable with the arm and having an abutment thereon, a cam on the plate, means to move the cam into the path of the abutment when the arm is moving in one direction, a pin on the bracket, a gate in the plate for the pin to pass through as the cam moves the wiper arm away from the windscreen, a spring pressed closure member for the gate and an opening in the plate for the pin to pass through when the wiper arm reaches the end of its traverse in the other direction.

3,224,027
WINDSHIELD WIPER BLADE

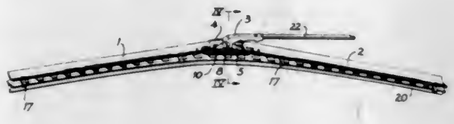
John R. Oisbei, Buffalo, and Anthony C. Scinta, Hamburg, N.Y., assignors to Trico Products Corporation, Buffalo, N.Y.

Filed Oct. 3, 1962, Ser. No. 228,108
5 Claims. (Cl. 15—250.41)



1. A squeegee unit for windshield wipers comprising an elongate anchoring portion, an elongate enlarged head portion having an arcuate upper surface adjacent said anchoring portion, a reduced neck portion securing said enlarged head portion to said anchoring portion, laterally spaced elongate wiping lips depending from said enlarged head portion, said squeegee unit having sections separable in a longitudinal plane passing through a line intermediate said wiping lips and extending from the lower surface of said enlarged head portion upwardly to at least the lower surface of said anchoring portion.

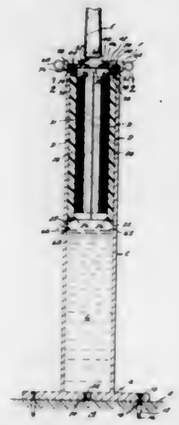
3,224,028
WINDSHIELD WIPERS
Lucien Péras, Billancourt, and Marcel Suisse, Paris, France, assignors to The Anderson Company, Gary, Ind., a corporation of Indiana
Continuation of application Ser. No. 815,654, May 25, 1959. This application Dec. 24, 1963, Ser. No. 334,081
Claims priority, application France May 31, 1958
The portion of the term of the patent subsequent to June 5, 1979, has been disclaimed
9 Claims. (Cl. 15—250.42)



5. In a vehicle windshield wiper assembly, the combination of an elongated wiper-blade holder having substantially greater width than thickness, said holder being of curved cross section throughout its width to provide concave and convex faces, longitudinally spaced attaching means on said holder for attaching on the convex face of said holder a flexible wiper blade having a defined plane of flexure, and connecting means for pivotally mounting said holder on a windshield wiper arm with the plane of flexure of said wiper blade approximately normal to the surface of the windshield and with the forward edge portion of said holder closest to said surface and the convex and concave faces of said holder curving continuously progressively away from said surface, whereby air flowing over said windshield when the vehicle is in forward motion flows over the curved face areas of said holder to produce an aerodynamic force on said holder with a useful component pressing said holder and wiper blade toward the windshield substantially throughout the length of said wiper blade and a lesser drag component acting on said holder in a direction parallel to the windshield surface in opposition to movement of said wiper assembly by said wiper arm.

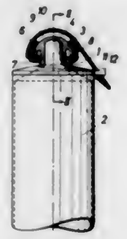
3,224,029
GOLF GRIP CLEANSING DEVICE
John G. Domingos, Bakersfield, Calif., asignor of one-half to John G. Domingos and Elba C. Domingos, jointly, one-fourth to Monte Richard Domingos, and one-fourth to John Michael Domingos
Filed June 5, 1964, Ser. No. 372,759
15 Claims. (Cl. 15—513)

1. A device for cleansing the grip of a golf club, including:
(a) a base;
(b) a cylindrical shell mounted in an upstanding position on said base, said shell having threads formed on the upper exterior portion thereof, which shell when so mounted is capable of holding a quantity of cleansing liquid in which said grip can be immersed;
(c) a plurality of brushes longitudinally disposed in said shell, each of which brushes include an elongate backing member of arcuate transverse cross section and a plurality of spaced bristles that extend inwardly therefrom;
(d) first means in said shell for removably supporting said brushes with said backing members in abutting contact;
(e) a circular sheet of resilient material disposed in the upper portion of said container and resting on the upper surfaces of said backing members, said sheet being of such thickness as to project slightly above the upper extremity of said shell, and in which sheet a centrally disposed, downwardly and inwardly tapering opening is formed that communicates with a straight-walled bore situated therebelow, said bore being of smaller transverse cross section than the minimum transverse cross section of a grip that is to be cleansed in said device;
(f) an internally threaded cap that removably engages said threads on said shell and exerts a compressive force on said sheet, said cap having a centrally positioned opening formed therein of greater transverse cross section than that of said tapered opening and in longitudinal alignment therewith; and



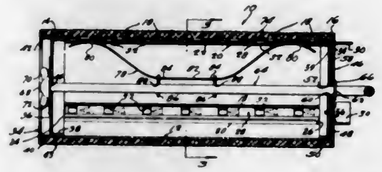
(g) second means for holding at least the outer circumferential portion ot said sheet stationary as said grip is moved downwardly through said openings and said bore to remove foreign material therefrom due to contact with said bristles, and thereafter cleansed by immersion in said liquid, and with liquid adhering to said grip being removed therefrom as said grip is drawn upwardly relative to said bristles, with any further liquid adhering to said grip being removed therefrom as said grip passes through said bore.

3,224,030
CLOSURE FOR SQUEEZABLE CONTAINERS
Karl Maichen, Lauterach 269, Austria
Filed Nov. 26, 1963, Ser. No. 326,118
Claims priority, application Austria, Nov. 29, 1962, A 9,364/62
7 Claims. (Cl. 15—543)



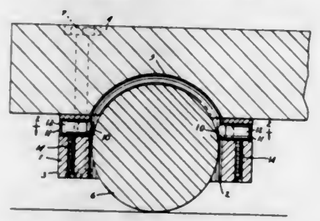
1. A closure for squeezable containers, particularly tubes, having a head provided with an opening comprising a cap of resilient material, which returns to its original position after a deformation and which is mountable on said container head, said cap having a continuous slit, which opens under the influence of a pressure produced in the interior of a container on which the cap may be mounted, and means for sealing the slit when the container is not being used including a lug on the cap overlying said slit and having a free end adapted to be fixed to a stationary closure part, said lug being provided with means for applying the contents of the container.

3,224,031
FOUNTAIN PAINT ROLLERS
Ragnvald G. Leland, 2334 W. 241st St., Lomita, Calif.
Filed July 6, 1962, Ser. No. 207,984
6 Claims. (Cl. 15—562)



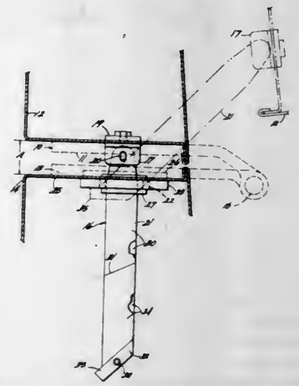
1. A fountain paint roller comprising a hollow cylinder adapted to contain paint having open ends and a sidewall, removable closure caps engaged in said ends, said caps having central openings, a roller handle having a shaft removably journaled through the cap openings, means securing the shaft in place, an absorbent applicator sleeve circumposed on the cylinder, the sidewall of the cylinder having a longitudinal row of holes therethrough, and valve means movably mounted on the inner side of the sidewall for closing and opening the holes, said valve means comprising an open slideway, and a valve element removably engaged in the slideway, said slideway comprising opposed hook flanges at opposite sides of said openings, said valve element comprising an endwise movable valve plate slidably confined between the hook flanges and bearing against the inner surface of the cylinder sidewall, said valve plate having a row of spaced openings registrable with the cylinder sidewall holes only the open position of the valve plate.

3,224,032
CASTER
Wellington P. McLean, 6630 Old Barber Road, Boise, Idaho
Filed June 25, 1964, Ser. No. 377,900
5 Claims. (Cl. 16—26)



1. A universal ball bearing caster comprising: a ring having means to secure it to the device to be supported, the ring having a cylindrical interior surface;
a sphere slidable axially of the ring and substantially filling it;
a plurality of spaced apart apertures being provided in said ring and arranged in a plane perpendicular to the axis of said cylindrical surface;
ball bearings seated in said apertures and extending inwardly from the apertures into contact with said sphere and limiting upward movement of the sphere within the ring and supporting the ring on said sphere;
a second group of spaced apart apertures being provided in said ring and arranged in a plane parallel to the plane of said first apertures but spaced below said first apertures;
ball bearings seated in the apertures of said second group and extending inwardly from such apertures and limiting downward movement of the sphere within the ring;
each of the apertures having a plug therein against which the bearing rests; and
means carried by the ring engaging each plug to hold it against outward movement radially of the ring.

3,224,033
DOOR CHECK
Andrew H. Fannan, Jr., and Joseph H. Marchione, Rockford, Ill., assignors to L. W. Menzimer, trustee, Rockford, Ill.
Filed Nov. 13, 1962, Ser. No. 236,989
10 Claims. (Cl. 16—82)

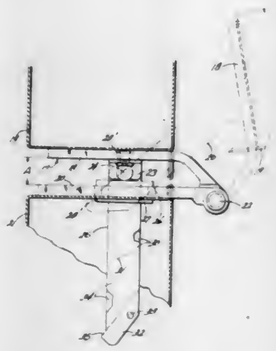


1. In a door check comprising a first plate and a second plate, one being attached to a door and the other being attached to a pillar on which the door is hingedly mounted, said plates being independent of the hinge means, an elongated friction arm connected to the first plate and extending therefrom through a slot provided in the second plate, said arm having wide flat surfaces on opposite sides thereof, friction pads mounted on opposite sides of said slot and having surface to surface door retarding-frictional engagement with the opposite sides of said arm throughout opening and closing of the door for frictionally resisting opening and closing of said door, said arm including for an outer approximately half portion of its length oppositely inclined compressible ramp portions on opposite sides thereof substantially the full length thereof giving in the compression of said ramp portions between the friction pads gradually increasing resistance to opening of said door substantially from approximately the mid-open to the fully opened position, and a stop projection on the outer end of said arm which by abutment on said second plate alongside the slot limits door opening movement.

3,224,034
BUTT TYPE DOOR HINGES WITH FRICTION TYPE HOLD-OPEN MEANS
Andrew H. Fannan, Jr., and Joseph H. Marchione, Rockford, Ill., assignors to L. W. Menzimer, trustee, Rockford, Ill.
Filed Oct. 15, 1962, Ser. No. 230,332
12 Claims. (Cl. 16—142)

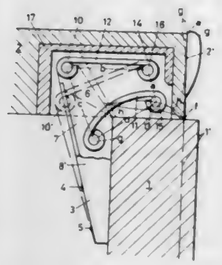
1. In a hinge comprising a first butt member having an elongated attaching portion, and a second butt member having an elongated attaching portion, the two butt mem-

bers having knuckle portions on their outer ends pivotally connected by a pintle, the improvement consisting of an elongated friction arm connected to the attaching portion of the first butt member and extending therefrom through a slot provided in the attaching portion of the second butt member, said arm having wide flat surfaces on opposite sides thereof, friction pads mounted on opposite sides of said slot and having surface to surface door retarding frictional engagement with the opposite sides of said arm throughout opening and closing of the door



for frictionally resisting opening and closing of said hinge, said arm including for an outer approximately half-portion of its length oppositely inclined and compressible ramp portions on opposite sides thereof substantially the full length thereof giving in the compression of said ramp portions between the friction pads gradually increasing resistance to opening of said door from approximately the mid-open to the fully opened position, and a stop projection on the outer end of said arm which by abutment on said second butt member alongside the slot limits hinge and door opening movement.

3,224,035
HINGES
Richard Heinze, Herford, Westphalia, Germany
Filed Jan. 17, 1963, Ser. No. 252,220
Claims priority, application Germany, Jan. 18, 1962, H 44,656; May 14, 1962, H 45,773; Aug. 23, 1962, H 46,724; Sept. 26, 1962, H 47,008; Oct. 11, 1962, H 47,119
8 Claims. (Cl. 16—163)



8. A hinge for a door having a cylindrical recess on the inside thereof, said door swingably arranged on an article of furniture or the like having a side wall provided with a sectional profile and a bracket on the inside of said side wall, said bracket having a free end; said hinge comprising:

(a) two links connecting said door and said bracket, said links consisting of an outer link and an inner link, said links having ends arranged in pairs adjacent to one another,

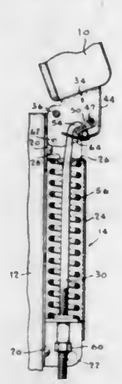
(b) a cylindrical intermediate housing embedded in said cylindrical recess in said door, said housing having first pivot means therein, one pair of said adjacent link ends being pivotally arranged on said first pivot means,

(c) said bracket consisting of a shoe-like channel structure, said channel structure having flanges, said flanges extending to said free end of said bracket, said free end of said bracket projecting into said cylindrical housing when the door is in closed position,

(d) second pivot means on said flanges, the other pair of said adjacent link ends being pivotally arranged on said second pivot means, and the dimensions of the article of furniture and its associated door being such that

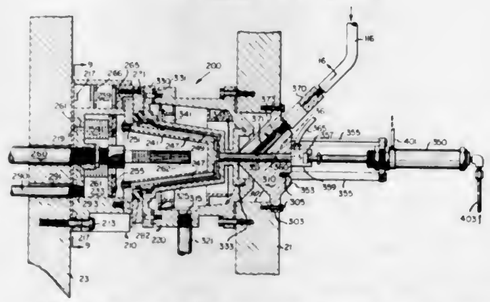
(e) the distance between the corresponding pairs of said adjacent link ends, the length of said corresponding links and the location of said first and said second pivot means is such that no part of said door projects during a full swinging movement beyond said side wall of said article of furniture.

3,224,036
CABINET HINGE
John M. Himes, Hartford, Wis., assignor to E. R. Wagner Manufacturing Company, Milwaukee, Wis., a corporation of Wisconsin
Continuation of application Ser. No. 53,832, Sept. 2, 1960. This application Jan. 30, 1964, Ser. No. 341,382
5 Claims. (Cl. 16—190)



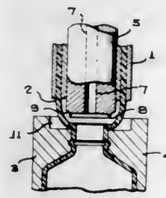
4. A counterbalancing hinge assembly for pivotally mounting a horizontal cover on a cabinet for movement between an open and a closed position comprising, a mounting bracket affixed to the cover, pin means pivotally connecting said mounting bracket to the cabinet, spring means connected to the cabinet, a link connecting the spring means to the mounting bracket, said link being pivotally connected at its lower end to the spring means and at its upper end to the mounting bracket, said link pivoting away from said pin means as the cover is moved from a closed to an intermediate position, the pivotal connection between the link and the mounting bracket being located with respect to the pin means so that the spring means provides an opposing moment to the weight of the cover, and stop means limiting the pivotal motion of the link with respect to the mounting bracket as the cover is moved from an intermediate position to a fully open position, so that the opposing moment of the spring means acts at the pivotal connnection between the spring means and the link.

3,224,037
APPARATUS FOR MOLDING FOAMABLE THERMOPLASTIC PARTICULATE MATERIAL
Roscoe S. Robbins, Fort Worth, Tex., Winston T. Palmer, Glendora, Calif., and James F. Newell, Jr., Wanamassa, N.J., assignors, by mesne assignments, to Crown Machine & Tool Co., Arlington, Tex., a corporation of Texas
Filed Feb. 1, 1963, Ser. No. 255,554
19 Claims. (Cl. 18—5)



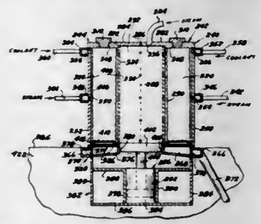
18. An apparatus for molding foamable thermoplastic beads into unitary objects comprising at least a pair of complementary mold parts, including cavity and core elements defining between them a generally frusto-conical cup-shaped molding cavity and being movable from an open to a closed position, means in communication with one of said mold parts to fill the cup-shaped molding cavity so defined with foamable plastic beads when said parts are in cooperating cavity defining relationship, generally equally circumferentially spaced axially extended elongated slots in the molding surface of at least one of the mold parts, and means for supplying steam to the slots during molding so that the steam will intimately mix with the foamable beads in the molding cavity.

3,224,038
APPARATUS FOR THE MANUFACTURE OF BLOWN, HOLLOW ARTICLES
Georg Friedrich Rolf Budesheim, Klein-Schoeppenstedt, Germany, assignor to J. A. Schmalbach Aktiengesellschaft, Braunschweig, Germany
Filed Feb. 18, 1963, Ser. No. 259,207
Claims priority, application Germany, Mar. 28, 1962, Sch 31,211
11 Claims. (Cl. 18—5)



1. In an apparatus for the manufacture of blown bottles; said apparatus being of the type including a mold having separable parts cooperable when brought together to close the mold to provide a mold cavity including a neck opening, means for delivering a tube of thermoplastic material into said mold, and a blast nozzle disposable within a portion of said tube; the improvement comprising, said blast nozzle being equipped with a cutting blade extending parallel to the axis of the blast nozzle and including a continuous annular cutting edge which is presented toward said mold and disposable within said tube for tube-cutting engagement against said mold.

3,224,039
EXPANDED PLASTIC MOLDING MACHINE
Gerhard Kracht, Allen Park, Mich., assignor to Swedish Crucible Steel Company, Detroit, Mich., a corporation of Michigan
Filed Oct. 25, 1963, Ser. No. 318,978
3 Claims. (Cl. 18—5)



2. A molding machine for expanding plastic material into a molded foam plastic article of approximately hollow cylindrical shape, comprising

an approximately circular base structure,

a pair of mold halves having approximately semi-cylindrical side walls and approximately semi-circular top walls pivotally mounted on said base structure for horizontal swinging motion toward and away from one another into closed and open positions respectively,

a hollow approximately cylindrical core structure mounted on said base structure and extending upwardly therefrom substantially to said top walls and defining therewith and with said base structure and side walls an approximately hollow cylindrical mold cavity,

power-operated means for swinging said mold halves toward and away from one another,

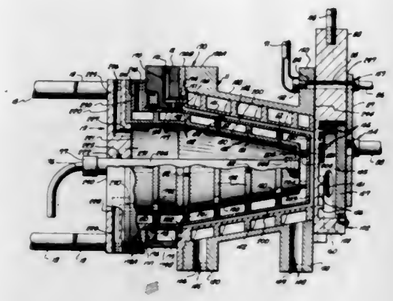
means for supplying heating fluid to said mold cavity,

and means for draining off from said mold cavity the condensate resulting from said heating fluid, said heating fluid supplying means including a pair of approximately semi-circular arcuate heating fluid manifolds, one heating fluid manifold of each pair being secured to the side wall of each of said mold halves, a pair of approximately semi-circular arcuate cooling fluid manifolds also secured to the side wall of each of said mold halves in vertically-spaced relationship to said arcuate heating fluid manifolds, and a condensate drain manifold substantially encircling said base structure in vertically-spaced relationship to said heating and cooling fluid manifold.

3,224,040
EXPANDABLE BEAD MOLDING
Roy G. Bridges, Rivera, Robert N. Aleson, San Fernando, Douglas B. Hutchings, North Hollywood, Ralph E. Whited, Altadena, and Miron L. Dyrness, North Hollywood, Calif., assignors to Tempo Plastic Company, Inc., Los Angeles, Calif., a corporation of California
Continuation of application Ser. No. 61,566, Oct. 10, 1960. This application Dec. 27, 1963, Ser. No. 337,969
6 Claims. (Cl. 18—5)

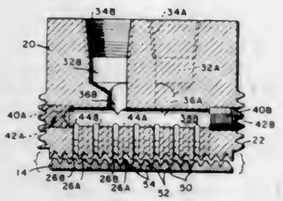
6. In a shell and core molding apparatus forming a mold cavity for molding expandable plastic beads and

having a chamber formed about a shell mold member and adapted to receive heating fluid and a chamber formed within a core mold member adapted to receive heating fluid, the improvement comprising of a plurality ot cook-



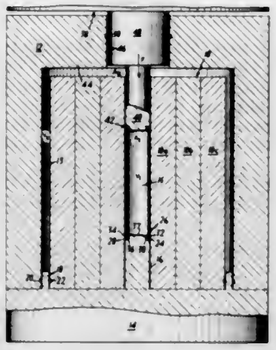
ing fluid conduits extending through one of said chambers and opening into the mold cavity, and means for applying a cooking fluid to said conduits so as to inject the cooking fluid into the mold cavity during molding.

3,224,041
SPINNING APPARATUS
Lester Reynolds, Old Trinity Road, Decatur, Ala.
Filed Jan. 28, 1963, Ser. No. 295,574
5 Claims. (Cl. 18—8)
(Filed under Rule 47(b) and 35 U.S.C. 118)



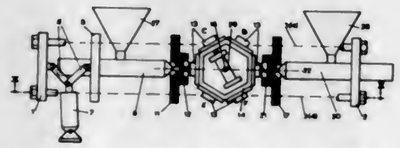
1. An apparatus for use in spinning composite filaments comprising a feeder means, a spinneret means, and a holder means for maintaining said feeder means and spinneret means in operative engagement with one another, said spinneret means comprising a substantially planar disc having a plurality of spaced feeder channels of substantially V-shaped cross-section formed in one face of said disc to extend chordwise thereof, a flattened portion bridging the space between adjacent feeder channels, a plurality of orifice feeder passages communicating between the apex region of each of said feeder channels and the obverse face of said disc to thereby define a plurality of spinning orifices along said obverse face; said feeder means comprising an integral body portion having a substantially planar surface, a plurality of V-shaped distribution channels formed in said surface of a depth greater than the depth of said feeder channels, the upper portions of the walls of said distribution channels being so shaped as to mesh in substantially fluid-tight relationship with said feeder channels, whereby the apex regions of said distribution channels and said flattened portions intervening said feeder channels together define a plurality of manifold passages.

3,224,042
HYDROSTATIC PRESSURE DEVICE
Milton Meissner, Edgeworth, Pa., assignor to Barogenics, Inc., New York, N.Y., a corporation of New York
Filed Oct. 23, 1963, Ser. No. 318,220
10 Claims. (Cl. 18—16)



1. A hydrostatic pressure device comprising a base plate having a cylindrical boss extending upwardly therefrom, a first cylinder having a bore completely therethrough disposed about said cylindrical boss and supported on said base plate, sealing means between the bore of said first cylinder and said cylindrical boss and defining a first chamber having an opening at the upper end thereof, a second cylinder supported on said base and having a bore therein, the wall of said second cylinder bore spaced from and surrounding the outer wall of said first cylinder, sealing means arranged between the lower ends of said first cylinder and said second cylinder and defining in the bore of said second cylinder a second chamber having an opening at the upper end thereof, said second chamber surrounding said first chamber and being at least axially coextensive with said first chamber, a hydrostatic medium in each of said first and second chambers, a ram having a first downwardly extending piston disposed within the opening of said first chamber, and a second downwardly extending piston disposed in the opening of said second chamber, sealing means between said first downwardly extending piston and the opening of said first chamber, and sealing means between said second downwardly extending piston and the opening of said second chamber, said first and second pistons on the ram being movable conjointly into the respective chambers to create hydrostatic pressure in the media therein.

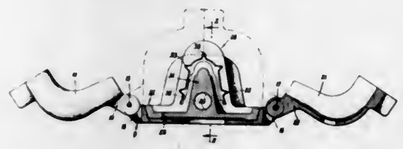
3,224,043
INJECTION MOULDING MACHINES
Koenraad J. Lameris, Groningen, Johan M. Kluun, Haren, Groningen, and Henrikus H. Sieben, Groningen, Netherlands, assignors to N. V. Lego Nederland, Groningen, Netherlands, a Dutch company
Filed Mar. 15, 1963, Ser. No. 265,502
Claims priority, application Netherlands, Mar. 16, 1962, 276,020
3 Claims. (Cl. 18—30)



1. An injection molding machine comprising at least two composite molds each of which is composed of a nozzle mold part and a counter mold part, said mold parts

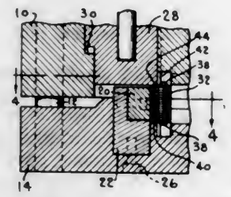
being mounted for relative movement and adapted to be pressed against each other during the molding process, said nozzle mold parts being spaced apart and in alignment with each other, a support carrying at least two pairs of said counter mold parts and being rotatable to move each pair of counter mold parts into a position opposite said nozzle mold parts, a closing device for moving one of said mold parts and operable to close both aligned composite molds by pressure against a pair of counter mold parts on said support.

3,224,044
DENTAL FLASKS
Samuel Harris, 94—15 69th Ave., Forest Hills 75, New York, N.Y.
Filed July 8, 1963, Ser. No. 293,507
5 Claims. (Cl. 18—33)



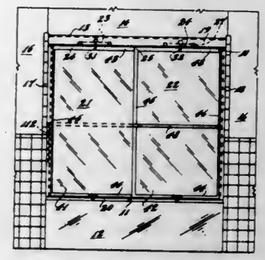
1. The combination with a three member hinged dental flask comprising a base member having upstanding spaced-apart sidewalls, a first upper flask member pivotally connected to said base member, a second upper flask member pivotally connected to said base member, and a platform member adapted to be placed in said base member, of a matrix element that is adapted to fit over but spaced from said platform member whereby a dental bridge can be embedded in investment material over said matrix element and the matrix element and bridge in turn embedded in investment material over said platform member.

3,224,045
MOLD FOR MAKING A COMBINED ELECTRO-MAGNETIC ARMATURE AND CONTACT CARRIER
Donald R. Hodge, Brookfield, Edmund A. Janicki, Brown Deer, and Carl F. Meidel, Wauwatosa, Wis., assignors to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware
Original application June 30, 1961, Ser. No. 121,248. Divided and this application Mar. 2, 1964, Ser. No. 348,383
2 Claims. (Cl. 18—36)



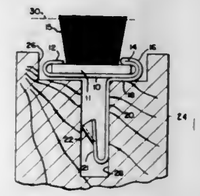
1. A mold for a contact carrier assembly having a magnetically responsive armature therein comprising, a fixed member and a movable member, magnetic means within one of said members for holding said armature in position, and a member movably mounted in the other mold member and when biased inwardly engaging said armature when the members are closed to prevent displacement of said armature by the pressure of the molding material and to compensate for variation in thickness of armatures.

3,224,046
BATHTUB ENCLOSURE DOOR HOLDER
Herbert J. Walters, Philadelphia, Pa.
Original application May 13, 1963, Ser. No. 279,873, now Patent No. 3,188,699, dated June 15, 1965. Divided and this application Mar. 4, 1965, Ser. No. 437,126
4 Claims. (Cl. 20—19)



1. In a door holder for a sliding and pivoting type bathtub enclosure door incorporating a horizontal towel bar and sliding within an enclosing frame, a channel-shaped lock bar pivotally connected at one end thereof to an upright member of said enclosing frame, said lock bar having a vertical, closed position and an operating horizontal position, said lock bar arranged to swing entirely within the confines of the said frame member when in closed position, said lock bar having downwardly facing flanges when in the operating position, said lock bar spacing the said door away from the said frame when in operating position and towel bar gripping means milled in said flanges.

3,224,047
WEATHERSTRIPPING
Robert C. Horton, Pittsford, N.Y., assignor to The Schlegel Manufacturing Company, Rochester, N.Y., a corporation of New York
Filed May 1, 1963, Ser. No. 277,296
1 Claim. (Cl. 20—69)



In a generally T-shaped article for weatherstripping use, the combination comprising:

(a) an elongate backing strip;

(b) a row of pile fibers secured to said backing strip intermediate its edges to form an elongate, deep pile row of insulating fibers, said backing strip extending laterally beyond the area of juncture of said pile row and said backing strip along each respective edge of said backing strip;

(c) an elongate sheet metal holding strip adapted for maintaining said pile row in a desired insulating position;

(d) said sheet metal holding strip being formed to define an elongate generally flat base portion forming the cross arm of a T;

(e) said backing strip being disposed flat on said base portion so that said pile row extends outward from one side of said base portion;

(f) a first longitudinal edge of said sheet metal holding strip being bent over a first longitudinal edge of said

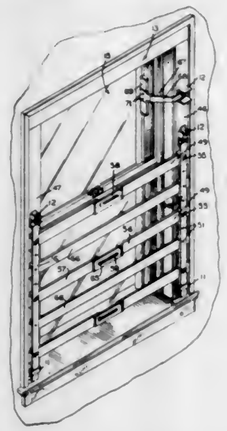
backing strip to clamp said first longitudinal edge of said backing strip to said base portion;

(g) said sheet metal strip being folded upon itself along a longitudinal line outward of a second opposite longitudinal edge of said backing strip, and said folded portion of said sheet metal strip being bent over said second edge of said backing strip to clamp said second edge of said backing strip securely to said base portion;

(h) said sheet metal strip being bent away from said base portion along a longitudinal line spaced from said fold line so as to form a flange extending away from the side of said base portion opposite that side from which said pile row extends and forming the upright arm of a T; and

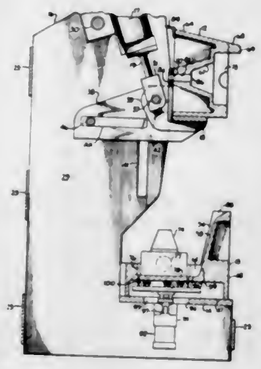
(i) a second opposite longitudinal edge of said metal holding strip being upturned to form a lip angled away from said flange at an acute angle to provide an edge for biting into one wall of a slot into which said holding strip is inserted with said flange engaging the opposite wall of said slot to resist withdrawl of said holding strip from said slot and thereby dispose said pile row in a desired insulating orientation.

3,224,048
REMOVABLE SAFETY BAR FOR WINDOWS, DOORS AND THE LIKE
Marie C. Sullivan, 198 Forest St., Needham, Mass.
Filed May 20, 1965, Ser. No. 457,338
7 Claims. (Cl. 20—71)



1. A removable safety bar for windows and doors comprising a first bracket adapted to be fastened to a frame of such window or door, a second bracket adapted to be fastened to a frame of such window or door at a point removed from said first bracket, and an elongated bar having a substantial width extending therebetween; said first bracket comprising a base adapted to be secured to said frame, and a U-shaped element secured to said base, said U-shaped element having a portion extending parallel to said base and spaced therefrom; said second bracket comprising an inverted U-shaped element having a base and a pair of upstanding arms, said base of said second bracket being adapted to be secured to said frame and said arms being separated from each other by a distance slightly in excess of the width of said bar, said inverted U-shaped element being provided with an upstanding bolt extending from the central portion of its base parallel to said arms for a distance approximately equal to the length of said arms; said bar comprising a first bar member being provided at one end with an integral tongue adapted to slide into said first bracket between said base and said U-shaped element, and at the other end with means for fastening said bar to said second bracket, said fastening means comprising an extension on said bar extending at substantially right angles to the plane thereof and provided with a elongated slot extending for a substantial portion of the length of said extension, a separate second bar member substantially as-wide as said first bar member and provided at one end with a projection extending through said slot and at a central portion with an aperture adapted to engage the bolt on said second bracket, said projection provided when extending through said slot with capping means maintaining said second bar member substantially parallel with said first bar member and said projection in sliding engagement with said slot, said first bar member being of such length that said right angle extension is positioned adjacent to said second bracket when said bar is in place, and nut means adapted to cooperate with said upstanding bolt to retain said fastening means in said second bracket.

3,224,049
PERMANENT-MOLD CASTING MACHINE
Stanley J. Woods, Hinsdale, and Edmund W. Woods and Harry M. Woods, Chicago, Ill., assignors to Pentagon Pattern and Engineering Company, Chicago, Ill., a corporation of Illinois
Filed Jan. 21, 1963, Ser. No. 252,865
4 Claims. (Cl. 22—90)



4. A permanent-mold casting machine comprising, in combination,

a support,

upper and lower mold carriers movably mounted on said support,

upper and lower mold platens mounted respectively on said upper and lower mold carriers and having interfacing mating surfaces,

a first portion of said interfacing surfaces being disposed in a horizontal plane to form a mold cavity and a second portion being disposed upwardly at an oblique angle to the horizontal plane to form a sprue passageway,

an open riser formed in said upper platen,

an ejector assembly for ejecting a casting from said lower mold platen including a face plate movably mounted on said lower carrier,

said assembly including ejector pins extending upwardly from said face plate and slidably received in said lower mold carrier for penetrating into said mold cavity,

means for moving said ejector pins into and out of said mold cavity,

means for moving said upper mold platen vertically relative to said lower platen and pivotally,

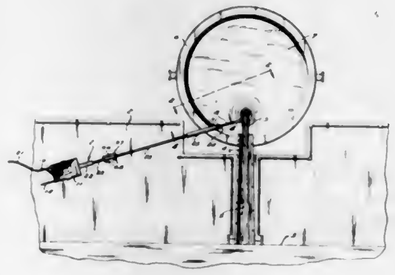
means for moving said lower mold platen pivotally, and actuating means for actuating said means in a correlated predetermined sequence.

3,224,050
PRE-FABRICATED DENTAL FRAME MODEL WITH A SEAL FACILITATING GROOVE
Kurt Redtenbacher, 1 Nisselgasse, Vienna, Austria
Filed Oct. 1, 1962, Ser. No. 227,225
Claims priority, application Austria, Oct. 6, 1961, A 7,535/61; Oct. 11, 1961, A 7,655/61
1 Claim. (Cl. 22—158)



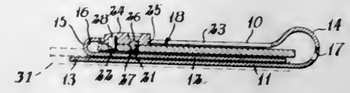
A pre-fabricated thermoplastic part for the manufacture of the mold of a metallic frame intervening in the producton of a dental restoration member, comprising an occlusal bar, proximal walls defining an under cut with said occlusal bar, and said occlusal bar and proximal walls having a continuous groove in their edge faces.

3,224,051
METHOD OF INTRODUCING ADDITION AGENT INTO A MELT
John W. Brown, Jr., Lakewood, Arthur C. Buesing, North Olmsted, and Francis T. Kaiser, Fairview Park, Ohio, assignors to Brown Fintube Company, Elyria, Ohio, a corporation of Ohio
Filed Jan. 31, 1962, Ser. No. 170,204
6 Claims. (Cl. 22—215)



1. A process of supplying to molten metal an additive of a density less than that of the metal, comprising causing the molten metal to flow in a freely falling, essentially solid stream into a receptacle and to impinge therein with substantial turbulence, propelling by air under pressure a substantially continuous stream of solid particles of additive having a minimum dimension of essentially ⅛ inch into said freely falling stream of molten metal at a velocity sufficient to cause the particles to penetrate below the surface of the molten metal in said stream and so that substantially all propelled particles are captured by the metal in said freely falling stream, and controlling the rate and duration of said propelling of said particles to cause substantially the amount of additive required to produce the desired reaction in the total amount of molten metal discharged during the duration of flow of said stream of molten metal to penetrate said stream of molten metal and be carried along therewith.

3,224,052
CLIP FOR PAPER CURRENCY
Harry M. Abraham, 1246 Pratt Blvd., Chicago, Ill., assignor of one-half to John Howarth and Loyd C. Johnson
Filed Mar. 20, 1964, Ser. No. 353,344
3 Claims. (Cl. 24—3)



2. A clip comprising in combination a holder formed from a single piece of resilient flat stock having one end folded over and substantially uniformly spaced from an intermediate section thereof and the opposite end thereof folded over and resiliently bearing against the folded first end to form a flat chamber between the said one end and intermediate section, there being a slot in said intermediate section extending longitudinally therein, a slide extending into the slot and movable therealong, a key in the chamber, and means securing the slide to the key, said holder having an opening in the fold of the opposite end through which said key can be projected by the slide.

3,224,053
HOLDING CLIP FOR POCKET INSTRUMENTS
Roy M. Jenkins, Burbank, Calif., assignor to Lindy Pen Co., Inc., Culver City, Calif.
Filed Oct. 2, 1963, Ser. No. 313,379
2 Claims. (Cl. 24—11)



1. A clip assembly for a pocket instrument comprising in combination: a post member integral with the external surface of the pocket instrument and extending outwardly therefrom, said post member having a forward flanged portion extending above the instrument, an intermediate portion tapering inward toward the instrument and terminating in a rearward seating portion having a planar surface parallel to said flanged portion, and a rear wall substantially orthogonal to said planar surface; and a clip member having resilient pocket gripping means and box-like attaching means adapted to enclose and abut against said seating means rear wall, said gripping means being normally biased for pivoting said box-like means into close fitting engagement with said post member and said rear walls, whereby said clip member, when in place, is prevented from forward sliding motion by the engagement of said rear wall with an end portion of said box-like attaching means.

3,224,054
WIRE TIES
Frederick O. Lige, Rte. 3, Hillsdale, Mich.
Filed Feb. 13, 1963, Ser. No. 258,308
2 Claims. (Cl. 24—16)



1. In a wire tie strip of indeterminate length from which a wire tie of determinate length may be severed comprising, in combination,

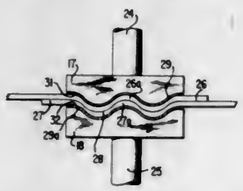
(a) an elongated strip of flexible material having a repetitive configuration throughout its length and having a longitudinal axis and longitudinal edges,

(b) notches defined in each strip longitudinal edge formed by surfaces obliquely related to said strip longitudinal axis, the oblique surfaces of opposite side edges being axially aligned whereby arrowhead-shaped portions are defined in said strip each having a narrow neck portion and a base portion, said base portions defining said strip maximum width, said base portions each defining a strip abutment shoulder transversely disposed to the strip axis,

(c) a longitudinally extending slit defined in each of said arrowhead-shaped portions having first and second ends and of a length substantially equal to the maximum strip width as defined by said base portions, said slit second end being disposed adjacent the neck portion of the associated arrowhead-shaped portion and said slit first end being disposed adjacent the base portion of the associated arrowhead-shaped portion, and

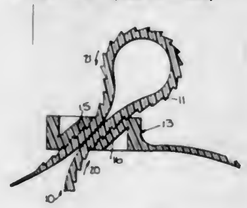
(d) a cross slit defined in each of said arrowhead-shaped portions intersecting the associated longitudinally extending slit first end, said cross slit being transversely disposed to said strip longitudinal axis and of a length substantially equal to the width of said narrow neck portions.

3,224,055
PACKAGE BINDING DEVICE AND METHOD AND APPARATUS FOR FORMING SAME
Keith L. Orser, Auburn, N.Y., assignor to Columbian Rope Company, Auburn, N.Y., a corporation of New York
Filed Mar. 19, 1963, Ser. No. 266,452
5 Claims. (Cl. 24—16)



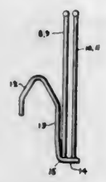
1. A package binding device comprising a length of generally flat tape of homogeneous, orientable plastic material in a longitudinally oriented condition encircling the package, and a uniformly wide sleeve of compressed material enclosing both end portions of said tape, the faces of said tape having an even surface, the interior surfaces of said sleeve pressingly engaging the faces of said enclosed tape portions with a pressure evenly distributed thereover, said sleeve and enclosed end portions forming a lamination having a single curvature shape in the form of a series of smoothly curving undulations extending longitudinally of the tape, that portion of each said tape end portion enclosed within said sleeve being a continuous section of substantially uniform thickness and width.

3,224,056
STRAP SEAL
Edward J. Joffe, Summit, N.J., assignor to Park Plastics Co. Inc., Linden, N.J., a corporation of New Jersey
Filed Nov. 29, 1963, Ser. No. 326,924
9 Claims. (Cl. 24—16)



1. In a combination of the class described, a strap having ratchet teeth formed thereon, a head having a passage formed with ratchet teeth at each of opposed sides thereof, said strap being of such thickness relatively to said passage that when passed through said head passage in one direction with its ratchet teeth facing one side of the passage and then folded and passed through said passage in a reverse direction, with its teeth facing in a reverse direction said strap fills said passage so that said teeth on said strap are in engagement with the ratchet teeth of said opposed sides of the opening, and said teeth on said opposite sides being oppositely shaped so that the strap portion at one side of the fold can move in said passage in one direction by the ratcheting of said teeth while the part at the other side of said fold can move only in an opposed direction by the ratcheting of said ratchet teeth.

3,224,057
DRAPERY PLEATER HOOK
Karl F. Sonntag, Middlebury, Conn., assignor to Scovill Manufacturing Company, Waterbury, Conn., a corporation of Connecticut
Filed May 26, 1964, Ser. No. 370,230
2 Claims. (Cl. 24—84)



1. A four-finger pleater hook for use with a drape having a plurality of pockets at the upper end thereof, the pockets being open at their lower ends, which comprises

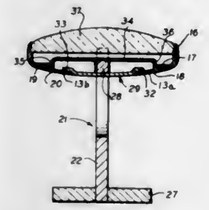
(a) a U-shaped wire providing a pair of vertical closely spaced and generally straight fingers;

(b) a second U-shaped wire providing a second pair of more widely spaced and generally straight vertical fingers;

(c) the plane of said more widely spaced fingers being a substantial distance forward of the plane of said closely spaced fingers; and

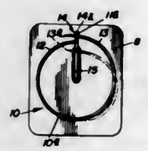
(d) a rearwardly projecting supporting hook having a shank portion which is shorter than either of said pairs of fingers, said shank portion being bent forwardly at its bottom end into the plane of the widely placed pair of fingers and being welded to both pairs of fingers.

3,224,058
CUFF LINKS
Abraham Blumstein, 9803 69th Ave., Forest Hills, N.Y.
Filed Nov. 15, 1963, Ser. No. 324,067
7 Claims. (Cl. 24—97)



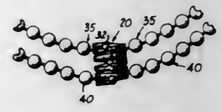
7. In a toggle finding for a jewel, a shell having an open top, and a peripheral wall having top and bottom edges and being sized and shaped to receive a jewel therein through said open top and having inward seat means for reception of the bottom of a jewel, said peripheral wall having opposing longitudinally extending sides having respective slots extending to one out of said top and bottom edges of the peripheral wall, a bottom closure for said peripheral wall having longitudinally spaced bottom closure slots with said side slots longitudinally between said bottom slots, a longitudinally extending blade spring within said shell below said seat and extending between said bottom slots, cooperating means connecting the ends of said blade spring and said bottom closure for fastening said blade spring to said bottom closure, and a yoke having legs on each side of said shell and a cross bar extending between said legs, said bar being substantially square in cross-section, said bar extending through said slots and in turnable and resiliently clamped relationship with said blade spring and said bottom closure.

3,224,059
SECURING MEANS FOR A GARMENT ORNAMENT
Arthur R. Scheberle, 432 S. 2nd St., Sterling, Colo.
Filed Jan. 10, 1964, Ser. No. 336,962
5 Claims. (Cl. 24—103)



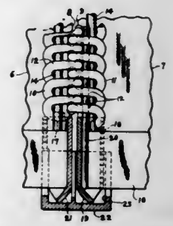
1. A detachable garment ornament, badge, button, or the like having top and bottom edges, a display front and a garment-opposing back, comprising, in combination, a functionally integral ornament-back-carried garment-supported means comprising a loop of resilient wire-like material, said loop providing upper and lower portions and the upper portion providing overlappable free end portions which are located adjacent the ornament top, one of said loop end portions having a garment piercing terminal, the other loop end portion terminating in a seat for the first mentioned loop end portion inwardly of its piercing terminal, said seat being disposed between the loop and the ornament back, whereby to maintain said loop closed when the ornament is being worn, and the inner end of said seat providing a portion which is secured to the back of said ornament adjacent its top, whereby when the ornament is being worn it will hang downwardly and be pivotally sustained by said garment supported seat.

3,224,060
CLASP FOR STRUNG BEADS
Leila Harris Ogden, 3980 Randall Mill Road NW., Atlanta, Ga.
Filed Aug. 13, 1963, Ser. No. 301,794
2 Claims. (Cl. 24—116)



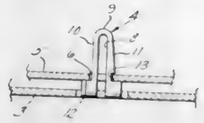
1. An article of jewelry for use as a clasp with strung beads, said clasp comprising a tubular member, said member having a pair of slots extending spirally inward from opposite ends, for removable insertion therein of interbead portions of cord on which the beads are strung, and pivoted closure means at opposite ends of said tubular member for opening and closing respective slots to removably secure strung beads inserted in said slots, said closure means comprising a pair of arms each pivotally connected to a respective end of said tubular member at a point angularly spaced from the adjacent slot end and swingable into and out of the adjacent slot end to close and open the latter.

3,224,061
TERMINAL MEMBER FOR PLASTIC FILAMENT ZIPPERS
Donald O. Taylor, Waterbury, Conn., assignor to Scovill Manufacturing Company, Waterbury, Conn., a corporation of Connecticut
Filed Sept. 17, 1964, Ser. No. 397,118
2 Claims. (Cl. 24—205.11)



1. In a zipper fastener, a fabric stringer, fastening means of the continuous plastic filament type carried by the stringer and presenting a series of closely spaced and aligned open loop portions along the stringer edge; a rigid terminal member clamped around said stringer in line with said open loop portions and a semi-rigid strand of material securely anchored inside said terminal member and extending into a plurality of said open loop portions adjacent one end of said series.

3,224,062
ATTACHMENT AND SPACING MEANS
Samuel Polonsky, Medway, Mass., assignor to General Electric Company, a corporation of New York
Filed Mar. 23, 1964, Ser. No. 353,838
1 Claim. (Cl. 24—214)



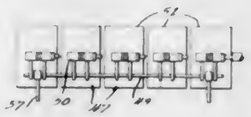
Attaching and spacing structure comprising: a mounting member having an aperture provided with opposed inside surfaces, a metal mounting plate, a mounting tab stamped from said plate by removing metal between the periphery of said tab and an opening formed in said plate during the stamping operation, said tab being deformed so as to project substantially perpendicularly from the plane of said plate, said tab comprising a loop with substantially parallel elongated portions and a rounded nose connecting said portions, each of said substantially parallel portions including a flat side surface having a width equal to the thickness of said metal mounting plate, one of said side surfaces being tapered toward the end of said tab, said opposed inside surfaces of the aperture in the mounting member being slidable on the flat side surfaces of said substantially parallel portions to deform said portions as the tab is forced into the aperture in the mounting member, a stop shoulder formed in said tab at a predetermined distance from the plane of said plate for abutting the mounting member to provide a predetermined spacing of said plate from the mounting member, and a notch in the outer edge of said tapered side adjacent said shoulder for engaging an edge of said aperture on the mounting member for holding said plate and the mounting member in predetermined spaced relationship.

3,224,063
GARTER GRIPS
Walter M. Jonas, Easton, Pa., assignor to Silbro Products Corp., Long Island City, N.Y., a corporation of New York
Filed June 22, 1964, Ser. No. 376,693
1 Claim. (Cl. 24—245)



A one-piece plastic frame for a garter grip comprising a lower gripping portion defining a keyhole-shaped opening and an upper attaching portion, said attaching portion having a generally laterally directed slot opening only at one side of the frame to form a lateral bar above the slot having a connection to the remainder of the frame only at the other side of the latter and being adapted to be inserted into a loop for removably suspending the garter grip therefrom, said slot being offset laterally toward said one side of the frame with respect to the longitudinal medial line of the frame so that said connection between said bar and said remainder of the frame is relatively wide to resist loads applied thereto, said lateral bar having an arcuate lower edge and a tangent to said arcuate lower edge at the lowest point thereon being inclined downwardly toward said one side of the frame with respect to a perpendicular to said longitudinal medial line of the frame so that, when the garter grip is suspended from a loop into which said bar is inserted, said frame is canted to locate said keyhole-shaped opening below the center of the loop.

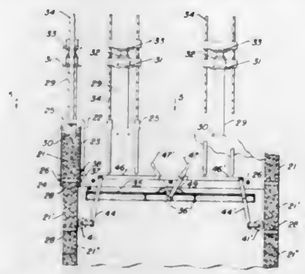
3,224,064
APPARATUS FOR MANUFACTURING PRE-TENSIONED REINFORCED CONCRETE SLABS
Robert J. Hummel, Pompano Beach, and Thomas D. Rembert and Howard L. Dennis, Fort Lauderdale, Fla., assignors to Houdaille Industries, Inc., Buffalo, N.Y., a corporation of Michigan
Filed Aug. 2, 1962, Ser. No. 214,272
5 Claims. (Cl. 25—41)



1. In an apparatus for manufacturing concrete slabs having spaced pre-tensioned strands extending therealong, a mobile frame suspended for movement along the ground in vertically spaced relation with respect thereto, a first bin mounted on said frame adjacent the forward end thereof, a second bin mounted on said frame and spaced rearwardly of said first bin, a vibrating compactor extending across said frame in the space between said first and second bins and suspended from said frame, said compactor having a series of parallel spaced elongated vibrating compacting shoes having advance plow-like ends for plowing the concrete over said strands, means for vibrating said shoes for compacting the concrete between and about said strands and forming channels between said strands, a transverse shaft extending across said frame rearwardly of said second bin and suspended from said frame and having a series of high frequency vibrating shoes individually pivoted thereto, said shoes having relatively flat compacting bottom surfaces for compacting the concrete laid by said second bin, links movably mounted on said frame at their upper ends and suspending said shaft from said frame for limited movement with respect thereto, spring means biasing said shaft and shoes in concrete compacting positions, and individual high frequency vibrators mounted on said shoes for independent floating engagement with the ground.

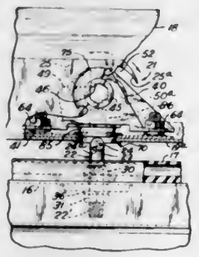
3,224,065
APPARATUS FOR BUILDING A HOLLOW CORE STRUCTURE
David B. Cheskin, 407 S. Dearborn, Chicago, Ill.
Filed Apr. 22, 1965, Ser. No. 453,543
2 Claims. (Cl. 25—131)

1. Apparatus for incrementally constructing a continuous vertically elongated reinforced concrete hollow core structure, which comprises in combination, a sectionalized substantially open-topped form section having opposing spaced wall portions which may be sprung apart and for forming concrete wall sections, and with peripherally adjacent sections of said form section effecting a ring-like form for the pouring of concrete in a continuous wall section, opposing spaced small openings along the lower edge portions of said wall portions adapted to accommodate removable bolt members, removable tubular support-spacer members of a length equivalent to the thickness of said wall sections and sized to encompass said removable bolt members, vertically spaced wall slots between adjacent sections of said form section providing sectionalized wall portions therefor and permitting the springing apart of the wall portions upon the release of said bolt means as clamping means at the lower end of said form section, working platform means extending between sectionalized wall portions of said form section and suspended therefrom such that as said form section is incrementally elevated there is a lifting of said platform means, locking-guide means projectable from at least one pair of opposing edge portions of said platform means, lever arm operated



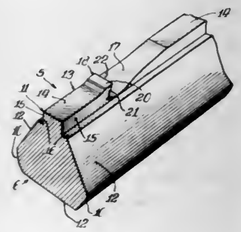
support means connecting with said guide wheel means whereby to maintain the latter in contact with previously poured concrete wall sections below the edge of said platform means and said form section, spaced lifting yoke means from the upper end of said form section, spaced lifting rod means from the upper end of said yoke means from said open-topped form section and demountable lifting means connective with each of said yoke means, with said lifting means being column supported and having column base support means sized and adapted to rest on the top surface of the superimposed concrete wall sections being formed to effect the incremental lifting of said form section and said connecting platform means.

3,224,066
CASKET LOCKING DEVICE
John S. Overland, Chicago, Ill., assignor to F. H. Hill Company, Inc., Cleveland, Ohio, a corporation of Ohio
Filed Apr. 26, 1962, Ser. No. 190,275
10 Claims. (Cl. 27—17)



1. In a casket having a body portion and a lid portion for closing said body portion, locking means for locking said lid and body portions together including a first latch member supported by one of said portions and projecting therefrom, the other of said portions having an opening therein into which said first latch member projects when said portions are in closed position, a second latch member, means mounted on the other of said portions for supporting said second latch member for movement relative to the other of said portions, means for moving said second latch member relative to the other of said portions from a withdrawn position to a latching position to engage said first latch member and lock said lid and body portions together, and cover means for blocking said opening when said portions are in open position and operatively connected with said second latch member and movable out of blocking position in response to movement of said second latch member relative to said other portion from said withdrawn position toward said latching position.

3,224,067
FELTING NEEDLES
Edson P. Foster, 511 W. 6th St., Manitowoc, Wis.
Filed Oct. 11, 1963, Ser. No. 315,475
2 Claims. (Cl. 28—4)



1. A felting needle having a body of substantially triangular cross-section, a ridge on said body portion formed at a corner edge of two adjacent side surfaces of said body portion, said ridge having an outer wall and spaced apart side walls constituting a narrow projecting fin extending lengthwise of said body and confined solely to said corner-edge, and a barb in said ridge.

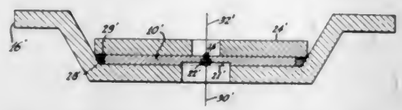
3,224,068
PROCESS FOR IMPARTING IMPROVED LATENT CRIMP TO FILAMENTS
Robert Alexander Edington, George Edward Barlow, and Peter Bernard Checkland, Harrogate, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
No Drawing. Filed May 15, 1963, Ser. No. 280,724
Claims priority, application Great Britain, May 24, 1962, 20,046/62
5 Claims. (Cl. 28—72)

1. A process for improving imparting of a latent crimp to continuous synthetic linear polymer filaments which on relaxing will have more uniformity and will have a greater regularity of bulk along the length of said filaments comprising passing continuous synthetic linear polymer filaments over a narrow surface indirectly heated to a temperature above the melting temperature of said filaments in such a manner that said filaments are uniformly heated on one side only continuously along their length.

3,224,069
METHOD OF FABRICATING SEMICONDUCTOR DEVICES
Derek Thorne, Somerville, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Original application July 20, 1960, Ser. No. 44,205. Divided and this application Apr. 1, 1965, Ser. No. 449,674
5 Claims. (Cl. 29—25.3)

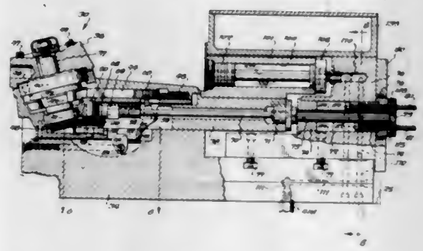
1. A method of fabricating a semiconductor device comprising the steps of preparing a given conductivity type semiconductive wafer with two opposing major faces, said wafer having a surface zone of said given conductivity type but greater conductivity than the interior thereof; bonding a first apertured base tab to one of said

major faces; removing said surface zone in the region within the aperture of said first base tab; attaching a first electrode to said wafer within said aperture; attaching a second electrode to the other said opposing major



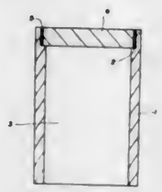
wafer face; bonding a second apertured base tab to the said other opposing major wafer faces so that the aperture of said second base tab surrounds said second electrode and is coaxially aligned with the aperture of said first base tab; and bonding said base tabs together.

3,224,070
AUTOMATIC MACHINE TOOL CONTROL MECHANISM
Henry L. Cunningham, Horseheads, N.Y., assignor to Hardinge Brothers, Inc., Elmira, N.Y.
Filed Apr. 3, 1963, Ser. No. 270,430
7 Claims. (Cl. 29—42)



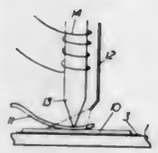
1. A hydraulic device for moving a machine part at different selectable speeds which comprises:
- a pair of adjacent, closed, parallel cylinders carried by said machine part and each having an opening at one end thereof,
- a pair of fluid conduits connecting the interiors of said cylinders, one conduit connecting one end of said cylinders together, the other conduit connecting the opposite ends,
- a reciprocable piston in each of said cylinders,
- one of said pistons having a passage from face to face,
- a hollow piston rod carried by said one piston communicating with said passage and extending out of said cylinder through said opening,
- another hollow piston rod carried by the other of said pistons having a hole proximate said other piston into said cylinder and extending out of said cylinder through said opening,
- said piston rods having their free ends rigidly affixed against movement,
- a source of motive fluid,
- means for selectively admitting said motive fluid through one of said piston rods whereby when said fluid is admitted into one of said hollow rods said machine part will be moved in one direction while fluid is discharged from said another piston rod, and when admitted into said another piston rod and discharged from said one piston rod said machine part will be moved in the opposite direction,
- means for controlling the rate of discharge of said motive fluid.

3,224,071
BRAZING METHOD FOR POROUS BODIES
Roberto Levi, New York, and Robert Vann Eggleston, Hastings on Hudson, N.Y., assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Mar. 14, 1960, Ser. No. 14,793
9 Claims. (Cl. 29—155.5)



1. A method for brazing a porous metal member selected from the group consisting of tungsten, tungsten-molybdenum alloy, rhenium, molybdenum, hafnium and niobium with interconnected pores to a support without substantially reducing the porosity of the metal member utilizing a brazing material which when molten will penetrate the pores of said member if contacted thereto, comprising the steps of filling the pores of the metal member with a filler substance substantially unreactive with the porous metal member and capable of removal therefrom and having a low vapor pressure at the melting temperature of the brazing material, placing the filled metal member on the support with said brazing material in the vicinity of their junction, thereafter heating the assembly until the brazing material liquifies, said filler acting as a barrier and preventing the liquid braze from penetrating the pores of the metal member, cooling the assembly to refreeze the brazing material and form a solid bond between the support and the metal member, and thereafter removing the filler substance from the pores of the metal member.

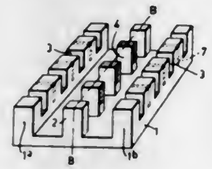
3,224,072
METHOD OF FORMING AN ELECTRICAL CONNECTION TO AN INSULATING BASE
Leo Ewart Arthur Summers, Rosedale, Fosse Lane, Nailsea, Somerset, and Roger John Horwood, Inglenook, Shoscombe, near Bath, Somerset, England, assignors to Bristol Aircraft Limited, Bristol, England, a British company
Filed Dec. 27, 1962, Ser. No. 247,660
Claims priority, application Great Britain, Jan. 5, 1962, 553/62
7 Claims. (Cl. 29—155.5)



1. A method of forming on an insulating base an element of a metal of high electrical conductivity comprising the steps of depositing on the base in a vacuum chamber a primary layer of a metal different from said highly conductive metal and which will provide good bonds both between itself and the material of the base and between itself and said highly conductive metal, then depositing on said primary layer by vacuum deposition at least three layers of said highly conductive metal, the temperature of the base being reduced for the depositing of each successive layer of said highly conductive metal and the deposition of each successive layer of highly conductive metal being continued until it is thicker than the preceding one.

7. A method of forming on an insulating base an element of gold and of connecting a gold wire thereto, comprising the steps of depositing on the base in a vacuum chamber a primary layer of a different metal which will provide good bonds both between itself and the material of the base and between itself and gold, then depositing on said primary layer by a vacuum deposition method comprising the evaporation of a gold source at least three layers of gold, the temperature of the base being reduced for the depositing of each successive layer of gold and the deposition of each successive layer of gold being continued until it is thicker than the preceding one, preheating the insulating base with a stream of hot inert gas and bonding the gold wire to the top layer of the deposited gold element by the application of heat and pressure in the presence of the hot inert gas.

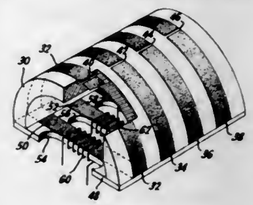
3,224,073
METHOD OF MAKING MULTI-TRACK MAGNETIC HEADS
Hans Peter Peloschek, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed May 2, 1963, Ser. No. 277,612
Claims priority, application Netherlands, May 9, 1962, 278,248
4 Claims. (Cl. 29—155.5)



1. A method of manufacturing a portion of a multi-track magnetic head, comprising: providing a plurality of spaced-apart grooves in the sides of a channel-shaped holder composed of nonmagnetic ferrite, said holder having a plurality of abutments spaced equally between said sides and projecting from the bottom of the holder in the same direction and having the same height as said sides, each abutment being aligned with a corresponding pair of solid portions of said sides, cementing a channel-shaped core composed of magnetic ferrite in each pair of corresponding grooves, the grooves having a depth such that after a core is placed therein the upper surfaces of the sides of the holder and the upper surfaces of the core are substantially co-planar, polishing all of said surfaces, dividing the resulting assembly into two parts along a plane passing through said abutments transversely through the holder, and bonding said parts together at said surfaces with non-magnetic bonding material, corresponding portions of said parts being located adjacent each other with the nonmagnetic bonding material being located therebetween, whereby the bonding material located between adjacent core surfaces provides the gap for each head.
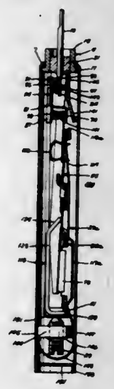
3,224,074
METHOD OF MAKING A MAGNETIC RECORDING HEAD STRUCTURE
Charles J. Peters, Wayland, Mass., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Original application June 24, 1960, Ser. No. 38,613. Divided and this application Aug. 7, 1963, Ser. No. 303,712
5 Claims. (Cl. 29—155.5)

1. A method of making a magnetic transducer head having a core of magnetic material with a gap therein supported on a non-magnetic supporting member and having a winding around the core, which comprises the steps of: depositing a thin film loop of magnetic material on a support member formed of non-magnetic material, coating said film with an etchant-resistant material, removing a strip of said etchant-resistant material to expose an area of said film having the desired location and dimensions of said gap, subjecting said exposed area



to an etchant which attacks the material of said film but does not attack said non-magnetic and said etchant-resistant materials to remove the magnetic material in said exposed area down to the supporting member to form a gap in said loop, removing the etchant-resistant material, and placing a winding around the core.

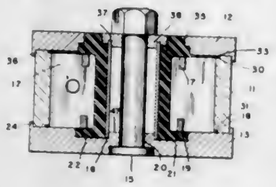
3,224,075
METHOD OF MANUFACTURING A THERMALLY RESPONSIVE SWITCH
Edward O. Andersen, Rock Falls, Ill., assignor to General Electric Company, a corporation of New York
Original application Dec. 28, 1960, Ser. No. 78,922, now Patent No. 3,134,002, dated May 19, 1964. Divided and this application Nov. 1, 1963, Ser. No. 320,902
1 Claim. (Cl. 29—155.5)



A method of manufacturing a thermally responsive switch wherein a U-shaped toggle spring has two oppositely disposed indented portions and continuously biases an operating member toward one of two switch positions within a hermetically sealed elongated housing, said method comprising the steps of wrapping one end of an elongated flexible strip around the transverse rib of a support; pivotally mounting the operating member upon said support; placing one indented portion of the U-shaped toggle spring in pivotal engagement with said strip and placing the other indented portion of the toggle spring in biasing engagement with the operating member; inserting the switch elements including the support, the strip attached thereto, the toggle spring, and the operating member within said housing through one end thereof with the other end of the elongated strip extending out-

wardly from said housing end, one end of the housing, providing an abutment for the support at said one end, tensioning said flexible strip to move the associated indented portion longitudinally toward said abutment of said one end of the housing and thereby vary the biasing force applied to said operating member by the toggle spring; fastening said flexible strip to said housing to maintain the desired biasing force characteristic during operation of said switch, and hermetically sealing said housing.

3,224,076
METHOD OF MAKING A COMMUTATOR
James L. Johnson, Jr., Ripley, N.Y., and Lloyd J. Krull, Erie, Pa., assignors to The Electric Materials Co., Erie, Pa., a corporation of Pennsylvania
Filed Mar. 1, 1962, Ser. No. 176,664
2 Claims. (Cl. 29—155.54)



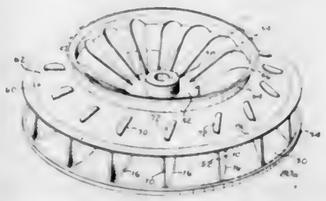
1. A method of making a commutator comprising
providing a building ring having a generally cylindrical hollow with peripherally spaced axially extending grooves in the inner periphery thereof for receiving fins on commutator bars,
providing commutator bars having fins on one side edge and axially extending notches in their ends,
inserting said commutator bars in said ring with said fins in said grooves whereby said bars are held in circumferentially spaced relation,
applying an impregnated glass tape in said notches thereby forming a band locating said commutator bars against radial movement,
closing said building ring by application of a top plate and a bottom plate, said top plate being provide with an aperture,
filling said spaces between said bars with an epoxy resin, through said aperture,
curing said resin,
removing said ring and cover plates and removing said fins from said bars.

3,224,077
METHOD OF FORMING AN ELECTRICAL CONDUCTOR FOR STORAGE BATTERY TERMINALS
Paul Gustaaf Phlips, Hombeek, Belgium, assignor to Burndy Corporation, a corporation of New York
Filed Dec. 28, 1962, Ser. No. 247,938
1 Claim. (Cl. 29—155.55)



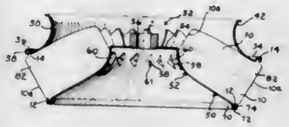
The method of forming an electrical connector for storage battery terminals so as to provide such a connector with an improved combination of resiliency and electrical conductivity, comprising the steps of: inserting an elongate body of highly elastic metal having a given length into a hollow, tube-like body of highly conductive metal having an axial length greater than said given length; deforming a first portion of the tube-like body into substantially flat strip form surrounding and securely engaging substantially the entire body of elastic metal, while allowing a second portion of said tube-like body to remain substantially undeformed; and subsequently further deforming said first portion into arcuately curved cylindrical form suitable for resiliently encircling and gripping a battery terminal.

3,224,078
METHOD OF MAKING A TURBINE TYPE BLOWER WHEEL
Robert A. Mayne, deceased, late of Oakwood, Ohio, by Ruth D. Mayne, executrix, 145 Collingwood Ave., Oakwood, Ohio
Filed Sept. 30, 1963, Ser. No. 313,148
7 Claims. (Cl. 29—156.8)



1. The method of manufacturing a turbine type blower including the steps of forming a pair of disc members, forming blades from the disc members, bending the blades from the plane of the disc members, said blades having tabs and being integral with the disc members, and a marginal portion on each disc member extending beyond the blades, forming an aperture in the center of each disc member, forming a supporting disc member, forming a frustum conical portion in the center of the supporting disc member, said frustum conical portion having equally spaced notches adjacent the apex, positioning the pair of bladed disc members upon the supporting disc member with the frustum conical portion projecting through the aperture in said bladed disc member, and with the blades of one disc member being equally spaced between the blades of the other disc member, projecting the inner portions of the blades through the slots in the frustum conical portion, forming a frustum conical member with slots therein, forming a centrally disposed aperture in the frustum conical member, projecting the tabs of the blades through said last mentioned slots, turning the tabs against the side of the frustum conical member, forming an axially disposed flange surrounding the centrally disposed aperture in said frustum conical member, and flaring outwardly the outer margin of the flange to form a venturi intake opening for the turbine type blower.

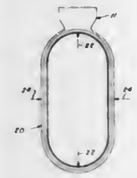
3,224,079
METHOD FOR MANUFACTURE OF TURBINE TYPE BLOWER WHEELS
Henry G. Dybvig, Kettering, Ohio, assignor to Ruth D. Mayne, Dayton, Ohio
Filed Dec. 28, 1964, Ser. No. 421,731
5 Claims. (Cl. 29—156.8)



1. The method of manufacturing a blower wheel of the turbine type, including the steps of forming a pair of arcuate flat sheet metal members, forming blades from the sheet metal members integral with marginal portions

thereof, superimposing the two arcuate flat sheet metal members with the blades of one sheet metal member projecting through the openings formed by forming the blades of the other sheet metal member, the margin of the sheet metal member terminating in a convex edge being longer than the other margin terminating in a concave edge, the blades of one member alternating with the blades of the other member, the margins of the superimposed sheet metal members being permanently secured together, curving the marginal portions into cylindrical portions, the marginal portions along one side of the secured members forming a cylinder having a smaller diameter than the diameter of the marginal portions along the other side of said secured members so that the outlet of the turbine wheel lies in a conical section forming an acute angle with respect to the axis of rotation of the wheel, securing the ends of the marginal portions together so as to form a closed cylindrical member on each side of the blades, forming a back-up support plate, securing the support plate to one of the marginal portions, forming a frustum-conical member surrounding the intake opening of the blower wheel, and securing the margin of the frustum-conical member to the other marginal portion of the blower wheel.

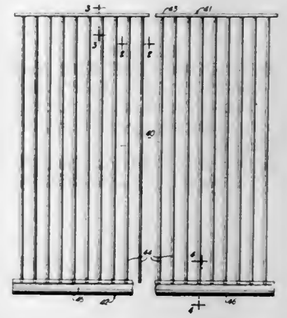
3,224,080
VALVE CONSTRUCTION METHOD
Austin U. Bryant, Walnut Creek, and Leo K. Edwarde, Piedmont, Calif., assignors to Grove Valve and Regulator Company, Oakland, Calif., a corporation of California
Filed Oct. 21, 1964, Ser. No. 405,360
7 Claims. (Cl. 29—157.1)



1. A method of fabricating a valve body band comprising the steps of:
providing a partial ring having a gap therein and a block with an arcuate portion thereon of a length and curvature substantially to fill said gap,
inserting said block in said gap with the ends of said arcuate surface adjoining the ends of said partial ring,
welding together the adjoining pairs of ends,
forming a groove around each annular face of said closed ring to a depth greater than that ultimately desired,
forming said closed ring into an oval-shaped band by longitudinally pulling and transversely pushing said closed ring, and
then finishing said annular faces to reduce the depth of said grooves to that desired.

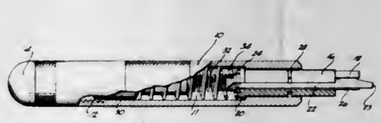
3,224,081
METHOD OF FORMING A SHELF
John H. Richter, Cynthiana, Ky., assignor to American Metal Climax, Inc., a corporation of New York
Filed Aug. 20, 1962, Ser. No. 217,939
4 Claims. (Cl. 29—160)

1. The method of forming a refrigerator shelf and the like comprising the steps of forming an elongated metal billet to a predetermined size; confining the billet in the chamber of an impact extrusion press with a die communicating with the chamber and provided with a plurality of die cavities for forming the wires of a shelf and an impact ram at opposite ends thereof; moving the die and ram relatively toward each other with sufficient force to effect impact extrusion of a portion of the material of



said billet through the die cavities to form said shelf wires while maintaining said wires connected to the remainder of the material of said billet in said chamber and simultaneously impact-forming said remainder into one side frame member of said shelf; removing said material from said press; and securing another side frame member to the ends of said shelf wires.

3,224,082
TOOL FOR UNLOCKING AND REMOVING FROM A CONNECTOR BLOCK AN ELECTRICAL CONTACT HAVING A LOCKING SPRING
Norbert L. Moulin, Placentia, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed Jan. 20, 1964, Ser. No. 338,793
3 Claims. (Cl. 29—203)



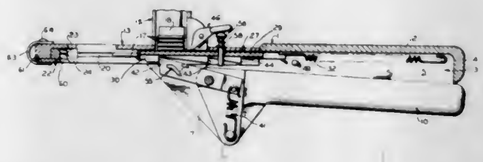
1. A tool for removing from a connector block an electrical contact having a locking spring engaging said block, said tool comprising:
a housing including an elongated cavity having one closed end;
an ejection spring in said cavity and engaging said one closed end;
a plunger mechanism movably positioned in said cavity and having one end engaging the other end of said ejection spring, said mechanism including a plunger having a bore, a bearing portion for engaging said block and an unlatching finger for depressing said locking spring when said bearing portion engages said connector block wherein both said bearing portion and said unlatching finger extend in spaced relationship from the other end of said plunger mechanism; and
an extractor mechanism carried by said plunger mechanism and movable within said bore including an extractor positioning spring having one end engaging one end of said bore and an extractor member having one end projecting from said one end of said plunger mechanism between said bearing portion and said

unlatching finger and the other end engaging the other end of said extractor positioning spring, said extractor member being depressed into said bore simultaneously with said bearing portion engaging said connector block thereafter a force of a predetermined magnitude applied to the closed end of said housing causes said plunger mechanism to depress into said cavity enabling said extractor member to extract said connector from said connector block.

3,224,083
PORTABLE APPARATUS FOR FASTENING CASINGS AND THE LIKE

Maynard J. G. Tipper, Oakland, Calif., assignor to Rheem Manufacturing Company, New York, N.Y., a corporation of California

Filed June 30, 1964, Ser. No. 380,260
7 Claims. (Cl. 29—243.57)



1. In a device for fastening a staple to the end of a casing or like article wherein a staple is fed by a punch along a track in a housing from a magazine into engagement with a die, driving means for actuating said punch comprising:

an elongated slide member including a punch longitudinally disposed relative to said track,

a lever swingably mounted relative to said housing for movement from an outer to an inner position and vice versa,

a connecting member interposed between said lever and said slide member for converting swinging movement of said lever to translation of said slide member,

said slide member being provided with three shoulders spaced apart longitudinally of said track and adapted to be engaged successively by said connecting member for moving said punch through successive partial strokes in the same direction upon successive actuations of said lever from an outer to an inner position,

the first and second shoulders engaged by said connecting member being spaced apart a relatively large distance compared to the spacing between the second and third shoulders,

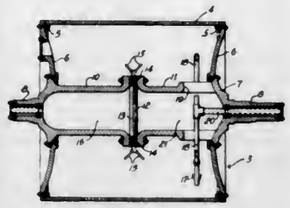
whereby said lever may be swung through a relatively large arc for advancing said staple a relatively great distance along said track upon the first and second actuations of said lever from an outer to inner position, and whereby said lever is swung through a smaller arc corresponding to a smaller advancement of said staple upon a third actuation of said lever.

3,224,084
METHOD OF MAKING A PRESSURE VESSEL FOR USE IN A PAPER MAKING MACHINE

Charles G. Russell Johnson, Neenah, Wis., assignor to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware

Original application Nov. 29, 1957, Ser. No. 699,704, now Patent No. 3,052,039, dated Sept. 4, 1962. Divided and this application Dec. 28, 1961, Ser. No. 162,680
7 Claims. (Cl. 29—469)

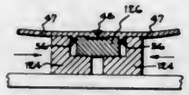
1. A method of making a welded wrought drum drier shell for use in a paper making machine comprising, cutting a generally rectangular metal plate having a pair of opposite side edges and a pair of opposite end edges at an angle greater than 5° to said side edges to provide a pair of plate segments, reversing the plate segments and welding said end edges together to form a generally parallelogram shaped section having a pair of opposite side edges and a pair of opposite diagonal edges, aligning the corresponding diagonal edges of a series of sections and welding the side edges of adjacent sections to form a generally parallelogram shaped pattern, forming the pattern to cylindrical shape with the axis of the cylindrical shaped pattern being disposed normal to a plane extending through the aligned diagonal edges of said sections, welding the adjacent side edges of the end sections in said pattern together to form an integral welded shell, and machining the outer surface of the welded shell to provide a smooth periphery on which a pressure member is adapted to ride.



3,224,085
METHOD OF WELDING A JOINT

James J. Black and Francis V. Roy, Cincinnati, Ohio, assignors, by mesne assignments, to Pullman Incorporated, a corporation of Delaware

Application Oct. 8, 1962, Ser. No. 233,174, now Patent No. 3,187,425, dated June 8, 1965, which is a division of application Ser. No. 25,324, Apr. 28, 1960, now Patent No. 3,131,949, dated May 5, 1964. Divided and this application Sept. 14, 1964, Ser. No. 402,375
1 Claim. (Cl. 29—493)

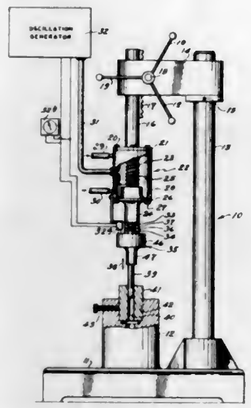


A method of forming an elongated wall member of predetermined width dimension from longitudinal extrusions each having a width lesser than said predetermined dimensions, each of said extrusions having an integral rib projecting laterally therefrom in uniform spacing from an edge of the extrusion and presenting at least one face defining an acute angle with respect to an adjacent portion of the extrusion, which method comprises placing said extrusions adjacent one another upon a guide bar with one face of the rib of each extrusion against a respective edge face of the guide bar, then exerting clamping pressure across the opposite faces of the said ribs and conjointly through the angulation of the said angulated faces of said ribs pulling said extrusions downwardly upon the face of said guide bar, whereby the width of the guide bar against which the said ribs are urged establishes the longitudinal alignment of said extrusions and the pull-down engagement of the extrusions with the face of the guide bar establishes that lateral alignment throughout their length, then seam welding the extrusions one to another along their adjacent edges while they are so aligned.

3,224,086
METHOD OF HIGH FREQUENCY VIBRATION FITTING

Lewis Balamuth, New York, N.Y., assignor to Cavitron Ultrasonics Inc., New York, N.Y., a corporation of New York

Filed Nov. 13, 1961, Ser. No. 151,932
4 Claims. (Cl. 29—525)

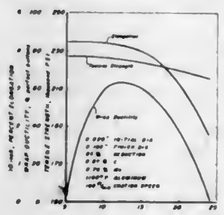


1. A method of effecting the insertion of one member into a corresponding opening defined by at least one other member, which opening is dimensioned relative to the cross-section of said one member so as to normally interpose substantial frictional resistance to relative movement of said one member in the opening, comprising exerting a force urging said members to move relative to each other in the direction of said insertion, and simultaneously applying vibratory energy in said direction to the member being inserted so as to effect elastic vibration thereof at a frequency of at least 1000 cycles per second with peak accelerations of the order of at least 1000 G, whereby the frictional resistance to said insertion is qualitatively reduced so that said force may be of a relatively small magnitude to effect the insertion.

3,224,087
METHOD OF MAKING HIGH-STRENGTH ALUMINUM-COATED STEEL WIRE

Richard A. Nickola, Bedford Heights, and Gordon T. Spare, Chardon, Ohio, assignors to United States Steel Corporation, a corporation of New Jersey

Filed Oct. 10, 1962, Ser. No. 229,583
5 Claims. (Cl. 29—527)

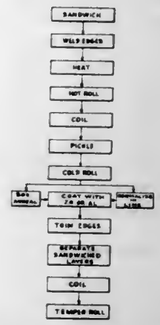


1. In the method of producing high tensile strength steel wire containing 0.8 to 0.9% carbon hot-dip coated with aluminum by passing it through a bath of molten aluminum, the improvement comprising drastically cold drawing the steel wire between 75% and 85% prior to coating by drawing it through dies having an entrance angle between 10 and 15°.

3,224,088
PROCESS FOR PRODUCING MULTI-LAYER METALLIC MATERIAL

George W. McNelly, Hammond, Ind., assignor to Inland Steel Company, Chicago, Ill., a corporation of Delaware

Filed Nov. 15, 1961, Ser. No. 152,406
5 Claims. (Cl. 29—529)



5. A process for producing a multi-layer, flat metallic material, said process comprising:

sandwiching a first pair of metallic slabs of a first composition between a second pair of metallic slabs of a second composition with a weld-preventing compound separating said first pair of slabs;

sealing said sandwich continuously along the periphery thereof to prevent entry of foreign material between any of the slabs until the seal is removed;

then welding each of the first pair of slabs to a respective one of said second pair of slabs by hot rolling;

then coating both exterior flat surfaces of said sandwich with a molten metal of a third composition, by dipping said sandwich in said molten metal;

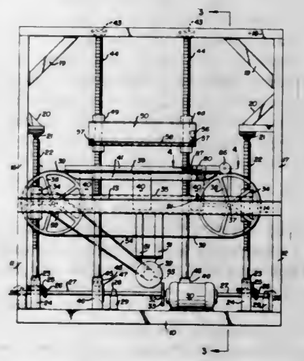
then removing the continuously sealed periphery of said sandwich after said coating step to enable separation of the two sandwich halves;

and then separating said sandwich into two halves, each comprising a center layer of said second composition and integral opposite exterior layers of said first composition and said third composition respectively.

3,224,089
CARTON OPENING MACHINE

Chester R. Gibbons, Guide Bldg., Canfield, Ohio

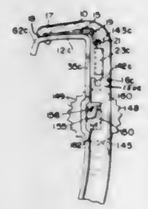
Filed Nov. 21, 1963, Ser. No. 325,256
4 Claims. (Cl. 30—2)



1. A machine for opening a carton and comprising a carton supporting table, an endless cutting blade and means movably mounting said endless blade with a portion

thereof in parallel relation to said table and thereabove, said means for mounting said endless blade being movable vertically relative to said table, at least one elongated member positioned adjacent said portion of said blade and supported by said means mounting said blade, and arranged to engage said carton subsequent to said blade's engagement thereof, means for moving and positioning said endless blade mounting means and said portion of said endless blade vertically relative to said carton supporting table, a transverse beam, a carton engaging member on said transverse beam, an electric motor, a switch and an electric circuit including said switch and electric motor, said switch arranged to be actuated by said carton engaging member, means including said motor for moving said transverse beam vertically interconnected with said means for mounting said endless blade and wherein said means operates to move said transverse beam at twice the rate of motion imparted said endless blade mounting means.

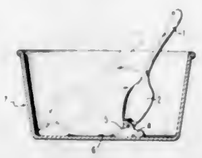
3,224,090
RAZOR WITH SHAVING ANGLE ADJUSTING MEANS ROTATABLE ON A LATERAL AXIS
James B. Kruger and Robert L. Bordeau, Staunton, Va., assignors to Philip Morris Incorporated, New York, N.Y., a corporation of Virginia
Original application Sept. 15, 1961, Ser. No. 138,485, now Patent No. 3,111,756, dated Nov. 26, 1963. Divided and this application Aug. 28, 1963, Ser. No. 305,136
3 Claims. (Cl. 30—63)



1. A razor comprising a cap having blade stops thereon, an arm extending downwardly from said cap, a blade clamping member underlying said cap, a rearwardly-urged forwardly-movable arm extending downwardly from said blade clamping member forwardly of the aforesaid arm, a guard fixed to said blade clamping member, a shaft carried on one of said arms for rotation on a lateral axis, a manually rotatable operating member fixed to a central portion of said shaft for rotating the same, and cam means mounted on the ends of the shaft and providing outward cam surfaces bearing against facing surfaces on the other of said arms to move said rearwardly-urged arm forwardly to vary the relative position of said cap and said guard to vary the shaving angle of a blade positioned by said blade stops.

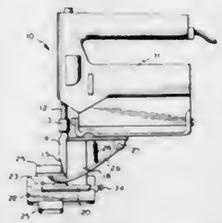
3,224,091
STIRRING SPOON WITH SCRAPING MEANS
Frank V. Scigliano, 176 Vinal St., Revere, Mass.
Filed May 25, 1964, Ser. No. 369,840
1 Claim. (Cl. 30—142)

A stirring spoon of the character described comprising, a spoon bowl, a handle integrally connected to one edge of said spoon bowl, an integral lip portion formed on the opposite edge of said bowl, a member having a straight-edge, a pin extending through said member and said lip portion for freely pivoting said straight-edged member to the spoon bowl, the straight-edge of said member being on the side opposite from the pivot whereby during the stirring action, the straight-edge of said member main-



tains line contact with the bottom of the receptacle to thereby prevent the contents of the receptacle from sticking to the bottom thereof.

3,224,092
CARPET CUTTING MACHINE
Donovan W. Nagel, 5309 Joylynne Drive, Madison, Wis.
Filed Feb. 21, 1963, Ser. No. 261,560
3 Claims. (Cl. 30—273)



1. In a reciprocally operated portable electric machine, an improvement for rapidly cutting without raveling taut scrim backed, resiliently extensible fiber pile carpeting to provide cut scrim and pile edges free of oscillatory tear and fiber pulling, said machine comprising an electric drive motor, frame, and reciprocally driven output member, said improvement comprising in combination a cutting blade disposed to depend from said output member and be attachable thereto, said blade being reciprocally driven through substantially at least one-half inch of linear movement at substantially at least 3000 strokes per minute, and being configured with a sharpened edge foremost wherein said edge comprises alternately disposed knife sharpened indentations, and knife sharpened substantially straight edge sections, each said straight edge section being at least substantially as great in dimension along said blade edge as each said indentation, at least a working portion of said blade edge being disposed rearward at a slight angle with respect to the direction of reciprocation, said portion of said blade edge being coplanar and non-parallel with said direction of reciprocation, a fixed standard for receiving goods to be cut configured with a depending post portion having relatively narrow dimension transverse to the direction of travel through goods to be cut and disposed in rearward alignment with said blade, and with a foot portion incorporating a spacer embodiment at least forwardly extending from said post portion, said standard having an opening extending thereinto and configured to receive said blade in all positions of blade movement, said spacer embodiment comprising low frictional coefficient means for passing along floor and wall surfaces with the projected distance between the top and the bottom of said foot portion and spacer embodiment being greater than the projected distance between next adjacent indentations in said blade edge, thereby operably enabling said machine to be passed along floor surfaces during operation.

3,224,093
TRAINING UTENSIL
Joel C. Huck, 3310 Ajeman, Houston, Tex.
Filed June 1, 1965, Ser. No. 460,409
3 Claims. (Cl. 30—324)

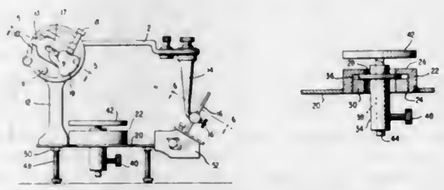


1. A training utensil for training persons to hold eating utensils in the eating position with the hand held partially closed, said training utensil comprising:
- a generally elongated handle having top and bottom notches intermediate the ends thereof, said top notch adapted for positioning the first phalanx of the thumb thereagainst and said bottom notch adapted for resting on the middle finger;
- a food supporting portion attached to the forward end of said handle;
- a downwardly extending curved portion attached to the rearward end of said handle and having a curved inner surface for at least partially encircling the third phalanx of the index finger, and
- a depending portion attached to the lower side of said handle rearwardly of said bottom notch and forming a side notch for positioning the first and second phalanges of said index finger thereagainst.

3,224,094
POLYETHYLENE COATED BLADES AND PROCESS FOR THEIR PRODUCTION
Pascal Eugene Esemplare, Roselle Park, N.J., assignor to Philip Morris Incorporated, New York, N.Y., a corporation of Virginia
No Drawing. Filed Oct. 4, 1962, Ser. No. 228,275
6 Claims. (Cl. 30—346)

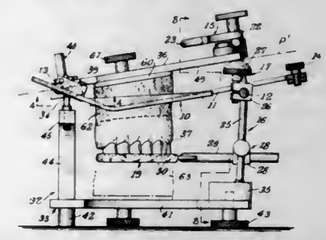
1. A razor blade having on its cutting edge an adherent coating of a polyethylene resin in which particles of a polytetrafluoroethylene resin are suspended, the ratio of polyethylene to polytetrafluoroethylene resins in the coating being between about 0.4:1 and 1:1.

3,224,095
DENTAL ARTICULATOR
Joseph F. Turner, 500 Botetourt St., #702, Norfolk, Va.; Luella E. Turner, administratrix of said Joseph F. Turner, deceased
Filed Nov. 27, 1962, Ser. No. 240,345
2 Claims. (Cl. 32—32)



2. An attachment to replace the base of a dental articulator in which a frame for holding the mounting for the upper denture carries a post to which is secured an incisor guide pin and is supported by adjustable pivots on a pair of uprights for slidable and angular movements simulating the relative movements of the human jaw, said attachment comprising a base plate having legs detachably fastened to its under side for supporting the articulator on a surface and having means at one side for detachably fastening and supporting said uprights on its surface and formed with a cylindrical wall integral with and extending upwardly from said base plate and opening on its lower side, said cylindrical wall being internally threaded and having a plane, transverse wall parallel to said base plate across its upper end vertically spaced above said base plate and with an aperture in said transverse wall, a clamping ring threaded into said cylindrical wall, a cylindrical member of smaller diameter than the internal diameter of said clamping ring and said aperture extending through said aperture and ring and provided with a radial flange below its upper end of greater diameter than said aperture and of less diameter than said cylindrical wall and clamped between said transverse wall and said ring, said cylindrical member and flange having sufficient clearance in said aperture, said cylindrical wall and said ring that it may be moved laterally in any direction and clamped in position by said ring with said flange parallel to said base plate, said cylindrical member having a polygonal, vertical aperture therethrough perpendicular to said transverse wall and said radial flange, and a set screw extending through the side of said cylindrical member to intersect said aperture in said cylindrical member, and a mounting plate for the lower denture formed with an integral, vertically extending polygonal post slidably and non-rotatably fitting in said aperture in said cylindrical member and held in vertically adjusted position by said set screw, said post and flange maintaining said mounting plate parallel to said base plate with said flange above said base plate to provide clearance for said cylindrical member and post above the surface supporting the articulator, and means on the side of said base plate opposite said one side for detachably fastening a guide for engagement by said incisor guide pin secured to said frame for holding the mounting for the upper denture.

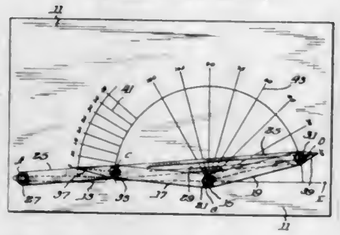
3,224,096
DENTAL ARTICULATOR
Charles E. Stuart, P.O. Box 891, Ventura, Calif.
Filed Oct. 1, 1962, Ser. No. 227,309
6 Claims. (Cl. 32—32)



1. In a dental articulator having a base for mounting a lower tooth model, and having an upper member for mounting an upper tooth model related to the lower model,
- (a) two condyle ball members in transversely spaced relation carried by the base,
- (b) means to adjust the transverse spacing of said condyle ball members on fixed increments of adjustments,
- (c) a pair of fossae-like units adjustably carried by the upper member of the articulator for adjustment of said units to conform to the adjustment of the condyle ball members,
- (d) and trunnions extending between the fossae-like units and the opposite lateral edges of said upper

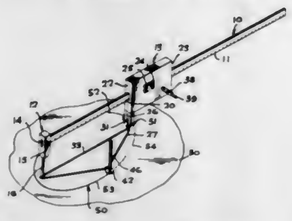
member, the fossae-like units being both laterally extensible and rotationally adjustable on said trunnions with relation to said upper member.

3,224,097
GEOMETRIC INSTRUMENT
John Y. Izumi, 105 E. Ohio St., Chicago, Ill.
Filed May 31, 1963, Ser. No. 284,419
1 Claim. (Cl. 33—1)



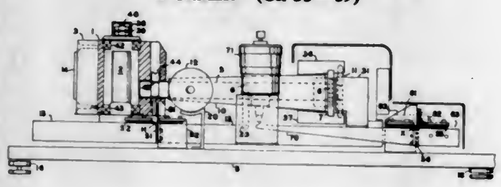
A geometric instrument for measuring angles comprising a base having a slot extending therealong in a straight path, a guide member having one end secured within the slot and adapted for both rotational movement and longitudinal movement therealong, the said guide member having an elongated slot extending inwardly thereof from its outer free end toward the point of slide connection within the base member slot, a pair of equal-length link members each having one end pivotally connected to the base member at a common point for turning relative thereto, one of said link members being pivotally connected to the guide member at a point on the guide member inwardly of the slot and spaced from the point of pivotal connection of the guide member within the slot by a distance which corresponds to the length of the first link from its point of connection of the first link to the guide member, the second link member having its outer end connected for slidable movement within the slot of the guide member, and indicator means extending outwardly from the end of each of the link members for indicating the instantaneous angular position thereof relative to a reference line extending through the length of the slot in the base member and the point of pivotal connection of the said links whereby with rotation of the links one end of one link slides within the slotted portion of the guide means and simultaneously the slidable connection of the guide means moves within the slot so that the pointer associated with one link indicates an angular position relative to the path of the base slot which is three times the angle indicated by the other indicating means.

3,224,098
ELLIPSE SCRIBER
Joseph D. Terrell, 1634 Shatto St., Los Angeles, Calif.
Filed Sept. 8, 1964, Ser. No. 394,946
1 Claim. (Cl. 33—30)



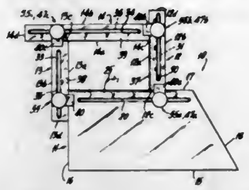
An ellipse scriber device comprising a rigid shaft of rectangular cross-sectional shape, a positioning stud having a fixed position at one end of the shaft, said stud extending from one edge of the shaft and terminating in a point extending longitudinally endward at the free end of said stud, a graduation on a flat side of said shaft, a carriage having a shoulder in positioning relationship with said graduation, said carriage having a rectangular bore therethrough slidably mounting said carriage on said shaft, and a tightener acting between said carriage and said shaft to fasten the carriage at selected positions on said shaft, a positioning post on said carriage substantially parallel to said stud and to said shaft, said positioning post terminating in a point extending longitudinally endward at the free end thereof, said last point being at the same distance from said one edge of the shaft as the point on said stud, first and second fasteners on said post adjacent the point thereon and a storage reel rotatably mounted on said carriage on an axis perpendicular to said flat side of the shaft, said reel being on the same side of said shaft as said positioning post and substantially in the same plane as said stud and said post, a cord having one end fixed to the first of said fasteners on the post and the other end extending around said storage reel, said post having a passage therethrough for the cord, said cord being adapted to extend from said first of said fasteners around said positioning stud, then through the passage in said post to releasable engagement with the second of said fasteners and thence to said storage reel, and guide means for a scriber in slidable engagement with said cord from a position at one end thereof adjacent said positioning post to a position adjacent said positioning post at the other end of the cord.

3,224,099
MEANS FOR OPTICAL MEASURING ABOUT TWO AXES
Andre R. Brault, North Merrick, N.Y., assignor to Optomechanisms, Inc., Mineola, N.Y.
Filed Aug. 30, 1961, Ser. No. 135,026
2 Claims. (Cl. 33—69)



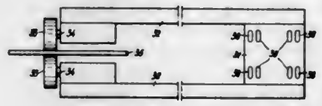
1. Horizontal and vertical optical angle measuring means comprising a frame, a brearing block, means to rotatably mount said bearing block about a horizontal axis adjacent one end of said frame comprising a pair of crossed springs connected to said frame and said bearing block, a first substantially horizontal lever connected to said bearing block, a first micrometer mounted to said frame and adapted to bear against said lever in a vertical plane, a second lever, means to rotatably mount said second lever about a horizontal axis on said frame comprising a second pair of crossed springs connected near the other end of said frame, said second lever having a horizontal knife edge at its other end bearing on the top of said bearing block, a third lever pivotally mounted on said second lever for horizontal movement adjacent said rotatable mounting of said second lever, a mirror mounted on one end of said third lever, the plane of said mirror being perpendicular to the axis of said third lever, a vertical knife edge at the other end of said third lever, a fourth hollow member lever pivotally mounted on said second lever for horizontal rotation, said hollow lever symmetrically enclosing said third lever in balance relation, said knife edge on said third lever bearing against said fourth lever adjacent to its pivot point, and a second micrometer mounted on said frame in a horizontal plane and adapted to bear against said fourth lever.

3,224,100
TEMPLATES OR DRAWING GUIDES OR INSTRUMENTS
Arthur J. Rose, 300 Broadway, Dobbs Ferry, N.Y.
Filed Aug. 6, 1963, Ser. No. 300,272
10 Claims. (Cl. 33—95)



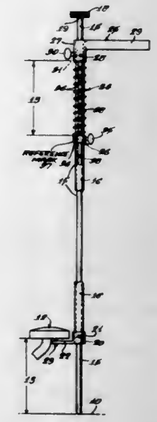
10. A drafting instrument comprising a flat base member having an upper edge, a lower edge and an end edge meeting said upper and lower edges, a first longitudinal member lying in the plane of the base member and having upper and lower ends and a longitudinal edge slidably contacting said end edge, means to retain said first longitudinal member in sliding engagement with said end edge of said base member and to clamp said first longitudinal member to said base member in various adjusted positions one relative to the other between uppermost and lowermost positions of said first longitudinal member, the lower end of said first longitudinal member in all adjusted positions thereof being disposed above the lower edge of said base member, a second longitudinal member lying in the plane of said base member and first longitudinal member and having an end edge slidably contacting the upper edge of said base member, means to retain the end edge of the second longitudinal member in sliding contact with said upper edge of said base member and to clamp said second longitudinal member to said base member in various adjusted positions one relative to the other, said second longitudinal member having a longitudinal edge, a third longitudinal member lying in the plane of said base member and first and second longitudinal members and having an end edge and a longitudinal edge, said second longitudinal member having a longitudinal edge, means to retain said end edge of said third longitudinal member in sliding contact with said longitudinal edge of said second longitudinal member and to clamp said second longitudinal member to said third longitudinal member in various adjusted positions one relative to the other, and means to retain said upper edge of said first longitudinal member in sliding contact with said longitudinal edge of said third longitudinal member and to clamp said third longitudinal member to said first longitudinal member in various adjusted positions one relative to the other.

3,224,101
APPARATUS FOR THE MEASUREMENT OF PHYSICAL QUANTITIES
Olof Werner Ohlsson, Jonkoping, Sweden, assignor to Svenska Tandsticks Aktiebolaget, Jonkoping, Sweden
Filed May 15, 1961, Ser. No. 110,115
Claims priority, application Sweden, May 14, 1960, 4,780/60; July 1, 1960, 6,416/60; July 29, 1960, 7,340/60
11 Claims. (Cl. 33—143)



1. An apparatus for the measurement of physical quantities such as thickness or strain, by the utilization of the magnetostrictive effect, comprising a transmitter; said transmitter including a measuring body of ferro-magnetic material adapted to be influenced by mechanical strain varying in dependence on the magnitude of said physical quantity to be measured, a voltage source; said ferro-magnetic body having at least one energizing winding coupled to said voltage source, said body having a pair of openings therein for each energizing winding, and each energizing winding passing through its appurtenant pair of said openings; a measuring instrument, at least one measuring winding coupled to said measuring instrument; said ferro-magnetic body also having a pair of openings therein for each measuring winding and each measuring winding passing through its appurtenant pair of openings; said pairs of openings for said energizing winding and for said measuring windings being separated from each other by ferro-magnetic material, and said ferro-magnetic material extending continuously around each of said openings; said windings extending at the side of each other without crossing each other; the combined area of all of said openings being only a small fraction of the ferro-magnetic remainder of the measuring body, viewed in plan, in order to ensure, that a substantial portion of the magnetic flux generated by said energizing winding passes through the measuring winding when said measuring body is subjected to mechanical strain as well as when it is not, and that the remaining, likewise substantial portion of said magnetic flux, passes outside said measuring winding when said measuring body is subjected to mechanical strain as well as when it is not, the proportions between said two portions of the flux passing through the measuring winding and outside the same respectively varying in dependence on the mechanical strain to which said measuring body is subjected and accordingly also in dependence on the magnitude of the quantity being measured.

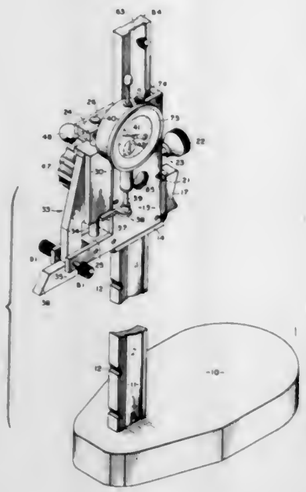
3,224,102
RATIO INDICATOR
Charles W. MacMillan, Rock Island, Ill., assignor to Bear Manufacturing Company, Rock Island, Ill., a corporation of Delaware
Filed July 30, 1963, Ser. No. 298,701
10 Claims. (Cl. 33—169)



5. A device for visually depicting the degree of displacement between a pair of relatively movable elements, comprising a tube member having opposed channels on interior surfaces thereof, a pinion gear supported for rotation between the channels and a portion at the lower end thereof engageable with one of said elements, a rod

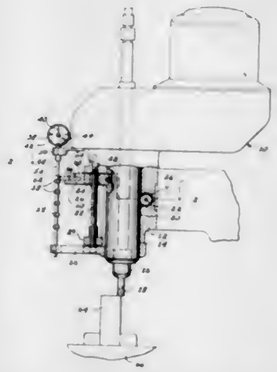
assembly including a first rack positioned in one of said channels in engagement with said pinion gear and having a lower end portion engageable with the other of said elements, and a second rack disposed in the other of said channels in engagement with said pinion and extending upwardly therefrom, indicating means including a helical spring encircling said tube member about the upper end portion of said second rack, index means on the upper portion of said second rack cooperable with the convolutions of said spring, and adjustable collar means on the upper portion of said tube member cooperating with said spring to correlate the upper end of the spring with said index means to depict the initial distance between said elements as a base value, relative movement of said elements effecting a corresponding relative movement of said rod assembly and tube member to correspondingly displace said spring relative to said index means, whereby the extent of relative movement is compared to said base value by the final position of the index means relative to the spring.

3,224,103
HEIGHT GAUGE
Alexander E. Kiralfy, 823 Wellesley Ave., Los Angeles, Calif.
Filed Aug. 26, 1963, Ser. No. 304,517
13 Claims. (Cl. 33—172)



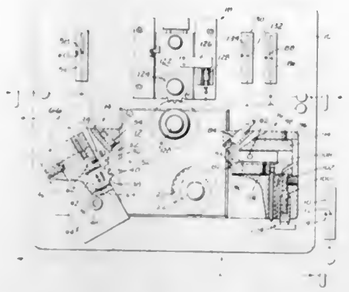
7. In a height gauge, a vertically directed post, a carriage mounted for vertical sliding movement along said post, said post having a plurality of notches therein, means carried by said carriage for engaging any one of said notches, means for indicating the vertical position of said carriage with respect to said post, a frame mounted for vertical sliding movement on said carriage, a measuring member carried by said frame and adapted to engage an object being measured, said frame having a vertically directed rack, a pinion gear carried by said carirage and engaging said rack, drive means connecting said pinion gear to a control knob, said drive means being operable upon rotation of said control knob in one direction to move said frame upwardly, said drive means being operable upon rotation of said control knob in the opposite direction to release said frame for free downward movement in response to the force of gravity alone, without said frame being urged downwardly by said drive means, said drive means including drive disengaging means operable upon downward movement of said measuring member into contact with the object being measured to disengage said drive means from said frame and allow said frame and measuring member to remain stationary despite the continued rotation of said knob in said last named direction, so that said measuring member engages said object being measured with a limited and constant pressure resulting only from the weight of said frame, a gauge mounted on said carriage, and means carried by said frame for operating said gauge, so that said gauge indicates the vertical position of said frame with respect to said carriage.

3,224,104
DIAL INDICATOR GAUGING ATTACHMENT
Robert E. Platt II, R.D. 1, near Riegelsville, Pa.
Filed Feb. 17, 1964, Ser. No. 345,181
2 Claims. (Cl. 33—172)



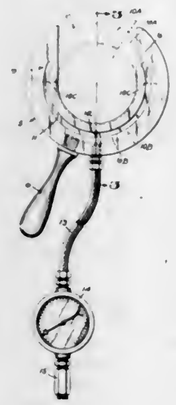
1. In a machine having an elongated stationary base, an elongated quill mounted thereon in longitudinally movable relation therewith, said quill having an operating spindle mounted therein in rotatable but axially fixed relation therewith, said machine also having a lever for disengaging its axial quill feed means, and including a micrometer screw rotatably mounted on said base in longitudinal relation with said quill with one end of said screw in actuating relation with said lever and its other end slidably mounted on said base, said screw having a micrometer nut mounted thereon; means for actuating said quill feed disengaging lever at a predetermined point in operative travel of said quill comprising, in combination, a dial indicator having a reciprocative actuating stem and means for rigidly attaching said indicator to said base with said stem in longitudinal relation with said base, quill and spindle, an elongated rod having means for attaching it at one end thereof to the outer end of said stem and for supporting it at its other end on said base in slidable relation therewith, said rod having a plurality of radially projecting abutments spaced thereon according to predetermined lengths of operative travel of said quill and spindle; a retractable finger having means for attaching it to said quill in a position for selective abutting relation with either of the abutments on said rod for effecting outward axial movement of said indicator actuating stem; and another finger having means for fixedly mounting it on said rod with the free end of said finger in abutting relation with said micrometer nut for effecting a slight axial movement of the micrometer screw to actuate said quill feed disengaging means.

3,224,105
LEAD ANGLE GEAR GAGE
Roland S. Ely, 4393 Creek Road, Cincinnati 41, Ohio
Filed June 11, 1963, Ser. No. 287,132
7 Claims. (Cl. 33—179.5)



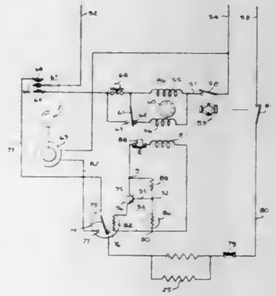
1. A gear checking device comprising; a lead angle checking station, a tooth profile checking station, a surface plate between said stations, an arbor for receiving a gear and having a base slidably resting on the surface plate and supporting the arbor perpendicular to the surface plate, said arbor being slidably movable on the surface plate for positioning a gear on the arbor in either of said stations, toothed means in each station to mesh with at least one tooth of the gear and thereby locate the gear circumferentially and to locate the gear axis on a first predetermined line, locating means in each station angularly disposed relative to said toothed means operable to locate said gear axis on a second predetermined line intersecting said first line, and gauging means in each station engaging a tooth of the gear for measuring a characteristic thereof.

3,224,106
METHOD AND APPARATUS FOR USE IN ASSEMBLING RING SECTIONS ABOUT A SHAFT WITH THEIR END FACES CO-PLANAR
David G. Way, Boxborough, Mass. (R.F.D., West Acton, Mass.)
Filed May 31, 1961, Ser. No. 113,913
4 Claims. (Cl. 33—180)



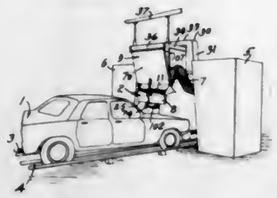
1. A device for use with a ring formed in half sections to enable it to be assembled about a shaft and provided, while assembled, with a flat face, said device being for use in re-establishing said face when the sections are assembled about said shaft, said device including a shaft-straddling yoke provided with a flat test face for engagement by substantial portions of the face-establishing surfaces of said ring sections, said device including a conduit having an inlet and an outlet attachable to a suction source, and said test face being channeled to define said inlet.

3,224,107
AMBIENT-COMPENSATED CONTROL SYSTEM FOR CLOTHES DRYERS
Glenn R. Chafee, Jr., Louisville, Ky., assignor to General Electric Company, a corporation of New York
Filed Oct. 10, 1963, Ser. No. 315,307
6 Claims. (Cl. 34—45)



1. In a clothes drying machine:
(a) a clothes container;
(b) means including an electric motor for effecting tumbling of clothes in said container, said motor including an auxiliary winding providing a low-voltage output;
(c) a main heater positioned to heat clothes in said container;
(d) thermostatic means responsive to the temperature of clothes in said container and effective to shut off said main heater in response to a predetermined high temperature;
(e) a transistor having a base, an emitter, and a collector;
(f) means for rectifying the output of said auxiliary winding;
(g) a variable first resistor having a resistance which varies substantially as its temperature varies and connected at one end to said transistor base, said resistor being positioned to sense ambient air temperature;
(h) a second resistor connected at one end to said transistor base, said auxiliary winding being connected across the other ends of said resistors;
(i) an electric resistance-type biasing heater positioned in heating relation to said thermostatic means so as to decrease the clothes temperature required to shut off said main heater;
(j) one of said resistors having its other end connected to said emitter in an emitter loop, and the other of said resistors having its other end connected to said collector in a collector loop;
(k) said biasing heater being connected with one of said resistors in one of said loops, said auxiliary winding being connected between said one resistor and said biasing heater;
(l) whereby a change in the resistance of said variable resistor causes a change in the level of energization of said biasing heater so that the clothes temperature required to shut off said main heater rises and falls as the ambient temperature rises and falls.

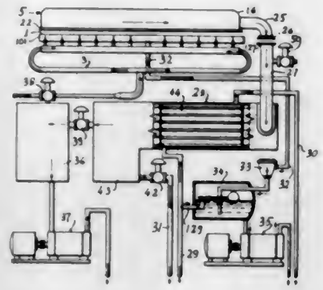
3,224,108
SYSTEM AND MEANS FOR AUTOMATICALLY AIR DRYING VEHICLES
Walter Flaming, 1601 Caspian Ave., Long Beach 13, Calif.
Filed July 2, 1962, Ser. No. 206,734
3 Claims. (Cl. 34—87)



1. Apparatus for drying the upper surfaces of freshly washed vehicles during movement thereof comprising, in combination, a source of compressed air; stationary framing beneath which vehicles may be moved; a nozzle assembly including an air-jet-discharging nozzle extending transversely of and above the vehicle, and a pantograph support for the nozzle; said nozzle having induction and eduction ports; means connecting the induction port with the source of compressed air; the eduction port being elongated transverse to the direction of movement of the vehicles and directing a jet of compressed air generally downwardly upon the upper surfaces of a vehicle passing beneath; said pantograph support being pivoted to and suspended from said framing and in turn pivotally suspending said nozzle, and being so constructed and arranged that the nozzle may be swung in planes parallel to the direction of movement of the vehicles being dried, and when so swung, the pantograph support maintains the nozzle always in the same angular position, which is nearly vertical; a trip arm pivotally mounted on the nozzle and having a roller at its lower end always disposed below the lowest part of the nozzle and always in advance of the nozzle, so that said roller, not the nozzle, will be contacted by a part of the vehicle moving beneath; a pilot valve mounted on the nozzle assembly above the trip arm; means responsive to swinging of said trip arm by said vehicle contact to operate said pilot valve; a pneumatic-hydraulic system including a hydraulic cylinder and piston assembly connected to the framing at its upper end and to the nozzle assembly at its lower end and adapted to raise and lower the nozzle relative to the vehicle beneath; and valves and piping connecting said pilot valve with said pneumatic-hydraulic system to effect automatic and rapid elevation of the nozzle assembly whenever the roller is struck by a part of a moving vehicle; automatic means being provided as part of said system to cause the nozzle assembly to descend slowly after said elevation.

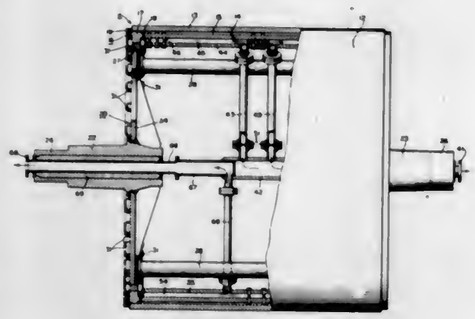
3,224,109
APPARATUS FOR THE VACUUM-DRYING OF LEATHER
Luigi Turato, Thiene, Italy, assignor to Officine di Cartigliano S.p.A., Industria Metalmeccanica, Vicenza, Italy, a corporation of Italy
Filed Feb. 8, 1963, Ser. No. 257,819
Claims priority, application Italy, Feb. 9, 1962, 3,063/62; Apr. 29, 1962, 9,284/62; July 10, 1962, 14,226/62; Sept. 24, 1962, 19,210/62
6 Claims. (Cl. 34—92)

1. An apparatus for the vacuum-drying of leather, comprising a heatable plate for receiving leather to be dried, a movable cover for said plate adapted to move into sealing engagement with the periphery of said plate and shaped to form a vacuum chamber housing the leather to be dried, and a vacuum pump connected to said vacuum chamber by a suction line, said suction line including a vacuum accumulator and a water vapor condenser separate from one another and connected in series, a rigid manifold mounted in said cover movable therewith and terminating in a rigid neck having a free outlet end, a lower duct fixed to said vapor condenser



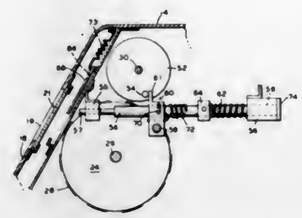
having an inlet end facing said outlet end of the manifold neck, and coacting sealing means provided on said facing duct and neck ends which co-operate by engagement upon lowering of said cover to sealingly close the suction line and connect the vacuum chamber of the cover manifold with the water vapor condenser.

3,224,110
ROTARY CYLINDER DRYER
Pieter J. Kroon, Swarthmore, Pa., assignor to Scott Paper Company, Philadelphia, Pa., a corporation of Pennsylvania
Original application Jan. 25, 1961, Ser. No. 84,833, now Patent No. 3,169,050, dated Feb. 9, 1965. Divided and this application June 3, 1964, Ser. No. 372,345
6 Claims. (Cl. 34—124)



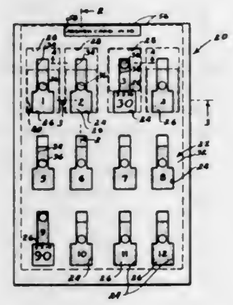
1. In a dryer of the rotary cylinder type, a cylindrical shell, wall means co-axial with said shell defining a heating chamber to which the inner surface of said shell is exposed, a plurality of spaced longitudinally extending rows of steam supply nozzles disposed in spaced relationship in said heating chamber, said nozzles being constructed and arranged to admit steam to said heating chamber in flow paths generally tangential to the inner surface of said shell, a plurality of spaced longitudinally extending rows of removal nozzles projecting into said heating chamber and having restricted intake ports disposed in close proximity only to the inner surfaces of said shell, said rows of removal nozzles being interspersed among said rows of supply nozzles and located substantially midway between adjacent rows of supply nozzles for receiving condensate swept across the inner surface of said shell by steam leaving said supply nozzles.

3,224,111
PERSONAL IDENTIFICATION APPARATUS AND METHOD
Eric Muelberger, Jr., P.O. Box 134, Colts Neck, N.J.
Filed Mar. 7, 1963, Ser. No. 263,658
5 Claims. (Cl. 35—3)



1. A machine for establishing personal identification and comprising a closed frame, a plurality of depressible keys carrying indicia and mounted for movement in the frame, a plurality of readout wheels carrying indicia thereon, means connecting the keys with the wheels to impart varying increments of rotation to the latter when the keys are depressed, and a shutter normally covering said wheels, spring means urging the shutter to open position, a key counter for releasing the shutter to expose said wheels after a predetermined number of keys have been depressed, said key counter including a first member movable in increments as each key is depressed, a second member movable by the first member when the predetermined number of keys have been depressed and releasing the shutter to travel to open position, spring means urging the second member to shutter engaging position and a lever for returning the wheels to starting position after each cycle of operation and engaging the shutter to close the same.

3,224,112
CARD HOLDER WITH MOVABLE SHUTTERS AND INTERCHANGEABLE CARDS FOR INSERTION THEREIN AND A SECOND CARD HOLDER WITH A SPINNER AND INTERCHANGEABLE CARDS
John R. Hanson, 26 Monica Drive, Little Rock, Ark.
Filed June 29, 1962, Ser. No. 206,391
11 Claims. (Cl. 35—9)



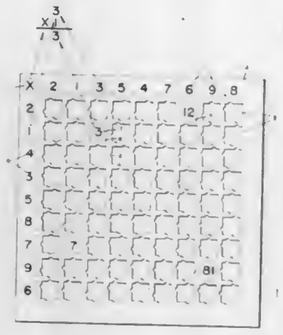
11. An amusement device including a card holder having a panel with windows therein, a different shutter associated with each of the windows and movable between a closed position in which it covers the window opening and an exposure position in which it leaves the window opening uncovered, an identifying indicium on the card holder for each of the shutters, a card insertable into the holder and having different areas of indicia thereon giving answers to questions, said areas corresponding in size and location to said windows, means behind the panel for removably holding the card in a definite position with respect to the panel with said areas of the card in register with said windows, a question card with indicia thereon, and a chance device which is adapted to be operated by successive users of the card holder and cards, the chance device including means for indicating which of the questions each user is to answer as his turn to answer comes, and the chance device comprising an envelope with a spinner rotatably mounted on a front side thereof, the question card being of a size to fit into the envelope and having its indicia angularly located around the path of the spinner, the envelope having means exposing the indicia on the question card through the front of the envelope.

3,224,113
COLOR DISPLAY DEVICE
Morton Goldsholl, Highland Park, Ill., assignor to The Sherwin-Williams Company, a corporation of Ohio
Filed Oct. 9, 1963, Ser. No. 315,065
1 Claim. (Cl. 35—28.3)



A color display device comprising in combination:
(a) a rectangular planar color flap supporting sheet having a plurality of rows of rectangular perforations disposed in a plurality of spaced columns, the perforations in said rows being in alternately staggered relation,
(b) a plurality of elongated rectangular flaps disposed in overlapping relation on said supporting sheet each flap having a plurality of different color areas on each surface thereof, said color areas constituting samples of coating compositions in a palette of colors, each of said flaps having along one marginal edge thereof tubular hinge pin receiving means including cut-out portions in each flap corresponding to the perforations in said rows, for exposing a hinge pin at a plurality of spaced segments intermediate the extremities of said marginal edge,
(c) a hinge pin disposed in said tubular hinge pin receiving means and substantially coextensive with the length of said flap, and
(d) a substantially U-shaped resilient fastener having a base and a pair of equally longitudinally spaced leg portions extending therefrom, the space between said leg portions being at least equal to the width of said hinge pin, each of said leg portions having a laterally extending elongated slot adapted for engagement with opposite marginal edges of said rectangular perforation to interlockingly engage said fastener in said perforation, said fastener being adapted to fit into a cut-out segment of said flap and to engage in the base thereof the exposed portion of said hinge pin, whereby each said color flap is hingedly supported on said supporting sheet.

3,224,114
ARITHMETIC GAME
Joseph L. Swanson, 123 32nd St., SE., Grand Rapids 8, Mich.
Filed July 22, 1963, Ser. No. 297,439
3 Claims. (Cl. 35—31)



3. An educational game device based on arithmetic calculations, said device comprising:

a panel having a group of openings arranged in aligned rows and columns; and

at least one insert piece adapted for placement within said openings, said rows, columns, and insert piece carrying related indicia whereby the indicia on said insert piece corresponds with the result of the interaction of the indicia at the column and row at a particular one of said openings according to a particular arithmetic operation,

said insert piece having at least one discontinuity interengageable with a discontinuity in said panel at each of said openings representing the columns and rows which the indicia thereof produce the indicia on said insert piece, and none other, according to said operation.

3,224,115
AUTOMATIC MUTING SYSTEM
Clarence L. Auernheimer, Fresno, Calif., assignor to A.V. Electronics, Inc., Fresno, Calif., a corporation of California
Filed Apr. 15, 1963, Ser. No. 273,004
5 Claims. (Cl. 35—35)



1. A teaching device comprising an audio frequency signal supply means, a student station connected to the supply means to receive the signal, a first resistor in series with said supply means, a ground line connected to the side of said resistor opposite from said supply means, a second resistor having a grounded variable resistance, said first and second resistors being connected to said signal supply means as a voltage divider circuit, a recorder, circuit means connected from said voltage divider circuit to the recorder, a microphone at said student station, means substantially matching cooperatively with the voltage divider circuit the microphone output voltage with the output voltage of the supply signal which passes through said circuit means, so that signals from both sources may be recorded on the recorder, a communication circuit connected to the student station and including a microphone and a receiver, two normally open switches connected respectively in said line to ground and in the communication circuit at said microphone, and means operable to close and open said switches in unison.

3,224,116
MULTIPLE ANSWER EXAMINATION GRADING DEVICE
Palmer De Pue, 2027 Devereaux Ave., Philadelphia, Pa.
Filed Nov. 13, 1962, Ser. No. 236,831
10 Claims. (Cl. 35—48)



1. A multiple answer examination grading device comprising a printed sheet bearing first sequential indicia arranged in a first reference column and corresponding respectively to questions to be answered, second and third indicia of mutually similar configuration arranged in second and third grading columns respectively parallel to said first column and arranged in rows aligned with said first indicia respectively, and fourth indicia similar in configuration and spacing to said second and third indicia arranged in a fourth grading column parallel to and shorter than said first column and arranged in at least twelve rows aligned with a portion only of said first indicia, said sheet bearing a single scoring table indicating correct grades for examinations having two choices and a number of questions corresponding to the number of indicia in said third column, and for examinations having three choices and a number of questions corresponding to the number of indicia in said fourth column, the number of indicia in the highest specified number of grading columns being an integer approximating the value expressed by

$$\frac{10}{1-\frac{1}{n}}$$

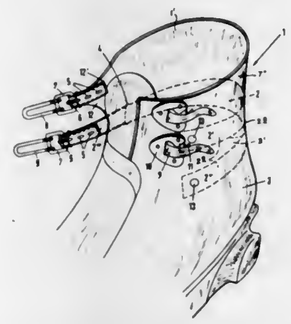
where n is said highest number.

3,224,117
SPORT SHOES, ESPECIALLY FOR RUNNERS
Adolf Dassler, Am Bahnhof, Herzogenaurach, near Nurnberg, Germany
Filed Sept. 15, 1964, Ser. No. 396,555
Claims priority, application Germany, May 26, 1964, D 44,531
6 Claims. (Cl. 36—2.5)



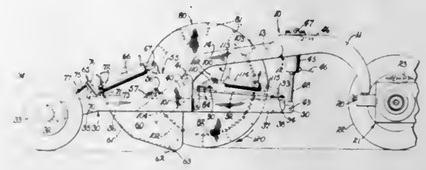
1. A sport shoe having an upper consisting of a leather of less than 1 mm. thickness having a grain side and a flesh side, the flesh side of the leather of said upper facing outwardly, and at least one coating on said flesh side, said coating forming a waterproofing impregnation.

3,224,118
SKI BOOT
Ewald E. Teufel, Tuttlingen, Germany, assignor to Rieker & Co., Tuttlingen, Germany
Filed Feb. 25, 1964, Ser. No. 347,239
Claims priority, application Germany, Dec. 4, 1963, R 36,717
3 Claims. (Cl. 36—50)



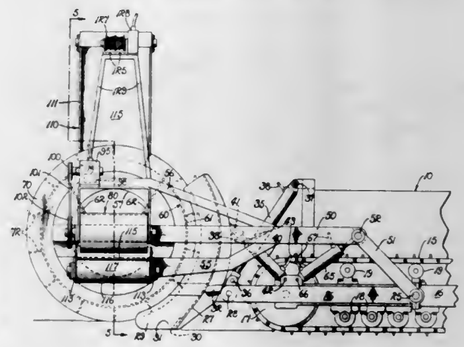
1. A ski boot to be worn on the foot of a skier and having an upper composed of outside leather and an inner lining, said upper having a heel portion for receiving the heel part of said foot and a top portion for enclosing the part of said foot in which the Achilles tendon is disposed, said leather havng a slit therein on one side of said upper, a draw strap disposed only in said top portion of said upper, said draw strap having one end region anchored to said upper on the side thereof which is opposite from the side on which said slit is located, said strap further having a central region extending around the back of said boot to pass adjacent the region to be occupied by the Achilles tendon, said one end region of said strap and said central region thereof being positioned between said lining and said leather, said strap passing through said slit and having its opposite end region located outside of said leather; connecting means attached to said other end region of said strap; and holding means anchored to said leather of said upper on the side thereof at which said one end region of said strap is attached for holding said connecting means.

3,224,119
EARTH MOVING SCRAPER
John Howard Wilmoth, 5756 N. Flora, and Harry L. Wilmoth, 6289 N. 1st, both of Fresno, Calif.
Filed Apr. 29, 1963, Ser. No. 276,254
19 Claims. (Cl. 37—9)



1. An improved earth moving scraper comprising a mobile frame having a predetermined excavating zone; an earth engaging scraper blade carried by the frame at said excavating zone; a receiving hopper mounted in the frame rearwardly of said blade and adapted to receive earth at said excavating zone; rotary earth elevating reel means freely rotatably mounted in the frame for rolling engagement upon the earth incident to earth traversing movement of the frame and being disposed forwardly of and in cooperating relationship with said hopper and adapted to elevate earth received from said excavating zone and to discharge said earth at an elevated station, including means permitting free floating elevational movement of said reel means independently of the scraper blade in conforming relation to the contour of the earth traversed; and an open bowl carried by the frame and disposed relative to said elevating reel means to receive earth discharged therefrom at said elevated station.

3,224,120
MOBILE ELEVATING LOADER
John Howard Wilmoth, 5756 N. Flora, and Harry L. Wilmoth, 6289 N. 1st, both of Fresno, Calif.
Filed Apr. 29, 1963, Ser. No. 276,255
8 Claims. (Cl. 37—9)

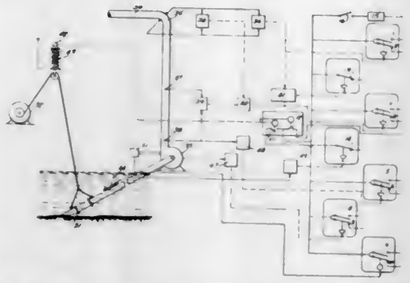


1. An elevating loader comprising a mobile vehicle; a support frame pivotally mounted on the vehicle; an earth scraping blade mounted on the frame and positioned to engage the earth in an excavating zone; earth elevating means carried by the vehicle in a position adjacent to, forwardly of, and coacting with said blade to receive earth excavated thereby and to elevate such earth to a level above said excavating zone; power means carried on the vehicle and connected to said earth scraping blade selectively to elevate the same; separate power means mounted on the vehicle and connected to said earth elevating means selectively to control the proximity of said earth elevating means relative to said blade; and conveyor means carried by the vehicle in a position to receive earth from said elevating means.

3,224,121
APPARATUS FOR OPTIMIZING DREDGE PRODUCTION

Rick A. Denning, Bronx, N.Y., assignor to the United States of America as represented by the Secretary of the Army

Filed Jan. 29, 1963, Ser. No. 255,159
4 Claims. (Cl. 37—58)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. In a suction dredge having a draghead, means for regulating the position of said draghead, a suction pump, and measuring means for continuously determining the operating conditions of the dredged mixture and the pump and the position of the draghead in relation to the channel bottom, the improvement comprising apparatus for controlling the output of the dredge, said apparatus comprising:

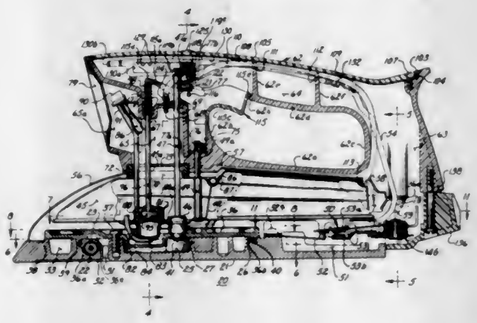
(a) primary control means associated with each of the measuring means for producing a separate signal when the measurement produced by its associated measuring means exceeds or falls below predetermined limits; and

(b) command signal means for correlating the separate signals produced by said primary control means and for selectively commanding corrections in the speed of said dredge pump and the position of said draghead.

3,224,122
PRESSING IRON

Ivar Jepson, Oak Park, Joseph L. Viecelli, Cicero, and Stanley Walczak, Chicago, Ill., assignors to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois

Filed Nov. 9, 1962, Ser. No. 236,510
21 Claims. (Cl. 38—77)

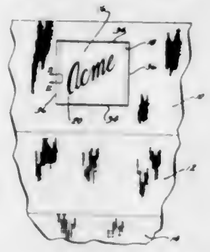


1. In a pressing iron, a sole plate, an electric U-shaped heating element for said sole plate, a first U-shaped steam generating chamber defined in said sole plate in good heat transfer relationship with said heating element, a second U-shaped steam generating chamber defined in said sole plate independent of said first steam generating chamber and also in good heat transfer relationship with said heating element, said U-shaped heating element and said U-shaped steam generating chambers being nested together, a common cover for both of said steam generating chambers, and means for securing said cover to said sole plate.

3,224,123
LABEL FOR HOSIERY

John G. Templeton, Grand Rapids, Mich., assignor to Rose Patch & Label Company, Grand Rapids, Mich., a corporation of Michigan

Filed Nov. 5, 1962, Ser. No. 235,243
5 Claims. (Cl. 40—2)

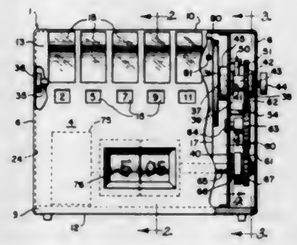


1. In combination, a stretchable sheer textile article and an attached label, said article being formed of flexible, stretchable, delicate, synthetic thermoplastic polymeric fibers interengaged to form a sheer delicate article; said label being formed of thermoplastic polymeric fibers of the same family of polymers as said article fibers and having flexible and stretchable characteristics similar to said article fibers to have a like stretching and flexing capacity during normal use of said article and at least some of said label fibers being of a thermoplastic material; said label fibers having a melting point below the softening point of said article fibers; and said label being permanently secured to said article by portions of its thermoplastic fibers fusion bonded to said article fibers while remaining in an unsevered condition.

3,224,124
PROGRAM INDICATOR

Mark R. Penland, 5123 W. Montrose Ave., Chicago, Ill.

Filed June 5, 1963, Ser. No. 285,678
4 Claims. (Cl. 40—30)

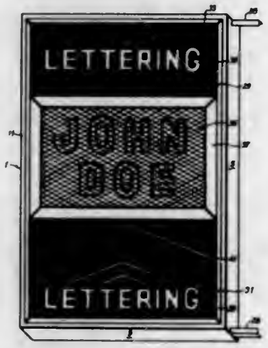


1. In a television program indicating device, a housing, a metering drum rotatably mounted therein, said housing having a wall with a plurality of station identified windows therein, a tape wrapped on the drum and having program information thereon registerable with respective windows, and a timed driving mechanism driving said drum for drawing the tape across the windows whereby programs being shown at the instant time at the respective stations is revealed at respective windows, said driving mechanism comprising a leaf spring connected to the drum and extending radially therefrom and a plurality of spaced sequentially arranged abutments on the housing engageable with the spring, said spring adapted to deflect and escape over the abutments, said leaf spring reboundingly engaging the abutment subsequent to the abutment over which the leaf spring momentarily escapes.

3,224,125
ADVERTISING SIGN

Frank J. Werner, Affton, Mo. (% Aalco Sign Co., 4244 Chouteau, St. Louis 10, Mo.)

Filed Aug. 27, 1962, Ser. No. 219,401
9 Claims. (Cl. 40—32)



1. An advertising sign comprising spaced parallel rippled sheets of transparent material, said sheets being of substantially uniform thickness and being formed with first narrow bands spaced part from each other and extending across the sheet in one direction, second narrow bands spaced apart from each other and extending across the sheet in another direction and intersecting said first bands, said bands being inclined to the general plane of the sheet in one direction and the remaining portions of the sheet bounded by said bands being inclined to the general plane of the sheet in the opposite direction from the direction of inclination of said bands, the inclination of said remaining portions being substantially less than that of said bands, separate sign plates movable parallel to said sheets in the space therebetween, said separate sign plates each having a surface design embodying relative light and dark translucent portions, lights behind said sign plates and adapted to shine through said plates and said sheets to project the design through said sheets with the appearance of scintillation as the plates move past said sheets, and means for moving said separate sign plates in the same direction between said lights and said sheets.

3,224,126
DISPLAY BOARDS AND MAGNETS USEFUL THEREWITH

Walter F. Bogusz, 405 N. Knight Ave., Park Ridge, Ill.

Filed June 27, 1962, Ser. No. 205,619
3 Claims. (Cl. 40—63)

1. A display board comprising a ferrous metal sheet, a plurality of elongated paper tubes having substantially flat front and rear walls mounted on said ferrous metal sheet with the substantially flat rear walls thereof lying against said sheet, the front faces of said paper tubes providing a flat surface on which indicia can be marked, said strips being in substantially parallel orientation with a side edge thereof contacting a side edge of an adjacent paper tube, and each of said tubes being held on said sheet by at least one wafer magnet mounted therein, the wafer magnets in said paper tubes having oppositely disposed facing surfaces of substantial area lying against the inner sides of front and rear walls of said paper tubes, said magnets each having a pair of spaced apart polar areas

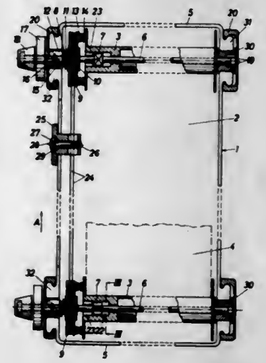


of opposite polarity formed in one of said surfaces, adjacent one end of the magnet, the magnet also having another pair of spaced apart polar areas of opposite polarity formed in the other of said surfaces adjacent the opposite end of the magnet.

3,224,127
MOVABLE DISPLAY DEVICE

Johann Hutterer, 2 Negerlegasse, Vienna II, Austria

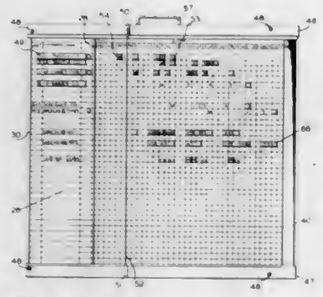
Filed Mar. 18, 1963, Ser. No. 265,851
Claims priority, application Austria Mar. 22, 1962
2 Claims. (Cl. 40—86)



1. A device for moving the successive fields of a representation divided into such fields, such as a map, picture or the like, into a viewing field, comprising a housing, a spool mounted in said housing for winding one end of a strip having said representations thereon, a second spool extending parallel to the first spool and serving to wind the other end of the strip, each of the said two spools being mounted on a shaft guided in the housing and being disengageably coupled to said shaft for joint rotation by a clutch, each of said spools having teeth on one end face, said viewing field being disposed between the two spools, means for guiding the strip through the viewing field during the movement of the strip from one of said spools to the other, and means for selectively manually driving one of the two spools in the driving sense, said means comprising a pair of pulleys each having a circumferential groove and each carrying teeth on its end face adapted to interengage said teeth of one of said spools to drive the latter only in the direction of rotation in which it winds up the strip, a cord drive engaged in said circumferential grooves to drivingly connect said pulleys, a slide member secured to said cord drive and movable along the housing between the spools, each of said pulleys being freely rotatably mounted and axially displaceable on one of said shafts

with respect to a coaxial one of said spools, said pulley, spool and shaft being coupled together for joint rotation by said clutch and said teeth, each grooved pulley being freely rotatable and axially displaceable on a sleeve having a collar at its inner end and a projecting member adjacent the cooperating spool, said shaft extending through said sleeve, and a spring bearing against the collar and one end of the pulley urging the pulley toward the spool and said projecting member, each shaft and each sleeve being provided with a handle which protrudes outside of said housing.

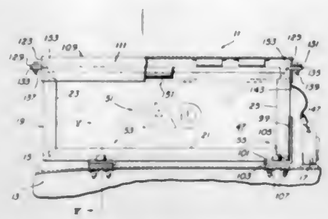
3,224,128
WORK CONTROL AND SCHEDULING DEVICE
William A. Steward, P.O. Box 291, Mill Valley, Calif.
Filed Apr. 25, 1963, Ser. No. 275,559
2 Claims. (Cl. 40—96)



1. In a work chart:
(a) a frame having a back plate, top and bottom plates extending normal to the back plate along opposite edges thereof, an end extending normal to the back plate between the top and bottom plates, and a front plate extending between the said top and bottom plates and joined to the said end, said front plate being of lesser length than the said back plate whereby to provide a generally L-shaped structure, said front plate, end and back plate together providing a receptacle;
(b) a separate work-depicting unit adapted to be partially fitted into said receptacle, said work-depicting unit including a planar support for a chart, a pair of brackets at either end of said planar support, a pair of spaced rollers mounted in each of the said pair of brackets at each end of the said planar support, a chart secured to one side of the planar support, and a flexible transparent sleeve trained about the rollers and covering the front of the said chart, said work-depicting unit being partially inserted in the said receptacle formed by the said back, end and front plate of the said frame whereby one of the said rollers is enclosed within the said receptacle and the other of the said rollers remains exposed.

3,224,129
ADVERTISING DEVICE FOR TAXIS AND THE LIKE
Theron R. Green, West Memphis, Ark., assignor to Motor Ads, Inc., Memphis, Tenn.
Filed Jan. 19, 1965, Ser. No. 426,655
14 Claims. (Cl. 40—129)

1. An advertising device for use with a taxi having a top, said device comprising a frame, sign means carried by said frame, at least one attachment device for removably attaching said advertising device to said taxi; said attachment device comprising a substantially flat and rigid lower plate having a first edge portion, a second edge portion, a threaded aperture in said first edge portion and a groove along said second edge portion, fastening means for rigidly fastening said lower plate to the top of said taxi, a substantially flat upper plate fixedly attached to said frame, said upper plate being provided with a first edge portion having a hole therethrough and a second



edge portion, said upper plate being removably engaged in flat face-to-face engagement with said lower plate with said second edge portion of said upper plate being received in said groove of said lower plate, and thumb screw means extending through said hole and threadedly engaging in said threaded aperture for removably holding said upper plate in engagement with said lower plate.

3,224,130
RECORD CARDS
Joseph C. Seigh, Endicott, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 26, 1961, Ser. No. 161,917
3 Claims. (Cl. 40—158)

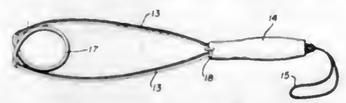


1. A record card for mounting film and the like comprising a top ply, a bottom ply, an intermediate ply secured to the inner faces of said top and bottom plies, a circular aperture in said intermediate ply, circular apertures in said top and bottom plies in alignment with said aperture in the intermediate ply, said last named apertures being smaller in diameter than said first named aperture to form an internal circular groove or race between the planes of the opposite faces of the card into which a film may be inserted and retained, a small cut in said top ply which intersects the aperture therein, a circular film mounted in said internal groove or race, and a small cut in said film which intersects the periphery thereof, the cuts in said top ply and said film facilitating the screwing of said film into and out of said internal groove or race.

3,224,131
LANDING NETS
Joel D. Parse, 830 S. Vrain, Denver, Colo.
Filed July 22, 1963, Ser. No. 296,864
2 Claims. (Cl. 43—12)

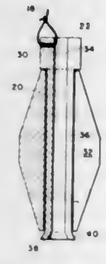
1. A landing net comprising a handle, a pair of resilient arms normally diverging from said handle, a resilient connecting member having a twist in it intermediate its extremities joining the outer ends of said arms, whereby

the arms may be compressed toward each other causing said connecting member to coil inwardly between said arms and toward said handle, the arms being adapted



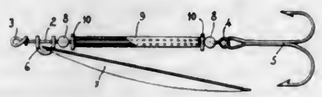
to spread apart when decompressed and hold said connecting member under tension in a straight line between the ends of said arms and a net mounted on said arms and connecting member.

3,224,132
FISHING EQUIPMENT RETRIEVER
Lawrence D. Frantz, 2515 E. Central Park Ave., Davenport, Iowa
Filed June 25, 1964, Ser. No. 378,007
4 Claims. (Cl. 43—17.2)



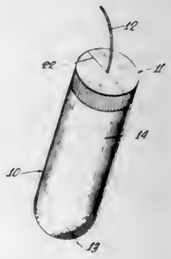
1. A fishing equipment retriever comprising a weighted outer cylinder of relatively dense material having an axial cylindrical bore throughout its length and a straight longitudinal slot communicating with said bore throughout the length of said bore, an inner cylinder having substantially the same diameter as and rotatably inserted in said bore, said inner cylinder also having an axial cylindrical bore throughout its length and a longitudinal slot communicating with said last mentioned bore throughout its length, said inner cylinder having a shoulder at one end larger that the diameter of the bore in said outer cylinder, the other end of said inner cylinder being of malleable mtaerial and projecting a relatively short distance beyond said outer cylinder and flaring to a larger diameter than the diameter of the bore in said outer cylinder, said flare constituting a locking means between said outer cylinder and said inner cylinder, the flare commencing a short distance after the inner cylinder exits from the bore in said outer cylinder allowing a small amount of relative axial locking motion between the cylinders.

3,224,133
FISHING LURE
Leon Joseph Arsène Emard, 3 Rue d'Orleans, Nantes, Loire-Atlantique, France
Filed Mar. 18, 1964, Ser. No. 352,735
Claims priority, application France, Jan. 21, 1964, 44,375, Patent 85,156
1 Claim. (Cl. 43—42.04)



A fishing lure comprising a longitudinally extending rod having a pair of opposite extremities formed with respective eyes, one of said eyes being connectible to a fishing line; at least one hook swingably mounted in the other of said eyes; a stirrup rotatably engaging said rod and axially shiftable thereon adjacent said one of said eyes; a spoon swingably mounted on said stirrup for swivel movement therewith about said rod; a single cylindrical tube of an elastomeric material surrounding said rod with radial clearance over at least the major portion of the length thereof while being axially compressible thereon; first abutment means between said stirrup and said tube axially shiftable along said rod; and second abutment means between said other eye and said tube, each of said abutment means including a washer member abutting said tube and a ball member bearing on the respective washer member remote from said tube whereby said tube is compressed between said washer members upon tensioning of said line and immobilization of said spoon in the mouth of a fish to shift said hook toward said stirrup and strike the fish.

3,224,134
PROTECTOR FOR FISHING HOOK AND THE LIKE
Brooks H. Holcombe, R.D. 2, Kinsman, Ohio
Filed Dec. 28, 1964, Ser. No. 421,432
11 Claims. (Cl. 43—57.5)

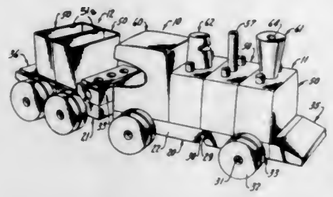


1. A device for enclosing and protecting a fishing hook and the like while it is attached to a line and the like, comprising a container for the hook having an opening through which the latter may be inserted and withdrawn, and a closure member for said container opening having a resilient portion for insertion axially thereinto, said closure member portion being of a size to be compressed a predetermined amount upon insertion thereof in said container opening and such portion having an axially extending slot extending inwardly of its periphery, said slot being sufficiently wide to provide for passage of the line therethrough when said closure member portion is uncompressed and being sufficiently narrow to restrict passage of the line therethrough when said closure member portion is compressed said predetermined amount.

3,224,135
CONSTRUCTION SET INCLUDING MEMBERS WITH PLURAL CONNECTING MEANS
John H. Wright and Charles Stowe Myers, Evanston, Ill., assignors to A. G. Spalding & Bros. Inc., Chicopee, Mass., a corporation of Delaware
Filed June 13, 1963, Ser. No. 287,705
10 Claims. (Cl. 46—17)

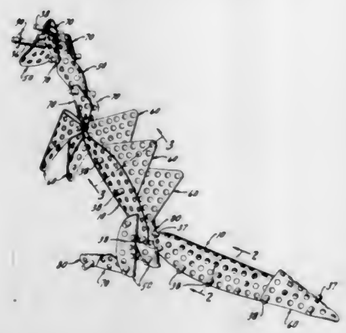
1. In a toy construction set having a plurality of elements including elongated axle rods and wheels attachable thereto: a platform block having a hollow base portion defining a plurality of pairs of axle receiving recesses therein and a plurality of individually raised lands on the top portion thereof, said lands located to define a centrally disposed longitudinal groove and at least one transverse groove bisecting said platform, an external lug formed on each of the outwardly facing walls of said

raised lands, said longitudinal groove located in parallel alignment with one pair of said axle receiving recesses and at least one of said transverse grooves located in parallel alignment with another pan of said axle receiving recesses, a hollow box-like body block having one open end formed to snugly fit over any two adjacent of said raised lands, and a plurality of internal lugs formed on the inner surface of said open end for snappingly engaging



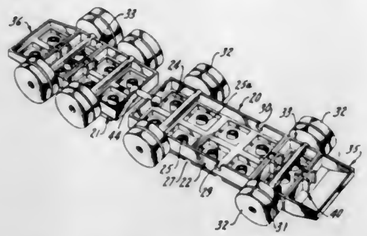
said external lugs when said open end of said body block is fitted over said raised lands, said body block also having a closed end carrying a pair of spaced nipples thereon, said nipples being dimensioned to snugly fit into any adjacent pair of said apertures in said raised lands for reversibly mounting said body block securely on said platform with the closed portion of said body block adjacent the surface of a pair of said raised lands.

3,224,136
TAKE-APART TOY FIGURE
Douglas C. Moryl, Los Angeles, Calif., assignor to A. G. Spalding & Bros. Inc., Chicopee, Mass., a corporation of Delaware
Filed Nov. 3, 1961, Ser. No. 149,949
4 Claims. (Cl. 46—22)



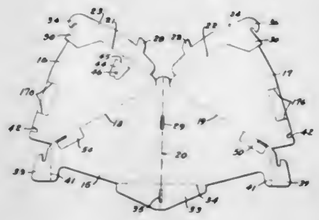
3. A take-apart toy figure comprising: a plurality of differently shaped flexible, deformable plastic sheets, each having a plurality of equi-diameter apertures formed therein, said differently shaped sheets having elliptical and triangular geometrical outlines with the apertures formed in each of said sheets being arranged in at least one geometrical array concentric with and conforming to the geometrical outline of said sheet, with at least one of said sheets bent into curved formation, and with all of said sheets representing portions of the figure; and a plurality of rigid rods having a common dimension with said apertures, with at least some of said rods passed through at least two apertures in each curved sheet and holding each curved sheet in such curved form, and with at least some of said rods passed through apertures in each of two adjacent sheets and interconnecting all of said sheets.

3,224,137
TOY CONSTRUCTION BLOCK SET
John H. Wright and Charles Stowe Myers, Evanston, Ill., assignors to A. G. Spalding & Bros. Inc., Chicopee, Mass., a corporation of Delaware
Filed Mar. 4, 1963, Ser. No. 262,457
4 Claims. (Cl. 46—26)



1. In a toy construction set, the combination including a plurality of construction blocks having the same width but having various lengths and profiles, said blocks having hollow base portions with at least one wall of said base portions defining a generally keyhole-shaped recess having an outwardly flared opening thereinto, a connector means for securing said blocks together in wall-to-wall relationship, said connector means having a generally H-shaped configuration with a cylindrical center portion dimensioned for insertion through said flared opening and into said recess, and said connector means having generally channel shaped end pieces, said connector means being formed of a resilient material whereby said means is deformable under pressure to allow said connector means to be inserted into two of said recesses and when said pressure is released said end pieces tightly grip two of said walls therebetween.

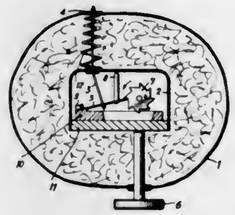
3,224,138
TOY GLIDER WITH DOUBLE WING MEANS
William J. Shapiro, 658 Montgomery St., Brooklyn, N.Y.
Filed Oct. 10, 1963, Ser. No. 315,171
27 Claims. (Cl. 46—79)



4. A toy glider for flight comprising wing means of sheet material and having a longitudinal axis, said wing means including a double wing element extending on both sides of the longitudinal axis and having at least one forward leading edge and side edges and at least one trailing edge, second wing means, integral hinge means connecting the second wing means and the double wing element together along at least one edge of the latter, the second wing means overlying the double wing element on both sides of the longitudinal axis, the wing means having a lateral dimension of substantial extent such as to support the glider in flight, and locking means carried by the two wing means spaced from the integral hinge means and securing the double wing element and the second wing means in adjacent spaced relation, and that part including the integral hinge means and the

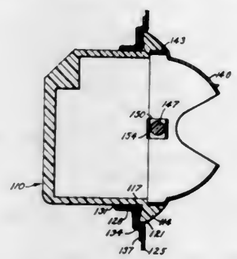
locking means which is located at the trailing edge retaining the trailing edges of the wing means in substantial spaced relation and with a substantial portion of the space between the trailing edges of the wing means being open.

3,224,139
TOY IMITATING BREATHING AND HEARTBEAT
Guido Reuge, 21 Rue des Rasses, Sainte-Croix, Switzerland
Filed Feb. 13, 1963, Ser. No. 258,182
Claims priority, application Switzerland, Feb. 15, 1962, 1,840/62
5 Claims. (Cl. 46—118)



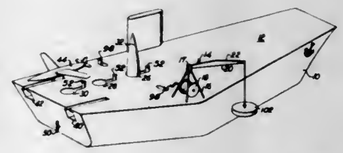
1. A device for simulating a heartbeat in a doll or the like comprising a body, a flexible external housing on said body, a casing located within said body, a motor enclosed within said casing, a shaft driven by said motor, a toothed wheel mounted on said shaft, a lever mounted within said casing vibrated by the teeth upon said toothed wheel, a flexible cord having one end attached to said housing and the other end to said lever, means actuated by said lever to strike said casing when said lever is actuated by one of the teeth upon said toothed wheel whereby the sound of a heartbeat is obtained simultaneously with the movement of said housing actuated by said flexible cord and a spring member disposed within said body between said housing and said casing to return said cord and said housing to original position.

3,224,140
MOUNTS FOR MOVABLE DOLL EYES FOR STUFFED TOYS
Harry Brudney, New York, N.Y., assignor, by mesne assignments, to Jacoby-Bender, Inc., Woodside, N.Y., a corporation of New York
Filed Feb. 28, 1962, Ser. No. 176,238
4 Claims. (Cl. 46—169)



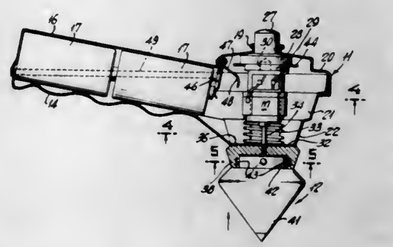
1. A doll eye for a stuffed toy, comprising a casing, a forward end of said casing being provided with a radial flange element for engagement with the front marginal surface of an eye aperture in the skin of a stuffed toy, a locking ring having a radial flange element for engagement with the rear surface of said skin and having an aperture encompassing said casing, said latter aperture having edge means engageable with said casing to effect a frictional grip thereon, said locking ring being slidable on said casing to compress said skin between the aforementioned flange elements, said edge means being operative to securely hold said locking ring in skin compressing position, said casing comprising a metallic front shell and a molded plastic rear housing, said first mentioned flange element being an integrally molded portion of said rear housing and having a rearwardly facing undercut surface, said locking ring flange element being provided with a crevice, said undercut surface terminating in a relatively narrow edge registering with said crevice for compressing a narrow area of said skin into said crevice.

3,224,141
PROJECTILE PROJECTING AND RETRIEVING TOY BOAT
Martin D. Borak, 12617 Epping Road, Wheaton, Md.
Filed Mar. 25, 1963, Ser. No. 267,472
4 Claims. (Cl. 46—242)



1. A toy boat comprising a buoyant hull, projectile launching means on said hull, magnetically responsive buoyant projectiles projectable by said launching means, a crane mechanism on said hull having a cable extensible and retractable by said crane and a retrieving magnet on the end of said cable cooperative with the magnetic projectiles for retrieving each after launching.

3,224,142
TOP HOLDING AND SPINNING DEVICE WITH ELECTRIC MOTOR DRIVE
Gustav J. Pawelka, Sunset Ave., Glenwood Landing, N.Y., and Frederick H. Kroll, 72 Wood Hollow Lane, New Rochelle, N.Y.
Filed Dec. 13, 1962, Ser. No. 244,502
12 Claims. (Cl. 46—243)

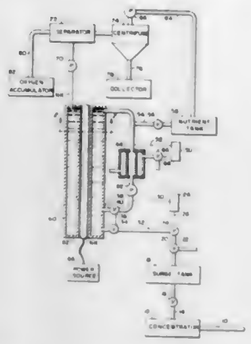


1. The combination of a rotatable top and a top spinner comprising, a chuck, an electric drive motor connected to said chuck for rotating said chuck in a predetermined forward direction, means releasably coupling said top to said chuck for rotation therewith and responsive to the forward rotation of said top relative to said chuck to effect disengagement thereof, an electric battery, means including a normally open switch connecting said motor to said battery, and means for selectively braking said chuck whereby to effect the forward rotation of said top relative to said chuck and the release of said top.

3,224,143
APPARATUS AND METHOD FOR GROWING ALGAE TO RECOVER OXYGEN

Richard W. Tew, Azusa, James O. Sane, Covina, and Robert P. Geckler, Glendora, Calif., assignors to Aerojet-General Corporation, Azusa, Calif., a corporation of Ohio

Filed Apr. 17, 1962, Ser. No. 188,099
14 Claims. (Cl. 47—1.4)



13. Apparatus for the continuous conversion of a gaseous feed stream containing a small amount of carbon dioxide to a product stream containing a high concentration of oxygen comprising: a plurality of containers connected in parallel with each being adapted to receive a carbon dioxide-retaining material; means for forcing said gaseous feed stream through said containers, a second chamber adapted to receive an aqueous composition comprising algae and nutrient, a pH measuring means positioned to contact said aqueous composition, cyclically actuated valve means connecting said containers and adapted to control the pressurized feed to an individual container, and to control the evacuation of carbon dioxide from an individual container whereby at least one container is being pressurized while at least one container is being evacuated and vice versa; means for conveying carbon dioxide from said container to said chamber, including an adjustable valve means adapted to control the feed rate of said carbon dioxide stream, and control means connecting said pH measuring means to said valve means whereby the flow rate of said carbon dioxide stream is proportioned to the pH of said aqueous medium; means for continuously circulating said aqueous composition through said chamber, a light source adapted to illuminate the interior of said chamber; means for continuously adding nutrient to said chamber; and means for continuously removing algae, nutrient and oxygen from said chamber.

3,224,144
FLORAL BASKET

Lawrence Muennich, Springfield Township, Hamilton County, Ohio (9850 Lakeview Drive, Cincinnati 31, Ohio)

Filed Mar. 22, 1961, Ser. No. 97,643
10 Claims. (Cl. 47—35)

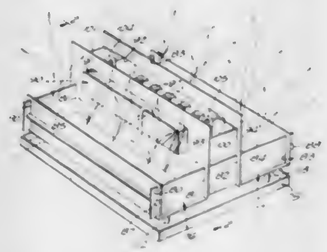


1. A floral basket comprising in combination a handle, a pair of box ends attached to said handle which connects said ends and limits unstressed positioning of one of said ends relative to the other of said ends, a pair of box sides each cooperatively engaging each of said ends to form a frame, said box sides supporting cooperating portions of said box ends in a predetermined relation to each other differing from the relation in which said connecting handle tends to bias them and with the box ends and handle forming a stressed handle-frame assembly, and a wedging receptacle wedgingly cooperating with said frame and bowing the ends and sides of said frame outwardly, whereby said handle-frame and receptacle comprise a floral basket stressed to remain in rigid assembled relation.

3,224,145
FLY TRAP

Earcy L. Ballard, 16640 Randall Ave., Fontana, Calif.

Filed Feb. 13, 1963, Ser. No. 258,263
4 Claims. (Cl. 47—38.1)



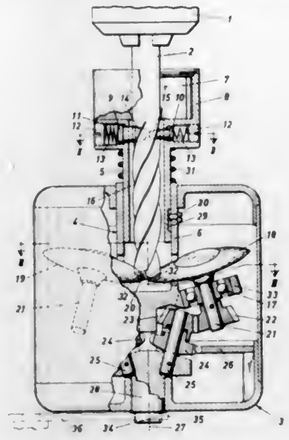
1. An insect trap comprising in combination, a first container having therein a lure for poisoning insects, a second container containing water disposed adjacent to said first container, means providing for a relatively slow transfer of water from said second container to said first container for moistening said lure, said first container having a position relative to said second container allowing access of insects to the lure in said first container, means including at least one additional container positioned adjacent to said first container containing soil providing a planter disposed beneath said second container whereby growing plants may be provided for adjacent to the first container, and means providing for transfer of water at a relatively slow rate from said second container to said planter, said water transfer means comprising pieces of balsa wood disposed in the bottom of said second container, said pieces of balsa wood and the bottom of the second container having openings therein providing for transfer of water at a relatively slow rate to the said planter.

3,224,146
APPARATUS FOR GRINDING DRILLS

Allan Eugen Ahlström, Norra Vagen 11, Halmstad, Sweden

Filed May 22, 1963, Ser. No. 282,296
Claims priority, application Sweden, May 24, 1962, 5,843/62
4 Claims. (Cl. 51—90)

1. In a grinding apparatus for grinding a twist drill having at one end thereof faces having cutting edges, the drill being provided with chip channels: a hollow main shaft having lateral arms; a centering and clamping means for clamping the drill to be ground in said main shaft coaxial therewith; two inclined grinding disks rotatably carried on the arms of the shaft, the peripheries of said grinding disks close to each other near the axis of said centering and clamping means; at least one guiding means adapted to engage one of the chip channels of the drill to be ground for locating the drill correctly relative to said shaft and thus also relative to said grinding disks, the latter thereby being brought to contact the faces of the drill; a handle at the lower end of said shaft so that the apparatus can be held with one hand of the operator during the grinding operation; and means for, upon the

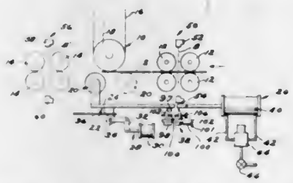


rotation of the shaft relative to said handle, to rotate said grinding disks when the latter are in contact with the faces of the drill while the latter is clamped by said centering and clamping means so as to grind the cutting edges of said drill.

3,224,147
METHOD OF FINISHING FLAT STOCK

John Ross, Southfield, Mich., assignor to Midwest Supply and Manufacturing Company, Ferndale, Mich., a corporation of Michigan

Filed Nov. 27, 1962, Ser. No. 240,247
13 Claims. (Cl. 51—281)



7. A method of finishing a flat sheet under the action of a rotatively driven finishing member, comprising feeding the sheet flatwise in a plane paralleling the rotative drive axis of said member in the finishing engagement with the latter, and supporting the sheet at a point located forwardly relative to said drive axis, in reference to the direction of sheet feed, to hold the sheet against said member after the sheet takes engagement with said member, and in the absence of a corresponding supporting of the sheet at the same time on the opposite side of said drive axis.

3,224,148
METHOD AND APPARATUS FOR PRODUCING A REFLECTIVE ROTATING SHUTTER

George A. Mitchell, 687 Prospect Crescent, Pasadena, Calif.

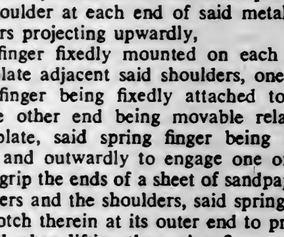
Filed Aug. 5, 1963, Ser. No. 299,797
12 Claims. (Cl. 51—328)

11. The method of producing a true polished face surface of revolution on a rotative member such a reflective shutter in an optical surface producing machine that has a rotating flat lap and a shifting work carrier

said method comprising the steps of,

mounting at least three shutter blanks rigidly on their own permanent spindles which provide fixed axes of rotation for the blanks substantially in the planes of their outer faces,

mounting such blanks on the work carrier by mounting their spindles for free rotation about and for axial movements along said axes on the work carrier with



the outer face surfaces of the blanks bearing substantially flatly against the rotative lap face, said mounted axes being circularly spaced from each other,

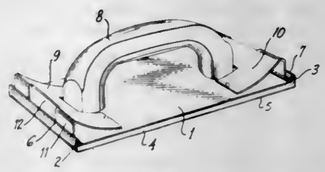
yieldingly pressing each blank toward the lap face relative to the work carrier,

and rotating the lap and simultaneously shifting the work carrier.

3,224,149
HAND SANDER

Eugene M. Harrington, 4316 Alger St., Los Angeles, Calif., and Melvin I. Masterson, Jr., 1708 Seabright Ave., Long Beach 13, Calif.

Filed Dec. 16, 1963, Ser. No. 330,955
1 Claim. (Cl. 51—386)



A hand sander comprising a flat metal plate,

a pad of yieldable cellular material attached to the bottom surface of said metal plate, a sheet of sandpaper extending over said pad,

a handle fixedly attached to said metal plate,

a fixed shoulder at each end of said metal plate, said shoulders projecting upwardly,

a spring finger fixedly mounted on each end of the metal plate adjacent said shoulders, one end of the spring finger being fixedly attached to said plate and the other end being movable relative to the metal plate, said spring finger being bent downwardly and outwardly to engage one of the shoulders to grip the ends of a sheet of sandpaper between the fingers and the shoulders, said spring finger having a notch therein at its outer end to provide a finger hold when lifting the spring finger.

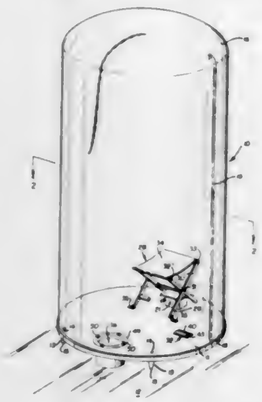
3,224,150
PORTABLE ICE FISHING SHANTY

James Allen Burtoft, 2534 Eastgate Ave., and Joseph Harold Burtoft, 3522 Albrecht Ave., both of Akron, Ohio

Filed Sept. 30, 1963, Ser. No. 312,562
4 Claims. (Cl. 52—2)

1. A portable shanty for accommodating at least one fisherman while fishing through a hole in the ice comprising, a floor member having an upper and an under side, foot means on the under side of said floor member

to support said floor member in spaced relation above the ice, a fishing hole through said floor member, sealing means outwardly of said fishing hole dependingly secured to said floor member for extending through a hole in the ice and into the water therebelow, a flexible dome sealed



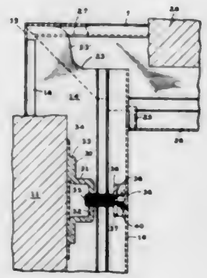
to said floor member, sealable entry means in said dome, an inlet bore, a pump means attached to said portable shanty, said pump means adapted to draw outside air through said inlet bore into the interior of said shanty, a vent means for restrictive exhaust of the air in said shanty.

3,224,151
ROOF BEAMS AND SUPPORTING COLUMNS
Albert F. Nystrom, Brookfield, Wis., assignor to Inland Steel Products Company, Milwaukee, Wis., a corporation of Delaware
Filed June 26, 1962, Ser. No. 205,285
2 Claims. (Cl. 52—90)



1. In a building:
a pair of beams consisting of first and second roof beams;
each of said beams having a deep end and a shallow end;
each beam having a web and top and bottom inclined flanges each extending in a continuous, unchanging slope between said ends;
each beam having a vertical side at each end thereof;
each of said vertical sides extending from the top inclined flange to the bottom inclined flange of the beam;
said vertical sides at the deep ends of the two beams being in mutually abutting relation, with the deep end vertical side on each of said beams having the same depth as and being coextensive with the deep end vertical side on the other of said beams;
a plurality of supporting columns each having vertically disposed surfaces;
said top and bottom flanges on said first beam extending in upward inclined diverging relation from the vertical side at the shallow end to the vertical side at the deep end;
said top and bottom flanges on said second beam extending in upward, inclined, converging relation from the vertical side at the deep end to the vertical side at the shallow end;
a respective vertical side at said shallow end of each of said pair of beams being abuttingly engaged to a vertically disposed surface on a respective one of a pair of said supporting columns;
said top flange of one of said beams being inclined at the same angle as, and constituting a continuation of, the top flange of the other of said beams;
the bottom flanges on said first and second beams extending from a mutual junction at the deep ends of the beams to define a single angle between said pair of supporting columns;
each of said columns having the same width;
the length of said second beam being equal to the length of said first beam plus one-half the width of a column, so that a second pair of roof beams identical to said first-recited pair and a supporting column identical to one of said first-recited supporting columns may be symmetrically arranged with the webs of said second pair in coplanar opposition to the webs of said first-recited pair and thereby provide a building of modular construction utilizing a minimum number of different types of beams and columns.

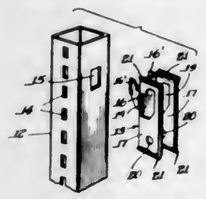
3,224,152
DOOR FRAME
Rupert L. Evans, 5100 Tyler St., Hollywood, Fla.
Filed Sept. 11, 1963, Ser. No. 308,214
2 Claims. (Cl. 52—217)



1. A metallic door frame for fitment into a preformed opening in a finished wall structure, comprising spaced apart parallel jambs that are connected together by a header, the jambs and the header each being formed of sheet metal having an inner disposed face, said face being provided with a channel forming a stop for a door, the jambs and the header outwardly from the face being rabbeted and then shaped to provide outwardly flaring arcuate walls, the walls terminating in a pair of opposed flanges forming a throat opening, the jambs and the header adapted to embrace the finished wall structure by shifting the flanges over the wall area and with the wall extending into the jambs and the header through the throat opening, the jambs at their upper ends and the header at its outer ends being notched and beveled for fitment together at assembly and with the arcuate side walls having a mating engagement at the corners whereby to form a cope joint, means carried by the opposed flanges of the header and spaced from the arcuate walls to form an opening for a wedge extension on the jambs at their upper ends whereby the wedge engagement causes the cope joint to be in flush smooth relation, a pressure device carried within the jambs adjacent their upper ends and

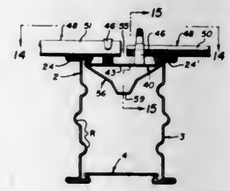
adapted to bear against a wall core to bias the jambs outwardly to cause the jambs and the header to have pressure engagement, stop lugs carried by the upper portion of the jambs that lie in the path of upward movement of the header, the pressure device forcing the jambs into the interlocking engagement with the header for creating the cove joint, means for anchoring one jamb at approximate vertical center to a wall core adjacent to the jamb comprising an elongated screw having a shank portion and a threaded portion, the screw being circumferentially grooved at a point between the first thread and the shank, the shank having a head remote from the threaded portion whereby the screw may be rotated, an expandable sleeve adapted to receive the shank of the screw, the sleeve having an inwardly directed bevel at one end for seating within the groove on the screw, the sleeve being so designed as to permit the sleeve to contract for fitment within an opening formed in the stop, the sleeve having self-retaining means for holding it within the jamb, the sleeve having an enlarged recessed collar at the opposite end thereof to receive the screw head whereby the sleeve may be forced through the aperture to snap outwardly to prevent subsequent removal thereof, the screw extending through the sleeve and engageable with a wall core whereby the jamb may be positively held in its spaced relation with respect to the stud against twisting or unauthorized springing of the jamb at a point of the latch for the door.

3,224,153
PANEL SUPPORTING STRUCTURE
Marvin A. Berman, Highland Park, and Albert Mayer, Cicero, Ill., assignors to Capitol Hardware Mfg. Co. Inc., Chicago, Ill., a corporation of Illinois
Filed Apr. 16, 1962, Ser. No. 187,685
1 Claim. (Cl. 52—495)



In a panel support structure comprising a pair of substantially hollow standards having vertically spaced slots in the sides thereof, and a panel between the standards, the improvement comprising panel holding clips on said standards for maintaining said panel in an upright position between said standards, said clips each comprising a sheet metal stamping having a pair of opposed wall portions forming a laterally facing channel into which the edge portion of said panel extends, and a pair of opposed hook-like extensions struck from said side walls adjacent one end thereof and bent back generally in the planes of said side walls, the vertical extent of said extensions being greater than that of each of said standard slots, the outer ends of said extensions being spaced apart a distance less than the width of said slots to enable said extensions easily to enter a standard slot, the middle portions of said extensions extending outwardly to a point where they are spaced apart a greater distance than the width of said standard slots and the base portions of said extensions being spaced apart a lesser distance than the middle portions of the extensions where the base portions thereof may snugly and resiliently snappingly engage the defining walls of one of the slots, wherein the clips are anchored in place by tilting the clip, inserting the hook-like extensions thereof into a standard slot and then pivoting the same into an upright position and opposite edges of said opposed wall portions of the clip flaring outwardly to facilitate insertion of the panel into the channel formed thereby.

3,224,154
STRUCTURAL ASSEMBLY CONSTRUCTION
Andrew J. Toti and Carlo J. Toti, both of 507 "H" St., Modesto, Calif.
Original application Dec. 28, 1959, Ser. No. 862,321, now Patent No. 3,134,468, dated May 26, 1964. Divided and this application July 24, 1963, Ser. No. 300,953
7 Claims. (Cl. 52—520)



1. An overhead roof cover structural assembly to be supported over a surface to be protected thereby comprising: a cover structure defined by a plurality of preshaped elongated imperforate cover elements each of which includes generally upwardly extending ridges along opposed longitudinal edges thereof, said ridges being contoured to interfit with other similar ridges of similar cover elements, the longitudinal edges of adjacent cover elements of said cover structure being in overlapping contact with each other with a ridge of one such element interfitted with a ridge of another such element, the interfitted ridges of the respective cover elements imparting a generally continuous imperforate rain proof construction to said cover structure; and at least one hollow supporting beam in combination with said cover elements of said cover structure, said supporting beam extending transversely of said interfitted edges of said cover elements and supporting said cover structure from beneath said cover elements; said beam including a structural member integral therewith at the top thereof, said structural member having a plurality of bendable tabs formed directly thereon in predetermined longitudinally spaced relationship therealong, each of said tabs being integral at one of its ends with said structural member and projecting generally upwardly therefrom; said interfitted cover elements of said cover structure being secured directly to said beam by said tabs, said tabs being folded over and overlying edge portions of said cover elements which overlie said beam structural member, said tabs thus obviating the need for separate fasteners for securing said cover elements of said cover structure to said beam.

3,224,155
HOLLOW PANEL WITH INTEGRAL KEY CONNECTING FEATURE
Charles Galloway Rook, P.O. Box 404, Lubbock, Tex.
Filed Aug. 12, 1963, Ser. No. 301,266
2 Claims. (Cl. 52—593)

1. A building construction interlocking panel board comprising, a pair of parallel spaced sidewall members having lower and side edge portions and an integral upper edge connecting portion therebetween formed of sheet material to a generally U-shaped cross-section, portions of each of said sidewalls remote from said upper edge connecting portion and adjacent the lower edges being crimped inwards and outwards to form inwardly extending respective stiffening ribs generally parallel to said lower edge portions, the lower outer portions of said ribs extending downwardly below said ribs substantially in the planes of the respective side walls and then being formed inwards

and upwards to provide depending spaced tongue elements with parallel sidewall members and grooves therebetween, a stiffening channel member of U-shaped cross-section having a base portion and depending leg portions positioned between said sidewall members of said panel board with a respective one of its leg portions received in a respective one of said grooves and with its base portion abutting both said ribs and with respective corners of its



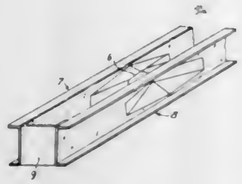
base portion abutting respective ones of said ribs, and the upper edge connecting portion of said panel board being formed to provide a tongue portion adapted to extend upwards into the stiffening channel member of a similar panel board to be interlocked therewith and having respective interlocking grooves adjacent the base thereof adapted to receive the depending spaced tongue elements of the lower edges of the similar panel board.

3,224,156

STRUCTURE OF TUBULAR FRAMEWORK FOR CARRYING SURFACES WORKING IN THE COLD OR HOT

Jacques Marchand, 94 Blvd. Malesherbes, Paris 17e, France

Filed Mar. 19, 1963, Ser. No. 266,405
Claims priority, application France, Mar. 20, 1962, 891,635
5 Claims. (Cl. 52—660)



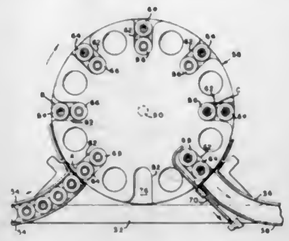
1. A tubular structure enabling carrying surfaces to be obtained and formed of parallel tubular frames joined to each other, comprising a single kind of primary members each made of a strip of sheet metal bent lengthwise in U shape with a wide web, the web of each primary member being stamped in order to provide, at least on the other side than the flange side of the primary member, identical embossed parts, regularly spaced and with an elongated lozenge shaped base, straight normal sides and diverging truncated top, said embossed parts projecting a facet from the web of each primary member and on the other side than the flange side.

3,224,157

WADDING CONTAINERS

Eino E. Lakso, Fitchburg, Mass., assignor to The Lakso Company Incorporated, Fitchburg, Mass., a corporation of Massachusetts

Filed Nov. 15, 1962, Ser. No. 237,912
6 Claims. (Cl. 53—21)



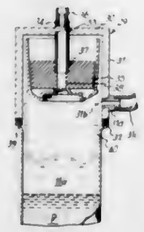
1. The method of wadding containers which comprises feeding a single line of containers to be wadded along a predetermined line, separating the containers a pair at a time from the line and arranging the pairs in generally radial condition with respect to a center, moving the pairs about the center, wadding one only of each pair of containers at an initial station at a predetermined distance from the center, wadding the other of each of said pair of containers at a succeeding station at a different predetermined distance from the center, and transferring the wadded containers a pair at a time to a single feeding out line.

3,224,158

METHOD FOR PACKAGING PRESSURE FEED DEVICES

Norbert J. Baumann, South Fort Mitchell, Ky., assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

Filed Feb. 5, 1962, Ser. No. 171,035
5 Claims. (Cl. 53—22)



5. The method of packaging a piston-type pressurized product dispensing container which comprises:

(A) filling an open-bottom container body having a product dispensing valve mounted at the top thereof with a quantity of the product to be dispensed, said filling being accomplished through said open-bottom with the container body in an inverted position;

(B) drawing a vacuum upon the unfilled volume of said container body while inserting a tapered piston in said open bottom;

(C) causing the piston to be forced into intimate contact with said product along its lower face and to displace some product from its filled position into a continuous wedge-shaped annular product seal between the tapered outer peripheral surface of said piston and the adjacent interior surface of said container body;

(D) breaking the vacuum acting upon the container body;

(E) applying a valve equipped container bottom and seaming it to the lower edge of the container body, and

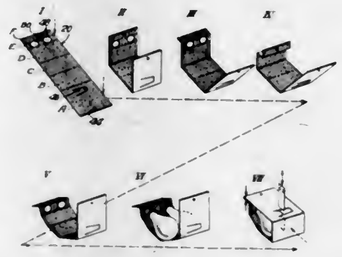
(F) pressurizing the container by forcing a propellant into the propellant chamber through the valve in said container bottom.

3,224,159

METHOD AND APPARATUS FOR PACKAGING LIGHT BULBS WITH COHESIVE CORRUGATED PAPER

Edgar W. Pitt and Kermit Greene, Newton, Mass., assignors to St. Regis Paper Company, New York, N.Y., a corporation of New York

Filed Jan. 23, 1963, Ser. No. 253,351
13 Claims. (Cl. 53—29)
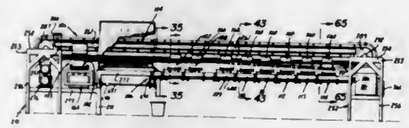


1. A method of packaging electrical bulbs with a die cut blank of cohesive corrugated paper having a series of panels interconnected along crease lines comprising; dispensing said blanks upon a conveyor means, moving said blank along said conveyor, partially folding said blank, moving said partially folded blank along said conveyor, partially spreading open said blank, dispensing electrical bulbs upon said blank, moving said blank and electrical bulbs along said conveyor, wrapping said blank about said bulbs, and pressing the end terminal portions of said blank into cohesive engagement one with the other.

3,224,160

EGG PACKING APPARATUS

Alvoid V. Scollard, Orinda, and Alfred E. Comstock, Greenbrae, Calif., assignors to Safeway Stores, Incorporated, Oakland, Calif., a corporation of Maryland

Original application Feb. 14, 1961, Ser. No. 89,275. Divided and this application Mar. 13, 1962, Ser. No. 179,347
7 Claims. (Cl. 53—55)



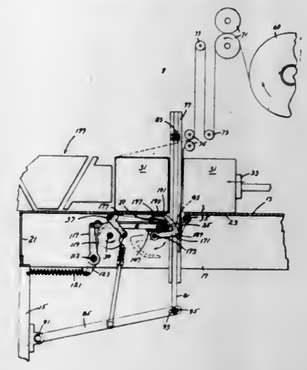
1. In a machine for handling eggs, means for delivering eggs to an egg discharge station, conveyor means mounted in the egg discharge station, the conveyor being adapted to accommodate either egg trays or egg cartons, the egg trays having five rows of six eggs each and the egg cartons having two rows of six eggs each, means for feeding cartons or trays to the conveyor, means for advancing the cartons or trays into the egg discharge station, means for causing the discharge of eggs, and means mounted on the conveyor adapted to be engaged by the cartons or trays for sensing whether cartons or trays are being advanced by the conveyor and connected to said means for causing the discharge of eggs to cause the eggs to be discharged in the discharge station in a proper manner to fill cartons or trays as the cartons or trays are advanced.

3,224,161

PACKAGE WRAPPING APPARATUS

John D. Conti, Elkins Park, Pa., assignor, by mesne assignments, to FMC Corporation, San Jose, Calif., a corporation of Delaware

Filed June 20, 1962, Ser. No. 203,827
11 Claims. (Cl. 53—228)



1. Article wrapping apparatus including a table, an elongated opening in said table, means at one side of said table for feeding a continuous sheet material through said opening and beyond the opposite side thereof, means for advancing an article to be wrapped against one side of the sheet material and into a wrapping station, a rod normally positioned adjacent to said one side of said table, means for moving said rod into engagement with the other side of the sheet material and through said opening into a terminal position on the opposite side of said table after the article is received in the wrapping station, means including a cutting blade and blade carrier supported adjacent to the opposite side of said table in alignment with said rod as it is received in said terminal position, means for moving said carrier toward said rod for releasably gripping the sheet material carried by said rod, means for operating said cutting blade for severing the sheet material gripped between said carrier and rod, means for tucking the trailing end of the severed sheet material around the article and into contact with the leading end thereof, and means for sealing the contacting ends of the severed sheet material.

3,224,162

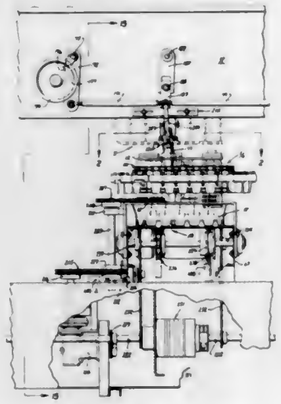
EGG HANDLING AND PACKING APPARATUS

Alvoid V. Scollard, Orinda, and Alfred E. Comstock, Greenbrae, Calif., assignors to Safeway Stores, Incorporated, Oakland, Calif., a corporation of Maryland

Filed Aug. 10, 1962, Ser. No. 216,249
20 Claims. (Cl. 53—247)

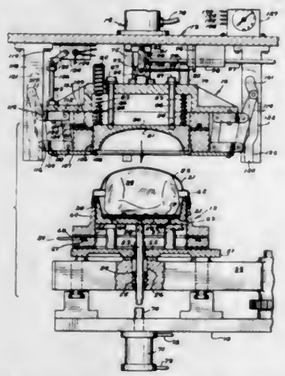
9. In aparatus for handling articles, means for transporting articles along a path through a plurality of stations, said means for transporting articles moving continuously in one direction, normally stationary accumulator means in each station for receiving articles from the means for transporting articles, said accumulator means including a plurality of article receiving buckets, each of the buckets being movable between article receiving and article releasing positions, means for moving the buckets in one direction in an orbital path so that the buckets in one portion of the orbital path are adjacent the path of the means in each station for transporting articles, means actuated when an article carried by the

means for transporting articles is to be deposited in a predetermined station for causing discharge of articles from the means for transporting articles into the buckets, said means for moving the buckets including means for accelerating the buckets of the accumulator means in the predetermined station from the normally stationary posi-



tion so that the buckets are travelling at substantially the same speed as the means for transporting the articles and one of the buckets is in registration with said article, means for causing discharge of articles from the means for transporting articles discharging said article into the bucket in registration therewith while the bucket is moving and means for moving the buckets to article releasing positions at points spaced from the region at which the articles are received by the buckets.

3,224,163
PACKAGE SEALER
Smith G. Ray II, Northfield, Minn., assignor to G. T. Schjeldahl Company, Northfield, Minn., a corporation of Minnesota
Filed Jan. 15, 1962, Ser. No. 177,689
19 Claims. (Cl. 53—329)



1. A heat sealing apparatus for packaging products in lidded containers fabricated of thermoplastic material, said apparatus comprising,

(a) a fixed support,

(b) a lower die assemblage carried by said fixed support and adapted to receive a container with its contents,

(c) an upper die assemblage mounted over said lower die assemblage and convergently movable theretoward,

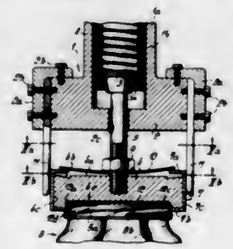
(d) said upper die assemblage having a portion adapted to receive a lid for said container and to press thereagainst during convergent movement of said upper and lower die assemblages,

(e) a heated die on said lower die assemblage having an outwardly facing surface adapted to surround said container and to contact the peripheral margin of said container,

(f) a heated die on said upper die assemblage having an inwardly facing surface adapted to surround said lid and to contact the peripheral margin of said lid, and

(g) power means urging said upper and lower die assemblages convergently first to press said lid against its contents whereby to expel air from the container, then to press the respective outwardly and inwardly facing surfaces together and thereby to heat seal the respective peripheral margins of the lid and container.

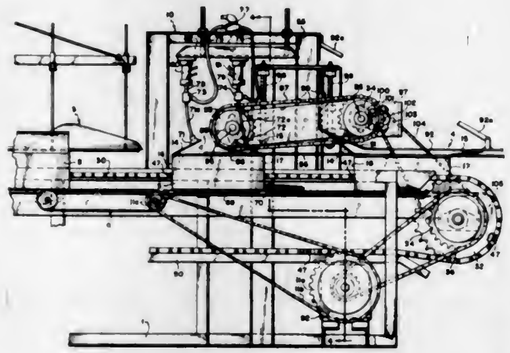
3,224,164
APPARATUS FOR APPLYING COVERS TO JARS AND SIMILAR CONTAINERS
Rudolf Keller and Alexander Keller, Neuss (Rhine), Germany, assignors to Firma Alexander Keller K.-G., Neuss, Germany
Filed Aug. 22, 1962, Ser. No. 218,751
Claims priority, application Germany, Oct. 17, 1961, K 44,945; Apr. 27, 1962, K 46,582
17 Claims. (Cl. 53—331)



1. In an apparatus for applying deformable tubular walls of substantially cup-shaped covers to externally threaded or beaded open end portions of jars and similar containers, in combination, a substantially disk-shaped carrier having a first side, a second side, and a peripheral face located intermediate said sides, said second side adapted to engage and to press a cover against then end portion of a container in such a way that the tubular wall of the cover surrounds the end portion and that said second side extends radially beyond the tubular wall; a plurality of substantially U-shaped deforming elements each comprising a first and a second leg respectively adjacent to said first and second sides and a connection portion located intermediate said legs and adjacent to the peripreral face of said carrier, the distance between said first and second legs exceeding the thickness of said carrier so that said deforming elements are titlable in radial planes passing through the axis of said carrier and movable in axial direction with respect to the carrier, said second legs being outwardly adjacent to the tubular wall of a cover which is engaged by the second side of said carrier; resilient means for normally biasing said deforming elements in a direction to maintain said second legs out of engagement with the tubular wall; and tilting means movable into engagement with said connecting portions for tilting said deforming elements and for thereby moving said second legs into deforming engagement with the tubular wall while permitting movement of said deforming elements in axial direction so that at least a portion of the wall assumes the external

outlines of the end portion and retains the cover on the container and so that during inward movement of said second legs said deformable elements may shift in axial direction so as to engage a portion of the wall located between adjacent crests of a threaded end portion.

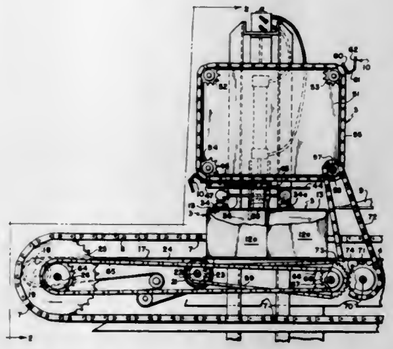
3,224,165
FOUR FLAP OPENER FOR CASES
Biagio J. Nigrelli, Northbrook, Wendell E. Standley, Lake Forest, and Richard B. Wittmann, Chicago, Ill., and Donald D. King, Madison, Wis., assignors, by mesne assignments, to Johns-Nigrelli-Johns, Inc., Skokie, Ill., a corporation of Illinois
Filed June 4, 1962, Ser. No. 199,944
8 Claims. (Cl. 53—382)



4. In a cover flap opening mechanism for top-opening cases having cover flaps hinged to swing rearwardly, the combination of a flap raising station, a conveyor having spaced pushers for advancing individual cases in spaced relation to and beyond the flap raising station with the flap hinge lines arranged transversely of the conveyor travel and on the trailing sides of the cases, means for driving the conveyor, means for stopping the individaul cases in position at said station, auxiliary conveying means for advancing each case ahead of its pusher as the case approaches said station until brought to a stop by said stop means at the station, a flap raising mechanism at said station, means timed with the pusher travel for actuating the flap raising mechanism while the case is at said station to raise the case flap and hold it inclined at a small angle, a flap swinging member disposed at a level above the case at said station but within the path of the case flap when raised, said member extending transversely of the direction of conveyor travel to support the flap in raised position when the case, with raised flap, is advanced, the pusher in original contact with the case serving to propel the case away from said station, said flap swinging member acting, upon advancing movement of the case, to swing the flap over to a rearwardly extended position.

3,224,166
COVER OPENER FOR ABUTTED CASES
Robert R. Johns and Wendell E. Standley, Lake Forest, and Richard B. Wittmann and John E. Karlovitz, Chicago, Ill., assignors, by mesne assignments, to Johns Nigrelli-Johns, Inc., Skokie, Ill., a corporation of Illinois
Filed Oct. 11, 1962, Ser. No. 229,836
6 Claims. (Cl. 53—382)

2. In a cover flap opener designed to open side-hinged cover flaps on top opening cases, the combination of conveying means along which a case is advanced with its cover hinge line extending in the direction of travel, means for raising a hinged cover flap on a case upwardly through a small angle, plow means located in spaced relation to the conveying means downstream from the cover raising means, said plow means being disposed in operative relation to the raised cover flap to swing the flap to fully open position when the case advances past such



plow means, and supplemental flap engaging means comprising an element mounted for movement above the case path, means for moving said element in timed relation with the first mentioned flap raising means to engage and hold the case flap raised as the case is conveyed until the advancing edge portion of the flap moves into engaging relation with the plow means.

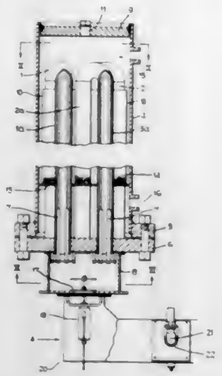
3,224,167
MODIFIED ZEOLITIC MOLECULAR SIEVES AND PROCESS FOR PRODUCING SAME
Robert A. Jones, Snyder, N.Y., assignor to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Jan. 21, 1963, Ser. No. 252,560
9 Claims. (Cl. 55—35)

1. Process for reducing the apparent pore size of sodium A zeolitic molecular sieve which comprises contacting said molecular sieve with steam at a water vapor pressure of greater than 25 mm. Hg at a temperature within the range of about 250° C. to about 650° C. and for a time period of from about 0.5 to about 200 hours, said period of time, water vapor pressure and temperature being commensurate such that the oxygen adsorption capacity of the steam treated molecular sieve after reactivation is less than about 10.6 weight percent measured at —183° C. and 700 mm. Hg pressure.

3,224,168
ADSORPTION APPARATUS
Sydney Absell Gregory, Stafford, England, assignor to Associated Electrical Industries Limited, London, England, a British company
Filed Aug. 21, 1961, Ser. No. 132,899
Claims priority, application Great Britain, Aug. 24, 1960, 29,257/60
4 Claims. (Cl. 55—208)

1. An adsorption vessel of the kind suitable for the adsorption of vapours and gases from gaseous mixtures comprising a substantially tubular shell of continuous section arranged with its axis vertical and containing a column of solid discrete adsorbent material, fluid flow connections at the top and bottom of said shell for passing the gas to be treated vertically through the mass of material and at least one heat transfer unit embedded in the column comprising an inverted U tube with downwardly open ends extending through the bottom of the column, one of the

limbs of the U-tube having external heat transfer fins extending into thermal exchange contact with the column of solid adsorbent material and the other limb of the U-tube being plain, each of said heat transfer fins extend-

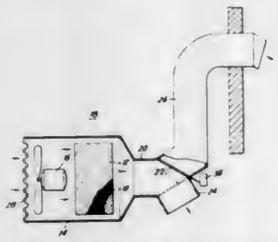


ing through said column in a longitudinal direction and being substantially located in a plane which includes the axis of said finned-limb and said fins being symmetrically spaced around the vertical axis of said finned limb.

3,224,169
ADSORPTION-TYPE DEHUMIDIFIER

William M. Gaylord, Jr., New Canaan, Conn., assignor to Union Carbide Corporation, a corporation of New York

Filed Dec. 26, 1962, Ser. No. 252,264
2 Claims. (Cl. 55—208)



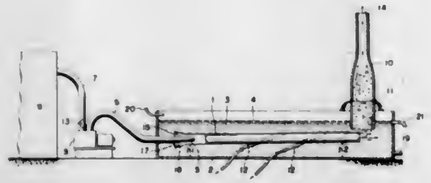
1. For use in an electrically powered dehumidifier system, a combination adsorption and regeneration unit which comprises at least one sheet type heating element which is electrically conductive over its surface area, said heating element being sheets of graphite cloth having a plurality of particles of a moisture adsorptive character secured thereto with a suitable adhesive.

3,224,170
GAS PURIFICATION APPARATUS

Mitsuji Iwanaga, Kurume-shi, Japan, and Hiroshi Idemitsu, 375 4-chome, Torikai-machi, Fukuoka-shi, Japan; said Iwanaga assignor to said Idemitsu

Filed Mar. 18, 1963, Ser. No. 265,905
Claims priority, application Japan, Mar. 19, 1962, 37/9,975; Nov. 2, 1962, 37/48,440; Dec. 21, 1962, 37/76,272
4 Claims. (Cl. 55—256)

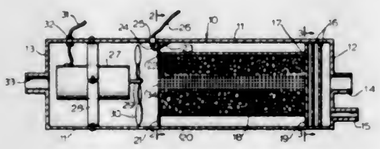
1. A purification apparatus for city indoor air, flue gases, and the like comprising a purification liquid tank incompletely filled with a purification liquid, a purification tube which has an upstream end and a downstream open end and is disposed in the said purification liquid below the said surface level with a slightly rising inclination from its said upstream end toward its said downstream open end, a gas injection nozzle inserted concentrically within the said upstream end of the said purification tube, means for injecting a gas to be purified into the said purification tube, a partition means provided with reverse-flow-preventive valve means and disposed on said gas injection nozzle about its outer periphery so as to close the space between the said nozzle and the inner surface of the said upstream end of the said purification tube, a gas transfer system provided with a blower and a fresh air inlet and adapted to supply a gas to be purified from its source to the said gas injection nozzle, a plurality of tubes having smaller diameter than said purification tube leading into said purification tube at points intermediate its ends, means for the introduction of purification liquid into the said purification tube, a funnel tube provided with outflow holes about its peripheral wall above the surface of the purification liquid in said tank and disposed at one end beneath said surface level of said purification liquid directly above the said downstream end of the said purification tube in such a manner as to intercept all gas particles leaving the said downstream end of the said purification tube.



3,224,171
EXHAUST FILTER FOR INTERNAL COMBUSTION ENGINES

Hyman D. Bowman, 801 W. Morgan St., Raleigh, N.C.

Filed Aug. 16, 1963, Ser. No. 302,586
2 Claims. (Cl. 55—274)

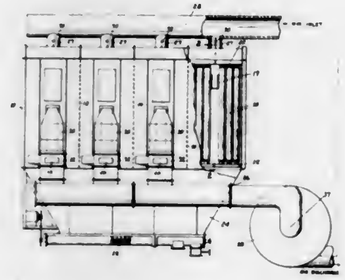


1. A filter device for removing undesirable fumes and particles from the exhaust and other gases from an internal combustion engine comprising a generally cylindrical housing having front and rear end wall portions with openings in the front wall portion for the admission of gases from the exhaust and crank case of an internal combustion engine, a series of baffles mounted in spaced relation transversely of said generally cylindrical housing and having openings offset for indirect flow of gases therethrough, an additional baffle mounted transversely of said generally cylindrical housing and having circumferentially spaced openings near its outer edge through which gases can pass into the area adjacent the generally cylindrical wall of said housing, a hollow generally cylindrical filter media removably mounted concentrically in said generally cylindrical housing in a manner to provide a chamber within said housing around the exterior of said filter media, whereby gases can flow from the chamber around the filter media to the interior and through the rear thereof, a member closing the space around the exterior of the rear end of said filter media and including pressure seated valves which can open when subjected to pressure in said chamber in excess of a predetermined value, and means for indicating when said valves are in open position.

3,224,172
DUST COLLECTING APPARATUS

Lawrence A. Eiben, Cleveland, Ohio, assignor to Buell Engineering Company, Inc., New York, N.Y., a corporation of Delaware

Filed Aug. 17, 1961, Ser. No. 132,231
2 Claims. (Cl. 55—303)

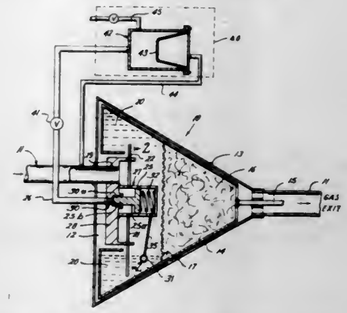


1. In a dust collecting apparatus comprising, an enclosed collection chamber, an elongated vertically oriented flexible fabric filter bag disposed in said chamber, said bag being open at both ends thereof, a dusty air duct including a dusty air inlet, the upper end of said bag being connected in sealed relation to said dusty air inlet to receive dust laden air therein and to pass the air through said bag and generally radially thereof into said chamber whereby the dust will be entrapped on the interior surfaces of said bag and clean air is exhausted from said chamber, a dust receiving means isolated from the chamber and adapted to receive dust from the interior of the bag, the lower end of said bag being connected in sealed relation to said dust receiving means, said bag being of sufficient axial length so as to be retractable and extensible in an axial direction for causing abutting engagement of the inner surfaces of the bag upon radial collapse thereof, while maintaining communication of the upper and lower ends of the bag with respectively the dusty air duct and the dust receiving means, said bag including a tubular-like member attached thereto intermediate the ends of the bag and extending below the bottom boundary of the bag proper and exteriorly of the chamber, said tubular-like member communicating with said dust receiving means, a weight secured to said tubular-like member for urging the bag into generally taut open condition, a clean air exhaust duct communicating with said chamber for exhausting the clean air from said chamber, valve means including duct means and a pivoted baffle plate in said duct means connecting said chamber to said clean air exhaust duct, said baffle plate being selectively movable from an open to a closed position to shut-off said chamber from said clean air exhaust duct and to by-pass newly admitted dust laden air through said dusty air duct for exhausting air from the interior of said bag, and means including an opening in said duct means and a closure door for said opening and attached pivoted linkage means pivotally connected to said baffle plate and to said closure door for admitting air into said chamber upon movement of said baffle plate toward a closed position, to cause said radial collapse of said bag and engagement of said inner surfaces thereof.

3,224,173
LIQUID-GAS SEPARATION SYSTEM

James E. Webb, Administrator of the National Aeronautics and Space Administration, with respect to an invention of William A. Prescott, 7703 E. 112th St., Kansas City, Mo.

Filed Dec. 31, 1964, Ser. No. 422,867
4 Claims. (Cl. 55—408)



1. A centrifugal separator for removing liquid from a liquid-gas stream, said separator comprising:

a hollow, generally frusto-conical element mounted in a conduit conveying a liquid-gas stream for rotation about its axis of generation, said hollow element having an outlet at its smaller end and an imperforate inwardly directed flange circumferentially engaging its larger end and defining an inlet to said hollow element for the liquid-gas stream, said larger end of the hollow element and the flange defining an annulus for the collection of liquid;

a porous mass disposed within said hollow element and interposed in the liquid-gas stream to completely cover said outlet, whereby the mixed fluids to be separated pass into said porous mass and liquid is collected thereon, said liquid being disposable by centrifugal action to the annulus at the larger end of the hollow element;

a hollow cylindrical chamber member having an outlet at one end thereof;

means for supporting said cylindrical chamber member in fixed relationship to said generally frusto-conical element;

a piston means slidably mounted in said cylindrical chamber member and dividing said cylindrical member into an outlet chamber fluidly communicating with said cylinder outlet and an actuation chamber;

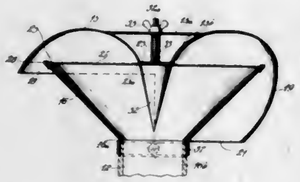
a spring means disposed within said actuation chamber and biasing said piston to a position where it closes off said outlet;

a pair of tubes having open ends at different radial distances from the rotary axis of the separator with each said open end extending into said annulus and at least the tube end which is most radially distant from the rotary axis extending tangential to the annulus and being open in a direction opposite to the motion of the liquid as the separator rotates, said tubes being in fluid communication at their other ends with the outlet chamber side of said cylinder member whereby liquid is pumped from said annulus into said cylinder member whenever at least one of said tube ends is submerged within liquid collected in said annulus;

a Venturi tube disposed within the annulus of the frusto-conical chamber with the bore of the Venturi tube extending tangential to said annulus, said Venturi tube having a restricted orifice and being located at a lesser radial distance from the rotary axis of the separator than the open end of at least one of said tubes; and

a conduit fluidly communicating the restricted orifice of the Venturi tube with the actuation chamber of said cylinder member whereby a pressure reduction produced in the restricted orifice of the Venturi tube by liquid flowing therethrough is introduced to the actuation chamber of the cylinder member to reduce the bias effect of the spring means and fluid pressure in said outlet chamber moves the piston valve from its position wherein the cylinder outlet is closed to a second position wherein the cylinder outlet is open to permit flow of liquid from the annulus of the separator through said cylinder member outlet.

3,224,174
AIR-FEED DEVICE FOR CARBURETORS
James A. Erbstoesser, Chicago, Ill., assignor of one-third to Stevens, Lehrer & Stevens, and one-third to Isadore M. Bernstein, both of Chicago, Ill.
Filed Nov. 29, 1962, Ser. No. 241,068
2 Claims. (Cl. 55—418)



1. An air feed device for attachment to the air-intake suction tube of a carburetor of an internal combustion engine, comprising in combination, an upper unit connected to a lower unit;

said lower unit comprising an upwardly flared, frustoconical element having upper and lower ends providing air-ingress and air-egress portions,

means on said lower air-egress portion for removably mounting the airfeed device on the air-intake suction tube,

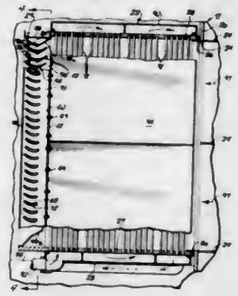
a foraminous screen removably secured transversely over the air-ingress portion of said frusto-conical element;

an inverted conical element depending axially from the center of said screen and extending substantially to the air-egress portion,

said upper unit comprising a toroidal-shaped element having a lower portion cut-away to provide an air-inlet opening and including an arcuate inner surface originating from below a plane passing through said screen and in spaced relation from the outer periphery of said screen and continuing in overlying relation above said screen, said arcuate surface converging axially toward said conical element and substantially merging into the outer surface of the upper portion of said conical element.

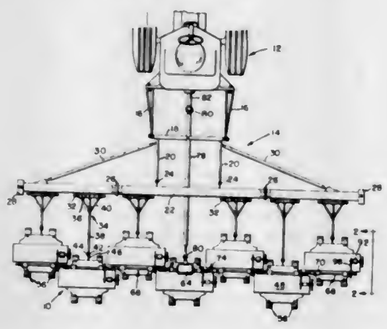
3,224,175
APPARATUS FOR SEPARATING LIQUID PARTICLES FROM LIQUID PARTICLE LADEN GAS
Gerald H. Beach, Olean, N.Y., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Filed Apr. 26, 1961, Ser. No. 105,634
15 Claims. (Cl. 55—440)

1. In apparatus for separating liquid particles from liquid particle laden gas, the combination comprising a first end wall, a hollow curved vane arranged transversely of the direction of fluid flow and having an end mounted on said first end wall so as to extend outwardly from one side thereof, said vane also including a first curved wall having a concave outer surface and a second curved wall having a convex outer surface and a downstream end wall, said first curved wall adjacent said downstream end wall having an opening extending outoutwardly from said one side of said first end wall along said downstream end wall and communicating with the interior of said vane, and means cooperating with said one side of said first end wall and concave surface to provide a gutter arranged immediately upstream of said opening and communicating therewith, said means including a first gutter wall arranged substantially parallel to said first end wall and entering said opening



and extending into contact with said downstream end wall and second curved wall and also including a second gutter wall spaced from said concave surface and connected to said first end and first gutter walls and abutting said downstream end wall, that portion of said opening between said first end wall and first gutter wall being wider in the direction of fluid flow than that portion of said opening on the other side of said first gutter wall, whereby liquid swept by the fluid flow along said one side of said first end wall is conducted by such gutter means to such wider portion of said opening.

3,224,176
POWER OPERATED GANG MOWER
Alexander P. Taylor, 3108 Fairview Ave., Parkersburg, W. Va.
Filed June 18, 1964, Ser. No. 376,063
12 Claims. (Cl. 56—7)



1. A gang mower comprising, in combination:

a plurality of individual mowing units having rotatable cutting blade means therein;

a pull frame having said mowing units secured to a portion thereof and adapted to be attached to a vehicle for moving said mowing units across the terrain to be mowed;

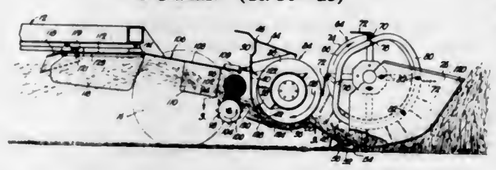
a common power shaft extending between each of said mowing units to operate the cutting blade means therein; and

power supply means for operating said power shaft to thus cause said cutting blade means to sever the grass on the terrain beneath them;

said mowing units being arranged in a juxtaposed relationship wherein the cutting blade in one unit overlaps the cutting blade in the next adjacent unit so that no uncut strips of grass are left remaining on said terrain after said mower has passed thereover;

said mowing units being arranged in an alternate stepped arrangement on opposite sides of said power shaft whereby one mowing unit cutting blade means is disposed on one side of the axis of said power shaft and the next adjacent mowing unit cutting blade means is disposed on the opposite side of the axis of said shaft.

3,224,177
METHOD OF CUTTING, CONDITIONING AND WINDROWING A CROP
Raymond A. Adee, Newton, Kans., assignor to Hesston Manufacturing Co., Inc., Hesston, Kans., a corporation of Kansas
Filed Oct. 21, 1963, Ser. No. 317,557
6 Claims. (Cl. 56—23)



1. A harvesting method comprising the successive, uninterrupted steps of sweeping a swath of a growing crop rearwardly and upwardly toward an elongated cutting zone and toward an elongated collection area disposed above and to the rear of said cutting zone, cutting the swath at said zone while the crop is being swept thereinto, and thereupon conveying the cut crop smoothly, continuously and uniformly to higher elevations while it is maintained off the ground by:

catching the entire swath of the cut crop at an elongated, transversely inclined station extending upwardly and rearwardly from said zone, said zone, said station, and said area being coextensive in length with and parallel to said swath, said collection area extending rearwardly from the uppermost and rearmost longitudinal extremity of said station;

disposing said entire swath of the cut crop over and onto said station by forces applied to the crop from directly above the station continuously in a direction extending upwardly and rearwardly from said zone, and while the crop remains in a condition spread along said station longitudinally of the latter,

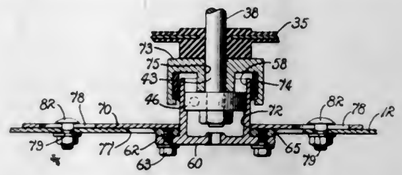
combing the swath disposed on said station rearwardly along the entire length of said extremity closely adjacent the latter and along a region extending upwardly therefrom and coextensive in length therewith to forceably direct the swath into said collection area;

shifting the swath laterally within and along said region and said area into a concentrated mass; and

projecting the concentrated mass in a continuous stream flowing along a path normal to, and extending upwardly and rearwardly from said area.

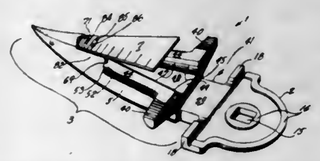
3,224,178
ADJUSTABLE DOFFER PLATE SHAFT MOUNTING FOR COTTON PICKERS
Leo A. Kennedy, 2979 Hammond Ave., Fresno, Calif.
Filed Nov. 1, 1963, Ser. No. 320,698
9 Claims. (Cl. 56—41)

1. An adjustable mounting, for a doffer shaft in a cotton picker having a picker housing providing rows of picker spindles and a plurality of doffer plates mounted on said shaft individually adjacent to said spindles for removing cotton therefrom, opposite upper and lower bearings on the shaft, and a bearing cage slidably receiving said upper bearing to mount the same in the housing and to permit axial adjustment of the shaft therein; comprising constraining means mounting said lower bearing



to accommodate said axial adjustment of the shaft; and shaft positioning means mounted on said constraining means adjustably to support the constraining means on the housing for universal transverse movement of the shaft selectively to position said doffer plates in minutely spaced substantially parallel relation to their respective spindles.

3,224,179
MOWER GUARD
Leslie N. Schuman, Brecksville, Ohio, assignor, by mesne assignments, to Midland-Ross Corporation, Cleveland, Ohio, a corporation of Ohio
Filed May 20, 1963, Ser. No. 281,687
8 Claims. (Cl. 56—310)



1. A mower guard for use in a sickle-bar type mower having an anchorage portion and a guard finger including a neck and an elongated body having a nose spaced from said neck, said body comprising, in its normal operative position:

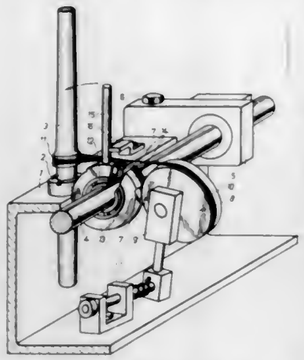
a pair of laterally spaced co-depending shoes projecting convergently and forwardly from said anchorage portion and each having a downwardly facing, bottom wearing surface, said shoes defining therebetween a longitudinally extending groove having an inverted valley surface, said valley surface having a forward surface portion sloping at a slight angle of declination from said valley surface; and

an upwardly facing lip supporting surface spaced adjacently rearward of said nose, at least portions of said lip supporting surface and said forward surface portion being in parallel coextensive relationship.

3,224,180
DEVICE FOR STOPPING THE DRIVE OF SPINDLES OF SPINNING AND DOUBLING FRAMES
Felix Graf, Winterthur, Switzerland, assignor to Actiengesellschaft Joh. Jacob Reiter & Cie, Winterthur, Switzerland, a corporation of Switzerland
Filed Jan. 18, 1960, Ser. No. 3,016
Claims priority, application Switzerland, Jan. 23, 1959, 68,691
12 Claims. (Cl. 57—88)

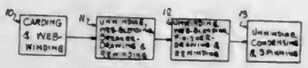
3. In combination with a belt drive for a spindle of a spinning or doubling frame including a driving pulley having a belt-engaging surface, a tensioning pulley, a whirl on said spindle, and an endless belt extending

around said whirl and said tensioning pulley and having a run in driving engagement with said surface of said driving pulley, a belt removing means mounted adjacent said driving pulley to rotate around the rotation axis of said driving pulley, and means for selectively rotating said belt removing means to an idle position wherein said



belt removing means is disengaged from said belt and to an active position wherein said removing means is temporarily interposed between said surface of said driving pulley and said belt and frictionally engages and removes said belt from said driving pulley for interrupting the drive of said belt by said driving pulley.

3,224,181
METHOD OF PRODUCING YARN FROM TEXTILE FIBER WEBS
James Elwood Johnson, Gastonia, N.C., assignor to Gossett Machine Works, Inc., Gastonia, N.C., a corporation of North Carolina
Filed Nov. 26, 1963, Ser. No. 326,179
5 Claims. (Cl. 57—156)

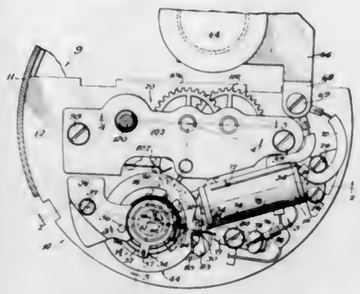


1. That method of spinning textile fibers which comprises the steps of: depositing a plurality of carded webs of said fibers respectively upon a plurality of flexible supporting strips, winding each strip and its deposited web into a package, unwinding and separating each of said strips from its deposited web continuously with forming the separated webs into a composite laminated web, imparting a draft to said laminated web to blend the web fibers, winding the blended web and a second supporting strip into a second package, and then unwinding and separating the last-named strip from the blended web continuously with spinning yarn from the latter.

3,224,182
PROCESS FOR PRODUCTION OF CROSS-LINKED CELLULOSIC YARNS
Frederick R. W. Sloan, Parsonage, Manchester, England, and John Lightfoot Spencer-Smith, Doagh, Northern Ireland, assignors to Whitecroft Industrial Holdings Limited, Manchester, England
No Drawing. Filed Mar. 16, 1961, Ser. No. 96,107
Claims priority, application Great Britain, Mar. 23, 1960, 10,313/60
8 Claims. (Cl. 57—157)

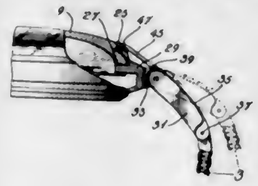
1. A process for the production of cellulosic yarns, which comprises the steps of impregnating a continuous cellulose filament tow with a solution containing a cross-linking agent, drying the tow while maintaining the filaments in continuous relative movement and converting the tow into yarn.

3,224,183
ELECTRICALLY ACTUATED TIME INTEGRATING DEVICE
Carl N. Challacombe, George G. Ensign, and Walter H. Lienert, Elgin, Ill., assignors to Elgin National Watch Company, a corporation of Illinois
Filed Oct. 14, 1963, Ser. No. 315,804
4 Claims. (Cl. 58—28)



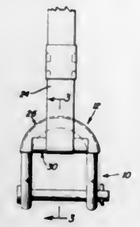
1. In an electrically-actuated time integrating mechanism, the combination of: a frame, a balance and hairspring assembly supported on the frame for oscillatory movement, said assembly including a balance being no greater in diameter than 8 millimeters, electromagnetic power means cooperating with said balance for actuating said oscillatory balance and hairspring assembly, and star wheel means rotatably mounted on said frame and being adapted to drive a power train, said balance actuating said star wheel means during oscillation thereof for advancing the star wheel means incrementally, said balance having a moment of inertia in a range of 4.5×10^{-3} to 7×10^{-3} gram centimeters squared, and the moment of inertia of the balance being not less than 300 times the moment of inertia of the star wheel means, whereby said time integrating mechanism functions at a frequency of from 9 to 12 beats per second and the amplitude of the balance is sustained at a level of less than and limited to two turns of motion.

3,224,184
WATCH DIAL ILLUMINATING DEVICE
André Brien, 3110 Germain St., Fabreville, Quebec, Canada
Filed June 22, 1964, Ser. No. 376,691
5 Claims. (Cl. 58—50)



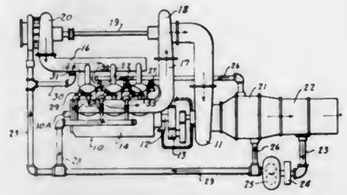
1. A watch glass adapted to be mounted over the dial of a watch comprising:
(a) a glass body formed with a cavity opening only through the outer surface of the body;
(b) a miniature electric bulb in said cavity having two lead-in wires;
(c) an electrically conductive cover closing said cavity over said bulb;
(d) one of said lead-in wires being in electrical contact with said cover and the other wire extending through said glass body to the edge thereof and protruding out of said glass body.

3,224,185
LINK AND SHACKLE INSERT
Daniel E. Grim, 5520 Constitution Ave. NE.; Floyd A. Kunz, 6016 Bellamah NE.; and Reinhart C. Gauerke, 224 General Arnold NE., all of Albuquerque, N. Mex.
Filed Apr. 16, 1963, Ser. No. 273,381
8 Claims. (Cl. 59—86)



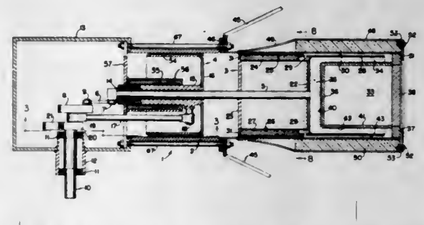
1. A stress relieving shackle insert for flat metal strapping comprising a generally semi-cylindrical body having a convex edge including a longitudinally extending groove therein, and a substantially diametrically extending straight strap receiving edge, said diametrically extending edge being transversely convex throughout a major portion of its length.

3,224,186
BINARY INTERNAL COMBUSTION ENGINE
Homer J. Wood, Sherman Oaks, Calif., assignor to Continental Aviation and Engineering Corporation, Detroit, Mich., a corporation of Virginia
Filed Apr. 23, 1962, Ser. No. 189,596
4 Claims. (Cl. 60—13)



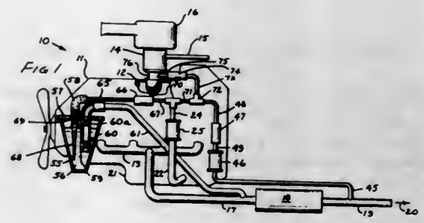
1. In a compound internal combustion engine having a driven power output means, a combustion chamber and a piston drivingly connected to said power output means, an air induction system and an exhaust system, a turbine driven by exhaust gases delivered by said exhaust system and drivingly connected with said power output means, said air induction system including a compressor operable to deliver compressed air to said combustion chamber, a water injecting system comprising,
(a) water recovering means connected downstream of said turbine and being operable to recover water from the exhaust gases,
(b) a first injection means disposed in said air induction system downstream of said compressor and means conducting water from said water recovering means to said first injection means whereby water is injected into the compressed air prior to delivery to said combustion chamber to cool same,
(c) a second injection means disposed in said combustion chamber, means conducting water from said water recovery means to said second injection means, and means actuating said second injection means only upon the compression stroke of said piston to deliver cool water to said combustion chamber,
(d) a third injection means disposed in said combustion chamber, means conducting water from said water recovery means to said third injection means, and means actuating said third injection means only during combustion in said combustion chamber,
(e) heat transfer means operable to recover heat from the exhaust gases, and
(f) means delivering water from said water recovering means to said heat transfer means at a pressure higher than atmospheric pressure, and
(g) means connecting said heat transfer means with said last mentioned conducting means whereby water delivered to said combustion chamber during combustion is preheated.

3,224,187
HOT GAS ENGINE
Roger R. Brelhan, 118 W. Broadway, Monona, Wis.
Filed May 4, 1964, Ser. No. 364,844
10 Claims. (Cl. 60—24)



1. In a hot gas engine, a cylinder, a solar energy receiver located within the forward end of the cylinder, a power piston located in the rear end of the cylinder, a displacement piston located in the cylinder between the receiver and the power piston with the space between the displacement piston and the power piston defining a cold chamber and the space between the displacement piston and the receiver defining a hot chamber, said receiver having an opening to receive solar radiation and having a wall to be heated by said solar radiation and disposed in heat conductive relation with the gas in the hot chamber, a mirror positioned to direct solar radiation into the opening of the receiver, and support means interconnecting the mirror and the cylinder, said support means being attached to the cylinder at the location of the cold chamber and said support means serving to support the mirror and also serving to conduct heat from the cylinder at the area of the cold chamber.

3,224,188
COMBUSTION CONTROL
Joseph S. Barlow, 1957 Maiden Lane, Altadena, Calif.
Filed Apr. 10, 1964, Ser. No. 358,787
4 Claims. (Cl. 60—30)



1. A combustion control for an internal combustion engine of the class having a combustion chamber fed with a fuel-air mixture and discharging exhaust gas, said en-

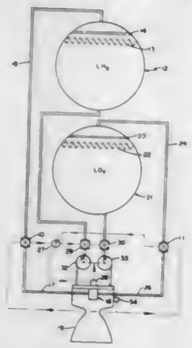
gine having an intake manifold to provide an inlet for said fuel-air mixture to enter said engine and an exhaust manifold to provide an outlet for said exhaust gas to leave said engine, said internal combustion engine creating products of combustion in said combustion chamber, a crankcase in said engine and a crankcase breather including a breather pipe extending from said crankcase to relieve gases therein, said control comprising: an exhaust tube in gaseous communication with said exhaust manifold to remove a portion of said exhaust gas discharged from said engine; a conduit connecting the exhaust tube and said breather pipe with said intake manifold, a metering device in said tube allowing a predetermined gaseous flow rate from said exhaust manifold to said conduit; a reservoir adapted to contain a catalyst solution; means conveying said catalyst solution from said reservoir to said conduit; and a metering device in said means to allow a predetermined catalyst flow rate therefrom.

3,224,189

LIQUID ROCKET PROPELLANT FEED SYSTEM

Richard J. Kenny, Littleton, Colo., assignor to Martin-Marietta Corporation, Baltimore, Md., a corporation of Maryland

Filed May 31, 1963, Ser. No. 284,553
3 Claims. (Cl. 60—35.3)



2. A method for starting a liquid propelled rocket engine in a substantially zero gravity environment which comprises the steps of separating vapors from the liquids in the fuel and oxidant liquid supply containers, feeding the separated vapors to a rocket fuel combustion chamber, igniting the vapors in the combustion chamber to produce a thrust, utilizing said thrust to bottom the liquid fuel and liquid oxidant in their respective containers, timing the combustion of said vapors and switching the combustion chamber from the temporary combustion of vapors to the normal combustion of liquid fuel and oxidant after sufficient time has elapsed to bottom said liquid fuel and liquid oxidant in their respective containers.

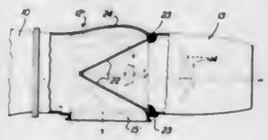
3,224,190

JET POWER PLANT PARTICULARLY FOR AIRCRAFT

Bruno Eckert, Stuttgart-Bad Cannstat, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany

Original application Feb. 11, 1959, Ser. No. 792,624. Divided and this application July 20, 1964, Ser. No. 395,973
Claims priority, application Germany, Feb. 14, 1958, D 27,424
2 Claims. (Cl. 60—35.54)

1. A jet power plant, particularly for the propulsion of aircraft having afterburner means for increasing the thrust thereof, comprising a turbine, housing means for said turbine, a thrust tube having a longitudinal axis along which the gases from said turbine discharge under normal operation of said power plant, said afterburner means being arranged within said thrust tube, deflector means effectively arranged between said housing means and said thrust tube for selectively deflecting the gas stream from the normal direction of flow, said deflector means being provided with a single opening for discharging the deflected gas stream therethrough, the axis of said discharge opening forming an angle with respect to the longitudinal axis of said thrust tube while the cross sectional area of said discharge opening is essentially equal to the cross sectional area of said thrust tube, and means for operatively connecting said deflector means with said afterburner means for automatically shutting off said afterburner



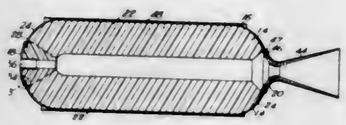
means when said deflector means deflects the gas stream from the normal direction of flow thereof, said deflector means comprising two transversely extending shaft means rotatably mounted in the walls adjacent said deflector means, two segmentally-shaped valve means each mounted on one of said shaft means, means for selectively rotating said shaft means together with said valve means to a first position for closing said discharge opening and to a second position for closing said thrust tube, the two segmentally-shaped valve means forming a cone when in said first position, the apex of said cone being directed up stream and coinciding with the longitudinal axis of said thrust tube, the walls of said deflector means being bulged outwardly adjacent said cone so as to facilitate the flow of gases around said cone during discharge thereof through said opening.

3,224,191

ROCKET MOTOR CONSTRUCTION

Clarence R. Bratton, Brigham City, Utah, assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

Filed May 20, 1963, Ser. No. 281,620
7 Claims. (Cl. 60—35.6)



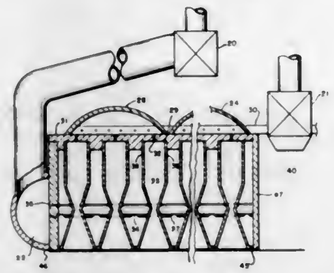
1. A solid-propellant rocket motor having a noninflammable casing forming a pressure vessel and containing a solid propellant comprising a plurality of components, each component being in the form of a longitudinally extending sector of a generally cylindrical shaped body and comprising a long, arcuate supporting member and a wedge shaped solid propellant bonded on one side thereof, said components being assembled in a cylinder-like arrangement and sealed to each other with said supporting members oriented outwardly; means surrounding said components for retaining them in assembled relation; a separate aft closure attached to one end of said assembled components and forming a nozzle; and a separate forward closure attached to the opposite end of said assembly to retain the ends of said components in a fixed relationship and complete the rocket motor casing.

3,224,192

MULTI-CHAMBERED LIQUID PROPELLANT THRUST DEVICE

Heinz E. Mueller, Littleton, Colo., assignor to The Martin-Marietta Corporation, Baltimore, Md., a corporation of Maryland

Filed June 18, 1963, Ser. No. 288,726
6 Claims. (Cl. 60—35.6)



1. A substantially flat thrust producing device comprising:

(a) a plurality of elongated thrust chamber units each
  (i) being open at both ends and having along the length thereof a combustion chamber portion, a reduced throat portion and an exhaust nozzle, and
  (ii) having at least one orifice through the side thereof communicative with the said combustion chamber portion,

(b) a head plate
  (i) having said plurality of chamber units perpendicularly mounted on one side thereof at the said combustion chamber portion ends thereof and
  (ii) including a plurality of ports therethrough each communicative with respective said combustion chamber portions,

(c) first manifold means for selectably introducing a first propellant liquid under pressure into said combustion chamber portions through said ports,

(d) a cover plate
  (i) sealably attached to said exhaust nozzles and
  (ii) including a plurality of holes therethrough each coincident with respective said exhaust nozzles for permitting escape of exhaust gases,

(e) means for sealing together the edges of said head plate and said cover plate,

(f) a plurality of conduits arranged through the spaces between said thrust chamber units and each
  (i) containing a series of outlets therealong directed towards said cover plate and
  (ii) passing through said sealing means, and

(g) a second manifold means for selectably introducing a second propellant liquid under pressure into said conduits,

(h) whereby said second propellant liquid will provide cooling for the device by being circulated around said chamber units and thrust will be produced by combustion of said propellants in said combustion chamber portions.

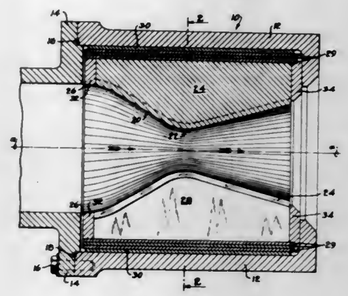
3,224,193

ANISOTROPIC HEAT SHIELD CONSTRUCTION

Joseph F. Loprete, Wayne, and Arthur D. Cangialosi, Clifton, N.J., assignors to Curtiss-Wright Corporation, a corporation of Delaware

Filed June 25, 1963, Ser. No. 290,395
18 Claims. (Cl. 60—35.6)

1. An exhaust gas nozzle construction for jet engines or the like comprising a nozzle having a substantially annular housing; a layer coaxially supported in said housing and having an inner surface which substantially conforms to at least a portion of the inner nozzle surface, said layer being composed of an anistropic material oriented so that said material is relatively highly thermally conductive in planes substantially including the nozzle axis and relatively highly thermally non-conductive in a circumferential direction about said axis.

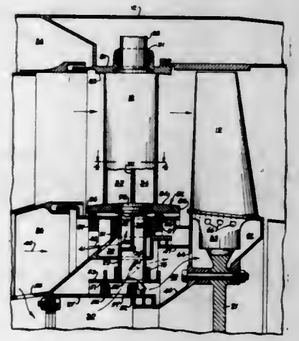


3,224,194

GAS TURBINE ENGINE

Angelo De Feo, Totowa Boro, and Ferdinand P. Sollinger, Wayne, N.J., assignors to Curtiss-Wright Corporation, a corporation of Delaware

Filed June 26, 1963, Ser. No. 290,718
20 Claims. (Cl. 60—35.6)

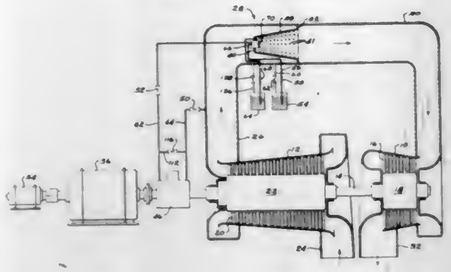


1. In a gas turbine power plant, the combination of a turbine rotor having a set of circumferentially-spaced blades extending therefrom for co-action with the turbine motive fluid for driving said rotor, a turbine nozzle structure having a set of circumferentially spaced blades for directing turbine motive fluid to said rotor blades; means for adjusting said turbine nozzle structure for varying the effective cross-sectional area of the turbine motive fluid flow path between the blades of said nozzle structure, passage means for supplying a cooling medium to as least one of said sets of blades for flow therethrough to cool said blades and means responsive to adjustment of said nozzle structure in a direction increasing its said area for increasing said flow of cooling medium.

3,224,195
GAS TURBINE FIRED WITH AN ASPIRATING BURNER NOZZLE

Bruce R. Walsh, Pittsburgh, Pa., assignor to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

Filed Sept. 26, 1962, Ser. No. 226,251
7 Claims. (Cl. 60—39.74)

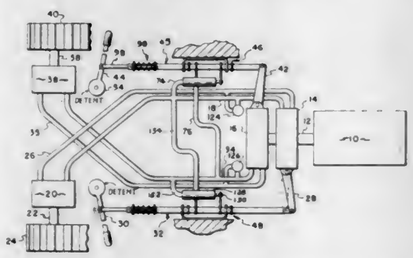


1. In an apparatus comprising a gas turbine, a combustor having inlet means, discharge means and a burner nozzle, a combustor air compressor, first conduit means connecting said combustor air compressor and said combustor inlet means, second conduit means connecting the discharge means of said combustor and said gas turbine, said apparatus adapted so that gases from said combustor drive both said turbine and said combustor air compressor, the improvement comprising said burner nozzle being of the aspirating type, aspirating nozzle air compressor means having suction connecting means extending to the pressurized combustor air and discharge connecting means extending to said nozzle and adapted to supply to said nozzle aspirating air at a pressure slightly above the pressure within said combustor, liquid oil reservoir means exposed to the pressure of said combustor, said nozzle adapted so that the movement of said aspirating air therethrough aspirates liquid oil from said reservoir to said combustor, and means for adjusting the pressure of the aspirating air supply to said nozzle whereby turbine speed is adjusted.

3,224,196
REGULATOR

Milton C. Bennett, Racine, Wis., assignor to J. I. Case Company, Racine, Wis., a corporation of Wisconsin

Filed July 27, 1964, Ser. No. 385,217
9 Claims. (Cl. 60—52)



1. A compensator for a fluid transmission of the type comprising a pair of positive displacement, variable displacement pumps driven from a prime mover and each having a control means shiftable to vary the displacement thereof, a high pressure conduit leading from each pump, a pair of positive displacement motors, each connected to receive pressure fluid from one of said high pressure conduits and also to a movable element to be actuated, said compensator comprising a pair of pressure responsive fluid motors,

means providing pressure receiving surfaces in each of said pressure responsive fluid motors, and means connected to the first-mentioned means and to one of said controls,

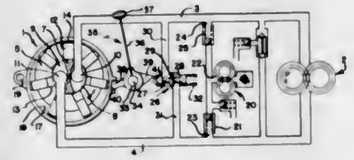
means connecting one of said pressure receiving surfaces in each of the last-mentioned fluid motors in pressure receiving relation with one of said high pressure conduits, and

means connecting the other of said pressure receiving surfaces in each of said last-mentioned fluid motors in relation to shift one of said control means.

3,224,197
HYDROSTATIC TRANSMISSION

John A. Lauck, 1767 Commonwealth Ave., Benton Harbor, Mich.

Filed Oct. 3, 1963, Ser. No. 313,629
13 Claims. (Cl. 60—53)

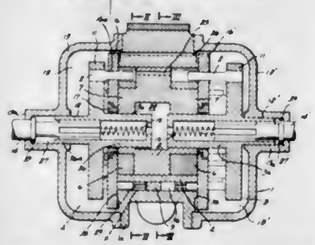


1. A reversible rotor-pintle type fluid pump for hydrostatic transmissions and the like comprising a sealing flange on said pintle adapted sealingly to engage the end of said rotor, and fluid pressure means operative to urge said pintle and sealing flange into sealing engagement with said rotor while fluid is being pumped in either direction.

3,224,198
HYDROSTATIC MACHINE

Gerhard Franz Schimkat, Scholzplatz 7, Berlin, Charlottenburg, Germany

Filed Dec. 23, 1964, Ser. No. 420,828
20 Claims. (Cl. 60—53)



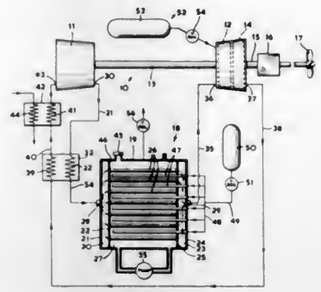
1. In a variable speed hydrostatic machine, a single housing, and a pair of mirror symmetrical internal-gear-type rotary pumps one of which functions as a motor and is driven by the other thereof, said pumps being mounted in and each thereof defining with said housing an arcuate working chamber, each pump having an axially movable rotor provided with a plurality of pistons extending into and arranged to orbit in the corresponding working chamber.

3,224,199
CLOSED CYCLE GAS TURBINE

George Colville Best, Clarkson, Ontario, Canada, assignor to Hawker Siddeley Canada Ltd., Toronto, Ontario, Canada, a corporation of Canada

Filed Oct. 19, 1964, Ser. No. 404,704
14 Claims. (Cl. 60—59)

1. A method of power generation which comprises, carrying out in a closed chamber an exothermic chemical reaction in which the fuel components react at substantially constant volume and without the production of gaseous reaction products, passing a working medium through one compartment of a two-compartment heat exchanger of which the other compartment is the closed

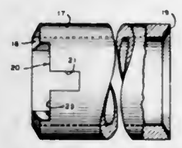


chamber so that the working medium picks up heat conductively from the contents of the closed chamber, and expanding the heated working medium through a prime mover to generate power thus cooling the working medium.

3,224,200
DRAINAGE TILE

Norwood Achey, W. Crest Road, Rossville, Ga.

Filed Apr. 12, 1963, Ser. No. 272,606
4 Claims. (Cl. 61—13)



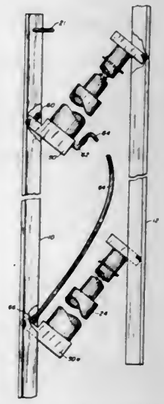
3. A generally tubular drain tile having relatively thick walls, said tile having means on each end for interfitting engagement with contiguous tiles, a T-shaped slot in each tile and disposed on the lowermost portion of said tile when installed, said T-shaped slot including a longitudinal slot and a transverse slot, said transverse slot terminating in a position such that an imaginary line drawn between the ends of such transverse slot is tangential to the internal periphery of said tile.

3,224,201
SHORING APPARATUS

James L. Brunton, Yorbalinda, Calif., assignor to Speed Shore Corporation, Gardena, Calif., a corporation of California

Filed Aug. 11, 1960, Ser. No. 48,900
5 Claims. (Cl. 61—41)

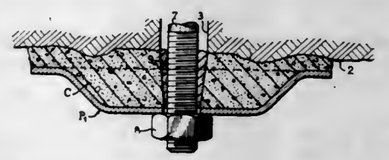
2. A collapsible shoring apparatus for use in trench excavations comprising: first and second elongate rails having exterior load-supporting surfaces and interior bearing surfaces; a first plurality of force-transfer blocks having load surfaces and having one upper end affixed to the interior surface said first of said rails on a first pivotal axis spaced downwardly from said upper end so that each of said first blocks is movable to a limit position, the distance from said first pivotal axis to said load surface on said first force-transfer blocks being equal to the distance from said first pivotal axis to said interior bearing surfaces on said first rail when said blocks are in said limit position whereby said load surfaces of said first blocks are each in mating engagement with one of said interior bearing surfaces to thereby support the load applied to said first rail; a second plurality of force-transfer blocks having load surfaces and having one lower end affixed to said second of said rails on a second pivotal axis spaced upwardly from said lower end and offset from said pivotal axes of said first plurality of force-transfer blocks so that each of said second blocks is movable to a limit position, the distance from said second pivotal axis to said load surface on said second force-transfer blocks being equal to the distance from said second pivotal axis to said interior bearing surfaces on said second rail when said blocks are in said limit position whereby said load surfaces of said second blocks are each in mating engagement with one of said interior bearing surfaces to thereby support the load applied to said second rail; jack means including a piston and a cylinder, affixed between opposed pairs of said first and second force-transfer blocks with offset pivots so as to hold said load surfaces of said pairs of blocks substantially parallel; said pistons in said jack means having a substantially smaller sectional area than the sectional area of each of said blocks affixed to said jack means; said jack means and said blocks being affixed together with said rails so that said first blocks and said second blocks pivotably swing in opposite directions upon collapsing or spreading said apparatus.



3,224,202
ANCHORING DEVICE

André Durget, Paris, France, assignor to Anciens Etablissements Goldenberg & Cie, Saverne, Bas-Rhin, France

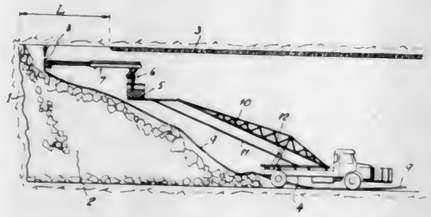
Filed May 16, 1962, Ser. No. 195,291
Claims priority, application France, May 23, 1961, 862,583, Patent 1,297,817
2 Claims. (Cl. 61—45)



1. An anchoring device comprising a saucer-shaped anchoring plate having a centural opening therein, an anchoring member extending through said opening and adapted to engage in a ground-constituted roof to suspend said plate therefrom, said plate having a face in facing relation with the ground-constituted roof, and a coherent, solid and plastic-type deformable mass on said face of the plate, said mass being constituted by an incompressible and non-deformable granular material and a

plastic-type deformable binder in which the granular material is embeded, said mass having a thickness whereby to project from the plate for encountering and conforming to the contour of said roof and preventing the plate from encountering the roof, said mass being generally shape retaining but being deformable under compression to the extent permitted by compacting said non-deformable material, said binder being bitumen.

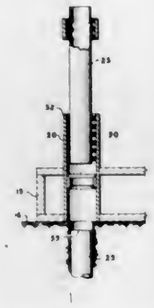
3,224,203
METHOD OF DRIVING TUNNELS IN ROCK
Sten Harald Brannfors, Lidingo, and Claes Yngve Hjalmar Alberts, Bromma, Sweden, assignors to AB Skanska Cementgjuteriet, Stockholm, Sweden, a corporation of Sweden
Original application Feb. 28, 1961, Ser. No. 92,277, now Patent No. 3,153,510, dated Oct. 20, 1964. Divided and this application Sept. 30, 1963, Ser. No. 312,666
Claims priority, application Sweden, Mar. 4, 1960, 2,231/60
3 Claims. (Cl. 61—45)



1. A method of driving a tunnel in rock comprising, in sequence, blasting rock at the tunnel face thereby creating muck in front of the blasted tunnel face, moving a concrete spray apparatus, having a spray head, into a position such that the operator is under the protection of a previously concrete-lined part of the tunnel roof, said spray apparatus having an effective reach, from beneath the lined part of the roof, outwardly beneath the unlined roof part formed by the recent blasting so that the spray head of the apparatus is under an unlined arched roof part formed by the recent blasting, stabilizing said last-named arched roof by spraying thereon a layer of quick setting concrete, spraying more concrete onto the roof so as to form a protective roof, and removing the muck under the protection of the thus newly stabilized roof, covering the parts of the roof and tunnel wall exposed by the removal of the muck with concrete repeating the above sequence at least once, then reinforcing the temporary roof formed after one of the previous blastings, and then repeating the above sequence of operations.

3,224,204
METHOD OF ANCHORING AN OFFSHORE STRUCTURE
Christian H. Siebenhausen, Midland, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Aug. 15, 1963, Ser. No. 302,418
7 Claims. (Cl. 61—46.5)

1. A method of installing at an offshore location a marine structure having a base with a plurality of pile jackets for receiving concentric stub piles therethrough and a plurality of vertically-displaced anchoring means on each jacket for each of said piles, said method comprising:
positioning said marine structure with its base on the ocean floor;
driving piles through the pile jackets of said base structure, said piles being arranged so that their upper ends are below the water surface;
connecting each of said piles to said base by at least one but less than all of said plurality of anchoring means for each pile contained within an anchoring jacket;
subsequently serving each of said piles and said jacket with said anchoring means connected thereto at a point below the connection between the pile and the anchoring means;



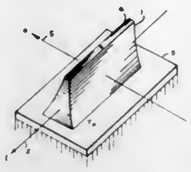
raising said marine structure and moving it to another location;
again lowering said marine structure to the ocean floor;
again driving a second series of piles through said jackets of said base structure; and,
connecting said second series of piles to said base structure by at least some of the remaining anchoring means in each of said jackets.

3,224,205
ASBESTOS-CEMENT STRUCTURAL SHEET
Norman S. Greiner and Clayton V. French, Somerville, N.J., assignors to Johns-Manville Corporation, New York, N.Y., a corporation of New York
Filed Aug. 29, 1962, Ser. No. 220,210
7 Claims. (Cl. 61—39)



1. A corrugated asbestos-cement sheet comprising
(a) a plurality of arcuate crown and valley portions connected by tangential straight flank portions,
(b) said sheet being of uniform thickness throughout its length in the range of about 0.25 inch to about 0.35 inch,
(c) the tangent angle of at least each interior crown and valley portion being substantially similar and in the range of about 59° to about 70°,
(d) the mean radius of curvature of the crown and valley portions being not less than about 1.75 inches,
(e) each corrugation having a pitch not exceeding about 11 inches and a net height not exceeding about 5 inches,
(f) said sheet having a section modulus of not less than about 3.33 inches per lineal foot of width,
(g) the flank portion being at least about 1.30 inches in length and of such length that when said sheet and a similar sheet are nested, the adjacent flank portions thereof are engaged along at least 60% of their length, and
(h) said sheet having a maximum bending moment of at least 9,000 inch pounds per lineal foot of width.

3,224,206
CONTOUR DESIGN FOR "CASCADING BY SHAPING" THERMOMAGNETIC DEVICES
John R. Sizelove, Dayton, Ohio, assignor to the United States of America as represented by the Secretary of the Air Force
Filed Nov. 23, 1964, Ser. No. 414,033
2 Claims. (Cl. 62—3)



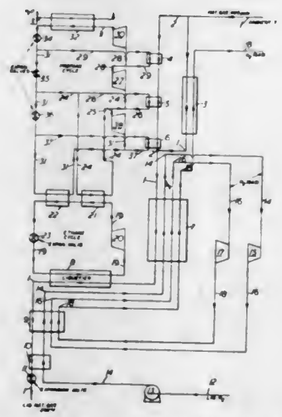
1. A thermomagnetic cooling element cut from a single hexagonal crystal of anisotropic material of 90 to 97 percent bismuth the remainder being primarily antimony for use in a magnetic field with a current flowing through the said element at right angles to the magnetic field providing a thermal gradient at right angles to the magnetic field and the flow of current with a cooled surface and a higher temperature surface, the higher temperature surface being maintained at a temperature of 70° K. to 200° K. by a temperature maintaining heatsink, the said element having the contour in cross section in the plane of the temperature gradient represented by the expression,

$$y = Y_c\left[\frac{T_c + Lx}{T_c}\right]^{1/n}$$

wherein:

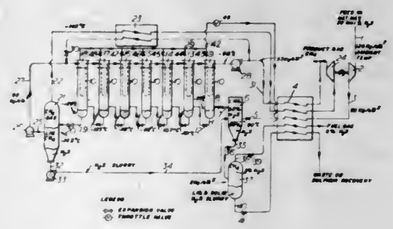
y=the expansion of the cross section of the base
Y_c=the length in cross section at cold surface
T_c=the temperature of the cold surface (degrees Kelvin)
L=the temperature gradient
x=the distance in the plane of the temperature gradient
n=the reduced Carnot efficiency.

3,224,207
LIQUEFACTION OF GASES
Eli M. Feist, Haifa, Israel, and Hadi Hashemi-Tafreshi, Norman, Okla., assignors to Conch International Methane Limited, Nassau, Bahamas, a corporation of the Bahamas
Filed Feb. 12, 1962, Ser. No. 172,467
6 Claims. (Cl. 62—9)



1. A method for the liquefaction of methane and subsequent cooling of the liquefied methane, which comprises removing sensible heat from the gaseous methane and liquefied methane by indirect heat exchange with a nitrogen expansion refrigeration system and removing latent heat from the methane by indirect heat exchange with a cascade vapour-compression refrigeration cycle, in which ethane, propane and water are used as refrigerants in the cascade vapour-compression refrigeration cycle.

3,224,208
PURIFICATION OF NATURAL GASES
Etienne Maurice Schlumberger, London, England, and Hadi Hashemi-Tafreshi, Norman, Okla., assignors to Conch International Methane Limited, Nassau, Bahamas, a company of the Bahamas
Filed Nov. 24, 1961, Ser. No. 154,409
12 Claims. (Cl. 62—12)

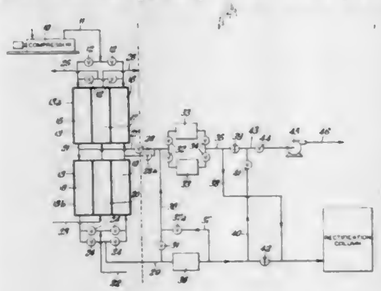


1. A method of purifying a gas containing contaminants which will solidify when the gas is in the liquid state which comprises
(a) liquefying the gas under superatmospheric pressure and reducing its temperature to a temperature above that at which the contaminants solidify,
(b) passing the liquefied gas to an expansion chamber operating at a pressure lower than the original pressure of the feed gas to cause a reduction in temperature so that a slurry of solid contaminants in the liquefied gas is formed accompanied by a flash-off of vapor,
(c) condensing the flashed-off vapor by heat exchange with cold purified liquefied gas as mentioned in (e) below and returning the condensed flashed-off vapor to the slurry in the expansion chamber,
(d) passing the slurry of solid contaminants in liquefied gas from the expansion chamber to a separator operating at a pressure lower than the expansion chamber, in which separator cold purified liquefied gas separates from a concentrated slurry of solid contaminants in liquefied gas,
(e) passing cold purified liquefied gas from the separator in heat exchange with the flashed-off vapors from the expansion chamber to condense said vapors and then taking the purified liquefied gas off as product and
(f) withdrawing from the separator a concentrated slurry of the solid contaminants.

3,224,209
PROCESS AND APPARATUS FOR PURIFYING AND SEPARATING COMPRESSED GAS MIXTURES
Wilbur H. Lauer, Buffalo, Osce P. Roberts, Jr., Grand Island, and Edward F. Yendall, Buffalo, N.Y., assignors to Union Carbide Corporation, a corporation of New York
Filed Jan. 28, 1960, Ser. No. 5,293
5 Claims. (Cl. 62—14)

1. A process for preparing a compressed gas mixture containing water and carbon dioxide impurities for low temperature rectification of the gas into its components comprising the steps of providing a gas mixture stream at an inlet pressure below 150 p.s.i.; dividing said gas

mixture stream into two parts, passing one part to a reversing heat exchange zone comprising at least two accumulator-type heat exchange zones arranged in alternating flow sequence, passing the other part to another reversing heat exchange zone comprising at least one passage exchanging zone, partially cooling each of the two parts of the mixture separately in said heat exchangers to temperatures between —80° C. and —110° C. and removing the water impurity by deposition in the heat exchangers; dividing each part of the partially cooled mixture into major and minor portions; withdrawing the two partially cooled minor portions from said heat exchangers with at least one of said two minor portions being withdrawn at a temperature between —80° C. and —110° C., mixing the two partially cooled minor portions to form a single partially cooled minor portion; further cooling the major portions of each part of said gas mixture stream in said two heat exchangers to a temperature at least as low as —170° C.; diverting a regulated first part of the further cooled major portion from the cold end of the passage exchange heat exchanger and mixing such part with the combined partially cooled minor portions, said

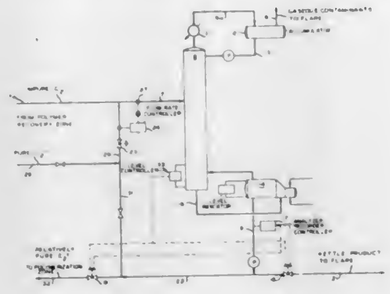


first part being of suitable quantity to form a combined stream having a temperature between —120° C. and —135° C., passing said new combined stream through an adsorbent zone for carbon dioxide removal by substantially all vapor phase adsorption therein; forming a gas mixture stream having suitable flow and temperature of between —150° C. and —155° C. for work expansion by diverting a regulated part of the warmer combined stream to the further cooled and combined major portion withdrawn from the accumulator-type heat exchange and the the passage exchanger, slightly throttling the remaining undiverted part of said warmer combined stream, diverting a regulated second part of said further cooled and combined major portions and mixing such further cooled second part with the slightly throttled undiverted part of the combined warmer stream so as to cool such stream thereby forming the work expansion inlet stream; expanding such inlet stream to a low pressure with production of external work; and passing at least part of the remaining undiverted further cooled and combined major portions of said compressed gas mixture to a rectification zone for undiverted part of the major portion withdrawn from separation into its components.

3,224,210
FRACTIONATION WITH CONSTANT FLOW RATE FEED
James W. Albritton, Pasadena, Tex., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Mar. 18, 1963, Ser. No. 265,692
11 Claims. (Cl. 62—21)

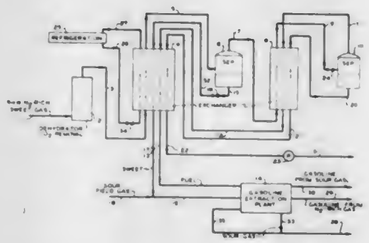
1. A process for fractionating a mixture of fluids of varying boiling points to separate the constituents thereof, comprising:

(a) introducing a first stream comprising said mixture into the middle portion of a fractionation zone;
(b) withdrawing a second stream comprising substantially all of the lower boiling constituents from the upper portion of said fractionation zone;
(c) withdrawing a third stream comprising substantially all of the higher boiling constituents from the lower portion of said fractionation zone;
(d) measuring the rate of introduction of said first stream into said fractionation zone;



(e) introducing a fourth stream of at least one of the constituents of said mixture into said middle portion when the measured flow rate of said first stream is below a predetermined value; and
(f) discontinuing the introduction of said fourth stream when the measured flow rate of said first stream is above said predetermined value.

3,224,211
PROCESSING LOW B.T.U. GAS FROM NATURAL GAS
Joseph T. Karbosky, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Nov. 20, 1961, Ser. No. 153,356
3 Claims. (Cl. 62—23)

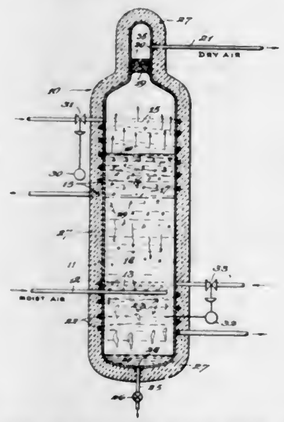


1. A process for processing a nitrogen-rich, sweet natural gas stream below the standard of heating value for sale for heating purposes and simultaneously processing a sour field gas to produce gasoline which comprises the steps of:

(a) passing said natural gas thru a first indirect heat exchange zone at a pressure in the range of 500–750 p.s.i.a. to cool same to a temperature below 0° F;
(b) from the chilled gas separating a first condensate lean in nitrogen and rich in natural gasoline and a first uncondensed gas lean in natural gasoline and rich in nitrogen, methane, and ethane;
(c) passing the uncondensed gas thru a second indirect heat exchange zone to further chill same;
(d) expanding the chilled gas from step (c) to a pressure in the range of 200–400 p.s.i.a. to further chill same;

(e) from the chilled gas of step (d), separating a second condensate consisting predominantly of methane and ethane and a second uncondensed gas consisting predominantly of nitrogen, methane, and ethane;
(f) passing the second condensate and the second uncondensed gas from step (e) substantially at their existing pressures, separately and serially thru second and said first heat exchange zones, said condensate and said gas being the sole coolants in said second heat exchange zone;
(g) expanding said first condensate to chill same and passing the resulting fluid thru said first heat exchange zone as coolant;
(h) passing said sour field gas to a gasoline extraction plant to extract gasoline therefrom, said plant utilizing fuel for heating purposes;
(i) passing the effluent second gas from step (f) to said plant and utilizing same as at least a part of said fuel, whereby some of said sour feed gas normally burned as fuel in said plant is released for other uses;
(j) passing the effluent first condensate from step (g) to said plant to extract gasoline therefrom;
(k) recovering the effluent second condensate from step (f) in gas form as an upgraded gas product meeting heating gas standards; and
(l) recovering gasoline from said plant.

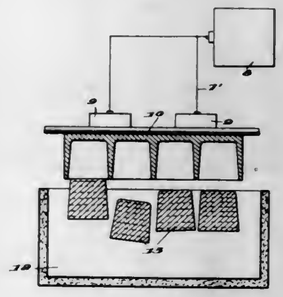
3,224,212
PROCESS AND APPARATUS FOR CONTINUOUSLY DEHYDRATING GAS
Gerald E. Engdahl, Lombard, Ill., assignor to Chicago Bridge & Iron Company, Hinsdale, Ill., a corporation of Illinois
Filed Jan. 8, 1964, Ser. No. 336,407
2 Claims. (Cl. 62—40)



1. Apparatus for removing water vapor from another gas having a liquefaction temperature below the freezing temperature of water, said apparatus comprising:

a vertically disposed vessel having a lower container portion and an upper neck portion of reduced cross-sectional area relative to said container portion;
said container portion holding a relatively viscous liquid having an upper surface located below said neck portion;
said viscous liquid having a specific gravity less than water and less than ice, and having a viscosity between 40 and 5,000 Saybolt Universal Seconds at temperatures between —100° F. and 40° F., and having a vapor pressure less than atmospheric at temperatures between —100° F. and 40° F.;
means for introducing said gas, containing said water vapor, into said container portion below the surface of said viscous liquid;
said introducing means including means for distributing said gas as divided streams of bubbles;
gas outlet means extending from said neck portion;
a refrigeration circuit comprising an evaporator coil and a condenser coil;
said evaporator coil encircling an exterior upper section of said container portion to provide a freezing zone in the container portion above said gas introducing means;
another coil connected to said condenser coil for circulation of fluid from the condenser coil to said other coil;
said other coil encircling an exterior lower section of the container portion to provide a heating zone below said freezing zone;
a pair of temperature control means each for controlling the temperature in a respective one of said zones;
means, at the bottom of said container portion, for receiving and withdrawing water in its liquid phase;
mist collector means in said neck portion, between said gas outlet means and said upper surface of the viscous fluid, for removing viscous fluid mist from said gas;
and insulating means enclosing the entirety of said vessel and enclosing said evaporator coil and said other coil.

3,224,213
METHOD FOR MAKING AND HARVESTING ICE USING ULTRASONIC VIBRATORS
Earl E. Hoyt, Jr., 421 West Ave., Northvale, N.J.
Filed July 17, 1964, Ser. No. 383,304
3 Claims. (Cl. 62—68)

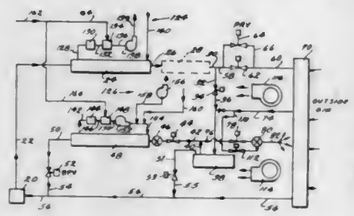


1. In the art of making frozen bodies from liquid in refrigerated freezer forms, the steps of subjecting the liquid in the form to ultrasonic high frequency agitation to drive off air and gas therefrom to produce clear frozen bodies, and harvesting the frozen bodies from the forms by subjecting the forms directly to ultrasonic high frequency vibrations therein to separate the frozen bodies from the form in harvesting.

3,224,214
HEAT PUMP APPARATUS AND METHOD
Grason T. Nickell and Samuel W. Glass, Jr., Greensboro, and Guy H. Cheek, Charlotte, N.C., assignors to Air Conditioning Corporation, Greensboro, N.C., a corporation of North Carolina
Filed Mar. 7, 1963, Ser. No. 263,667
30 Claims. (Cl. 62—81)

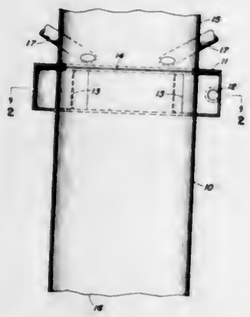
29. In a heat pump cycle in which a fluid refrigerant gas is compressed, condensed, evaporated and recompressed in a continuous cycle, a method of supplying

energy to the cycle comprising condensing said refrigerant gas in said continuous cycle by passing a fluid in heat exchange relationship with said refrigerant gas; causing said condensed refrigerant to evaporate at least partially at a point separated from the point at which said refrigerant is evaporated in said continuous cycle and passing a fluid in heat exchange relationship with said evaporating refrigerant at said separated point, thereby supplying heat to said refrigerant, and simultaneously evaporating at least a portion of said refrigerant at said point in said continuous cycle while passing a fluid in heat exchange relationship with said last-mentioned evaporating refrigerant



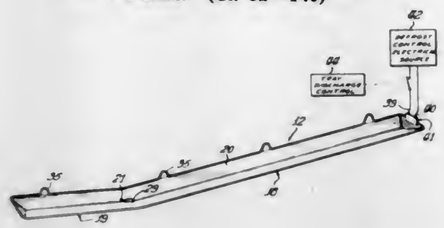
so as to make available simultaneously a source of low temperature flupid to a point of use; maintaining said source of low temperature fluid distinct and separate from said fluid in heat exchange relationship with said evaporating refrigerant at said separated point after said fluids have passed out of heat exchange relationship with their respective evaporating refrigerants; and also maintaining said source of low temperature fluid distinct and separate from said fluid in heat exchange relationship with said refrigerant gas after said fluids have respectively passed out of heat exchange relationship with the evaporating refrigerant and refrigerant gas into which they are brought in heat exchange relationship.

3,224,215
PROCESS AND DEVICE FOR COOLING A HOT GAS MIXTURE CONTAINING TiO_2
Karl-Jürgen Bramekamp and Achim Kulling, Leverkusen, Germany, assignors to Titangesellschaft m.b.H., Leverkusen, Germany, a corporation of Germany
Filed Dec. 19, 1963, Ser. No. 331,825
Claims priority, application Germany, Dec. 24, 1962, T 23,262
11 Claims. (Cl. 62—120)



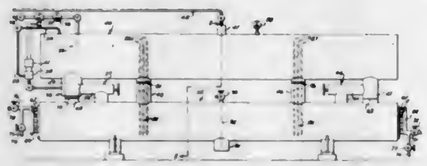
1. Process for cooling hot reaction gases including gaseous chlorine and particulate TiO_2 in suspension produced by the vapor phase oxidation of $TiCl_4$ in the presence of an auxiliary flame which comprises: rapidly cooling said hot reaction gases without loss of chlorine by passing said hot reaction gases in heat transfer relationship through a circumambient continuously moving, unbroken film of relatively cold water.

3,224,216
REFRIGERATOR DEFROST TRAY
Richard O. Crouch, Fort Smith, Ark., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Sept. 3, 1964, Ser. No. 394,204
7 Claims. (Cl. 62—140)



1. A tray adapted to be mounted in the cooling area of a refrigerator, freezer or like unit and collect and remove water during the defrosting of the unit, the combination comprising a top layer of light-weight material having a predetermined trough shape and provided with an upper surface configuration converging toward at least one low point so that water flows over said surface by gravtiy to said low point, a bottom layer of light-weight material complementarily shaped to fit below said top layer, heating means disposed between said top and bottom layers respectively and operative to raise the temperature of said top layer to maintain said defrost water in a fluid state, and means for holding said respective layers together, said top and bottom layers having openings positioned at said low point for removing the water from the tray.

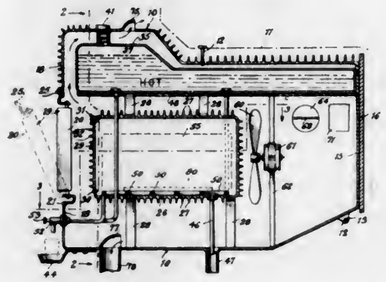
3,224,217
REFRIGERATING SYSTEM INCLUDING AN ACCUMULATOR
Harold J. Smith, San Francisco, and Howard E. Boudreau, Daly City, Calif., assignors to Cyclops, Inc., San Francisco, Calif., a corporation of California
Filed July 25, 1963, Ser. No. 297,541
5 Claims. (Cl. 62—221)



1. A refrigerating device comprising:
a cooling tank;
tubular heat exchange means disposed in said cooling tank above the bottom of said cooling tank;
an accumulator tank disposed above said cooling tank in close adjacency thereto;
first conduit means connecting the bottom of said accumulator tank to the top of said cooling tank;
manually operable valve means in said first conduit means;
an inlet connection to said accumulator tank;
control means for controlling flow of liquid refrigerant through said inlet connection to maintain the liquid refrigerant in said accumulator tank at a predetermined level;
an outlet connection to the top of said accumulator tank;
second conduit means extending from the interior of said cooling tank below said heat exchange means to the interior of said accumulator tank adjacent the top thereof;

the volume of said accumulator tank between said predetermined level and the level of the top of said second conduit means being at least as great as the volume of said cooling tank above the lowermost portion of said heat exchange means therein.

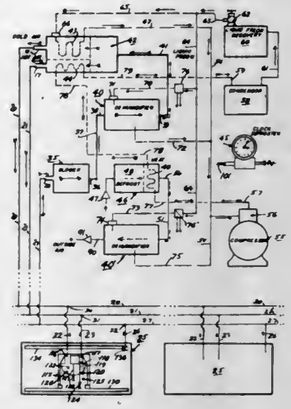
3,224,218
AIR COOLING AND LIQUID SUPPLY SYSTEMS FOR AUTOMOBILES
William B. New, 1412 NW. 11th Place, Fort Lauderdale, Fla.
Filed Mar. 7, 1962, Ser. No. 178,093
2 Claims. (Cl. 62—239)



1. In combination with an automobile having an enclosed space with a windshield and an instrument panel, a casing secured approximately under the said panel, a liquid tank secured inside the casing and having separate compartments for holding liquids, filler caps for said compartments for admitting liquids, means connected to one of the compartments for conveying said liquid therein to a tap on the outside of said casing below the said instrument panel, a cooling container inside the casing and secured thereto, means connected to the other of the compartments and passing over the inside floor of the cooling container to cool and convey liquid to a tap on the said casing below the said panel, said last mentioned means passing over the floor of the container being adapted to store perishable foods thereon inside the container, a duct system connected to the outside of the automobile enclosed space and conveying air over and around said cooling container and thence throughout the said automobile enclosed space to cool and air condition it, means for forcing air through the said duct system, additional means inside the said casing for forcing the air throughout the inside of the casing into the duct system, and tray means attached to the said casing for holding cups and glasses adjacent the liquid supplying taps.

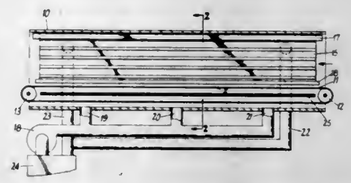
3,224,219
REFRIGERATION SYSTEM FOR DISPLAY CABINETS, FOOD STORAGE CABINETS, AND THE LIKE
Adam Boren, 300 Deal Lake Drive, Asbury Park, N.J.
Filed May 16, 1962, Ser. No. 195,297
7 Claims. (Cl. 62—278)

1. In combination with a closed cycle refrigeration system for refrigeration units such as display cabinets and food storage cabinets which have means for mixing hot and cold air supplied to hot and cold inlets thereof and a return outlet for the mixed air comprising a central unit with separate heating and cooling sections for air supplied to an inlet of the central unit, said central unit having hot and cold air outlets connected to and downstream of said heating and cooling sections, respectively, means for connecting said hot and cold air outlets of said central unit with the hot and cold air inlets of the storage cabinets, respectively, dehumidifying and cooling means having an inlet and outlet, means for supplying mixed air deriving from said outlet of the refrigeration unit to the inlet of said dehumidifying and cooling unit, and means coupling



the outlet of said dehumidifying and cooling means as the only air supplied to the inlet of said central unit, said air supplied to said central unit from said dehumidifying and cooling means thereby being supplied to the heating and cooling sections of said central unit.

3,224,220
COMBINED RADIANT AND CONVECTION COOLING SYSTEM
Clarence A. Mills, 2311 Fairview Ave., Cincinnati, Ohio
Filed Apr. 26, 1963, Ser. No. 275,877
5 Claims. (Cl. 62—380)



1. A cooling system comprising means defining a tunnel, a perforate platform disposed within said tunnel defining means, at least one carbon blacked plate coil for absorbing ultra-long wave length radiation in the space above said platform, and means for directing a moderate movement of cooling air through said tunnel defining means.

3,224,221
MODULE COOLING SYSTEM
Nicholas M. Raskhodoff, Cheverly, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed Dec. 24, 1964, Ser. No. 421,129
3 Claims. (Cl. 62—414)
(Granted under Title 35, U.S. Code (1952), sec. 266)

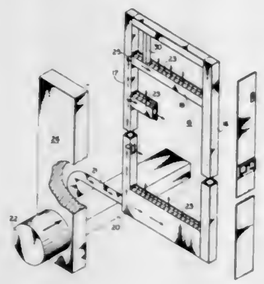
1. A cooling system for supplying cooling air to electrical equipment housed in a cabinet which comprises:
an air cooling means,
an air supply duct in said cabinet leading from said air cooling means and
extending across said cabinet containing said electrical equipment to be cooled,
a plurality of racks upon which said electrical equipment is assembled in individual modules

said rack including a vertically extending hollow end member and a plurality of horizontal hollow members connected with said vertically extending hollow member,

a bellows type hose connected between said air duct extending across said cabinet and said vertically extending structural members of each of said racks,

said vertically extending member of each of said racks connected with said bellows type hose cooperating therewith to supply fresh air to said electrical equipment within said modules,

said plurality of horizontal hollow members each forming an air duct connected with said vertically extending hollow member of said racks to permit passage of air through the horizontal members,

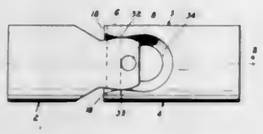


each of said separate horizontal air ducts including a plurality of spaced apertures along the length in the upper face thereof,

each of said plurality of horizontal ducts having apertures in the top face thereof adapted to supply fresh air to the electrical components within modular inclosures mounted on said horizontal members, and

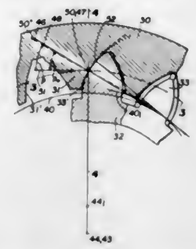
said bellows type hose providing a continuous flow of fresh air to said electrical components when the module racks are positioned within the cabinet or withdrawn therefrom.

3,224,222
UNIVERSAL JOINT
Lawrence F. Palmer, Sr., 179 E. 317th St., Willowick, Ohio
Filed Jan. 9, 1963, Ser. No. 250,389
5 Claims. (Cl. 64—9)



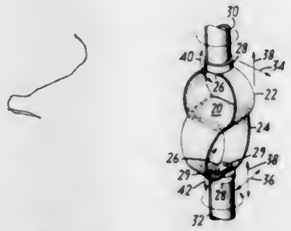
1. A joint comprising, a pair of yoke members, each of said yoke members including torque load bearing surfaces for coaction with torque bearing surfaces on the other of said yoke members, and means operatively connecting said yoke members together for pivotal articulation of the joint on said torque bearing surfaces, said means connecting said yoke members together including a pair of cross-pintles, and retaining means embracing said cross-pintles to maintain said yoke members in operative position during pivotal articulation of said joint, said retaining means including an endless link having a twisted, generally oval configuration.

3,224,223
TOOTHED COUPLING
Ernest Wildhaber, 124 Summit Drive, Brighton, N.Y.
Filed Sept. 9, 1963, Ser. No. 307,380
4 Claims. (Cl. 64—9)



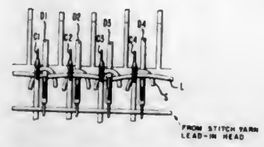
1. A toothed coupling comprising an internally toothed outer member with longitudinally straight teeth and an externally toothed inner member with crowned teeth engaging said straight teeth and extending lengthwise along continuous convex curves, said straight teeth having concavely curved tooth profiles, said crowned teeth having convex tooth profiles in planes perpendicular to the axis of rotation of said inner member, the inclination of said convex profiles to the radial direction, at a constant distance from the axis of rotation, being at least as large adjacent a tooth end as at the tooth middle, said convex profiles being more curved than said concave profiles and at their mid-portion being less inclined to the radial direction than said concave profiles so that they contact said concave tooth profiles in a region between said mid-portion and their outside ends when the axes of the two members are aligned.

3,224,224
FLEXIBLE COUPLING
Peter Kudriavetz, Jr., Marion, Mass., assignor to Acushnet Process Company, a corporation of Massachusetts
Filed June 7, 1963, Ser. No. 286,290
5 Claims. (Cl. 64—11)



1. A flexible coupling for two members spaced from each other which comprises, a member with a main body portion, and at least four flexible arms extending therefrom, at least two of said flexible arms being bent around on one side of said main body portion and affixed at their ends to one of said members, and at least two of said flexible arms being bent around on the second side of said main body portion and affixed at their ends to the second one of said members, the distance between interior surfaces of the two bent arms on each side of the main body portion being greater than the distance between the interior surfaces of such arms at the place where the arms are attached to the main body portion and affixed to the said members when measured in a plane at right angles to the common axis of both members when held in perfect alignment said body portion and said arms forming a pair of flexible loops substantially circular in cross section.

3,224,225
METHOD AND APPARATUS FOR LAYING IN YARN ON DIAL NEEDLES
James Henry Blore, Andover, Mass., and Barry John Ward, Kirby Muxloe, England, assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed May 25, 1961, Ser. No. 112,608
2 Claims. (Cl. 66—9)



1. The improved method of knitting sweater blanks on automatic transfer circular knitting machines having a plurality of dial needles having hooks and latches, a plurality of cylinder needles having hooks and latches and means for actuating said needles to produce jersey stitch and rib stitch material which comprises

(a) knitting rib construction on both said dial and said cylinder needles,

(b) transferring all the loops on each of said cylinder needles to each of the corresponding dial needles,

(c) forming a jersey stitch construction on said dial needles,

(d) projecting certain dial needles in an extended position while maintaining the other of said dial needles in a retracted position,

(e) feeding a lay-in yarn to said extended dial needles,

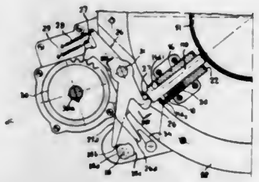
(f) retracting said extended dial needles to position said lay-in yarn below the nose portion of said other dial needles,

(g) the improvement comprising at this point in time, elevating said cylinder needles and then extending all of said dial needles, said elevated cylinder needles maintaining said lay-in yarn substantially in its laid-in position to insure that said extended dial needles pass above said lay-in yarn,

(h) lowering said cylinder needles and

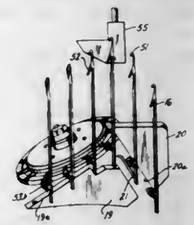
(i) thereafter continuing knitting.

3,224,226
NEEDLE SELECTION DEVICE
Vinicio Luchi, Florence, Italy, assignor to Solis Società a Responsabilita Limitata, Florence, Italy, a corporate body of Italy
Filed July 11, 1962, Ser. No. 209,116
Claims priority, application Italy, July 17, 1961, 13,435/61; Oct. 10, 1961, 18,597/61
9 Claims. (Cl. 66—50)



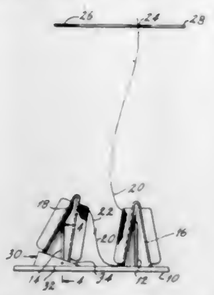
1. In a circular knitting machine, in combination, a rotary needle cylinder having an axis and axially extending grooves; needles disposed in said grooves for sliding movement; jacks mounted in said grooves for lifting said needles, said jacks having butts disposed at eight circumferential levels, a first group of four jacks having butts at four adjacent levels located along a first circumferential arc, and a second group of four jacks having butts at four other adjacent levels located along a second circumferential arc, each group of jacks having short butts of the same length at the respective four adjacent levels, and each jack of each group having one long butt, said long butts being located at different levels and adapted to cause the formation of tuckstitches by the respective needles, selected butts of said short butts being adapted to be omitted for forming a selected pattern different from the tuck stitch pattern; a stationary structure including a support; eight slider cams inclined to the axis of said needle cylinder and to said levels, and mounted on said support at said levels, respectively, for movement between a retracted position and an operative position for engaging said butts at the corresponding levels for lifting the respective jacks and needles; an assembly of coaxial rotary cams supported on said structure for turning movement about an axis parallel to said axis; cam follower means controlled by said rotary cams and respectively acting on said slider cams, said cam follower means including two sets of eight cam follower levers, respectively; a shaft supporting said cam follower levers and being parallel to said axis of said needle cylinder, the cam follower levers of each set alternating with the cam follower levers of the other set, each cam follower lever being controlled by a corresp.onding rotary cam, two adjacent cam follower levers of said two sets controlling the same slider cam for shifting the same between said positions; and means for preventing operation of said slider cams by all the cam follower levers of each set.

3,224,227
KNITTING MACHINE
Leonard Beckenstein, Freeport, N.Y., assignor of fifty percent to Martin Lahm, Brooklyn, N.Y.
Filed May 24, 1963, Ser. No. 282,957
12 Claims. (Cl. 66—50)



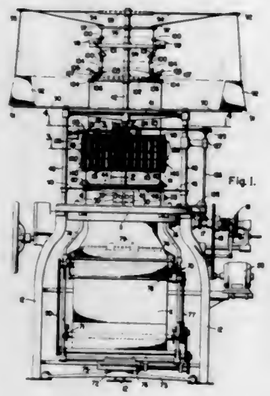
1. A pattern wheel knitting machine comprising a needle cylinder having axially aligned needle grooves, a pattern wheel station adjacent the periphery of said cylinder, means for relatively rotating said station and said cylinder about the axis of said cylinder, a first group of knitting needles having body portions slidably mounted in said grooves and having butt portions extending radially beyond the periphery of said cylinder, the butt portions of said first group being laterally offset with respect to the body portions of said needles, a second group of knitting needles having body portions slidably mounted in said grooves and having butt portions extending radially beyond the periphery of said cylinder, the butt portions of said second group having a different lateral relationship with respect to the body portion of the needles of said second group than said butt portions and body portions of said first group, a pattern wheel rotatably mounted at said station and having a plurality of sets of radially extending grooves, each said set including a first groove and a second groove angularly spaced from said first groove, said butt portions of said first type being positioned to mesh with said first groove of each said set and said butt portions of said second groove being positioned to mesh with said second groove of each said set upon relative rotation of said station and said cylinder.

3,224,228
ACCESSORY ATTACHMENT FOR KNITTING APPARATUS
Wolf Roizentul, 200 E. 18th St., Brooklyn, N.Y.
Filed Aug. 19, 1963, Ser. No. 303,088
5 Claims. (Cl. 66—125)



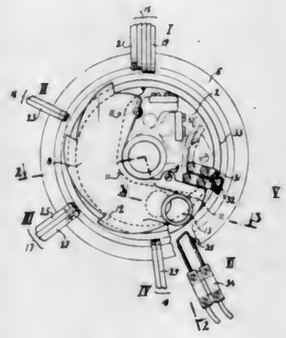
1. For knitting apparatus, including yarn supplying means comprising a plate having a plurality of spaced upright pins set thereon, each said pin adapted to support yarn wound on a tubular conical core, and a yarn guide associated with each said pin disposed thereabove in alignment with the longitudinal axis thereof, a removable adaptor for disposing a yarn cone mounted on one of said pins with its longitudinal axis in alignment with the yarn guide associated with an adjacent of said pins, said adaptor comprising a body having top and bottom faces disposed in parallel, convergent planes, said body having an opening formed therethrough extending between said faces and normal to said bottom face, said body mountable by said opening over said one pin with its bottom face resting on said plate, and its top face disposed at an angle to the surface of said plate and directed towards said adjacent pin, said body adapted to support on its top face a yarn cone mounted over said one pin and dispose said yarn cone with its longitudinal axis in alignment with said yarn guide of said adjacent pin.

3,224,229
YARN CONTROLLING DEVICE FOR KNITTING MACHINES
Lester Mishcon, Miami Beach, Fla., assignor, by mesne assignments, to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed May 6, 1963, Ser. No. 278,135
22 Claims. (Cl. 66—132)



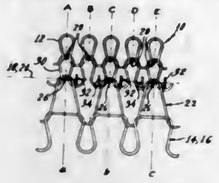
1. A multi-feed knitting machine having knitting instrumentalities and means for supporting a multiplicity of yarn supplies relatively to said knitting machine, means for furnishing yarns from said multiplicity of yarn supplies to said knitting instrumentalities comprising a multiplicity of yarn feeding elements, means for directing yarn between each of said yarn supplies and said knitting instrumentalities into engagement with all of said multiplicity of yarn feeding elements, and means for imparting movement to each of said yarn feeding elements in timed relation with the operation of said knitting instrumentalities.

3,224,230
DEVICE FOR PNEUMATIC HOLDING OF INACTIVE YARNS IN A CIRCULAR KNITTING MACHINE
Josef Dusík, Ivan Martiš, and Václav Obořil, Trebic, Milan Mejzlik, Rokytnice N/Rok., and Jaroslav Javorek, Trebic, Czechoslovakia, assignor to Sdružení podniku textilního strojírenství, Liverec, Czechoslovakia
Filed Feb. 25, 1963, Ser. No. 260,689
Claims priority, application Czechoslovakia, Mar. 24, 1962, 1,815/62
8 Claims. (Cl. 66—145)



1. In a knitting machine, in combination:
(a) a plurality of needles defining a cylindrical needle race about an axis of rotation and being arranged for rotary movement about said axis in a predetermined direction;
(b) a plurality of yarn carrier means angularly spaced about said axis, and defining respective yarn feed stations, each of said yarn carrier means being arranged for axial movement relative to said needles between an operative position in which said needles can take yarn from said yarn carrier means, and an inoperative position out of yarn taking range of said needles;
(c) two members having respective faces spaced in the direction of said axis to define a gap therebetween, said gap extending in a plane transverse of said axis and being open in a radially outward direction in an arc about said axis, said feed stations being radially adjacent said arc;
(d) a conduit having an axis angularly intersecting said plane, said conduit and said faces jointly defining an annular orifice extending about the axis of said conduit and offset from said axis of rotation in such a manner as to be substantially nearer said cutting means than at least one of said feed stations, the conduit communicating with said gap through said orifice, and the flow section of said orifice being smaller than the flow section of said conduit; and
(e) yarn cutting means arranged adjacent said arc and spaced from said feed stations in said predetermined direction for cutting a yarn extending outward of said gap to one of said needles.

3,224,231
KNIT GARMENT AND FABRIC THEREFOR
George C. Matz, Gilbertsville, Pa., assignor to Swiss Knitting Company, Inc., Dover, N.J., a corporation of New Jersey
Original application Sept. 28, 1961, Ser. No. 141,418. Divided and this application Mar. 16, 1964, Ser. No. 352,170
8 Claims. (Cl. 66—171)



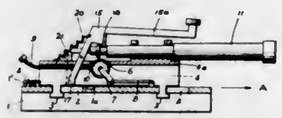
1. A knitted garment having a jersey knit portion and a rib-knit cuff portion interknit with a course of said jersey knit portion, with the loops in a course of said rib-knit portion interknit with alternate loops only of said course of the jersey knit portion.

3,224,232
INSTANT FLARE DEVICE
Michael Dzvonik, 226 Sherman Ave., Whitaker, Pa.
Filed July 1, 1964, Ser. No. 379,643
4 Claims. (Cl. 67—3)



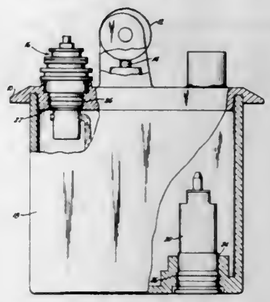
1. A signal-flare projecting apparatus carried by a vehicle having a wall, said apparatus including in combination an elongated cylinder body mounted on said wall, a flare holder slidably mounted within the cylinder body and having a pin extending rearwardly of an axially central position of the flare holder, said pin having a head at the distal end thereof, a solenoid, an armature actuable by energization thereof, said armature having an opening for receiving the head of said pin, and for retaining the head therein until energization of said solenoid, spring means for driving the flare holder when the head of said pin has been released from the opening of said armature to project said flare beyond the signal-flare projecting apparatus, and flare striker cloth mounted for engaging a fuse head of the flare for ignition thereof responsive to the extension of flare from the cylinder body.

3,224,233
PYROPHORIC LIGHTER
Aviv Kariri, 9 Ben Yehuda St., Haifa, Israel
Filed May 14, 1964, Ser. No. 367,423
5 Claims. (Cl. 67—4.1)



1. A pyrophoric lighter which comprises a base member, a carriage member slidable mounted on said base member between a first and a second position, a friction wheel rotatably mounted on said carriage, a spark producing stone, means mounting said stone on said carriage in contact with said friction wheel, a tension spring connected between said carriage and said base to bias said carriage towards said first position, means coacting between said friction wheel and said base member to turn said friction wheel when said carriage is moved from said first position to said second position while said spring is tensioned, a removable separate torch member having a flammable end, means slidably mounting said torch member on said carriage member, means latchable locking said torch member to said carriage member with its flammable end near said spark producing stone and means releasing said latchable locking means when said carriage member reaches said second position as said torch member is pulled against the action of said tension spring.

3,224,234
FLUID-TIGHT SEAL
Conrad Zellweger, Geneva, Switzerland, assignor to La Nationale S.A., Geneva, Switzerland, a corporation of Switzerland
Filed July 16, 1963, Ser. No. 295,462
Claims priority, application Switzerland, Mar. 22, 1960, 3,226/60
6 Claims. (Cl. 67—7.1)

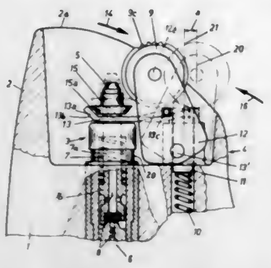


1. In a gas burning cigar lighter, a fuel reservoir of a plastic material subject to permanent deformation when stressed beyond its elastic limit and a metallic burner valve assembly extending through one wall of said fuel reservoir, said metallic valve assembly having a preformed peripheral ridge thereabout pressed radially into the plastic material of said fuel reservoir by an amount sufficient to establish local stresses in said plastic material in the immediate vicinity of said ridge to stress said plastic material beyond its elastic limit but not beyond its ultimate strength.

3,224,235
GAS LIGHTER
Bernard Meylan, Villa La Ruche, Leysin-Feydey, Switzerland
Filed Oct. 5, 1964, Ser. No. 401,433
Claims priority, application Switzerland, Oct. 9, 1964, 12,365/63
7 Claims. (Cl. 67—7.1)

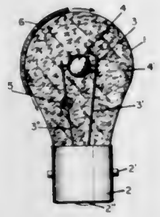
1. A gas lighter comprising a housing, a displaceable valve pin constructed as a burner element and mounted for movement to and fro between an open position and a closing position, hand-operated friction wheel means operatively connected with said displaceable valve pin in order to trigger movement of the latter, rocker lever means for carrying said friction wheel means, flint means mounted on said housing independently of the rocker lever and in contact with the friction wheel means, said rocker lever means being mounted for tilting movement between a rest position and an ignition position, actuating means for operably interconnecting said rocker lever means with said displaceable valve pin, said actuating means being articulated with said rocker lever means for

movement together with the latter approximately transverse with respect to the direction of movement of said displaceable valve pin, control means cooperating with



said displaceable valve pin, said actuating means including free end portion means cooperating via said control means with said displaceable valve pin in order to displace the latter into its open position.

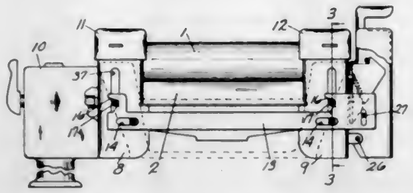
3,224,236
NOBLE GAS FLASH LAMP AND LASER LIGHT SOURCE
Jack De Ment, 1717 NE. 19th Ave., Portland, Oreg.
Filed July 15, 1963, Ser. No. 295,006
25 Claims. (Cl. 67—31)



1. An explodable chemical light flash lamp which comprises a gas tight transparent envelope provided with two spaced electrical lead wires passing thereinto and having in communication with the interior of said envelope a pallet of light producing explodable chemical composition affixed to the ends of the said lead wires in the interior of said envelope, said explodable chemical composition characterized as emitting light upon the explosion thereof, and a small mass of heat decomposable, solid noble gas compound contained within said envelope, the said noble gas compound characterized as releasing noble gas upon the explosion of the said pellet, whereby upon passage of an electrical current through the said lead wires the pellet explodes and the noble gas compound decomposes with the release of noble gas to enhance the luminosity of the light producing explodable chemical composition.

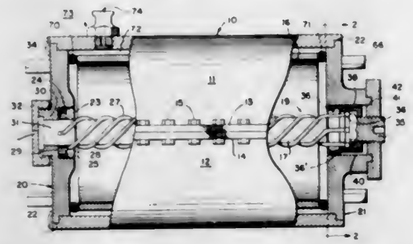
3,224,237
WRINGER
James W. Brandt, Erie, Pa., assignor to Lovell Manufacturing Company, Erie, Pa., a corporation of Pennsylvania
Filed Oct. 14, 1963, Ser. No. 315,946
8 Claims. (Cl. 68—257)

1. In a clothes wringer, a bottom frame with upstanding side stiles at each end of the bottom frame, an upper roll and a lower roll extending between the side stiles, a lower roll bearing mounted in pressure carrying relation at each end of the frame, an upper roll bearing at each end of the upper roll, a carrier for each upper roll bearing slidably mounted in the adjacent side stile, a pressure member slidable in each side stile, spring means connecting the pressure member and bearing carrier in each side stile for resisting upward movement of the bearing carrier relative to the pressure member, slides mounted on opposite sides of the frame for movement lengthwise of the rolls, cam means engaged by lengthwise



movement of the slides for locking the pressure members to the side stiles, a handle pivoted on one of the side stiles on an axis transverse to the slides, a connection between the handle and the slides for moving the slides lengthwise to and from the wringing pressure position, and a latch on said one side stile for holding the handle in the pressure position.

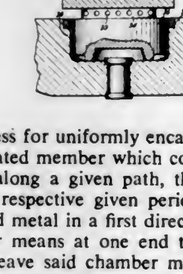
3,224,238
EXPLOSIVE-FORMING APPARATUS
Erik K. Henricksen, Downey, Calif., assignor to Aerojet-General Corporation, Azusa, Calif., a corporation of Ohio
Filed Aug. 29, 1963, Ser. No. 305,295
10 Claims. (Cl. 72—56)



2. A device for positioning an elongate body of substantially uniform cross section centrally within an elongate chamber by external application of force comprising a pair of removable end means for substantially enclosing said chamber, sheath means defining a volume sufficient to freely accommodate said body, said sheath means being susceptible to constriction upon being extended, means for securing one end of said sheath means centrally to the inner surface of one of said end means, said other end means having an aperture centrally disposed to accommodate said sheath means, and means extending through said aperture for gripping the other end of and extending said sheath within said chamber, whereby upon positioning said body in said sheath within said chamber, extension of said sheath will constrict said sheath against said body and simultaneously center said body within said chamber.

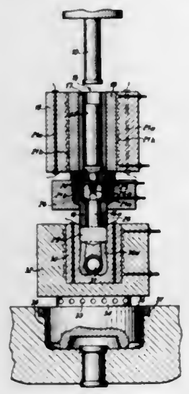
3,224,239
PNEUMATIC RESHAPING OF CANS
Ants Hansson, Evanston, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Aug. 17, 1962, Ser. No. 217,556
7 Claims. (Cl. 72—62)

1. A method of reshaping a hollow member utilizing a vented mold and a cooperating pneumatic pump of the positive displacement type, said method comprising the steps of seating said hollow member in said mold with only a single end of said member unsealed, sealing the periphery of said single end relative to said mold and pump, and actuating said pump to positively compress, substantially adiabatically, the air present within said



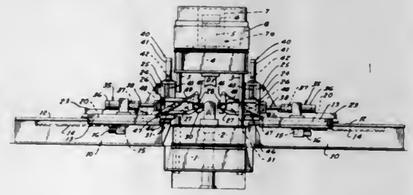
pump and member between said pump and member whereby the heat resulting from the work of the positive compression of said air by said pump acts simultaneously with said positive compression to increase the pressure of said air sufficiently to reshape said member in accordance with the internal contour of said mold.

3,224,240
METHOD OF EXTRUDING
Ernst Müller, Zieglerstrasse 57, Duisburg, Germany
Original application Sept. 20, 1960, Ser. No. 57,214. Divided and this application Jan. 31, 1964, Ser. No. 341,708
5 Claims. (Cl. 72—270)



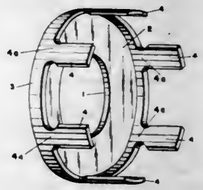
1. In a process for uniformly encasing in a covering of metal an elongated member which continuously advances longitudinally along a given path, the steps of intermittently and for respective given periods of time exerting pressure on said metal in a first direction so as to force it into a chamber means at one end thereof and to cause said metal to leave said chamber means in said first direction through the other end opposite said one end so as to extrude said metal around the elongated member advancing longitudinally and transversely of said first direction past said other end of said chamber means; and exerting pressure in said first direction on the metal in said chamber means in the intervals between given periods of time by moving said chamber means in a second direction opposite said first direction while simultaneously preventing flow of said metal through said one end of said chamber means so that said metal will continue to leave said chamber means through said other end and in said first direction in opposition to the direction of movement of said chamber means and will thereby continue to be extruded around said continuously advancing elongated member without any interruption.

3,224,241
UNDERREACH PRESTRETCH FIXTURE AND COMBINATION THEREOF WITH DRAWING DIE PRESS
Stanley M. Dolney, Parma, Ohio, assignor to The Cyril Bath Company, Solon, Ohio, a corporation of Ohio
Filed Feb. 28, 1964, Ser. No. 348,011
3 Claims. (Cl. 72—297)



1. In a drawing press and prestretch unit combination, a ram movable along an upright path, ram power means for driving the ram, a frame at one side of the ram path, a carriage mounted on the frame for movement relative thereto in opposite directions transversely of said ram path along a fixed horizontal path, an elevator mounted on the carriage for movement relative to the carriage along an upright path to raised and lowered positions, selectively, elevator power means interconnecting the carriage and elevator for moving the elevator to said positions, selectively, a stock gripper mounted on the elevator, yieldable stretch power means interconnecting the frame and carriage for yieldably urging the carriage, and thereby the elevator and gripper, along said horizontal path in a direction away from said ram path, and said ram power means, elevator power means, yieldable stretch power means each being operable independently of the others for effecting said movements of the gripper, ram, and elevator independently of each other, and stock gripping means at the opposite side of the ram path.

3,224,242
PROCESS FOR MANUFACTURING CASINGS FOR LAMINATED DISC CLUTCHES AND LAMINATED DISC BRAKES
Wilhelm Noll, Unna, Westphalia, Germany, assignor to Maschinenfabrik Stromag G.m.b.H., Unna, Westphalia, Germany, a firm of Germany
Filed Sept. 4, 1962, Ser. No. 221,168
Claims priority, application Germany, Oct. 18, 1961, M 50,612/61
5 Claims. (Cl. 72—340)



1. A process for manufacturing lamination guide casings having a substantially flat bottom portion defining a central aperture and having a substantially cylindrical lateral portion projecting at right angles from said bottom portion for use in disc-clutches, disc brakes, and like appa-

ratus, said process comprising in combination the steps of:

(a) die forging a block of metal to roughly impart to it the shape of a lamination guide casing;

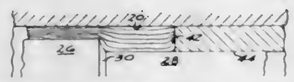
(b) thereafter further compressing said block by die forging and thereby more closely imparting to said block the shape of a lamination guide casing;

(c) machining into said lateral portion a plurality of equidistant circular holes having a predetermined circular pitch;

(d) removing additional material from said lateral portion to form a plurality of spaced axially extending torque-transmitting fingers out of said lateral portions, said removing of additional material including simultaneously making pairs of axially extending incisions in said lateral portion by a pair of gang-operated cutting tools, each of said pairs of incisions being spaced to intersect with a pair of said plurality of circular holes; and

(e) of locally hardening the edge zones of said plurality of fingers extending in a direction longitudinally thereof while leaving the root zones of said plurality of fingers unhardened.

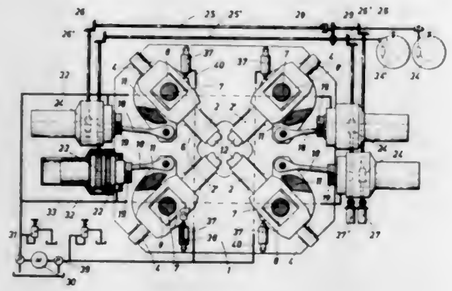
3,224,243
METHOD OF THICKENING THE WALL OF A TUBE
Walter H. Van Deberg, Ferndale, Mich., assignor to Earl A. Thompson Manufacturing Company, a corporation of Michigan
Filed June 30, 1961, Ser. No. 121,216
12 Claims. (Cl. 72—354)



1. The method of cold thickening an axial zone of a tubular metal workpiece which includes taking a nominally circular tube having a longitudinally extending grain, which tube may vary slightly from precise circular shape and has a nominally uniform outside diameter, which diameter may vary slightly along the length of the tube, pressing the tube axially into a cylindrical die having in said zone a uniform internal diameter slightly less than the minimum outside diameter of the tube to form the portion of tube in the zone into a precisely circular shape of uniform outside diameter, which portion in the zone is uniformly rigidly supported radially by intimate contact with the die as a result of the forming operation, using an internal form in said zone of the tube, and applying to the tube at opposite ends of said zone axially compressive force to shorten the tube and cause the cold metal to flow and conform accurately to the internal form without folding or bending to make a workpiece having a thick walled annular portion and an axially adjacent thin walled annular portion in which workpiece the grain of the metal remains generally straight and parallel to the axis throughout the length of the workpiece and expands smoothly and continuously from the thin walled portion into the thick walled portion.

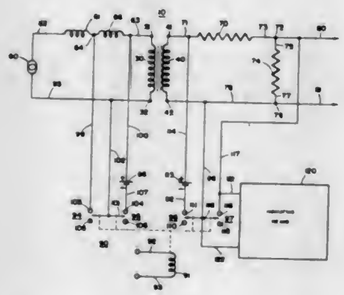
3,224,244
SWAGING MACHINE
Bruno Kralowetz, St. Ulrich, near Steyr, Austria
Filed Mar. 13, 1964, Ser. No. 351,799
Claims priority, application Austria, May 20, 1963, A 4,045/63
7 Claims. (Cl. 72—402)

1. A swaging machine, which comprises a swaging box defining a path along which a workpiece is movable in the direction of its longitudinal axis, a plurality of cylindrical adjusting housings mounted in said swaging box and angularly adjustable in hammer-opening and hammer-closing directions, a plurality of hammer drive shafts, each of which is eccentrically and rotatably mounted in one of said housings, a plurality of eccentrics, each of which is carried by one of said shafts, a plurality of hammers, which are mounted in said box and movable toward and away from said path in a direction which is radial to said path, said eccentrics being operable by said shafts to drive said hammers toward said path for a hammer blow and away from said path, said hammers being adapted to be adjusted away from and toward said path by an angular adjustment of said adjusting housings in said hammer-opening and hammer-closing directions, respectively, a plurality of backing



cylinders, a plurality of backing pistons, each of which is slidable in one of said cylinders and connected to one of said housings, a hydraulic system for supplying liquid under pressure to each of said cylinders at one end of said piston therein to enable said piston to resist an angular movement of said adjusting housings in the hammer-opening direction under the action of a hammer blow, said hydraulic system comprising an overpressure relief valve arranged to release liquid from said cylinders when the pressure applied to said relief valve exceeds a predetermined value, said machine further comprising a plurality of mechanical adjusting gearings, each of which is operatively connected to one of said housings and operable to effect an angular adjustment of said housing when this is desired.

3,224,245
CONTROL APPARATUS
Joseph A. Alibrandi, Watertown, Alan M. Campbell, Weston, and John A. Maynard, Winchester, Mass., assignors to Honeywell Inc., a corporation of Delaware
Filed Oct. 11, 1961, Ser. No. 144,391
1 Claim. (Cl. 73—1)



A fail-safe self-checking apparatus for an electromagnetic force transducer in which a magnetic element is mounted for displacement in response to a sensed condition and is biased to a normal null position by suitable restraining means, said transducer further having an induction pickoff comprising a primary winding normally energized from an A.C. source and a secondary winding both mounted adjacent said magnetic element, the displacement of said element causing a variation in the output from said secondary winding that corresponds to the amount and direction of movement of said element; said self-checking apparatus comprising:

(a) first and second D.C. sources;

(b) indicating means;

(c) circuit means for connecting said indicating means across said secondary winding;

(d) a dummy load connected in series with said A.C. source and said primary winding;

(e) first, second, third, and fourth simultaneously operated switching means each having a normally de-energized position and an energized position;

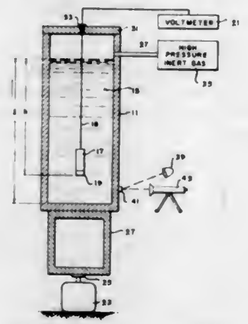
(f) circuit means including said first switching means in the energized position for connecting said dummy load across said A.C. source to de-energize said primary winding;

(g) circuit means including said second switching means in the energized position for connecting said first D.C. source to said primary winding;

(h) circuit means including said third switching means in the energized position for connecting said second D.C. source to said secondary winding; and

(i) circuit means including said fourth switching means in the energized position for shorting out said indicating means; said switching means in the energized position thereby providing D.C. inputs to said de-energized primary and secondary windings to cause displacement of said magnetic element; said switching means in the de-energized position permitting normal operation of said force transducer whereby the displacement of said magnetic element is indicated by said indicating means.

3,224,246
LOW FREQUENCY HYDROPHONE CALIBRATION
Fred Schloss, Arlington County, Va., and Murray Strasberg, Montgomery County, Md., assignors to the United States of America as represented by the Secretary of the Navy
Filed July 15, 1963, Ser. No. 295,256
14 Claims. (Cl. 73—1)



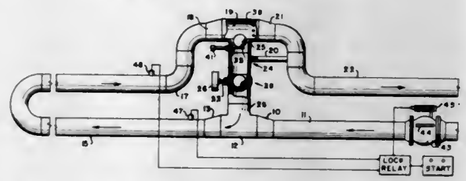
1. The method of calibrating a hydrophone to closely approximate free field testing of said hydrophone, comprising the steps of:

immersing the hydrophone so that its sensitive element is at a depth h in a column of liquid of depth L the speed of elastic waves in said liquid being c, and the liquid density being ρ;

transmitting vibrations to the liquid to produce elastic waves therein while holding the hydrophone motionless, whereby there is produced acoustic pressure in liquid column measurably affecting the hydrophone output, and

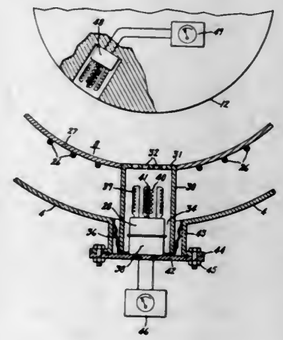
measuring the acceleration displacement amplitude of the vibrations imparted to the liquid column at a frequency ω.

3,224,247
PROVING FLOWMETERS
Maurice L. Barrett, Jr., Zionsville, Ind., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Aug. 11, 1961, Ser. No. 130,818
8 Claims. (Cl. 73—3)



1. An apparatus for calibrating or proving liquid flowmeters of the indicating type located in a pipe line, which comprises a continuous loop forming an integral part of said pipe line for the continuous and uninterrupted flow of liquid through the loop, said pipe line loop including two substantially vertically displaced parts, substantially vertical by-pass conduit means interconnecting said vertically displaced parts, plug means movable through said pipe line loop in sealing engagement therewith and through said by-pass conduit means, flow-control means in said by-pass conduit means for controlling the passage of said plug means through said by-pass conduit means and permitting passage therethrough from said upper part to said lower part while obstructing the flow of liquid in the opposite direction, whereby said plug means can be controllably transferred from said upper part to said lower part without interrupting the flow of liquid through said pipe line loop, and a pair of sensing means disposed in said pipe line loop in spaced relation, whereby the travel of the plug means past sensing means will be indicated.

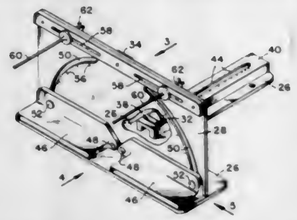
3,224,248
APPARATUS FOR PRESSURE MEASUREMENT IN VACUUM SYSTEMS
Donald J. Santeler, Scotia, N.Y., assignor to General Electric Company, a corporation of New York
Filed Sept. 29, 1961, Ser. No. 141,688
2 Claims. (Cl. 73—4)



2. In a vacuum system the combination of wall means defining a chamber having an aperture therein, which

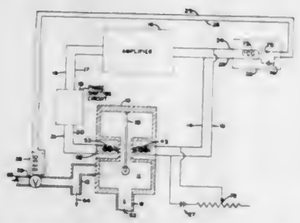
chamber is adapted to have a test member positioned therein, a cryogenic pumping means located within said chamber, pressure measuring means in communication with the aperture and refrigeration means proximate said pressure measuring means.

3,224,249
ADJUSTABLE FIXTURE FOR DROP TESTING
Bernard W. Ford, 430 Wilson Road, Ridgecrest, Calif., and William J. Switzenberg, Jr., 48A Rowe, China Lake, Calif.
Filed May 9, 1962, Ser. No. 193,636
7 Claims. (Cl. 73—12)
(Granted under Title 35, U.S. Code (1952), sec. 266)



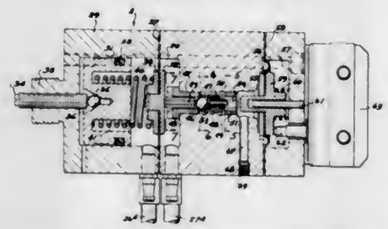
4. Test apparatus for use with a pivoted normally horizontal drop leaf table for dropping a container having intersecting surfaces forming edges or corners, onto an abutment, in a vertical plane passing through the center of mass of the container and a lower edge or corner, whereby the container will fall in said plane without rotating in any direction, comprising; a support, means for removably affixing said support to said leaf, said support being adjustable about a first horizontal axis and engageable with portions of the container to balance same in the position defined by said plane, and means for positively locking said support against movement away from any desired position of adjustment.

3,224,250
GAS LIQUID DETECTOR
Donald L. Ming, West Covina, and Bernard Case, Tarzana, Calif., assignors to Aerojet-General Corporation, Azusa, Calif., a corporation of Ohio
Original application Dec. 26, 1957, Ser. No. 705,407. Divided and this application Feb. 27, 1961, Ser. No. 92,095
5 Claims. (Cl. 73—19)



1. A gas liquid detector comprising a chamber serving as a vapor trap and adapted to be filled with a liquid, a vibratory reed formed from magnetic material and having oppositely disposed surfaces, said reed mounted in said chamber for vibration only in directions transverse to said surfaces whereby vibration is substantially prevented by the resistance of liquid in said chamber contacting at least a part of said surfaces of said reed, an electromagnetic driving coil external to said chamber, means causing said electromagnetic driving coil to generate a vibratory magnetic field, said electromagnetic driving coil positioned so the vibratory magnetic field is magnetically coupled to said reed and exerts a vibratory force on said reed inside said chamber causing said reed to vibrate at a useful amplitude only when gas in the liquid enters the chamber and forces the liquid in said chamber substantially out of contact with said reed, an electromagnetic pickup coil external to said chamber, said pickup coil being magnetically coupled to said reed by the magnetic field generated from said electromagnetic driving coil, and the magnetic field generated from said electromagnetic driving coil forming the only coupling between said reed and the respective driving coil and pickup coil so that the vibration of said reed induces voltages in said pickup coil whereby an indication of the presence of gas in the liquid may be obtained.

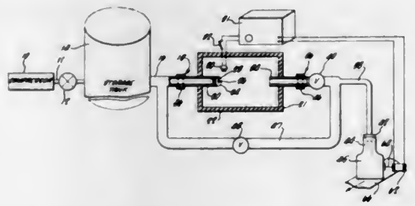
3,224,251
AIR GAUGE CONTROL
William A. Minix, Detroit, Mich., assignor to Freeland Gauge Company, Detroit, Mich.
Filed Nov. 25, 1964, Ser. No. 413,683
8 Claims. (Cl. 73—37.5)



8. In an air flow device for gaging the bore of a part, wherein air leakage from a gage head within said bore is visibly measured and compared with air leakage from said gage head within a series of predetermined master bores, providing a range for the selection or rejection of work pieces;
- a pneumatic control for the automatic sorting of selected parts corresponding to the master bores in the selected range;
- a support;
- a gage body mounted on the support and including an air pressure indicator;
- a source of air under regulated constant pressure connected to the gage body for communication with the said indicator;
- a gage head having an orifice;
- a conduit between said gage body and gage head;
- the application of said head to a bore permitting variable air bleeding from said head depending upon the bore size;
- such bleeding providing a variable reaction intermittent control air pressure in said conduit;
- a series of separate control elements, each individually adjusted for firing and selective operation of a part sorting device depending upon correspondence of the bore tested with one of the series of corresponding master bores;
- each control element comprising a limit switch for momentarily activating a sorting device and including a plunger;
- a housing mounting said limit switch including an operating chamber into which said plunger movably extends;
- a first flexible and axially movable diaphragm sealed within said chamber, normally biased to resist movement in one direction and adapted upon such movement for operative engagement with said plunger; and there being a central chamber in said housing;

- a second flexible and axially movable diaphragm sealed within said control chamber normally biased from one side for movement in one direction; there being a bore in said housing interconnecting said chambers;
- a biased normally closed movable valve seated in said bore closing off communication between said chambers;
- a control rod guidably mounted within said bore and axially movable therein and interposed between and engaging said valve and the second diaphragm for unseating said valve on movement of the latter diaphragm in said one direction;
- a source of air at a preset constant pressure connected to the control chamber on one side of the second diaphragm adapted for communication with said bore; normally opposing the bias of said second diaphragm and in balance therewith;
- said air line with its variable reaction control air pressure being connected to said control chamber upon the opposite side of said second diaphragm for variably creating a pressure imbalance acting upon said second diaphragm for moving the same to momentarily unseat said valve;
- said source of air under constant pressure moving said first diaphragm to actuate said limit switch plunger.

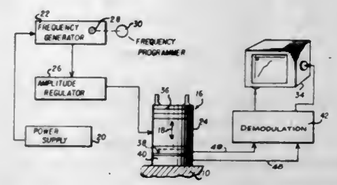
3,224,252
LEAK TESTING
Robert H. Hamilton, Menlo Park, Calif., assignor, by mesne assignments, to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California
Filed June 17, 1963, Ser. No. 288,402
12 Claims. (Cl. 73—49.2)



1. Apparatus for leak-testing a container, the apparatus including a source of test fluid under pressure, a conduit connecting the source to the container, an orifice plate disposed in the conduit for partially restricting flow through the conduit to develop mechanical vibrations due to fluid flowing into the container if it leaks, and a transducer disposed to receive mechanical vibrations produced by a leaky container and convert them into an electrical signal.

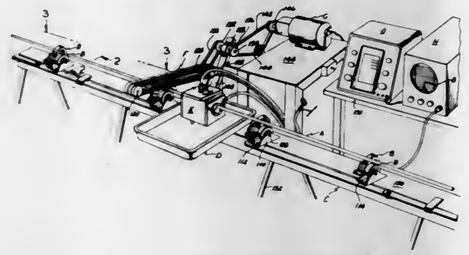
3,224,253
MEASUREMENT OF THE DYNAMIC REACTANCE PROPERTIES OF STRUCTURES
Robert L. McKay, Washington, D.C., assignor of forty percent to Milton Carr Ferguson, Washington, D.C.
Filed Oct. 16, 1962, Ser. No. 230,966
5 Claims. (Cl. 73—67)

1. Apparatus for measuring significant dynamic properties of structures, comprising:
- (a) means rigidly coupling a source of cyclical compressional displacement energy to the structure,
- (b) means for varying the cyclic operating frequency of said source through a predetermined range of frequencies,
- (c) means responsive during variation of said frequency varying means for maintaining constant the value of applied force,
- (d) means for separately measuring (1) the reactive force component, and (2) the velocity component of the displacement motion induced in said structure for varying values of said frequency, and



- (e) means for combining said components to yield the values, over said frequency range, of the complex ratio of the applied force to the velocity induced, and thereby a series of values of the mechanical motional impedance of said structure over said range of frequencies.

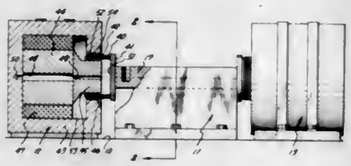
3,224,254
ULTRASONIC INSPECTION APPARATUS FOR ELONGATE MEMBERS
Joe H. Loving, Lakewood, Calif., assignor to General Inspection Laboratories, Inc., Bell, Calif.
Filed Dec. 12, 1961, Ser. No. 158,668
3 Claims. (Cl. 73—71.5)

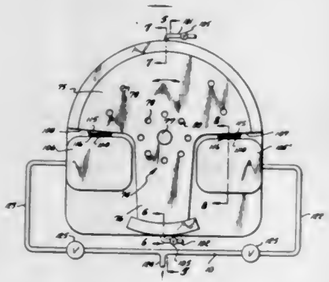


1. A device for testing elongate members, including:
- (a) a rectangular open-topped container having two longitudinally aligned openings formed in opposite sides thereof;
- (b) first means in said openings for sealingly engaging said elongate member when the same is advanced through said container;
- (c) a cover pivotally supported on top of said container;
- (d) second means mounted on said cover and projecting therebelow for transmitting spaced pulses of ultra sonic waves through a liquid situated in said container to a section of said elongate member in said container, said second means including a wave train generating and receiving surface that is disposed in said container below the surface of said liquid;
- (e) a hollow body having a slit formed therein, which body is affixed to said cover and disposed therebelow adjacent said second means, with said slit facing said second means and in horizontal alignment with said generating and receiving surface;
- (f) third means for supplying said liquid under pressure to said hollow body to discharge a stream thereof transversely across said generating and receiving surface; and

(g) fourth means for discharging to and withdrawing liquid from said container at such rates that the free surface of said liquid is maintained at a predetermined elevation therein, with said second means being adjustable relative to the section of said elongate member in said container by pivotally moving said cover relative to said container.

3,224,255
OSCILLATING VIBRATION TABLE WITH AIR CENTER
Leroy R. Woods, Pasadena, Calif., assignor, by mesne assignments, to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Maryland
Filed Sept. 19, 1958, Ser. No. 762,086
10 Claims. (Cl. 73—71.6)

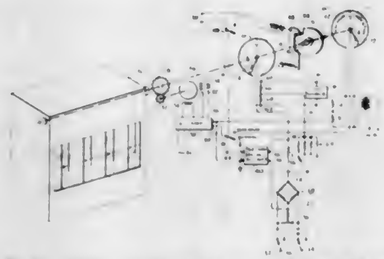




1. A vibration table comprising: a base structure; a platform structure supported by said base structure in a given plane for movement in said plane and having a work supporting portion thereon; one of said structures having recesses extending longitudinally in the direction of movement of said platform; the other of said structures having projections elongated in the direction of movement of said platform, said projections being parallel to said given plane and each said projection extending into a respective recess with an operative clearance on all sides of not more than a few thousandths of an inch; means for supplying fluid to the interior of said recesses at a pressure above the pressure surrounding the vibration table to float platform in a substantially friction free medium for movement in said given plane; means for vibrating said platform in the direction of movement comprising magnets, each said magnet being disposed at an end of said platform and having a central pole piece extending toward said platform with a bore therein, and a ring pole piece extending around said central pole piece; a vibration responsive armature on each of said platform disposed parallel to said given plane and comprising a coil support and a coil wrapped around said coil support, said coil support comprising a collar disposed around said central pole piece in spaced relation thereto; means for supplying fluid under pressure to said bores; and means for regulating the pressure of the fluid fed to said bores to center said platform structure between said magnets.

5. A vibration table comprising: a base; a platform structure; a supporting structure fixed to said base for supporting said platform structure for oscillatory movement about a rotary axis in a plane perpendicular to said rotary axis, one of said structures comprising arc-shaped supports, the other of said structures comprising arc-shaped counter supports, the arcs of said arc-shaped supports and counter supports being drawn on said rotary axis, said arc supports and counter supports intermeshing to confine movement of said platform structure to rotary oscillations about said rotary axis; and means for oscillating said platform in said plane about said rotary axis.

3,224,256
SYSTEM TO RETAIN AND INDICATE MAXIMUM READING OF A STRAIN GAGE TYPE INDICATOR
Joseph C. Hastings, Wayne, Pa., assignor, by mesne assignments, to Tinius Olsen Testing Machine Co., Willow Grove, Pa., a corporation of Pennsylvania
Filed May 7, 1962, Ser. No. 192,753
4 Claims. (Cl. 73—88.5)



1. In an electro-mechanical system for reindicating the maximum load applied to a test specimen of the type having an electrical strain transducer electrically connected to a servo motor which is adapted to mechanically drive both a visual indicating device and a balance potentiometer so that the balance potentiometer creates a zero voltage balance at the servo motor when the visual indicating device indicates the load applied to the test specimen, the combination comprising,

shaft means connected to said visual indicating device and driven by said servo motor,

friction drive means having an input shaft connected to said shaft means and an output shaft friction-coupled to said input shaft,

stop means for restraining the rotational movement of said output shaft when a load is applied to said test specimen which causes said servo motor to drive said visual indicating device to a position indicative of the applied load,

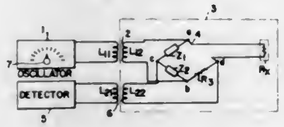
a maximum load indicating potentiometer having a movable arm mechanically connected to said output shaft and electrically connectable to said servo motor, said potentiometer having a stationary resistance element electrically connected to a voltage source to provide a voltage output proportional to the rotational position of said movable arm,

said means for restraining the movement of said output shaft being adapted to maintain the rotational position of said movable arm in a zero balance position when a load is being applied to a test specimen, which provides a zero voltage balance voltage output on said movable arm,

said means for restraining the movement of said output shaft being adapted to permit rotational movement of said movable arm when a load is being removed from a test specimen which provides a voltage output on said movable arm at a voltage output position,

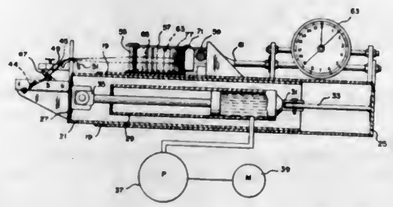
and switch means for electrically disconnecting said electrical strain transducer and said balance potentiometer from said servo motor after a load has been applied to and subsequently removed from a test specimen, which caused the movable arm of said maximum load indicating potentiometer to be positioned at a voltage output position, said switch means being operable to electrically connect the voltage output at said movable arm to said servo motor whereby said servo motor is caused to simultaneously drive said movable arm and said visual indicating device until the movable arm provides a zero voltage balance output at said servo motor and the visual indicating device reindicates the maximum load which has been applied to and removed from said test specimen.

3,224,257
ROTATING BODY STRAIN METER
Katsumi Takami, Kitatama-gun, Tokyo-to, and Kiyokata Matsuura, Chikusa-ku, Nagoya-shi, Japan, assignors to Kabushiki Kaisha Hitachi Seisakusho, Tokyo-to, Japan, a joint-stock company of Japan
Filed June 4, 1963, Ser. No. 285,426
Claims priority, application Japan, June 5, 1962, 37/22,481
2 Claims. (Cl. 73—88.5)



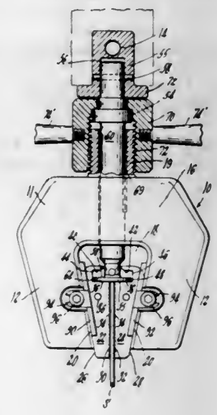
1. A rotating body strain meter comprising, in combination: a strain gauge element affixed to a rotating body at a point where strain is to be measured, said element varying its resistance in correspondence to strain changes; an alternating current bridge affixed to said rotating body comprising said strain gauge element and a resistive element as first adjacent arms and two impedance elements as second adjacent arms; means for applying an electric variable frequency signal to the junctions formed by said first and second adjacent arms by electromagnetic coupling; means for taking voltage from said bridge by electromagnetic coupling to detect bridge unbalance; and means for varying the frequency of said electric variable signal to provide an indication of strain.

3,224,258
TESTING MACHINE FOR SAFETY SEAT BELTS
Walter G. Preston, Tulare, Calif., assignor to Tulareloft, Incorporated, Tulare, Calif., a corporation of California
Filed Oct. 17, 1962, Ser. No. 231,082
3 Claims. (Cl. 73—95)



1. A machine for testing safety seat belts comprising a tubular guide member, a slide member telescopically disposed within said guide member, a first bracket secured across one end of the guide member, a second bracket secured across that end of the slide member opposite said one end of the guide member means secured between said first and second brackets for urging said slide member out of said guide member, holding means one one of the members for securing the ends of the safety seat belt and second holding means on the other of the members for securing the safety seat belt at a point intermediate its ends, said second holding means comprising a drum, said drum being pivotally secured to said other of the members, shield means recovably disposed about said drum, and an open ended receptacle disposed adjacent said drum and said shield means, said receptacle being slotted, bifurcated finger means disposed within said receptacle, said receptacle and finger means being adapted to receive the safety seat belt to be tested.

3,224,259
SPECIMEN GRIP FOR TENSILE TESTING APPARATUS
Joseph P. De Nicola, North Quincy, Mass., assignor to Instron Corporation, Canton, Mass., a corporation of Massachusetts
Filed Jan. 16, 1962, Ser. No. 166,520
3 Claims. (Cl. 73—103)



3. A tensile testing apparatus specimen grip for accepting a specimen from the front, clamping said specimen without longitudinally stressing it, holding said specimen self-tighteningly during tensile testing thereof, and retaining said specimen despite testing to failure, which comprises:

a frame with a pair of generally longitudinal side pieces and a cross member connecting said side pieces at corresponding ends thereof, said side pieces including facing surfaces converging away from said cross member, symmetrically about a longitudinal plane, to provide an opposed pair of wedging surfaces;

a core extending longitudinally through said cross member and terminating in a mounting end and a jaw-engaging end portion having a guide surface;

a pair of jaws, each jaw having a wedging surface, a guide surface, and a gripping surface;

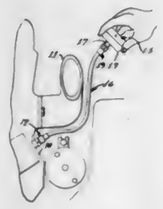
biasing mechanism urging each of the jaw wedging surfaces against one of the frame wedging surfaces and each of the jaw guide surfaces against the core guide surface, the gripping surfaces being equidistant from said longitudinal plane on opposite sides thereof and being moved transversely relative to each other responsive to relative sliding movement of said jaw

wedging surfaces and the respective frame wedging surfaces, the movement of said gripping surfaces being free of any longitudinal component while said jaw guide surfaces are against said core guide surface, said jaws being longitudinally movable away from said core in said tensile testing, responsive to tensile forces on the specimen which override said biasing mechanism; and

an actuator mounted on said core intermediately of the ends thereof and engaging said frame to provide selective longitudinal movement thereof and to hold said frame against longitudinal movement during tensile testing, said frame being longitudinally movable on said core;

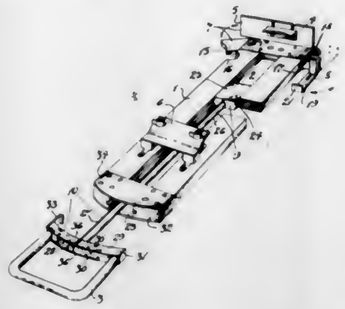
whereby a specimen loaded between said gripping surfaces from the front may be clamped by actuation of said actuator without longitudinally stressing the specimen, and is firmly gripped despite thinning in testing by accommodating longitudinal movement of the jaws away from the core, and whereby said core and guide jaw surfaces cooperate to limit the transverse distance between said gripping surfaces upon testing to failure to the initially clamped transverse distance, to retain any remaining portion of the specimen in the grip.

3,224,260
COMPRESSION TESTER FOR INTERNAL COMBUSTION ENGINES
Ivan J. Lankford, Chicago, Ill., assignor to Peerless Instrument Company, Chicago, Ill., a corporation of Illinois
Filed Aug. 7, 1961, Ser. No. 129,633
3 Claims. (Cl. 73—116)



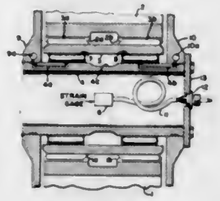
1. In a compression tester particularly adapted to test the compression of internal combustion engines, a fitting for threading within a spark plug hole, a check valve in said fitting positioned in the combustion chamber of a cylinder upon threading said fitting within a spark plug hole, a flexible drive conduit sealed to said fitting and conducting pressure from the spark plug hole and providing the torque to thread and seal said fitting to the spark plug hole by turning movement of said conduit, a connector sealed to the opposite end of said flexible conduit from said fitting and operable to turn said flexible conduit and fitting upon turning movement of said connector, a pressure gauge including a gauge head secured to said connector and adapted to be turned by the hand to thread and seal said fitting to a spark plug hole, said fitting having an inner head, a large diameter threaded portion spaced outwardly of said head and a small diameter threaded portion spaced outwardly of said large diameter threaded portion, an O-ring separating said threaded portions and a second O-ring separating said larger diameter threaded portion from said head, whereby said fitting may be selectively threaded in and sealed to small and large diameter spark plug holes by turning movement of said gauge by the hand.

3,224,261
COMBINATION SKI-BOOT HOLDER AND TORQUE INDICATOR
Peter Isaac, 9 Crown Hill Place, Apt. 410, Toronto 18, Ontario, Canada
Continuation of application Ser. No. 122,882, July 10, 1961. This application Feb. 17, 1965, Ser. No. 438,169
16 Claims. (Cl. 73—133)



1. A device comprising the combination with a holder for at least one ski-boot, of means for indicating the torque between a boot and ski harnessed thereto, said device including a substantially flat supporting structure against which a ski boot may be secured with retaining clamps, load moving means applicable against said boot when harnessed to a ski for rotating said boot relative to said ski, device setting means bearable against said ski, both said load moving means and said device setting means being secured to one and the same end of said supporting structure, effort applying means for exerting torque through the agency of said load moving means about an axis located approximately upon the heel of said boot and perpendicular to the sole thereof, said effort applying means being connected to said supporting structure and projecting from the end opposite said one end, and indicating means on said device co-acting with said effort applying means for indicating said torque upon actuation of said effort applying means.

3,224,262
TORQUE METER
Eugene E. Shipley, Middleton, Mass., assignor to General Electric Company, a corporation of New York
Filed Nov. 13, 1962, Ser. No. 236,846
3 Claims. (Cl. 73—136)



1. A torque meter for a rotatable power train comprising:

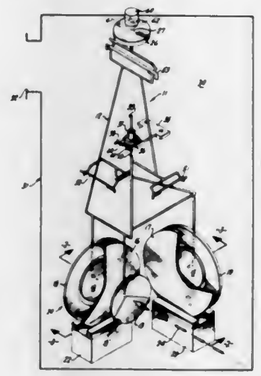
first and second spaced rotatable members,

a third rotatable member coupled to both said first and second members to transmit torque therebetween,

a fixed hollow shaft supporting and rotatably journaling said third member, said shaft being subject to transverse deflection due to the tangential forces on the third member arising from the coupling between said members, and

a temperature-compensated strain gage bridge affixed to the inner wall of the hollow shaft near the midpoint thereof and substantially equidistant from the points where said third member contacts said first and second members, whereby transverse deflection of said fixed shaft will effect a strain-gage output signal proportional to torque transmitted between said first and third rotatable members.

3,224,263
NULL-TYPE VACUUM MICROBALANCE
Vernon L. Rogallo, Los Altos, Calif., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Nov. 9, 1962, Ser. No. 236,749
11 Claims. (Cl. 73—142)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A microbalance comprising:

(a) a suspension unit forming a compound pendulum;

(b) means suspending said suspension unit for free pivoting thereof upon the application of a force thereto;

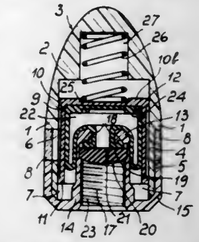
(c) at least one target rigidly engaging said suspension unit for transmitting thereto an impinging force to be measured;

(d) electrostatic restoring means applying a controllable force to said suspension unit for pivoting it back to null position during application of force to the target; and

(e) means indicating a null position of the suspension unit, whereby the magnitude of said controllable restoring force required to return the suspension unit to null position is a measure of the force applied to said target.

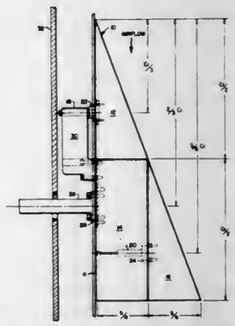
3,224,264
PRESSURE INDICATING DEVICE
Renato Becciani, Via Magnasco 2, Milan, Italy, and Luigi Valtorta, Via Podgora 110, Sesto San Giovanni, Milan, Italy
Filed May 31, 1963, Ser. No. 284,591
Claims priority, application Italy, June 20, 1962, Patent 760,424; Apr. 24, 1963, 8,396/63
2 Claims. (Cl. 73—146.8)

1. A pressure indicating device, comprising a hollow body having a closed top part and a bottom part, an opening in said bottom part, a substantially cylindrical wall on said bottom part and surrounding said opening, said cylindrical wall having a diameter smaller than the diameter of the cavity of said hollow body, said cylindrical wall projecting from said bottom within the cavity of said hollow body, at a distance from the top part thereof, a bag-like bellows member of flexible material and having a neck portion of reduced diameter projecting from the body portion of said bellows member having a diameter substantially greater than the diameter of said neck portion, said neck portion fitting within the interior of the top portion of said cylindrical wall, means for fixing said neck



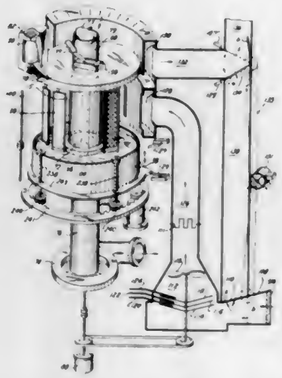
portion to the inside of the top portion of said cylindrical wall, a bell member above said cylindrical wall and riding on said bellows member, said bell member being movable within the interior of said hollow body, spring means biasing said bell member towards said cylindrical wall, indication markings on the outer surface of said bell member and window means on the outer wall of said hollow body for allowing vision of said indication markings.

3,224,265
METHOD FOR DETERMINING AERODYNAMIC INFLUENCE COEFFICIENTS OF A WING
Bernard Mazelsky, West Covina, and Harry B. Amey, Jr., Whittier, Calif., assignors to Aerojet-General Corporation, Azusa, Calif., a corporation of Ohio
Filed May 7, 1962, Ser. No. 192,863
9 Claims. (Cl. 73—147)



1. The method of determining the aerodynamic influence coefficients of a wing comprising the steps of forming a number of independent configurations of a model of the wing, subdividing each configurations in such a way that the subdivisions of one wing configuration can be interchanged with a subdivision of another wing configuration to form a flexible assembly of wing configurations and interchangeable component assemblies wherein each of the resulting number of wing configurations simulates an independent angle of attack distribution, inserting in sequence each of the resulting wing configurations in a wind tunnel, and instrumenting each wing configuration so that the lift of at least a number of different portions of each wing configuration can be measured, whereby by knowing the lift at various portions of each wing configuration, and the angle of attack of those portions, and determinating this information for a sufficient number of independent configurations of the model of the wing, the aerodynamic influence coefficients can be calculated.

3,224,266
TESTING APPARATUS FOR DETERMINING RESISTANCE TO WEATHER INFLUENCES
Hans Ulrich Klippert, Hanau am Main, Germany, assignor to Quarzlampen Gesellschaft m.b.H., Hanau am Main, Germany
Filed June 7, 1962, Ser. No. 200,746
Claims priority, application Germany, June 9, 1961, Q 661
7 Claims. (Cl. 73—150)



1. In a testing apparatus, in combination, a rotary carousel turnable about a given axis; a light source located on said axis; a plurality of carriers carried by said carousel for turning movement therewith and distributed about said light source, said carousel supporting each of said carriers for turning movement about an axis parallel to the axis of turning of said carousel, and said carriers being adapted to carry samples to be tested so that the latter will be moved around the light source during turning of said carousel around the axis at which the light source is located; a star member fixed to each carrier for turning movement therewith with respect to said carousel and having a plurality of fingers projecting from the turning axis of each carrier with respect to said carousel; a projection located in the path of turning movement of said star members during turning of said carriers with said carousel around the light source so that said projection will engage a finger of each star member to cause the latter to turn with respect to said carousel during movement of the star member past the projection whereby the carriers will be turned about their axes of turning with respect to said carousel as they move past said projection; and means cooperating with each star member for preventing turning of the same with respect to said carousel when all fingers of the respective star member are out of arrangement with said projection.

3,224,267
WELL COMPLETION APPARATUS
Don L. Harlan, Houston, and Laurence M. Hubby, Bellaire, Tex., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware
Filed Apr. 27, 1962, Ser. No. 190,620
12 Claims. (Cl. 73—155)

3. Apparatus for use in well completion which comprises, in combination,

a single tubing string in a wellbore spaced from the well casing thereof and passing through a plurality of vertically spaced hydrocarbon productive formations separated by relatively impermeable, non-productive formations;

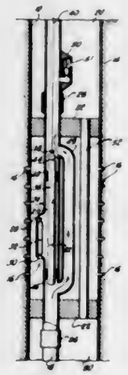
packing members vertically spaced apart in said wellbore providing a sealed off section in the annulus between said well casing and said tubing string to isolate at least one of said hydrocarbon productive formations from others of said formations;

a mandrel connected into said tubing string in sequential fluid communication therewith located between said packing members and exposed to the isolated hydrocarbon productive formation;

said mandrel being provided with an inlet between two of said packing means for receiving production fluid from said isolated hydrocarbon productive formation;

means positioned in the mandrel inlet to control the flow of production fluid therethrough from said isolated hydrocarbon production formation;

a flowmeter adapted to be lowered into said tubing string and positioned in said mandrel, and provided with an inlet in communication with the aforesaid means to control the flow of production fluid and an outlet; and



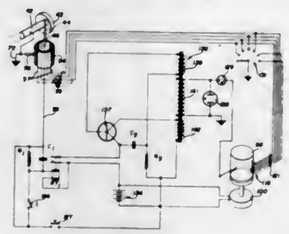
a first packer located upstream said mandrel inlet and said inlet of said flowmeter to prevent passage of production fluid from lower hydrocarbon productive formations through said flowmeter, and a second packer located downstream said mandrel inlet and said inlet of said flowmeter providing a fluid-tight upstream seal to insure communication between said mandrel inlet and the flowmeter inlet and a fluid-tight downstream seal to prevent production fluid from said isolated hydrocarbon productive formation from bypassing said flowmeter;

said mandrel including bypass means for separably directing the flow of production fluid past said flowmeter from a hydrocarbon productive formation below said isolated formation from which production fluid is being metered.

3,224,268
WEATHER RECORDING STATION
Ralph L. Feuner, 45 Harrison Ave., Sausalito, Calif.; Kenneth C. Yarborough, 754 21st St., Richmond, Calif.; Arthur E. Williams, 5807 Sherwood Forest Road, El Sobrante, Calif.; and Charles H. Jansen, 629 26th St., Richmond, Calif.
Filed Oct. 27, 1961, Ser. No. 148,239
1 Claim. (Cl. 73—189)

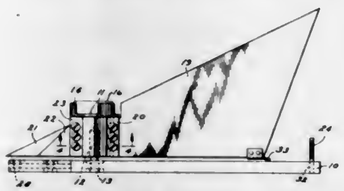
In a weather recording station for recording whether information on a paper tape, a support stand, a support member rotatably mounted on said stand for rotation about a vertical axis, a fan rotatably mounted on one end of said support member for rotation about a horizontal axis, said fan being responsive to wind velocity, a wind vane mounted on the other end of said support member for directing the fan into the wind, a shaft affixed

to said fan, a disc carried by said shaft, a movable contact member carried by said disc, a stationary contact yieldably engaging said disc and being adapted to be engaged by the movable contact carried by the disc as the disc is rotated by the fan, a plurality of commutator segments carried by said support stand, said commutator segments being arranged in a vertical direction so that each commutator segment represents a predetermined wind direction, a plurality of electrodes adapted to be mounted adjacent the paper tape on one side of the paper tape, a platen adapted to be mounted on the other side of the



paper tape, means connecting said electrodes to said commutator segments so that one electrode is provided for each commutator segment, brush means connected to said shaft and engaging the commutator segments as the support member rotates on said stand in accordance with the wind direction, means including a single oscillator for generating high voltage pulses connected between said platen and said brush means, and means connected to said stationary contact member for energizing the high voltage pulse generating means each time the stationary contact is engaged by the movable contact carried by the disc so that a high voltage pulse is produced by the high voltage pulse generating means whereby the paper tape is marked with a plurality of pulses in which the number of pulses extending longitudinally of the paper indicates the wind velocity and wherein the positioning of the pulses laterally of the paper tape indicates the wind direction.

3,224,269
DEVICE FOR INDICATING WIND DIRECTION AND MEASURING WIND SPEED
Richard L. Weir, % Weir Development Co., 70 Sinclair Ave., Dayton, Ohio
Filed June 12, 1962, Ser. No. 201,834
5 Claims. (Cl. 73—189)



1. In a device for indicating wind direction and measuring wind speed, the combination comprising

a base,

a conventional compass including a compass casing, a compass needle mounted in said casing for rotation about a generally vertical axis, and directional indicia means on said compass casing,

means for mounting said casing for rotation relative to said base so that the casing can be rotated about the vertical axis of the needle,

a wind vane,

means for pivotally supporting said wind vane on said base for movement about a vertical axis,

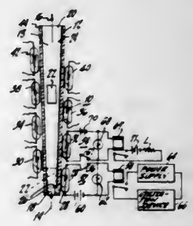
indicia means related to said directional indicia means on the casing for rotating the casing to orient the casing relative to the direction of the vane so that when the casing is oriented relative to the direction of the vane, the compass needle will indicate the compass direction,

means for selectively rigidly fixing a portion of said vane on said base,

a portion of said vane being adapted to be flexed when moved in a direction at an angle to the direction of the wind,

and wind velocity indicia means on said base adapted to indicated the velocity of the wind depending of the flexing of the vane.

3,224,270
FLOW GAUGES
Kenneth N. Karol, Teaneck, and Irving Weiss, Colonia, N.J., assignors to Radio Corporation of America, a corporation of Delaware
Filed Feb. 12, 1963, Ser. No. 257,939
6 Claims. (Cl. 73—209)



1. Apparatus for monitoring the flow of a fluid, said apparatus comprising

(a) a conduit adapted to conduct the flow of said fluid therethrough,

(b) a magnet having a pair of opposite poles, similar, substantially linearly aligned, normally open,

(c) means disposing said magnet at a rest position in the absence of said flow, said magnet being adapted to be moved from said rest position by said flow, and

(d) a reed switch comprising a pair of substantially resilient contacts of magnetic metal that has a relatively low magnetic reluctance, said switch being disposed adjacent to said conduit and adapted to be actuated by said magnet when said magnet is within a predetermined distance from said switch with said opposite poles of said magnet substantially parallel to said linearly aligned contacts, whereby a magnetic flux of sufficient magnitude can be directed lengthwise of said resilient contacts to cause mutual attraction thereof to close said switch.

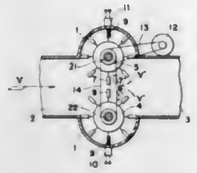
3,224,271
MASS FLOW METER USING DIFFERENCE BETWEEN TORQUES
Tatsuya Ichihara, Tokyo, Japan, assignor to Honeywell Inc., a corporation of Delaware
Filed June 12, 1962, Ser. No. 201,945
Claims priority, application Japan, June 12, 1961, 36/20,270
2 Claims. (Cl. 73—229)

1. A mass flow meter for a fluid flowing a long a path, comprising

a pair of bladed vane members, each of which is mounted for rotation about an axis perpendicular to the direction of the flow of the fluid along the path,

motor means for rotating both of said members about their axes at substantially the same speed,

one of said members being only partially immersed in the fluid flowing along the path in such a manner that said blades of said one member which are in contact with the fluid flowing along the path

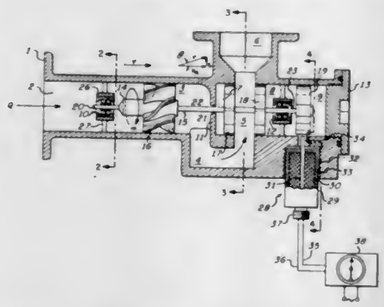


move substantially in a direction following the flow of the fluid flowing along the path,

the other of said members being only partially immersed in the fluid flowing along the path in such a manner that said blades of said other member which are in contact with the fluid flowing along the path move substantially in a direction opposing the flow of the fluid flowing along the path,

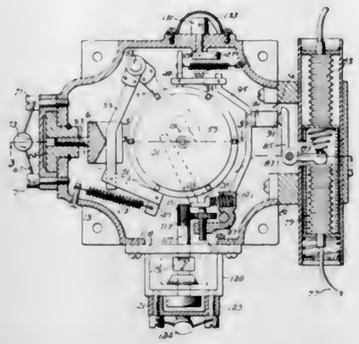
and means for determining the difference between the torques required to rotate said members as a measure of the mass flow of the fluid.

3,224,272
VELOCITY FLOWMETERS
Anatole J. Sipin, 117 E. 77th St., New York, N.Y.
Original application Aug. 19, 1958, Ser. No. 755,913. Divided and this application Feb. 11, 1963, Ser. No. 257,661
3 Claims. (Cl. 73—231)



1. A velocity flowmeter including an axial flow turbine having a housing and a shaft rotating about and translatable along the turbine flow axis; said shaft including a plurality of blades in the path of a flowing fluid extending radially from and uniformly pitched with respect to the flow axis at a constant blade angle; means for sensing the translation of the shaft including an axial reference part fixed to the housing and a part bidirectionally translatable along the flow axis with the shaft with respect to the fixed part; a second turbine with an element attached to the shaft and arranged in the path of the flowing fluid for changing the rotational speed of the shaft in accordance with the sense and magnitude of the relative displacement of the fixed reference part and the translatable part caused by the change in velocity of the flowing fluid so as to null the axial force of the flowing fluid on the rotating blades; and means dependent on the rotational speed of the shaft for measuring the velocity of the fluid flowing through the turbine.

3,224,273
BASIC LIQUID METER AND INTERCHANGEABLE COMPENSATING MEANS THEREFOR
Albert J. Granberg, Oakland, Calif., assignor to Cal-Meter Co., Emeryville, Calif., a corporation of California
Filed Feb. 26, 1962, Ser. No. 175,519
12 Claims. (Cl. 73—233)



2. A compensated liquid meter including

a basic meter having a casing, a rotational shaft and a register,

and compensating means therefor,

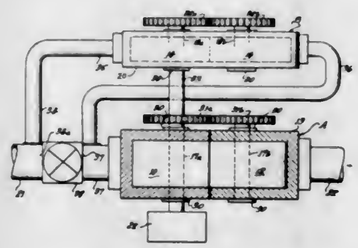
said compensating means comprising a planetary transmission connecting said shaft to said register,

said transmission including a gear housing capable of rotation to alter the speed ratio thereof,

means for angularly rotating said gear housing intermittently to establish a speed ratio for said transmission,

and means responsive to changes in a condition of liquid flowing through said meter, for altering the speed ratio of said transmission in accordance with such changes.

3,224,274
GAS METER IMPROVEMENT
David H. Silvern, North Hollywood, Calif., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Filed June 20, 1963, Ser. No. 289,337
4 Claims. (Cl. 73—261)



1. A metering device of the impeller wheel type comprising:

a meter having at least one rotor adapted to be rotated by the flow of fluid through said meter;

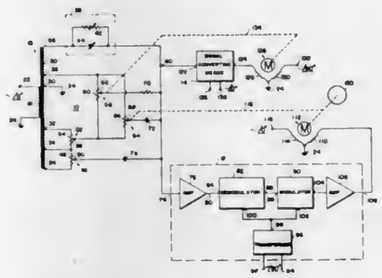
a motor having at least one rotor adapted to be rotated by the flow of fluid through said motor;

said meter and motor being interconnected such that said meter rotor is rotated by said motor rotor;

means for conducting fluid flowing through said meter through said motor;

and means operatively connected to said fluid conducting means for predetermining the pressure of said fluid through said motor such that the output of said motor is substantially constant and substantially equal to the frictional resistance of said meter to the flow of fluid.

3,224,275
CONTROL APPARATUS
Jerome A. Fahley, Brooklyn Center, Minn., assignor to Honeywell, Inc., a corporation of Delaware
Filed Apr. 9, 1963, Ser. No. 271,695
8 Claims. (Cl. 73—304)



8. In a measuring system wherein the characteristics of the substance being measured may vary from insulative to conductive comprising, in combination:

bridge circuit means including sensor means, output means and first and second rebalance means, said sensor means being adapted for supplying a signal having resistive and capacitive components, the components being of two different phases, the relative magnitude of these components being indicative of the characteristics of the substance being measured, said first rebalance means being adapted for supplying a first rebalance signal being substantially opposite in phase from a first phase of said two phases and said second rebalance means being adapted for supplying a second rebalance signal of a phase substantially opposite from the second phase of said two phases;

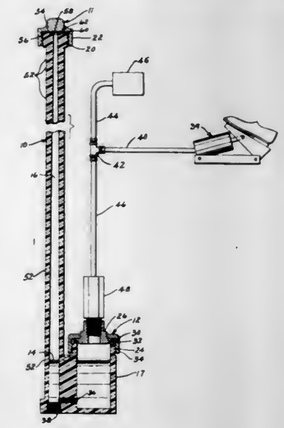
first phase sensitive signal converting means including input means and output means, said input means of said first phase sensitive signal converting means being connected to said output means of said bridge circuit means for receiving said signals therefrom, said output means being attached to said first rebalance means for varying the magnitude of said first rebalance signal, said first phase sensitive signal converting means being responsive only to signal components of the first phase and to signal components of substantially opposite phase from said first phase;

second phase sensitive signal converting means including input means and output means, said input means of said second phase sensitive signal converting means being connected to said output means of said bridge circuit means for receiving said signals therefrom, said output means being attached to said second rebalance means for varying the magnitude of said second rebalance signal, said second phase sensitive signal converting means being responsive only to signal components of the second phase and to signal components of substantially opposite phase from said second phase; and

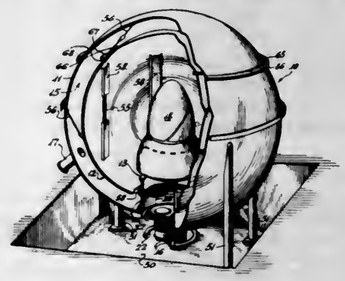
indicator means attached to one of said phase sensitive signal converting means for providing an output indicative of quantity of the substance being measured.

3,224,276
PRESSURE TESTING APPARATUS
Walter F. Kuhlman, Norwalk, Ohio, assignor to Kuhlman Instrument Company, Norwalk, Ohio, a corporation of Ohio
Filed Jan. 7, 1963, Ser. No. 249,717
6 Claims. (Cl. 73—401)

1. In a device of the class described: means forming a measuring fluid reservoir, a transparent plastic tube extending upwardly from said reservoir, said tube having an internal opening which communicates with said reservoir, and at least the upper end of which gradually decreases in cross section as the distance increases from said reservoir, said tube having a flat upper end with a recess surrounding the upper end of said internal opening, an O-ring in said recess surronding said internal opening, said O-ring extending above said flat upper end when said O-ring is in its normal uncompressed condition, a valve for compressing said O-ring and abutting the upper end of said tube, indicia associated with said plastic tube for readily determining differences in liquid level between that in said tube and that in said reservoir, a conduit for placing said reservoir under pressure, and means for connecting said conduit to a pressure system to be tested, whereby a range of high pressures can be accurately measured with said valve closed and a range of lower pressures can be measured with said valve open.



3,224,277
ENVIRONMENTAL APPARATUS
Robert S. Chamberlin, La Grange, Ill., and Lyle V. Larsen, Summit, N.J., assignors to Chicago Bridge & Iron Company, Chicago, Ill., a corporation of Illinois
Filed Feb. 16, 1962, Ser. No. 173,652
8 Claims. (Cl. 73—432)



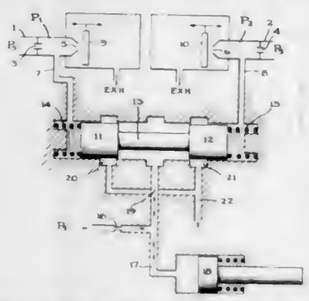
1. Environmental apparatus comprising:

an outer chamber constructed of carbon steel;

an inner chamber located entirely within said outer

chamber and constructed of a metallic material relatively ductile at the temperature of liquid nitrogen;
said inner chamber having inner and outer walls with mutually opposed surfaces spaced apart along the entire areas of said surfaces to define channel means therebetween;
said chambers including means defining a space therebetween;
means for evacuating the space between said chambers to a pressure level where heat transfer by convection is not significant;
means for evacuating the interior of the inner chamber to a pressure level substantially lower than that in the space between the two chambers;
and insulating means between the chambers for impeding heat transfer by radiation inwardly toward the inner chamber.

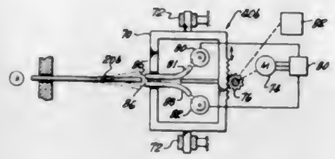
3,224,278
CONTROL VALVE SYSTEM RESPONSIVE TO DIFFERENCES BETWEEN INDEPENDENT INPUT SIGNALS
Karl N. Reid, Arlington, Mass., and Allison R. Williams, 380 Newbury St., Danvers, Mass.; said Reid assignor to said Williams
Filed Aug. 21, 1963, Ser. No. 303,559
10 Claims. (Cl. 73—510)



1. Control valve means for modulating a pressure output in proportion to the absolute value of the difference between two independent input signals comprising three fluid pressure amplifiers each having a pressure chamber, a normally constant pressure supply line connected thereto and having a fixed orifice therein, and a movable member providing a variable discharge orifice therefor, two of said amplifiers being mechanically independent of each other and each having its movable member controlled independently of the other by a single input signal so that the pressure in its pressure chamber is proportional to said single input signal, and means biasing the movable member of said third amplifier to neutral position, said movable member of the third amplifier being moved in response to the pressures in the pressure chambers of the first two amplifiers acting in opposition on said movable member to adjust the variable orifice of said third amplifier in proportion to the absolute value of the difference between said independent input signals regardless of direction and absolute level thereof and thereby to modulate the pressure output of said third amplifier.

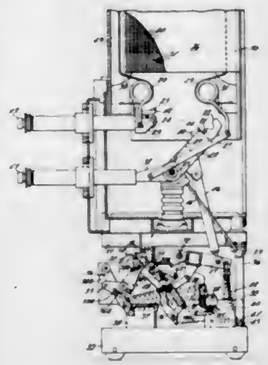
3,224,279
ACCELEROMETER
Guido Galli, Temple City, and Carl A. Germano, Montrose, Calif., assignors to Giannini Controls Corporation, Duarte, Calif., a corporation of New York
Filed June 28, 1962, Ser. No. 205,953
6 Claims. (Cl. 73—517)

1. Means responsive to acceleration and comprising in combination
a support,
an optical fiber portion having one end fixedly mounted on the support, the other end having a normal position and being transversely deflectable therefrom in response to bodily acceleration of the support,
means for injecting electromagnetic radiation of optical



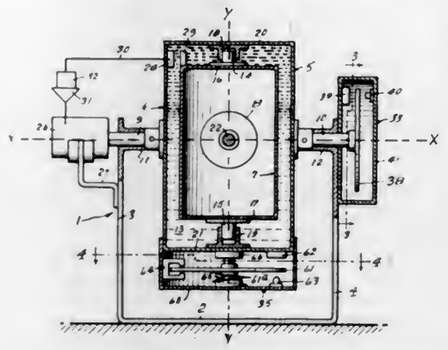
frequency into said one end of the fiber portion for longitudinal transmission therein,
means for receiving radiation emitted from the other end of the fiber portion,
and means responsive to variations in the position of said received radiation for developing an electrical signal that represents the fiber deflection.

3,224,280
STORED ENERGY OPERATING MECHANISM FOR CIRCUIT BREAKER
John W. May, Walpole, and George K. Benham, Somerville, Mass., assignors to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Apr. 7, 1964, Ser. No. 357,932
9 Claims. (Cl. 74—2)



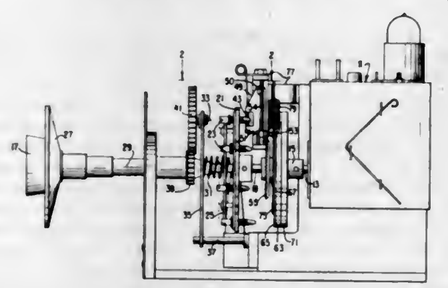
1. In an operating mechanism having a first toggle movable from a collapsed position to an overcenter position, actuating means for moving said first toggle to said overcenter position, said actuating means comprising, in combination, a second toggle movable from a collapsed position to an extended position, a spring operatively connected to said toggle and movable from discharged to charged condition by said second toggle as the latter moves to its extended position, releasable latching means for maintaining said second toggle in extended position and said spring in charged condition, and means for moving said second toggle from collapsed position to its extended position, said means comprising a gear rotatable about an axis and having a projection thereon, and a crank rotatable with respect to said gear about said axis and adapted to be engaged by and rotated by said projection on said gear, said crank being adapted to engage said second toggle to move said toggle to extended position.

3,224,281
BASE MOTION COMPENSATOR FOR RATE INTEGRAL GYRO
Henry Blazek, Nyack, N.Y., assignor to Sperry Rand Corporation, Ford Instrument Co. Division, Long Island City, N.Y., a corporation of Delaware
Filed July 12, 1961, Ser. No. 123,493
16 Claims. (Cl. 74—5.6)



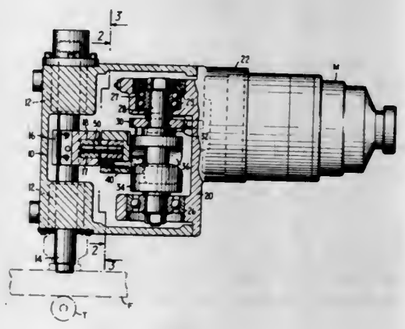
1. A sensing and indicating mechanism for sensing and indicating correct changes in attitude of a rate integral gyro which comprises a base, a gyro case, and shaft means by which said case is rotatably mounted on said base for rotation about the input axis of said gyro; said mechanism comprising a gyro incremental transducer which includes a logic circuitry and is operative to sense the angular change of said base with respect to said case about the input axis of said gyro and to impart output pulses in accordance therewith, a compensating incremental transducer which includes a logic circuitry and is operative to sense the angular velocity of said base with respect to inertial space about the output axis and to impart output pulses in accordance therewith, and a summing device which is operative to receive and combine the output pulse of said transducers and to impart output pulses in accordance therewith which indicate the change in attitude of said gyro.

3,224,282
TUNER FOR TELEVISION RECEIVER
Harold Tyzack, Schiller Park, Ill., assignor to Motorola, Inc., Chicago, Ill., a corporation of Illinois
Filed Oct. 4, 1962, Ser. No. 228,368
10 Claims. (Cl. 74—10.15)



1. A drive mechanism for a tuner in a multi-channel wave signal receiver including in combination, a tuner shaft adapted to operate the tuner of the receiver, first torque transmitting means fixed to said tuner shaft for driving the same, a detent positioned control shaft, second torque transmitting means fixed to said control shaft and engaging said first torque transmitting means for detent positioning of said tuner shaft according to the detent position of said control shaft, third torque transmitting means engaging said first torque transmitting means for driving said tuner shaft for fine tuning within a range associated with the detent position determined by said control shaft, cam follower means coupled to said third torque transmitting means for driving the same, presettable adjustable cam means engageable with said cam follower means and operable by said control shaft, said cam follower means displaceable by said cam means a distance sufficient to provide fine tuning of said tuner shaft within a range which overlaps the ranges associated with adjacent detent positions, whereby said tuner drive mechanism may be preset for detent tuning of a channel within the range associated with that detent position.

3,224,283
OSCILLATOR UNIT
Frank J. Pilia, West Orange, N.J., and John H. Brems, Detroit, Mich., assignors to Union Carbide Corporation, a corporation of New York
Filed Aug. 7, 1962, Ser. No. 215,431
8 Claims. (Cl. 74—53)

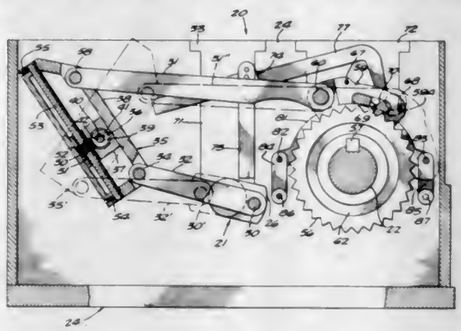


5. An oscillator unit comprising a casing having slide bearings in parallel walls thereof, a pair of implement supporting parallel thrust rods mounted in said slide bearings for longitudinal reciprocation, a yoke inside said casing rigidly connecting said thrust rods, a thrust block mounted to slide in said yoke, a motor secured to said casing, a shaft journaled in said casing, gear means connecting said shaft to said motor, a cam on said shaft, a swing arm pivoted on an axis transverse to said cam shaft and having a longitudinal channel, a swing block mounted to slide in said channel and pivoted to said thrust block, and a cam follower on said swing arm engaged by said cam, whereby said implement supporting thrust rods are reciprocated when said motor is energized through the operation of said shaft, cam, cam follower, swing arm, swing block, thrust block and yoke, and said slide block provides means for adjusting the amplitude of oscillation of the implement during operation thereof.

3,224,284
TRANSMISSION
Clinton B. McElheny, 1680 Tartar Lane, and Myrl M. Sauers, Space 1, 1680 Tartar Lane, both of Compton, Calif.
Filed Apr. 5, 1962, Ser. No. 185,339
5 Claims. (Cl. 74—119)

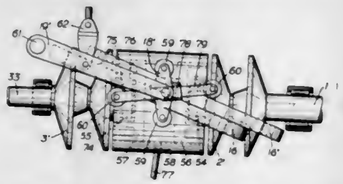
1. A variable speed transmission comprising: an input crankshaft; a connecting rod pivoted from said crankshaft at a position thereon spaced from the axis of rotation thereof; a linkage pivoted from said connecting rod at first position along the length of said linkage; a link-

age shaft supported in a fixed transverse position relative to the axis of rotation of said crankshaft; said linkage being pivotally mounted about said linkage shaft at a second position along the length of said linkage spaced from said first position, said linkage having a longitudinal slot therein to fit over said linkage shaft; an output shaft; output means responsive to oscillation of said linkage by rotation of said crankshaft for continually applying torque to rotate said output shaft a predetermined amount once during each period of said oscillation; speed control means to adjust the pivot position of said link-



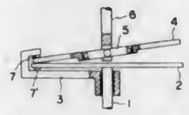
age on said linkage shaft, the output means travel of said predetermined amount being variable with adjustment of said linkage pivot position, said speed control means including a first helical gear fixed to said linkage shaft; a second helical gear; means to hold said second helical gear in a substantially fixed axial position relative to said linkage shaft and to hold said second helical gear in a position rotatable about its own axis of symmetry in mesh with said first helical gear; and a lead screw connected to said linkage in fixed axial and rotational positions, said second helical gear having a female internal thread and being threaded around said lead screw.

3,224,285
INFINITELY VARIABLE FRICTION GEARING
Karl Maichen, Lauterach 269, Austria
Filed Apr. 29, 1963, Ser. No. 276,445
Claims priority, application Austria, Apr. 30, 1962, A 3,508/62; Nov. 29, 1962, A 9,363/62
6 Claims. (Cl. 74—192)



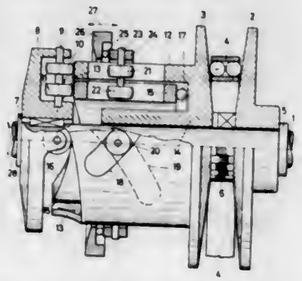
1. An infinitely variable friction gearing comprising at least one driving shaft, at least one substantially conical rotor having a straight generatrix secured to said driving shaft for rotation therewith, an associated driven shaft coaxial with each driving shaft and also having at least one substantially conical rotor with a straight generatrix secured thereto, each rotor on a driving shaft tapering in a direction opposite to the taper of each rotor on its associated driven shaft, an endless ring-shaped, rolling contact member surrounding and frictionally engaging the tapered surfaces of each pair of rotors on associated driving and driven shafts, and means for adjustably displacing each said rolling contact member along said tapered surfaces to parallel positions for changing the speed of the gearing.

3,224,286
VARIABLE SPEED-REDUCTION MECHANISM
Ryutaro Mori, Kodaira-shi, Masaharu Nishimura, Musashino-shi, and Kinichiro Furukawa, Nakano-ku, Tokyo-to, Japan, assignors to Kabushiki Kaisha Hitachi Seisakusho, Tokyo-to, Japan, a joint-stock company of Japan
Filed Oct. 9, 1963, Ser. No. 315,012
Claims priority, application Japan, Oct. 12, 1962, 37/44,129
6 Claims. (Cl. 74—199)



1. A variable speed-reduction mechanism comprising: a first and a second rotary disc; a first and a second rotary shaft connected respectively to said first and second rotary discs, said connection between the first rotary disc and the first rotary shaft being achieved through a universal joint; and means adapted to press together said discs while causing said discs to achieve rolling contact with each other to enable the locus of the contact point between said discs to rotate around the first rotary shaft.

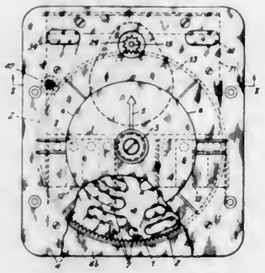
3,224,287
INFINITELY VARIABLE CONE PULLEY TRANSMISSION
Werner Gesche, Herbert Steuer, and Erhardt Karig, Bad Homburg von der Höhe, Germany, assignors to Reimers Getriebe K.G., Ascona, Switzerland, a firm of Switzerland
Filed Nov. 4, 1963, Ser. No. 321,004
Claims priority, application Germany, Nov. 15, 1962, R 33,883
9 Claims. (Cl. 74—230.17)



1. An infinitely variable transmission having transmission shafts, conical disks axially slidable on said shafts, setting means for shifting said disks relative to each other for changing the speed ratio of said transmission, and pressure applying means moving at least one of said conical disks on one of said shafts axially toward another disk for transmitting the driving force in proportion to a torque acting upon said shaft and also dependent upon the axial movement of said conical disk by said setting means, said pressure applying means comprising two units each comprising cam tracks having helical surfaces of a varying pitch and inclined inversely to the cam tracks of the other unit, roll bodies operatively associated with said cam tracks for transmitting a torque from said transmission shaft to said conical disk and vice versa, and means for turning said units in opposite directions to each other when said conical disk is shifted in the axial direction by said setting means, whereby said cam tracks of both units are held in constant engagement with the associated roll bodies, said two pressure applying units comprising a bracing member rigidly connected to said

transmission shaft, and two smooth cylindrical tubular members disposed within each other and having said cam tracks on one end thereof, the first of said tubular members being rigidly connected to said conical disk, a thrust bearing interposed between the other end of the second tubular member and said conical disk, said second tubular member being rotatable on said thrust bearing relative to said conical disk, said means for turning said units in opposite directions to each other comprising wall surfaces of at least one helical slot in the walls of each of said tubular members, said slots being directed inversely to each other and intersecting with each other so as to form coaxial openings, a pair of rollers guided within said openings and having a common shaft extending axially to said transmission shaft, and a ring around said tubular members, said common shaft being mounted on said ring, said setting means adapted to act upon said ring for shifting said conical disk in the axial direction, said roll bodies forming pairs of pressure rollers engaging with said cam tracks and rotatable on shafts mounted on said bracing member and extending radially to said transmission shaft.

3,224,288
PROGRAMME CONTROLLER FOR WASHING MACHINES AND THE LIKE
Gottfried Leuenberger, Schlieren, Zurich, Switzerland, assignor to Maschinenfabrik Ad. Schulthess & Co. AG, Zurich, Switzerland
Filed June 25, 1963, Ser. No. 290,492
3 Claims. (Cl. 74—405)



1. A programmed control device for automatic domestic washing machines and the like, said device comprising a perforated control disc, means supporting said disc for rotation about a central axis, gear teeth formed in the outer edge of said disc, motor drive means, a first pinion gear driven by said motor drive means, a pivoted carrier supporting said motor drive means and said pinion gear and having two stable positions such that said pinion gear engages said gear teeth on said disc to drive said disc in a first poition and said pinion gear is disengaged from said gear teeth to release said disc in the second position, manually operable means for selectively pivoting said carrier to said first and second positions while said drive motor is operating, and manually operable means for rotating said disc to a desired position when said first pinion is disengaged from said disc and said disc is free.

3,224,289
MOTORIZED HEAD PULLEY
Bernhard N. Palm, Newport Beach, Calif., assignor to Electra Motors, Inc., Anaheim, Calif., a corporation of California
Filed Dec. 3, 1962, Ser. No. 241,799
9 Claims. (Cl. 74—421)

1. An internally driven pulley comprising the combination of

a prime mover having an external casing with end walls and an axially extending driving shaft projecting through one end wall,

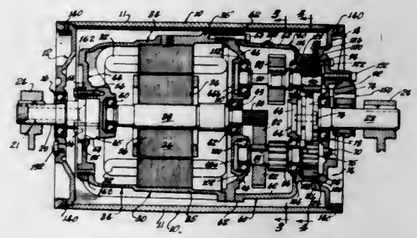
a trunnion rigidly connected to and projecting axially from the other end wall of the prime mover casing,

a hollow casing extension having a generally tubular wall rigidly and sealingly secured at one tubular end to said one end of the prime mover casing and projecting axially from that end of the prime mover casing, said tubular wall being effectively imperforate,

a perforate end formation rigidly attached to and extending across the axial end portion of said tubular wall that is remote from the prime mover casing,

a second trunnion rigidly secured to said perforate end formation and extending axially therefrom on an axis common to the axis of the first mentioned trunnion,

at least one of said trunnions adapted to be held stationarily,



a hollow axially extending pulley member surrounding the prime mover and having mounting elements at its axial ends journalled on said trunnions,

the mounting element that is journalled on the second mentioned trunnion having an annular lubricant sealing contact with said last mentioned end of the tubular extension wall,

at least that portion of said mounting element within its annular sealing contact being effectively imperforate except for its journalling on the second trunnion,

a driving gear driven by the prime mover driving shaft,

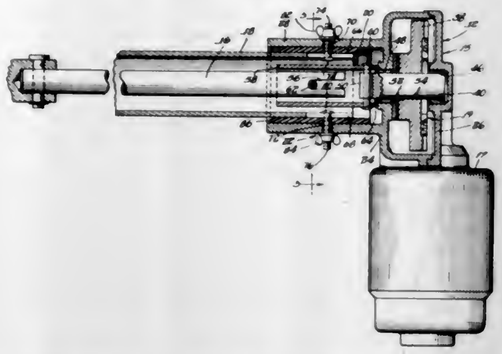
a driven gear attached to the internal side of the last mentioned mounting element within said annular sealing contact,

and a driving gear train operatively extending between the driving and driven gears and carried for rotation in bearings mounted on the said one casing end wall and on said perforate formation that extends across the end portion of said tubular extension wall.

3,224,290
DRIVE MECHANISM
Nicholas George Polydoris, 1234 Pam Anne Drive, Glenview, Ill.
Filed Mar. 28, 1962, Ser. No. 183,274
10 Claims. (Cl. 74—424.5)

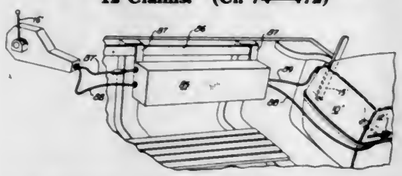
2. In a device of the character described comprising, a casing, an electric motor mounted in said casing, said electric motor having a first shaft, a first gear connected to said first shaft to be driven by said electric motor through the shaft, a second gear meshing with the first gear, a second shaft connected to said second gear, said second shaft having its axis spaced from the axis of the

first shaft a maximum distance less than the outside radius of the second gear, a connector attached to the second shaft for transmitting rotational energy from the



second shaft to a drive shaft, a tube connected to said casing surrounding the connector, and a sound deadener within said tube for absorbing noise.

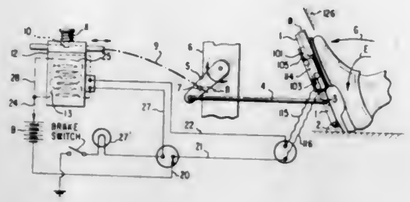
3,224,291
ELECTRICAL CONTROL
Harold L. Zimmerman, Oshkosh, Wis.
(4471 N. 84th St., Milwaukee, Wis.)
Filed Mar. 23, 1962, Ser. No. 181,929
12 Claims. (Cl. 74—472)



1. An electrical control for a device operable into first, second, and neutral positions comprising, in combination; solenoid plunger means adapted to be connected to said device; forward, neutral, and reverse solenoid means for said plunger means adapted when energized to selectively attract said plunger means to a magnetically centered position therein and shift said device into said first, second, and neutral positions; control means for selectively energizing said forward, reverse, and neutral solenoid means; and switch means controlled by said plunger means for opening the energizing circuit to each solenoid means slightly before said plunger means has been stopped in said magnetically centered position; said plunger means being brought to rest in said magnetically centered position by the magnetic field of said solenoid means generated by the electromotive force induced therein due to self-inductance after opening of said energizing circuit, whereby said solenoid means are not energized and do not draw current when said device is in said first, second, and neutral positions.

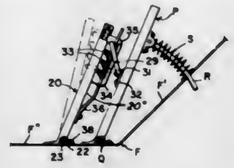
3,224,292
LOCKING DEVICE FOR A MOTOR VEHICLE ACCELERATOR PEDAL
Anton Huber, Dietramszeller Str. 8, Bad Toelz, Bavaria, Germany
Filed Dec. 5, 1963, Ser. No. 328,412
Claims priority, application Germany, Dec. 6, 1962, H 47,605
6 Claims. (Cl. 74—513)

1. A locking device for the accelerator pedal associated linkage of motor vehicles comprising, an electromagnet having a movable locking member for retaining the accelerator pedal linkage in set position, first and second windings in said electromagnet, a body portion adapted for connection to the upper end of an accelerator pedal, an auxiliary pedal connected for lateral tilting movement on said body portion about a longitudinal axis, a spring biased switch connected to energize said first winding and connected to said body portion and adapted to be closed by said auxiliary pedal upon unilateral tilting thereof thus



locking the accelerator pedal linkage in selective position, a friction spring connected between said body portion and auxiliary pedal to retain the same in respective position against the action of said spring biased switch, said second winding wound opposite to said first winding, and second switch means connected to energize said second winding to nullify the action of said first energized winding and return the accelerator pedal to the normal position.

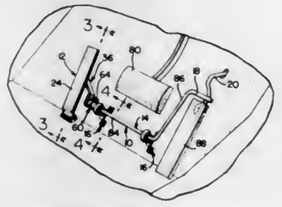
3,224,293
AUXILIARY THROTTLE-PEDAL CONTROLS
John P. De Rose, 1708 Janero Drive, Santa Rosa, Calif.
Filed Dec. 31, 1962, Ser. No. 248,420
1 Claim. (Cl. 74—562)



In combination with a first vehicle-controlling accelerator pedal extending upwardly from the vehicle floor in hinged relation thereto, and in front of a seat fixedly disposed rearwardly of the pedal, for an engagement and forward swinging actuation of the pedal against a biasing resistance means by a foot of an operator of the vehicle occupying the seat and engaging the tread of the first pedal for actuating the same, a second pedal extending upwardly from the vehicle floor in hinged relation thereto and disposed opposite the first pedal between it and the seat for its engagement and forward swinging actuation about an axis parallel to said axis of swinging of the first pedal by the corresponding foot of a first vehicle operator, and a link means of adjustable length directly and hingedly and releasably connecting the pedals and comprising a rigid U-shaped element having parallel arms, with one said pedal provided with a bearing journaling one arm of the link element while the other pedal is provided with a line of notches extending longitudinally thereof for selectively receiving the other arm of the link element whereby the mutual transverse spacing of the pedals is adjustably variable to so position the second pedal with respect to the first as to provide for the use of the installed second pedal by operators having shorter effective leg lengths than the first operator.

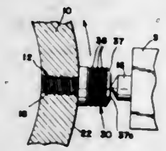
3,224,294
LEFT FOOT ACCELERATOR STRUCTURE
Lee M. Gresham, Detroit, Mich., assignor to Rutha Mae Gresham, d.b.a. Gresham Driving Aids, Detroit, Mich.
Filed Nov. 29, 1963, Ser. No. 326,664
6 Claims. (Cl. 74—562.5)

1. In a left foot accelerator structure,
a left foot accelerator pedal pivotally mounted for rotative movement,
a cross-shaft mounted for rotative movement and having one end thereof extending to a point adjacent said pedal,
a first lever secured to said cross-shaft adjacent said one end,
a second lever rotatably mounted on said cross-shaft adjacent said first lever and adapted to engage with and disengage from said first lever,
said second lever being movably secured to said accelerator pedal,
said pedal being rotatable into and out of a cross-shaft operating position,



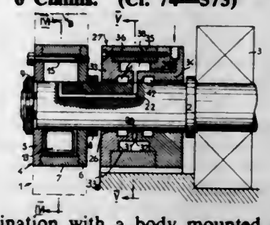
said cross-shaft terminating at its other end in a lever having an arm portion extending therefrom and adapted to engage accelerator throttle means,
whereby when said left foot accelerator pedal is depressed said cross-shaft arm portion engages and operates said throttle means.

3,224,295
VARIABLE CONTROL MEANS
Milton W. Ardern, 7363 Hillendale Road, Chesterland, Ohio
Filed July 26, 1963, Ser. No. 297,831
9 Claims. (Cl. 74—568)



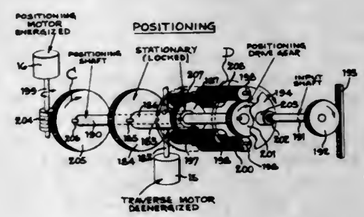
4. In a machine tool comprising, a generally rigid, rotatable control member, operating means mounted on said member and projecting therefrom, said means projecting a predetermined distance from said member, said distance being of such extent that such means normally clears associated actuatable means upon rotation of said member, and means detachably connected in snap-fastened relation to the first mentioned means for extending said first mentioned means a sufficient amount for causing engagement of the latter with the associated actuatable means upon predetermined rotary movement of said member, said operating means comprising a stud-like member projecting rigidly from said control member, said stud-like member having an enlarged head portion extending from the exterior surface of said control member, a shoulder projecting generally radially from said head portion, and cam means on said shoulder for facilitating movement of said detachable means into snap-fastened relation with said head portion.

3,224,296
DEVICE FOR RADIALLY SUPPORTING A ROTARY SHAFT IN A STATIONARY PART
Adrien Civelli, Boulogne-sur-Seine, France, assignor to Landis-Gendron S.A., Villeurbanne, Rhone, France, a company of France
Filed Mar. 4, 1963, Ser. No. 262,553
Claims priority, application France, Mar. 6, 1962, 890,115; Feb. 27, 1963, 926,140
6 Claims. (Cl. 74—573)



1. In combination with a body mounted on a rotary shaft for rotation about the axis of said shaft and a balancer member coaxial with said shaft, and containing a plurality of balancing elements displaceable in said member and dividing it into arcuate chambers, a mechanical bearing structure axially spaced from said balancer member and supporting the rotary shaft, a detecting member positioned between said balancer member and said bearing structure and including means for detecting any unbalance in said body comprising a cylindrical inner surface surrounding a length portion of said shaft with a clearance space therebetween, an annular chamber in said detecting member, an annular channel extending radially and circumferentially between said annular chamber and said clearance space, a plurality of separate ducts in said shaft for establishing a communication between said clearance space and each of said arcuate chambers, said ducts opening into said clearance space at equi-angularly spaced points, and means for conducting fluid under pressure to said annular chamber to produce pressure differentials in said clearance space proportional to any unbalance of said body, so as to induce a compensatory shift in the relative position of said balancing elements in accordance with said pressure differentials.

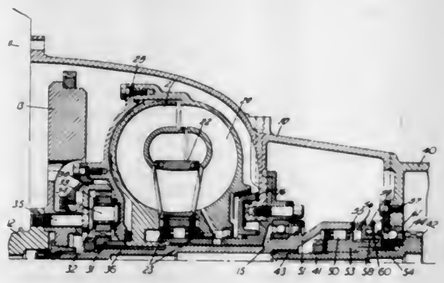
3,224,297
DIFFERENTIAL DRIVE FOR POSITIONING THE SHIFTABLE MEMBER OF A MACHINE TOOL
Robert N. Knosp, Ludlow, Ky., assignor to The Fosdick Machine Tool Company, Cincinnati, Ohio, a corporation of Ohio
Original application Sept. 5, 1961, Ser. No. 135,879, now Patent No. 3,171,301, dated Mar. 2, 1965. Divided and this application Feb. 10, 1964, Ser. No. 352,706
3 Claims. (Cl. 74—675)



1. In a drill head having an elevating mechanism including an input shaft, and having a rapid traverse motor and a positioning motor, a transmission system adapted to provide a driving connection from said motors individually to said input shaft comprising, a positioning shaft, a traverse sleeve mounted in axial alignment with

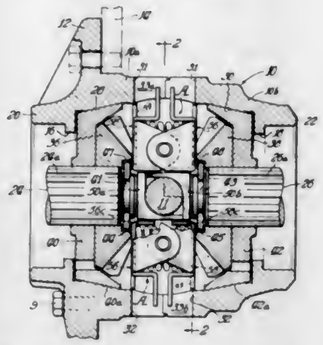
said positioning shaft for rotation relative to said positioning shaft, a first self-locking worm and worm wheel drive connecting said positioning motor to said positioning shaft, a second self-locking worm and worm wheel drive connecting said traverse motor to said traverse sleeve, a differential cage mounted for rotation about the axis of said positioning shaft and traverse sleeve and in driving connection with said input shaft, respective traverse and positioning driving gears mounted on said positioning shaft and traverse sleeve, respective planetary gears journalled for rotation in said differential cage and meshing with said traverse and positioning driving gears, and respective idler gears journalled in the differential cage and meshing with the said planetary gears, said idler gears providing a driving connection between said respective traverse and positioning driving gears adapting the planetary gears and idler gears to rotate in an orbit about said driving gears and to impart rotary motion to the differential cage, whereby either the traverse motor or positioning motor is adapted to be energized to impart rotary motion to the input shaft through orbital rotation of the planetary gears and idler gears about the driving gears.

3,224,298
VARIABLE GEARING FOR MOTOR VEHICLES
Claude Hill, Kenilworth, England, assignor to Harry Ferguson Research Limited, "Abbotswood," Stow-on-the-Wold, England, a British company
Filed Aug. 21, 1962, Ser. No. 218,379
Claims priority, application Great Britain, Aug. 22, 1961, 30,186/61
6 Claims. (Cl. 74—688)



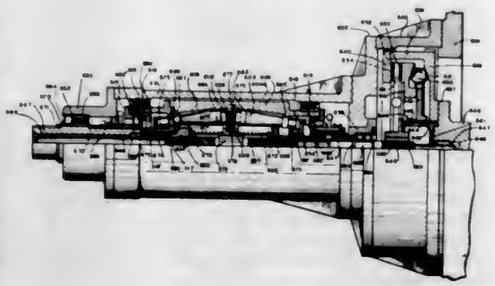
1. A transmission comprising a housing, a rotatable input means, a rotatable output means, a rotatable intermediate means disposed between said input and output means and axially aligned therewith, an epicyclic gear train unit including a ring gear, a sun gear and a plurality of planetary gears, a carrier for carrying said planetary gears, a fluid torque converter including an impeller, a turbine and a reaction wheel, the reaction wheel of said converter mounted on a portion of said housing for rotation only in the direction of said impeller and said turbine, the turbine of said converter mounted on said intermediate means for rotation therewith, the impeller of said converter rotatably mounted on a portion of said housing, said planetary gear carrier being mounted for rotation with the impeller of said converter, said sun gear of said epicyclic gear train mounted on said intermediate means for rotation therewith, the ring gear of said epicyclic gear train mounted on said input means for rotation therewith, said transmission including means for braking the impeller of said converter and means for transmitting torque from said intermediate means to said output means only in a forward drive direction.

3,224,299
DIFFERENTIAL MECHANISM
John W. Holdeman and William G. Jeakle, Auburn, Ind., assignors to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Sept. 7, 1962, Ser. No. 221,948
8 Claims. (Cl. 74—711)



1. In a differential mechanism: a casing including access apertures; differential gearing in said casing, said differential gearing including a pair of side gears and a pinion gear rotatably mounted in said casing on a cross shaft; a pair of output shafts each having a terminal portion extending into said casing and being drivingly connected to said side gears respectively; differentiation retarding means in said casing adapted, when engaged, to clutch said casing and said output shafts together for conjoint rotation; preload means normally urging said differentiation retarding means into engagement, said preload means comprising at least one cartridge-type resilient assembly, said assembly including spring retainer means including a pair of mutually connected members providing limited movement toward and away from each other and spring means operatively associated with said retainer means for urging said retainers outwardly.

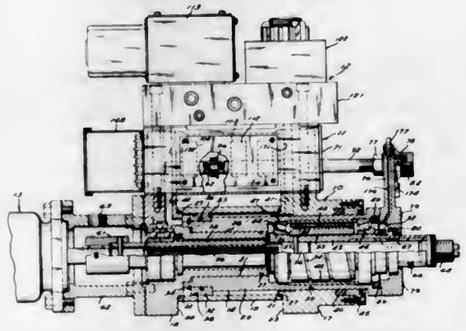
3,224,300
AUTOMATIC TRANSMISSION
Walter V. Chery, 908 Fairview Ave., Meadville, Pa.
Filed Sept. 3, 1959, Ser. No. 837,856
22 Claims. (Cl. 74—796)



1. A transmission comprising a support, a first row of spaced frusto-conically shaped rollers and a second row of frusto-conically shaped rollers in said support, each of said rows of rollers being disposed with their axes in a conical path, an actuating shaft, said shaft being disposed with its center passing through the central axis of said conical path, said shaft having two spaced threaded portions, one having a right hand thread and the other a left hand thread, a self-adjusting sun wheel threadably

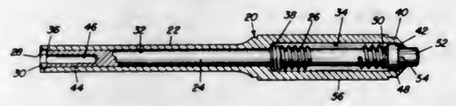
received on each said threaded portion, the outside periphery of one said sun wheel frictionally engaging said rollers in one said row, the other said sun wheel frictionally engaging the outside periphery of said rollers in the other said row, means to drive said first row of frusto-conical rollers, and means to connect a load to be driven to the periphery of the other said row of rollers.

3,224,301
HYDRAULIC DRILL UNIT
Stanley E. Vickers, Columbus, Ohio, assignor, by mesne assignments, to Imperial Manufacturing Company, Middlefield, Ohio, a corporation of Ohio
Filed Mar. 16, 1962, Ser. No. 180,168
10 Claims. (Cl. 77—32.7)



1. A drive unit for cutting tools comprising a rotatable spindle, a hydraulic motor rotating said spindle, a hydraulic actuator powered by liquid under pressure, positive drive means connecting said actuator and spindle, pressure means connected to said motor supplying liquid to said motor at a first pressure, a pressure reducing valve connected to said pressure means supplying liquid to said actuator at a substantially constant second pressure substantially lower than said first pressure, said liquid at said second pressure being substantially incompressible, an exhaust control through which said liquid is exhausted from said actuator, said exhaust control limiting flow therethrough to a constant rate over substantial ranges of up to said second pressure thereby maintaining a constant velocity of movement of said actuator and spindle.

3,224,302
SOCKET WRENCH WITH A NUT EJECTOR
Robert L. Cooley, Sr., 7660 Torrem St., La Mesa, Calif.
Filed Oct. 19, 1962, Ser. No. 231,745
2 Claims. (Cl. 81—124.1)



1. A nut-ejector type socket wrench, comprising in combination:

(A) An integral and elongated sleeve having the shape of:

(1) a socket for a nut at one end of the sleeve;

(2) an elongated longitudinally disposed and constant diameter cylindrical bore, axially aligned with and extending to said socket;

(3) a second elongated, constant diameter cylindrical bore, axially aligned with the first mentioned bore and of larger diameter than the first mentioned bore to form a shoulder at the junction of said bores, the end of the second mentioned bore opposite said junction terminating in an inwardly spun cylindrically shaped shoulder, said shoulders confronting one another;

(B) an elongated nut-ejecting rod having an ejector end disposed within said sleeve and having a constant diameter throughout the ejector end and throughout the length of the first mentioned bore, and throughout the major portion of the second mentioned bore, and substantially complementing the first mentioned bore in diameter, said rod having:

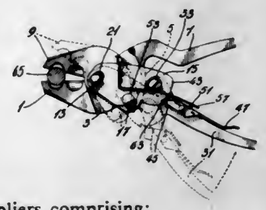
(4) a shoulder within the second mentioned bore in abuttable relationship with the second mentioned shoulder;

(5) and a section extending outwardly of the second mentioned shoulder and beyond the end of the sleeve;

(6) said rod having a longitudinal and cylindrical bore therein at that end thereof which is adjacent said socket;

(C) and a coil spring interposed between the first and second mentioned shoulders, said coil spring surrounding the rod and being under compression normally yieldingly urging the shoulder on the rod in abutting relationship with the second mentioned shoulder in the second mentioned bore, the ejector end of said rod terminating adjacent the inner end of the socket when the shoulder on the rod is in abutting relationship with the second mentioned shoulder in the second mentioned bore.

3,224,303
PLIERS WITH RACK AND TOOTHED LEVER MEANS COMING INTO MESHING ENGAGEMENT WHEN THE JAWS CONTACT A WORKPIECE
Pierre R. Giroux, Laviolette, Quebec, Canada, assignor of ten percent to Omer Veillette, La Tuque, Canada
Filed July 16, 1964, Ser. No. 383,002
10 Claims. (Cl. 81—343)



1. Power pliers comprising:

(a) a first and a second jaw member pivotally interconnected for movement toward and away from one another;

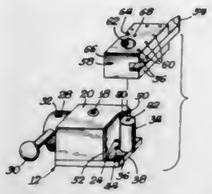
(b) a first operating lever arm integral with said first member; said first jaw member being formed with a toothed rack;

(c) a plate pivotally mounted on said second member;

(d) a second operating lever arm, for and separate from said second member, pivotally mounted on said plate and formed, at one end thereof adjacent said toothed rack, with a circular gear segment adapted to mesh with the said rack, and

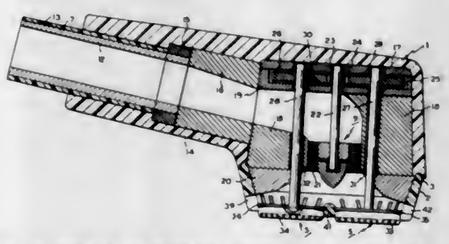
(e) means on said second jaw member and on said plate cooperating to limit pivotal displacement of said plate and operative, upon relative movement of said arms toward one another and upon pivotal movement of the jaw members being arrested by a resisting element therebetween, to cause meshing of said gear segment and rack, whereby further relative movement of said arms causes riding of said gear segment on said rack and increases force on said element between said members.

3,224,304
QUICK CHANGE TOOL HOLDER
William T. Wills, Jr., Los Angeles, Calif., assignor to Amsted Industries Incorporated, Chicago, Ill., a corporation of New Jersey
Filed Dec. 30, 1963, Ser. No. 334,349
2 Claims. (Cl. 82—36)



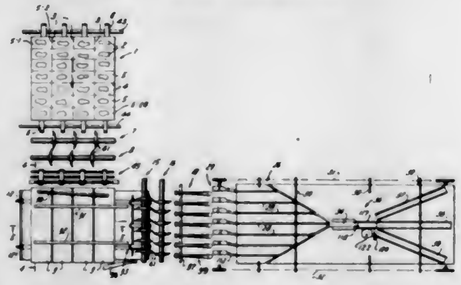
1. In a tool holding device mounted on a compound rest of a lathe for quick and easy interchangeability of tools for a specific machining operation, the combination comprising, a body member secured to the compound rest and having a vertical surface at one end, said vertical surface having vertically extending projections adjacent the lateral edges projecting beyond the portion of the surface therebetween, screw means extending horizontally through the body member and projecting through said vertical surface perpendicular thereto and between said projections, a vertical stud mounted on and carried by the end of said screw means adjacent said vertical surface, a handle on the opposite end of the screw means and operable upon actuation thereof for drawing the stud toward the body member and for releasing it therefrom, means for selectively positioning the handle means at different angular positions about the axis of the screw means, means for maintaining said stud in vertical position including a pin secured in said vertical surface slidably received in an aperture in the stud, said pin being displaced from but parallel with said screw means, a tool holder having a vertical hole for receiving the stud in downward fitting thereon, the tool holder having a vertical surface facing said surface on the body member when fitted on the stud and being drawn into firm engagement with the body member in response to the stud being drawn toward the body member, the tool holder engaging said projections when drawn into engagement with the body member and having a vertical groove receiving one of the projections, the interfacing surfaces on the body member and tool holder being so shaped as to enable complete separation of the body member and tool holder in moving them away from each other in direction perpendicular to the surfaces.

3,224,305
METHOD OF SHAVING
Irving Silver, James E. Hubbartt, and Richard B. Inman, Atlanta, Ga., assignors to Shavair of America, Inc., a corporation of Georgia
Filed July 9, 1963, Ser. No. 293,646
2 Claims. (Cl. 83—14)



1. A method of shaving comprising the steps of establishing a region of low pressure substantially lower than atmospheric pressure, applying a skin and hair conditioning substance to the area to be shaved, placing a perforated flat area of one of a pair of relatively movable cutting elements in contact with said area while simultaneously maintaining the other of said cutting elements on the opposite surface of said area of said cutting element, imparting manual movement only to said one cutting element relative to the area to be shaved, applying a pneumatic suction from the low pressure region through and around said perforated cutting elements for removing said conditioning substance along with any hairs that are cut by said cutting element and directly to the area in contact with said one cutting element from the shaved area, and accumulating such hairs and any residue of said conditioning substance in the region intermediate the shaved area and said low pressure region.

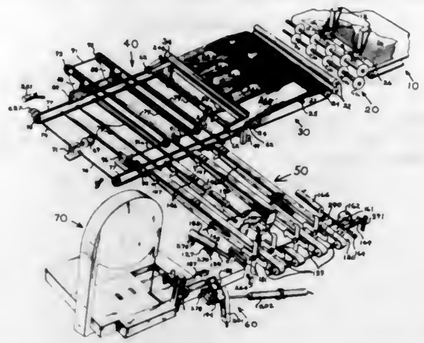
3,224,306
AUTOMATIC CUTTING AND COLLATING MACHINE AND METHOD
George F. Hawley, Bogota, N.J., and Jean E. Moulder, Huntington, Conn., assignors to AEL Development and Research Division, Inc., Stamford, Conn.
Filed Oct. 9, 1962, Ser. No. 229,322
19 Claims. (Cl. 83—23)



1. A method for cutting and stacking cards of relatively uniform size each cut from a relatively large substantially flat sheet of material which comprises moving said large sheet edgewise in a first direction and cutting said moving sheet parallel to said direction to form a plurality of strips of similar length and width, moving said strips individually edgewise perpendicular to their length and cutting said moving strips transversely into a plurality of cards all in a first plane, moving said cards edgewise while progressively turning them into spaced parallel planes perpendicular to said first plane, and moving the cards simultaneously edgewise while progressively converging the cards into a stack.

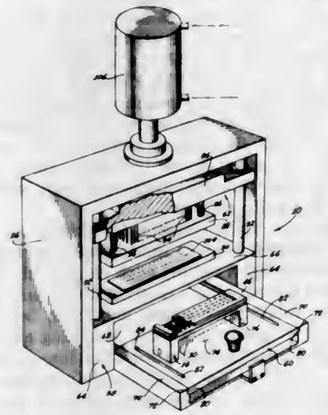
3,224,307
METHOD AND APPARATUS FOR HANDLING SHEET MATERIALS
Clarence C. Kinker, Toledo, Ohio, assignor to Owens-Illinois Glass Company, a corporation of Ohio
Filed Jan. 2, 1963, Ser. No. 249,025
15 Claims. (Cl. 83—35)

1. The method of handling blanks of sheet material between the time that a predetermined number of said blanks are slit from a single panel of sheet material and the time that said blanks are cut transversely of their lengths comprising the steps of underfeed stacking said blanks into bundles by feeding the respective blanks beneath the corresponding blanks of the preceding panel, the number of bundles being the same as said predetermined number, each blank of a single panel forming part of a different bundle; moving said bundles longitudinally with respect to said blanks; engaging said longitudinally moving bundles with a plurality of transversely positioned supporting members; pushing said bundles transversely off said supporting members; rotating each of said bundles about a longitudinal axis so that each of the blanks of said



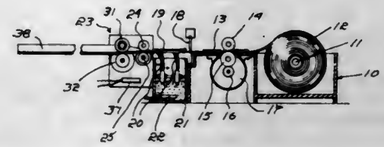
bundle rests on its respective edge; and moving said edge-turned bundles to a saw.

3,224,308
LOADING MACHINE
Sydney Dix, Costa Mesa, Calif., assignor to Dix Engineering Co., Venice, Calif., a corporation of California
Filed Oct. 18, 1963, Ser. No. 317,255
10 Claims. (Cl. 83—133)



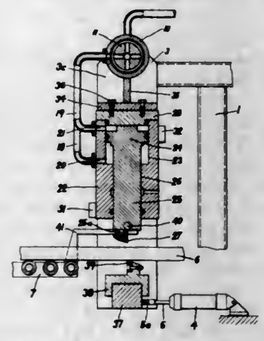
1. A machine for loading a member into each of the workpieces in a group of workpieces, said machine including:
- a workpiece holder having a plurality of positioning means for receiving said workpieces and retaining them in longitudinal columns and transverse rows, said positioning means being effective to position each of the workpieces so that they all have upwardly directed openings,
- punch means including a separate punch for each of the workpieces in said group, said punches being arrange in a plurality of columns and rows and positioned substantially identical to the columns and rows of said workpieces,
- means having said workpiece holder disposed thereon for moving said workpiece holder into a position wherein the openings in each of said workpieces is disposed in substantial alignment with said punches,
- means for positioning a blank in said punch means in substantial alignment with the open ends of said workpieces for being pierced by said punches, and
- drive means interconnected with said punch means and effective to force said punches through said blank to cut said members from said blank and to force said members through said open ends and into said workpieces.

3,224,309
APPARATUS FOR USE IN PREPARING ADHESIVE COATED TAPES FOR USE
Ralph C. Nash, 61 Manchester St., Nashua, N.H.
Filed Aug. 27, 1962, Ser. No. 219,433
7 Claims. (Cl. 83—156)



7. In a tape dispenser, means to rotatably support a roll of adhesive-coated tape, means to pull tape from said roll and project it, two pairs of idler rolls through which the tape passes as it is projected, and tape severing means between said pulling means and said pairs of rolls, said two pairs of rolls being spaced from each other lengthwise of and in the path of the tape as it is projected, the rolls of each pair being disposed with the roll axes parallel to the plane of the tape and spaced apart in a plane at right angles thereto to receive the tape between them, a corresponding one of each pair of rolls having a peripheral channel and the other roll of each pair having a channel-entering crest, both pairs of rolls acting on the tape as it is projected to provide it with a lengthwise deformation in the form of a channel and cooperating to guide the tape against lateral movement while being so deformed, the height of the channel being such as to so stiffen said length that, when projected, said length is rigid and, when severed, it may be handled as a rigid member, the height of said channel being partly formed by the infeed pair of rolls and completed by the outfeed pair of rolls thereby to minimize resistance to the tape at the infeed side of said infeed pair of rolls as the tape is projected from said tape pulling means, and the two pairs of rolls providing support for the projected tape length.

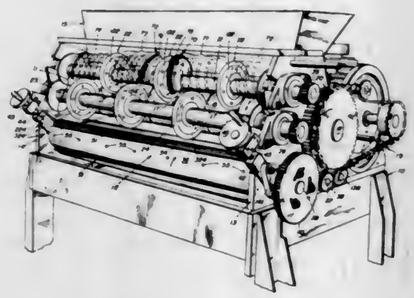
3,224,310
CUTTER FOR SEPARATING A STRAND OF MATERIAL
Hans Bieri, Haberweidstrasse 36, Uster, Switzerland
Filed Feb. 4, 1963, Ser. No. 256,017
Claims priority, application Switzerland, Feb. 9, 1962, 1,606/62
12 Claims. (Cl. 83—157)



1. A cutter for separating a strand of material, especially adapted for cutting finite sections from a metal stand mov-

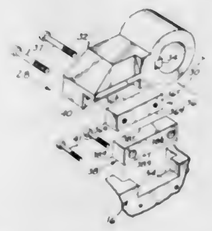
ing during the time of the cutting operation; comprising a machine stand, cutter means including cutter elements mounted for relative movement, at least one of said cutter elements being movable, a frame pivotably connected to said machine strand for transmission of the movement of said cutter elements, a cylinder and a piston displaceably mounted in said cylinder supported by said frame and operatively connected with said movable cutter element of said relatively movable cutter means to drive the associated movable cutter element, support means for pivotably connecting said frame to said machine stand, said support means including a pivot pin rigidly connected at opposed ends with said machine stand and a hollow bushing through which piercingly extends said pivot pin for pivotably supporting said frame, said bushing and said pivot pin being provided with interfacial peripheral channel means defining flow ducts for transfer of a working medium through said support means to said cylinder.

3,224,311
SHEET SUBDIVIDING APPARATUS
Edward E. Wagner, Chester, Va., assignor to Philip Morris Incorporated, New York, N.Y., a corporation of Virginia
Filed Feb. 16, 1960, Ser. No. 9,113
16 Claims. (Cl. 83—302)



1. Sheet subdividing apparatus comprising, in combination, rotary bed means rotatable in one direction to draw thereagainst a web of sheet material along a path of travel with location of said rotary bed means to one side of the latter, a plurality of web slitting means located laterally of and on the opposite side of the web travel path from said rotary bed means at different positions of advance along the path, one of said slitting means comprising at least a pair of rotary slitting discs spaced transversely from each other in the direction substantially parallel to the axis of said rotary bed means and positioned relative thereto to press the web against the latter and slit a longitudinal strip therefrom whenever such web is drawn therebetween, and means defining said path of web travel whereby said first-mentioned longitudinal strip as it is slit from said traveling web will tend to move radially inward between said pair of transversely spaced rotary slitting discs with resulting jamming of its edges therebetween, another of said slitting means in an advanced position comprising an advanced rotary slitting disc with a less than 90° angle being defined between a pair of planes intersecting at the axis of said rotary bed means and each plane including this axis and with the axes of the first pair of rotary slitting discs located in one of these planes and the axis of said advanced rotary slitting disc located in the other of these planes, said advanced slitting disc being staggered axially with respect to said pair of slitting discs positioned relative to said rotary bed means to press the strip out from between said first pair of rotary slitting discs back against said rotary bed means and to slit it longitudinally into subdivision strips whenever said first formed strip is drawn between said rotary bed means and said second-mentioned slitting means.

3,224,312
TIMED STOCK CUTTER WITH MULTIPLE EDGED KNIVES
Charles L. Larson, Grants Pass, Oreg., assignor to Jeddeloh Bros. Sweed Mills, Inc., Jackson, Oreg., a corporation of Oregon
Filed Sept. 9, 1963, Ser. No. 307,717
1 Claim. (Cl. 83—355)



In a stock cutter,

a frame, and cutter mechanism mounted on said frame operable to cut stock into pieces when a continuous ribbon of stock is fed thereinto,

said cutter mechanism comprising a fixed knife element, a movable knife element, and a knife holder supporting the movable knife element whereby the latter may be moved in a circular sweep about an axis that extends transversely of both the fixed and movable knife elements and that is disposed to one side of said fixed knife element with such movement producing in the movable knife element a scissor-type shearing stroke on each sweep of the movable knife element,

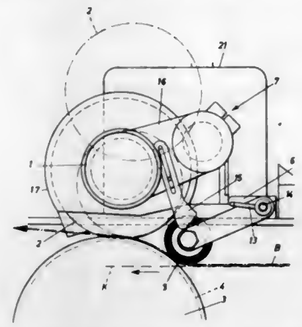
said movable knife element comprising an elongated four-cornered body of substantially rectangular cross section having a cutting edge along each of the four corners thereof which is straight and parallel to each of the other three edges, and faces bounding said body joining adjacent pairs of cutting edges,

said cutter mechanism further including means detachably mounting the movable knife element on said knife holder enabling positioning of the movable knife element with any of its four cutting edges leading the element during a shearing stroke and with a face of the element which joins with such cutting edge facing the fixed knife element and in the plane defined by the sweep of the movable knife element.

3,224,313
DEVICE FOR TRIMMING WEBS OF CLOTH OR THE LIKE
Gustav Robert Fritz Möhring, 3 Salzmannweg, Stuttgart, Germany
Filed May 28, 1964, Ser. No. 371,018
Claims priority, application Germany, May 30, 1963, M 57,018
13 Claims. (Cl. 83—422)

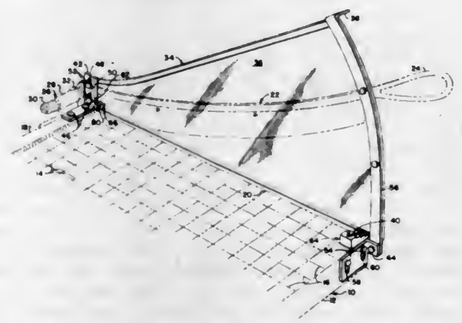
1. A device for trimming webs of cloth or the like, comprising a circular knife and a first disc cooperating therewith for cutting the web and provided with a peripheral annular groove, said first disc being mounted below the plane of the web provided by stretching and conveying chains serving for supplying said web, so as to project by a considerable amount upwardly beyond this plane and cooperate with a brush disc of known construction

arranged in the region of the line of intersection between the plane of the web and said first disc, said brush disc



being pressed from above against said web and said first disc.

3,224,314
SAFETY SHIELD FOR CUTTING AND CREASING APPARATUS
George J. Wolnez, Sacramento, Calif., assignor to Aerojet-General Corporation, Azusa, Calif., a corporation of Ohio
Filed Nov. 24, 1964, Ser. No. 413,566
5 Claims. (Cl. 83—522)



1. A safety guard for a severing and creasing device having a pivotal knife acting upon a base comprising: an upstanding shield positioned in spaced relation with said knife, said upstanding shield being adjustably mounted upon said base, an adjustable thickness gage positioned adjacent said shield, a projection attached to the upper portion of said shield positioned over the path of the pivotal knife, said shield positioned in spaced relation with said base whereby the knife is not accessible by the operator of the severing and creasing device and further the operator of the device can determine the thickness or gage of material being severed.

3,224,315
MEANS TO MUTE WIND INSTRUMENTS
John C. Guinness, 1332 N. Curson, Los Angeles 46, Calif.
Filed May 21, 1964, Ser. No. 369,216
15 Claims. (Cl. 84—383)

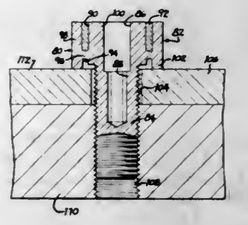
1. Means to mute a wind instrument having a hollow body with a mouthpiece forming an air passage to the interior of the body, comprising:

permeable muting means movable between a retracted position permitting free air flow through the air passage and an effective position at least partially blocking the air passage, said muting means having a plu-



rality of small passages for restricted air flow therethrough.

3,224,316
STRESS INDICATING MECHANICAL FASTENING DEVICE
Henry W. Grikscheit, Birmingham, and Robert H. Schott, Troy, Mich., assignors of one-fifth to The Detroit Testing Laboratory, Inc., Detroit, Mich., a corporation of Michigan
Filed Sept. 6, 1963, Ser. No. 307,242
3 Claims. (Cl. 85—62)

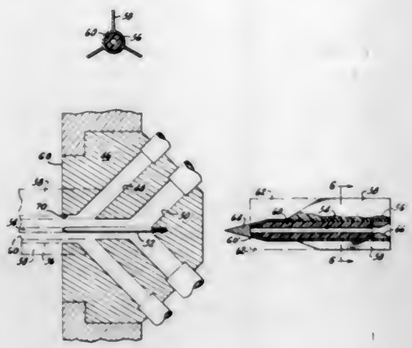


1. A torque indicating fastening device comprising a body having an internally threaded opening for securement to other structure, said body having an upper end surface and a lower end surface, said body having an annular recess concentric with the internally threaded opening, said recess extending from the upper end surface towards the lower end surface and defining an outer wall portion and an inner wall portion, the body material between the bottom of the recess and the lower end surface having a predetermined cross-sectional area to result in a predetermined stress yield point, and a stress-sensitive material in the recess in intimate contact with the surfaces defining the recess, said stress-sensitive material being reactive to relative movement of the aforementioned outer wall portion and inner wall portion of the body to indicate the occurrence of such relative movement, relative movement occurring when the torque applied to the body reaches the stress yield point of the body material between the bottom of the recess and said lower end surface.

3,224,317
METHOD OF CONSTRUCTING A MINIATURE SOLID PROPELLANT ROCKET
Bert B. Gould, Berkeley, Calif., assignor, by mesne assignments, to MB Associates, San Ramon, Calif.
Filed Sept. 22, 1961, Ser. No. 140,091
3 Claims. (Cl. 86—1)

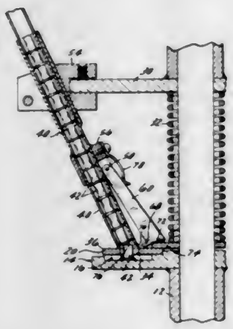
1. The method of constructing a miniature solid propellant rocket, said rocket having a central burning port, a propellant grain surrounding and forming said port, a plastic casing enclosing said propellant grain, and a nozzle disposed in the aft end of said casing, comprising introducing an initially-fluid, ultimately-solidifying propellant mixture into a cavity about a mandrel to form an extrudable substantially self-supporting tubular propellant grain; advancing the propellant grain in said cavity to achieve cohesion, extruding into said cavity and

in intimate contact with said cohesive tubular propellant grain a settable plastic material whereupon the extruded



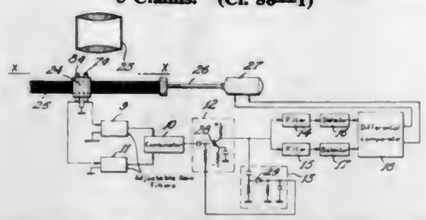
product is discharged into the atmosphere, cut to length and a nozzle is secured in the aft extremity of the casing adjacent to said propellant material.

3,224,318
AUTOMATIC PRIMER CAP FEEDER FOR SHOTGUN SHELL RELOADERS
Theodore J. Bachhuber, 725 Dayton St., Mayville, Wis.
Filed Mar. 5, 1964, Ser. No. 349,686
5 Claims. (Cl. 86—38)



1. An automatic primer cap feeder for a shotgun shell reloader having a relatively reciprocable tool carriage and work support, guide means for accommodating relative movement of the carriage and tool support in a direction of approach, such feeder including a tubular hopper adapted to receive a stack of primer caps, bracket means for mounting said hopper on the tool carriage of the loader, and escapement means for discharging a single primer cap from the hopper upon each relative reciprocation between the carriage and work support, said escapement means comprising a lever in pivotal connection with the hopper and extending toward the work support and having a free end portion externally of the hopper formed with a cam, said free end portion also being provided with a finger normally disposed in the path of the lowermost cap in the hopper, said finger being retractable from said path when said lever oscillates upon its pivotal connection with the hopper, and a surface on the work support in the path of the said free end portion of the lever and directly engaged by said cam during relative approach of the carriage and work support.

3,224,319
OPTICAL TELEMETRY DEVICES
André Charles Robert, Eaubonne, and Gilles Eugène Romain Trincard, Paris, France, assignors to Sud-Aviation Société Nationale de Constructions Aeronautiques, Paris, France
Filed May 2, 1962, Ser. No. 191,942
Claims priority, application France, May 4, 1961, 860,682, Patent 1,296,011
5 Claims. (Cl. 88—1)

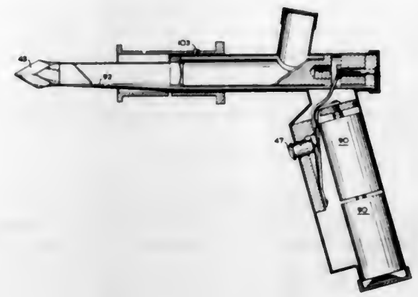


1. In optical telemetry apparatus for measuring the distance between an obstacle and a predetermined point and of the type having a light source disposed at said predetermined point for illuminating the obstacle, an optical sighting system disposed in the vicinity of said source for receiving light rays reflected by said obstacle and two photo-electric cells disposed adjacent one another in the focal plane of said optical system at a fixed interval and displaceable in said focal plane along a straight line at right angles to the lighting line joining said source and said obstacle for determining the position in which said cells are equally lighted, whereby the distance between the center of said interval in said position of the cells and said lighting line is related to the distance to be measured; the improvement comprising a rotatable device disposed in the path of the light beam emitted by the source and having two sets of apertures for said beam, which sets of apertures have different widths and spacings for generating two light rays respectively modulated at different frequencies, means for driving said device in rotation, two frequency channels respectively connected to the two photo-electric cells and respectively corresponding to the frequencies of the two modulated light rays received by said cells after reflection by the obstacle, adding means connected to said two frequency channels, a single automatic gain amplifier fed by said adding means, and means supplied by said amplifier for generating an error signal related to the difference existing between the amplitudes of the signals transmitted through said frequency channels, comprising means connected to the single automatic gain amplifier for dividing the complex signal delivered by said amplifier into two series of amplified signals respectively modulated at the frequencies of the two modulated light rays, means for respectively detecting said amplified signals and a differential comparator connected to said detecting means for delivering the error signal, whereby said two photo-electric cells can be displaced to a position in which the amplitude of the signals are equal and said error signal becomes null, and in which position said cells are equally lighted and can then serve as a reference for evaluating the distance between the obstacle and said predetermined point.

3,224,320
APPARATUS FOR DETERMINATION OF THE DISTRIBUTION OF MEAT AND FAT IN SLAUGHTERED ANIMALS OR PARTS THEREOF
Erik Stenberg Knudsen, Roskilde, Denmark, assignor to Slagteriernes Forskningsinstitut, Roskilde, Denmark
Filed Mar. 28, 1960, Ser. No. 18,080
Claims priority, application Great Britain, May 5, 1959, 15,453/59
3 Claims. (Cl. 88—14)

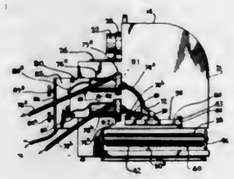
1. A device for measuring the thickness of tissue layers beneath the outside surface of an animal carcass com-

prising in combination a hollow probe having a closed outer end provided with means thereon for penetrating said surface and said underlying tissues, a window in the wall of said probe adjacent said penetrating means, a reference point on said window, optical means for observ-



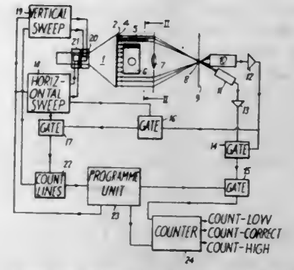
ing tissue adjacent said window, means for illuminating said tissue through said window, and means on the exterior of said probe remote from said outer end for determining the distance between said reference point on said window and said surface.

3,224,321
HEAT EXHAUST SUCTION DEVICE FOR OPAQUE PROJECTORS
Ludwig Beck, 1530 2nd Ave., New York, N.Y.
Filed Apr. 24, 1963, Ser. No. 275,278
7 Claims. (Cl. 88—26)



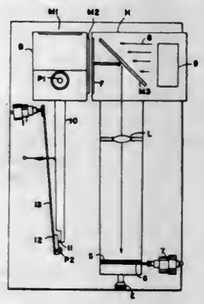
3. In an optical projector having a generally rectangular casing with opposing front, rear and side walls, and apertures in said walls for admitting air into the casing, the combination comprising an endless belt extending horizontally through apertures in the side walls for carrying an article to be subjected to light of a projection lamp through the casing, a nozzle attached to one side wall of the casing and communicating with the interior of the casing through another aperture in said side wall, said nozzle having an external coupling, a Y-type fitting having a common inlet connected to said coupling and having two outlet branches communicating with said inlet, pipes connected to the respective branches, rotor housings connected to the pipes respectively, air moving rotors in the housings having air inlet sides open to said pipes, air outlet pipes connected to air outlet sides of the housing, a plate, a pair of motors mounted on said plate and connected to and respectively driving said rotors, a power supply, and a pair of rheostats respectively in circuit with said power supply and said motors for independently controlling the speed of said motors, whereby air drawn from said casing into said nozzles passes through said housings and out of said air outlet pipes.

3,224,322
OPTICAL GAUGING SYSTEM
Michael Hereward Westbrook, Leamington Spa, England, assignor to Associated Engineering Limited, Leamington Spa, England, a British company
Filed July 31, 1961, Ser. No. 127,941
Claims priority, application Great Britain, Aug. 5, 1960, 27,230/60
18 Claims. (Cl. 88—14)



1. An optical gauging system for engineering components comprising a light source producing a light beam, means for effecting relative movement in a first direction between said light beam and a component to be gauged such that said light beam is intercepted by said component during said relative movement for a time representative of at least one dimension of said component, means for producing a train of electrical pulses in timed relation to the speed of said relative movement whereby a constant number of pulses is produced per unit of movement, means for producing a predetermined number of pulses equal to the number of said timed pulses which would be produced during the interception of said light beam by a component having a gauged dimension of the correct value, gating means fed with said train of electrical pulses, light sensitive means sensitive to unintercepted light from said beam for producing a signal controlling the number of pulses gated by said gating means during said interception, and means for comparing the latter number with said predetermined number of pulses representing said correct value, and indicating means responsive to any divergence, in excess of allowable tolerance limits, between said number of pulses produced during said interception and said predetermined number of pulses representing said correct value for indicating that the component has an incorrect dimension.

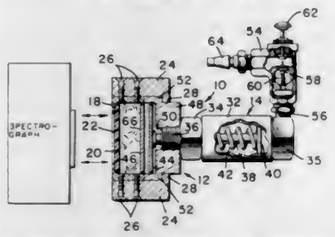
3,224,323
INTERFEROMETRIC OPTICAL ANGLE MEASURING DEVICE
Anwar K. Chitayat, Plainview, N.Y., assignor to Optomechanisms, Inc., Mineola, N.Y.
Filed Oct. 19, 1961, Ser. No. 146,302
4 Claims. (Cl. 88—14)



1. Means for accurately measuring the angle of rotation of a first mirror rotatable about a pivot point, com-

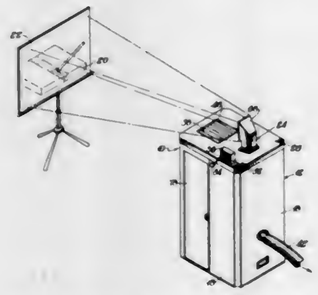
prising a second mirror having a fixed angular relation to said first mirror, an optical flat having a fixed position and spaced closely to said second mirror, a source of light directed toward said optical flat and said second mirror to produce a fringe pattern, a viewing screen, and a semi-reflecting mirror placed between said light source and said optical flat and adapted to reflect a fringe pattern reflected from said second mirror onto said viewing screen, mechanical means to measure the rotation of said first mirror to provide a coarse reading comprising a first lever connected to said second mirror at one end, a knife edge on the other end of said first lever, a second lever pivotally mounted on the neutral axis of said first lever, said second lever having a bearing block adjacent one end bearing against said knife edge, and a micrometer bearing against the other end of said second lever, and means to measure the spacings of said fringe pattern.

3,224,324
METHOD OF PRESENTATION OF COMPRESSIONABLE FIBROUS SAMPLES
Wesley A. Coppock and Sam W. Burdge, Cary, N.C., assignors to Monsanto Company, a corporation of Delaware
Filed Sept. 27, 1962, Ser. No. 226,647
4 Claims. (Cl. 88—14)



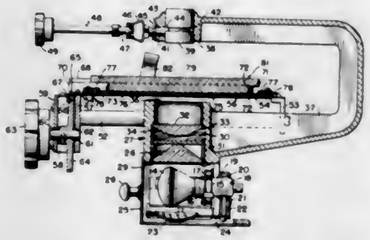
1. A non-destructive method of presentation of void-containing fibrous samples for color analyses comprising the steps of inserting said sample between a planar, transparent viewing means and a piston, fluidly actuating said piston to compress said sample against said viewing means to a degree beyond which light reflectance from said sample through said viewing means remains substantially constant, measuring the light reflectance of said sample while so compressed.

3,224,325
DEMONSTRATION PROJECTION APPARATUS
Joseph F. Quaas, Island Park, and Guido A. dal Molin, Wantagh, N.Y., assignors to Eutectic Welding Alloys Corporation, Flushing, N.Y., a corporation of New York
Filed Sept. 7, 1961, Ser. No. 136,497
10 Claims. (Cl. 88—24)



1. An apparatus for demonstrating a procedure emitting fumes, heat and glare comprising a booth for accommodating a person and within which said procedure is performed, a workbench disposed within said booth, said booth having walls for shielding said procedure from direct observation by persons in the vicinity outside said booth and for enclosing said fumes, heat and glare, a projection system extending into said booth and including a projection head outside of said booth, said projection system also including a screen outside of said booth upon which said procedure may be indirectly observed while it is being performed within said booth, a ventilating system connected to said booth for exhausting fumes and heat from said booth, and said ventilating system having means for conducting said fumes and heat away from said vicinity of said booth and for admitting fresh air into said booth.

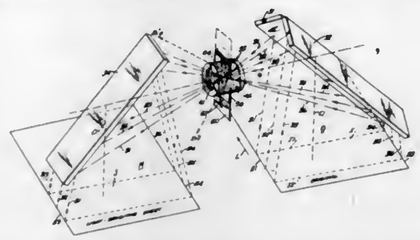
3,224,326
PROJECTOR VIEWER
Philip J. Brownscombe, Millington, N.J., assignor to Eugene Dietzgen Co., Chicago, Ill., a corporation of Delaware
Filed June 8, 1962, Ser. No. 201,046
2 Claims. (Cl. 88—24)



1. A projector viewer comprising a base, a lamp housing mounted on said base and containing a lamp and light condenser lenses above said lamp, a pair of horizontally spaced, parallel rods extending forwardly and rearwardly on opposite sides of said housing, means on said housing slidably journalling said rods for horizontal, front-to-rear and rear-to-front sliding thereof relative to said lamp housing, a carriage mounted on said rods and movable horizontally therewith, a frame on said carriage, means on said carriage along the front and rear edges of said frame slidably guiding said frame for horizontal movement of said frame relative to said carriage in opposite directions transverse to the sliding movement of said rods, upper and lower, horizontal, transparent plates mounted on said frame directly above said light condenser lenses, a rotatable shaft having a knob on the front of said carriage, means rotatably journalling said shaft on said frame of said carriage, a rack mounted on and extending along the front edge of said frame, and a pinion on said shaft meshing with said rack, whereby said frame can be moved horizontally on said mounting means by rotation of said knob and whereby said carriage with said frame and transparent plates thereon can be moved back and forth by pushing or pulling said knob.

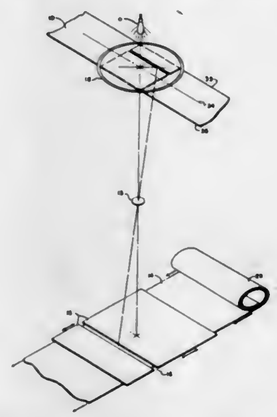
3,224,327
APPARATUS FOR PRODUCING UNIFORM EXPOSURE ACROSS THE WIDTH OF LIGHT SENSITIVE SHEETS
John J. Schulze, Prospect Heights, Ill., assignor to Addressograph-Multigraph Corporation, a corporation of Delaware
Filed Sept. 11, 1963, Ser. No. 308,123
8 Claims. (Cl. 88—24)

1. An exposing apparatus comprising means for feeding in timed relation sheet elements including an original to be copied and a light-sensitive material, exposure means including a scanning aperture for illuminating a narrow increment of said original and an imaging aperture for exposing said light-sensitive sheet, means to illuminate said original and a lens for projecting said increment light image transmitted from said original to said light-sensitive material as said elements pass the respective apertures and oval masking means oriented within said



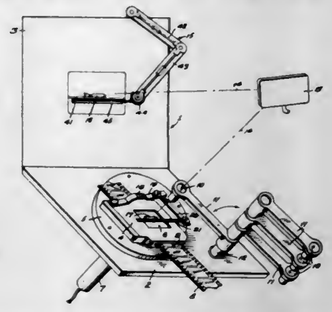
lens to restrict the passage of a portion of the light rays emanating from the central portion of said increment light image and transmitting those light rays emanating from the edge portions of said increment light image entering said lens whereby the light-sensitive sheet is uniformly exposed.

3,224,328
RECTIFIER FOR LINE-SCAN AERIAL IMAGES
Karl Leistner, Eatontown, N.J., assignor to the United States of America as represented by the Secretary of the Army
Filed Feb. 6, 1963, Ser. No. 256,776
5 Claims. (Cl. 88—24)
(Granted under Title 35, U.S. Code (1952), sec. 266)



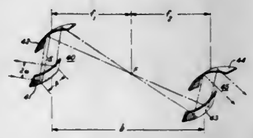
1. In combination with a processed line scan record, an apparatus for rectifying the distortion in the said record comprising means to illuminate said record, a focusing lens acting to project the image of the record upon a rectifying plane, a photosensitive sheet in said plane, a masking template overlying said sheet, said template having a narrow slot extending across its area and at right angles to the record scan lines, exposing means acting to move the template along and close to said sheet in a direction at right angles to said scan lines, driving means synchronized to said template driving means acting to move said sheet along the line of movement of the template and pattern actuated means acting to vary the speed of said sheet with respect to the template to effect rectification of the line scan image and thereby to print a rectified image upon said sheet.

3,224,329
STRAIGHT-EDGE OPTICAL DEVICE
Billy C. Gray, 720 Baca Road, Las Cruces, N. Mex.
Filed Dec. 10, 1963, Ser. No. 329,594
3 Claims. (Cl. 88—24)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. In combination with a film projector including a base, a head on said base, a window in said head, there being a film slot in said head, a source of light secured under said base and in alignment with said window, a mirror arranged to reflect light rays from said light onto said screen and an angle measuring member rotatable about said screen; a straight edge secured adjacent said head and rotatable about said window whereby said straight-edge may be aligned in parallel relationship with an image on a film in said slot and its shadow projected onto said screen and in the same alignment thereon as at said window whereby said angle measuring device may be aligned parallel with the shadow of said straight edge on said screen and its attitude measured by said angle measuring member.

3,224,330
OPTICAL REFLECTING SYSTEM FOR REDIRECTING ENERGY
Rudolf Kompfner, Middletown, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 22, 1961, Ser. No. 161,566
4 Claims. (Cl. 88—57)

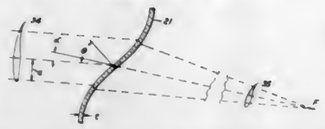


1. A transmission system for optical or near-optical wavelength energy comprising
a source of said wave energy having a given direction of propagation,
means for receiving said wave energy spaced away from said source,
and a plurality of means for changing the propagation direction of said energy,
each of said last recited means having a focal length f and comprising a first element having a cylindrical energy reflecting surface with a radius of curvature $2\sqrt{2}f$ lying in a first plane and a second element having a cylindrical energy reflecting surface with a radius of curvature $\sqrt{2}f$ lying in a second plane, which is substantially orthogonal to said first plane,
said first and second elements being separated a distance small with respect to f with reflecting surfaces facing each other,
said direction changing means being spaced apart from each other along said system a distance $2f$.

3,224,331
SINUSOIDAL SHAPED LENS FOR LIGHT WAVE COMMUNICATION

Rudolf Kompfner, Middletown, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Dec. 22, 1961, Ser. No. 161,591
6 Claims. (Cl. 88—57)



1. Means for focusing electromagnetic wave energy propagating in a plane parallel to the x, y plane of an x, y, z coordinate system and having wavelengths in the range between 10^{-2} and 10^{-6} centimeters, said means comprising a thin energy transparent dielectric lens of constant thickness having first and second surfaces with curvature of the form

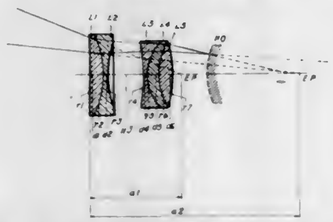
$$y=\sin\frac{x}{\beta}$$

for a given range of values of z where β is the wavelength of the sinusoid divided by 2π, said lens extending in said x direction substantially equal distances from the line $x=n\pi\beta$ ($n=0,1,2\ldots$) over a total range of values of x equal to or less than $\pi\beta$ units.

3,224,332
AFOCAL WIDE-ANGLE SUPPLEMENTARY OBJECTIVE

Berta Mikusch, Vienna, Austria, assignor to Karl Vockenhuber and Christl Hauser, both of Vienna, Austria

Filed May 1, 1962, Ser. No. 191,527
Claims priority, application Austria, May 10, 1961, A 3,680/61
3 Claims. (Cl. 88—57)



1. An afocal wide-angle supplementary objective for the use on the front of photographic objectives of different, positive refractive power comprising

a negative cemented front doublet component,

a positive cemented rear component axially aligned and approximately afocally spaced from said negative cemented front doublet component,

said positive cemented rear component consisting of one negative and two positive lenses cemented together and defining two cemented surfaces,

the rearmost of said two cemented surfaces having a positive refractive power,

the other of said two cemented surfaces having a negative refractive power,

both said cemented surfaces being concave to said following photographic objective,

said negative cemented front doublet component and said positive cemented rear component including abnormal glass pairs, whereby one lens of said glass pairs has a higher refracting index and a higher Abbé dispersion number than the other lens of said glass pairs,

said negative cemented front doublet component consisting of two lenses cemented together and defining one cemented surface,

said one cemented surface having a negative refractive power,

the surface of said negative cemented front doublet component remote from said positive cemented rear component being of a configuration within a range of being plane to being concave having a low curvature,

the radius of the outer surface facing said positive cemented rear component being at least approximately two-thirds of the absolute value of the focal length of said negative cemented front doublet component,

the difference of the refractive indices of the rearmost of said two cemented surfaces of said positive cemented rear component having a positive refractive power is at least 0.15,

the radius of said rearmost of said two cemented surfaces is no more than one-third of the focal length of said positive cemented rear component,

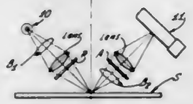
the difference of the refractive indices of said other of said two cemented surfaces of said positive cemented rear component having a negative refractive power is at least 0.07, and

the radius of said other of said two cemented surfaces is within a range of one-fourth to one-fifth of the focal length of said positive cemented rear component.

3,224,333
MAGNETO-OPTIC DEVICE EMPLOYING REFLECTIVE LAYER TO PROVIDE INCREASED KERR ROTATION

Anthony J. Kolk, Jr., Rolling Hills, and Milivoj Orlovic, Gardena, Calif., assignors to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland

Filed May 19, 1961, Ser. No. 111,231
9 Claims. (Cl. 88—61)

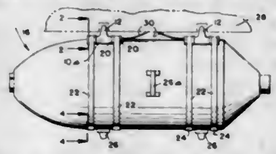


1. In a magneto-optic system, a magnetic device comprising a layer of magnetic material having a first surface for receiving an incident beam of light and a second surface opposite to said first surface, and an opaque layer of reflective material in uniform contact with said second surface, said layer of magnetic material having a thickness of less than 600 angstroms.

3,224,334
RETROFIT LUGS FOR BOMBS

Roman Curtis, Granada Hills, and Eugene J. Thirkill, Whittier, Calif., assignors to the United States of America as represented by the Secretary of the Navy

Filed Feb. 5, 1964, Ser. No. 342,835
2 Claims. (Cl. 89—1.5)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. Apparatus for suspending an elongated bomb from an aircraft bomb rack having a pair of longitudinally spaced suspension hooks for releasably engaging a pair of longitudinally spaced suspension lugs extending upwardly from the top of said bomb, said suspension lugs each comprising;

(a) a unitary integrally forged steel member formed of a pair of like rectangular elongated substantially flat plate members disposed in spaced apart parallel relation,

(b) said plate members being joined together solely midway between their longitudinally spaced ends by the ends of the legs of an inverted U-shaped member adapted to releasably engage a bomb rack hook,

(c) said plate members and U-shaped member being H-shaped as viewed in a plane perpendicular to the longitudinal axis of the bomb; and

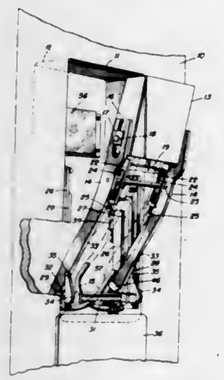
(d) a pair of tensioned bands extending completely around the bomb and over the plates, the bands being longitudinally spaced, one at each side of the U-shaped member, each band being formed of a single strip of metal having a uniform rectangular cross section throughout its length,

(e) the construction and arrangement being such that the lugs and their attaching bands remain affixed to the bomb when the lugs are released from said hooks.

3,224,335
UMBILICAL RETRACT MECHANISM

John F. Witherspoon, Mountain View, and Robert B. Garey, San Jose, Calif., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed Feb. 27, 1964, Ser. No. 347,971
15 Claims. (Cl. 89—1.7)



1. An umbilical retractor assembly for moving an umbilical connector away from a missile during the launching sequence of the missile, said retractor assembly comprising;

a housing,

two mutually spaced parallel retract arms,

said retract arms being pivotally supported at a first end thereof by said housing,

an umbilical connector attached to the second end of said retract arms,

a cam track means secured within said housing,

a cam follower means slidably disposed in said cam track means,

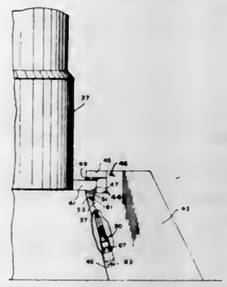
missile actuated means attached to said cam follower means for moving said cam follower means along said cam track means, and

retract arm engaging means attached to said cam follower means for rotating said retract arms about their respective first ends to move said umbilical connector into said housing.

3,224,336
MISSILE LAUNCH RELEASE SYSTEM

Timothy O. Eddins, Decatur, Ala., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed May 25, 1964, Ser. No. 370,134
9 Claims. (Cl. 89—1.7)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. In a missile launch release system combination of a launch pad support arm and a hold down clamp integral therewith and so arranged to provide a downward force to a missile supported by the support arm to maintain the static equilibrium of the missile prior to the missile engines building up to their rated lift-off or launch thrust, a predetermined constant retarding force and stroke energy absorber interconnected between said missile and said launch pad support arm comprising:

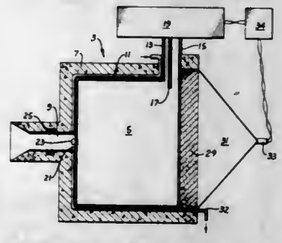
(a) an energy absorbing deformable element having a predetermined longitudinal dimension and thickness; and

(b) means for deforming said element throughout a predetermined portion of said longitudinal dimension while maintaining the stresses developed in said element by the deformation thereof below the element's ultimate strength, whereby a predetermined constant retarding force depending on the element's material, shape and thickness, is applied to the missile when the hold down clamps are released and the missile moves relative to said launch pad support arm.

3,224,337
HYPERVELOCITY GUN

Franklin C. Ford and Arthur T. Biehl, Walnut Creek, Calif., assignors to MB Associates, a corporation of California

Filed June 7, 1962, Ser. No. 200,770
3 Claims. (Cl. 89—8)



1. A hypervelocity gun utilizing a combination of electrical and chemical energy comprising in combination:

(a) a loop of an electrically conductive material;

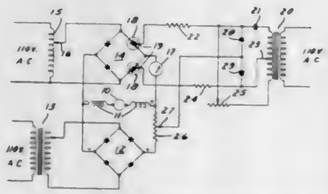
(b) a tamping material substantially enclosing said loop;

(c) an explosive charge at least partially surrounding the loop, said explosive charge being adapted to collapse the loop upon detonation of the charge;

(d) a source of electricity electrically charging the loop through leads thereto;

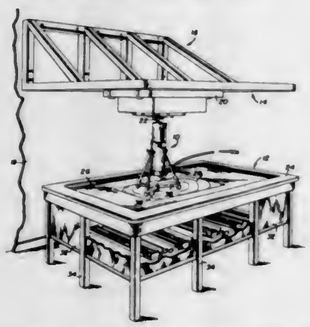
(e) an electric switch adapted to disconnect the leads from the source of electricity and to short circuit the leads;
(f) said electric switch being actuated by the explosive charge;
(g) an opening in one portion of the tamping material, said opening extending to the loop and forming a barrel;
(h) the loop being necked down in the vicinity of the opening thus forming a sabot from a portion of the loop;

3,224,338
METHOD OF AND MEANS FOR CONTROLLING THE REMOVAL OF MATERIAL WITH A CUTTING TOOL
Rollin A. Reynolds, Palos Verdes, Calif., assignor to Dyna Systems Inc., Torrance, Calif., a corporation of California
Filed Apr. 3, 1961, Ser. No. 100,049
6 Claims. (Cl. 90—11)



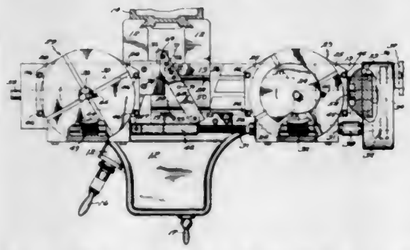
1. The method of removing material from a workpiece with a cutting tool driven by a power means, comprising the steps of; establishing a maximum speed of operation and maximum deliverable force for said power means; causing said power means to move said tool and said workpiece relatively in a cutting direction to remove material from said workpiece; sensing changes in the resistance to such cutting movement; causing said sensed changes to change the speed of movement of said tool in such manner that the actual speed of said tool, expressed as a percentage of said maximum speed, added to the actual force exerted on said tool, expressed as a percentage of said maximum force, is substantially constant.

3,224,339
METHOD AND APPARATUS FOR CUTTING TOPOGRAPHIC MODELS
Donald W. Nusbaum, Palo Alto, Calif. (1429 San Marcos Circle, Mountain View, Calif.), and Nils C. Nekalson, 2850 Illinois Ave., East Palo Alto, Calif.
Filed Dec. 16, 1963, Ser. No. 330,696
8 Claims. (Cl. 90—13.1)



1. The method of cutting a topographical model from a contour map comprising the steps of:
(a) suspending the work piece from which the model is to be cut to the underside of a substantially horizontal platform;
(b) placing a transparent, substantially horizontal, free standing surface below the suspended work piece and illuminating the transparent surface from below;
(c) placing the positive print of the contour map face down upon the transparent surface so that the contour lines visible from above are reversed;
(d) movingly supporting a vertically extensible and horizontally slidable contour cutter means upon the print covered transparent surface and following each reversed contour line; and
(e) successively adjusting the vertical height of the contour cutter means to correspond to the successive contour lines to be cut.

3,224,340
LEVERAGE PROPORTIONED TRACING MACHINE
Magnus Wahlstrom, Easton, Conn., assignor to The Bridgeport Machines Inc., Bridgeport, Conn., a corporation of Connecticut
Filed Nov. 28, 1962, Ser. No. 240,632
8 Claims. (Cl. 90—13.7)



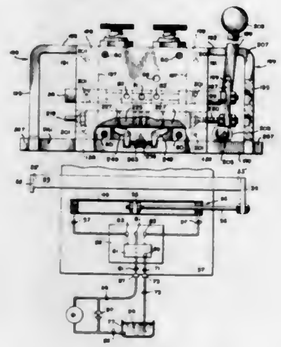
1. In a milling machine for duplicating in a rotating workpiece a configuration proportionally like that of a rotating pattern, the combination of an elongate saddle stationed on the milling machine having at least one rectilinear longitudinal guideway, a first carriage slidable along a guideway on said saddle, a first pattern carrying rotary table mounted on said first carriage, a second carriage slidable along a guideway on said saddle aligned straightaway lengthwise with said rectilinear guideway, a second work carrying rotary table mounted on said second carriage, means controlled by the configuration of a pattern rotating on said first table operative to cause rectilinear sliding movement of said first carriage in at least one direction along its said guideway, power means to rotate both of said tables simultaneously, a proportioning device extending in crosswise relation to said guideways between said carriages swingable about a hinge pivot stationed on said saddle and having movement transmitting connection with both of said carriages whereby said second carriage is caused to slide along its said guideway in proportion to sliding movement of said first carriage, and a milling cutter stationed in relation to said saddle in position to generate in the workpiece a configuration proportioned to that of the pattern.

ERRATUM

For Class 91—165 see:
Patent No. 3,224,020

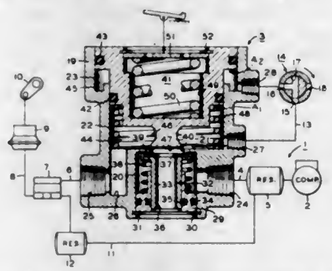
3,224,341
HYDRAULIC CONTROL APPARATUS
Arthur W. Bean, Marengo, Ill., assignor to Elmer M. Melahn, Algonquin, Ill.
Filed Nov. 9, 1962, Ser. No. 236,604
9 Claims. (Cl. 91—358)

2. Hydraulic apparatus for driving a movable member by applying fluid under pressure selectively in either one of a pair of fluid delivery and return conduits, while delivering fluid from the other of said conduits to a discharge receiver, at a regulated rate, to determine the rate of speed at which the member is driven, comprising an axially shiftable valve stem disposable selectively in position to block fluid flow, from a supply source of fluid under pressure, to both of said conduits, and in position to deliver fluid under pressure to either of said conduits, while the other is connected with said receiver, means to yieldingly support said valve in any selected one of its several relatively shifted positions including a mounting member shiftable on an axis parallel to and spaced from



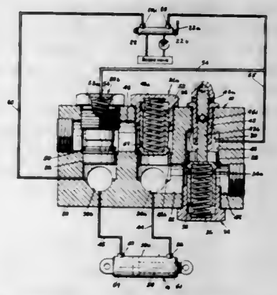
the axis of the valve stem, and positionable selectively in control positions corresponding with the several shifted positions of the valve, means to anchor the mounting member in said control positions, spring means supported on said mounting member for normally urging the valve stem toward the selected valve position corresponding with the control position in which the mounting member is anchored, latch means operable to retain said valve stem in position shifted from said selected position during travel of the movable member, and means operable to release the latch means when the movable member reaches a terminal position during its travel.

3,224,342
APPLICATION VALVE
Richard C. Bueler, Glendale, Mo., assignor to Wagner Electric Corporation, St. Louis, Mo., a corporation of Delaware
Filed Jan. 17, 1964, Ser. No. 338,367
9 Claims. (Cl. 91—434)



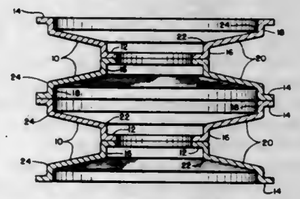
1. In a fluid pressure system comprising a fluid pressure source and a fluid pressure responsive motor, an application valve for controlling the application of fluid pressure from said source to said motor including manually controlled application means, said application means being movable in response to a manually applied force thereon to effect the application of fluid pressure from said source to said motor, a pair of reaction areas on said application means and responsive to applied fluid pressure acting thereon to oppose the manually applied force, and means for selectively subjecting one of said reaction areas to atmosphere, said application means being movable in response to the manually applied force when said one reaction area is subjected to atmosphere to effect the application of a proportionally increased fluid pressure to said motor acting on only the other of said reaction areas in opposition to the manually applied force.

3,224,343
FLUID POWER SYSTEM AND VALVE MECHANISM THEREFOR
Anthony Nevulis, Wickliffe, Ohio, assignor to The Ohio Brass Co., Mansfield, Ohio, a corporation of New Jersey
Filed Aug. 27, 1963, Ser. No. 304,894
14 Claims. (Cl. 91—436)



1. In a control valve for use in a pressurized fluid power system for controlling the actuation of a fluid powered motor unit adapted to raise and lower a load comprising, a body, a plurality of biased check valve mechanisms mounted in said body, each of said valve mechanisms comprising a valve seat having inner and outer ends and a biased valve member adapted for sealing engagement with the inner end of said valve seat, a plurality of fluid passing ports in said body, each of said ports communicating with a respective one of said valve mechanisms and communicating said respective valve mechanism with the exterior of said body, each of said ports being in constant communication with the outer end of the respective valve seat in a direction away from the respective valve member, so that predetermined fluid pressure at the respective of said ports will be operative to actuate the respective valve member in a direction away from the inner end of its respective valve seat, and passageway means in said body communicating the inner ends of the valve seats of at least a pair of said valve mechanisms with one another.

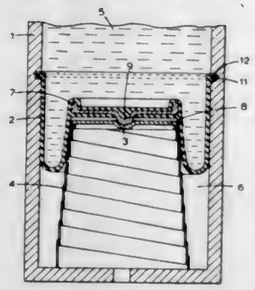
3,224,344
MECHANICAL QUANTIZER
Dwight M. Baumann, Cambridge, David E. Hanson, Brockton, and Raymond Shamle, Norwood, Mass., assignors to Metal Bellows Corporation, Sharon, Mass.
Filed Aug. 6, 1963, Ser. No. 300,367
7 Claims. (Cl. 92—45)



1. A bellows having at least two stable configurations, said bellows comprising

(a) a plurality of annular diaphragms, each of said diaphragms having inner and outer marginal portions,
(b) means interconnecting said diaphragms in a bellows arrangement to provide for expansion and contraction of said bellows along an axis,
(c) a plurality of said diaphragms being deformable along said axis,
(d) each of said deformable diaphragms having
(1) a generally frustoconical portion between said inner and outer marginal portions, and
(2) inner and outer flexure joints between said marginal portions and said frustoconical portion thereof,
(e) said frustoconical portions of said deformable diaphragms being elastically deformable to provide for relative movement along said axis of said inner and outer marginal portions thereof,
(f) said interconnecting means providing for sufficient relative axial movement of said inner and outer flexure joints of each of said deformable diaphragms to permit reversal of the relative positions thereof along said axis,
(g) whereby each of said deformable diaphragms has a first stable configuration in which said inner and outer flexure joints thereof have a first order in one direction along said axis and a second stable configuration in which said first and second joints have the reverse order in said direction.

3,224,345
DIAPHRAGM SUPPORT
Hans Peter Doetsch, 32 Altdrossenfeld, uber Bayreuth, Germany
Filed July 10, 1963, Ser. No. 293,999
Claims priority, application Germany, July 16, 1962, D 39,384
4 Claims. (Cl. 92—94)

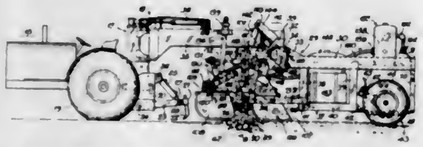


1. A diaphragm assembly for installation in a housing, said assembly comprising a fluid impervious flexible diaphragm in the form of an elongate sleeve having an open end and a closed end, the open end being adapted to be secured peripherally in and to the wall of the housing to partition the housing into two chambers, a frustoconical spring comprising a plurality of turns, formed from a flat strip of resilient material and disposed at one side of and coaxial with the said sleeve, the flat surfaces of the strip being substantially parallel to the axis of said spring, each turn being in sliding engagement with adjacent turns, the apical end of the frustoconical spring opposing the said closed end of the sleeve, bearing means comprising two members, one comprising a plate with a recess therein secured to said apical end of the spring and the other comprising a plate with a boss projecting therefrom secured to said opposed end of the sleeve, said bearing means providing rotational movement between said apical end of the spring and said opposed end of the diaphragm while preventing relative radial displacement thereof, and said sleeve length being such as to form a deep rolling loop outwardly of the spring when the spring is in an extended position.

3,224,346
TERRAZZO REPAIR PROCESS
Anthony J. Simonson, Yardley, and David H. Packer, Levittown, Pa., assignors to Thiokol Chemical Corporation, Bristol, Pa.
No Drawing. Filed Mar. 31, 1961, Ser. No. 110,838
13 Claims. (Cl. 94—22)

1. A process for the repair of void areas of approximately 2 to 10 mils in depth between a terrazzo floor installation and a base structure comprising detecting said void areas, drilling a plurality of spaced repair holes through the terrazzo floor into the detected void areas whereby said repair holes allow access to said void areas from the surface of said installation, forcing a cureable flexibilized epoxide resin adhesive repair composition through said repair holes and into said void areas to fill said void areas, said forcing being conducted in such a manner that at least one of said repair holes serves as weep holes while said repair composition is being forced through at least one other of said repair holes, allowing said repair composition to cure in said void areas and bond said terrazzo installation to said base structure and restoring said repair holes to approximately their original condition.

3,224,347
SOIL PROCESSING MACHINE
Harry J. Seaman, 4505 W. Roosevelt Drive, Milwaukee, Wis.
Filed Apr. 22, 1963, Ser. No. 274,621
4 Claims. (Cl. 94—40)

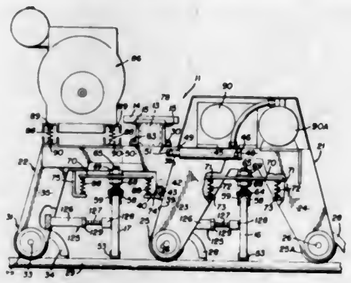


3. In a machine for road building, a frame movable over a ground surface, a rotor rotatable on a generally horizontal axis transverse to said frame and provided with soil-penetrating mixing projections, means for yieldably supporting said rotor from said frame, power means driving said rotor including a gear housing adjacent an end of said rotor and having therein drive gearing including an output shaft journalled in said housing and coaxially coupled to said rotor, said housing being angularly displaceable about the common axis of said output shaft and said rotor, said frame means including a power unit carried by said frame and a driving connection between said power unit and said gear housing, and resilient restraining means operatively connecting said frame and said housing to limit the angular displacement of said housing about the rotor axis for thereby absorbing shocks imparted to said rotor during the rotation of said rotor.

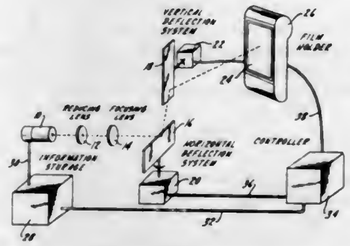
3,224,348
VIBRATING SCREED
Hamilton J. Maginnis, 563 Russell Road, Mansfield, Ohio
Filed May 9, 1962, Ser. No. 193,468
9 Claims. (Cl. 94—48)

9. A screed machine comprising, spaced apart, parallel, individual dollies, a transverse beam extending between said dollies, connecting means for fastening said transverse beam to each of said dollies, said connecting means adapted to loosely fasten said transverse beam to said dollies in a horizontal plane and simultaneously assure

the lateral stability of said dollies, tandem screed boards extending transversely between said dollies, vibrating means mounted on each of said screed boards for individually vibrating each of said screed boards, grip means securely holding each of said screed boards in proximity to each of said dollies, a floating plate attached to each said grip means and movable with respect thereto along the axis of said screed boards, resilient means connecting each floating plate to its respective dolly, means for individually adjusting the vertical disposition of each of said screed boards with respect to said dollies, and power means mounted on said dollies for selectively propelling each dolly independently of the other to permit controlled skewing of the screed boards while the machine is in operation, the movement of each said floating plate along the axis of the screed board with which it is associated permitting limited lateral movement of said screed boards with respect to said dollies when said screed boards are vibrated and skewed.

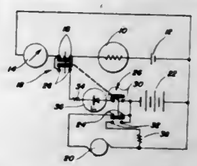


3,224,349
ELECTRO-OPTICAL PRINTER AND CONTROLS THEREFOR
Robert W. Schumann and Norman S. Jones, Madison, Wis., assignors to Nuclear Data, Inc., Madison, Wis., a corporation of Illinois
Filed Apr. 18, 1963, Ser. No. 273,869
12 Claims. (Cl. 95—4.5)



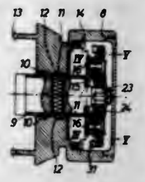
1. In a high speed recording system, means for producing electromagnetic radiation, on command, in the shape of any one of a plurality of characters, an electromagnetic radiation sensitive recording medium, movable electric-current operated radiation-deflecting means positioned between said radiation producing means and recording medium, control means for providing current to move said deflecting means to position a character image on a limited area of said recording medium including a digital to analog current converter, and means for cutting off the current to said deflecting means during non-recording periods including a diode in circuit between said digital to analog current converter and said current operated deflecting means, and circuit means for applying a negative voltage to the anode of said diode during non-recording periods.

3,224,350
BATTERY TEST CIRCUIT CAMERAS
Allen G. Stimson, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Feb. 18, 1964, Ser. No. 345,775
4 Claims. (Cl. 95—10)



1. In a camera having a battery and having a photoelectric exposure control system including an electric measuring instrument with a member deflectable in accordance with energization of said instrument, a battery test circuit comprising, in combination: a Zener diode; and switching means for connecting said diode in series with said battery and said instrument for imparting a large deflection to said member if the output voltage of said battery is above a predetermined level and for imparting substantially no deflection to said member if the output voltage of said battery is below said level.

3,224,351
STRUCTURE FOR RENDERING A ZOOM LENS OPTIONALLY ADJUSTABLE BY HAND OR BY MOTOR
Helmut Strasser, Munich-Solln, Germany, assignor to Agfa Aktiengesellschaft, Leverkusen-Bayerwerk, Germany, a corporation of Germany
Filed July 17, 1962, Ser. No. 210,529
Claims priority, application Germany, July 29, 1961, A 38,012
6 Claims. (Cl. 95—45)



1. For use with a zoom lens, in combination, elongated support means; a single manually shiftable means carried by said support means for longitudinal shifting movement therealong between a hand-position and a motor-position, said support means also supporting said shiftable means for rotary movement relative to said support means; a first gear carried by said shiftable means for movement therewith and adapted to participate in the actuation of structure for changing the focal length of the zoom lens when said manually shiftable means is rotated relative to said support means after said manually shiftable means has been shifted to said hand-position thereof; a second gear carried by said shiftable means for movement therewith; electrical switch means connected electrically with a motor which is adapted to drive a structure for changing the focal length of the objective, said electrical switch means including a third gear located in the path of movement of said second gear when said shiftable means is shifted to said motor-position thereof and meshing with said second gear when said shiftable means is in said motor-position thereof so that upon turning of said manually shiftable means relative to said support means when said shiftable means is in said motor position thereof said second and third gears will cooperate to actuate said switch means for controlling the motor.

3,224,352
REFLEX-COPYING
Joseph Valette and Georges Voisin, Lyon, France, assignors to Société Lumière, Paris, France, a company of France

Filed Sept. 14, 1962, Ser. No. 223,689
1 Claim. (Cl. 95—73)



A method for the reproduction of a page of a bound book by reflex-copying, which comprises:

(a) opening the said book to the page desired to be copied so that an acute angle is formed between the said page and the opposite page;

(b) placing a sheet of photographic material into intimate contact with the page to be copied, the photosensitive surface of said photographic material being in contact with said page to be copied;

(c) inserting into the book between the said photographic material and the page opposite the page to be copied a substantially parallel-sided plate of a transparent material, the face of the plate adjacent the photographic material being ground;

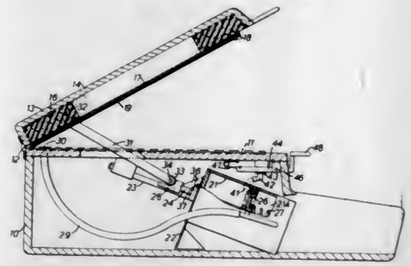
(d) directing a beam of light into the opening between the said pages of the said book; and

(e) internally reflecting said light beam before it reaches said photographic material, by directing the light beam in said opening into the said plate through one of its edges, whereby it undergoes successively total internal reflection at the surface of the plate remote from the photographic material and partial reflection at the surface of the photographic material, thus illuminating said photographic material and said page to be copied by the said reflected light beam;

(f) the degree of grinding of the surface of the plate adjacent the photographic material being so graded in accordance with the distance from the edge of the plate at which the light beam enters the plate that the surface of the photographic paper remote from the page to be reproduced is substantially evenly illuminated.

3,224,353
PHOTOGRAPHIC CONTACT PRINTING APPARATUS
Harold G. Jones, Bon Accord, Sea Road, Littlehampton, England

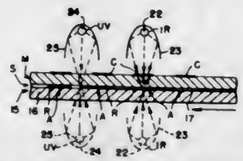
Filed Sept. 30, 1963, Ser. No. 312,402
Claims priority, application Great Britain, Oct. 1, 1962, 37,066/62
5 Claims. (Cl. 95—76)



1. Photographic contact printing apparatus comprising a box containing a source of printing light, a bed on top of the box for the location thereon of photographic papers to be exposed, a lid hingedly connected to the box, a flexible blanket carried by the lid, sealing means which border a trapped space between the blanket and the box when the lid is in a closed position, a vacuum pump having its working space connected to said trapped space, and a mechanical linkage connecting the lid and the pump for actuating the pump to create a partial vacuum in said trapped space in response to closing movement of the lid.

3,224,354
APPARATUS FOR MAKING COPIES ON RAY SENSITIVE SHEETS UPON EXPOSURE TO ULTRAVIOLET AND INFRARED RADIATION
Joseph E. Dietzgen, Highland Park, and Hubert J. Thomiszer, Skokie, Ill., assignors to Eugene Dietzgen Co., Chicago, Ill., a corporation of Delaware

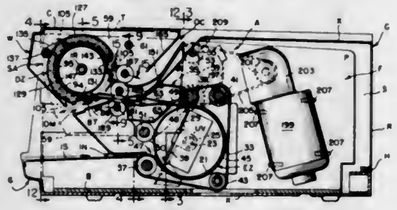
Filed July 7, 1960, Ser. No. 41,291
4 Claims. (Cl. 95—77.5)



1. Apparatus for making copies of graphic material on a ray sensitive copying sheet containing a diazo compound, an azo coupling component and a substance capable of evolving an azo developing medium when heated, comprising means forming a source of radiation containing ultraviolet rays, means forming an infrared ray emitting source, and carrying means for supporting, in stacked sandwich forming relation, a copying sheet and a graphic original carrying graphic material to be copied, said carrying means serving to support the sandwich in position to receive the impact of infrared rays emitted by said source upon the graphic material to be copied, to thereby heat the same to a temperature sufficient to cause evolution of the developing medium, in azo developing quantities, in the areas of the copying sheet in registration with the heated portions of the graphic original to be copied, and then in position to expose the sensitive copying sheet to ultraviolet rays emitted by said source of radiation.

3,224,355
APPARATUS FOR MAKING PRINTS
Hubert J. Thomiszer, Skokie, Ill., assignor to Eugene Dietzgen Co., Chicago, Ill., a corporation of Delaware

Filed July 31, 1962, Ser. No. 213,630
3 Claims. (Cl. 95—77.5)

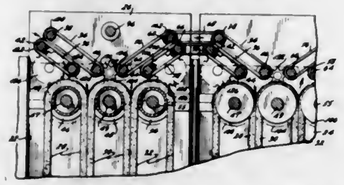


1. In apparatus for making copies of graphic material having means forming initial and final treatment zones, a main frame upon which the means forming one of said zones is mounted, an auxiliary frame carrying the means forming the other of said zones, said auxiliary frame being mounted on the main frame for swinging movement, about a pivot axis, between normal position adjacent and overlying and retracted position exposing said main frame mounted zone forming means, initial conveying means on one of said frames for delivering sheet material to be processed through said initial treatment zone, final conveying means on the other of said frames for delivering sheet material through said final treatment zone and thence to a sheet discharging station, transfer means for delivering sheet material between said initial conveying means and said final conveying means, and a driven member for actuating the conveying means on one of said frames, the combination, with said driven member, of a driving member turnable about said pivot axis and drivingly connected with said driven member and with a motor on the other of said frames.

2. In apparatus for separating a pair of stacked layers of sheet material comprising a pair of elongated spaced apart members having mutually divergent surfaces, a partition having a leading edge disposed between the divergent surfaces of said spaced members, and means to draw the layers each upon a corresponding one of said divergent surfaces to separate the layers progressively and deliver the same upon the opposite sides of the partition, the combination, with said partition, of transfer means comprising a pair of rollers disposed on opposite sides of the partition and having mutual rolling contact in an opening formed in the partition, whereby the partition extends substantially tangential to both rollers at the line of their rolling contact.

3,224,356
PHOTOGRAPHIC SHEET MATERIAL PROCESSING APPARATUS
Marvin B. Fleisher, Wantagh, and Philip E. Hixon, Jericho, N.Y., assignors to The Rolor Corporation, Syosset, N.Y., a corporation of New York

Filed Apr. 24, 1963, Ser. No. 275,360
6 Claims. (Cl. 95—94)

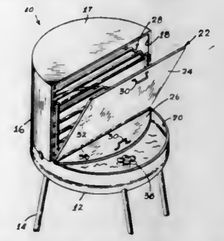


1. Photographic sheet material processing apparatus comprising a pair of adjacent treating tanks, each of said tanks having first, second and third endless belts with adjacent runs of the belts abutting to form a downward and an upward vertical pass through the tank, the second belt at its lower end being trained around a support roller, a roller for supporting said first belt positioned below said first named support roller, the axes of said rollers being substantially in vertical alignment so that said first and second belts continue to abut over portions of the peripheries of said support rollers, feed means for introducing sheet material into said downward pass, and means for conveying the material from one tank to another, said last mentioned means including upwardly inclined upper and lower flexible bands for receiving the material from between adjacent runs of said second and third endless belts and further including essentially horizontal endless bands for receiving the material from between the inclined flexible bands and for conveying the material to the feed means of an adjacent tank.

3,224,357
FOOD SMOKER ATTACHMENT FOR HOODED BRAZIERS
George J. Rubens, Woodland Hills, Calif. (8604 Melody Court, Bethesda, Md.)

Filed Jan. 10, 1964, Ser. No. 337,004
10 Claims. (Cl. 99—259)

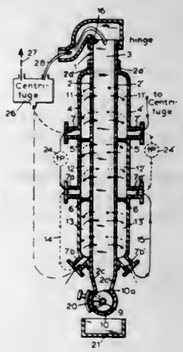
1. A food smoking kit for use on a brazier having a basin and a hood mounted thereon partially covering a portion of said basin, said smoking kit comprising a pair of closure members, means for pivotally mounting the closure members, one of said closure members being supportable on the basin in a horizontal position for covering a remaining portion of the basin, another of said closure members being supportable vertically on the basin to close a vertical opening in the hood, means for providing a vent opening at the upper end of the hood for



the escape of the smoke generated; a grill, means for supporting the grill within the hood, means for securing said vertical closure member in an upright position, whereby smoke generated in the basin beneath said horizontal closure member will flow laterally and upwardly through the grill and out said vent opening to smoke effectively in an indirect manner any food supported on the grill.

3,224,358
APPARATUS FOR RECOVERING FERMENTABLE LIQUORS
Walter Spielvogel, Essen, Germany, assignor to Weigelwerk G.m.b.H., Essen, Germany, a corporation of Germany

Filed Nov. 22, 1961, Ser. No. 154,146
Claims priority, application Germany, Nov. 23, 1960, W 28,981
8 Claims. (Cl. 99—278)

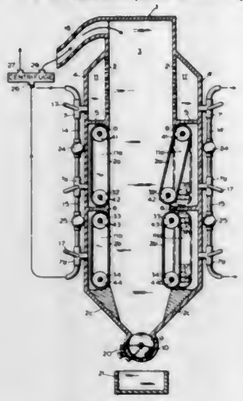


1. An apparatus for extracting liquor from a pulpy mass, comprising wall means forming a generally upright duct, said wall means including a plurality of vertically spaced perforated portions located in pairs on opposite sides of said duct, respective fluid-inlet means for a flushing liquid at one of said perforated portions of each of said pairs, respective fluid-outlet means for the recovery of said flushing liquid together with the extracted liquor at the other of said perforated portions of each of said pairs, feed means at an upper end of said duct for admitting said mass into same, continuously operative discharge means for the spent mass at the lower end of said duct, and conduit means for connecting a lower one of said outlet means with an upper one of said inlet means thereby passing said liquid iteratively through said mass.

3,224,359
APPARATUS FOR THE CONTINUOUS RECOVERY OF FERMENTABLE LIQUORS

Walter Spielvogel, Essen-Bredeney, Germany, assignor to Weigelwerk A.G., Essen, Germany, a corporation of Germany

Original application Apr. 11, 1962, Ser. No. 186,799, now Patent No. 3,135,610, dated June 2, 1964. Divided and this application Aug. 1, 1963, Ser. No. 303,979
5 Claims. (Cl. 99—278)

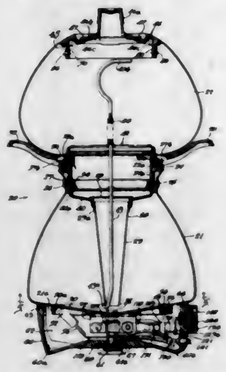


1. An apparatus for extracting liquor from a pulpy mass, comprising an upright generally elongated housing provided with inner wall means forming a duct for descent of the mass, said wall means comprising at least one conveyor alongside the mass in said duct and movable generally therealong, said conveyor being provided with perforations for the passage of liquor extracted from the mass, outer wall means forming a plurality of chambers for the extracted liquor with said inner wall means, fluid-inlet means connected to one of said chambers, fluid-outlet means connected to another one of said chambers, said duct having an upper entrance end for the admission of the mass and a lower exit end for its discharge, and feed means for driving said conveyor.

3,224,360
AUTOMATIC COFFEE MAKER

Chester H. Wickenberg, Elgin, and Moises B. Lorenzana, Glen Ellyn, Ill., assignors to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois

Filed June 14, 1961, Ser. No. 117,079
8 Claims. (Cl. 99—292)

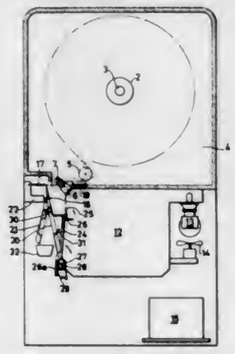


2. A vacuum type coffee maker comprising an open top lower vessel having means defining a circular opening in the top thereof, an upper vessel having a cylindrical depending portion readily receivable in said opening, an annular groove defined in the periphery of said depending portion, an annular resilient sealing member of circular cross section disposed in said groove, said cylindrical portion with said sealing member disposed in said groove being inserted into said opening and removable therefrom, and means on said upper vessel for camming said sealing member to tend to move it out of said groove and into sealing engagement with both said first-mentioned means and said cylindrical portion thereby to insure a good seal between said vessels.

3,224,361
AUTOMAT FOR HEAT TREATMENT AND DELIVERY OF FOOD-STUFFS

Göran Axel Runo Öjelid, Huskvarna, Sweden, assignor to Husqvarna Vapenfabriks Aktiebolag, Huskvarna, Sweden

Filed Feb. 21, 1962, Ser. No. 174,890
Claims priority, application Sweden, Feb. 25, 1961, 2,015/61; Mar. 13, 1961, 2,632/61
12 Claims. (Cl. 99—332)



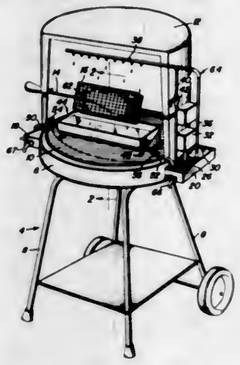
1. In an automat for heat treatment and delivery of articles of food, the improvement comprising:
- an oven for heat treatment of said articles by microwave irradiation,
- means including a cathode for generating a field of microwaves to effect said irradiation,
- means for heating said cathode to a working temperature, at which said field is generated, from a substantially lower temperature in a given time,
- delivery means for delivering a said article into said oven for heat treatment therein and then out of the oven for use, and
- means for maintaining said cathode at said working temperature, after said delivery out of the oven, for an interval greater by a multiplicity of times than said given time, and
- means operative upon the demand of a said heated article for (a) operating said heating means and then said delivery means after said given time, if said cathode is at said lower temperature when the said demand is received, or (b) operating said delivery means immediately if said interval is existing, so as to preclude the necessity of heating the cathode to said working temperature for demands occurring during said interval.

3,224,362
AUTOMATIC BASTER FOR BRAZIERS

John J. Kozar, 800 Carl Ave., New Kensington, Pa.

Filed Sept. 11, 1964, Ser. No. 395,779
5 Claims. (Cl. 99—346)

1. In combination, a brazier including a fire bowl, a pair of basting fluid supply pans mounted on opposite side portions of said fire bowl and solely therefrom, a spit supported from said bowl and for rotation about an axis spaced vertically above said bowl and extending between said opposite side portions thereof, a grill supported from said bowl and overlying the bottom thereof in vertically spaced relation thereto, a drip pan supported from said grill, extending beneath said spit, and including low opposite end bottom portions thereof adjacent said opposite side portions, a pair of valved drain conduits each having one end connected to, supported from, and communicating with a corresponding low opposite end portion of said drip pan, the other ends of said drain conduits being disposed over said basting fluid pans for selective discharge of fluids

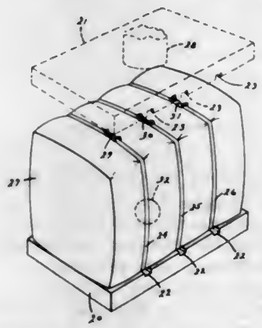


caught in said drip pan into said supply pans, and a spraying unit including a submersible fluid pump including a fluid delivery pipe supported solely from said pump and projecting upwardly therefrom and terminating at its upper end in a laterally directed generally horizontally disposed spray pipe adapted to discharge basting fluid downwardly therefrom at points spaced longitudially therealong, the fluid pump of said spraying unit being selectively removably positionable in said supply pans for sole support of said spraying unit from the corresponding supply pan and with said spray pipe generally paralleling the axis of rotation of said spit, spaced above the latter and extending toward the remote side portion of said fire bowl.

3,224,363
METHOD OF BALING

James E. Talbot, Wynnewood, Pa., assignor, by mesne assignments, to FMC Corporation, San Jose, Calif., a corporation of Delaware

Original application Mar. 27, 1963, Ser. No. 268,232. Divided and this application Dec. 9, 1963, Ser. No. 329,048
3 Claims. (Cl. 100—3)

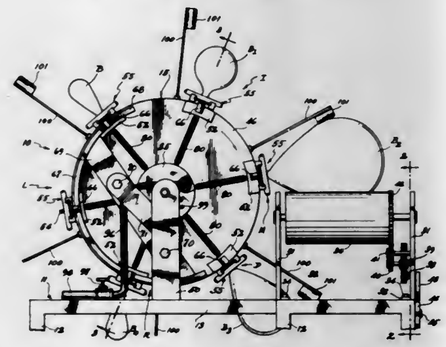


1. A method of baling comprising compressing the material to be baled between a pair of platens having bale tie receiving slots therein to thus form a compressed bundle, securing a bale tie about the bundle with the securing means for the tie located on a side of the bundle not engaged by a platen, slipping the secured tie about the bundle to position the securing means on a face of the bundle engaged by one of the platens, and releasing the compressive force of the platens.

3,224,364
BALLOON MARKING MACHINE

Dominick Terzuoli, Brooklyn, N.Y., assignor to Miner Industries, Inc., New York, N.Y., a corporation of Delaware

Filed Dec. 16, 1963, Ser. No. 330,693
9 Claims. (Cl. 101—37)



1. A machine for marking toy balloons comprising
- conveyor means including a plurality of nipples moving in spaced apart relation along a closed path and each adapted to extend into a balloon to be marked, and a clamp mechanism associated with each nipple for securing a balloon on the latter;
- control means for said clamp mechanism operative to open the latter during movement of the clamp mechanism and associated nipple along a first portion of said path for permitting the placement of a balloon on the nipple and to cause closing of the clamp mechanism during movement along the remaining portion of said path, thereby to secure the balloon on the nipple;
- means for supplying compressed air to each nipple during movement of the latter along an initial part of said remaining portion of the path, thereby to inflate the balloon secured on the nipple;
- marking means located adjacent said remaining portion of the path at a location following said initial part and being engageable with each inflated balloon to mark the latter; said
- means for venting each nipple to atmosphere after passing said marking means and prior to return to said first portion of the conveyor path so that each marked balloon is deflated before being freed by the clamp mechanism for removal from the related nipple.

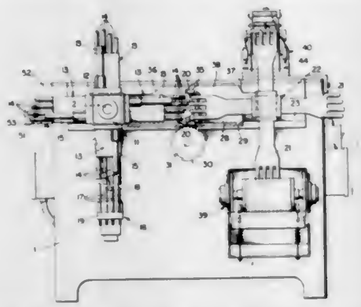
3,224,365
PRINTING ATTACHMENT FOR GLOVE TURNING MACHINES

Robert T. Crumbliss, Chattanooga, Tenn., assignor to The Singer Company, New York, N.Y., a corporation of New Jersey

Filed Jan. 13, 1964, Ser. No. 337,487
7 Claims. (Cl. 101—43)

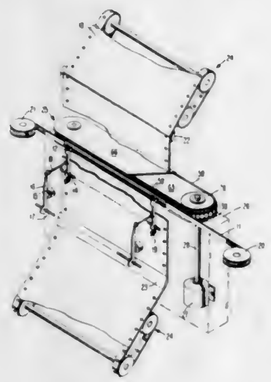
1. In a glove turning machine, a first hand element and means for moving the same from a loading position wherein it is adapted to receive a glove to a transfer

position, a second hand element and means for moving the same from a transfer position opposed to the transfer position of said first hand element to a printing position and to a glove unloading position, a transfer mechanism for removing a glove from said first hand element in the transfer position and transferring it onto said second hand element and for inverting the same as it is transferred, a printer for printing on a glove on the second hand element in the printing position, and actuating means for said



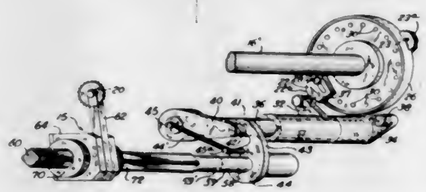
printer to impart a printing stroke thereto and means for controlling said actuating means comprising a relay, sensing means for electrically engaging said first hand element to determine whether a glove of a selected hand is on the same and for closing said relay in response thereto, and means in series with said relay and said actuating means for actuating said printer when the glove on said first hand element at the time of engagement by said sensing means is subsequently in printing position on the second hand element.

3,224,366
TYPE CARRIER DEVICE
James M. Cunningham, Endwell, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Mar. 28, 1963, Ser. No. 268,757
10 Claims. (Cl. 101—93)



1. In a printer apparatus in which hammer means strikes a print medium against moving type, a type mechanism comprising in combination,
(a) type support means,
(b) a continuous monorail on said support means forming a longitudinal guide path,
(c) a type train carried by said support means comprising a plurality of individual type elements slidable on said monorail and in abutment with each other during longitudinal motion along said guide path,
(d) means for moving said type train longitudinally along said monorail,
(e) and means for removing foreign particles collecting on said type elements form interacting surfaces of said monorail and said type elements comprising
(f) groove means in said monorail having wiping edges for contacting surfaces of said type elements slidable on said monorail.

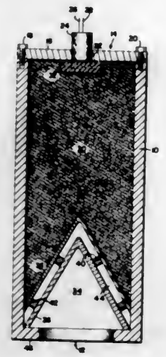
3,224,367
MARKING MECHANISM FOR USE WITH SHEET MATERIAL
Norman K. Henkel, Dayton, Ohio, assignor to Harris-Intertype Corporation, Cleveland, Ohio, a corporation of Delaware
Filed Nov. 5, 1962, Ser. No. 235,393
5 Claims. (Cl. 101—226)



1. In a device of the class described, marking means for marking on sheet material advanced relative thereto and movable periodically between active and inactive positions into and out of engagement with the sheet material, respectively, means supporting said marking means for movement between said active and inactive positions, operating means connected to said marking means to move said marking means between its said positions and including a member movable between first and second positions for effecting movement of said marking means between said inactive and active positions, a latch part operatively associated with said member and engageable therewith to releasably hold said member in its first and second positions, first and second trip means movable in timed relationship to the advance of said material and operatively connected to said member to force said member from said first position to said second position and from said second position to said first position, respectively, and means for changing the time of operation of one of said first and second trip means relative to the other, said latch part comprising a hook-like part connected to said marking means for movement therewith, and said hook-like part includes a pair of recesses for receiving a portion of said member when said member is in its first and second position, respectively, and wherein said device further includes spring means biasing said hook-like part into engagement with said portion of said member and frictionally holds said member in the recesses.

3,224,368
DUAL LINER SHAPED CHARGE
Alfred M. House, Hopkins, Minn., assignor to Honeywell Inc., a corporation of Delaware
Filed Sept. 10, 1964, Ser. No. 395,431
9 Claims. (Cl. 102—24)

6. In a shaped explosive charge device:
(a) a shaped charge of explosive having a cavity formed therein;
(b) a first liner lining said cavity;
(c) a second liner having an impedance to the propagation of a detonating wave that is greater than said first liner; and



(d) means for mounting said second liner adjacent said first liner such that an open space is provided between said liners.

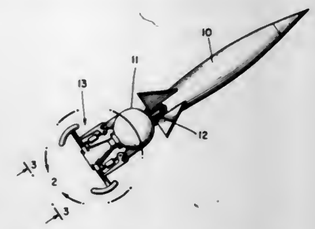
3,224,369
MISSILES AND OTHER AERIAL BODIES
Albert John Dunn, Bangor, and Robert George Brown, Cregagh, Belfast, Northern Ireland, assignors to Short Brothers & Harland Limited, Belfast, Northern Ireland, a British company
Filed July 12, 1963, Ser. No. 294,657
Claims priority, application Great Britain, July 23, 1962, 28,291/62
17 Claims. (Cl. 102—34.1)



1. A missile or other aerial body comprising a detachable recovery unit, a main parachute and a pilot parachute housed in said recovery unit, ejection means responsive to a control signal to thrust the recovery unit clear of the missile, a releasable securing element in the recovery unit, flexible support means connected between the missile and the securing element, means conecting the main parachute between the releasable securing element and the recovery unit whereby upon release of the securing element the main parachute is deployed between the recovery unit and the missile, a release mechanism mounted on the recovery unit and connected to the pilot parachute, said release mechanism being responsive to a reduction in the drag on the pilot parachute to a predetermined value after deployment thereof to release said securing element to cause the main parachute to be deployed.

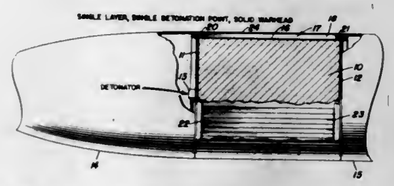
3,224,370
BOOSTER ROCKET
Richard Vogt, Santa Barbara, Calif., assignor to Curtiss-Wright Corporation, a corporation of Delaware
Filed July 27, 1959, Ser. No. 829,913
2 Claims. (Cl. 102—49)

1. A rocket-missile combination comprising a missile; a rocket unit coupled to the missile at the rear end of said missile, said coupling being such that the rocket unit automatically separates from the missile during flight upon a substantial reduction in the forward thrust of the rocket unit, said rocket unit including an exhaust nozzle; exhaust gas deflecting means having a first position in which said deflecting means is disposed out of the flow path of the rocket exhaust gases discharging through said nozzle and having a second position in which said deflecting means is disposed in the flow path of at least a portion of said exhaust gases for substantially reducing the rocket forward thrust; and means operable for causing said de-



flecting means to move from its said first position to its said second position to effect separation of said rocket unit and missile, said last mentioned means including controllable means responsive to a predetermined flight condition for causing said deflecting means to move to its said second position.

3,224,371
WARHEAD FOR MISSILES
Marvin L. Kempton, Socorro, N. Mex., and Eugene L. Nooker, Silver Spring, Md., assignors to the United States of America as represented by the Secretary of the Navy
Filed June 7, 1956, Ser. No. 590,077
2 Claims. (Cl. 102—67)

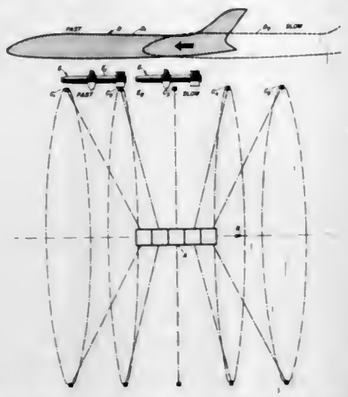


1. A warhead for a missile, including an explosive charge, a plurailty of detonators in one end of the explosive charge, a plurality of rod elements interconnected at their alternate opposite ends, means for initially retaining them in parallel relation, and means for controlling the detonation wave produced upon simultaneous initiation of the detonators and consequent explosion of the charge, for breaking said first-mentioned means and releasing the rod elements, said explosive charge projecting the interconnected rod elements as an arcuate projectile, said first-mentioned means including tabs formed at the ends of the rod elements, end plates at opposite ends of the rod elements, a weld securing an end plate to the tabs at each end of the warhead, said tabs defining grooves between the elements and the end plates, and spalling tubes in the grooves.

3,224,372
MULTI-PROJECTILE CONTINUOUS ROD WARHEAD
Eugene L. Nooker, Silver Spring, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed May 12, 1958, Ser. No. 734,806
11 Claims. (Cl. 102—67)

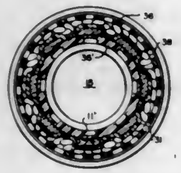
1. A multi-projectile continuous rod warhead comprising a detonating high explosive projectile-propelling charge, a detonator for the charge, a plurality of structurally independent continuous rod projectiles surrounding the charge in tandem and engaging the outer surface of said charge, means connecting confronting ends

of the independent projectiles, and means retaining the free ends of the projectiles in place on the charge, each of said independent continuous rod projectiles comprising a



plurality of generally parallel rod elements rigidly connected at their opposite corresponding ends and distributed uniformly about said charge.

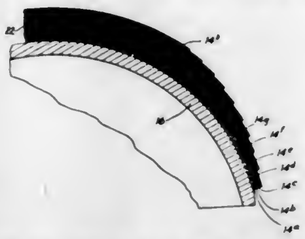
3,224,373
IGNITER DEVICE FOR SOLID BODY OF PYROTECHNIC MATERIAL
Jack M. Kramer, Los Alamitos, Calif., assignor to Aerojet-General Corporation, Azusa, Calif., a corporation of Ohio
Filed May 1, 1963, Ser. No. 277,392
1 Claim. (Cl. 102—70)



An igniter device for initiating combustion of a surrounding solid body of pyrotechnic material, said igniter device comprising a double-walled tubular member having inner and outer walls, said walls being formed of a material consumable by heat, said outer wall being provided with a plurality of inwardly directed concavities, said inner wall being joined to the inner portions of said outer wall in areas other than those defining said concavities in said outer wall to provide separate pockets between said walls, and powdered fast-burning pyrotechnic material encapsulated in each of said pockets, said inner wall being further provided with a plurality of inwardly opening recesses extending partially through the thickness thereof, and said recesses being in underlying alinement with said pockets in which the powdered fast-burning pyrotechnic material is encapsulated.

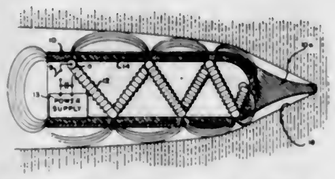
3,224,374
NOSE CAP FOR A RE-ENTRY BODY
Elmer P. Warnken, Cincinnati, Ohio, assignor to Studebaker Corporation, a corporation of Michigan
Filed Mar. 9, 1960, Ser. No. 13,830
3 Claims. (Cl. 102—92.5)

1. A dome-shaped cap for a re-entry body or the like having a face for contact by fluid flow which comprises a plurality of resin-impregnated laminations of dome shape, said laminations including a first section of laminations of substantially equal diameter arranged in face-to-face overlying relationship and a second section overlying the first section, the laminations of the second section being of progressively decreasing diameter and being arranged in face-to-face relation, there being a minor edge



portion of one face only of each lamination of the second section which is exposed at said cap face for trailing contact with fluid flow, a major portion of said lamination face being overlapped by an adjacent upstream lamination.

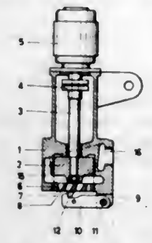
3,224,375
APPARATUS FOR ESTABLISHING PLASMA BOUNDARY SURFACES
Marc Hoff, 12 Wren Drive, Woodbury, N.Y.
Filed Oct. 11, 1962, Ser. No. 229,874
8 Claims. (Cl. 102—92.5)



1. A space missile reentry cone comprising:
(a) a nonmangetic metallic casing;
(b) a plasma-deflecting apparatus disposed within said casing and including
(c) a primary helical electrical winding;
(d) a secondary helical electrical winding wound on said primary windings, said windings extending substantially the length of said casing;
(e) and circuit means for supplying current continuously to both of said windings,
(f) the ampere-turns of said windings being proportioned to develop a peripheral magnetic field at least of the same order of intensity as their resultant axial field.

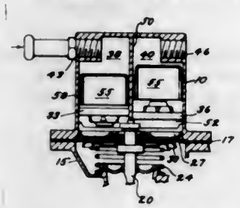
3,224,376
CENTRIFUGAL PUMP FOR CONTAMINATED LIQUIDS
Harald Schade, Frankenthalerstrasse 19, Karlsruhe, Baden, Germany
Filed Sept. 17, 1963, Ser. No. 309,421
Claims priority, application Germany, Oct. 12, 1962, Sch 32,166
4 Claims. (Cl. 103—103)

1. A centrifugal pump for conveying liquids contaminated with solids having a housing, an impeller rotatably mounted in said housing, means for driving said impeller, said housing having at least one inlet opening leading to said impeller, disintegrating means comprising a cutter ring removably secured to and rotatable with said impeller and disposed in front of said inlet opening, said cutter ring having apertures for the passage of liquids therethrough to said inlet opening, the outer edges of said apertures forming cutting edges, at least one cutter blade operatively associated with said cutter ring, spring means acting upon said cutter blade to press the same toward said cutter ring, means mounting said cutter blade so as to be movable relative to said cutter ring and to permit said cutter blade to yield against the action of said spring



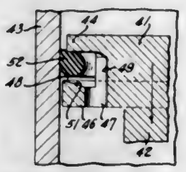
means when said disintegrating means are overloaded, and shock absorbing means for retarding the movement of said cutter blade toward said cutter ring after said cutter blade has yielded from said cutter ring.

3,224,377
REVERSIBLE PULSATOR DOMES FOR FUEL PUMPS
William J. Hicks, Fairfield, Ill., assignor to Airtex Products, Division of United Industrial Syndicate, Inc., New York, N.Y., a corporation of New York
Filed June 3, 1963, Ser. No. 285,113
9 Claims. (Cl. 103—150)



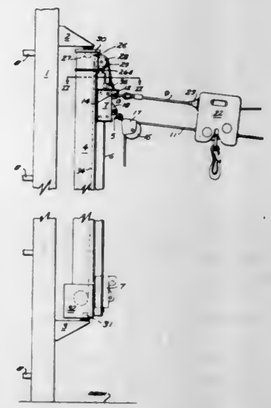
1. A fuel pump comprising a body member having an inlet and an outlet chamber, a valve in each of said chambers, ports in said chambers at points spaced from respective valves and an air dome member in at least one of said chambers intermediate the respective port and the respective valve, said air dome member being secured in said chamber and means whereby said member is spaced radially from walls of said chamber to permit fuel to flow to the respective valve between said walls and said member.

3,224,378
FLUID PRESSURE PISTON SEAL AND VALVE
George C. Graham, 76 Crest Road, Ridgewood, N.J.
Filed Jan. 9, 1964, Ser. No. 336,699
2 Claims. (Cl. 103—178)



1. A fluid pressure device comprising a cylinder, a piston movable reciprocably within said cylinder, an annular channel in said piston, a resilient sealing ring fitting loosely within said channel, at least one aperture in said piston establishing communication between the interior of said cylinder and the interior of said channel, said ring during the pressure stroke of said piston being urged into a sealing posi.ion between said piston and said cylinder at least in part by the pressure exerted radially thereon by the fluid in said channel, and an annular beveled surface on said piston facing said channel against which said ring impinges during the suction stroke of said piston, said surface being arrayed at an angle to urge said ring inwardly during said suction stroke to relieve the pressure between said ring and said cylinder.

3,224,379
VERTICALLY RECIPROCABLE RECEIVING APPARATUS
Marvin O. Miller, El Cerrito, Calif., assignor to the United States of America as represented by the Secretary of the Navy
Filed Jan. 30, 1964, Ser. No. 341,471
9 Claims. (Cl. 104—114)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. Apparatus for receiving and handling trolley-supported objects transferred to a station on a tensioned highline and out-haul line, the apparatus comprising:
a vertical column carried at said station for rotation about its longitudinal axis,
rail means rotatably carried by said column and extending continuously substantially its full functional length,
pad-eye means mounted for longitudinally-reciprocable movement along said rail means, and
means for reciprocating said pad-eye,
said pad-eye being provided with means for securing said highline whereby the pad-eye rotatably orients itself in said highline direction and the pad-eye further mounting coupling means for said out-haul line whereby said trolley can be pulled into close proximity with the pad-eye for lowering and raising the trolley-supported load.

3,224,380
REPLENISHMENT-AT-SEA RECEIVING APPARATUS
Warren G. Cook, Bremerton, Kenneth E. Mathews, Poulsbo, and James L. Hill, Bremerton, Wash., assignors to the United States of America as represented by the Secretary of the Navy
Filed Feb. 13, 1964, Ser. No. 344,794
9 Claims. (Cl. 104—114)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. Apparatus for receiving objects transferred to a station by means of a trolley supported on a haul line and a tensioned line, comprising:
an outrigger member pivotally carried at its inner end by said station and extending laterally outwardly of the station, said member being mounted on a verti-

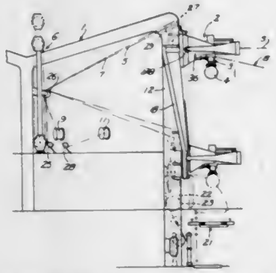
cal axis whereby said member is swingable horizontally,

a cradle member medially carried by and extending laterally of said outrigger member, said cradle member being pivotally mounted on a horizontal axis whereby said cradle is rockable vertically about said axis,

a carriage mounted in said cradle for reciprocable movement laterally thereof,

a pair of vertically-disposed axially-aligned adjacent sheaves carried at the inner end of said carriage, and

means normally-positioning said carriage with the axis of its sheaves aligned with the pivotal axis of said cradle,



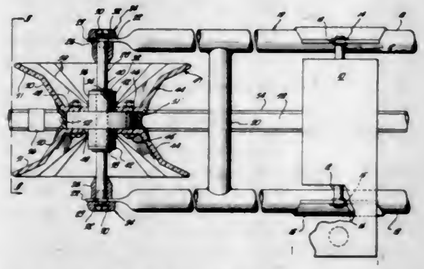
said cradle having an open end adapted to receive said trolley and guide the trolley into contact with said carriage, and

said tensioned line of the object-transferring apparatus being threaded through the pass of said adjacent sheaves,

whereby said carriage and cradle pivot vertically as a unit in response to forces acting on said tensioned line and said apparatus as a whole is swingable horizontally by said line,

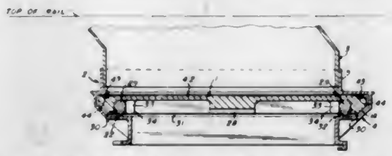
said carriage being resiliently retractable by said received trolley for moving said sheave axis away from said cradle axis whereupon said tensioned line acts as a flexible cam urging the cradle into a horizontal disposition.

3,224,381
WHEEL FOR CARRYING ELECTRONIC EQUIPMENT
Clyde R. Stewart, Palo Alto, Calif., assignor, by mesne assignments, to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California
Filed Mar. 30, 1964, Ser. No. 355,709
5 Claims. (Cl. 105—150)



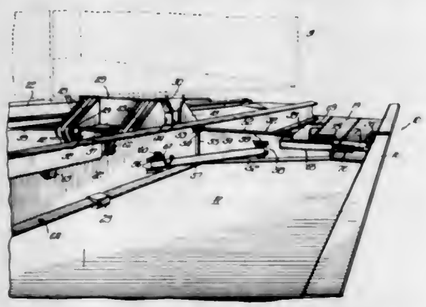
1. A wheel adapted to roll on an elongated member, the wheel including a plastic hub, a first annular plastic wheel flange secured to one side of the hub, a second annular plastic wheel flange secured to the opposite side of the hub so the flanges are spaced apart, the flanges extending away from each other at a rate decreasing with distance from the hub axis to form an annular groove around the hub to receive the member, and an annular strip disposed around the central portion of the groove, the strip having a higher coefficient of friction against the member than does the outer portion of the groove.

3,224,382
SLIDING GATE SEALING MEANS ASSEMBLIES
Walter L. Floehr, Toledo, Ohio, assignor to Unitcast Corporation, Toledo, Ohio, a corporation of Ohio
Filed Feb. 12, 1960, Ser. No. 8,367
17 Claims. (Cl. 105—282)



1. In a slide gate assembly for a hopper, the combination of a single slide gate slidable between open and closed positions in a frame fixed to said hopper, means carried by said slide gate and operative after said gate has reached closed position for displacing said gate relative to said frame toward and into sealing engagement with a seat on said frame surrounding a discharge opening of said hopper.

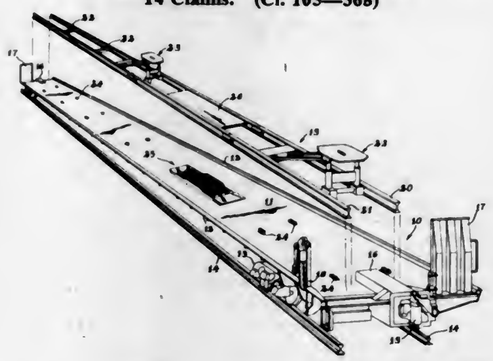
3,224,383
CONTAINER MOUNTING ARRANGEMENT
Jack E. Gutridge, Dyer, and Kenneth J. Austgen, Griffith, Ind., assignors to Pullman Incorporated, Chicago, Ill., a corporation of Delaware
Continuation of application Ser. No. 111,012, May 18, 1961. This application Sept. 17, 1964, Ser. No. 398,476
10 Claims. (Cl. 105—366)



1. In a vehicle having a longitudinally extending deck portion for lading loading thereon provided with wheel supported lading receiving track areas located just inwardly of the sides of said deck portion, the provision of lading support and attachment means mounted on said deck portion longitudinally thereof and confined centrally between said track areas, said support and attachment means comprising a pair of laterally spaced and longitudinally extending rail-like members having load bearing surfaces projecting above said deck portion to receive the vertical load of container-type lading thereon and transmit said load to said vehicle, container-type lading engaging means forming part of said lading support and attachment means and being adapted to engage a portion of the lading to hold the lading against longitudinal movement relative to the lading support and attachment means, and transversely extending container-type lading attachment means including laterally stabilizing gripping means pivotally attached to each of said rail-like members for pivoting in a direction laterally outwardly of said rail-like members from a storage position substantially parallel

to said rail-like members to a lading gripping position substantially outwardly of said rail-like members and said lading gripping means being spaced for attachment between the load-bearing surfaces and the container-type lading, and being of lateral extent to engage the container-type lading substantially at the lateral outboard extremities thereof and being transversely over and vertically spaced from adjacent track areas to primarily laterally stabilize the lading on said rail-like members in the lading gripping position, and said lading attachment means in their lading gripping position except for the lading gripping means thereof being of a height which is less than that of said rail-like members for defining a clearance space between the lading attachment means and the lading to require concentration of the vertical load of container-type lading on said rail-like members.

3,224,384
CUSHIONED RACK ASSEMBLY FOR RAILWAY CARS
Jack W. Borger, Calumet City, Ill., assignor to Pullman Incorporated, Chicago, Ill., a corporation of Delaware
Filed Dec. 15, 1961, Ser. No. 159,543
14 Claims. (Cl. 105—368)



1. In a railway car provided with an open deck portion having mounted thereon a cushion rack assembly including longitudinally extending and laterally spaced and interconnected rail members attached to said car through cushion means providing for controlled longitudinal relative movement between said rack assembly and the car, said rail members being provided with top and bottom surface lateral flange portions, the improvement comprising said rack assembly being formed from a plurality of limitedly pivotally interconnected rack sections permitting vertical opposite directional relative movement between said sections, the interconnection of said sections being defined by means confining the relative movement within a plane normal to said deck portion, said interconnection means including a plate projecting beyond an end of each rail member in a plane normal to said open deck portion, the projecting end of each plate overlying a side surface portion of a rail member of an adjacent section within the vertical confines of said flange portions, and transverse means pivotally interconnecting the projecting end of the plate to the adjacent rail member.

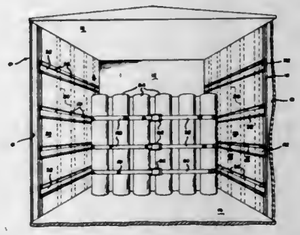
3,224,385
SECURING DEVICE FOR CARGO TIE-DOWN MEANS
Edwin C. Elsner, Glendale, Calif., assignor to Aeroquip Corporation, Jackson, Mich.
Filed Jan. 18, 1963, Ser. No. 252,379
3 Claims. (Cl. 105—369)

1. A cargo control system for cargo carriers defined by a pair of opposed side walls and an end wall comprising, in combination,

(a) an elongated track mounted on each of said side walls in substantially parallel relation, said tracks including opposed U-shaped portions and an elongated opening defined intermediate said portions, the openings of said tracks being in opposed relation,

(b) a slide reciprocably received within said U-shaped portions of each of said tracks and wholly confined within the configuration thereof,

(c) a plurality of abutments longitudinally spaced along the length of each of said tracks, and mounted thereon, said abutments including an abutment surface disposed toward the end wall and preventing movement of said slides in a direction away from said end wall when engaging a slide,

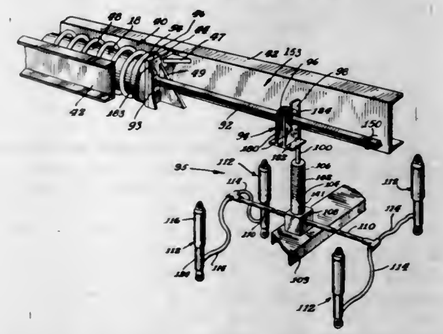


(d) means supporting said abutments permitting selective movement of said abutments into and out of the path of movement of the associated slide, said means normally maintaining said abutments within the path of movement of the associated slide and permitting the associated slide to remove the abutment from its path of movement on engagement thereby when being moved toward the end wall,

(e) a flexible tension-transmitting member affixed to each of said slides and extending from the associated elongated opening defined on said tracks, and

(f) tension-creating means interconnecting said tension-transmitting members adapted to tension said members and confine cargo between said end and side walls and said tension members.

3,224,386
ADJUSTABLE CUSHIONING ARRANGEMENT FOR RAILROAD CARS
William H. Peterson, Homewood, Ill., assignor to Pullman Incorporated, Chicago, Ill., a corporation of Delaware
Filed Jan. 21, 1963, Ser. No. 253,783
15 Claims. (Cl. 105—392.5)



1. In a railway car including a wheeled car structure, means carrying car couplers on said car structure, means for supporting lading on the car structure, said coupler carrying means and said lading supporting means being relatively movable longitudinally with respect to the other, and self-contained cushioning means including means

movable longitudinally relative to each other between an extended and contracted position, said cushioning means being operatively interposed between said lading supporting means and said coupler carrying means so that upon impacts causing closure of said cushioning means from said extended to said contracted position said cushioning means is operative to cushion the impacts delivered to the car through said coupler carrying means,

the improvement wherein:

said self-contained cushioning means includes control means for controlling the closure of said cushioning means to provide a substantially constant force travel cushioning characteristic for the lading carried on the car structure,

said cushioning closure control means including means for varying the closure of said cushioning means to provide a closure having a substantially constant force travel characteristic corresponding to a selective one of a plurality of lading weights lying in a range between a predetermined maximum and minimum load weights to be carried by the car structure,

and means connected to said closure varying means for setting said control means to provide a selective one of said closure characteristics corresponding to the actual weight of the lading carried by said car structure when lading having weight lying within said range is applied to the car structure,

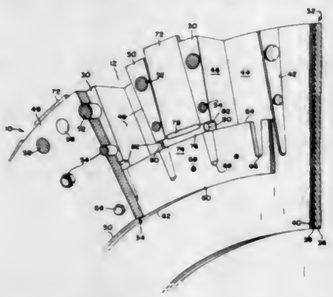
whereby when longitudinally applied impacts are delivered to the car structure through said coupler means, said cushioning means achieves said selective one substantially constant force travel characteristic for the lading weight then carried by the car.

3,224,387

DIE STRUCTURE FOR WAFERING OR PELLETING MACHINES

Murray W. Forth, Moline, Ill., assignor to Deere & Company, Moline, Ill., a corporation of Delaware

Continuation of application Ser. No. 102,822, Apr. 13, 1961. This application June 18, 1964, Ser. No. 377,457
23 Claims. (Cl. 107—14)



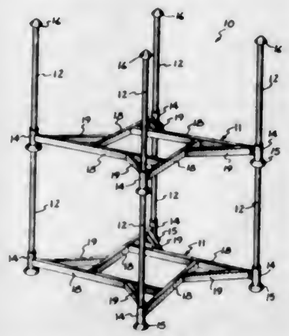
1. In a machine of the class described, die structure comprising: first and second spaced apart parallel side members; a pair of spacers disposed between and rigid with said members and spaced apart to define with said members a die opening having opposite inlet and outlet ends, the portion of the first member between said spacers providing one wall for the opening and said spacers respectively having opposed faces extending from said one wall toward the second member to provide two additional walls for the opening; a rigid wall element disposed across from said one wall and between the opposed faces of the spacers adjacent to and inwardly of the second member and having an inner surface facing toward said one wall to provide at least part of a fourth wall for said opening, said element having first and second ends respectively toward the inlet and outlet ends of the opening; and hinge means mounting said element solely at its first end for movement of its second end toward and away from said one wall for respectively restricting and enlarging said outlet end, said means including a pair of pivots coaxial on an axis closely parallel to said surface and inwardly of the second member and carried respectively by the spacers and connected to the element at the extremity of its first end.

3,224,388

PORTABLE STACKING UNIT WITH STAR FRAME

Leroy F. Skubic, Beverly Shores, Ind., assignor to The Paltier Corporation, Michigan City, Ind., a corporation of Illinois

Filed May 23, 1963, Ser. No. 282,645
2 Claims. (Cl. 108—53)



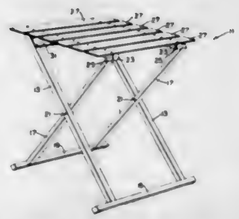
1. A portable unit for stacking in vertical tiers and comprising, in combination, four post receiving sockets disposed in rectilinear spaced relation with each other, support feet in the form of separable bearing members on said sockets, four crossbeams respectively projecting inwardly from corresponding ones of said sockets, said crossbeams being disposed each with its inner end substantially perpendicular to the next adjacent crossbeam, and four struts respectively projecting inwardly from corresponding ones of said sockets, each of said struts being disposed with its ends at an acute angle to a pair of adjacent crossbeams, and means for rigidly securing said crossbeams and said struts and said sockets together as a unitary star-shaped assembly.

3,224,389

FOLDABLE STOOL

Jay H. Kent, Brookville, Miss.
(1269 Wilzin Ave., Greenville, Miss.)

Filed Mar. 11, 1964, Ser. No. 350,961
2 Claims. (Cl. 108—119)



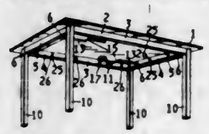
1. A foldable stool comprising two pairs of legs, each leg of each pair having a seat end and a foot end opposite to said seat end, the legs of an inner pair being respectively pivoted to the legs of the other and outer pair intermediate their lengths for scissors-like movement to and from folded condition in which said legs are in substantial alignment and register with the foot ends of one pair of legs adjacent the seat ends of the other pair of legs, from and to extended condition in which the seat ends of said leg pairs are separated to support a seat structure, a seat structure comprising a pair of spaced apart seat supports, a plurality of parallel slats spanning between and fixed to said seat supports providing a seating surface mounted upon and carried by said supports, said supports being pivoted adjacent one of their ends to one of said pairs of legs substantially at the seat ends of said one pair of legs, said supports adjacent but spaced from their other ends having diagonally disposed notches, a latch bar fixed to and spanning between the legs of the other pair of legs adjacent their seat ends, said latch bar removably engaged in said support notches securing said stool in said extended condition, said latch bar adjacent the engagements with said notches being cut out providing limit means substantially abutting against said seat supports and limiting sidewise slippage of said seat structure relative to said legs, the distal foot ends of the respective pairs of said legs being rigidly interconnected by transversely extending foot bars stabilizing said stool in use against tipping and twisting, said latch bar in said folded condition being remote from said seat structure and adjacent the foot ends of the other pair of legs comprising handle means for movement of the folded stool from place to place, said foot bars blocking leg penetration into a supporting surface.

3,224,390

FOLDING LEG TABLE CONSTRUCTION

Charles A. Calvin, 9919 Provo Ave., Tujunga, Calif.

Filed Sept. 17, 1963, Ser. No. 309,442
6 Claims. (Cl. 108—132)



1. In a folding leg table construction, a table top, a supporting frame for said table top comprising hollow side rails having the ends thereof and hollow end rails connected to the adjacent side surfaces of the side rails to form a top supporting frame of rectangular configuration as viewed in plan, a pair of leg assemblies disposed one each at each end of said frame and each assembly including a pair of leg members and a horizontal member connecting the upper ends of said pair of legs, means hingedly mounting each of said leg assemblies to one each of the rails of said frame for movement about axes spaced from and parallel to the plane of said table top for movement between a folded position parallel and adjacent to the side of said frame remote from the side thereof engaged by said table top and an erected position at right angles thereto with the horizontal connecting members of each of the leg assemblies positioned adjacent and parallel to the outer surfaces of the respective end rails, and separate manually operable means each extending between one each of said side rails and one each of said leg assemblies at a point thereon above said hinge means effective to cause positive movement of the connected leg assembly between said positions.

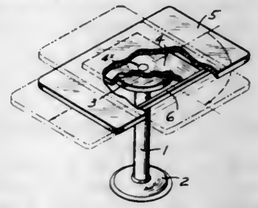
3,224,391

SLIDABLE AND SWIVEL-TOP TABLE

Joseph Cooper, Forest Hills, N.Y.
(65—10 Fresh Meadow Lane, Flushing 65, N.Y.)

Filed Jan. 29, 1964, Ser. No. 341,028
1 Claim. (Cl. 108—140)

In a table, a standard having a fixed head at its upper end, an upstanding pivot member carried by said head, a table supporting member mounted on said pivot means for rotation, a unitary table top mounted on said supporting member and having end and longitudinal side margins, guide means carried at opposite margins of said supporting member, means slidingly interengaging said guide means and carried by the table top at its longitudinal side margins, a bracket arm carried by one channel bar, a latch operating lever extending longitudinally of the table top so that its ends are projected to approximately the ends of the table top, said lever having a recess therein, pivot means connecting the latch opening lever, intermediate its ends, to



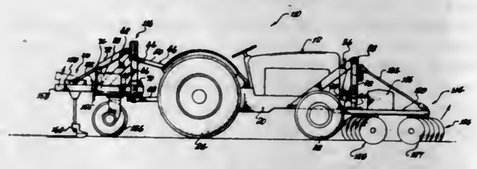
the said bracket, a spring normally urging said latch operating lever in a direction inwardly of the table top, a latch-receiving finger carried by said top supporting member and adapted to enter the recess of the latch operating lever, a stop finger carried by the fixed head of the standard, two spaced lugs carried by the table top supporting member and disposed thereon at about right angles to each other, each lug normally being spaced from said stop finger a distance equal to that required for rotation of the table top in either of opposite directions, 90 degrees relatively to the top supporting member, and each lug being positioned for abutment with said stop finger.

3,224,392

SOIL TILLAGE APPARATUS

William Fisk Mellen, Anaheim, Calif.
(P.O. Box 2032, Fullerton, Calif.)

Filed Sept. 8, 1964, Ser. No. 394,692
2 Claims. (Cl. 111—52)



1. In a soil tillage apparatus, the combination of

(a) a tractor including a tractor frame having mounted thereon tractor driving and supporting means engageable with a ground surface;

(b) a front tillage tool located ahead of said tractor;

(c) front tool mounting means mounting said front tillage tool on said tractor frame ahead of said tractor driving and supporting means for movement, relative to said tractor frame, between a raised, inoperative position clear of the ground and a lowered, operative position wherein it tills the soil below said ground surface;

(d) said front tool mounting means including front tool lifting means interconnecting said front tillage tool and said tractor frame for moving said front tillage tool between its said raised and lowered positions;

(e) a carrier located behind and connected to said tractor and including a carrier frame having mounted thereon carrier supporting means engageable with said ground surface;

(f) a rear tillage tool located behind said carrier;

(g) rear tool mounting means mounting said rear tillage tool on said carrier frame behind said carrier supporting means for movement, relative to said carrier

frame, between a raised, inoperative position clear of the ground and a lowered, operative position wherein it tills the soil;

(h) said rear tool mounting means including rear tool lifting means interconnecting said rear tillage tool and said carrier frame for moving said rear tillage tool between its said raised and lowered positions;

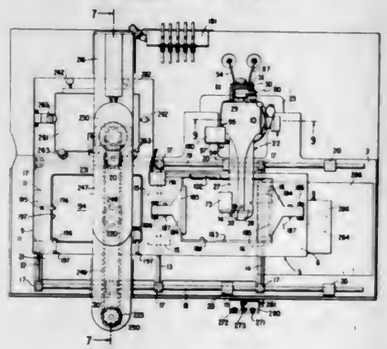
(i) said rear tillage tool comprising a seeder having laterally spaced seeding devices; and

(j) said carrier supporting means including laterally spaced wheels respectively located in the paths of said seeding devices and adapted to firm the soil ahead of said seeding devices.

3,224,393
AUTOMATICALLY ACTUATED SEWING MACHINES

Kenneth D. Adams, Long Valley, John A. Herr, Garwood, and Ira G. Schwartzberg, Newark, N.J., assignors to The Singer Company, New York, N.Y., a corporation of New Jersey

Filed Sept. 11, 1963, Ser. No. 308,201
16 Claims. (Cl. 112—2)



1. In combination, a sewing machine having a point of stitch formation and means for supporting and moving a work piece relative to the point of stitch formation in a path defined by a pattern line conforming to the desired seam configuration, said means comprising a work support, means for mounting said work support for universal movement relative to and in a plane containing the the point of stitch formation, a pattern member mounted for movement with said work support and having a pattern line, a tracer mechanism for generating a varying electrical control signal in response to the relative position of said tracer mechanism laterally of the patttern line, and means responsive to said control signal for moving said work support relative to the point of stitch formation and for simultaneously moving said pattern member relative to said tracer mechanism whereby said pattern member is moved with said pattern line in cooperation with said tracer mechanism and said work support is moved in a path defined by said pattern line.

3,224,394
MACHINE FOR SEWING BAGLIKE STRUCTURES AND THE LIKE

Reinhold Dobner and Oskar Braun, Kaiserslautern-Pfalz, and Heinz Ulmer, Kirchentellinsfurt, Kreis Tubingen, Germany, assignors to G. M. Pfaff A.G., Kaiserslautern-Pfalz, Germany, a corporation of Germany

Filed May 28, 1964, Ser. No. 370,769
Claims priority, application Germany, May 31, 1963, P 31,950
12 Claims. (Cl. 112—10)

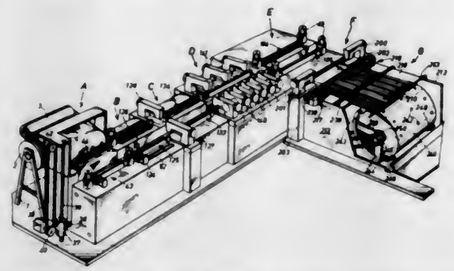
1. A machine of the character described comprising in combination:

(1) means to temporarily hold the end portion of a web of flexible material withdrawn from a supply roll against a first horizontal supporting surface,

(2) folding means disposed closely adjacent to said surface to draw off and reversely bend a blank of predetermined length from said roll,

(3) means to hold the opposite end portion of the drawn off blank against a second horizontal supporting surface,

(4) means to transversely cut said web at a point closely adjacent to said second surface, to provide a U-shaped workpiece having a pair of vertical leg portions depending from said end portions overlying said surfaces,



(5) a pair of hemming devices having stationary hemming plates each adjoining and being in line with one of said supporting surfaces,

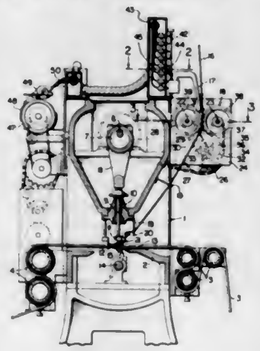
(6) a pair of hem sewing machines each adjoining the end of one of said hemming devices, and

(7) work feeding means operably engaging said end portions, to successively feed a workpiece in its vertical position and in a direction parallel to the plane thereof to said hemming devices and said hem sewing machines, to form and sew a hem along the edges of both said end portions.

3,224,395
PATTERN ATTACHMENT FOR TUFTING MACHINES

Roy T. Card, Chattanooga, Tenn., assignor to The Singer Company, New York, N.Y., a corporation of New Jersey

Filed Nov. 21, 1963, Ser. No. 325,347
4 Claims. (Cl. 112—79)

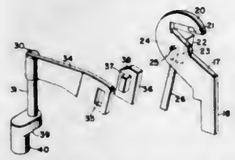


1. In a tufting machine, a yarn feeding mechanism comprising a pair of spaced parallel shafts, a plurality of yarn feeding elements mounted upon each of said shafts with each of said elements in yarn feeding engagement with an element on the opposite shaft and defining pairs of cooperating yarn feeding elements, one of said elements of each of said pairs of cooperating yarn feeding elements being a driven element coupled to its shaft for unitary rotation therewith and the other of said elements being an idler element freely mounted on its shaft for rotation relative thereto, the elements on each of said shafts including both driven elements and idler elements disposed in adjacent relation, means for rotating one of said shafts in one direction at one speed and the other of said shafts in the opposite direction at a different speed, and shiftable yarn guide means for directing a yarn selectively between the elements of one of said pairs of cooperating yarn feeding elements or between the elements of an adjacent one of said pairs of cooperating yarn feeding elements whereby the yarn will be fed at different rates.

3,224,396
TUFTING MACHINE HOOK AND KNIFE MECHANISM

Bernard H. Wittler, Rossville, Ga., assignor to The Singer Company, New York, N.Y., a corporation of New Jersey

Filed Dec. 9, 1963, Ser. No. 329,061
3 Claims. (Cl. 112—79)



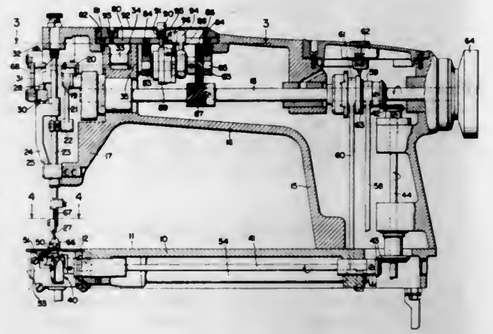
1. In a tufting machine, a hook including a loop-seizing blade having a cutting edge along its lower edge, a knife blade having a cutting edge along its upper edge, means for effecting relative motion between said hook and said knife blade, said knife blade having one surface disposed in abutment with one surface of said hook for cooperation of the cutting edge of said knife blade with the cutting edge of said hook during relative movement of said hook and said knife blade to cut a loop of yarn on the loop-seizing blade of said hook to produce cut pile, means for biasing said one surface of said knife blade against said one surface of said hook, and means for introducing air under pressure between said opposed surfaces of said hook and said knife blade for reducing friction between said opposed surfaces of said hook and said knife blade.

3,224,397
LOCK STITCH SEWING MACHINES

William C. Van Ness, Parsippany, N.J., assignor to The Singer Company, New York, N.Y., a corporation of New Jersey

Filed Aug. 30, 1963, Ser. No. 305,671
4 Claims. (Cl. 112—154)

1. In a sewing machine having a frame including a work supporting bed, a standard rising from said bed, a bracket arm extending from said standard, and a sewing head formed on said bracket arm overhanging said bed, a needle carried on said sewing head and a loop taker carried in said bed, a main shaft journaled in said bracket arm, operative connections with said mainshaft for reciprocating said needle endwise and for imparting interrelated movement to said loop taker for the formation of lock stitches, a work feeding mechanism effective to transport work fabrics in one direction relatively to said work supporting bed, means driven by said main shaft for operating said work feeding mechanism including an adjustable feed eccentric on said mainshaft, and a feed eccentric adjusting plunger carried in said bracket arm above said standard, a needle gate shiftably supported in said sewing head for movement in a plane parallel to the direction of transport of work fabrics by said work feeding mechanism, a rock shaft journaled in a partition between said bracket arm and said sewing head, a drive link affixed at one end to said rock shaft and slidably connected at the other end to said needle gate, and mechanism for jogging said needle gate including a bracket adapted to be secured on said bracket arm adjacent to said sewing head, a stud shaft journaled in said bracket, a driven gear and an adjustable needle jogging eccentric carried on said stud shaft, a drive

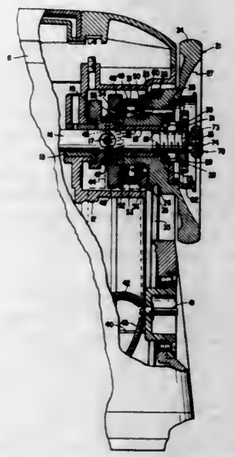


gear fast on said main shaft and disposed in mesh with said driven gear when said bracket is secured on said bracket arm, a pitman embracing said adjustable eccentric, a rock arm operatively connecting said pitman to said rock shaft, and a needle jogging eccentric adjusting plunger carried on said bracket adjacent to said sewing head providing means for selecting an increment of needle gate shifting motion which is greater than the increment of feed during the formation of each stitch.

3,224,398
SEWING MACHINE DRIVING DEVICES

Robert G. Greulich, Belleville, N.J., assignor to The Singer Company, New York, N.Y., a corporation of New Jersey

Filed Sept. 16, 1963, Ser. No. 309,020
7 Claims. (Cl. 112—220)



1. A driving arrangement for a sewing maching having a drive shaft comprising a handwheel journaled relatively to said drive shaft, means secured for rotation with said handwheel and adapted to be drivingly con-

nected with a foot treadle device, a drive element journaled relatively to said drive shaft, an electric motor operatively connected to said drive element, a first operator influenced clutch means for selectively coupling said hand wheel to said drive element, said clutch being disengageable to completely uncouple said handwheel from said drive element, and a second operator influenced clutch means for selectively coupling said handwheel to said sewing machine drive shaft.

3,224,399
SINGLE THREAD LOCKING SEAM
Milton Cass Lightner, Mountain Lakes, and Ralph E. Johnson, Boonton, N.J., assignors to The Singer Company, Elizabeth, N.J., a corporation of New Jersey
Filed Dec. 5, 1963, Ser. No. 328,256
5 Claims. (Cl. 112—262)



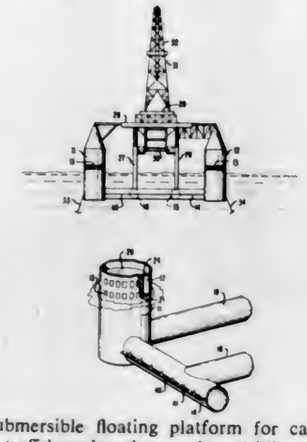
1. A ravel-proof seam in a workpiece comprising a single thread formed into a succession of interconcatenated loops each loop projecting transversely through a workpiece, each alternate one of said succession of loops being a locking loop which is twisted only one-half turn about the axis of penetration of said locking loop through the workpiece, and each one of said loops which projects through the workpiece between said locking loops being passed through the next succeeding twisted locking loop.

3,224,400
ONE PIECE SHEET METAL TRUNNION (T-BOLT)
William M. Willis, Northridge, Calif., assignor to Aeroquip Corporation, Jackson, Mich.
Filed July 2, 1962, Ser. No. 206,912
2 Claims. (Cl. 113—116)



1. The method of forming a trunnion for a clamp having first and second tubular cylindrical portions from sheet stock of uniform thickness wherein the stresses within the second tubular portion are so related as to resist axial compressive forces, comprising the steps of drawing a cylindrical tubular cup having a closed end from the sheet stock, forming the portion of said cup adjacent said closed end into a cylindrical tubular portion of reduced transverse dimension interconnected to the remaining larger cylindrical portion of the cup by a radially extending shoulder and concentrically related to said larger portion, flattening said larger cylindrical portion and shoulder to a planar configuration portion perpendicularly disposed to the longitudinal axis of said reduced cylindrical portion and trimming said planar portion to a rectangular configuration, said planar portion having side edges and end edges, and bending said planar portion to a tubular configuration in a direction parallel to said end edges substantially abutting said side edges to form said first tubular portion having an axis substantially perpendicular to the axis of said reduced portion, said reduced portion constituting said second tubular portion, forming a first hole in the closed end of said second tubular portion concentric to the axis thereof and forming a second hole in said first tubular portion coaxial with said first hole.

3,224,401
STABILIZED FLOATING DRILLING PLATFORM
Lawrence C. Kobus, Houston, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Apr. 13, 1964, Ser. No. 359,050
7 Claims. (Cl. 114—.5)



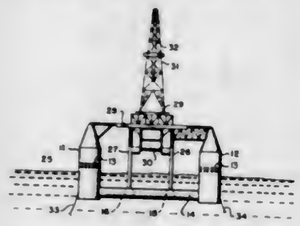
1. A semi-submersible floating platform for carrying out operations at offshore locations such as drilling a well, said platform comprising

a buoyant hull,

an operating platform carried by said buoyant hull at a level above any wave action at the time the platform is positioned at its operating location and depth, and

keel means fixedly secured to the outer surface of the buoyant hull of said vessel at a point below the normal operating water line thereof, said keel means being rigid and extending substantially laterally from said hull, said keel means comprising plate means having perforations therethrough, said perforations having an area equal to from about 2% to about 15% of the area of the keel means.

3,224,402
STABILIZED FLOATING DRILLING PLATFORM
Lawrence C. Kobus, Houston, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Apr. 13, 1964, Ser. No. 359,110
4 Claims. (Cl. 114—.5)



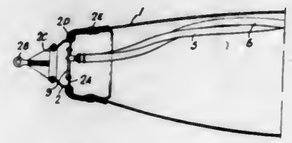
1. A semi-submersible floating platform for carrying out at offshore locations operations such as drilling a well, said platform comprising

a buoyant hull having a plurality of vertically-extending columns,

cross-bracing hull members extending between said columns at least near the lower ends thereof to form with said columns a closed geometric configuration, and

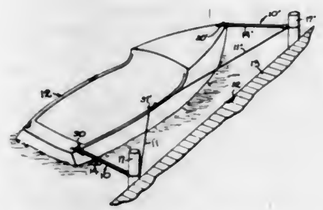
a plurality of said vertically-extending columns having chamber means formed therein in open fluid communication with the space outside said columns, said chamber means being positioned in each of said columns at a level adjacent and above the surface of the water in which the platform is positioned when carrying out operations therefrom.

3,224,403
FLEXIBLE BARGES
Arthur Loftus Paddington, Langley, England, assignor to Dracone Developments Limited, London, England, a British company
Filed Jan. 16, 1964, Ser. No. 338,151
Claims priority, application Great Britain, Jan 18, 1963, 2,219/63
8 Claims. (Cl. 114—74)



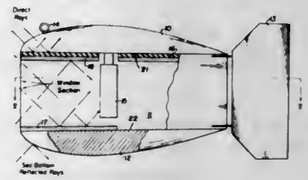
1. A barge for fluent cargo having a density less than that of the water in which the barge is to be floated, comprising a long collapsible envelope of flexible material, a rigid end fabrication at each end of the barge, a detachable manhole cover means forming part of one of said rigid end fabrications, the said envelope being tapered at each end, which is secured to the respective rigid end fabrication, inflatable means within said envelope, means securing said inflatable means to said rigid end fabrication at each end of the barge, said inflatable means comprising at least one flexible tube extending substantially the full length of the barge and serving, when inflated, both to cooperate with the envelope to define and keep open at least one pumping channel extending substantially the full length of the barge and also to keep the barge afloat whilst it is being pumped empty of its cargo.

3,224,404
MOORING DEVICE
George E. De Jong, 2301 Cumberland St., Rockford, Ill.
Filed Nov. 6, 1964, Ser. No. 410,827
6 Claims. (Cl. 114—230)



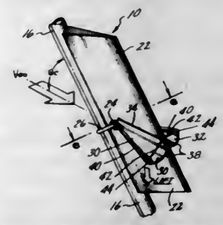
1. A boat mooring device including, in combination, an elongated tube, a line extending through said tube and formed with a loop projecting from one end of the tube, said line having a free end portion projecting from the other end of said tube whereby said loop is drawn into the tube to be tightened around a mooring connection, said tube forming a brace for holding a moored boat away from a dock when said free end portion is secured to a second mooring connection at said other end, and a hook fast on the exterior of said tube adjacent said one end and opening toward said other end to cooperate with said loop in securing said device to an annular mooring connection.

3,224,405
TOWED BODY FOR VARIABLE DEPTH SONAR
Fergus Alexander Adair Fergusson, Cedric Robert Mann, and James Gordon Retallack, all of Dartmouth, Nova Scotia, Canada, assignors to Her Majesty the Queen in right of Canada as represented by the Minister of National Defence
Filed Mar. 27, 1961, Ser. No. 98,546
Claims priority, application Canada, Aug. 31, 1960, 806,205
4 Claims. (Cl. 114—235)



1. A towed body for housing a variable depth sonar transducer comprising a sound transparent window section, an upper dome, an underdome and an empennage, said upper dome being provided with a tow point for connection with a tow cable, said towed body being of streamlined cross section and said underdome including ballast sufficient to increase the negative buoyancy of said towed body, and said window section being formed of a skin of heavy gauge aluminum sheet and is provided with a plurality of vertically extending ribs having a T-shaped cross section.

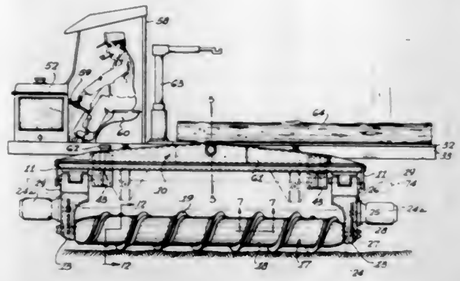
3,224,406
UNDERWATER TOWING CABLE LIFT ATTACHMENT
James W. Clark, Glastonbury, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed May 14, 1964, Ser. No. 367,477
5 Claims. (Cl. 114—235)



1. In a underwater towing apparatus, a flexible cable, a plurality of flexible wings positioned in symmetric pairs at selected stations along said cable, and means to support said wings so that water motion during cable towing will act upon said wings to hydrodynamically generate lift forces along said cable.

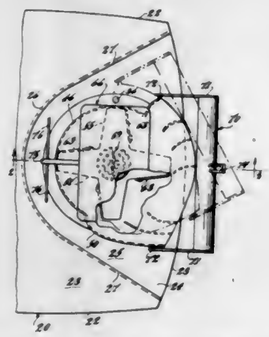
3,224,407
TRACTOR VEHICLE
Paul A. Bertrand, Rolphton, Ontario, Canada
Filed Oct. 27, 1964, Ser. No. 406,719
9 Claims. (Cl. 115—1)

1. A vehicle comprising a chassis, a load-bearing platform mounted on said chassis, and propulsion means for said vehicle comprising a pair of traction devices each having a cylinder and a helical blade thereon, each said cylinder having axial spindles and a pair of supporting frames having said spindles journalled therein, each said pair of supporting frames being pivotally mounted on said chassis on an axis parallel to the axis of said cylinders and extending longitudinally of said vehicle, means for applying rotative movement to said



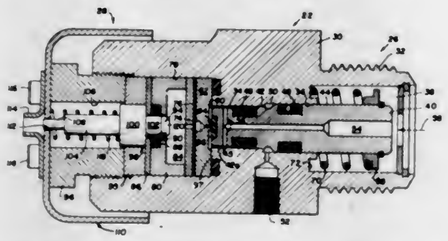
cylinders, and independent means for swinging each of said cylinders about the axis of its said supporting frames.

3,224,408
PROPULSION DEVICE
Albert P. Sfredda, Bethlehem, Pa., assignor of fifty percent to George W. Downs, Collegeville, Pa.
Filed May 21, 1964, Ser. No. 369,137
5 Claims. (Cl. 115—12)



1. In combination, a boat hull having a transom, a well aft in said hull having forward and side walls and having its rear side opening through said transom, said well having a bottom opening communicating with the sea downwardly through the bottom of said hull, and a propulsion device mounted in said well, said propulsion device comprising a generally horizontally disposed substantially involute-shaped enclosure having a central opening and arranged in said well with its central opening communicating downwardly through the bottom opening of said well, said enclosure having its rear side substantially completely open for communication rearwardly overboard through the open rear side of said well and said transom, enclosure-mounting means in said well mounting said enclosure for rotative adjustment about a generally vertical axis through said central opening, a hollow rotor in said enclosure having an inlet passageway communicating downwardly through said central opening to the sea and having an outlet passageway communicating generally radially outwardly from said inlet passageway, rotor-mounting means mounting said rotor for rotation generally axially of said inlet passageway to move said outlet passageway angularly past said open rear side of said enclosure, drive means connected to said rotor for rotating the latter to pump sea water through said rotor for discharge from said outlet passageway both directly overboard through said rear open side of said enclosure and into said enclosure for subsequent impulsion overboard through the rear open side of said rotor, and deflector means carried by said enclosure in the rear region thereof for directing both the direct outlet discharge and subsequently impelled outlet discharge in substantially parallel flow.

3,224,409
LOW PRESSURE ALARM ASSEMBLY
Nicholas Fenger and James R. Fenger, Northfield, Ohio, assignors to Fluid Power, Inc., Hudson, Ohio, a corporation of Ohio
Filed Nov. 21, 1963, Ser. No. 325,381
5 Claims. (Cl. 116—70)

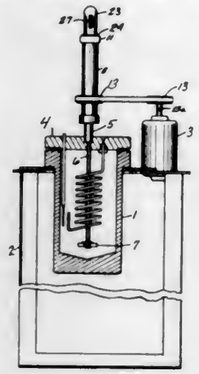


1. In a low pressure warning alarm comprising a casing having one end adapted for connection to a source of pressurized fluids and a longitudinal passageway therethrough which communicates with the source, a reciprocating plunger having a first end and a second end, said plunger extending through said longitudinal passageway in sealing engagement therewith, spring means interposed between said first end and said casing for biasing said plunger against the pressure exerted by the pressurized fluids on said first end, conduit means extending through said plunger for exhausting fluids from said second end of said plunger into said longitudinal passageway, a first transverse wall sealing said longitudinal passageway and provided with an opening therethrough, and means carried by said second end of said plunger for sealing said opening, the force of said spring urging said sealing means out of engagement with said opening when the pressure of the source falls below a preselected level whereby pressurized fluids are discharged through said opening into said longitudinal passageway, the improvement comprising: a second transverse wall sealing said longitudinal passageway and provided with a longitudinal valve opening, said second tranverse wall being spaced from said first transverse wall to provide an expansion chamber therebetween into which pressurized fluids from the source are discharged, means interposed between said first transverse wall and said second transverse wall for metering the flow of fluids into said expansion chamber, a beater disposed within said longitudinal passageway, said beater having a first end portion extending through and engaged with said sealing element and a second end portion spaced from said first end portion, means positioned for actuation by said second end portion of said beater for emitting a signal, and means engaged with said beater for urging said first end portion into sealing engagement with said sealing element, said beater being movable cyclically between a seated position under the force of said urging means and an unseated position under the force exerted by fluids accumulated in said expansion chamber, said beater actuating said signal emitting means when in said unseated position.

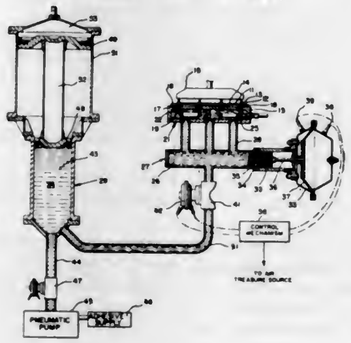
3,224,410
SHAFT ROTATION INDICATOR
Edward H. Epprecht, Fairview, Pa., assignor to Autoclave Engineers, Inc., Erie, Pa., a corporation of Pennsylvania
Filed Nov. 8, 1963, Ser. No. 322,303
2 Claims. (Cl. 116—115)

1. In an autoclave having a tube with its inner end open to the interior of the autoclave and its outer end

closed and presented to the atmosphere exterior of the autoclave, driving magnets rotatable about the exterior of the tube, an agitator shaft within the tube, driven magnets within the tube keyed to the agitator shaft and magnetically coupled to the driving magnets through the walls of the tube, some of the driven magnets being opposite the driving magnets and other of the driven magnets being at the outer end of the tube and out of opposition to the driving magnets and sending magnetic flux through the outer end of the tube, and a metal sleeve journaled on the outer end of the tube in position to intercept magnetic flux from said other driven magnets whereby rotation of the agitator shaft will induce eddy currents in the sleeve and cause rotation of the sleeve to indicate that the agitator shaft is rotating.



3,224,411
APPARATUS FOR APPLYING ADHESIVE TO A SURFACE
Jess P. Blaha, Detroit, Frederick R. Cotton, Novi, and Anthony P. Gorbe, Melvindale, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Sept. 18, 1961, Ser. No. 138,707
2 Claims. (Cl. 118—408)



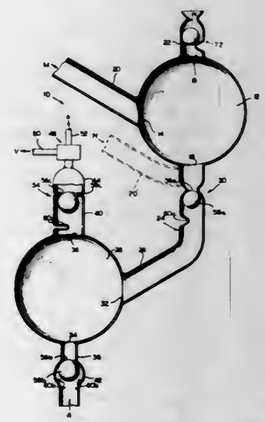
1. An apparatus for applying an adhesive to a groove on the surface of a member comprising an applicator plate having a surface, means for securing said member to the surface of said applicator plate, a secondary manifold having a first chamber, hollow perforations in said applicator plate placing its surface in communication with said first chamber, a primary manifold having a second chamber, a distribution tube placing said first chamber in communication with said second chamber, an adhesive supply tank, a conduit placing said adhesive supply tank in communication with said second chamber, a first pressure means associated with said supply tank, said first pressure means exerting pressure on said adhesive to force said adhesive into the groove on the surface of said member, a second pressure means mounted in said second chamber, said second pressure means relieving the pressure on said adhesive sufficiently to retain said adhesive in said perforations, and a means for selectively and sequentially controlling said first and second pressure means.

3,224,412
PROSTHETIC POULTRY SPUR
Gabriel Fuentes, Jr., P.O. Box 867, Bayamon, Puerto Rico
Filed May 4, 1964, Ser. No. 364,601
5 Claims. (Cl. 119—1)



1. A prosthetic spur for poultry comprising an elongated tapered body of synthetic plastic, the small end having a pointed end and the enlarged end having a rounded socket constituting a means for receiving the stub of the natural spur of the poultry, said body having a longitudinally curved axis.

3,224,413
PULSATOR OPERATED RELEASER FOR A PIPELINE MILKER
Robert K. Patterson, R.F.D. 3, Montague Road, Amherst, Mass.
Filed Jan. 3, 1963, Ser. No. 251,461
3 Claims. (Cl. 119—14.07)



1. A vacuum type milk releaser comprising an integral glass receiving container and drain tank; said container having an upper and lower end, first glass conduit means integral with the upper end of the glass container and adapted to be connected to a source of reduced pressure,

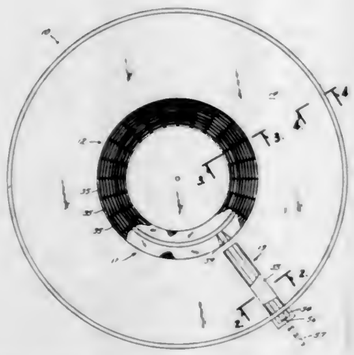
second glass conduit means integral with said container and adapted to be connected to a source of milk, said glass drain tank having an upper and lower end, third glass conduit means integral with the lower end of the receiving container and said drain tank, fourth glass conduit means integral with the upper end of the drain tank and adapted to be connected to a timer controlled valve and source of reduced pressure, fifth glass conduit means integral with the lower end of the drain tank, a constriction in said third and fifth glass conduit means defining a circular opening therethrough having smooth rounded edges, a freely suspended spherical resilient member having a diameter larger than the circular openings in said third and fifth conduit means and adapted to contact the respective circular openings, means projecting into said third and fifth glass conduit means to support the respective spherical members at a position below their position of contact with the circular openings, thereby providing a check valve in said third and fifth glass conduit means against upward flow of milk.

3,224,414

FARM ANIMAL FEEDING STRUCTURE FLOOR

William J. Conover, Rhodes, Iowa, assignor to Black, Sivalls & Bryson, Inc. (B. S. & B.), Kansas City, Mo., a corporation of Delaware

Filed Jan. 15, 1964, Ser. No. 337,776
1 Claim. (Cl. 119—28)



A farm animal feeding structure comprising in combination:

a floor having an annular trench formed therein with an inner perimeter and an outer perimeter, said trench having a cross-sectional shape substantially identical throughout its circumference;

said shape defined by a pair of upper radially spaced vertical walls connected to a pair of intermediate side walls converging downwardly at a 45° angle for connection in turn to a pair of vertical, radially spaced lower walls forming a channel, the lower walls interconnected across their bases;

grate means supported on said floor and continuously extending over said annular trench for passing animal wastes therethrough and into said annular trench, said grate means including a plurality of segmented, pie-shaped grates arranged in a contiguous side-by-side manner with each grate having a plurality of parallel, radially spaced members connected together at their ends, and with the length of said members progressively decreasing from the member closest to the outer perimeter to the member closest to the inner perimeter; and

means formed in said floor and in fluid communication with said annular trench for leading the animal wastes away therefrom.

3,224,415

PNEUMATIC IMMOBILIZING DEVICE FOR ANIMALS AND THE LIKE

Max Gottfried, Rossford, Ohio, assignor to Jobst Institute, Inc., Toledo, Ohio, a corporation of Ohio

Filed Sept. 10, 1964, Ser. No. 395,364
5 Claims. (Cl. 119—96)



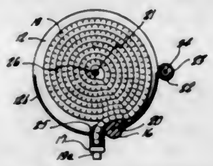
1. A pneumatic immobilizing device for animals and the like comprising a sheet of material to which is secured an inflatable portion constituting a restraining enclosure, and means of disconnecting one edge of the said inflatable portion and folding the said inflatable portion back into an open position, and a valve secured to the said inflatable portion, the said valve providing a means of inflating the said inflatable portion with a fluid, the said inflatable portion being placed over the body of an animal that has been placed on the said sheet, and firmly secured thereby immobilizing the said animal for a desired length of time.

3,224,416

ROLLED ERASER AND HOLDER

Kwong Li Lou, Civil Air Transport Inspection Dept., Tainan Airfield, Tainan, Taiwan, China

Filed July 17, 1964, Ser. No. 383,358
8 Claims. (Cl. 120—36)



1. In an eraser apparatus, the combination of:

an eraser of generally disk-shaped configuration and having a cut extending partially therethrough spiralling outwardly from the center thereof;

an eraser holder having a back plate, a front plate, and a bottom plate connecting the front and back plates so as to form an eraser enclosure;

an eraser holder arm;

means pivotally connecting the eraser to the eraser holder arm so that the eraser is rotatable with respect thereto;

means pivotally attaching the eraser holder arm to the eraser holder so that the eraser holder arm normally urges the eraser into the eraser enclosure;

an eraser strip outlet formed in the eraser holder; and

eraser cutting and guide means attached to the eraser holder for cutting through the eraser along the spiral cut so as to cut a strip of eraser material therefrom and for guiding said strip into said eraser strip outlet.

3,224,417

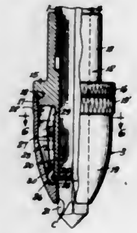
ERASER-HOLDING CHUCK AND ERASER

Louis J. Misuraca, 1359 Romulus Drive, Glendale, Calif.

Continuation of application Ser. No. 365,027, May 5, 1964. This application June 1, 1965, Ser. No. 467,804
2 Claims. (Cl. 120—36)

1. In a power actuated eraser means, an elongated, resilient, expendable eraser element of uniform, non-circular cross-sectional configuration and a power operated chuck device in which said eraser element is held and by which said eraser element is rotated; said chuck device

having an eraser receiving portion of non-circular configuration complementary to the said cross-sectional configuration of said eraser element, and further having positioned in longitudinally spaced relation thereto means defining a circular orifice portion the inner circumference of which is smaller than the longitudinally aligned non-circular portion of said chuck and adapted to apply radially inwardly directed compressive forces the resultant components of which intersect on a line extending longitudinally of said eraser element, and centrifugal force responsive means carried by said chuck device and including radially inwardly directed jaw means interposed between said eraser receiving portion of non-circular configuration and the means defining the circular orifice portion, effective upon rotation of said chuck device at operating speed to overcome the resilience of said eraser element upon cessation of rotation of said chuck device and to disengage said centrifugal force responsive means, the compressive forces applied by the circular orifice portions acting to restrain the eraser from longitudinal movement throughout the entire length of the chuck thereby preventing the eraser from dropping out of said chuck device.

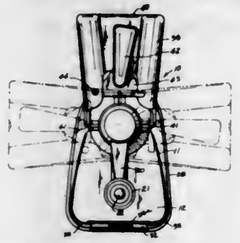


3,224,418

PENCIL SHARPENING DEVICE

Henry Ruskin, Bayside, and Sheldon I. Kohen, Flushing, N.Y., assignors to Swingline Inc., Long Island City, N.Y., a corporation of New York

Filed Aug. 11, 1961, Ser. No. 130,864
10 Claims. (Cl. 120—96)



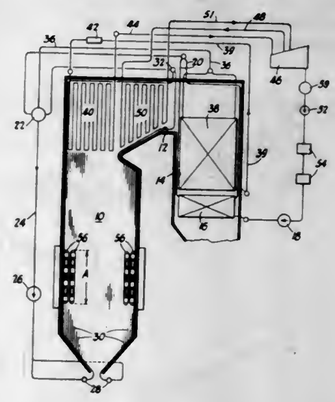
2. A pencil sharpener having a body member including a hollow chip receptacle portion thereupon and provided with a substantial circular first opening extending inwardly from the rear thereof and communicating with the interior of said chip receptacle portion, said body member also having a front wall provided with a second opening therewithin in alinement with said first opening, a rotatable cutter support member also within said chip receptacle portion having a stem member projecting rearwardly through said first opening, handle means secured to the projecting portion of said stem member, cutter means supported upon said cutter support member, pencil guide means operatively connected with said cutter and projecting forwardly through said second opening, a third opening provided within said chip receptacle portion, an openable cover disposed about said third opening, snap locking means upon said cover and complementary locking means upon the adjacent portion of said body member, a guide portion at the rear of said body member, and a stand member having a support portion removably and lockably disposable within said guide portion, said body portion being detachably removable from said stand member.

3,224,419

VAPOR GENERATOR WITH TANGENTIAL FIRING ARRANGEMENT

Herbert M. Lowenstein, Windsor, and Robert H. Wolin, Avon, Conn., assignors to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware

Filed Dec. 13, 1961, Ser. No. 159,039
14 Claims. (Cl. 122—478)



1. In a vapor generator the combination of an upright elongated furnace of polygonal transverse section having its walls lined with heat exchange tubes and having a gas outlet adjacent one end from which extends a convection gas pass, a convection vapor heater in said gas pass, said furnace being fired by pulverized coal and being provided with tilting tangential firing means comprised of burner means adjacent each of the furnace corners operative to project pulverized coal and air into the furnace to create a whirling mass of burning fuel rotating about the furnace axis and which mass is vertically adjustable toward and away from the furnace outlet, each of said burner means being comprised of a first and a second vertically elongated, generally coextensive burner assembly with said first and second assembly being in closely spaced relation and extending vertically throughout a substantial length of the furnace, said assemblies including means for projecting fuel into the furnace at a plurality of vertically spaced locations with the locations of the several burner means being arranged in tiers so that the fuel is projected from the burner means into the furnace in vertically spaced tiers, said assemblies also including means to project air into the furnace, each of said assemblies including means to adjust the angle of discharge of the fuel and air with respect to the horizontal to vary the vertical position of the burning fuel mass, means for supplying pulverized coal to said assemblies with fuel projecting means of said first assemblies receiving fuel from a common source and fuel projecting means of said second assemblies also receiving fuel from a common ource.

3,224,420

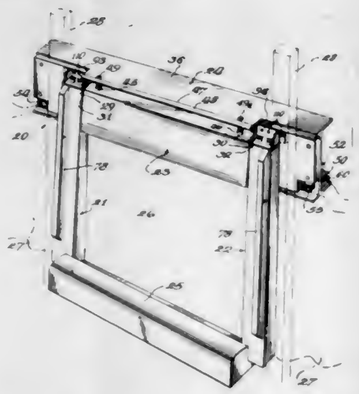
DOOR FRAME FOR METALLURGICAL FURNACE

Elmer W. Borman, Hammond, Ind., assignor to Inland Steel Company, Chicago, Ill., a corporation of Delaware

Filed Nov. 27, 1963, Ser. No. 326,407
10 Claims. (Cl. 122—497)

1. In a metallurgical furnace having a side wall with a doorway therein:

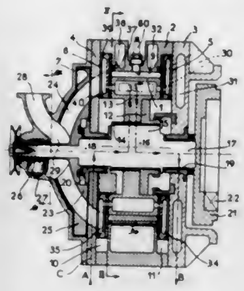
a furnace structural member extending horizontally across the top of said doorway and having web means and upper and lower flange means;
means, on that one side of said web means disposed toward the furnace interior, cooperating with said lower flange means to define a first container, integral with said structural member, for receiving and confining a cooling fluid;
means for passing a cooling fluid through said first container;
said first container including means for supporting a roof portion of said furnace;
means on the other side of said web means, opposite said one side thereof, integral with and cooperating with the web means to define a door frame top section including a second container for receiving and confining a cooling fluid;



means for passing a cooling fluid through said second container;
a pair of door frame side sections each separate and discrete from the other, from the door frame top section, and from the structural member;
means removably connecting each of said door frame side sections to said other side of the web means adjacent a respective opposite end of said door frame top section;
means defining a pair of spaces, each located between a respective door frame side section and a respective portion of said door frame top section adjacent said side section, for accommodating thermal expansion of said door frame sections;
each of said side sections defining a respective side of said doorway and including means for receiving and confining a cooling fluid;
means for passing a cooling fluid through each of said side sections;
and sill means defining the bottom of said doorway.

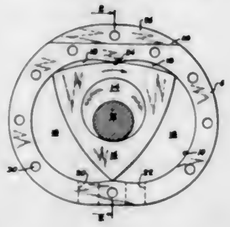
3,224,421
ROTARY ENGINES WITH ROTATING DISTRIBUTORS
Lucien Peras, Billancourt, France, assignor to Regie Nationale des Usines Renault, Billancourt, Seine, France
Filed June 22, 1962, Ser. No. 204,522
Claims priority, application France, June 29, 1961, 866,503, Patent 1,301,866; June 30, 1961, 866,686, Patent 1,301,878
6 Claims. (Cl. 123—8)

1. In a rotary engine comprising a stator having a peripheral wall with $N+1$ lobes disposed about an axis, and casing on the axial sides of said peripheral wall, said stator forming a working chamber, an epicycloidal rotor with N lobes, a shaft rotatably mounted in said casing along said stator axis, an eccentric fixed to said shaft and carrying said rotor for rotation relative to said shaft and said eccentric, combustion chambers at the radially outermost portion of each of said stator lobes, a mounting means, a distributor means consisting of not more than one side-plate fixedly mounted on at least one of the lateral faces of said rotor and rotating with the latter at



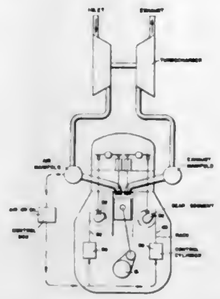
the same speed, individual conduits to each of said combustion chambers located in the casings for, respectively, the admission into said chambers of combustible gases and the removal from said chambers of exhaust gases, said distributor means being arranged intermediate said conduits and their respective combustion chambers and provided with ports passing in front of said combustion chambers and cyclically connecting the latter with the appropriate conduit.

3,224,422
ROTARY MECHANISM HOUSING CONSTRUCTION
Werner Autrum, Neckarsulm, Wurttemberg, Germany, assignor to NSU Motorenwerke Aktiengesellschaft, Neckarsulm, Germany, and Wankel G.m.b.H., Lindau (Bodensee), Germany
Filed Oct. 10, 1962, Ser. No. 229,663
Claims priority, application Germany, Nov. 18, 1961, N 20,840
3 Claims. (Cl. 123—8)



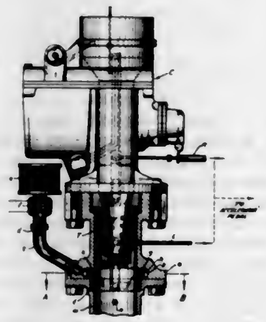
1. A housing for a rotary mechanism having a region of relatively high heat input and intermittent high internal pressure, said housing comprising in combination a peripheral wall having an internal peripheral surface and having a longitudinal axis, a pair of end walls spaced apart by said peripheral wall along said axis and defining with said peripheral wall an ,internal cavity, said end walls having plane inner surfaces substantially parallel to each other, at least one of said end walls having a flange member extending therefrom in the axial direction from said plane surface and positioned outwardly of said internal peripheral surface, said flange member having an axially inward flat surface in a plane parallel with said axis, and said peripheral wall having a flat seat receiving said flange member in said region of high heat input and pressure.

3,224,423
VALVE TIMING CONTROL SYSTEM FOR SUPERCHARGED AUTOMOTIVE ENGINE
John L. Ostborg, 4350 Redmond Road, Springfield, Ohio
Filed June 3, 1965, Ser. No. 467,169
17 Claims. (Cl. 123—90)



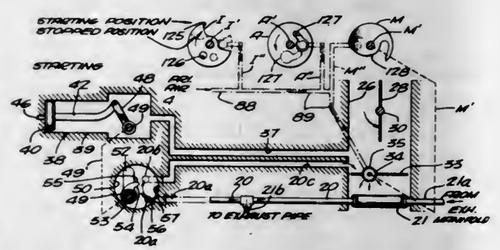
12. A supercharged automotive engine having exhaust and intake valves including a crankshaft, an exhaust valve actuating cam shaft, an intake valve actuating cam shaft, a gear train forming a driving connection from said crankshaft to said cam shafts for rotating said cam shafts in unison with said crankshaft, means associated with each cam shaft mounting elements of said gear train for relative orbital motion to effect rotative adjustment of a respective cam shaft relative to said crankshaft, and means interconnecting said last named means effecting rotative adjustment of said cam shafts in respectively opposite directions whereby to advance the phase relationship of one thereof relative to said crankshaft while retarding the other.

3,224,424
PROCESS FOR IMPROVING COMBUSTION IN AN INTERNAL COMBUSTION ENGINE
Erwin Joseph Mennicken, Reinbek, near Hamburg, Franz Muth, Hamburg-Blankenese, and Kurt Hermann Strehle, Schonningstedt, near Hamburg-Bergedorf, Germany, assignors to Filtrona Filter G.m.b.H., Glinde, near Hamburg, Germany, a corporation of Germany
Filed Sept. 30, 1963, Ser. No. 312,664
Claims priority, application Germany, Oct. 1, 1962, F 37,931
5 Claims. (Cl. 123—119)



1. A process for assuring complete combustion of a combustible mixture in an internal combustion engine to prevent the formation of toxic components in the engine exhaust gases while the engine is in idling condition, comprising the steps of:
providing a throttle means for controlling the flow of the combustible mixture within said engine;
coupling said throttle means to an air controlling means;
selectively operating said throttle means to admit sufficient combustible mixture to permit said engine to idle;
operating said air controlling means to supply extra air to said engine while said engine is idling, with the amount of said supplied extra air being sufficient to produce complete combustion of the combustible mixture within said engine;
gradually diminishing said supply of extra air in response to an increase in the opening of said throttle means; and
completely eliminating said supply of extra air when said throttle means reaches a predetermined open position.

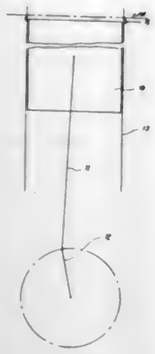
3,224,425
FUEL SUPPLY SYSTEM, CARBURETOR AND METHOD
Michael A. Arpaia, 16530 Chatsworth, Granada Hills, Calif.
Filed Feb. 20, 1962, Ser. No. 174,608
48 Claims. (Cl. 123—122)



1. That improved method of forming and controlling a combustible mixture enroute to the cylinders of an internal combustion engine through an intake manifold passage in communication with the atmosphere, said method comprising providing a source of fuel under predetermined super-atmospheric pressure, admitting a metered quantity ot pressurized fuel from said source into primary air under conditions effective to vaporize liquid constituents of the fuel and to mix the same with the primary air, jetting said mixture of fuel and primary air into a stream of secondary air while the latter is enroute through said manifold passage, utilizing manifold pressure conidtions to cut-off all flow of fuel under certain engine operating conditions, and manually initiating and regulating the metering of pressurized fuel under engine idling and power demand operating conditions.

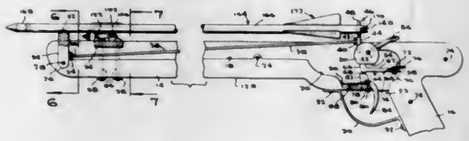
3,224,426
INTERNAL COMBUSTION ENGINES
Martin Burch Franch, 15 Republica Argentina Ave., Barcelona, Spain
Filed May 12, 1964, Ser. No. 367,609
Claims priority, application Spain, May 22, 1963, 288,265
4 Claims. (Cl. 123—191)

1. An improvement in an internal combustion engine comprising a piston, a cylinder defining a combustion chamber for said piston having a groove in the wall thereof adjacent top dead center as reached by said piston, said groove extending circumferentially the entire cross section of said wall of said cylinder and having a total volume smaller than that required for containing a fuel mixture capable of involving any further explosions within said combustion chamber, said groove being placed adjacent said top dead center so that it is actually in communication with the combustion chamber before the entire mix-



ture has had time to burn throughout, this providing an increased volume to prevent self ignition.

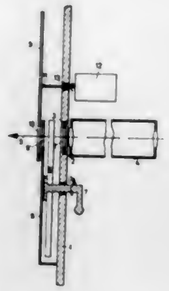
3,224,427
CROSSBOW PISTOL
Ernest A. Ronan, Florenton, Minn.
Filed Sept. 14, 1962, Ser. No. 223,647
12 Claims. (Cl. 124—25)



1. A crossbow comprising an elongated stock having a pair of opposed ends, a bow arm projecting laterally from opposed sides of said stock and disposed adjacent one end thereof, means adjacent the remotely-disposed ends of said bow arms for stringing a bowstring therebetween, a first arrow support pivotally mounted on said stock adjacent the other end thereof and projecting laterally therefrom, said arrow support being fixed by its said pivotal mount against movement longitudinally of said stock, trigger means pivotally mounted on said stock adjacent said other end of said stock and engaging said first arrow support to prevent pivotal movement thereof in one direction, said first arrow support being engaged by said bowstring when drawn and placed under tension thereby constantly urging said arrow support for movement in said one direction, a second arrow support mounted on said stock adjacent said one end thereof, said trigger being operable to release said first arrow support for pivotal movement in said one direction under said tension of said drawn bowstring, and means pivotally connecting said arrow support on said stock, and means connecting said first and second arrow supports for substantially simultaneous movement with one another upon operation of said trigger to release said first arrow support.

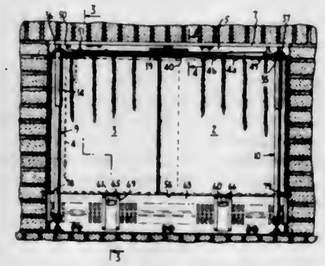
3,224,428
VIEWING DEVICE FOR VACUUM APPARATUS
Walter Dietrich and Friedrich Krall, Hanau am Main, Germany, assignors of one-half each to W. C. Heraeus G.m.b.H., Hanau am Main, Germany, and Deutsche Gold- und Silber-Scheideanstalt vormals, Roessler, Frankfurt am Main, Germany
Filed Oct. 15, 1963, Ser. No. 316,318
Claims priority, application Germany, Nov. 7, 1962, H 47,342
5 Claims. (Cl. 126—200)

1. In a vacuum chamber, a wall having an aperture therein, an inspection window hermetically sealed in said aperture in the wall of said chamber, a rotatable transparent disk mounted within said chamber so that one side thereof faces the inner side of said window, means for moving said disk in a direction substantially parallel to said window, means for covering the other side of said



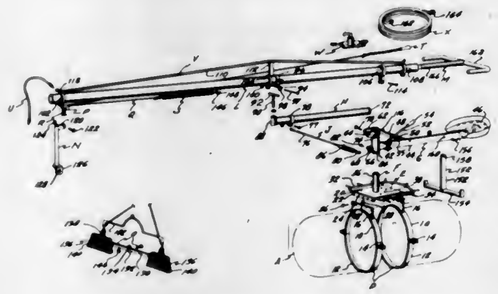
disk at least at the area thereof disposed in front of said window, said covering means having an aperture therein, and means for moving said covering means so that said aperture therein is intermittently moved in front of said area so as to uncover the same at least twenty times per second.

3,224,429
FIREPLACE ENSEMBLE
Leonard M. Quittner, 1711 Lorraine Road, Reading, Pa.
Filed Dec. 31, 1963, Ser. No. 334,718
12 Claims. (Cl. 126—202)



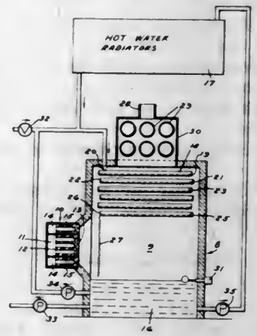
1. In combination, an inside mounted fireplace hanging curtain screen, a pair of elongated, spaced apart, axially extendable support members mountable internally of a fireplace on a hearth thereof in an upstanding position and exerting pressure on an underside of the top of the fireplace, a transverse member connected to said support members in and spanning a space between said upstanding members for supporting said curtain screen and disposed in use adjacent a front top face portion of the fireplace, each of said support members comprising, an elongated rotatable part, means on each rotatable part relative to which said rotatable part is rotatable having a surface engageable with said underside of the top of said fireplace, a threaded screw disposed as a variable extension on each of said support members for variably increasing and decreasing the overall axial length of the respective support member in response to rotation of said rotatable part in opposite directions relative to a longitudinal axis of the respective support member while mounted in said fireplace thereby to increase and decrease the overall axial length of said respective support member and to vary pressure applied by each respective support member to said underside of the top and the hearth of said fireplace for holding said support members in upstanding position mounted inside said fireplace, and said screen comprising a flexible draw curtain screen mounted for movement relative to said transverse member.

3,224,430
GAS WEED BURNER
Darrel E. Reifschneider, Compton, and John L. Snapp, Long Beach, Calif., assignors to Manchester Welding & Fabricating Company, d.b.a. Manchester Tank & Equipment Company, Lynwood, Calif., a corporation of California
Filed May 1, 1964, Ser. No. 364,092
7 Claims. (Cl. 126—271.2)



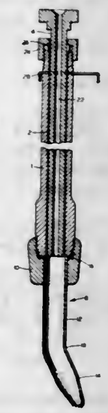
1. The combination with a power drawn tank of fuel of a device for burning a strip of weeds or grass as said tank is moved including:
(a) a horizontal platform;
(b) means for supporting said platform at a fixed position above the tank;
(c) a post extending upwardly from said platform;
(d) a sleeve pivotally supported on said post;
(e) a seat;
(f) means for supporting said seat at a fixed position relative to said sleeve;
(g) a supporting boom pivotally mounted on said sleeve;
(h) means for angularly adjusting said supporting boom relative to said post;
(i) an elongate tubular boom extending in a generally rearwardly direction from the tank;
(j) means for supporting said elongate boom above said supporting boom;
(k) a combined counterweight and handle telescopically mounted in a first end of said elongate boom most adjacent to said seat;
(l) an arm projecting downwardly from a second end of said elongate boom;
(m) a burner assembly pivotally supported on the lower end of said arm for movement in a plane parallel to said elongate boom;
(n) first and second cables connected to forward and rearward ends of said burner assembly respectively;
(o) spring means connected to said first cable and to said elongate boom for at all times tending to pivot said burner assembly where it tilts toward said seat;
(p) a pulley supported on said second end of said elongate boom that is engaged by said second cable, said second cable extending forwardly to a position adjacent to said seat;
(q) conduit and a pressure reducing valve assembly connected to said tank to said burner assembly to supply fuel from said tank thereto; and
(r) foot engageable members supported from said platform that may be engaged by said user to pivot said supporting boom and elongate boom to a desired position on either side of said tank to burn a strip of weeds or grass as said tank is moved.

3,224,431
OPEN WATER HEATING SYSTEM
Artemas F. Holden, 2195 S. Milford Road, Milford, Mich.
Filed July 16, 1963, Ser. No. 295,430
6 Claims. (Cl. 126—355)



1. A water heating system comprising a furnace having an enclosed heating chamber, a plurality of substantially horizontal vertically spaced water pans at the top of said chamber, a water inlet leading to the uppermost of said pans, opposite ends of successive pans being adapted to discharge to the next lower pan, the lowermost of said pans having a discharge edge providing an overflow water curtain adjacent one side of said heating chamber, a vertically extending gas-fueled luminous wall radiant heating panel closely adjacent the path of said water curtain to effect direct radiant heat transfer thereto, an open water tank at the bottom of said heating chamber for collecting heated water, a flue at the top of said heating chamber for exhausting burned gases from said radiant heating panel after they have risen past said successive water pans pre-heating the water descending therethrough and reducing the temperature of exhaust gases, and a water outlet from said tank for supplying hot water requirements.

3,224,432
DEVICE FOR IRRADIATING A BODY CAVITY
Frank S. Billingsley, United States Navy
(13116 Valley Wood Court, Silver Spring, Md.)
Filed Apr. 10, 1963, Ser. No. 272,170
11 Claims. (Cl. 128—1.2)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A device of the character described for irradiating a body cavity, such as the uterus, comprising:
a cylinder;
an applicator including

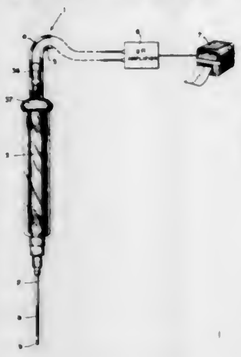
a relatively rigid tubular stem having its proximal portion fixed to, coaxial with, and in communication with the interior of said cylinder and having the axis of its distal portion at an obtuse angle to the axis of its proximal portion; and

a distensible, elastic balloon having its proximal region fixed relative to said stem and its interior in communication with the distal end of said stem so that said balloon is in communication through said stem with the interior of said cylinder;

a plunger telescopically engageable in said cylinder; and

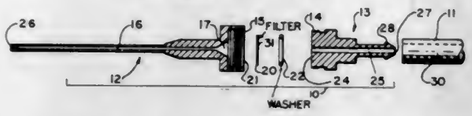
means on said cylinder for locking said plunger, at various positions of travel, against motion in said cylinder.

3,224,433
pH ELECTRODES
Henry J. Hroch von Dalebor, Littleton, Colo., assignor to Honeywell Inc., a corporation of Delaware
Filed Apr. 10, 1961, Ser. No. 101,946
10 Claims. (Cl. 128—2)



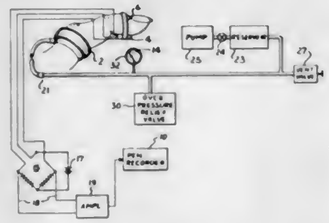
1. A pH electrode assembly comprising a hypodermic needle having an axial bore and a pointed end, a glass pH electrode having a tube portion located within said bore and terminating therein adjacent said needle end, and an elongated window in the wall of said needle extending from adjacent said end parallel to the axis of said needle, and passing from the exterior of said needle to said bore, a section of said tube portion which is in register with said window being arranged to constitute a pH-sensitive membrane.

3,224,434
CELL COLLECTOR
Norman Molomut, Flushing, and Paul Scheman, Freeport, N.Y., assignors to Waldemar Medical Research Foundation, Inc., Port Washington, N.Y., a corporation of New York
Filed Nov. 6, 1962, Ser. No. 235,693
4 Claims. (Cl. 128—2)



1. A clinical cell collector, comprising a nozzle having a nose portion and a rear portion, said nose portion and said rear portion being detachably connectible to each other, a longitudinal passageway in said nose portion and a longitudinal passageway in said rear portion, said passageways providing a through passageway when the two portions are connected, the passageway at the end of the nose portion adjacent the rear portion being enlarged to form an annular chamber, and a cell-collecting filter seated in said chamber so as to be athwart the longitudinal passageway, whereby when suction is applied to the far end of the rear portion the filter will be in the path of cells that are aspirated by the nose portion, the end of the nose portion remote from the rear portion being roughened so as to serve as a scraper of cells.

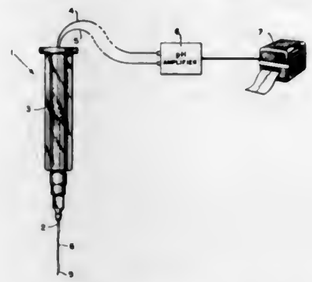
3,224,435
METHOD OF MEASURING BLOOD PRESSURE
Max Traite, Old Bridge, N.J., assignor to Gulton Industries, Inc., Metuchen, N.J., a corporation of New Jersey
Filed Sept. 10, 1962, Ser. No. 222,489
1 Claim. (Cl. 128—2.05)



A method of measuring diastolic blood pressure comprising: applying an inflatable cuff around an external blood vessel of the limb of the person being tested, obtaining a plethysmogram waveform of the limb beyond the blood vessel, the waveform, in the absence of a cuff pressure reaching the diastolic blood pressure, comprising an initial or main hump or pulse followed by a smaller hump or pulse of lesser amplitude than said main hump or pulse, gradually increasing the pressure in said cuff between a lower limit substantially below the lowest expected diastolic blood pressure to be measured and at least an upper limit at or above the upper expected diastolic blood pressure to be mesured, and at a relatively slow rate where a number of heart beats much greater than two will occur before the cuff pressure reaches said lower limit, wherein the change between a steady state and a changed condition of the plethysmogram can be readily detected, and recording or detecting the cuff pressure at the point in time where the shape of the lesser pulse first flattens out.

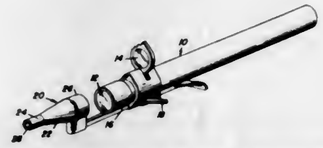
3,224,436
HYPODERMIC APPARATUS FOR MEASURING HYDROGEN ION CONCENTRATION OF BLOOD WITHIN A LIVING BODY
Robert A. Le Massena, Denver, Colo., assignor to Minneapolis-Honeywell Regulator Company, Minneapolis, Minn., a corporation of Delaware
Filed Apr. 10, 1961, Ser. No. 101,797
13 Claims. (Cl. 128—2.1)

1. A pH electrode assembly comprising a hypodermic needle having an axial bore and an open, pointed end, a glass pH electrode disposed within said needle bore and having a tube portion terminating in said bore adjacent said needle end, an elongated window through the wall of said needle extending from adjacent said needle end parallel to the axis of said needle, a section of said tube portion which is in register with said window being arranged to constitute a pH-sensitive membrane, a reference electrode disposed within said needle bore and having a tube portion terminating at said open end of said needle and having a relatively small end opening in register with said open end of said needle, a separate electrode member individual to each of said electrodes, located within the corresponding one of said tube portions entirely within said needle bore, and provided with an electrical lead connection, an electrically conductive substance in said tube portion of said glass electrode bridging between the corresponding one of said electrode



members and said pH-sensitive membrane section, and an electrically conductive substance in said tube portion of said reference electrode bridging between the corresponding one of said electrode members and said end opening of the last mentioned tube portion.

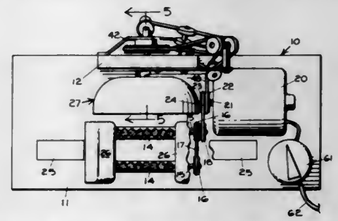
3,224,437
FLEXIBLE EAR SPECULUM
James F. Hardgrove, Universal Products Corp., Collegeville 2, Pa.
Filed Apr. 4, 1962, Ser. No. 184,965
3 Claims. (Cl. 128—9)



1. For use in conjunction with a light containing diagnostic instrument, an ear speculum consisting of a hollow substantially frusto-conical body open at its base and apex ends, said speculum being formed of a flexible resilient material and capable of lateral deflection upon contact with the interior of an ear so as to prevent damage to the ear, said deflection also directing the passage of a light beam through the body so as to control the illumination of the interior of the ear, an access slot through the body extending inwardly a short distance from the apex end thereof, said slot allowing for a slight inward folding of the apex end upon engagement of the speculum within an ear, and a downwardly extending longitudinally oriented solid projection integral with the base end of the body and similarly formed of flexible resilient material, said projection having a blind bore extending inwardly into the solid projection from the end thereof corresponding to the base end of the body, said bore being of a size so as to frictionally engage a projecting support on a diagnostic instrument in order to mount the speculum thereon.

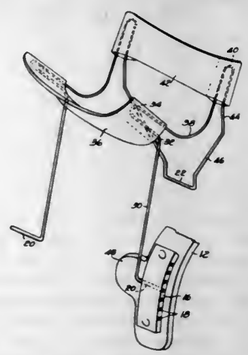
3,224,438
SCALP MASSAGING AND HAIR BRUSHING DEVICE
Frank J. Orifici, 8471 SW. 33rd Terrace, Miami, Fla.
Filed May 31, 1963, Ser. No. 284,550
4 Claims. (Cl. 128—46)

1. A device for massaging a person's scalp comprising a platform, an upright support member mounted on said platform, scalp engaging means, a bushing mounted on said upright support member, a shaft rotatably mounted in said bushing, manually adjustable eccentric means connecting said scalp engaging means and said shaft whereby upon rotational movement of said shaft said scalp engaging means will oscillate transversely of the axis of said shaft, means securing said scalp engaging means and said support member to prevent rotational movement of said scalp engaging means, resilient O-rings mounted on said shaft adjacent each side of said bushing to permit axial movement of said shaft, a pulley mounted on said shaft for rotational movement with said shaft, support means mounted on said shaft, means



securing said support means against rotational movement, a bracket secured to said support means and extending stantially parallel to said shaft, a second pulley mounted on said support, said second pulley having an axis substantially at right angles to said shaft, a counter weight mounted in proximity of the periphery of said second pulley, a motor, pulley and belt means connecting said motor, with said first and second pulleys whereby upon operation of said motor said scalp engaging means will oscillate along the axis of said shaft and along substantially right angle thereto to massage a person's scalp.

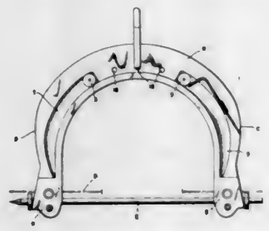
3,224,439
ORTHOPEDIC CERVICAL BRACE
Robert C. Blair, Jr., P.O. Box 148, Daytona Beach, Fla.
Filed Mar. 28, 1963, Ser. No. 268,621
7 Claims. (Cl. 128—75)



1. A cervical orthopedic brace comprising an occiput sling, a chin sling, and a one-piece length of wire or the like having its mid-portion bent to define a rectangular bail and leg portions extending upwardly therefrom; said leg portions terminating in respective first hairpin loops respectively carrying the ends of the occiput sling; said hairpin loops merging into respective upwardly concave arcs terminating in respective second hairpin loops respectively carrying the ends of the chin sling; the last-named loops merging into respective downwardly extending support legs having angled terminals; and means for supporting said terminals on the sternum of a patient and for supporting said bail on the upper back of said patient, in which said means comprises a flexible U-

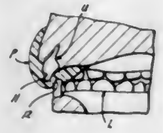
shaped neck-embracing strap having, on its spaced ends, fittings to receive said respective terminals, and a fitting on its junction region to receive said bail.

3,224,440
SURGICAL BOW ASSEMBLY
Frank O. Wright, 880–882 Adams Ave., Memphis, Tenn.
Filed June 10, 1963, Ser. No. 286,606
6 Claims. (Cl. 128—84)



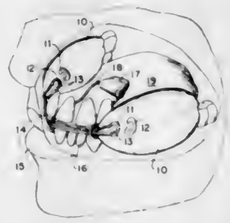
1. A wire bow structure for surgical use comprising an X-ray lucent molded plastic body including a base portion and spaced arms, means for connecting said bow structure with a traction applying system, said arms being resiliently associated with their base for movement toward and away from each other, head members formed at the ends of the arms, coplanar recesses formed in the head members, each of said recesses being defined in part by an offset wall portion providing a shoulder, said shoulders lying in a common plane, spaced transversely extending openings formed in each of the head members and extending into said recesses, and fastening means selectively insertable in either of the transverse openings.

3,224,441
METHOD OF FORMING A TEETH PROTECTOR
Richard P. Monaghan, Box 247, Overton, Tex.
Filed Apr. 24, 1963, Ser. No. 275,420
4 Claims. (Cl. 128—136)



1. A method of forming a teeth protector, comprising the steps of, providing a strip of themoplastic material of a length to extend across the front upper teeth of a user, heating the strip to soften same, forming such strip into a rope-like shape, shaping the material while in the mouth of the user using the tongue and while in the softened state to cover the upper front teeth and a portion of the front surface of the gum thereabove, also positioning some of the material behind the upper front teeth to receive at least a portion of the lower front teeth when the jaws are closed, closing the jaws of the user together to the normally closed position which the user's teeth would assume in the absence of any teeth protector to embed most of both the upper and lower front teeth into such material while in the softened state so that the upper cutting edges of the lower front teeth extend above and behind the lower cutting edges of the upper front teeth to such an extent that the rear teeth which normally contact each other in the absence of a teeth protector are in substantial contact, shaping the exterior surface of the material in front of the upper front teeth and gum thereabove, and allowing the material to set to a fixed shape with the shape of the teeth impressed therein and while retaining a flexible resiliency.

3,224,442
WEIGHT REPULSING AND CIGARETTE RENEGING APPLIANCE
James M. Stubbs, 1111 Lancaster Lane, Rockingham, N.C.
Filed May 8, 1964, Ser. No. 365,998
4 Claims. (Cl. 128—136)



1. A device for reducing caloric intake and consequently holding down the weight of an individual and for reducing cigarette and other smoking,

said device comprising ap air of thin long oval members of acrylic plastic with relatively smooth external surfaces capable of being readily cleaned and curved both lengthwise and transversely and of a general configuration to fit between the teeth and the cheeks of the face,

means flexibly connecting said oval members together comprising aperture means in each member adjacent an end thereof and a flexible connection extending between and secured in said aperture means of each oval member and adapted to be located loosely between the lower lip and the lower teeth,

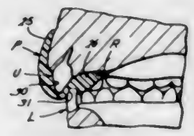
a tab for frivolous movement by the tongue,

means connecting said tab to said elastic connection for movement in any direction,

said last-mentioned means comprising a flexible and elastic strand loosely connected to said elastic connection extending between said oval members,

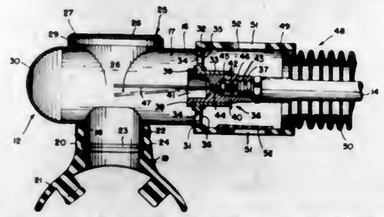
said elastic strand being adapted to extend rearwardly between the front teeth into the area of the tongue.

3,224,443
TEETH PROTECTOR AND METHOD OF FORMING SAME
Richard P. Monaghan, P.O. Box 247, Overton, Tex.
Continuation of application Ser. No. 123,879, July 13, 1961. This application Feb. 24, 1965, Ser. No. 439,508
4 Claims. (Cl. 128—136)



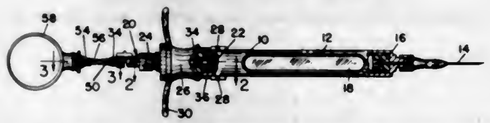
1. A teeth protector comprising, a silicone elastomer, fibers and a hardening agent intimately dispersed in said elastomer to provide a hardened but flexible silicone elastomer, and said elastomer, fibers and hardening agent being shaped to provide a protective unsupported external cover over the front teeth on the upper jaw of the user, said hardening agent including an ester selected from the group consisting of ethyl laurate, isomyl valerate, actyl acetate, amyl iso valerate, and an amyl butrate.

3,224,444
UNDERWATER BREATHING APPARATUS
Robert J. Dempster, 9232 S. Oakley Ave., Chicago, Ill.
Filed Feb. 6, 1962, Ser. No. 171,415
6 Claims. (Cl. 128—142)



6. Underwater breathing apparatus comprising a housing forming a breathing chamber from and into which a wearer of the apparatus may inhale and exhale air, a normally closed shut off valve connected with said chamber, an air supply hose connected with said valve and adapted for connection with a remote supply of air under pressure, a one-way flow control valve connected to the housing to permit air to flow out of said chamber while excluding fluid flow into the chamber, means operable to open the shut off valve in response to air inhalation from the chamber by the wearer, conduit means connected with the housing and extending in position to receive air delivered from the breathing chamber through said one-way valve and to discharge such air at a station remote from the housing, to thereby obviate the production of vision obstructing exhaust air bubbles within the field of vision of the wearer, and a one-way check valve in said conduit means, in communication with circumambient fluid, thereby permitting surrounding water to enter the same in order to prevent the establishment of air siphon conditions in the conduit means, during underwater use.

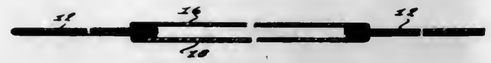
3,224,445
ASPIRATING SYRINGE
Norman W. Melott, Moundsville, W. Va., assignor to Cook-Waite Laboratories, Inc., New York, N.Y., a corporation of Delaware
Filed Mar. 1, 1956, Ser. No. 568,873
3 Claims. (Cl. 128—218)



1. An aspirating syringe comprising a generally cylindrical magazine, a plunger reciprocable longitudinally within said magazine, and a substantially flat aspirator hook rigidly fixed to the forward end of said plunger; said magazine being adapted to receive therein a cylindrical ampoule having a piston stopper slidable forwardly therein to expel a medicament therefrom and retractible to afford aspiration, said hook having substantially similar opposite side faces approximately parallel to the line of reciprocal movement of the plunger; said hook being adapted to become embedded in said stopper without turning relatively thereto, and having a portion opposing its withdrawal from said stopper upon a retraction stroke of the plunger.

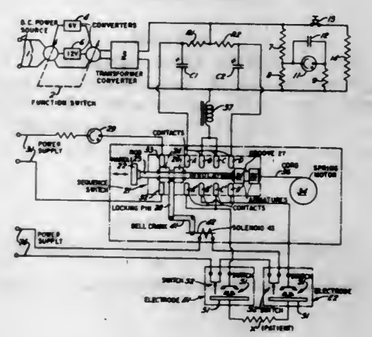
3,224,446
KNIT-WOVEN DIAPER
Graves T. Gore, 19 Ware St., Ware Shoals, S.C.
Filed Jan. 30, 1963, Ser. No. 254,892
6 Claims. (Cl. 128—284)

1. A diaper comprising a center portion of soft absorbent stretchable knitted material and two side portions of woven material extending transversely outwardly from opposite sides of said center portion, said center portion comprising a plurality of separate plies of knitted material, said side portions comprising a plurality of plies of woven material having inner and outer longitudinal edges, said inner edges being sandwiched between the separate plies of said center portion, said center portion and said side portions being substantially the same length



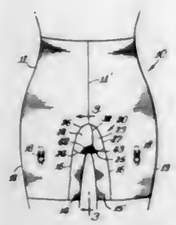
and secured together along the sandwiched longitudinal edges thereof to form a generally rectangular diaper, said knitted center portion providing lateral stretchability throughout said diaper sufficient to accommodate the size of the diaper to different size infants, and said side woven portions providing stability and strength to the diaper to enable repeated pinnings without deterioration and repeated launderings without curling or distortion of the diaper.

3,224,447
ELECTRODES FOR VENTRICULAR DEFIBRILLATOR
Earl Matthew Becker and William Carl Stuckrath, Pittsburgh, Pa., assignors to Mine Safety Appliances Company, a corporation of Pennsylvania
Filed June 25, 1962, Ser. No. 204,949
4 Claims. (Cl. 128—421)



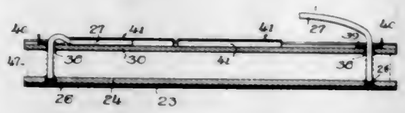
1. In a cardiac defibrillator for delivering pulses of high voltage electric current from a pulse generator through a pair of electrodes to a patient's body, safety means for connecting the pulse generator to the electrodes and for initiating operation of the pulse generator, comprising: separate first switch means associated with each electrode and operable to connect each electrode to the pulse generator when the electrode is pressed with a predetermined pressure against the body of the patient, electrically actuated triggering means for initiating operation of the pulse generator, separate second switch means associated with each electrode, an electrical series circuit including a source of electric current and both second switch means and the triggering means, the second switch means being operable to actuate the triggering means for initiating operation of the pulse generator solely in response to a predetermined pressure of both electrodes against the patient's body in excess of the pressure required to operate the first switch means.

3,224,448
SEPARABLE CROTCH UNDERGARMENT
George L. Diebold, Skokie, Ill., assignor to Venus Foundation Garments, Inc., Chicago, Ill., a corporation of Delaware
Filed Apr. 29, 1963, Ser. No. 276,260
5 Claims. (Cl. 128—529)



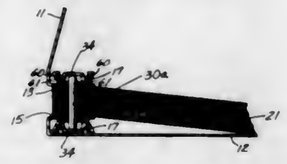
1. An undergarment comprising a body encircling portion and a separable crotch portion, said crotch portion including a pair of elongated flexible material sections secured at the front and rear edges thereof to said body portion with the inner longitudinal edges of said sections overlapping each other to a substantial degree preventing separation of said sections during normal body movements, said sections overlapping in an area covering the entire central portion of said crotch portion, and an elastic material insert of substantial width in each of said sections and forming one portion only of the length of said inner longitudinal edges.

3,224,449
LOOSE LEAF BINDER
John Potts, Chicago, Ill., assignor to Wilson-Jones Company, Chicago, Ill., a corporation of Massachusetts
Filed Mar. 19, 1959, Ser. No. 800,507
1 Claim. (Cl. 129—25)



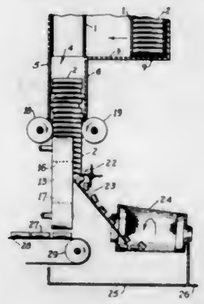
A top cover for a loose leaf binder having sheet retaining posts having a normal tendency to remain straight and to return to straight position when bent, a top binding plate, a channel on the upper surface of said top binding plate, a pair of plates positioned in said channel said pair of plates being provided with first apertures; said channel and said top binding plate being also apertured in alignment with said first-named apertures, an eyelet extending through said apertures securing each plate of said pair of plates immovable in said channel and to said top binding plate, said posts being adapted to extend through said eyelet and being bendable into said channel, said pair of plates each having its outer end extending upwardly transversely of said channel to form a stop member, said channel having a recess along each longitudinal edge, and a pair of normally spaced keepers overlying said channel having outwardly extending flanges slidably engaged in said recesses between said stop members, whereby said keepers are adapted to abut and slide along the bent ends of said posts to hold them in said channel.

3,224,450
FLEXIBLE POST BINDER AND COMPRESSION MECHANISM THEREFOR
Edward Whittemore, Elmhurst, and Robert Lindgren, Aurora, Ill., assignors to Wilson Jones Company, Chicago, Ill., a corporation of Delaware
Filed Jan. 27, 1964, Ser. No. 340,187
4 Claims. (Cl. 129—25)



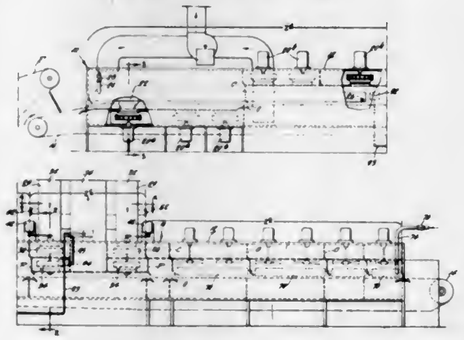
1. A compression mechanism for a flexible post binder comprising a channel having a pair of oppositely laterally disposed rails, a pair of oppositely inwardly extending spaced overhanging portions carried by said rails and a pair of oppositely disposed inturned end portions, a pair of compressor members normally slidably disposed within said channel, each of said compressor members formed with a pair of oppositely laterally disposed upwardly opening substantially V-shaped hook members each having a resiliently connected inwardly movable portion, a bridge portion intervening said hook members, each of the inwardly movable portions of each of the hook members of a compressor member being normally disposed between one of the overhanging portions of said channel and lying along the rails thereof, the spacing between the overhanging portions of said rails being greater than the spacing between the apexes of the V-shaped hooks but less than the spacing between the outer extremities of said hooks; each of said compressor members being also adapted to be snapped into said channel from a position outside the plane thereof.

3,224,451
APPARATUS FOR REMOVAL OF TIPS FROM SCRAP CIGARETTES
George Dearsley, London, England, assignor to American Machine & Foundry Company, a corporation of New Jersey
Filed May 9, 1963, Ser. No. 279,203
Claims priority, application Great Britain, May 11, 1962, 18,316/62
13 Claims. (Cl. 131—20)



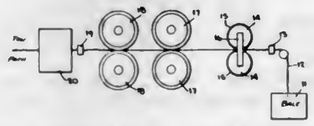
1. Apparatus for removing the filter tip portions from filter tipped cigarettes comprising means for feeding the cigarettes in a direction transversely of their longitudinal axes while said cigarettes are in abutting relationship, both side by side generally horizontally and top and bottom generally vertically, with their tipped ends facing in the same direction and in the form of a continuous stream of a width to accommodate at least two cigarettes, means for compressing the stream of cigarettes, so that the generally vertical layers are compacted and the generally horizontal layers are subjected to increasing compaction, to form a relatively dense solid unitary cigarette mass, and means comprising a single rotary element, wider than said mass, engageable substantially simultaneously with all of the cigarettes in a generally horizontal layer, to sever the filter tips therefrom, while they are so compacted.

3,224,452
MATERIAL TREATING METHOD AND APPARATUS
John J. Franklin, Glenside, and Edwin W. Hine II, Philadelphia, Pa., assignors to Proctor & Schwartz, Inc., Philadelphia, Pa., a corporation of Pennsylvania
Filed Oct. 16, 1963, Ser. No. 316,577
5 Claims. (Cl. 131—140)



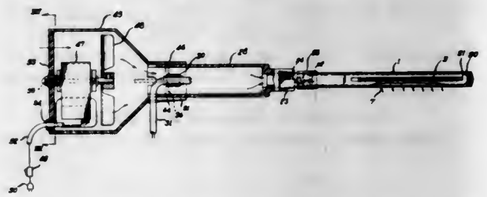
1. A method of treating material consisting of the steps of subjecting the material to a gaseous treatment medium in at least two substantially enclosed treatment zones which are in limited free fluid communication, controlling the condition of the gaseous treating medium in each of said zones to provide a processed material having a predetermined condition, sensing the gaseous pressure in said treatment zones and varying the gaseous pressure in at least one of said treatment zones in response to pressure variations sensed between said zones thereby to substantially balance the gaseous pressure in said zones and minimize inflow of gaseous medium between said zones.

3,224,453
FILTER CIGARETTES
William R. Mahoney, Pensacola, Fla., and Richard E. St. Pierre and Donald T. Dunlap, Charlotte, N.C., assignors to Celanese Corporation of America, New York, N.Y., a corporation of Delaware
Original application June 12, 1959, Ser. No. 820,041, now Patent No. 3,103,220, dated Sept. 10, 1963. Divided and this application Apr. 8, 1963, Ser. No. 271,057
The portion of the term of the patent subsequent to May 8, 1979, has been disclaimed
3 Claims. (Cl. 131—208)



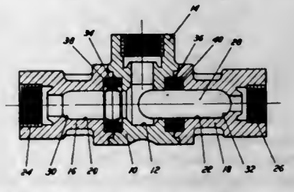
1. A plug of substantially uniform cross-sectional density for cigarette filters comprising a tow of about 3000 to 120,000 crimped continuous filaments of less than about 25 denier per filament, the crimps of said filaments generally being out of registry with one another, said crimps having been deregistered by a method comprising longitudinally moving the tow having filaments the crimps of which are generally in registry, while contacting the tow with at least one ridge, said ridge being inclined to the path of movement of the tow, thereby to displace some of the filaments of the tow relative to other filaments of the tow whereby the crimps of the filaments are generally moved out of the registry, said plug having a density less than about 0.23 gram per cubic centimeter and a smoke-removal efficiency of at least about 15%.

3,224,454
CURLING IRON HAVING DIFFERENT SIZED HAIR WINDING TUBES
Frank Quinio, 532 2nd Ave., Tarentum, Pa., and Louis Quinio, Jr., 522 Beaver St., Sewickley, Pa.
Filed May 24, 1962, Ser. No. 197,529
2 Claims. (Cl. 132—33)



1. A hair dressing implement for winding and heating strands of hair and for fixing the curled hair by drying the curled strands while under tension on the curling surface of said implement, consisting of a hollow cylindrical curling iron with a row of upstanding teeth at one side having perforations in the wall thereof and having a heating element disposed therein, said curling iron being connected to a source of air under pressure to deliver air around said heating element and through the perforations of said hollow curling iron, a plurality of tube-like adaptors of different diameters mounted on said curling iron in contact therewith to provide curling surfaces of greater diameter than said cylindrical curling iron, said tube-like adaptors having perforations for the escape of air passing from the perforations in the wall of said curling iron and having slotted portions receiving the teeth of the curling iron to effect intimate contact with the hollow cylindrical curling iron.

3,224,455
THREE-WAY SERVO DEVIATOR FOR PRESSURIZED FLUID SYSTEMS AND MORE SPECIFICALLY FOR PNEUMATIC BRAKING SYSTEMS
Giuseppe Alfieri, Milan, Italy, assignor to Fabbrica Italiana Magneti Marelli S.p.A., Milan, Italy, a corporation of Italy
Filed Nov. 30, 1962, Ser. No. 241,236
Claims priority, application Italy, Dec. 5, 1961, 21,867/61
5 Claims. (Cl. 137—113)



1. A three way servo deviator for pressurized fluid systems, comprising a hollow body having connection fittings adapted to lead to a system and to two pressurized fluid supply sources, stop means within said body on opposite sides of said system fitting, a piston in said body and movable in response to pressure from one of said source fittings to one position in which fluid from said

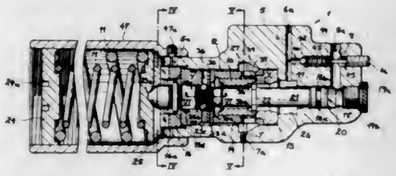
one source fitting is in communication with said system fitting and movable in response to pressure from the other of said source fittings to another position in which fluid from said other source fitting is in communication with said system fitting, and a pair of sealing gaskets fixedly mounted within said body on opposite sides of said system fitting, the length of said piston being greater than the distance between a stop means and the adjacent gasket so that one of said gaskets slidably engages the exterior surface of said piston when it is in said one position and the other of said gaskets engages said piston when it is in said other position, said gaskets being spaced apart a distance less than the length of said piston so that the piston in moving from one to the other position is always engaged by one or the other of said gaskets.

3,224,456

VALVE FOR THE CHARGING OF PRESSURE ACCUMULATORS

Hans-Christof Klein, Hattersheim (Main), Germany, assignor to Alfred Teves K.G., Frankfurt am Main, Germany, a corporation of Germany

Filed June 26, 1964, Ser. No. 378,215
Claims priority, application Germany, Aug. 2, 1961, T 20,536
5 Claims. (Cl. 137—115)



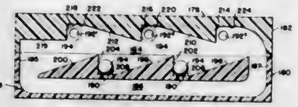
1. In a valve for the charging of a pressure accumulator with a fluid from a supply system having a high-pressure and a low-pressure side, in combination, a valve body formed with an inlet connectable to said high-pressure side, a chamber connectable with said accumulator, an outlet connectable to said low-pressure side, and a passage in said body interconnecting said inlet and said outlet; an actuating member adapted to be operated by fluid pressure from the accumulator extending within said body into said chamber for displacement within said body from a normal terminal position toward an off-normal position; a closure member displaceable in said body relatively to said actuating member between a first position blocking said passage and a second position wherein said passage is unblocked, said closure member having the shape of a differential piston with a smaller and a larger end face exposed in its first position to oppositely directed forces due to fluid pressure within said passage tending to maintain said closure member in said first position; restoring means engaging said actuating member for resisting displacement thereof from said normal position into said off-normal position, said actuating and closure members being provided with co-operating first and second formations engageable with each other upon displacement of said actuating member from and into said normal position whereby said closure member is entrained from said first to said second position and vice versa, respectively; indexing means yieldably engaging said actuating member in said normal position; and means forming a bypass for said passage normally obstructed by said indexing means, said indexing means being movable into a nonobstructing position by the displacement of said actuating member from said normal position, thereby relieving the fluid pressure within said passage.

3,224,457

SEQUENCING VALVE

Harry S. Davis, Fort Lauderdale, Fla., assignor to Davis Flow Valve, Inc., Fort Lauderdale, Fla., a corporation of Florida

Filed Nov. 21, 1962, Ser. No. 239,226
11 Claims. (Cl. 137—119)



2. A sequencing valve, comprising: a valve housing having inlet means and at least two spaced outlets; ceiling, side and floor walls within said housing providing an endless flow passage interconnecting said inlet means and said outlets, said walls including a series of interconnected sloping ceiling surfaces and a series of interconnected sloping floor surfaces, means interconnecting the high point of a ceiling surface with the low point of an adjoining ceiling surface, and means interconnecting the high point of a floor surface with the low point of an adjoining floor surface, said inlet means being disposed at the low points of said sloping floor surfaces and said outlets being disposed at the high points of said ceiling surfaces, the high and low points of a sloping ceiling surface being offset longitudinally of said flow passage relative to the high and low points of a sloping floor surface so that the low point of a floor surface is disposed between the high and low points of a ceiling surface: valve means, not more than one less than the number of outlets, freely movable in said flow passage, said valve means having a density greater than that of the controlled fluid and cooperating with said outlets to control flow through said outlets; said sloping ceiling surfaces being inclined in a direction opposite to the inclination of the sloping floor surfaces to advance said valve means in a single direction through said flow passage; whereby each valve means is freely movable by the force of fluid flow from said inlet means through said flow passage against said valve means, in cooperation with said sloping surfaces, from a position adjacent an inlet means at the foot of one of said floor surfaces in proximity with a certain outlet to a position obstructing said certain outlet to be maintained in such obstructing position by fluid pressure in said flow passage, and movable by the force of gravity, upon cessation of fluid flow through said flow passage and the lowering of fluid pressure therein, from said obstructing position and to be moved down the incline of a floor surface to a position adjacent an inlet means at the foot of said floor surface, from which latter position said valve means may be moved into a different position by the force of fluid flow directed against said valve means and by a sloping ceiling surface into register with a next outlet, to obstruct flow therefrom, when fluid flow is restored through said inlet means and through said flow passage.

3,224,458

SEQUENCING VALVE

Harry S. Davis, Fort Lauderdale, Fla., assignor to Davis Flow Valve, Inc., Fort Lauderdale, Fla., a corporation of Florida

Original application Nov. 2, 1962, Ser. No. 239,226. Divided and this application July 22, 1964, Ser. No. 384,402

12 Claims. (Cl. 137—119)

1. A sequencing valve, comprising: a housing having upper, lower and side walls defining an endless flow passage; fluid inlet means into said flow passage; a plurality of outlets in the upper part of said flow passage; ball valve means, at least one less than the number of outlets, freely movable in said flow passage, said ball valve means having a density not greater than the density of the fluid to be controlled; the upper and lower walls of said flow passage each having a series of inclined surfaces, wall means interconnecting the high point of an inclined surface with the low point of an adjoining inclined surface, said fluid outlets being positioned adjacent the high points in the upper wall, said interconnecting wall means in the upper wall being offset, axially of said endless flow passage, relative to the interconnecting wall means in the lower wall, the inclined surfaces in the upper wall sloping in an opposite direction in relation to the inclined surfaces in the lower wall; and bleed means of restricted cross section relative to said outlets in the lower part of said flow passage, whereby, upon initiation of fluid flow through said inlet means,



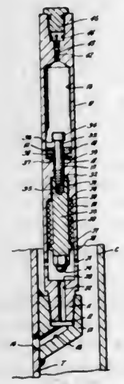
said ball valve means will float on or be carried upwardly by the fluid into engagement with an upper inclined surface to be cammed into position to close an outlet to prevent flow therethrough, and when flow through said inlet means is discontinued, the fluid remaining within the flow passage escapes through the bleed means and the ball valve means engages an inclined surface on the lower wall to be cammed down the slope thereof to come to rest on the interconnecting wall means, so that when fluid flow is again initiated, each ball valve means will again be floated or carried upwardly against an inclined surface on the upper wall to be cammed to an adjacent outlet at the upper end thereof in a manner previously described, each ball valve means progressing in a single direction through said flow passage.

3,224,459

SNAP-CLOSING GAS LIFT VALVE

Mason M. Lilly, % Harold Brown Co., P.O. Box 25047, Houston, Tex.

Filed Aug. 5, 1963, Ser. No. 299,822
5 Claims. (Cl. 137—155)



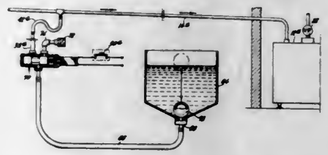
1. A gas lift valve, comprising, a generally tubular housing, a valve seat port in the housing, a valve member reciprocable relative to the port for controlling the same, an elongate stem secured to the valve member, annular abutment means in the housing having an axial opening through which the stem is reciprocable, annular shoulder means carried on said stem for longitudinal movement therewith relative to said abutment means, resilient means biasing the valve member toward the port-closing position, and a snap-acting mechanism for controlling the closing movement of the valve member comprising, a Belleville spring washer seated on said abutment means surrounding said stem in longitudinally spaced relation to said shoulder means, the spacing being such as to permit initial limited free longitudinal movement of the stem in the port-closing direction followed by engagement of the washer by said shoulder means whereby to resist further movement of said stem throughout at least a portion preceding the terminal portion of said movement, said washer having a pre-selected h/t ratio, as hereinabove defined, such that when the deflection of said washer under the closing pressure of said biasing means exceeds a pre-determined fraction of h, the washer will collapse allowing the valve member to snap through said terminal portion to the port-closing position.

3,224,460

MILK TRANSFER SYSTEM

Harry E. Cann III, West Chester, Pa., assignor to Esco Cabinet Company, West Chester, Pa., a corporation of Pennsylvania

Filed Jan. 9, 1963, Ser. No. 250,436
3 Claims. (Cl. 137—399)



1. A milk transfer unit comprising a milk-receiving tank, an outlet pipe at the bottom of said tank, a buoyant ball adapted to seat over said outlet pipe, a two-way valve, a connector tube connecting said valve with said outlet pipe, a first outlet of said valve connected with a vacuum bulk container, a second outlet of said valve opening into the atmosphere, a valve control means for connecting said connector tube with either said first valve outlet or said second valve outlet, said buoyant ball seating on said outlet pipe when said connector tube is connected with said vacuum bulk container, said ball being adapted to be freed from said outlet pipe subsequent to introduction of milk into said tank by actuation of said valve to introduce air at atmospheric pressure into said connector tube, said ball being adapted to again seat upon said outlet pipe following passage of the milk introduced therein into the bulk container.

3,224,461

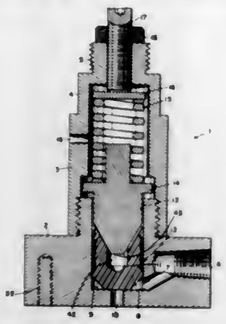
PROPELLANT CHARGING VALVE HAVING PLASTIC HEAD CONSTRUCTION

Frank L. Kurek, 609 Charles Lane, Madison, Wis.

Filed Sept. 14, 1961, Ser. No. 138,062
2 Claims. (Cl. 137—509)

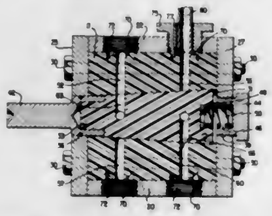
1. In a valve which opens in response to an increase in upstream pressure: a seat, a cylindrical bore having an axis perpendicular to said seat, a single tubular passage opening out of said bore, through substantially the center of said seat, a piston of resilient plastic having a generally cylindrical outer surface slidably received in said bore, a surface on one end of said piston to seal against said seat, a conical surface in the other end of said piston, a piston-holding member biasedly urged against said piston, said piston-holding member having one end surface thereof engaged with said conical surface

of said piston, said end surface being conical, and a plurality of conical slits in the outer cylindrical wall of said



piston, said slits extending upwardly into said piston with respect to said seat.

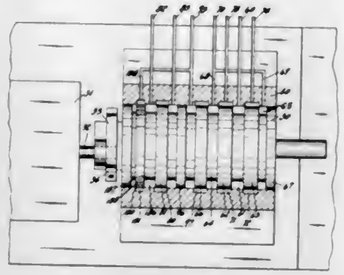
3,224,462
NON-METAL VALVE
Edwin B. Lopker, 2841 NE. 33rd Court, Fort Lauderdale, Fla.
Filed Sept. 12, 1963, Ser. No. 308,429
15 Claims. (Cl. 137—625.19)



1. A valve comprising a plastic body having at least one internal passageway providing a fluid connection to a plurality of ports at the surface of the body and a metal case substantially completely enclosing said body, being locked against rotation relative to the body, having an internal configuration corresponding to the external shape of the body and being provided with holes corresponding to the ports in the body, said holes being provided with means for securing fluid conduits to the body, said body having a surface depression at said ports for connection to said fluid conduits.

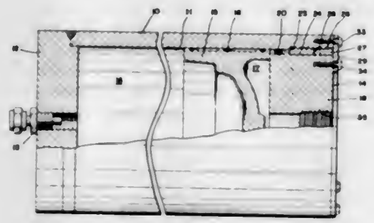
3,224,463
SPOOL VALVE FOR THE CONCURRENT CONTROL OF A PLURALITY OF MOTORS
Aage Jensen, 2515 Arlington Ave., Racine, Wis.
Filed Jan. 16, 1961, Ser. No. 82,945
6 Claims. (Cl. 137—625.69)

1. A spool valve having means for balancing pressures occasioned by leakage, said valve comprising a valve spool having first, second, third and fourth lands mutually spaced, and a casing with which said lands are in bearing contact, said casing including a first port with which the first land is normally in register, a hydraulic liquid pressure supply connection opening to the casing between the first land and the second land, said casing having a second port with which the second land is normally in register, the width of the second port slightly exceeding the width of the second land, a pressure liquid discharge connection communicating with the casing between the second land and the third land, a liquid return connection communicating with the casing between the third land and the fourth land, said casing further having a port with which the fourth land is normally in register and which is slightly wider than the fourth land, and a liquid discharge connection opening through the casing



beyond the fourth land, and means providing a bypass connection from the first mentioned port to the liquid return connection.

3,224,464
ACCUMULATOR END CAP
Herbert H. Schmiel, Willoughby, Ohio, assignor to Parker-Hannifin Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Feb. 7, 1963, Ser. No. 256,994
7 Claims. (138—31)

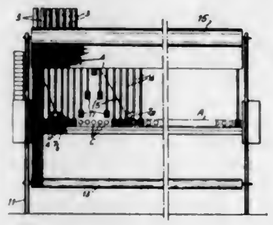


1. In an accumulator, a body having a bore therein closed at one end, a freely movable piston within the bore dividing the same into first and second chambers adapted to receive fluid under pressure, a removable plug closing the other end of the body, means for sealing the plug relative to the bore, said plug having an outwardly facing shoulder, a ring attached to the body and engageable with the shoulder for retaining the plug within said bore, said ring having gripping means spaced from either end thereof for engagement by a tool for unthreading the ring from the bore, and blocking means rendering said gripping means inaccessible to a tool unless said plug is moved inwardly of said bore away from said ring.

3,224,465
CONTINUOUS WEAVING LOOM
Louis Fontaine, 22 Ave. de Grammont, Tours, France
Filed Dec. 10, 1962, Ser. No. 243,453
Claims priority, application France, Dec. 12, 1961, 881,678
7 Claims. (Cl. 139—12)

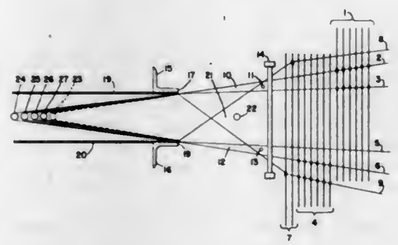
1. In a weaving loom, in combination, frame means adapted to support a warp composed of a plurality of warp threads extending parallel to each other substantially in a plane; a plurality of healds, one for each warp thread, mounted on said frame means movable in a direc-

tion transverse to said plane between a forward and a rearward position, said healds being respectively adapted to engage the warp threads for moving the engaged portions thereof in a direction transverse to said plane so as to form a shed; a heald operating means connected to each heald for moving when actuated the respective heald independently of the other healds between said positions thereof; a plurality of reed members extending transverse to said plane between the warp threads and being movable from a neutral position in which upper surfaces of said reed members extend in a second plane transverse to that of the warp threads and a raised position; a plurality of reed supporting and operating means mounted on said frame means, one for each reed member, for moving, when actuated, the respective reed member individually



from said neutral to said raised position and back; a plurality of shuttles each having a bobbin with a weft thread wound thereon of a length equal at least to the width of the warp, said shuttles adapted to ride on said upper surfaces of said reed members when the same are in the neutral position for placing during the passage thereof across the warp shed a weft thread into said shed; means for projecting said shuttles one by one in succession along said surfaces in one direction through said warp shed; speed regulating means for maintaining the speed of each shuttle during its passage across the shed substantially constant; and programming means for successively actuating each of said heald operating means and each of said reed supporting and operating means independent of each other and in dependence on the speed of the shuttle across the shed.

3,224,466
METHOD FOR WEAVING CONTOURED THREAD CONNECTED DUAL WALL INFLATABLE FABRIC
Elliot B. Grover, Raleigh, N.C., assignor to Goodyear Aerospace Corporation, Akron, Ohio, a corporation of Delaware
Filed Jan. 31, 1964, Ser. No. 341,719
3 Claims. (Cl. 139—20)



1. A method for weaving deep pile contoured inflatable fabric which includes the steps of

weaving two fabrics of warp and weft yarns in substantially parallel and spaced relationship,

taking the fabrics away from the weaving edge in substantially straight and parallel spaced relationship,

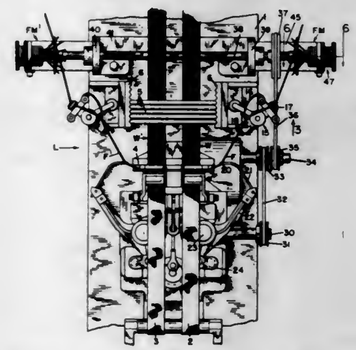
weaving a plurality of drop yarns longitudinally into the fabrics in substantially parallel relationship to the warp yarns,

crossing said drop yarns over from one fabric to the other,

extending the crossed over drop yarns pre-determined distances to achieve a desired spaced relationship between the fabrics when the fabrics are moved apart after the weaving is completed, where such extension is independent of any other weaving operation and where the extensions of individual drop yarns are variable across the width of the fabrics, and

subsequently weaving the extended and crossed over drop yarns into their respective fabrics to hold the drop yarns in position before the next cross over thereof.

3,224,467
FEEDING MECHANISM FOR WEFT IN LOOMS
John P. Gagliardo, Shrewsbury, Mass., assignor to Crompton & Knowles Corporation, Worcester, Mass., a corporation of Massachusetts
Filed Mar. 13, 1964, Ser. No. 351,720
13 Claims. (Cl. 139—122)

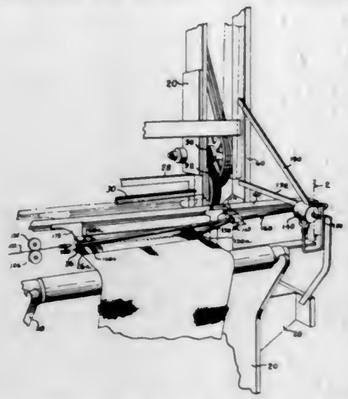


1. In feeding mechanism to advance weft from a stationary supply to weft laying means in a loom, said mechanism having two cooperating coaxial feeding members each having weft engaging elements separated by spaces distributed around the axis of said members, the elements of each member passing through the spaces of the other member, the elements of said two members incident to passing through said spaces forming a series of V-shaped notches the apices of which are located around said axis and in at least some of which the weft is engaged by the elements, said feeding mechanism being characterized by having drive means to cause rotation in unison of said members, and manual adjusting means normally stationary during operation of the loom to effect relative axial movement of said members during rotation of the latter to change the distance of said apices from said axis and thereby vary the amount of weft advanced from said supply to said weft laying means per rotation of said members.

3,224,468
LOOM
Louis J. Zerbee, 301 Chillicothe Ave., Bellefontaine, Ohio
Filed Apr. 2, 1964, Ser. No. 356,903
5 Claims. (Cl. 139—127)

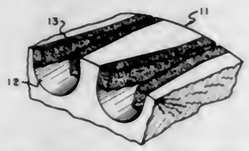
1. A device in a loom for feeding weft wires through the shed of the warp wires, the combination including a reciprocating beater, a torpedo-like cap on the leading end of the weft wire, means for feeding the weft wire between the warp wires, the torpedo-like cap guiding the

leading end across the warp wires, and pneumatic mechanism for withdrawing the cap from the leading end of the weft wire when laid in position across the warp wires and



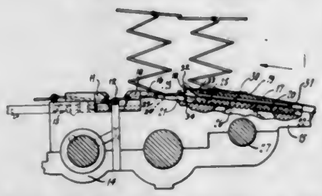
for returning the cap to the opposite side of the warp wires, said mechanism placing the cap on the leading end of the next weft wire.

3,224,469
BOBBIN TIP SUPPORT MEANS IN FILLING BATTERY
William E. Harmon, Pacolet Mills, S.C., assignor to Deering Milliken Research Corporation, Spartanburg, S.C., a corporation of Delaware
Filed Aug. 8, 1963, Ser. No. 300,798
6 Claims. (Cl. 139—249)



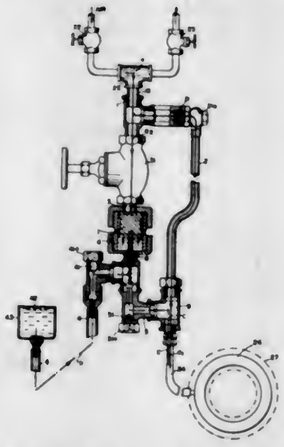
1. In a filling replenishing loom battery of the type which secures a plurality of filling carriers, a disc having disposed thereon a plurality of stationary and resiliently lined filling carrier engaging areas, said filling carrier engaging areas having bearing faces which exert opposing forces which are substantially oblique to the longitudinal axis of the filling carriers.

3,224,470
SPRING UNIT LACING MACHINES
Alfred Turley, Bushbury, Wolverhampton, England, assignor to Vono Limited, Tipton, England, a British company
Filed May 14, 1963, Ser. No. 280,279
3 Claims. (Cl. 140—92.3)



1. In a coil spring lacing machine for lacing together coil springs comprising, an elongated upper frame and an elongated lower frame, each carrying a plurality of clamping jaw assemblies, for clamping together the end coils of two rows of springs held between the upper and lower jaw assemblies, each jaw assembly comprising a fixed jaw and a slidable jaw movable toward and away from the fixed jaw to respectively close and open the jaws, means for opening and closing the jaw assemblies, each frame having at one end means for forming and advancing a wire helix for lacing together the end coils of the springs and a transporter mechanism for each jaw assembly for engaging the laced together coils and moving them forwardly, and also bringing a fresh row of coil springs in between the jaws, the improvement wherein said transporter mechanism comprises a rack bar having teeth thereon, means for slidably mounting said rack bar for reciprocatory movement in a direction at right angles to the line of a row of springs between the jaw assemblies, a pinion in mesh with the teeth on the rack bar, an upper common drive shaft, a lower common drive shaft, the pinions of the upper jaw assemblies being mounted upon the upper common drive shaft, the pinions of the lower jaw assemblies being mounted upon the lower common drive shaft, a main drive shaft, means for driving said upper and lower common drive shafts from said main drive shaft, adjustable stop means on each jaw assembly to locate the end coil of a spring placed thereon, means for adjusting the position of said stop means in relation to the center of the jaws to allow for different diameters of spring end coils, means for providing reciprocating rotary movement of the main drive shaft and further adjustment means for altering the extent of reciprocating rotary movement of the main drive shaft.

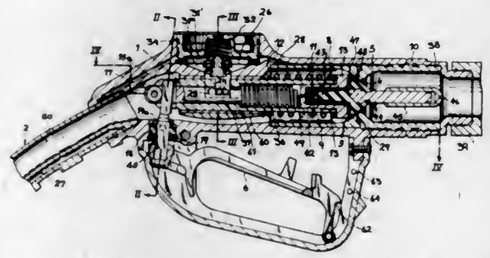
3,224,471
APPARATUS FOR INFLATING A RUBBER TUBE
Karl Zängl, Kantstrasse 10, Munich 13, Germany
Filed May 31, 1962, Ser. No. 198,956
7 Claims. (Cl. 141—38)



1. An apparatus for automatically admixing a protective liquid with a stream of air under pressure for the inflation of an elastic tube, comprising a mixing chamber, a receptacle containing a supply of said liquid, a source of said air under pressure, first conduit means connecting said receptacle with said chamber, second conduit means connecting said source with said chamber, outlet means at said chamber for dispensing a mixture of air with said liquid, first valve means in said first conduit means, dosing means coupled with said first valve means for admitting a limited supply of said liquid into said chamber, flow-control means including second valve means in said second conduit means for passing said air under pressure through said chamber with entrainment of the admitted liquid over an interval sufficient to inflate a tube

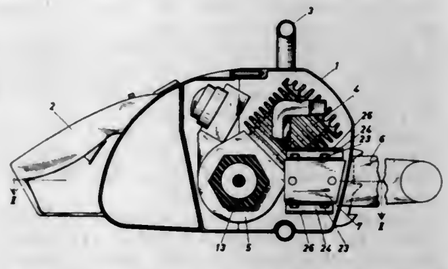
connected to said outlet means, and automatic means responsive to operation of said flow-control means for briefly actuating said first dosing means substantially at the beginning of said interval.

3,224,472
LIQUID-DISPENSING NOZZLE WITH AUTOMATIC CUTOFF
Karlheinz Ehlers, Kanzleistrasse 55, Hamburg, Germany
Filed Apr. 18, 1963, Ser. No. 273,895
Claims priority, application Germany, Apr. 19, 1962, A 40,006
14 Claims. (Cl. 141—209)



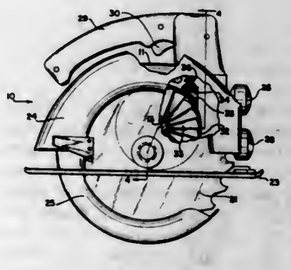
1. A nozzle with automatic cutoff for dispensing liquid from a nondraining hose, comprising a tubular housing with an open front end and with an open rear end connectable to said hose;
an elongated spigot secured to said front end, said spigot having a relatively wide filling channel communicating with the interior of said housing and a relatively narrow air channel extending from a location within said housing to a port opening into the atmosphere near the free end of said spigot;
pressure-sensitive piston means in a space of said housing separated from said interior;
a valve body axially movable in said interior, said housing being provided near its rear end with a constriction forming a valve seat;
a pair of slidably interconnected control members axially movable in said housing with freedom of limited relative displacement in an axial direction, one of said members bearing said valve body;
first spring means in said housing bearing upon said one of said members for urging said valve body against said seat, thereby blocking the flow of liquid through said housing; a handle externally mounted on said housing, said handle being provided with an extension projecting into said housing, the other of said members being linked with said extension for forward displacement away from said valve seat upon movement of said handle from a normal position to an off-normal position;
second spring means weaker than said first spring means bearing upon said members for tending to maintain them in a predetermined relative position;
and latch means in said housing limitedly displaceable in axial direction of said housing, said latch means being simultaneously engageable with cooperating formations on both said members in said predetermined relative position thereof whereby movement of said handle into said off-normal position forces said one of said members away from said valve seat and enables the flow of liquid from said hose to said spigot, said housing being formed with a first passage extending from said air channel of said spigot to a part of said space on one side of said piston means, said housing being further formed with a second passage extending from said part of said space to a point along the flow path of said liquid through said interior whereby suction due to said flow becomes effective upon the blocking of said port to displace said piston means, said latch means being linked with said piston means for disengagement from at least one of said formations upon suction-induced displacement of said piston means, thereby enabling said first spring means to restore said one of said members to flow-blocking position, said latch means comprising a slotted cage and roller means movable in slots of said cage in axial direction of said housing, said roller means being engageable with said formations, said cage being secured to said membrane with freedom of limited relative mobility.

3,224,473
PORTABLE ENGINE-DRIVEN CHAIN SAWS
Gunther Heinrich Wilhelm Dobbertin, 28 Ovra Oskroksgatan, and Bengt Olof Johan Stellan Mörner, 6A Olbersgatan, both of Gothenburg, Sweden
Filed Nov. 26, 1962, Ser. No. 240,117
Claims priority, application Sweden, Apr. 3, 1962, 3,686/62
3 Claims. (Cl. 143—32)



1. A portable chain saw comprising a saw bar, an engine having a crankshaft, a saw bar mounting member rigidly connected with said engine, means rigidly securing said saw bar to said mounting member, a casing, carrying handles rigidly connected to said casing, a pair of rings of resilient material, means connecting said rings at their inner peripheries to said engine coaxially with the crankshaft of said engine, and means connecting said rings at their outer peripheries to said casing.

3,224,474
AUTOMATICALLY-APPLIED FRICTION BRAKING MEANS FOR A PORTABLE ELECTRIC TOOL
Leonard Bloom, Baltimore, Md., assignor to The Black and Decker Manufacturing Company, Towson, Md., a corporation of Maryland
Filed Dec. 17, 1964, Ser. No. 419,102
4 Claims. (Cl. 143—43)



1. In a hand-operable portable electric saw of the type comprising a substantially-flat shoe plate for supporting the saw upon the top surface of a workpiece, a housing

structure on the shoe plate, a motor in the housing provided with a shaft, a spindle journaled in the housing, gear reduction means to drive the spindle from the motor shaft, a blade mounted on the spindle and extending through the shoe plate to engage the work, an upper control handle on the housing for manually guiding the saw along the top surface of the work, and an eletctric switch mounted in the upper handle, the switch being provided with a manually-actuated resiliently-biased trigger for energizing the motor from the electric line: The improvement of means to automaticallly brake the blade to a stop subsequent to disconnecting the motor from the line, which comprises:

(A) a brake drum mounted on the motor shaft within the housing;

(B) a brake shoe within the housing and engaging said drum;

(C) means constantly urging said brake shoe against said drum, whereby said brake shoe tends to exert a radial braking force on said drum; and

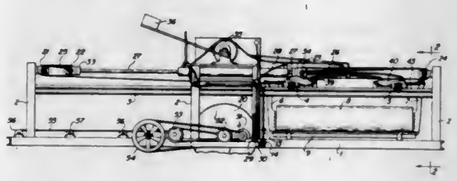
(D) linkage means including at least one pivoted lever in the upper control handle, connecting said brake shoe and the switch trigger, and counteracting said radial braking force of said last-named constantly-urging means when the operator engages the switch trigger in making a cut;

(E) said pivoted lever having a distinct mechanical advantage, thereby reducing the pressure required by operator against said constantly-urging means in the normal use of the saw in making a cut;

(F) whereby said linkage means automatically withdraws said brake shoe away from said drum and allows the motor shaft to rotate when the switch trigger is manually actuated; and

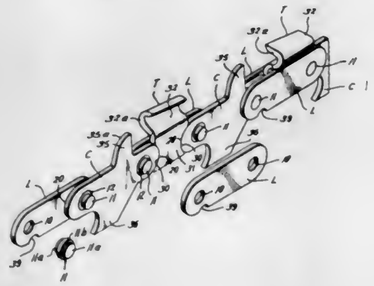
(G) whereby said brake shoe automatically returns into braking engagement with said drum carried on the motor shaft when the switch trigger is manually released to disconnect the motor from the line, whereby the braking force is applied automatically to the higher-speed motor shaft rather than to the lower-speed saw spindle.

3,224,475
STUD MILL
Arthur Fehr, Cache Creek, British Columbia, Canada
Filed July 15, 1963, Ser. No. 294,935
10 Claims. (Cl. 143—54)



1. A stud mill comprising a frame consisting of substantially horizontal base members, vertical members and transverse members, carriage tracks mounted on the upper parts of said vertical members, a carriage movably mounted on said carriage tracks, a hydraulic cylinder, a double acting piston having piston arms extending through each end of the said hydraulic cylinder, speed-multiplying means including a plurality of sheaves connected to the ends of said piston arms, a plurality of cables, and a plurality of sheaves mounted on said frame over which said cables pass, the said cables connected to the ends of said carriage to move said carriage along said tracks, hydraulically operated arms pivotally mounted on the ends of said carriage, log holding dogs extending from the said pivotally mounted arms adapted to be raised and lowered into inoperative and operative position, a log cradle, adjustable transversely adjustable means of said frame for supporting the logs in cutting position, and saws mounted in said frame.

3,224,476
SAW CHAIN
Earl L. Chadwick, Portland, Oreg., assignor of three and three-fourths percent to Donald A. Schafer, Vancouver, Wash., and one and one-fourth percent to Waldo E. Caulfield, Portland, Oreg.
Filed Sept. 5, 1963, Ser. No. 306,822
6 Claims. (Cl. 143—135)



1. A saw chain for cutting wood and the like, comprising:

(a) a plurality of holding links and connecting links adapted to be disposed in an endless loop,

(b) pivotal connection means pivotally connecting a pair of said holding links to a pair of said connecting links,

(c) said pair of holding links having opposing ends which are longitudinally spaced from each other to provide a cutter tooth slot between said pair of said connecting links,

(d) a cutter tooth having a shank positioned in said cutter tooth slot,

(e) co-acting means entirely externally of said cutter tooth including co-acting holding surfaces on the shank of said cutter tooth and said opposing ends of said pair of holding links for releasably holding said cutter tooth so as to eliminate the need for shear pins and the like for holding the cutter tooth on the chain,

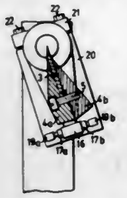
(f) the holding surface on each of said opposing ends of said pair of holding links being formed on a radius which is offset from the point of pivoting of said pivotal connection means in a direction longitudinally towards the cutter tooth shank and along an axis passing substantially through the pivot points of the pivotal connection means for the pair of holding links,

(g) each of said opposing ends of said pair of holding links having a lower edge surface merging with said holding surface but at a lesser distance from the pivot point than the radius of said holding surface,

(h) the holding surface on the shank of the cutter tooth having a radius substantially the same as the radius of the holding surface on the adjacent holding link, and

(i) the lower portion of the holding surface on the cutter tooth shank extending beyond the inner extremity of the holding surface on the adjacent holding link a distance which is approximately equal to the distance of said lower edge from the pivot point of the adjacent holding link to prevent a release of said shank until said pair of holding links has pivoted approximately ninety degrees from the holding position.

3,224,477
KNIFE STRUCTURES PARTICULARLY INTENDED FOR THE PEELING OF VENEER
Nils Hugo Sarv, Jonkoping, Sweden, assignor to Aktiebolaget Jönköping-Vulcan, Jonkoping, Sweden
Filed July 23, 1963, Ser. No. 297,012
Claims priority, application Sweden, Aug. 20, 1962, 8,999/62
5 Claims. (Cl. 144—212)



1. In apparatus for the peeling of veneer from a log: a knife which is rockable, on an axis extending along the edge of the knife, through a limited angle of rotation in both directions, from a neutral position corresponding to a pre-determined angle of cutting, in response to the pressure of the log and the veneer against the knife during the veneer peeling operation.

3,224,478
METHOD OF PRODUCING PICKER STICKS
William R. Egbert, Mohawk, N.Y., assignor to Lundstrom Laboratories, Inc., Herkimer, N.Y., a corporation of New York
Original application Oct. 29, 1963, Ser. No. 320,257, now Patent No. 3,172,429. Divided and this application Jan. 26, 1965, Ser. No. 428,029
3 Claims. (Cl. 144—320)



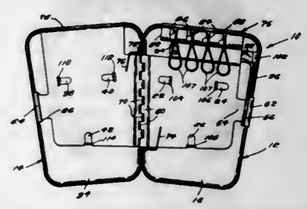
I. The method of producing a picker stick, which comprises forming an elongated unitary blank composed essentially of the integrated fibers and lignin of a natural hardwood and having a length and width at least equal to the length and width of the desired picker stick, the thickness of said blank at substantially every point along its length being greater than desired at the same point in the picker stick, subjecting said blank to heat sufficient to plasticize lignin contained in the wood and to compression between heated platens extending over the whole of and pressed together against the opposite side faces of the blank, so as to compress the blank on a taper and form it into a densified wooden body reduced and tapered in thickness from end to end thereof, as the compression proceeds allowing one of he platens to tilt relative to the other and yet limiting the tilting by engaging said one platen against incompressible stops disposed between portions of the platens at opposite sides of said blank, continuing the convergence of the platens until they are fully seated against said stops at a relative position of the platens in which the smaller end portion of said body has the thickness required to hold a loom picker and the wood of the blank has been plastically displaced and densified in outer zones thereof extending throughout the breadth and length of opposite sides thereof and yet a core having less hardness than said outer zones remains along the center of the body between said outer zones throughout at least the length thereof extending to said smaller end portion, and while maintaining the platens in said position cooling said body under compression between them to reset the displaced lignin of the compressed wood.

3,224,479
EXPANDING BIT SCREW DRIVER
Carolus M. Osborn and Frank J. Davis, Salt Lake City, Utah, assignors to Kedman Company, Salt Lake City, Utah, a corporation of Utah
Filed Jan. 10, 1964, Ser. No. 336,926
3 Claims. (Cl. 145—50)



1. An expanding bit screwdriver, comprising a handle; a longitudinally split shank, including a pair of half-round, elongate, resilient parts mounted together at one end in the handle in flat face to flat face, coextensive relationship and extending therefrom with laterally displaced portions having bit members serially related side by side and mutually contiguous along a relatively short, diagonally oriented slip plane to form an elongate, composite, normally rectilinear bit at the opposite end of the shank and longitudinally tapered, bit-expanding interceptors extending backwardly from said bit toward the handle, each of said parts being of substantially uniform transverse dimension along its length from the handle to the interceptor and normally fitting closely together, but bowing outwardly when the bit is expanded along said slip plane; and an elongate sleeve encircling and extending longitudinally of that portion of the shank, forwardly of the handle, in which the said parts are of uniform transverse dimensions, and being slidable along the shank, said sleeve having relatively short collars closely encircling the shank to guide forward and backward sliding movement of said sleeve therealong and to expand said bit by acting on said interceptors during said forward movement, to force the corresponding portions of the shank inwardly toward each other, the remainder of the length of said sleeve being spaced sufficiently from the shank to prevent binding when said sleeve is slid along the shank for expanding said bit.

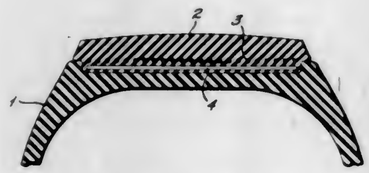
3,224,480
DEVICE FOR RETAINING ARTICLES THEREIN
Joseph O. Burman, Jr., Attleboro, Mass., assignor to Progressive Machinery Corp., Attleboro, Mass., a corporation of Massachusetts
Filed Sept. 23, 1963, Ser. No. 310,747
5 Claims. (Cl. 150—40)



1. In a key case construction, a first cover section defined by a body portion to which marginal walls are

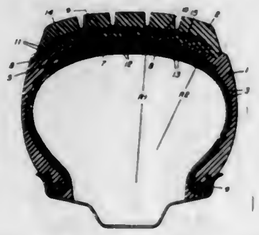
joined, a second cover section similar to that of said first cover section and including a body portion to which marginal walls are joined, tabs struck out from the body portions of said cover sections, a plate assembly formed as a unit and including a first plate that is secured within one of said cover sections by the tabs therein, and a second plate that is hingedly connected to said first plate and that is secured within the other of said cover sections by the tabs located therein, said first plate including a latch element and said second plate including a latch member that cooperates with said latch element to lock said cover sections in a closed position, said second plate having key retaining means associated therewith that retains keys thereon, said keys being located within said cover sections when they are latched in the closed position thereof.

3,224,481
TREAD RINGS FOR REMOVABLE-TREAD TIRES
Giuseppe Lugli, Milan, Italy, assignor to Pirelli S.p.A., Milan, Italy
Filed Sept. 23, 1963, Ser. No. 310,760
Claims priority, application Italy, Oct. 4, 1962, 19,576/62
5 Claims. (Cl. 152—176)



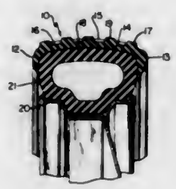
1. In a replaceable tread ring adapted to be detachably mounted upon the carcass of a pneumatic tire, a reinforcement consisting of a plurality of continuous inextensible cords, each of said inextensible cords being disposed in a substantially longitudinal direction, said reinforcement being of a width substantially equal to the width of said tread ring, and at least one annular layer of protective cords extending substantially parallel to each other at an angle of no less than 30° relative to the mid-circumferential plane of the tire, said layer of protective cords being disposed radially inwardly of said reinforcement and being of a width coextensive with the width of said reinforcement, and said layer of protective cords being of such flexibility to avoid modifying the pressure distribution between said tread ring and the carcass.

3,224,482
REMOVABLE TREAD TIRES
Carlo Barassi and Giullo Cappa, both of Milan, Italy, assignors to Pirelli S.p.A., Milan, Italy
Filed Feb. 4, 1964, Ser. No. 342,471
Claims priority, application Italy, Feb. 5, 1963, 2,342/63
4 Claims. (Cl. 152—176)



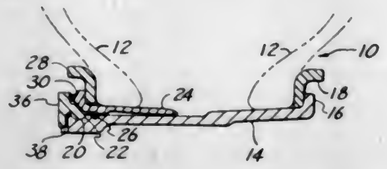
1. A pneumatic tire comprising a removable tread ring, a carrying carcass, a plurality of longitudinal ribs provided on the outer periphery of said carcass, said tread ring extending over said carcass and having a plurality of grooves on its inner surface which receive said ribs and which divide said tread ring into a central portion and at least two lateral portions, a group of inextensible longitudinal cords wholly confined within each of said portions of said tread ring and lying on a surface having a substantial transversal bending, and at least two strips of fabric disposed in said tread ring in a radially outermost position with respect to said cords.

3,224,483
TIRE TREAD
Robert H. Gross, Denver, and Clyde M. McPhee, Littleton, Colo., assignors to The Gates Rubber Company, Denver, Colo., a corporation of Colorado
Filed July 24, 1964, Ser. No. 385,007
4 Claims. (Cl. 152—187)



1. A tire tread portion comprising a solid preformed annular flexible elastomer body portion having a plurality of circumferentially extending traction elements, a first sidewall portion joined integrally to one lateral edge of said body portion and extending radially inward from said body portion and having a thicker cross section immediately adjacent to the portion attached to said body portion, a second sidewall integrally attached to the other lateral edge of said body portion, said second sidewall having a tapered cross section being thicker at the portion integrally joined to the body portion and tapering to a thin outer portion said second sidewall portion extending transversely outward from said body portion in an unstressed condition but extending radially inward when placed in a tensioned stressed condition.

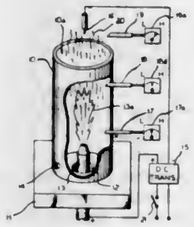
3,224,484
WHEEL CONSTRUCTION
Hoyt W. Smith, Peoria, Ill., assignor to Le Tourneau-Westinghouse Company, Peoria, Ill., a corporation of Illinois
Filed Apr. 22, 1964, Ser. No. 361,689
1 Claim. (Cl. 152—410)



A rim construction for mounting a tire comprising:
a base member having an annular gutter of semicircular cross-section,
the base member having a notch in the outer edge thereof,
an annular bead seat ring telescopically positionable over the base member and having a radially and outwardly flanged portion and a chamfered outer edge forming a conical surface,

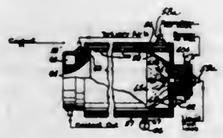
an annular rim flange positionable adjacent to and in engagement with the inner surface of said flanged portion,
a generally U-shaped bracket secured to said flanged portion,
an annular lock ring of circular cross-section positionable in said gutter and having a conical surface engageable with said chamfered outer edge, and
a lug secured to said lock ring and engageable in said notch and said bracket.

3,224,485
HEAT CONTROL DEVICE AND METHOD
Oscar C. Blomgren, Sr., Lake Bluff, Ill., Ellsworth G. Munck, Cleveland, Ohio, and Spencer R. Griffiths, Jr., Park Ridge, and Oscar C. Blomgren, Jr., Lake Bluff, Ill., assignors to Inter-Probe, Inc., North Chicago, Ill., a corporation of Illinois
Filed May 6, 1963, Ser. No. 278,232
8 Claims. (Cl. 158—1)



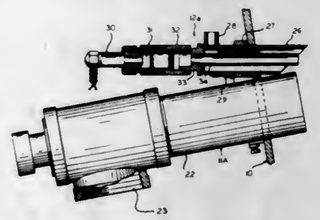
1. The method of decreasing the temperature at the upper open end of an upstanding tubular member having a heat source therein and wherein the heat therefrom normally moves in one direction toward said open end, comprising the steps of directing a needle-like probe downwardly towards the said upper open end of the tubular member, negatively charging said probe with a high voltage, low amperage source to thereby substantially retard movement of the heat out the upper open end of said member, and spacing said probe at a distance from the upper open end of said member slightly greater than that which would cause arcing between said probe and said member.

3,224,486
METHOD AND APPARATUS FOR PRODUCING AIR-FUEL FLAMES OF SONIC AND SUPERSONIC VELOCITIES
Lorant B. Geller and Earland R. Mitchell, Ottawa, Ontario, Canada, assignors to Her Majesty The Queen in Right of Canada as represented by the Minister of Mines and Technical Surveys
Filed Dec. 7, 1964, Ser. No. 416,469
3 Claims. (Cl. 158—4)



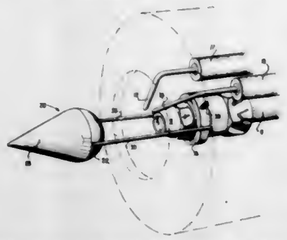
1. A method of producing a jet flame which comprises the steps of injecting a finely atomized stream of liquid fuel into a combustion chamber having a convergent exhaust outlet, continuously injecting a primary stream of compressed air directly into said atomized fuel stream in said chamber to serve as primary combustion air, said injected fuel and air forming a combustible mixture in said chamber, controlling from a point externally of said chamber the activation of an ignition device located in said chamber and including the steps of (a) initially activating said device to ignite said mixture, (b) continuing the activation of said device until a stable flame has been established therein, and (c) de-activating said ignition device following said flame establishment, and continuously injecting a stream of compressed secondary air into said chamber independently of said streams of fuel and primary air and at a point spaced from the points of injection of said streams of fuel and primary air, controlling the supply of said fuel, primary air and secondary air to provide in said primary air stream 60% to 80% of the stoichiometric amount of air required for combustion in said chamber, and determining the pressure in said chamber while further controlling the supply of said fuel, primary air, and secondary air to maintain a pressure in said chamber resulting in a flame issuing from said exhaust outlet having a temperature in the order of 2000 to 3000° F. and an effective exhaust velocity in the order of 2500 to 4600 feet per second, the total of said primary air and said secondary air being in the ratio of 11 to 30 pounds of said total air per pound of said fuel.

3,224,487
COMBINATION PILOT BURNER AND FLAME DETECTOR
Michael J. McInerney, Highland Park, and Joseph L. Czyl, Harvey, Ill., assignors to Vapor Corporation, Chicago, Ill., a corporation of Delaware
Filed May 23, 1963, Ser. No. 282,641
2 Claims. (Cl. 158—28)



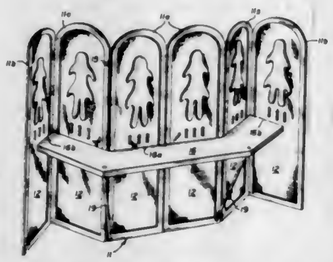
1. In combination with a fire pot for a heating plant, a main burner extending into the fire pot, a combination pilot burner and flame detector for detecting the pilot and main burner flames extending into the fire pot and at an inclined angle to the axis of and within heat proximity to said main burner, said pilot burner and flame detector comprising, an elongated tubular member projecting into the fire pot, said tubular member being open at the end extending within the fire pot to define at said open end a fuel nozzle and being closed at the end extending outside of the fire pot, a fuel inlet on said tubular member located at the closed end outside of the fire pot, a sighting tube extending through the closed end of said tubular member and centrally therethrough terminating at a point substantially coincident with the open end of said tubular member and defining with said tubular member an annular in cross-section fuel passageway extending from the closed end of said tubular member to the open end thereof, and a flame detection unit mounted on said tube outside of said tubular member for detecting the flame at the nozzle, the inclination of said combination pilot burner and flame detector to said main burner being such that said detector responds to the main burner flame.

3,224,488
OIL BURNER HAVING A COMBUSTION AID
Hubert L. Skonecke, Chicago Heights, Ill., James H. Kirk, Dyer, Ind., and Donald E. Safford, Park Forest, Ill., assignors to Sinclair Research, Inc., Wilmington, Del., a corporation of Delaware
Filed Oct. 11, 1962, Ser. No. 229,929
6 Claims. (Cl. 158—73)



1. In a gun-type liquid fuel burner having a nozzle surrounded by an air conduit and having ignition means downstream of said nozzle, said nozzle being adapted to spray fuel into a mixing zone containing a combustion supporting gas, the improvement which comprises a member in the path of the fuel flow downstream of the nozzle, said member supported by arms extending from the nozzle, said member having a continuous spherical surface in the direction of the nozzle and an inwardly-tapered, conical surface downstream of the spherical surface, accessible to said combustion-supporting gas.

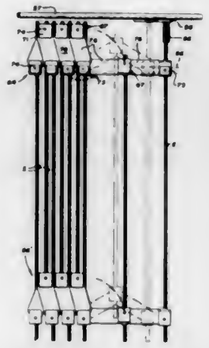
3,224,489
ROOM DIVIDER
Vincent G. Haberthier, P.O. Box 204, Limon, Colo.
Filed Mar. 14, 1963, Ser. No. 265,249
5 Claims. (Cl. 160—135)



1. A demountable ornamental screen and console combination comprising a plurality of upright screen panels hingedly joined to form an integral assembly disposed in a plurality of converging planes, cleat means disposed on each of said panels at a common elevation, at least one shelf member having cleat means, the cleat means of said panels and said shelf member including substantially continuous portions extending along the adjoining portions of said panels and said shelf member and being fitted together in frictional interfitting relation to detachably connect said shelf member to said panels so as to bridge a face of said panel assembly and hold the panel assembly in a stabilized configuration.

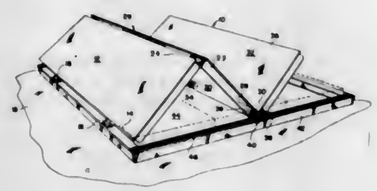
3,224,490
VERTICAL VENETIAN BLIND CONSTRUCTION
Andrew J. Toti and Carlo J. Toti, both of 507 H St., Modesto, Calif.
Filed Mar. 21, 1960, Ser. No. 16,217
15 Claims. (Cl. 160—168)

1. In a traverse type vertical Venetian blind construction which includes a series of vertically arranged blind slats, and means for rotating said slats about their respective vertical axes and for traversing said slats between a retracted position in which said slats are maintained in a neat pack with the vertical axes of adjacent slats located closely adjacent each other and an extended position in which the vertical axes of adjacent slats are spaced from each other: the improvement in conjunction with said means for rotating and traversing said slats, of means for supporting said slats so that at least certain slats of said series are movable in a vertical direction during traverse



movement of said slat series between said retracted and extended positions; said supporting means including track structure supportable in an opening in which said Venetian blind construction is to be positioned, slide members engaged with said track structure and operatively connected with said slats of said series, and pivotal link structure in conjunction with said slats of said series for maintaining adjacent slats spaced from each other when said slats are in said extended position and for actuating said vertically movable slats during traverse movement of said slat series.

3,224,491
HATCH COVER SYSTEM
Wallace Hamilton, Bentleyville, Ohio, assignor to PneumoDynamics Corporation, Cleveland, Ohio, a corporation of Delaware
Filed June 21, 1963, Ser. No. 289,674
12 Claims. (Cl. 160—188)



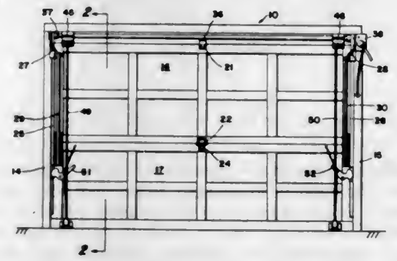
1. In combination with a pair of relatively movable panel sections and the like, a truck assembly comprising a body, anti-friction means for movably supporting the truck assembly, means for pivotally connecting each of said sections to the truck body for swinging movement with respect thereto, and panel-connecting means extending between and interconnecting the panel sections independently of the connections thereof to the truck body, said panel-connecting means being operative to transmit force from one section to the other in such manner that swinging movement of one relative to the truck body causes the other to swing on its pivotal connection to the body.

3,224,492
GARAGE DOOR AND OPERATOR
Richard D. Houk, Alliance, Ohio, assignor to Consolidated Electronics Industries Corporation, a corporation of Delaware
Filed Apr. 30, 1962, Ser. No. 190,869
8 Claims. (Cl. 160—189)



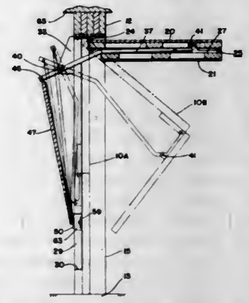
1. A combined garage door and operator for a door frame having a header and a side jamb comprising, in combination, an upper and a lower panel effectively pivoted together on a horizontal line,
- means swingably connecting the upper edge of the upper panel to the header of the door frame,
- said upper panel swinging upwardly to open the door,
- a motor and drive means connected to lift on said door to effect opening of said door,
- and arm means effectively pivoted to said frame on a line below and inwardly of said swingably connecting means and pivoted to said lower panel to substantially collapse said lower panel against said upper panel substantially at the position where the upper panel becomes generally horizontal in a door-opening movement and together with said swingable connecting means supporting about 60% of the total weight of said door during the entire opening movement such that said motor and drive means lifts a maximum of only about 40% of the total weight of said door during the entire opening movement to thus preclude the necessity for counterbalance means on said door.

3,224,493
DOOR AND CONTROL SYSTEM THEREFOR
Richard D. Houk, Alliance, Ohio, assignor to Consolidated Electronics Industries Corporation, a corporation of Delaware
Filed Apr. 30, 1962, Ser. No. 190,877
12 Claims. (Cl. 160—189)



1. A door for a door frame, comprising, in combination, at least one door panel,
- means to mount said panel for upward opening movement,
- drive means including an electric motor connected to pull on a movable link,
- means connecting said movable link to said panel,
- urging means urging said link toward a first limit position,
- said drive means connected to said link to pull same through a path of movement against the urging of said urging means from said first to a second limit position and said drive means exerting an upward opening force on said door at said second limit position,
- limit switch means connected to be actuated from a first to a second condition in accordance with movement of said door panel to a position within a minor distance of being closed on the door frame,
- electrical circuit means controlling energization to said electric motor and including a second switch,
- said circuit means including said limit switch means to disable control of said motor by said second switch until said limit switch means has been actuated to said second condition.

3,224,494
DOOR
Richard D. Houk, Alliance, Ohio, assignor to Consolidated Electronics Industries Corporation, a corporation of Delaware
Filed Apr. 30, 1962, Ser. No. 190,858
7 Claims. (Cl. 160—213)

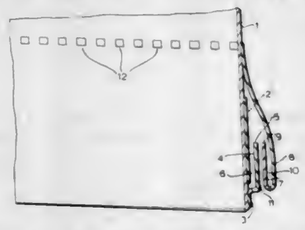


1. In combination, an upward acting door for a door frame,
- said door including upper and lower panels,
- first means connecting the upper panel near the upper edge thereof for swinging movements relative to the upper part of a door frame,
- second means effectively hinging the upper part of the lower panel to the lower part of the upper panel,
- a frame bracket at the top fifteen percent of said door frame,
- a control link pivoted to said lower panel and to said door frame bracket and swinging to lie between said upper and lower panels to establish substantially 180 degrees movement of the lower panel relative to the upper panel during substantially 90 degrees swinging movement of the upper panel to the door open position,
- and said frame bracket and control link together with said first connecting means constituting the sole guide and support means of the door relative to the door frame.

3,224,495
DRAPERY WITH CONCEALED POCKETS FOR WEIGHTS
Cavour L. Truesdale, Richmond, Va., assignor to Plastic Products, Incorporated, Richmond, Va., a corporation of Virginia
Filed Aug. 30, 1963, Ser. No. 305,678
9 Claims. (Cl. 160—349)

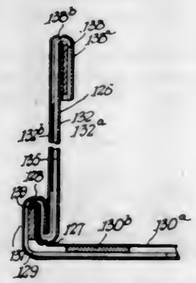
1. A drapery construction of the type having a hem provided with openings therein for insertion of weights com-

prising a main panel having a bottom edge, an inner panel having an upper margin, and a lower margin, said inner panel being disposed against said main panel, said upper margin being attached to said main panel at points on a line spaced above said bottom edge, said lower margin terminating in a reverse fold, said reverse fold terminating in an upstanding strip having a first free edge disposed between said inner panel and said main panel, an intermediate panel having a top margin and a bottom margin, said intermediate panel being disposed between said upstanding strip and said main panel, said bottom margin being attached to said main panel at points on a line of juncture near the bottom edge of said main panel, said top margin terminating in a second free edge spaced close to said first free edge, and a buffer panel disposed between said intermediate panel and said main



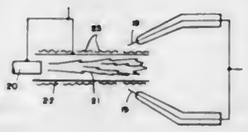
panel and being attached to said main panel; said inner panel, said upstanding strip, said intermediate panel, and said buffer panel being joined at intervals throughout their lengths at points on a plurality of substantially vertical lines of attachment, the lower margin of said inner panel being substantially on a line with the lower margin of said intermediate panel, thereby forming a first series of concealed pockets for weights between said inner panel and said upstanding strip, said first series pockets having openings defined between said first free edge and said inner panel, and a second series of concealed pockets for weights between said intermediate panel and said buffer panel, said second series pockets having openings defined between said second free edge and said buffer panel, said lines of attachment defining bottom openings in said hem for insertion of weights between said upstanding strip and said intermediate panel.

3,224,496
TEMPORARY DOOR AND METHOD
William E. Bruning, Omaha, Nebr., assignor of one-half to International Paper Company, New York, N.Y., a corporation of New York, and one-half to The Stanley Works, New Britain, Conn., a corporation of Connecticut
Filed Mar. 19, 1962, Ser. No. 180,894
3 Claims. (Cl. 160—368)



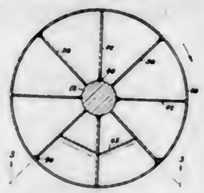
1. In combination, a sliding storm door-equipped freight vehicle having a doorway closable by said door and defined by vertical framing posts and a floor, and a closure secured to the inside of said framing posts, said closure comprising a generally rectangular planar panel having the major portion thereof disposed in a generally vertical plane to close the lower portion of said doorway, with the vertical edges of said panel major portion being secured to said framing posts, a lower minor portion of said panel being disposed in a horizontal plane to provide a flap in contact with said floor, said major and lower minor portions being separated by an intermediate minor portion including a reversely folded, vertically-extending panel part positioned between said major portion and said framing posts adjacent said floor to provide a pry-bar portion for opening said door.

3,224,497
METHOD AND APPARATUS FOR LOWERING THE TEMPERATURE OF A HEATED BODY
Oscar C. Blomgren, Sr., Lake Bluff, Ill., Ellsworth G. Munck, Cleveland, Ohio, and Spencer R. Griffiths, Jr., Park Ridge, and Oscar C. Blomgren, Jr., Lake Bluff, Ill., assignors to Inter-Probe, Inc., North Chicago, Ill., a corporation of Illinois
Filed Mar. 26, 1963, Ser. No. 268,185
10 Claims. (Cl. 165—2)



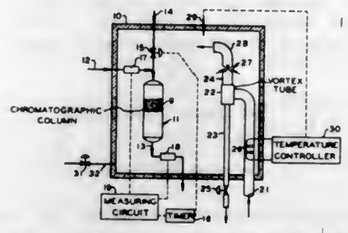
1. The method of lowering the temperature of a solid body exposed to ambient atmosphere and heated to a temperature above said ambient atmosphere comprising the steps of directing a needle-like probe toward the exterior of said body, negatively charging said probe with a high voltage low-current source, and spacing said probe at a distance from said body slightly greater than that which would cause arcing between said probe and said body.

3,224,498
CHAIN MATRIX HEAT EXCHANGER
Frank W. Hochmuth, 28 Fox Den Road, West Simsbury, Conn.
Filed Dec. 26, 1963, Ser. No. 333,567
16 Claims. (Cl. 165—5)



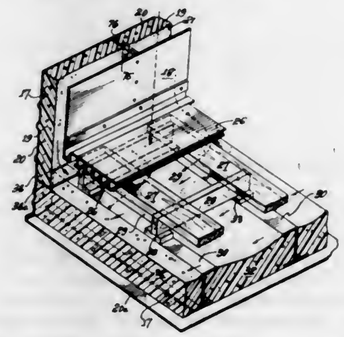
1. Rotary regenerative heat exchange apparatus having a rotor including a cylindrical rotor shell, a rotor post extending axially through said rotor shell, radial partitions extending alternately inward from the rotor shell into a closely spaced relation with the rotor post and outward from the rotor post into a closely spaced relation with the rotor shell to provide a series of sectorial compartments therebetween, a myriad of flexible heat absorbent elements extending between laterally adjacent radial partitions, and means for rotating the rotor about its axis while varying the distance between adjacent partitions to thus vary the tension on said heat absorbent elements sufficient to effect removal of dust deposits therefrom.

3,224,499
TEMPERATURE CONTROL SYSTEM
Marvin E. Reinecke, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Apr. 18, 1962, Ser. No. 188,462
6 Claims. (Cl. 165—30)



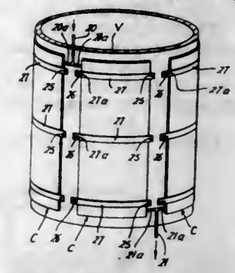
4. A temperature control system for maintaining the temperature of a chromatographic analyzer at a substantially constant value within the normal range of ambient temperature which comprises in combination a chromatographic analyzer, a source of fluid at ambient temperature, means for heating at least a portion of the fluid from said source to a temperature higher than said value, means for cooling the thus heated fluid to said value, means for passing the thus cooled fluid in heat exchanging relationship with said chromatographic analyzer, and means for manipulating said means for heating to vary the amount of heat transferred to said at least a portion of the fluid responsive to the temperature of said chromatographic analyzer.

3,224,500
PERIMETER COOLED CARGO CONTAINER
Walter Bennett, San Marino, Calif., assignor to Utility Trailer Manufacturing Company, City of Industry, Calif., a corporation of California
Filed Dec. 15, 1961, Ser. No. 159,522
8 Claims. (Cl. 165—53)



8. Load bearing floor structure for a temperature controlled goods container, comprising in combination
a lower outer wall shell including load supporting framing and a layer of thermal insulation,
an inner wall shell spaced above the lower shell, the inner shell having a heat conductive metallic floor panel providing a goods supporting deck,
and spacing and supporting structure of low heat conductivity mounted on the lower load supporting framing and supporting the floor panel and embodying a plural set of elongated transversely extending and longitudinally spaced elements of low heat conductivity and a plural set of elongated longitudinally extending and transversely spaced elements of low heat conductivity,
said plural sets being in inter-supporting relation,
the longitudinal spacings of the transversely extending elements forming transverse air circulation channels open at the lateral edges of the spacing and supporting structure, and the transverse spacings of the longitudinally extending elements forming longitudinal air circulation channels open at at least one longitudinal end of the spacing and supporting structure and in intercommunication with the transverse air circulation channels between the transversely extending elements,
and transverse openings extending through the longitudinally extending elements, said openings also providing transverse air circulation channels in addition to the air circulation channels between the transversely extending elements.

3,224,501
HEAT TRANSFER CEMENT AND PANEL CONSTRUCTIONS
Richard L. Burdick, William E. Brown, and James E. Bilbro, all of Houston, Tex., assignors, by mesne assignments, to Thermon Manufacturing Company, Houston, Tex., a corporation of Texas
Filed Mar. 28, 1962, Ser. No. 183,228
6 Claims. (Cl. 165—81)

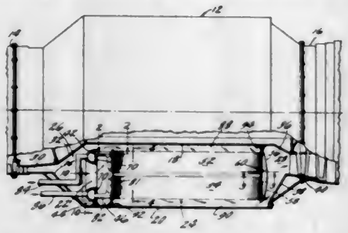


1. In combination with a vessel,
(a) a prefabricated heat transfer panel having passage means therethrough for conducting a heat transfer fluid,
(b) means mounting said panel on the vessel for effecting a heat transfer between the panel and the vessel, and
(c) heat transfer cement disposed between and in complete contact with said panel and said vessel,
(d) said heat transfer cement including particles of a stable high thermal conductivity heat conducting agent dispersed in an organic binder which cement is non-hardening and pliable and has a greater coefficient of thermal expansion than said panel to maintain said complete contact with both said panel and said vessel even during the expansion and contraction of the panel relative to the wall of the vessel.

3,224,502
FINNED ENVELOPE HEAT EXCHANGER
Rudolf N. Wallace, Glastonbury, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed May 29, 1963, Ser. No. 285,547
12 Claims. (Cl. 165—82)

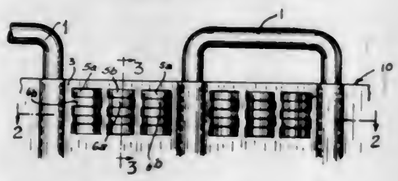
1. In a radiator for transferring heat from one fluid stream to another, elongated concentric cylindrical casing members defining a toroidal shaped chamber therebetween, a radiator matrix comprising a plurality of elongated U-shaped tubular elements the parallel legs of each of which are flattened and curved normal to their length to form hollow envelopes which lie in the same curved planes, said elements being arranged side-by-side in a circle about said toroidal chamber with their flat side

surfaces in juxtaposition, inner and outer annular manifolds, one adjacent the inner casing member, the other adjacent the outer casing member, conduit means for connecting the inner legs of said U-shaped elements at their free ends to said inner manifold, conduit means for connecting the outer legs of said elements at their free



ends to said outer manifold, means for fixedly supporting one of said manifolds against axial movement on the adjacent casing member while permitting limited radial movement relative to said casing member, and means for supporting the other manifold for free axial and lateral movement relative to said casing members.

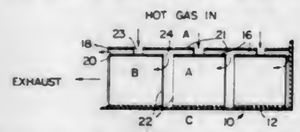
3,224,503
HEAT EXCHANGER
Albert Konanz, Hausserstrasse 24, Heidelberg, Germany
Filed Dec. 6, 1961, Ser. No. 157,497
Claims priority, application Germany, Dec. 10, 1960, A 36,254
6 Claims. (Cl. 165—171)



1. A heat exchanger comprising, in combination, a metal plate having at least one substantially rectilinear, substantially semicircular cross-section groove extending thereacross in a first direction; and a conduit having at least one substantially rectilinear portion extending conformingly within said groove; said plate being formed with aligned series of parallel longitudinally spaced slits extending substantially perpendicular to the axis of said groove to define strip sections in adjacent relation in said first direction, said strip sections being aligned in rows extending in said first direction with the rows extending substantially perpendicular to the lengths of said strip sections; adjacent strip sections in each series and in each row being offset from respective opposite surfaces of said plate, whereby each series of strip sections has the nature of an undulating strip extending substantially normal to the axis of said groove; adjacent rows of strip sections being separated by relatively narrow planar strip portions of said plate extending in said first direction.

3,224,504
FINNED HEAT EXCHANGER
Fred W. Staub and Lee H. Tomlinson, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York
Filed Dec. 23, 1963, Ser. No. 332,489
3 Claims. (Cl. 165—185)

1. A heat exchanger comprising:
(a) a base member,
(b) a plurality of generally tubular members mounted in axial alignment on a surface of said base member in heat exchange relationship therewith, said tubular members being closely spaced to form interstices therebetween, and
(c) means including a plurality of spaced conductive annular disks, one of said disks being mounted on and extending outwardly from each end of said tubular members to form a plurality of fluid flow passages communicating with said interstices, the length of each of said passages being no more than



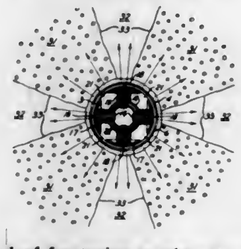
30 percent of the total length of the base member, the fluid flowing through said passages, said interstices and said tubular members to form heat exchange flow paths, the temperatures of the fluid entering each of said passages being equal respectively and the pressure drop along the length of each of said passages being at least 70 percent of the total pressure drop along the entire flow path.

3,224,505
FLUID DIVERTER ASSEMBLY
Bruce J. Watkins, West Covina, Glenn D. Johnson, Downey, and Howard L. Shatto, Jr., Palos Verdes, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed June 20, 1962, Ser. No. 203,968
7 Claims. (Cl. 166—.5)



1. A fluid diverter assembly adapted to be positioned and anchored in a tubular well member and sealed thereagainst while being adapted to receive and slidingly seal against an inner pipe string, said diverter assembly comprising
(a) tubular housing means of a size to fit within said tubular well member, said tubular housing means having a normally open bore therethrough of a size and diameter to permit a drill pipe to rotate when one is inserted therein in spaced relationship therewith,
(b) anchoring means carried by said tubular housing means and extendible beyond the outer surface thereof and adapted to engage the inner wall of said well member,
(c) first annular sealing means carried outwardly on said tubular housing means for sealing against the inner surface of said well member, and
(d) second annular sealing means carried by said tubular housing means and extending radially into the bore thereof a distance sufficient to seal against an inner pipe string when such a pipe string is positioned therein,
(e) said tubular housing means including a pair of telescoping housing portions arranged in spaced relationship with said first annular sealing means carried between them in a normally inoperative and unexpanded condition.

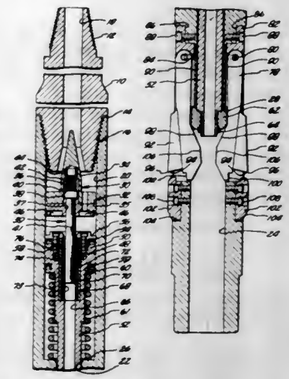
3,224,506
SUBSURFACE FORMATION FRACTURING METHOD
Jimmie L. Huitt, Shaler Township, Allegheny County, Bruce B. McGlothlin, O'Hara Township, Allegheny County, and John Papaila, Apollo, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware
Filed Feb. 18, 1963, Ser. No. 258,983
6 Claims. (Cl. 166—42)



1. A method of fracturing a subterranean rock formation which comprises
applying to the formation at the desired location of the fracture a hydraulic pressure sufficient to effect fracture of the rock,
injecting a first pressurized fluid into a desired region of said fracture during propagation thereof,
simultaneously injecting a second pressurized fluid into a different desired region of said fracture during propagation thereof,
controlling the relative rates of injection of said fluids,
one of said fluids containing particulate material capable of propping said fracture,
the other of said fluids being substantially free of particulate material capable of propping said fracture, and
releasing said hydraulic pressure.

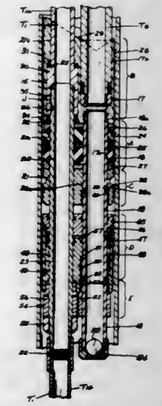
3,224,507
EXPANSIBLE SUBSURFACE WELL BORE APPARATUS
Bruce J. Cordary, Los Alamitos, and Charles O. Van Note, Jr., Rolling Hills, Calif., assignors to The Servco Company, Long Beach, Calif., a corporation of Nevada
Filed Sept. 7, 1962, Ser. No. 222,051
6 Claims. (Cl. 166—55.8)

6. A subsurface well bore apparatus comprising:
(a) a tubular body adapted to be secured to a drill string and having a central passage;
(b) a plurality of expansible arms secured to the tubular body and adapted to occupy a retracted position and an expanded position;
(c) slidable means movable within the passage responsive to changes in pressure of a fluid passing through the passage to engage the plurality of expansible arms to move them to an expanded position;
(d) orifice-forming means within the passage;
(e) constricting means disposed relative to the orifice-forming means;
(f) the orifice-forming means and the constricting means being shaped to provide a first orifice area and a second larger orifice area when the expansible arms are in a retracted position; and
(g) the slidable means including means whereby movement of the slidable means moves the orifice-forming means and the constricting means relative to each other to provide only the second larger orifice area



when the expansible arms are in the expanded position.

3,224,508
HYDRAULIC PACKER WITH SAFETY JOINT RELEASE
Chudleigh B. Cochran, Houston, Tex., assignor to Cicero C. Brown, Houston, Tex.
Filed Dec. 26, 1962, Ser. No. 247,195
12 Claims. (Cl. 166—120)



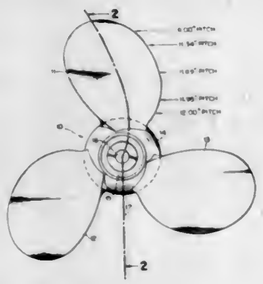
1. A well packer apparatus lowerable within a well bore including:
a well packer assembly comprising a support, a packing element mounted on the support, and an anchoring means, also mounted on the support, for anchoring said assembly within said bore, said packer assembly having a longitudinal passage extending therethrough,
an upper section of a tubing string having its lower portion extending into the passage and rotatably attached to the upper end of the packer assembly,
a lower section of said tubing string having its upper portion projecting into said passage with its lower portion extending downwardly below the packer assembly,
a threaded connection between said upper and lower sections of said tubing string to form a continuous tubing string extending through the packer assembly,
means for setting the packing element and anchoring means of the packer assembly to set the same within the bore,

the threaded connection being operable by rotation of the upper tubing section of tubing relative to the lower tubing section to cause movement of the sections with respect to each other,

co-acting means on said upper section and on the packer assembly to unset and release the latter upon a predetermined relative movement of the tubing sections with respect to each other,

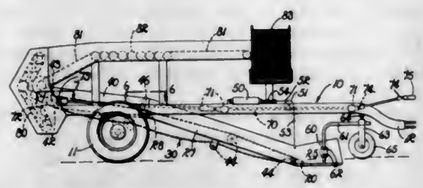
said rotation of the upper tubing section relative to the lower tubing section completely separating said sections, whereby the upper section and packer assembly may be removed from the bore separately from the lower tubing string section.

3,224,509
BOAT PROPELLER
William C. Thompson, Freeport, N.Y., assignor to Columbian Bronze Corporation, Freeport, N.Y., a corporation of New York
Filed Apr. 17, 1964, Ser. No. 360,586
5 Claims. (Cl. 170—160.5)



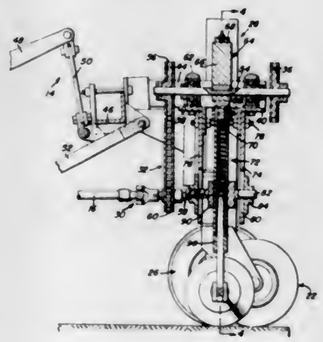
1. A flexible boat propeller adapted for operation submerged in water, said propeller having a hub and at least one blade connected to said hub along the periphery thereof, said blade being formed from a substantially non-water absorbent, relatively stiff but flexible synthetic plastic material and in static condition having a pitch that decreases in a direction away from said hub, said blade extending from said hub with a positive rake.

3,224,510
HARVESTER
Stanley Loosli, Ashton, Idaho, assignor of one-half to Herbert A. Huebner, Los Angeles, Calif., and one-half to Richard M. Worrel, Fresno, Calif.
Continuation of abandoned application Ser. No. 239,409, Nov. 20, 1962. This application Sept. 21, 1964, Ser. No. 400,625
7 Claims. (Cl. 171—127)



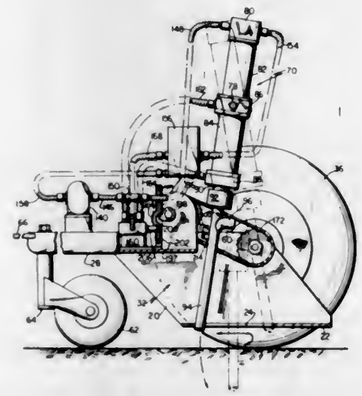
1. A harvester comprising a mobile frame having predetermined forward and rearward end portions, a plurality of elongated conveyors positioned longitudinally in the frame in laterally contiguous relation having adjacent inner edges, opposite outer edges, forward end portions adjacent to the ground and upwardly extended rearward end portions, means mounting said conveyors in the frame for elevational movement of the forward end portions thereof independently of each other, crop harvesting blades individual to the conveyors mounted on the mounting means of their respective conveyors at the forward end portions thereof for unitary elevational movement therewith, and depth control means individual to the conveyors mounted on the mounting means of their respective conveyors at the forward end portions thereof in ground engagement for corresponding elevational movement of the depth control means and their respective conveyors and blades in a response to the terrain traversed by said depth control means, said conveyors having spaced upper and lower runs and the mounting means therefor being extended between said upper and lower runs, and said mounting means at all positions between the outer edges of the conveyors being below the upper runs of the conveyors so that said upper runs provide a common unobstructed path longitudinally of the frame.

3,224,511
ROW CROP WEEDER AND THINNER
Vearl J. Quibell, Kennedy, Minn., assignor of fifty percent to Douglas F. Quibell, Kennedy, Minn.
Filed July 9, 1964, Ser. No. 381,321
3 Claims. (Cl. 172—87)



1. A crop thinning unit adapted to be mounted on a wheeled trailing frame towed by a towing vehicle having a power takeoff shaft, said unit comprising a pair of supporting members suspended from the frame in spaced relation above the ground having aligned slots therein, a sleeve, bearing means pivotally mounting said sleeve about a pivot axis extending through the slots in the supporting members, a tubular member slidably mounted by said sleeve for reciprocable movement, means adjustably positioning the bearing means within said slots, eccentric drive means rotatably mounted by the frame about an axis vertically spaced above the pivot axis, means connecting said eccentric drive means to the tubular member for imparting reciprocable movement thereto, a tool shank received within said tubular member and projecting therefrom toward the ground, a tool connected to the tool shank for penetrating the ground, bearing means mounted on the tubular member for slidably mounting the tool shank in non-rotatable relation to the tubular member, spring means enclosed within the tubular member and engageable with the tool shank for urging the tool into engagement with the ground, and means drivingly connecting the power takeoff shaft to the eccentric drive means, said eccentric drive means including an eccentric sleeve rotatably mounted on an eccentric disc, said connecting means between the eccentric drive means and the tubular member including a stub shaft secured to the eccentric sleeve and received within the tubular member, clamp means securing the tubular member in angularly adjusted relation to the stub shaft, and means releasably securing the clamp means and the tubular means in axially assembled relation to each other.

3,224,512
SOIL SAMPLER
Jack P. Alexander, Ardmore, Okla., assignor to The Samuel Roberts Noble Foundation Incorporated, Ardmore, Okla., a corporation of Oklahoma
Filed July 29, 1963, Ser. No. 298,194
6 Claims. (Cl. 173—19)



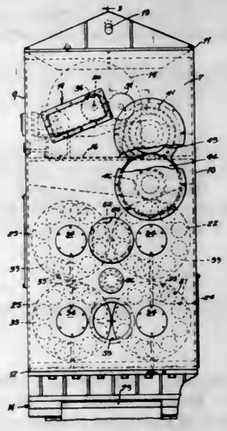
1. A mobile soil sampler comprising a vehicle frame having an upright supporting member mounted thereon, a sampling device pivotally mounted on said supporting member, said sampling device comprising a cylinder, a piston vertically reciprocable in said cylinder, a sampling tube fixedly secured to said piston and depending therefrom, a spout projecting laterally from said sampling tube, a receptacle adapted to receive soil samples discharged through said spout, a source of fluid under pressure, said sampling tube being normally held in a retracted and forward position, and means responsive to the forward motion of said vehicle for periodically admitting fluid under pressure from said source to the top of said cylinder, thereby moving said piston downwardly and injecting said sampling tube into the ground, and thereafter admitting fluid under pressure from said source to the bottom of said cylinder while said sampling tube is in the ground, thereby raising said tube and returning said tube to its normal position.

3,224,513
APPARATUS FOR DOWNHOLE DRILLING
Frank G. Weeden, Jr., 8918 Colleen, Houston 55, Tex.
Filed Nov. 7, 1962, Ser. No. 236,016
12 Claims. (Cl. 175—26)

11. A method for drilling a well bore and regulating the inclination thereof, which method comprises providing a drilling tool comprising a supporting structure having a cutting tool rotatably mounted thereon and containing a plurality of inertial rotors arranged to permit upon rotation of the rotors establishment of a gyroscopic effect in opposition to torque resulting from rotation of said cutting tool during drilling and to permit upon rotation of the rotors cancellation of forces of precession developed during drilling; actuating said driling tool to drill said well bore; actuating said inertiar rotors to establish a gyroscopic effect in opposition to torque resulting from rotation of said cutting tool during drilling; and controlling individually said inertial rotors to regulate forces of precession, thereby regulating the inclination of said well bore.



3,224,514
VIBRATORY PILE HAMMER
Moses Hornstein, Merrick, Long Island, N.Y., and John J. Kupka, Gladstone, N.J., assignors to KHG Associates, Merrick, Long Island, N.Y., a partnership
Filed Aug. 18, 1964, Ser. No. 390,345
8 Claims. (Cl. 175—55)



7. A vibratory pile hammer comprising the combination of

a casing,

stationary tubular shafts rigidly secured at their ends to opposite walls of said casing,

rotors journalled on said stationary shafts,

weights mounted in readily removable relation in said rotors,

a motor mounted in said casing,

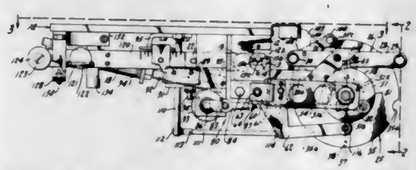
drive gearing from said motor to the respective rotors,

a pile clamp at the bottom of the casing in rigid connection with said opposite walls of the casing to receive the full force of vibrations imparted to the casing,

said rotors being of annular formation in surrounding relation about the shafts and having cells in the peripheral portions of the same open at one end,

said casing having servicing openings providing access to said open ends of the cells,
said weights being insertable through said servicing openings into seated engagement in said cells and
releasable means on the ends of said rotors for closing the open end of said cells over the weights inserted therein.

3,224,515
POWER DISCHARGE FOR NET WEIGHER AND METHOD OF WEIGHING
Leon J. Nowak, Jr., Park Ridge, Ill., assignor, by mesne assignments, to Blaw-Knox Company, Pittsburgh, Pa., a corporation of Delaware
Filed Mar. 22, 1963, Ser. No. 267,195
24 Claims. (Cl. 177—1)



1. A method of quickly and accurately weighing uniform weight batches of material, said method including the steps of
charging material to be weighed into a material receiving compartment in a multi-compartment receptacle,
controllably rotating said receptacle that portion of a complete revolution equal to one over the number of compartments in the receptacle by a positive, continuously applied force effective to provide a rate of increase and decrease of speed of rotational movement which is substantially a controlled variation, and
discharging the material from the compartment.

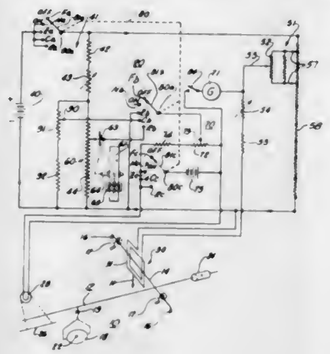
3,224,516
LETTER WEIGHING SCALE
William Stelzer, 4351 Franklin Road, Bloomfield Hills, Mich.
Filed Jan. 14, 1965, Ser. No. 425,591
4 Claims. (Cl. 177—172)



1. A letter weighing scale having a relatively wide ferrous beam of a predetermined weight, load supporting means at one end on the upper side of said beam adapted to support a load to be weighed, a plurality of transverse grooves in the underside of said beam intermediae said load supporting means and the center of gravity of said beam, and a magnetic pin adapted to be inserted in any of said transverse grooves to serve as a fulcrum for said scale to fulcrum on any flat level surface not a part of said scale, said magnetic pin being magnetically held by said beam in a groove into which it has been placed.

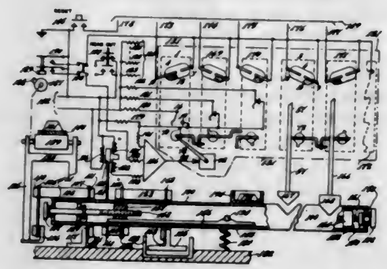
3,224,517
ELECTROMAGNETIC BALANCE
Lee Cahn, 2404 Moreno Drive, Los Angeles 39, Calif.
Filed Feb. 27, 1963, Ser. No. 261,254
11 Claims. (Cl. 177—210)

1. In a weighing system that includes a balance having means for supporting an object to be weighed to displace a member from a neutral position with a force applied thereto in one direction by said object and also including a magnetic force generating means comprising a coil for moving said member in the opposite direction with a force proportional to the current that flows through said coil, and also including a potential source, the combination therewith of:
a resistor connected in series with said coil;
means for adjusting the magnitude of the current that flows through said resistor and through said coil to cause said magnetic force generating means to supply a force to said member in opposition to the force produced thereon by such object and to develop a



voltage across said resistor that varies in accordance with the magnetic force;
indicating means responsive to a potential difference;
a mass-indicating potentiometer and a rheostat connected in series across said potential source; and
means including an adjustable contact movable between the ends of said potentiometer for connecting said indicating means and a selected portion of said potentiometer in a circuit in series with said resistor;
said potentiometer having an indicator dial operatively associated with said movable contact for indicating the setting of said contact on said potentiometer, whereby the mass of said object may be indicated.

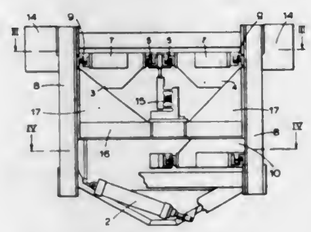
3,224,518
WEIGHING SCALE WITH SERVO-OPERATED REBALANCING SYSTEM AND INDEPENDENT CIRCUIT FOR REMOTE READ-OUT DEVICE
James A. Potter, 12 Greenhouse Blvd., West Hartford, Conn.
Filed Feb. 24, 1964, Ser. No. 346,630
6 Claims. (Cl. 177—210)



6. In a measuring system in which a lever is displaced by a quantity being measured, a series of balancing components are automatically selected for balancing the effect of the displaced lever, and data concerning the selected balancing components are transmitted to a remote read

out device, the improvement which consists of the combination of: an electrical balancing circuit comprising a differential transformer providing an electrical signal indicative of the direction and amount of deflection of the lever; a servomotor adapted to advance and withdraw a series of balancing components in response to the signal from the differential transformer until a balancing combination of components is selected, and means coordinating the differential transformer, servomotor, and balancing components; and an independent electrical circuit isolated from the balancing circuits, said independent electrical circuit comprising a remote read out device, a plurality of mercury switches, each mercury switch being associated with its corresponding balancing component to uniformly indicate by the switch position the advance-withdrawal position of such balancing component, and coordinating means transmitting signals from the plurality of mercury switches to the remote read out device.

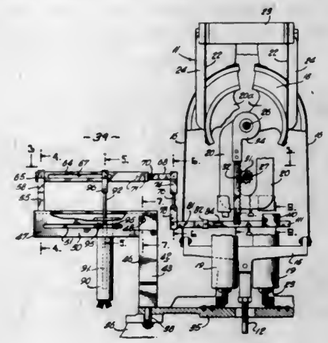
3,224,519
BATCH WEIGHER
Lawrence Alfred Fletcher, Claygate, Surrey, and Sidney Albert Palmer, Surbiton, Surrey, England, assignors to Lindars Automation Limited
Filed May 14, 1964, Ser. No. 367,498
10 Claims. (Cl. 177—210)



1. Batch weighing apparatus, comprising:
an external frame;
a symmetrical hopper of downwardly tapering section mounted within said external frame and gate means at the lower end of the hopper for controlling the discharge of the contents of the hopper;
means including spring means and counterbalance weights for mounting said hopper in stable equilibrium on said frame;
load cell means mounted on said external frame and connected to said hopper and responsive to a displacement of said hopper with respect to said frame in response to an applied load for providing an electrical signal which is a measure of the displacement of said hopper; and
utilization means connected for responding to said signal.

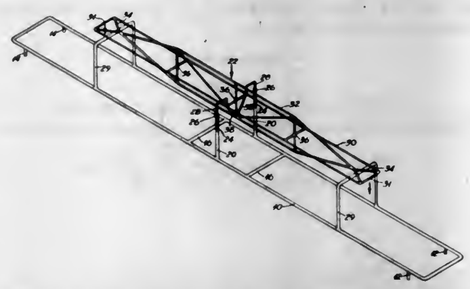
3,224,520
TRANSDUCER MOUNTING IN WEIGHING APPARATUS
Roger H. Damon, Jr., St. Johnsbury, Vt., assignor to Fairbanks Morse Inc., New York, N.Y., a corporation of Delaware
Filed Feb. 2, 1965, Ser. No. 429,838
6 Claims. (Cl. 177—210)

1. In weighing apparatus having counterbalancing means and weight indicator means, the indicator means including a driven member and a drive member operable by the counterbalancing means and in driving engagement with the driven member, wherein the drive member is adapted and arranged such as to be under a predetermined bias in the direction to maintain drive contact thereof with the driven member, the combination therewith of a lever pivotally mounted at one end, lever pivoting means in connection to the other end of the lever and operable by said drive member, a transducer having an element movable to vary the effect of the transducer, means mounting the transducer adjacent said lever with its movable



element extending toward the lever at a point thereof intermediate the lever ends, means connecting said element to the lever, said lever and element imposing on said drive member through said lever pivoting means, a load tending to increase said predetermined bias of the drive member, and means effective through the lever pivoting means to counterbalance said load.

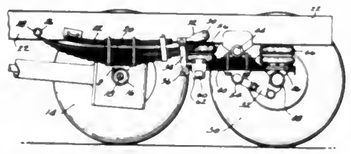
3,224,521
ULTRAMICROBALANCE BEAM
Alvin W. Czanderna, Charleston, W. Va., assignor to Union Carbide Corporation, a corporation of New York
Filed May 21, 1964, Ser. No. 369,156
5 Claims. (Cl. 177—246)



1. In a beam ultramicrobalance of the type wherein the load-carrying beam is mounted on a base so as to permit pivotal motion in a vertical plane about a pair of pivot points, the improvement of a three-dimensional beam constructed of a network of rigid rod-shaped interconnecting structural members whereby an ultramicrobalance possessing high load capacity at high load to sensitivity and load to precision ratios is attained, said three-dimensional beam having a length to mass ratio of at least about 10 millimeters per gram and comprising a plurality of interconnected structural members defining an elongate planar horizontally-disposed first rigid frame; a plurality of interconnected structural members defining a second elongate planar rigid frame which lies in a plane that intersects the plane of said first rigid frame in substantially perpendicular relation and that contains the points at which load is applied to the three-dimensional beam, said first and second rigid frames being substan-

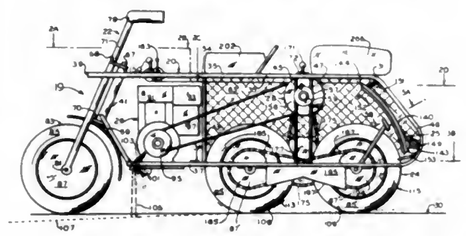
tially longitudinally coextensive and rigidly connected together proximate their ends and said second rigid frame extending above and below the plane of said first rigid frame, each of the structural members of said second rigid frame forming the side of at least one triangle; and a plurality of structural members connecting said first and second rigid frames disposed in at least one plane intersecting the planes of said first and second rigid frames.

3,224,522
VEHICLE SPRING AND AXLE LOADING CONTROL SYSTEM
Donald J. Fleming, Green Bay, Wis., assignor to Olson Trailer & Body Builders Co., Green Bay, Wis., a corporation of Wisconsin
Filed Oct. 30, 1962, Ser. No. 234,174
11 Claims. (Cl. 180—22)



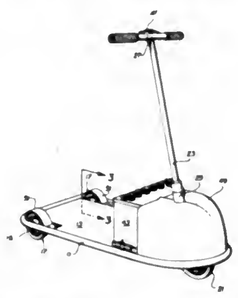
1. In a vehicle having a drive axle and a tag axle, wheels on both axles, and a frame above said axles; the combination with said axles, of a spring system supporting the frame and including at each side of the frame a first spring having a connection at its front end with the frame and having a connection intermediate its ends with the drive axle, and a second spring having a connection at its front end with the rear end of the first spring and having a pivotal connection intermediate its ends with the frame and having a connection at its rear end with the tag axle; first and second air springs for which the frame is provided with seats respectively forwardly of the said pivotal connection and rearwardly thereof, means for imposing first air spring thrust on the connected ends of the first and second springs, and means for imposing second air spring thrust on the tag axle.

3,224,523
THREE-WHEELED MOTOR VEHICLE
Travis Junior Ross, Stinnett, Tex., assignor to Ross Craft Manufacturers, Stinnett, Tex.
Filed Jan. 30, 1963, Ser. No. 254,936
4 Claims. (Cl. 180—25)



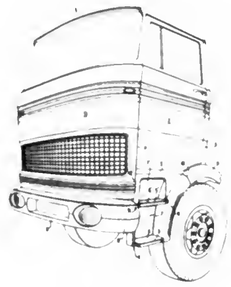
1. A vehicle comprising a main frame, two drive wheels arranged in tandem, a front steering wheel, said wheel rotatably mounted in a front steering wheel frame, a pivotal support for said front steering wheel frame, said support being firmly attached to said main frame, said steering wheel frame being pivotally yet firmly located in said support for pivotal movement about an axis of rotation, said steering wheel thus being pivotally and rotatably attached to said main frame, each of said drive wheels being rotatably supported on a separate axle, each of said axles being parallel and supported on a second, pivotal, frame and each of said drive wheels rotates in the same flat vertical plane, said axles each having a longitudinal axis, said axes each lying in a flat horizontal plane, pivotal supports fixedly attached on said main frame, said second, pivotal, frame pivotally supported on said pivotal supports, said pivotal supports providing an axis of rotation of said second, pivotal, frame parallel to the axles of said drive wheels, the support for said front steering wheel frame providing such wheel frame an axis of rotation which lies in the flat vertical plane of rotation of said drive wheels and which flat vertical plane is perpendicular to said flat horizontal plane in which the longitudinal axes of the axles for said drive wheels lie, and said axis provided by the support of said front steering frame is directed downwardly and forwardly, the plane of rotation of said drive wheels and of said steering wheel lying in the same flat vertical plane, motor means and a power transmission means supported on said main frame, a mechanical connection between the said power transmission means and said motor whereby said power transmission means is driven by said motor, a first mechanical connection from said power transmission means to one of said drive wheels and another mechanical connection from said power transmission means to the other of said drive wheels whereby each of said drive wheels is independently connected to said power transmission means and pivot arresting means comprising a first pivot arresting part attached to said second, pivotal, frame and a latter pivot arresting part attached to said main frame, said first part and said latter part being engageable with each other to thereby arrest the rotation of said pivotal frame with respect to said main frame, means attached to said latter pivot arresting part holding it spaced away from said first pivot arresting part normally, and movable control means attached to said main frame and to said latter pivot arresting part for moving said two pivot arresting parts into and out of operative contact.

3,224,524
SCOOTER TYPE VEHICLE WITH COMBINATION FENDER AND BRAKE THEREFOR
Frank J. Laher, 120 Camino Sobrante, Orinda, Calif.
Filed Sept. 19, 1963, Ser. No. 309,990
1 Claim. (Cl. 180—26)



A scooter type vehicle comprising a platform upon which a rider may stand, a plurality of wheels supporting said platform for rolling motion, motive means connected to at least one of said plurality of wheels, a fender having two ends, one of said ends serving to mount the fender to the platform adjacent one of said wheels, said last named wheel including a portion for contact with the ground and a hub portion adjacent to and having a diameter smaller than said portion for contact with the ground, said fender constructed with a portion located about the ground contacting portion of the wheel therebelow and constructed of spring material to provide an upwardly urging resistance to foot pressure applied thereto by the operator of the vehicle, said fender further provided with a semicylindrical portion having a radius of curvature substantially the same as the hub portion of said wheel, said semicylindrical portion being offset laterally from the portion of the fender that is over the ground contacting portion of the wheel whereby direct foot pressure by the rider upon the fender serves to bring the semicylindrical portion of the fender into braking contact with the hub portion of the wheel.

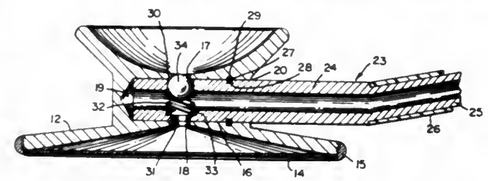
3,224,525
STEP UNIT FOR MOTOR VEHICLES
Hans Froltzheim and Karl Letzel, Sindelfingen, Germany, assignors to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed July 8, 1963, Ser. No. 293,488
Claims priority, application Germany, July 11, 1962, D 39,349
11 Claims. (Cl. 180—89)



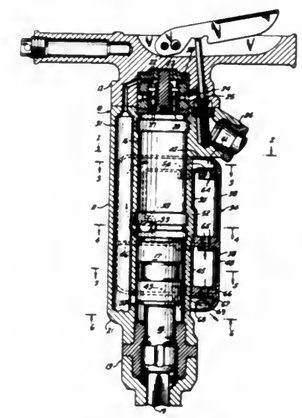
11. A step unit for the cab of a motor vehicle, especially of a commercial type motor vehicle having side walls, said unit comprising:
step means constructed as a liftable cover for a space below the driving compartment in the cab which space is rendered accessible by lifting up said cover and contains units necessary for the operation of the vehicle,
said step unit comprising wall means comprising marginal portions forming a continuation of one of said side walls and being substantially coplanar therewith, said step unit further comprising recessed step structure disposed substantially perpendicular to the plane of said one of said side walls and said marginal portions,
and means pivotally supporting said step structure about an upper horizontal axis disposed rearwardly of said marginal portions to enable swinging of said step structure upwardly from a recessed position in which said space is closed by said cover to a raised position in which said space is rendered accessible.

3,224,526
STETHOSCOPE
Russell E. Weber, Worcester, Mass., assignor to Cardiosonics Medical Instruments Corporation, Cambridge, Mass., a corporation of Massachusetts
Filed Nov. 19, 1964, Ser. No. 412,521
8 Claims. (Cl. 181—24)

1. A stethoscope head construction comprising,
a body member forming diametrically opposed diaphragm and open microphones,
said body member having a cylindrical recess symmetrically interposed between said microphones,
means forming aligned openings from the apex of each of said microphones through said member,
a tubular shaft,
means rotatably securing said shaft within said recess against axial movement,
means forming an opening through the wall of the shaft adapted on rotation of said shaft to be aligned selectively with either of said two openings of said microphones,
and spring means mounted within said shaft and comprising a stop means for closing one of said microphone openings upon alignment of another said openings with said shaft opening.



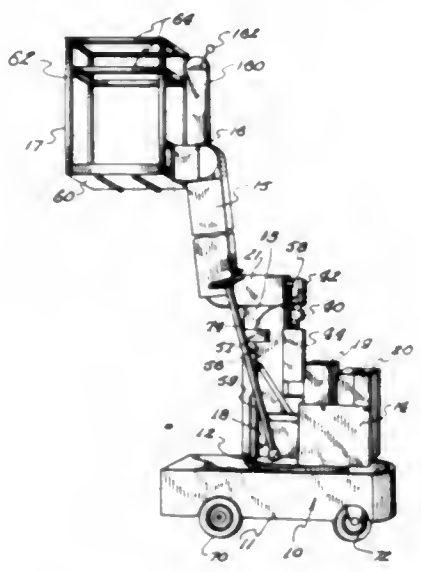
3,224,527
PERCUSSIVE DRILL WITH NOISE SILENCER
Robert J. Waldron, Sanquoit, N.Y., assignor to Chicago Pneumatic Tool Company, New York, N.Y., a corporation of New Jersey
Filed Apr. 3, 1964, Ser. No. 357,039
20 Claims. (Cl. 181—36)



18. A sound filtering unit for use in combination with a pneumatic percussive tool of a type having a cylindrical portion, a radial rib lengthwise of the cylindrical portion, and a pair of spent air exhaust ports each opening in identical manner through an opposite face of the radial rib, the sound filtering unit comprising a pair of identical casting half-sections each adapted to overlie an opposed surface area of the radial rib and cylindrical portion of the tool and adapted to be welded to each other and to the surface of the tool, the sound filtering unit having a pair of opposed longitudinally extending openings each adapted to overlie one of the sides of the rib over one of the exhaust ports, a group of upper chambers, a group of lower chambers, separate intermediate throat means connecting each upper chamber with a separate lower chamber, a separate discharge throat means connected to each lower chamber, an arcuate opening in the filtering unit overhead of the upper chambers adapted to overlie opposite sides of the rib and the cylindrical portion of

the tool, the arcuate opening merging at opposite ends with the longitudinally extending openings, and separate inlet throat means connecting each upper chamber with the overhead opening.

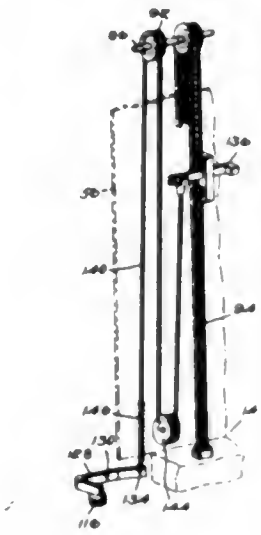
3,224,528
OVERHEAD MAINTENANCE APPARATUS
John S. Hubbard, R.R., Parker, Ind.
Filed Oct. 31, 1963, Ser. No. 320,329
11 Claims. (Cl. 182—2)



1. Overhead maintenance apparatus comprising: a mobile base; and extensible vertical telescoping mast mounted on said base; means for actuating said mast upward and downward; power means mounted on said base and disposed to one side of said mast for supplying energy to said apparatus; an offset arm having one end connected to the upper end of said mast; a second arm having one end pivotally connected to the other end of said offset arm; a platform pivotally connected to the other end of said second arm; means for actuating said second arm and platform in a vertical plane relative to the direction of movement of said base, said second arm and platform being movable to a position alongside the mast where the platform is in a retracted position adjacent to and overlying a portion of said base; means for maintaining said platform in a horizontal position parallel to the horizontal plane of the base in all degrees of rotation of said platform.

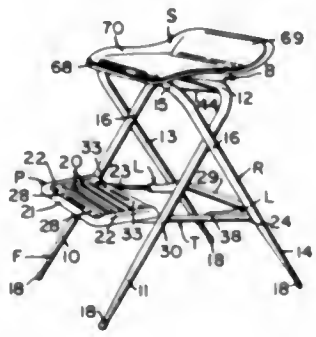
3,224,529
POWER SAFETY DEVICE FOR CARRIAGE CONTROLLED MATERIAL HANDLING TRUCKS
Peter F. Gandolfo, Wellesley, Mass., assignor to Lewis Shepard Company, Watertown, Mass., a corporation of Massachusetts
Filed May 23, 1963, Ser. No. 282,671
3 Claims. (Cl. 182—14)

1. For use on a carriage controlled material handling truck of the type having a mobile base with a mast assembly extending upwardly therefrom and a carriage movable vertically on said mast assembly under the influence of lifting apparatus operatively connected thereto, an emergency stop device operable from the carriage of said truck for enabling an operator positioned thereon to quickly and efficiently stop all movement of said truck should an operating emergency arise, said emergency stop device comprising: a button-operated switch of the type closed by pressure exerted on said button and opened by release of pressure thereon; means manually operable from said carriage and extending co-extensively with the lifting apparatus of said truck for maintaining pressure on said button during normal operation of said truck, said



means capable of automatically releasing pressure on said button in the event that downward vertical movement of said carriage on said mast assembly is accidentally interrupted.

3,224,530
STEP STOOL
Marvin King, Oak Park, William M. Schmidt, Grosse Pointe Farm, and Stanley E. Thorwaldsen, Livonia, Mich., assignors, by mesne assignments, to Samsonite Corporation, Denver, Colo., a corporation of Colorado
Filed Apr. 10, 1963, Ser. No. 271,909
4 Claims. (Cl. 182—33)

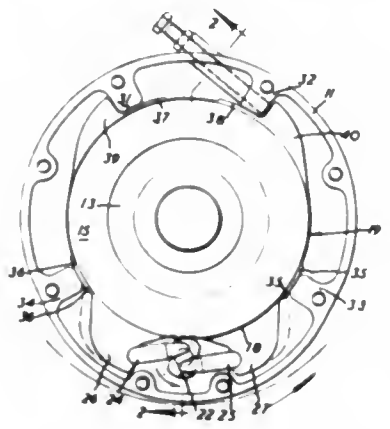


1. A step stool comprising a pair of front legs; a pair of rear legs pivoted to said front legs above the center of height thereof so that, with said legs in open position, the upper portion of said rear legs will be disposed above said front legs and the upper portion of said front legs will be disposed above said rear legs; a seat pivotally attached at its front to the upper portion of said rear legs and movably connected to the upper portion of said front legs; a step frame having a pair of spaced, rearwardly extending bars, said step frame being pivotally connected to said front legs below the pivotal connection of said front and rear legs; a step mounted on the front of said step frame; a cross rod extending between said rear legs intermediate the ends thereof; links pivotally connecting a bar of said step frame to said rear cross rod, said bars of said step frame being adapted to engage the underside of said rear cross rod to maintain said step in normal position; and an angle attached to the underside of said step and having an ear depending from each end thereof, each said ear being connected to a pivotal connection between a front leg and said step frame.

3,224,531
SPREADING TYPE DISC BRAKES

George Eric Thompson, Edgbaston, Birmingham, England, assignor to Girling Limited, Birmingham, England, a British company

Filed Jan. 9, 1964, Ser. No. 336,659
Claims priority, application Great Britain, Jan. 9, 1963, 986/63
4 Claims. (Cl. 188—72)



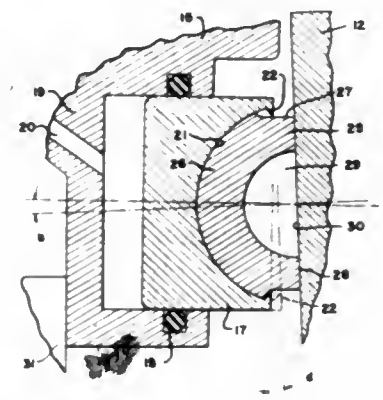
1. A disc brake comprising a stationary housing, a rotatable shaft within said housing, a pair of axially spaced discs slidably mounted for limited axial movement on said shaft, annular braking surfaces on opposite sides of each disc, braking means for engagement with said annular braking surfaces, axially spaced radial surfaces in said housing, axially separable pressure plates located between the discs for bringing the discs into frictional engagement with the radial surfaces in the housing, actuator means for said brake comprising an abutment on each of said plates in aligned, circumferentially spaced adjacency with each other on one side of the axis of said plates and cam means operably engaging said abutments for urging said abutments away from each other and effect relative angular movement between said pressure plates, co-operating inclined recesses in adjacent faces of said pressure plates, roller means located in the recesses for urging apart the pressure plates on relative angular movement between the pressure plates, angularly spaced pilots projecting radially inwards from the housing and adapted to co-operate with portions of the peripheries of the plates to locate them centrally with respect to the housing, two of said pilots being angularly spaced on opposite sides of a point which is normally diametrically opposite said actuator means, each of said pilots cooperating with one of said pressure plates only and each having a substantially radially extending stop abutment part, and a radial lug on each of said pressure plates engageable with the respective stop abutment parts for arresting angular movement of one or the other of said plates with the rotatable discs when the brake is applied.

3,224,532
CALLIPER-TYPE DISK BRAKE

George Simon, 6540 E. Palmer, Detroit, Mich.

Filed Dec. 16, 1963, Ser. No. 330,712
1 Claim. (Cl. 188—152)

A disk brake comprising a rotatable brake disk having a braking face; a hydraulic cylinder arranged approximately axially perpendicular to said face and having an open end arranged closely adjacent to the outer edge of the disk face and a closed opposite end arranged remote from said face; a piston slidably fitted within said cylinder for movement towards and away from said face; a fluid passageway formed in said cylinder for transmitting pressurized fluid into the cylinder between the piston and the closed end of the cylinder for moving the piston towards the disk face; an approximately hemispherically shaped socket formed in the end of the piston adjacent said disk, and having an inwardly extending annular lip formed upon the edge defining the opening of said socket; a pressure member in the form of a short, hollow cylinder having a flat, open, annular shaped end and an opposite, closed ball shaped end, the ball end corresponding in size and shape to said socket and closely fitted within said socket for rotatable and rocking movement relative to said piston; the diameter of said ball end being greater than the diameter of the remaining portion of said cylinder, thus forming an annular shoulder ar-

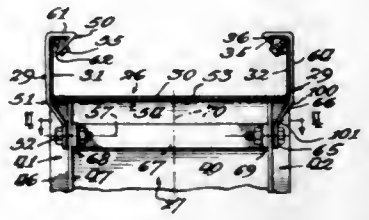


ranged within the socket, with the shoulder normally being spaced a short distance from said lip, whereby said pressure member may rock within the socket until said shoulder contacts said lip; said flat, annular shaped end being arranged approximately parallel to said disk face for making face-to-face braking contact therewith upon movement of the piston towards said disk; whereby said pressure member rotates about its axis relative to said piston upon initially making contact with said disk and rocks within said socket to maintain said face-to-face contact with the disk despite the wobbling of the disk, relative to the cylinder, as the disk rotates.

3,224,533
OPENING FRAME AND CLIP THEREFOR

Albert F. Nystrom, Brookfield, Wis., assignor to Inland Steel Products Company, Milwaukee, Wis., a corporation of Delaware

Filed Dec. 31, 1962, Ser. No. 248,675
14 Claims. (Cl. 189—35)



1. In a frame for an opening:
a first elongated member;
a second elongated member, extending transversely to said first elongated member, and having a terminal end adjacent said first member;
each of said members defining a respective side of said opening;
a clip element including a hanger portion;
said clip element including means mounting the clip element for slidable movement along said first member;
a connection between said clip hanger portion and said second member adjacent said terminal end of the second member;

said connection including means mounting the second member for rotation about an axis perpendicular to the plane of said opening;

a space between the terminal end of said second member and said first member for accommodating said rotation and slidable movement of the second member relative to the first member;

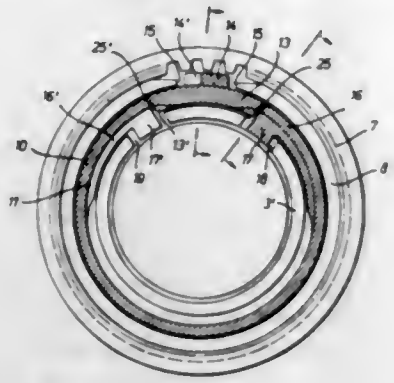
means at said connection for securing said second member against rotation; and cooperating means at said connection and on said hanger portion for urging said terminal end of the second member into abutment with the first member to bind the second member against slidable movement.

3,224,534

SYNCHRONIZING ARRANGEMENT

Rudolf Boguslawski and Josef Brandl, Munich, Germany, assignors to Bayerische Motoren Werke Aktiengesellschaft, Munich, Germany

Filed Mar. 10, 1964, Ser. No. 350,712
Claims priority, application Germany, Mar. 13, 1963, B 71,099
17 Claims. (Cl. 192—53)



1. A synchronization installation for change-speed transmissions, especially for motor vehicles, having a hub portion supporting thereon the synchronization installation, comprising:

slotted friction ring means,

unitary slotted expanding ring means arranged within said friction ring means to increase the servo effect thereof and extending approximately over the entire length of said friction ring means,

said expanding ring means having end regions which, in the operating position thereof, abut directly, on the one hand, against the end of said friction ring means pointing in the direction of rotation, and, on the other, against an abutment surface provided in said hub portion said abutment surface facing in the direction opposite to said first-named direction,

the end regions of said expanding ring means being provided with abutment surface means, the planes of which subtend with one another such an angle that the abutment forces acting against said expanding ring means have an inwardly directed resultant.

3,224,535

PILOT CLUTCH

Earle C. Herbkersman, Parma, Ohio, assignor to The Pipe Machinery Company, Wickliffe, Ohio, a corporation of Ohio

Filed Jan. 2, 1962, Ser. No. 163,932
4 Claims. (Cl. 192—67)

1. A pilot clutch comprising a pair of clutch members, means supporting the clutch members in coaxial relation for rotation relative to each other about their common axis and for movement axially endwise toward and away from each other,

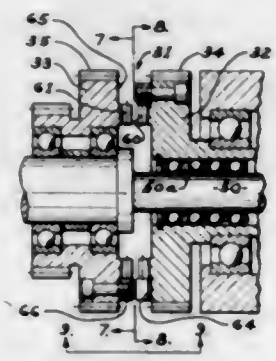
each clutch member having at the end facing the other member a plurality of clutch teeth arranged in a row extending circumferentially of said axis, the teeth of each clutch member being concurrently engageable with the teeth of the other clutch member in driving relation upon movement of the members axially relatively toward each other to a predetermined position,

yieldable means for yieldably urging the members toward each other,

one clutch member having a holdout face facing endwise of said one clutch member toward the other clutch member, and extending circumferentially of, and elongated circumferentially of, said one clutch member, and also having a recess which has a front end wall and which is open endwise of the clutch members toward said other clutch member, and which interrupts said holdout face for a portion of the circumferential extent of said holdout face,

a holdout member on said other clutch member and projecting endwise thereof toward said one clutch member and having a front end which leads in the direction of drive, and having an outer face positioned to engage and slide circumferentially of the clutch members along said holdout face, said outer face extending circumferentially of said other clutch member and being elongated endwise,

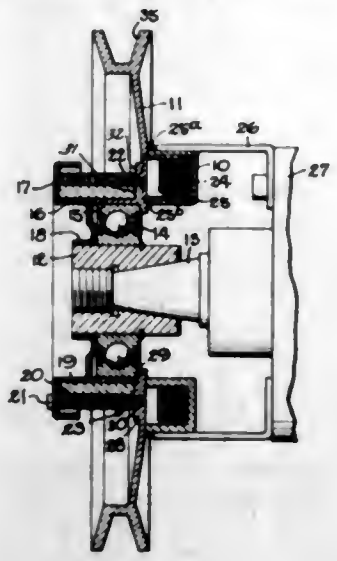
said holdout member being of less length circumferentially of the clutch members than the recess so that the holdout member can enter said recess under the force exerted by the yieldable means when the holdout member and recess are aligned circumferentially of the clutch members,



said holdout face and said outer face being positioned axially of the clutch members in a relation to each other and to the outer ends of the teeth of the clutch members so that, when said holdout face and outer face are in engagement, the outer ends of the teeth of one clutch member are constrained to an axial position wherein they are very slightly out of endwise contact with the teeth of the other clutch member, so that, when the holdout is urged into the recess while in alignment therewith, but in a circumferential position in which the ends of the teeth on the clutch members can engage each other, the holdout member is limited to very slight entry into the recess by the ends of the teeth so that the front end of the holdout member, in the direction of co-rotation of the clutch members, and the front end wall of the recess, are constrained by the teeth to a depth of engagement axially of the clutch members such that only the axially outermost margin of the front end of the holdout member and the axially outermost margin of the front end wall of the recess engage, said outermost margin of the front end wall of the recess being inclined from front to rear of the recess in a direction away from the clutch member carrying the holdout member, the axially outermost margin of the front end wall of the holdout member being inclined from the front to the rear in the direction toward the clutch member having the recess, so that

said engagement at said axially outermost margins is insufficient to effect the driving relation between the front end of the holdout member and said front end wall of the recess under the force imposed by said yieldable means, but, instead, said margins cam the holdout member axially of the clutch members out of contact with the front end wall of the recess.

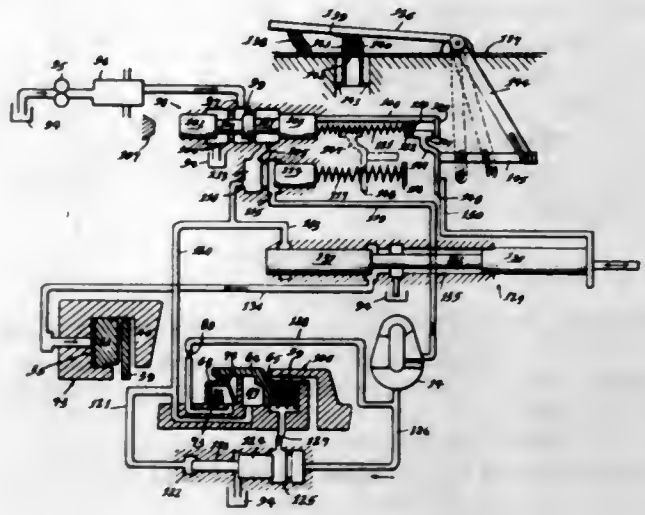
3,224,536
MAGNETIC COIL CLUTCH
James A. Mason, Grand Rapids, Mich., assignor to Warner Electric Brake & Clutch Company, South Beloit, Ill., a corporation of Delaware
Filed July 25, 1962, Ser. No. 212,410
2 Claims. (Cl. 192—81)



1. A friction coupling having, in combination, two members disposed end to end and mounted for relative turning about a common axis, annular friction surfaces on the peripheries of the respective members, means coacting with said surfaces to form a main friction clutch adapted when activated to couple said members frictionally and including a helical coil of magnetic material telescoped with at least one of said surfaces, means anchoring one end turn of said coil to one of said members, the turn at the opposite end of said coil being free and constituting a magnet armature, a magnetic pilot friction clutch operable when activated to derive a torque from the relative turning of said members and apply such torque to said armature, said pilot clutch providing a toroidal flux path threading into and out of said armature and including a radial flange on the other of said members providing an axial face disposed opposite and overlapping the inner portion of the end face of said armature, a magnetic ring encircling said flange and providing an outer face overlapping the outer portion of said armature face, and a nonmagnetic means rigidly joining the adjacent edges of said ring and said flange, and torque transmitting means on said ring adapted to be coupled to a rotary part for effecting the transmission of rotary power radially between said ring, said nonmagnetic means, said flange and said main clutch.

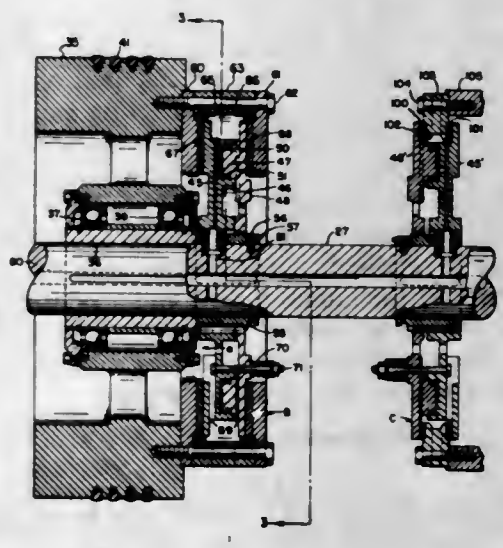
3,224,537
FLUID OPERATED CLUTCH WITH OPERATOR SENSING SIGNAL
Conrad R. Hilpert, Winnebago, Ill., assignor to Twin Disc Clutch Company, Racine, Wis., a corporation of Wisconsin
Filed Aug. 3, 1961, Ser. No. 129,038
2 Claims. (Cl. 192—85)

1. A power transmitting structure comprising a pressure liquid source, a hydraulically actuated clutch including a plurality of friction plates, a piston member and a chamber for receiving pressure liquid to move the piston member towards the plates, a pressure regulating valve interposed between the source and clutch, a rockable pedal for varying the position of the valve between limit positions thereof respectively determining full release of the plates and a relatively high pressure in the chamber to establish a maximum torque transmitting condition of the plates and including an intermediate relatively low pressure position, means associated with the



rockable pedal including a plurality of spring means compressed by the pedal when in a position determining full release of the plates, and means for preventing thrusting of some of the spring means against the pedal when the latter reaches said intermediate position to provide a sensing signal to the operator to pause in said intermediate position until the plates are in relative sliding contact, continuing movement of the pedal thereafter establishing varying valve positions determining a gradual pressure rise in the chamber to the maximum value.

3,224,538
CLUTCH UNIT FOR POWER PRESS
William E. Ward, 3645 Warrensville Center Road, Shaker Heights, Ohio
Filed June 20, 1963, Ser. No. 289,316
6 Claims. (Cl. 192—85)



1. In a device of the character referred to, a shaft, a first assembly concentric with said shaft and adapted to be selectively connected to said shaft, a second assembly comprising a pair of elements connected with said shaft for limited axial movement relative thereto and relative to each other, said elements projecting radially beyond radially inner portions of said first assembly, fluid actuated motor means connected to said elements of said sec-

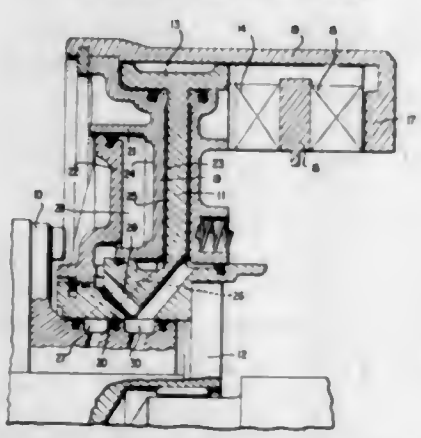
ond assembly for moving the same axially of said shaft, conduit means for supplying fluid to said fluid actuated motor means including a longitudinally extending aperture in said shaft, a transversely extending aperture in said shaft communicating with said first aperture and terminating in a counterbore, a radial aperture in one of said elements of said second assembly radially outwardly of said transversely extending aperture in said shaft and of less diameter than that of said counterbore, a tubular member supported in said counterbore for radial movement therein and communicating with said transversely extending aperture in said drive shaft and said radial aperture in said one element, a circumferential seal carried by said tubular member and the wall of said counterbore, and an end seal between the radially outer end of said tubular member and the radially inner surface of said element of said second assembly in which said radial aperture is formed.

3,224,539

DOUBLE ACTING FLUID OPERATED CLUTCH

Werner R. E. Hensel, Fellbach, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany

Filed Nov. 30, 1962, Ser. No. 242,045
Claims priority, application Germany, Dec. 2, 1961, D 37,585
11 Claims. (Cl. 192—86)



1. An actuating mechanism for a friction clutch, especially for a shifting clutch in automatically shifted motor vehicle transmissions, comprising drum means, disk-like means carrying said drum means, clutch means including parts disposed within said drum means and further including a pressure plate disposed on one side of the disk-like means, actuating piston means disposed on the other side of said disk-like means, and connecting means including a longitudinally movable sleeve-like member disposed outwardly of said drum means for operatively connecting said actuating piston means with said pressure plate, said actuating piston means being constructed as double-acting piston having a relatively large piston area effective for the engagement of the clutch means and a relatively small piston area, the large piston area facing said disk-like means and the small piston area being disposed on the side thereof opposite said disk-like means.

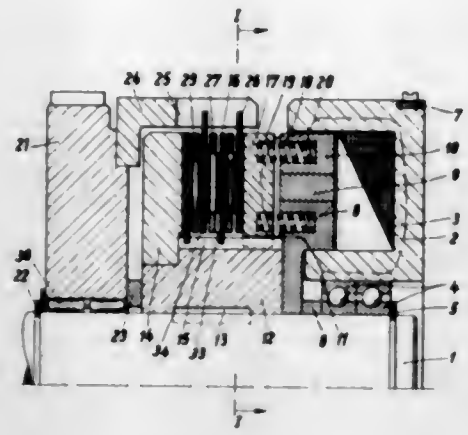
3,224,540

ELECTROMAGNETICALLY OPERATED MULTIPLE DISC CLUTCH OR BRAKE

Hermann Straub, Friedrichshafen, Germany, assignor to Zahnradfabrik Friedrichshafen, Aktiengesellschaft, Friedrichshafen, Germany

Filed Feb. 26, 1962, Ser. No. 175,719
Claims priority, application Germany, Mar. 7, 1961, Z 8,594
6 Claims. (Cl. 192—90)

1. In an electromagnetic clutch, the combination of a plurality of axially movable rotative frictional elements, energizable magnetic means adjacent said frictional elements, resilient bias means disposed to effect engagement of said plurality of frictional elements, said magnetic means comprising a magnetizable body capable of re-



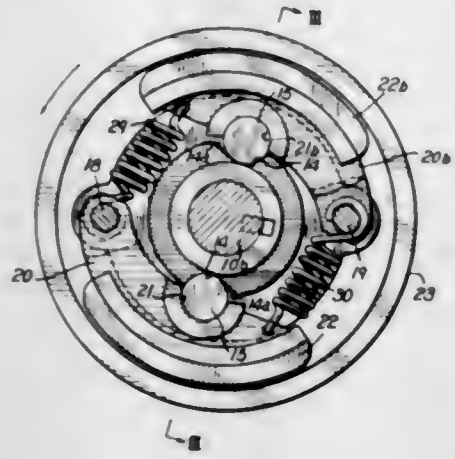
taining a residual magnetism subsequent to energization by a D.C. source, said residual magnetism being sufficient to overcome said resilient bias to maintain disengagement of said plurality of frictional elements.

3,224,541

CENTRIFUGAL AND TORQUE RESPONSIVE CLUTCH

Yoshizo Yamamoto, 1314 4-chome, Nakameguro, Meguro-ku, Tokyo, Japan

Filed Feb. 3, 1964, Ser. No. 342,025
Claims priority, application Japan, May 22, 1963, 38/25,512
3 Claims. (Cl. 192—105)



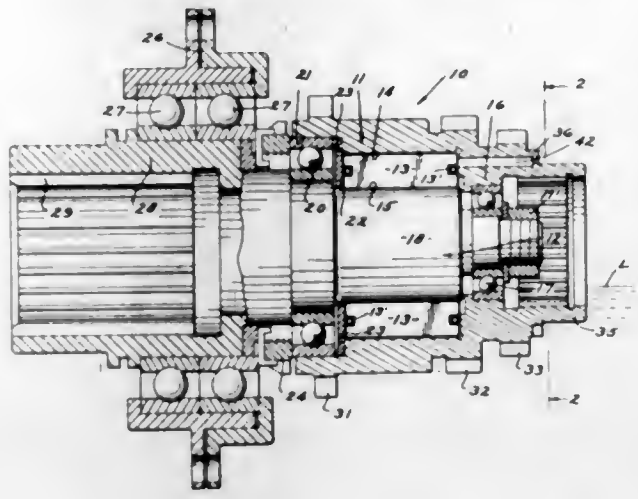
1. A clutch assembly comprising a drive shaft mechanically connected with a prime mover, a ring member rigidly mounted on said shaft and having a plurality of separated axial recesses formed in the periphery of said member, a roller freely rotatable in each of said recesses, each recess being formed with a concave part-cylindrical surface on one side conforming to the surface of the roller and with a cam slope at the other side thereof, a plurality of pivotable clutch shoes mounted as a whole rotatably on and around said shaft, each of said shoes being provided with a semi-cylindrical recess for receiving rotatably one of said rollers, a driven member rotatably mounted on said shaft, spring means urging said shoes to swivel in their contracting direction, said cam slopes being adapted to urge mechanically said rollers and said shoes to move in their expanding direction for increasing the engaging pressure upon establishment of the centrifugal engagement of said shoes with said driven member.

3,224,542

FORCE LUBRICATED SPRAG CLUTCH

Thaddeus F. Zlotek, Detroit, Mich., assignor to Formsprag Company, Warren, Mich., a corporation of Michigan

Filed Mar. 11, 1963, Ser. No. 264,297
9 Claims. (Cl. 192—113)



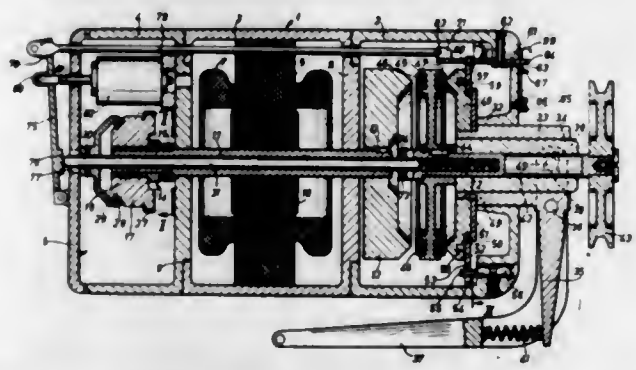
1. A force lubricated rotary clutch mechanism including a pair of coaxial, radially spaced and relatively rotatable races, clutch elements acting in conjunction with said races in the annular space therebetween, and means to force lubricate said space, comprising an integral formation on a rotating one of said races which has a face exposed in the direction of rotation of said race, said formation being provided wtih a lubricant scoop passage therein opening from said face and extending in the formation generally tangentially of the rotative direction to said annular space, said passage being inclined in the axial direction toward said space.

3,224,543

MOTOR DRIVE AND COUPLING MECHANISM FOR SEWING AND THE LIKE MACHINES

Kristen Hedegaard, Gentofte, Denmark, assignor to G. M. Pfaff AG, Kaiserslautern, Pfalz, Germany, a corporation of Germany

Filed June 15, 1964, Ser. No. 374,950
Claims priority, application Germany, June 15, 1963,
10 Claims. (Cl. 192—145)



1. In motor drive mechanism, a continuously running electric motor having a through-going hollow main drive shaft with a first end of said shaft projecting from one side and with the second end of said shaft projecting from the opposite side of said motor, main friction coupling means having a main driving coupling member directly secured to the first end of said shaft, auxiliary coupling means having an auxiliary driving coupling member, reduction gearing means operably connecting said auxiliary driving member with the second end of said shaft, an output shaft, a main driven coupling member mounted upon and axially displaceable relative to said output shaft, a rotatably mounted braking member for said main driven member, locking means to normally arrest said braking member, resilient means to normally urge said main driven member into engagement with said braking member, first operating means to disengage said main driven member from said braking member and to operate it into engagement with said main driving member, to rotate said output shaft at the motor speed by way of said main coupling means, an auxiliary drive shaft coaxial with and rotatively mounted within said main drive shaft, means coupling one end of said auxiliary drive shaft to said output shaft in axially yielding connection therewith, an auxiliary driven coupling member secured to the opposite end of said auxiliary drive shaft in normally disengaged position from said auxiliary driving member, and second operating means to operate said auxiliary driven member into engagement with said auxiliary driving member including means to simultaneously release said braking member, to drive said output shaft at reduced speed by way of said auxiliary

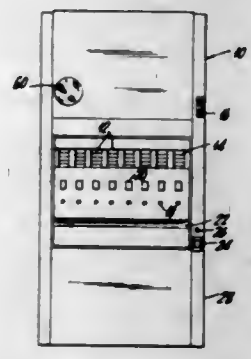
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3,224,544

ARTICLE DISPENSING CONTROLLED MESSAGE PRODUCING MEANS

Robert S. Shober, North Woodmere, N.Y. (% New Era Letter Co., 495 Broadway, New York 12, N.Y.), and Edwin M. Bederson, 854 Bryant St., Woodmere, N.Y.

Filed May 29, 1963, Ser. No. 284,170
24 Claims. (Cl. 194—10)



1. In an article dispensing apparatus, a plurality of storage means for a plurality of different articles, respectively, a plurality of corresponding dispensing means under the control of the operator of the apparatus for dispensing the article from its storage means, presetting means under the control of the operator adapted to be actuated prior to the actuation of any one of said dispensing means to render the latter operative, means responsive to the operation of said presetting means for producing a message for the operator prior to the operation of any one of said dispensing means, another message producing means associated with a predetermined set of one or more of said dispensing means, and means operable in response to the operation of one of said predetermined set of dispensing means for automatically actuating the message producing means corresponding to said predetermined set dispensing means.

3,224,545

WEAR COMPENSATING APPARATUS INCLUDING BI-DIRECTIONAL SPRING CLUTCH

Roy F. Hanft, Lexington, Ky., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Jan. 30, 1964, Ser. No. 341,244
3 Claims. (Cl. 197—16)

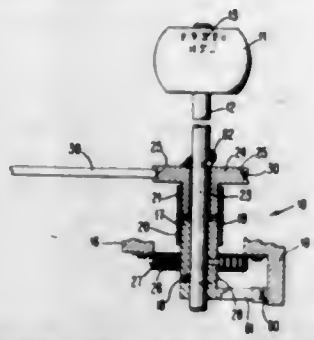
1. Apparatus for compensating for wear or the like in at least one mechanism operable to control movement of a movable member having spaced elements thereon to selectively position the elements at a working position comprising:

a movable member having spaced elements thereon and a member driven by said mechanism;

said mechanism operating to move said driven member in both rotational directions;

clutch means drivingly interconnecting and directly coupling said driven member and said movable member for oscillatory movement through a working position to a number of preselected positions when said clutch is engaged;

said clutch means comprising a spring clutch whose convolutions are disposed to normally engage said movable member and said driven member;



means to release said clutch means each time said driven member and said movable member are moved in coupled relation to at least one of said preeselected positions to position an associated one of said elements at said working position; and

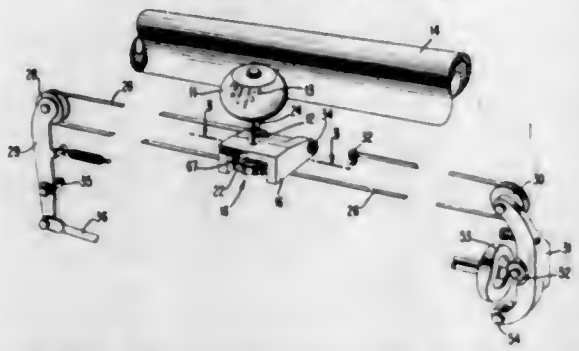
means connected with one of said members operable to effect relative movement between said members when said clutch means is released to compensate for wear and the like in said mechanism.

3,224,546

WEAR COMPENSATING APPARATUS HAVING PLURAL PAWLS

Jerome B. O'Daniel and Leon E. Palmer, Lexington, Ky., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Jan. 30, 1964, Ser. No. 341,245
7 Claims. (Cl. 197—16)



1. Apparatus for compensating for wear and the like in at least one mechanism operable to control movement of a print member having spaced characters thereon to selectively position the characters at a printing position comprising:

a print member having a plurality of spaced characters mounted about the periphery thereof;

a rotatable member and mechanism interconnected with said rotatable member, operable to cause movement of said rotatable member;

clutch means drivingly interconnecting said rotatable member and said print member;

said clutch means operable when engaged to cause oscillatory movement of said print member with said rotatable member in both rotational directions through a printing position;

means to release said clutch means each time said rotatable member and said print member are in at least one preselected rotational position to position an associated one of said characters at said printing position; and

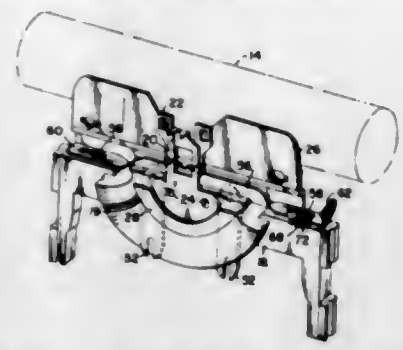
means connected with one of said members operable to effect relative movement between said members when said clutch means is released to automatically compensate for wear and the like in said mechanism.

3,224,547

TYPEWRITER IMPRESSION CONTROL

Richard F. Betzler, 609 7th Ave., Folsom, Pa.

Filed Feb. 4, 1963, Ser. No. 255,963
2 Claims. (Cl. 197—183)



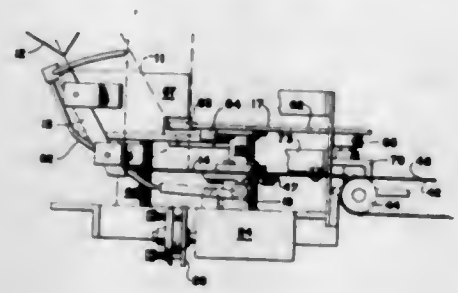
1. In a typewriter, a cylindrical platen mounted for rotation about a fixed horizontal axis, said axis lying in a vertical plane, a type bar, means supporting said type bar for swinging movement toward and away from said platen, an abutment member positioned in the path of movement of said type bar to limit the extent of movement of said type bar toward said platen, said abutment member being resiliently mounted on said supporting means for movement in horizontal direction normal to said vertical plane, said supporting means including an upright surface facing away from said plane and being disposed between said abutment member and said vertical plane, means biasing said abutment member toward said surface, and positioning means movable in a direction parallel to said plane for moving said abutment member against the bias of said biasing means away from said surface to position said abutment member in spaced relation to said supporting means and thereby reduce the extent to which said type bar is movable toward said platen.

3,224,548

TRANSFER CONVEYOR

John C. Peterson, 124 Atkinson Lane, Watsonville, Calif.

Filed Mar. 23, 1964, Ser. No. 354,079
5 Claims. (Cl. 198—25)



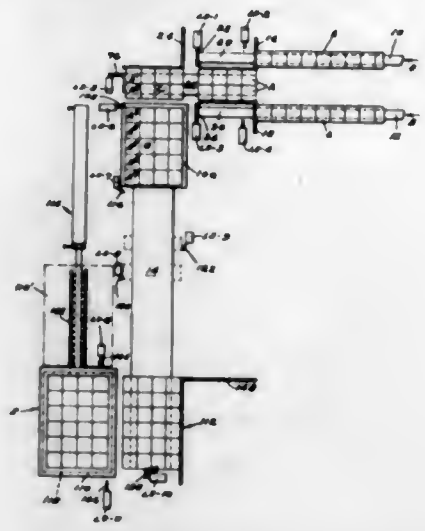
1. A transfer conveyor, comprising: a turntable, means for rotatably supporting and rotating said table, a chain drive sprocket secured to, above, and coaxial with said table for rotation therewith, an endless chain in mesh with said drive sprocket, said chain having two runs tangential to said drive sprocket and substantially normal to each other, and two idlers for said chain to give the path thereof a triangular form, carton engaging lugs secured to and spaced equidistantly along said chain to extend outwardly of said path, one of said runs being a tight run and the other a slack run, means for feeding elongated cartons inclined to the upper face of said table adjacent the edge thereof and adjacent said tight run, and means for blocking said carton feed and for normalizing the carton length to said table.

3,224,549

METHOD OF AND APPARATUS FOR TRANSFERRING CASELOADS OF ARTICLES

Joseph F. Cella, Bronxville, N.Y., and James L. Lobik, Holyoke, Mass., assignors to Cesco Container Mfg. Corp., New York, N.Y., a corporation of Massachusetts

Filed Nov. 21, 1962, Ser. No. 239,132
9 Claims. (Cl. 198—30)



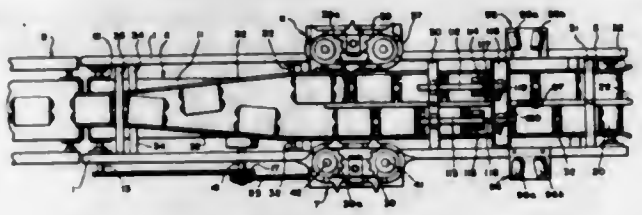
1. That method of transferring caseloads of articles to an outfeed conveyor from a plurality of infeed conveyors delivering articles at various rates comprising: transferring articles from the highest delivery rate infeed conveyor to an article supporting station at a transfer rate substantially equal to the delivery rate of such infeed conveyor, withholding article transfer from a slower delivery rate infeed conveyor to accumulate a line of articles awaiting transfer, periodically transferring articles from the accumulated line on said slower infeed conveyor to the article supporting station simultaneously with the transfer of articles from said highest delivery rate infeed conveyor when said line exceeds a determined size, and transferring a caseload of articles as a unit from said article supporting station to said outfeed conveyor when the group within the article supporting station exceeds a predetermined size.

3,224,550

COMBINING CONVEYOR FOR SIX-PACKS

Biagio J. Nigrelli, Northbrook, Wendell E. Standley, Lake Forest, Richard B. Wittmann, Chicago, and Joseph V. Ferraro, Niles, Ill., assignors to Johns-Nigrelli-Johns, Inc., Skokie, Ill., a corporation of Illinois

Filed Nov. 29, 1963, Ser. No. 326,929
9 Claims. (Cl. 198—32)



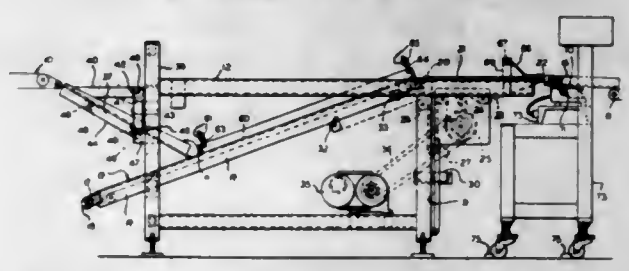
1. In a mechanism for arranging upstanding, uniform sized articles in a single conveyed line, which articles are delivered from two feeding or delivery lines, the combination of a receiving conveyor and two delivery conveyor sections arranged for the transfer of articles from the delivery sections to the receiving conveyor, said delivery conveyor sections comprising movable supporting means on which the articles are disposed in aligned, abutted relation, means for continuously driving the delivery conveyor means, separate feeding means for each line of abutted articles on the delivery conveyor means, means for selectively starting and stopping said separate feeding means while the supporting conveyor means continues to operate and slide beneath an abutted line of articles, means arranged in spaced relation upstream from the separate feeding means for applying downward pressure on the articles to hold them firmly against the supporting conveyor means, whereby starting of the line of abutted articles after a period of stoppage thereof on the moving supporting conveyor means will be facilitated, and means by which the downward pressure on the articles of either conveyed line is rendered inoperative simultaneously with the stoppage of the feeding means for such conveyed line.

3,224,551

CONVERGER AND STACKER FOR COOKIES

Richard C. Talbot, Skokie, and Fred Rieg, Chicago, Ill., assignors to Peters Machinery Company, Chicago, Ill., a corporation of Illinois

Filed Dec. 12, 1963, Ser. No. 330,049
8 Claims. (Cl. 198—32)



1. In a converger for cookies and the like, converging multiple rows of cookies into single rows, an inclined slide having at least one chute extending therealong, said chute having spaced side walls inclined outwardly of said slide and spaced apart at their receiving ends to receive at least two cookies in side by side relation and converging to discharge ends having a spacing to accommodate the discharge of one cookies therefrom, said side walls converging toward the discharge ends thereof at different angles and one of said side walls being longer than the other, the longer side wall placing a drag on the cookies delivered thereon and retarding travel of cookies along said chute to accommodate cookies delivered to the shorter side wall to move in advance of the cookies delivered to the longer side wall, with the resultant alignment of the cookies passing through the discharge end of said chute one behind the other.

5. In a converger for cookies and the like and in combination with a feed conveyor, an inclined slide having at least one converging chute extending therealong in cookie receiving relation with respect to said conveyor and having opposite inclined side walls of different heights and lengths, converging toward the center of said chute at different angles with respect to each other, to effect the moving of cookies along said chute, one behind the other, an upwardly inclined conveyor at the discharge end of said chute having an upper generally horizontal run, and vibratory stacker means at the discharge end of said conveyor, effecting the progress of the cookies for further processing and the stacking thereof by the vibratory action of said stacker means.

3,224,552

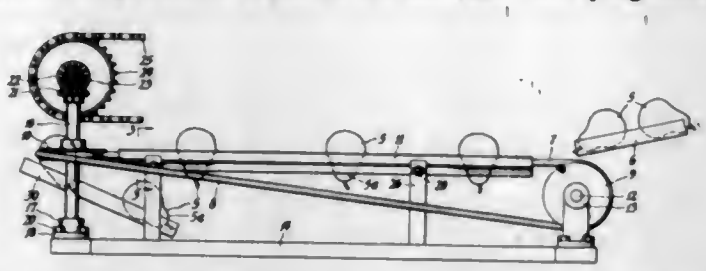
FRUIT FEEDING MECHANISM

Francis McNeill, 3 Little Ave., Mooroopna, Victoria, Australia

Filed Oct. 5, 1962, Ser. No. 228,607
Claims priority, application Australia, Mar. 21, 1962, 15,585/62
4 Claims. (Cl. 198—33)

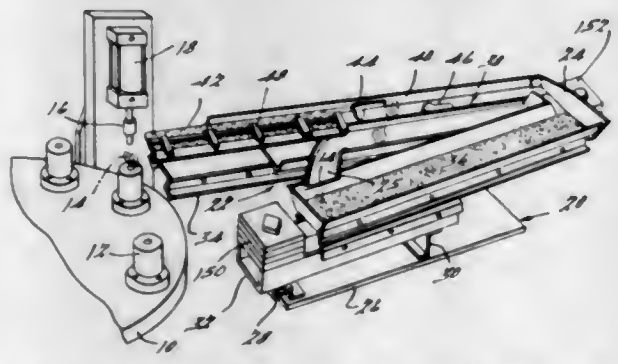
1. Apparatus for advancing objects of ob-ovoid configuration comprising conveying means movable along a

substantially closed path, said conveying means being spaced apart to support the large end of such objects on opposite sides thereof, driving means for said conveying means, said driving means being spaced apart sufficiently to gradually separate further said conveying means



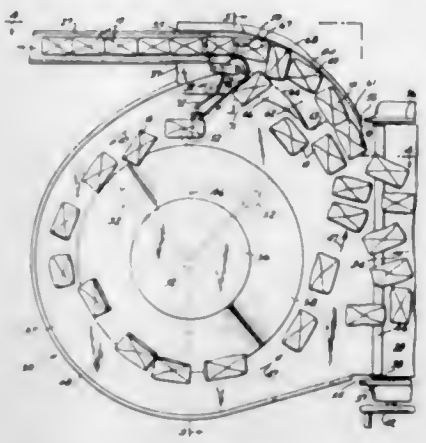
to discharge such objects therefrom with the large ends positioned facing the direction of travel of said conveying means, and receiving means at the discharge end of said conveying means positioned downwardly and rearwardly with respect to said conveying means.

3,224,553
VIBRATORY WORK FEEDING AND ORIENTING UNIT
Milford A. Campbell, 17225 MacArthur, Detroit, Mich.
Filed Feb. 27, 1963, Ser. No. 261,363
10 Claims. (Cl. 198—33)



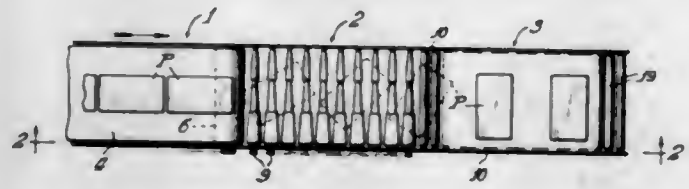
1. In a vibratory feed system for delivering parts from a reservoir to discharge means in a predetermined condition comprising: a straight line trough-like reservoir feed unit including a parts reservoir provided at the bottom of said feed unit, an elongated upwardly extending straight line feed path provided by said reservoir feed unit, a support base for said reservoir feed unit, an electromagnetic drive mounted on said support base, spring means mounted on said support base and movably supporting said reservoir feed unit, electromagnetic operable means connected to said reservoir feed unit and being responsive to said electromagnetic drive to impart vibratory movement to said reservoir feed unit, changeable weight means mounted on said support base to vary the rate of movement of said reservoir feed unit, an outlet from said reservoir feed unit, track means extending to said outlet to discharge parts therethrough; a straight line trough-like orienting feed unit including an elongated upwardly extending straight line feed path, a support base for said orienting feed unit, an electromagnetic drive mounted on said support base, spring means mounted on said support base and movably supporting said orienting feed unit, electromagnetically operable means connected to said orienting feed unit and being responsive to said electromagnetic drive to impart vibratory movement to said orienting feed unit, changeable weight means mounted on said support base to vary the rate of movement of said orienting feed unit, track means located adjacent said outlet from said reservoir feed unit to receive parts therefrom, orienting means provided on a first portion of said track means to arrange parts in the predetermined condition, return means to receive unoriented parts and return such parts to said reservoir feed unit, and guide means to convey parts in the oriented condition to said discharge means.

3,224,554
AUTOMATIC ORIENTATION, ALIGNMENT AND INPUT FEEDING MACHINERY FOR CONFECTIONARY ARTICLES
Jean E. Moulder, Huntington, William J. Hoffinger, Ridgefield, and Robert E. Scherr, Old Greenwich, Conn., assignors, by mesne assignments, to AEL Food Automation Division, Inc., Stamford, Conn.
Filed Apr. 11, 1963, Ser. No. 272,399
4 Claims. (Cl. 198—33)



1. Automatic input feeding apparatus for confectionary articles comprising a rotary vibratory platform conveyor having a generally circular configuration and including a generally tangential discharge outlet from the perimeter of the platform, said vibratory platform conveyor having a smooth surface and holding the confectionary articles thereon, rotary vibratory drive means for said platform for circulating the articles therein in a direction toward said outlet, orienting mechanism for the confectionary articles approaching said outlet including guide wall means extending toward said outlet and defining one side of said outlet, and resilient rejector means revolving in a direction counter to the approaching confections and defining the opposite side of said opening for said articles to pass through said outlet single file and for rejecting misaligned confections including a pulley wheel rotatably mounted at the opposite side of said opening, a belt travelling around said pulley wheel, guide means for said belt spaced from said pulley wheel and guiding the belt along a path at a large angle to the direction of movement of the confections approaching along said wall for urging the mis-aligned confections away from said outlet, whereby the confectionary articles are rearranged from a random group into a single file line passing through said outlet for further processing of the confections.

3,224,555
POWERED CONVEYOR MECHANISM FOR TURNING ARTICLES
Wendell E. Standley, Lake Forest, and Leonard C. Braun, Elk Grove Village, Ill., assignors to Johns-Nigrelli-Johns, Inc., Skokie, Ill., a corporation of Illinois
Filed June 25, 1964, Ser. No. 377,885
1 Claim. (Cl. 198—33)



Mechanism for turning rectangular articles comprising a feeding conveyor for advancing a row of articles, a receiving conveyor aligned with the feeding conveyor and in spaced relation thereto, an article supporting and turning section interposed between the feeding and receiving conveyors, said turning section comprising

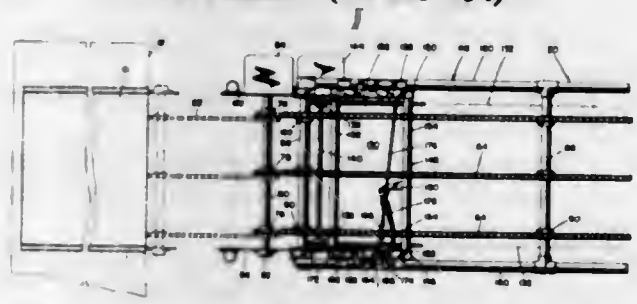
a plurality of closely related, elongated, tapered rolls mounted on axes parallel with each other, said axes being uniformly disposed at an angle to the horizontal inclining upward in the direction of the small ends of the tapered rolls sufficient to dispose the article supporting surfaces of the rolls in an approximately horizontal plane, the feeding conveyor being operative to discharge articles onto the turning section, and means for driving said tapered rolls in the same direction, whereby articles fed onto the turning section will be rotated approximately 90 degrees and discharged onto the receiving conveyor.

3,224,556

ARTICLE GROUPING AND CONVEYING METHODS AND APPARATUS

George H. Stram, Hellam, Pa., assignor, by mesne assignments, to Baker Perkins Inc., New York, N.Y., a corporation of New York

Filed Oct. 4, 1962, Ser. No. 228,447
14 Claims. (Cl. 198—34)



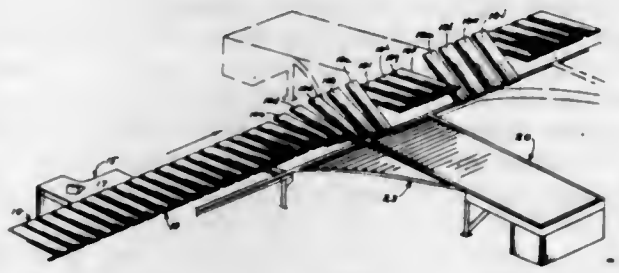
1. Article grouping means comprising an endless continuously operating article conveyor, traveling gate means movable intermittently along a downstream portion of said continuously operating article conveyor into an upstream article arresting position and a downstream article releasing position, means for initiating movement of said gate means; means for operating said traveling gate means at a slower speed than said continuously operating article conveyor to accumulate haphazardly spaced articles in a consolidated row behind said gate means, clamp means spaced upstream of said traveling gate means movable between article arresting and article releasing position, means mounting said clamp means for movement downstream at a slower speed than the speed of said conveyor, and means for operating said clamp means into article arresting position at predetermined intervals to draw a gap between successive groups of articles for insertion therein of said gate means in its said upstream article arresting position.

3,224,557

ARTICLE SPACING SYSTEM FOR CONVEYORS

David W. Beecher, Rockville, Md., assignor to Aerojet-General Corporation, El Monte, Calif.

Filed June 19, 1963, Ser. No. 289,465
11 Claims. (Cl. 198—34)



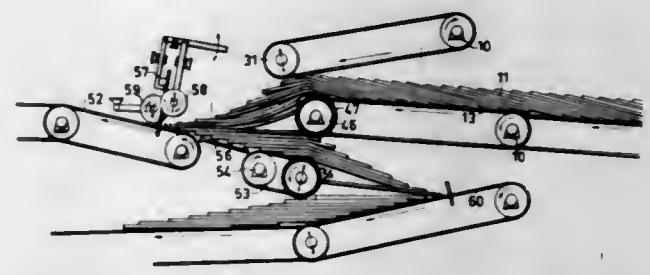
1. In a system for effecting a predetermined spacing between articles, a pair of tandem belts operating at a predetermined speed ratio and comprising an entrance belt and a discharge belt wherein said entrance belt runs at a slower speed than said discharge belt, means for effecting simultaneous starting and stopping of said belts comprising article sensing means disposed at the discharge end of said discharge belt, and circuitry means for stopping said belts responsive to spacing between articles as sequentially sensed by said sensing means when successive articles are spaced less than a predetermined distance apart when the downstream article is leaving the discharge belt, said circuitry means being operative to start said belts a predetermined time thereafter.

3,224,558

REVERSING BELT CONVEYOR APPARATUS

Bo Robert Junior Carlén, Stockholm, Sweden, assignor to Ab Bonnierforetagen, Stockholm, Sweden, a corporation of Sweden

Filed Dec. 2, 1963, Ser. No. 327,191
Claims priority, application Sweden, Dec. 5, 1962, 13,120/62
3 Claims. (Cl. 198—35)



1. A reversing belt conveyor appparatus for a stream of overlapping newspapers, weekly magazines and similar printed articles having a folded back edge and an opposite cut front edge, comprising an upper endless belt conveyor driven in one direction and a lower endless belt conveyor driven in the opposite direction to reverse the direction of movement of newspapers received from the discharge end of the upper conveyor, a stop member located in front of said discharge end and forming an abutment for the newspapers, the distance between said stop member and said discharge end being somewhat less than the width between the trailing and leading edges of the newspapers, said discharge end including driven feeder members concentric with the pulleys of the upper conveyor at its discharge end and having a periphery for engagement with the trailing edges of the newspapers when their leading edges abut said stop member so as to rapidly urge the newspapers down to the lower conveyor, said feeder wheels being provided also to engage the stream of newspapers when moving in said opposite direction on the lower conveyor, and in which the lower conveyor forms the end portion of a surface for receiving the newspapers from the upper conveyor, the opposite end portion of said surface being formed by the end of an intermediate endless belt conveyor driven in the same direction as the upper conveyor and provided to receive the leading edges of the newspapers leaving the discharge end of the upper conveyor, said stop member being associated with said intermediate conveyor and provided to be raised to permit the newspapers to pass on to said intermediate conveyor when desired.

3,224,559

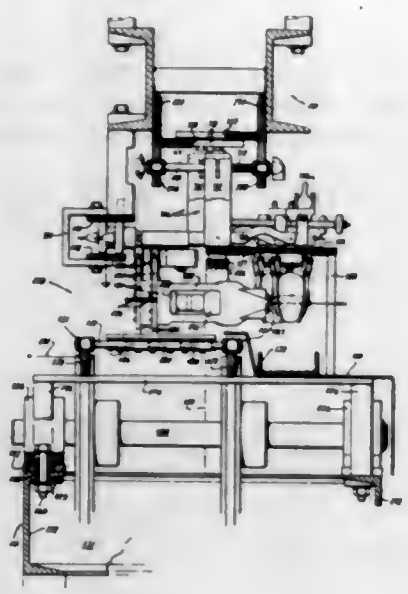
EGG CANDLING AND GRADING APPARATUS

Alvoid V. Scollard, Orinda, and Alfred E. Comstock, Greenbrae, Calif., assignors to Safeway Stores, Incorporated, Oakland, Calif., a corporation of Maryland

Original application Feb. 14, 1961, Ser. No. 89,275. Divided and this application Mar. 13, 1962, Ser. No. 179,345
13 Claims. (Cl. 198—38)

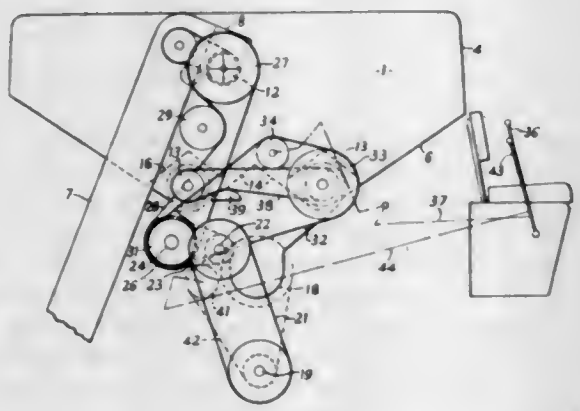
1. In a machine for handling eggs, a plurality of transport assemblies adapted to carry individual eggs, means for advancing said transport assemblies between an egg

pickup station and an egg discharge station, each of said transport assemblies including a mounting block, means for mounting said block for movement laterally of the path of advancement, spring means yieldably urging said block in one direction, a selector shaft having circumferentially spaced notches therein mounted in said block, detent means engaging the notches in the shaft to retain



said block in predetermined lateral positions in accordance with the rotational position of said shaft, means for rotating said eggs carried by said transport assembly, and means for applying a candling light to the eggs while they are being rotated to facilitate candling of the same by an operator and positioning of the selector shaft in the transport assembly by the operator in accordance with the quality of the egg carried by the transport assembly.

3,224,560
COMBINE HARVESTERS
John S. Jarvis, Ipswich, Suffolk, England, assignor to Ransomes Sims & Jefferies Limited, Ipswich, England
Filed Oct. 23, 1963, Ser. No. 318,398
4 Claims. (Cl. 198—64)



1. In a combine harvester:

(A) means defining a grain tank which serves as a temporary store for threshed grain and which has

(1) opposite lengthwise extending side walls which have lower portions that slope inwardly and downwardly and which have their lower edges parallel and spaced apart by a substantial distance;

(2) a pair of opposite end walls, in one of which there is an outlet opening, and

(3) a bottom wall having a longitudinally extending raised medial portion that is laterally spaced from both side walls and cooperates with them to define a pair of longitudinally extending troughs,

(B) a pair of discharge augers, one in each of said troughs, having their axes parallel and extending lengthwise in the tank for moving grain out of the tank through said outlet opening;

(C) grain supply means, for feeding threshed grain into the tank, having an outlet near the top of the other of said end walls;

(D) a distributing auger extending lengthwise through the tank intermediate the side walls with its axis substantially parallel to the axes of the discharge augers and spaced a substantial distance above the raised medial portion of the bottom wall;

(E) a grain receiving hopper arranged to receive grain discharged through said outlet opening;

(F) an outlet spout extending upwardly from the grain receiving hopper exteriorly of the tank and having a discharge outlet at its upper end;

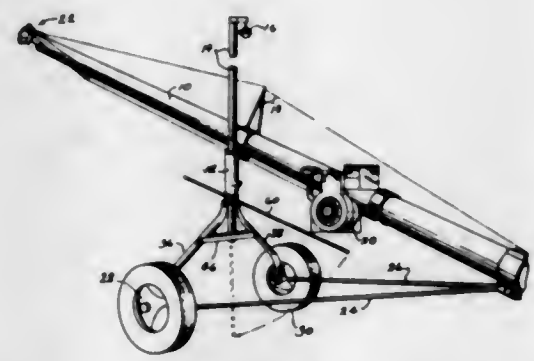
(G) an outlet auger within the outlet spout for conveying grain from the grain hopper to the discharge outlet in the spout;

(H) transmission means connecting the discharge augers for rotation in unison;

(I) a clutch mechanism for releasably coupling one of the discharge augers to a driving means on the harvester; and

(J) a further clutch mechanism for releasably coupling the outlet auger to said driving means.

3,224,561
HIGH CLEARANCE AXLE FOR CENTER-POST AUGERS
Martin Mayrath, 10707 Lennox Lane, Dallas, Tex.
Filed July 2, 1962, Ser. No. 206,795
2 Claims. (Cl. 198—120.5)

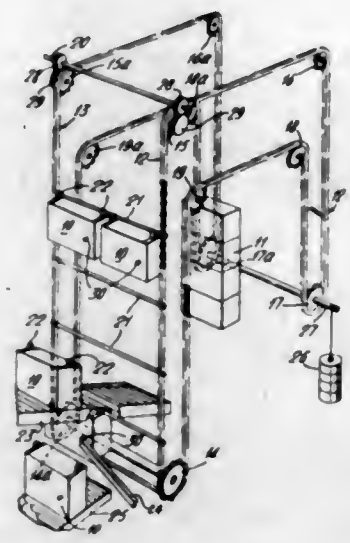


1. In a wheeled conveyor, a pair of coplanar downwardly diverging tubular support legs of generally ogee shape possessing an appreciable degree of flexural resilience, a substantially vertical mast comprising a lower portion bolted between the upper ends of said legs and an upper portion extending upwardly and demountable from said lower portion, a conveyor carried by said upper portion of said mast, a horizontal stub axle carried by the lower extremity of each of said legs, a ground wheel journaled on each stub axle, a cross brace connecting said legs at a level substantially closer to their upper ends than their lower ends whereby said legs below said cross brace are free to flex and thus provide a vertically resilient connection between said wheels and said conveyor, said lower portion of said mast extending downwardly below its connection to said legs and having its lower extremity in bracing engagement with said cross brace and terminating substantially at the level thereof, to leave the space below said cross brace and between said wheels free of obstruction.

3,224,562
CONVEYOR SYSTEMS

Peter John Bailey, Starcross, Devon, Bernard Deryck Baines, Burnham, and Horst Karl Lindstaedt, Uxbridge, England, assignors to Nuclear Chemical Plant Limited, London, England, a company of Great Britain

Filed Nov. 7, 1962, Ser. No. 236,009
Claims priority, application Great Britain, Nov. 10, 1961, 40,410/61; Mar. 9, 1962, 9,287/62
2 Claims. (Cl. 198—131)



1. A conveyor system for subjecting objects to penetrating radiation from a radiation source, comprising an endless conveyor having at least two substantially parallel, upright portions passing adjacent the source on each of two opposite sides thereof and disposed one beyond another relative to the source, the conveyor comprising two endless chains and cross-bars connected between the chains, containers having hooks engageable over the cross-bars to swingably carry the containers, each cross-bar being adapted to slidably carry a plurality of containers side by side, an inclined roller conveyor for feeding each container to the endless conveyor so that its hooks are engaged and lifted by a cross-bar at one end thereof, an inclined rail engageable by the containers to displace them horizontally on the bars during their passage on the conveyor, and an inclined roller conveyor for engaging each container when it has completed its travel on the endless conveyor and supporting it so that the movement of the endless conveyor disengages the cross-bar from the hooks, when the container can slide down the roller conveyor.

3,224,563
ENDLESS CONVEYOR FOR MASS MANUFACTURE OF PRODUCTS, FOR INSTANCE OF SHOES OR THEIR PARTS

Lubomír Zeman, František Zák, and Bohumil Kožela, Gottwaldov, and Stanislav Kubíček, Kosiky, Czechoslovakia, assignors to Závody přesného strojírenství Gottwaldov, národní podnik, Gottwaldov, Czechoslovakia

Filed Feb. 1, 1963, Ser. No. 255,522
Claims priority, application Czechoslovakia, Feb. 7, 1962, PV 765/62
7 Claims. (Cl. 198—131)

1. An endless conveyor for manufacturing shoes or their parts comprising, in combination:

(a) a stationary frame elongated in a horizontal direction;

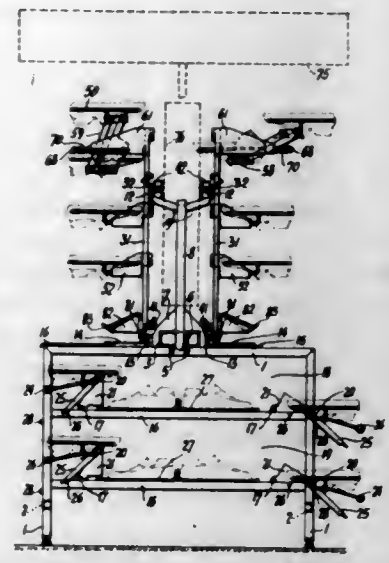
(b) a plurality of upright tubular members supported by said frame;

(c) an endless chain movably supported on said frame;

(d) driving means and return means respectively arranged at the ends of said frame for actuating movement of said chain;

(e) supporting and guiding means on an upper part of said frame, said supporting and guiding means constituting two substantially parallel vertically spaced tracks on one side of said tubular members;

(f) a plurality of trucks connected by said chain, said trucks having respective upper suspension wheels mov-



ably engaging the upper track, and respective lower supporting wheels engaging the lower track;

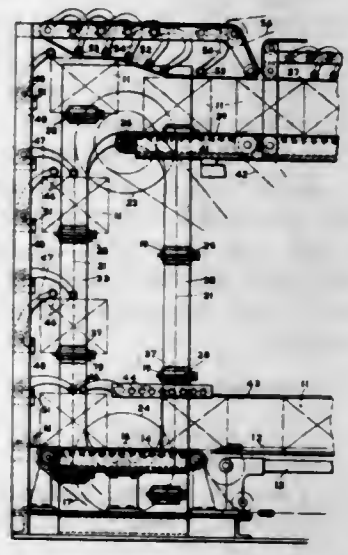
(g) a plurality of racks releasably mounted on each truck; and

(h) a plurality of storage racks attached to a lower part of said frame below said tracks.

3,224,564
CONVEYING APPARATUS

James Arthur Kay, Gainsborough, England, assignor to Rose Brothers (Gainsborough) Limited, Gainsborough, England, a British company

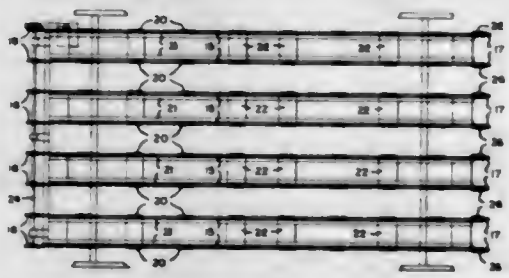
Filed Jan. 27, 1964, Ser. No. 340,310
Claims priority, application Great Britain, Jan. 25, 1963, 3,327/63
3 Claims. (Cl. 198—163)



1. A conveying apparatus of the type referred to, comprising an intermediate platform adapted to receive cartons in succession from the closing and sealing apparatus, an elevator consisting of a pair of parallel endless chains with their driving and supporting sprockets in lateral alignment, the chains being arranged one on each side of the path of movement of the cartons and arranged transversely to the plane of the intermediate platform, a spaced series of carrier members mounted on the elevator and adapted on the upward run of the elevator to move in succession through the plane of the intermediate platform into engagement with the bases of successive

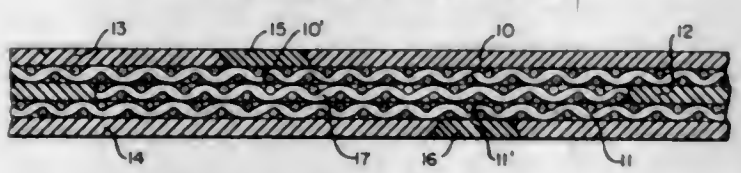
cartons received by that platform so as to lift the successive cartons from that platform, the carrier members each consisting of opposed plates extending inwardly from the chains, and being pivotally mounted on the chains and provided with parallel motion mechanism, a stop member adapted to engage the successive cartons on the platform to position them in readiness for the successive oncoming carriers on the elevator, an intermediate conveyor arranged above the level of the intermediate platform and adapted to receive the successive cartons from the carrier members on the downward run of the elevator and to guide them into a pressure conveyor, a series of rollers carried by pivoted arms arranged along the upper run of the elevator, the rollers engaging the upper surface of successive cartons as they move upwardly and each being arranged to roll along the upper surface and down the side of each successive carton as the latter is elevated, and an auxiliary pressure conveyor arranged above the intermediate conveyor and adapted to be engaged by the upper surface of each carton in turn as it moves around the axis of the upper elevator sprockets to be deposited on to the intermediate conveyor.

3,224,565
METHOD AND APPARATUS FOR CONVEYING OBJECTS
John E. Houser, Marion, Ohio, assignor to The Fairfield Engineering Company, Marion, Ohio, a corporation of Ohio
Filed July 17, 1963, Ser. No. 295,669
3 Claims. (Cl. 198—190)



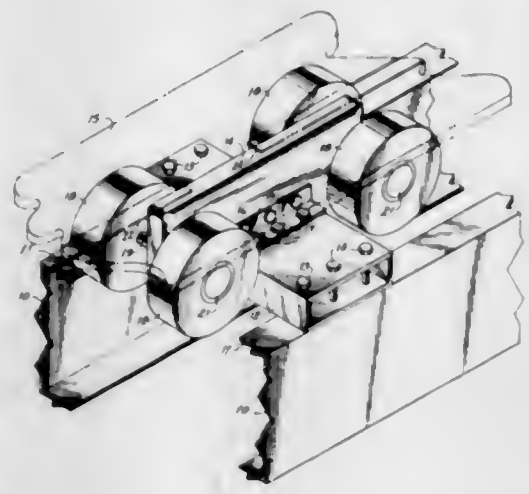
1. The method of steering objects on a multiple belt conveyor which comprises providing a plurality of substantially parallel steerable, elastomeric belts, each extending between end pulleys and each having a drive pulley and an adjustably movable slack take-up pulley, yieldable tension means associated with each said belt and adjustable to maintain a desired tension on each belt, driving the drive pulleys at a common speed, adjusting the tension means associated with each belt to a desired setting for said belt and thereafter adjusting the slack take-up pulley for each belt from time to time whereby stretch in the belt is taken up and the tension on the belt is maintained constant.

3,224,566
SPLICED BELTING
Robert H. Elliott, Lincoln, Mass., assignor to American Biltrite Rubber Co., Inc., Chelsea, Mass., a corporation of Delaware
Filed Apr. 12, 1962, Ser. No. 186,905
5 Claims. (Cl. 198—193)



1. Conveyor belting comprising at least two carcass plies of textile material and an intermediate layer of elastomeric sheet material located between adjacent plies of the textile material, the said elastomeric layer being of substantially the same thickness as the textile plies and adhesively bonded thereto, and outer cover plies of rubbery compound enclosing the textile plies, the said belting having a spliced area in which the carcass plies are severed and have butt joints at longitudinally spaced locations in the belt and at different levels therein, and an insert of adhesively coated textile material of the same physical properties as the said carcass plies overlaps and strengthens the butt joints and replaces a corresponding volume and area provided by the removal of a section of said intermediate elastomeric layer.

3,224,567
MAGNETIC BELT GUIDE
Arthur F. Kain, Mulberry, Fla.
Filed May 2, 1963, Ser. No. 277,587
4 Claims. (Cl. 198—202)

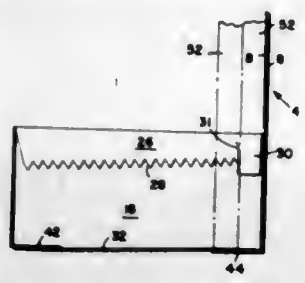


1. A belt guide for use with a conveyor comprising an elongated, endless belt of the type which has incorporated therein a narrow, medially positioned strip of magnetically responsive material extending lengthwise of the belt, said belt guide comprising a narrow, upstanding, elongated, block-form, permanent magnet means of limited length and having a flat upper surface, means for securing the magnet in longitudinally position below the upper run of a belt of the type described, anti-friction, belt supporting rollers arranged in close relations on each side of the magnet means and closely adjacent each end thereof, the upper, peripheral, belt-supporting surfaces of the rollers being disposed in slightly spaced relation above the flat upper surface of the magnet to support a belt out of contact with such upper surface of the magnet, said rollers being rotatable on axes disposed transversely to the length of the magnet, said block-form magnet means having axles supported thereon, extending transversely at the end portions of the magnet, said belt-supporting rollers being mounted to rotate upon said axles.

3,224,568
SHIPPING AND DISPLAY CONTAINER
Richard A. De Feo, Ardmore, Pa., assignor to Bayuk Cigars Incorporated, Philadelphia, Pa., a corporation of Maryland
Filed Dec. 16, 1963, Ser. No. 331,061
4 Claims. (Cl. 206—44)

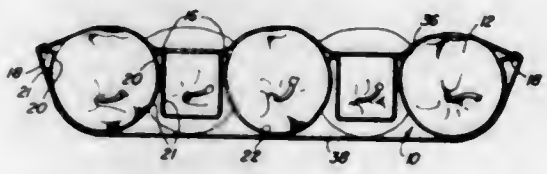
1. A display container for the reception of cartons of merchandise comprising:
a bottom,
a rear panel,
a front panel,
a pair of spaced side panels having substantially parallel upper edges,

and an integral flap hingedly connected to the upper edge of each side panel and tending to extend downwardly and towards the other side panel,
the inner edge of each flap being serrated and sloping



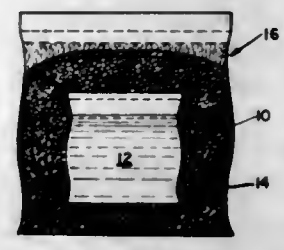
downwardly from the rear thereof to the front thereof and the flaps presenting at rest a gradually narrowing opening therebetween to provide for increasing resistance to the forward motion of said cartons.

3,224,569
CLASP PACKING TRAY
Ammon M. Leitzel, Portland, Oreg., assignor, by mesne assignments, to Great Northwest Fibre Company, Wenatchee, Wash., a corporation of Washington
Filed Oct. 4, 1962, Ser. No. 228,332
10 Claims. (Cl. 206—45.31)



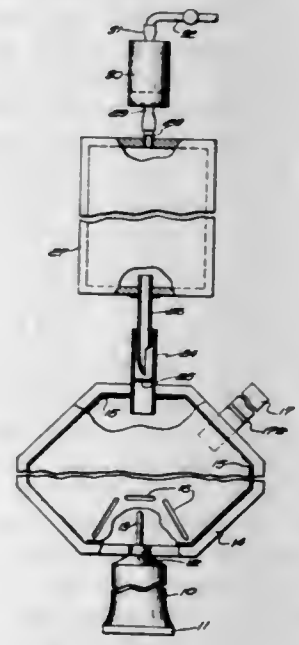
4. A package comprising,
a molded packing tray for holding a plurality of rounded objects having predetermined minimum and mixiumum diameter, said tray being formed with a plurality of upstanding walls defining a plurality of channels open at each end thereof, the adjacent walls of adjacent channels being connected by flexible hinge portions whereby said tray may be compressed laterally,
said walls being continuous in the longitudinal direction and undulating cooperatively with one another so as to define a plurality of longitudinally spaced pockets along each channel,
a plurality of said objects positioned one in each pocket,
the walls between said pockets being spaced relatively more closely together to define restricted portions of a width less than said diameters to restrain longitudinal movement of an object along a channel,
said pocket portions of each channel being staggered relative to the pocket portions of the immediately adjacent channels,
said walls having a height relative to the bottom of said pockets greater than one-half of said maximum diameter, the upper portions of said walls overhanging said objects when the same are placed in said pockets and said tray compressed laterally,
and a cover of flexible transparent material secured under tension to the opposite longitudinal edges of said tray and to said walls and retaining said tray in laterally compressed condition, to secure said objects with said pockets.

3,224,570
DOUBLE CONTAINER
Abraham N. Spanel, Princeton, N.J., assignor to International Latex Corporation, Dover, Del., a corporation of Delaware
Filed Feb. 14, 1961, Ser. No. 89,256
5 Claims. (Cl. 206—47)



1. Container comprising an outer larger pliable envelope of one bursting strength containing a water soluble chemical having an endothermic heat of solution and an inner smaller water-filled pliable envelope of bursting strength less than that of the outer envelope, the inner envelope being made of plastic film having a Mullen burst strength of about 30 to 60 p.s.i. and having a tear strength in grams measured as herein described, the upper limit of tear strength in grams having the same numerical value as the burst strength in p.s.i.

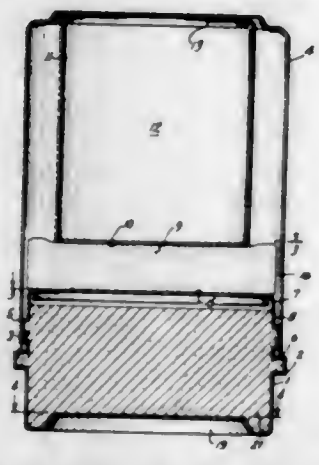
3,224,571
COMPARTMENT MIXING PACKAGE
Thurman S. Jess, Holliston, Milton J. Morrisette, Ashland, and Edward J. Poitras, Holliston, Mass., assignors to Fenwal, Incorporated, Ashland, Mass., a corporation of Massachusetts
Filed Nov. 19, 1962, Ser. No. 238,411
3 Claims. (Cl. 206—47)



2. A kit for packaging compound substances comprising a closed collapsible bag of a flexible material compatible with one ingredient of a compound substance, a measured quantity of that one ingredient sealed in the bag, a closed collapsible tube of a material compatible with another ingredient of the substance, a measured quantity of that other ingredient sealed in the tube, a generally solid tip closing said tube, said tip projecting sufficiently to be grasped by the fingers and adapted to be broken away upon manual flexing, the tube mounted with said tip projecting into said bag and so as to be engageable through the flexible collapsible walls thereof, said tube adapted upon the breaking away of said tip to be manually manipulated to express said other in-

gredient through said outlet and into said bag, trap means in said bag for said tip when broken away, said trap means having openings small enough to prevent escape of the tip therethrough and large enough for easy passage therethrough of said other ingredient expressed through said outlet and into said bag, a dispensing port tube outlet for said bag, said port tube outlet opening into said bag and adapted to receive rigid coupler means, and a membrane integrally closing said tube and constructed and arranged to be opened by said rigid coupler means upon its said reception in the tube.

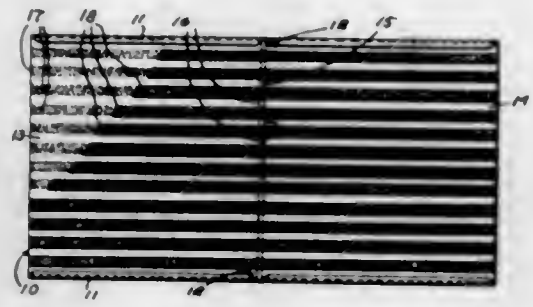
3,224,572
SHOE POLISH KIT
Carl E. Meyerhoefer, Little Neck, N.Y., assignor to Knomark, Inc., Brooklyn, N.Y., a corporation of New York
Filed June 27, 1963, Ser. No. 291,181
4 Claims. (Cl. 206—47)



1. A shoe polish kit comprising in combination a paste receiving cup open at one end to permit access to a supply of paste therein, said paste conforming substantially to the shape of the cup, said cup having a bottom wall opposite said open end and a cylindrical side wall of elliptical horizontal sectional contour provided with an inturned bead extending around said open end of the cup, said bottom wall of the cup having means anchoring said paste thereto, a paste applicator having a side wall and a bottom wall with a dauber secured to said bottom wall, said paste applicator including a hand hold, said dauber being of resilient material and of elliptical horizontal sectional contour and shaped and dimensioned to be extendable in use through said open end of the cup, a cup cover having an open end telescopically positioned over the applicator and securely engaging said cup, the major axial dimension of the elliptical dauber being at least as great as that of the interior circumference of the side wall of said cup and the minor axial dimension of said elliptical dauber being less than that of said interior circumference of the side wall of said cup, whereby when the dauber is rotated in use in operative contact with the paste supply, in said cup, inner face portions of the side wall of the cup which are above the paste level therein will be wiped clean by the dauber, while the paste supply is held firmly in position against rotation in the cup, and when the dauber is withdrawn from contact with the paste supply, excess paste thereon will be removed by said inturned bead edge of the cup.

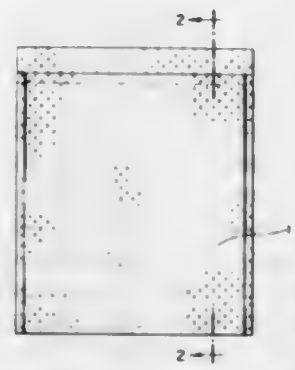
3,224,573
ENVELOPES FOR PHONOGRAPH RECORDS
David G. Way, Boxborough, Mass.
(R.F.D., West Acton, Mass.)
Filed Mar. 31, 1965, Ser. No. 446,777
4 Claims. (Cl. 206—62)

1. An open-ended envelope for a phonograph record, said envelope comprising a rectangular sheet having a pair of closely spaced folds transversely of the central part thereof providing a narrow envelope bottom, each fold also defining with the proximate end of the sheet an envelope wall, each of said walls including narrow portions secured to the side margins of its inner face and to corresponding marginal portions of the other wall, the thus secured and interconnected marginal portions providing narrow envelope sides, said two sides and said



bottom positioning said walls in spaced and approximately parallel relationship providing a space receiving the record and greater than the thickness of the record over the complete surface of the record, and secured to the inner faces of said walls between said sides, a soft yieldable coat of an area and thickness yieldably supporting the received record and preventing its contact with said walls.

3,224,574
EMBOSSED PLASTIC BAG
Albert L. McConnell, Chester, and Edward M. Kasinkas, Lansdowne, Pa., assignors to Scott Paper Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed June 10, 1964, Ser. No. 374,030
3 Claims. (Cl. 206—56)



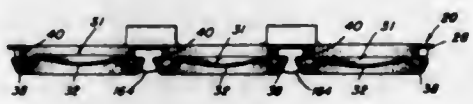
1. An article of manufacture in the form of a plastic bag suitable for inserting articles therein, said bag being comprised of a front panel and a rear panel, made of a thermoplastic material, said front panel made of the same sheet and folded upon the rear sheet, said front panel having a small lip, said front panel being optionally shorter than said rear panel, said panels being joined by heat and pressure distortion of the thermoplastic material along the lines necessary to define the outlines of a bag and, at the same time, providing an opening for insertion of articles in the interior of said bag, said thermoplastic sheet material possessing a plurality of protrusions and depressions resembling hills and valleys distributed throughout the sheet, said hills and valleys introducing a resiliency in the film capable of preventing the adhesion of the said front and rear panels and concomitant creation of vacuum, said adhesion being prevented by the resilient maintenance in a spaced-apart relationship of the front and rear panels in the thermoplastic film of said bag.

3,224,575

PROTECTIVE COVERS FOR CANS, PROTECTIVE PACKAGES THEREOF AND METHODS OF FORMING AND APPLYING SUCH COVERS

Carlton L. Whiteford, New Canaan, Conn., assignor, by mesne assignments, to R. A. Jones & Co., Inc., Covington, Ky., a corporation of Kentucky

Filed Apr. 29, 1959, Ser. No. 809,664
16 Claims. (Cl. 206—65)



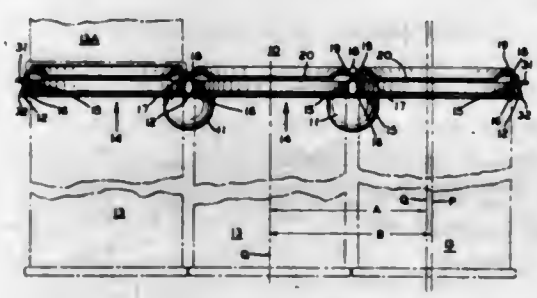
13. A cover and carrier for protecting and carrying a plurality of closed and sealed cans of the type having a cylindrical side wall, a closed transverse top end wall and an axially and radially extending circumferential top bead having a top, bottom and radially outwardly extending side portions; said cover and carrier being effective to protectively overlie the closed top ends of said cans, and consisting solely of a one-piece, pressure-shaped and set sheet formed from elastic plastic sheet material initially of a substantially uniform shickness of the order of .010 inch, said shaped cover sheet having formed therein and extending upwardly from the top side thereof a plurality of separated and inverted scupped pockets into each of which the top end of one of said cans is adapted to be socketed; each of said pockets having a transverse top end completely overlying the top end of the can socketed therein and an integral, depending, circular side wall with the latter having defined therein a continuous circular constricted and tensioned, elastic gripping band of smaller diameter than the diameter of said can side wall when the can to be socketed therein is free therefrom, and an annular internal groove of greater diameter than said band, said groove being disposed intermediate the band and said pocket transverse end with the upper end of said band and the bottom side of said groove integrally connected by a merging lateral shoulder, said circular band of each pocket being adapted to be snapped down over said rim bead of one of said cans to tension said band in gripping engagement with said side wall of this can with said rim bead thereof located in said groove and projecting laterally over said lateral shoulder for support on the latter when the package is lifted by grasp of said cover sheet, said cover sheet having medial areas intermediate said pockets.

3,224,576

PLASTIC CARRIER-PACKAGE

Carlton L. Whiteford, New Canaan, Conn., assignor, by mesne assignments, to R. A. Jones & Co., Inc., Covington, Ky., a corporation of Kentucky

Filed Dec. 21, 1959, Ser. No. 861,015
8 Claims. (Cl. 206—65)



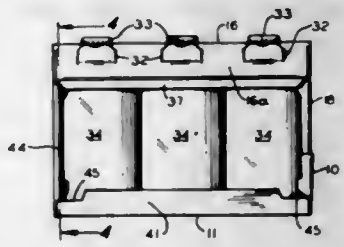
7. A packaging device for a plurality of containers comprising an imperforate sheet of elastic material having a web portion and a plurality of first conformations, said first conformations defining a plurality of discrete pocket means having side walls, each said pocket means having an entrance portion adapted to receive and guide containers into said pocket means, each said pocket means also having a constriction band member in the side wall thereof adapted to grip a container receivable in said pocket means, and continuous peripheral flange means extending around the edges of said imperforate sheet and having portions extending parallel to and at a substantial angle to the plane of said web portion for rigidifying said elastic device.

3,224,577

TUCK-LOCK CARTON AND PACKAGE

William W. Hansen, 1381 Fernside Blvd., Alameda, Calif.

Filed Dec. 19, 1960, Ser. No. 76,865
3 Claims. (Cl. 206—65)



2. A package comprising a group of upright containers having tapered upper ends and crown-type closures, a carton having vertical opposed end panels extending over the two ends of the group, each of said panels having end panel extensions integral therewith and extending into said carton to positions between said end panels and said containers adjacent thereto with the last mentioned containers solely holding said end panel extensions in their positions, said end panels having their upper corners formed diagonally, top and bottom panels extending between and integral with said end panels and extending over the upper and lower ends of the containers, said top panel having side portions joined thereto by scored lines and bent at an angle to the intermediate top panel portion to engage said diagonally formed corners, said top panel having a group of holes engaging the upper ends of said containers underneath said closures, each of said holes intersecting one of said scored lines and being formed in part by a retaining tab cut free at the sides from the adjacent side portion and said retaining tab having a width at least equal to the diameter of said closures, and said side portions having locking tabs formed at the ends thereof and integrally connected thereto, said locking tabs being positioned in 90° relation with said top panel, and in overlapping relation with said end panels, and being disposed underneath said end panel extensions, and said bottom panel having side portions with locking tabs formed at the ends thereof and integrally connected thereto, said locking tabs being positioned in 90° relation to said bottom panel and in overlapping relation with said end panels, and being disposed underneath said end panel extensions.

3,224,578

SHEET COMBINING DEVICE

Roelof M. M. Oberman, Voorburg, and Leendert Kosten and Adrianus Johannes van der Toorn, The Hague, Netherlands, assignors to N. V. Electrologica, Amsterdam, Netherlands

Filed Mar. 20, 1963, Ser. No. 266,590
3 Claims. (Cl. 209—72)

1. A device for combining sheets having numerical data thereon from several *n* piles of sequentially ordered sheets into a single pile of sequentially ordered sheets, wherein *n* is a whole number greater than two, comprising:

(A) separate means for holding each pile of sheets to be combined,

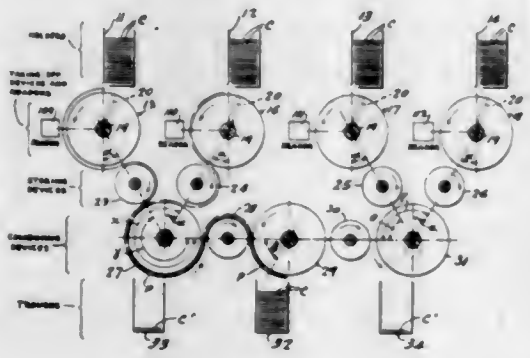
(B) separate rotating drum means associated with each holding means for taking off one sheet at a time from said piles,

(C) separate means associated with each taking-off means for reading the numerical data on the taken off sheet,

(D) separate rotating drum storing devices associated with each taking-off drum means for storing said read sheets,

(E) n' first rotating drum combining devices, wherein n' is the smallest whole number equal to or greater than $n/2$, associated with two of said storing devices for removing said sheets from said storing devices,

(F) n'' second rotating drum combining devices, wherein n'' is the smallest whole number equal to or greater than $n'/2$, associated with two of said first combining devices, and so on until a single final combining device is obtained,



(G) a final holding means associated with said final combining device for receiving said single pile of sheets,

(H) control means connected to each of said taking-off means, each of said reading means, each of said storing devices, and each of said combining devices for controlling their operation in accordance with the sequence of the numerical data read from each sheet,

(I) said control means including a number evaluating device,

(J) an associated receiving means with each of said first combining devices for receiving sheets that may not be in said sequential order, and

(K) means controlled by said number evaluating device for discharging sheets in said associated receiving means which are not in said sequential order,

whereby said sheets are retained on said drum storing devices until they can be transferred to said final holding means in a sequential order of the numerical data read from said sheets, and wherein the minimum surface distance over said drums from any pile to said final holding means is substantially the same.

3,224,579

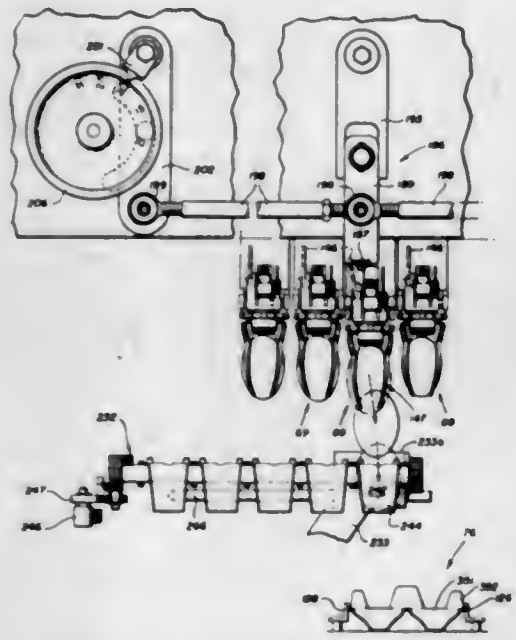
EGG HANDLING, SORTING AND PACKING APPARATUS

Alvoid V. Scollard, Orinda, and Alfred E. Comstock, Greenbrae, Calif., assignors to Safeway Stores, Incorporated, Oakland, Calif., a corporation of Maryland

Filed Mar. 2, 1962, Ser. No. 177,071

16 Claims. (Cl. 209—74)

1. In apparatus for handling eggs, frame means forming commercial stations and weight stations, means including individual egg carrying devices for transporting eggs with the same axes lying in parallel vertical planes along a path in one direction through the commercial stations and weight stations, the egg carrying devices being capable of assuming egg carrying and egg releasing conditions, each of the egg carrying devices including means for weighing the eggs carried thereby, each of the egg carrying devices being capable of assuming a position determined by the weight of the egg carried by the device, a candling station means in the candling station for causing the egg carrying devices to assume a lateral position in accordance with the grade of egg carried by the device, means mounted in the commercial stations for causing the egg carrying devices in a predetermined lateral position to assume an egg releasing condition in a predetermined station, means in each of the weight stations for causing each of the egg carrying devices having eggs therein corresponding to the weight of eggs to be discharged in the station to assume an egg releasing condition while passing through the station so that the egg in the device is discharged to fall by gravity in the station, an accumulator having egg receiving pockets mounted in each station and underlying the path of the egg carrying devices and receiving eggs from the egg carrying devices and retaining the eggs with their same axes lying in parallel vertical planes, means for shifting the accumulator in each station, said means for shifting said accumulator in each station including means for counting each egg which is released in the station, and means for causing each accumulator in each station to release the eggs it has received after it has accumulated a predetermined number of eggs.



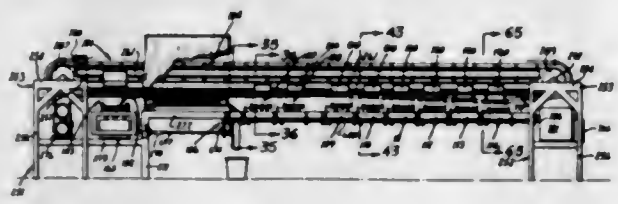
3,224,580

EGG WEIGHING AND SORTING APPARATUS

Alvoid V. Scollard, Orinda, and Alfred E. Comstock, Greenbrae, Calif., assignors to Safeway Stores, Incorporated, Oakland, Calif., a corporation of Maryland

Original application Feb. 14, 1961, Ser. No. 89,275. Divided and this application Mar. 13, 1962, Ser. No. 179,344

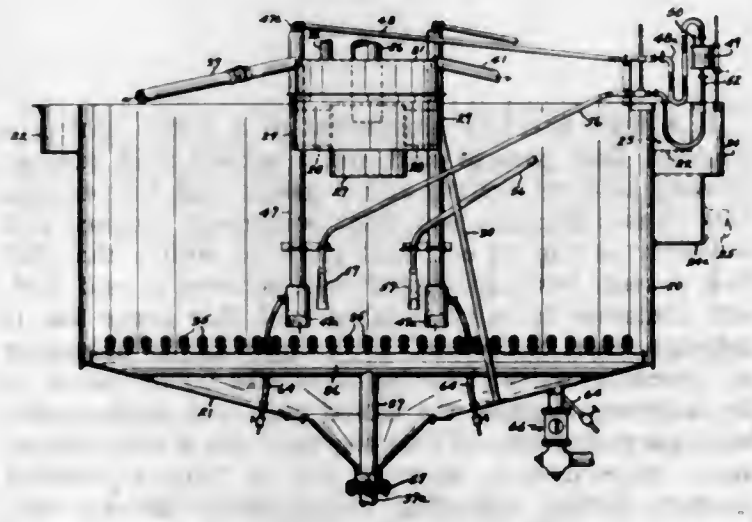
41 Claims. (Cl. 209—121)



1. In a machine for handling articles, means including a plurality of individual transport assemblies for transporting articles along a predetermined path, means operating in synchronism with said means for transporting articles for transferring simultaneously a plurality of

articles upwardly and directly into a plurality of said individual transport assemblies of said transporting means during movement of the same, said individual transport assemblies of said means for transporting articles including means for retaining the articles after they have been inserted therein, said means for transporting articles also including means for weighing the articles while they are being transported, and means for effecting discharge of the articles from the individual transport assemblies of the transporting means in accordance with the weight of the articles carried therein.

3,224,581
SELF-CLEANING HYDRAULIC CLASSIFIER CONTROL
Kenneth W. McKnight and Carl W. Virant, Silver Bay, Minn., assignors to Reserve Mining Company, Silver Bay, Minn., a corporation of Minnesota
Filed July 13, 1962, Ser. No. 209,539
3 Claims. (Cl. 209—158)

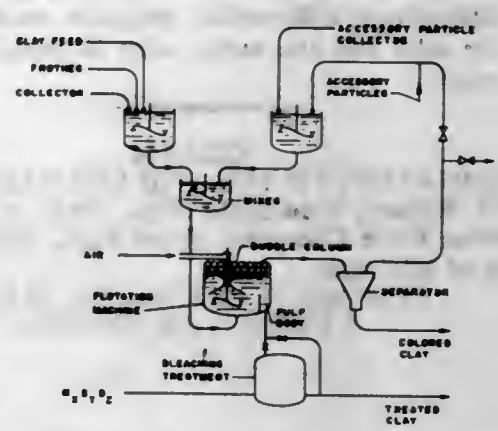


1. Apparatus for the classification of a slurry of solid particles in liquid suspension comprising an enclosure, means for maintaining a teeter column for said suspension including means near the bottom of the enclosure for directing jets of water upwardly through said suspension, intake means for replenishing the slurry, a siphon passage including a pipe having an inlet end near the lower, denser portion of said teeter column and an outlet end outside the enclosure, an air vent at a zone in said siphon passage near its uppermost point and above the level of liquid in said column, and means for opening an air passage means to said air vent including a float chamber, a liquid-responsive movable float in said chamber adapted, by rising movement thereof to cut off air supply to said air vent and by falling movement thereof to restore air supply to said air vent, and means for varying the level of liquid in said float chamber including a water carrying control pipe having an upper end in flow communication with said float chamber and a lower end in flow communication with said teeter column near the siphon inlet end, said lower end of said control pipe having a downwardly flaring intake member opening which is greater in diameter at its lowermost edge than the diameter of said control pipe.

3,224,582
KAOLIN CLAY BENEFICIATION
Joseph Iannicelli, Macon, Ga., assignor to J. M. Huber, Corporation, Locust, N.J., a corporation of New Jersey
Filed June 1, 1965, Ser. No. 467,202
6 Claims. (Cl. 209—166)

1. A process for beneficiating a finely divided kaolin clay composed of particles of relatively different surface characteristics which includes

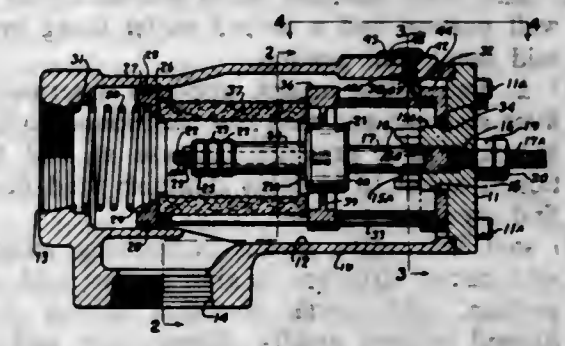
(a) treating said kaolin clay for froth flotation in an aqueous medium with
  (i) a reagent capable of selectively coating particles of one surface characteristic with an oleophilic coating and
  (ii) non-waxy water-insoluble polymeric accessory particles of homogeneous surface oil adsorption characteristics and selected from the group consisting of polyethylenes, polyvinyl chlorides, nylon, polyethylene terephthalates, urea, formaldehydes, polypropylenes, polystyrenes, polyacry-



lates, polymethacrylates, polymethylene polyesters, and phenol polyesters, said particles being floatable in an aqueous slurry of said kaolin, and then

(b) subjecting the thus-treated kaolin to froth flotation producing
  (i) a froth product which contains said accessory particles and particles of said one surface characteristic and
  (ii) a sink product containing kaolin clay brighter than the initial kaolin clay.

3,224,583
DUAL FILTER DEVICE
Nils O. Rosaen, Bloomfield Hills, Mich., assignor to The Rosaen Filter Company, Hazel Park, Mich., a corporation of Michigan
Filed Apr. 9, 1962, Ser. No. 186,875
8 Claims. (Cl. 210—90)



8. A filter device comprising
(a) a housing provided with a filter chamber,
(b) an inlet and an outlet provided in said housing and communicating with said filter chamber,
(c) a carrier structure axially slidably mounted within said filter chamber,
(d) a first and a second filter element carried by said carrier structure in an axially aligned position,
(e) valve means carried in said housing intermediate said filter elements and including a valve member carried by said carrier structure and movable with said carrier structure intermediate a position substantially closing communication between the outlet sides of said filter elements and a position opening communication between the outlet sides of said filter elements,

(f) means urging said carrier structure toward a position in which said valve member is in the closed position,

(g) pressure responsive means carried by said carrier structure and operable to respond to increases in the pressure differential across one of said filter elements to move said carrier structure toward a position in which said valve member is in the open position,

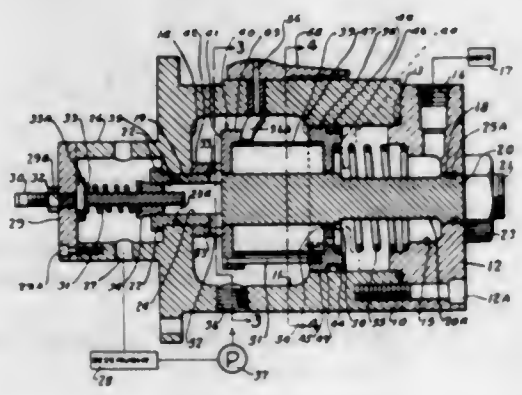
(h) means actuated by said carrier structure to open fluid flow directly from the inlet side of said first filter element to said outlet in response to a predetermined differential pressure increase between the inlet and the outlet sides of said first filter element.

3,224,584

COMBINATION FILTER AND UNLOADING VALVE

Nils O. Rosaen, Bloomfield Hills, Mich., assignor to The Rosaen Filter Company, Hazel Park, Mich., a corporation of Michigan

Filed Apr. 2, 1962, Ser. No. 184,339
7 Claims. (Cl. 210—91)



1. A filter device comprising

(a) a body member having an inlet and an outlet,

(b) a first rod carried in said body member,

(c) a filter member axially slidably carried on said rod intermediate said inlet and said outlet and comprising a filter element having a porous filter surface and a carrier structure,

(d) said body member being provided with an inner wall portion and a second outlet being provided in said inner wall portion,

(e) a first valve means disposed intermediate said filter element and said first mentioned outlet and responsive to a pressure increase at said first mentioned outlet to variably diminish fluid flow to said first mentioned outlet,

(f) said first valve means comprising means urging said carrier structure to abut against said inner wall portion, said carrier structure having an annular flanged portion axially aligned with said rod, said annular flanged portion extending closely adjacent a peripheral portion of said rod when said carrier structure abuts said inner wall portion whereby to substantially close fluid flow from the outlet side of said filter element to said first mentioned outlet, and said flanged portion moving away from said peripheral portion when said carrier structure moves axially away from said inner wall portion whereby to open fluid flow from the outlet side of said filter element to said first mentioned outlet,

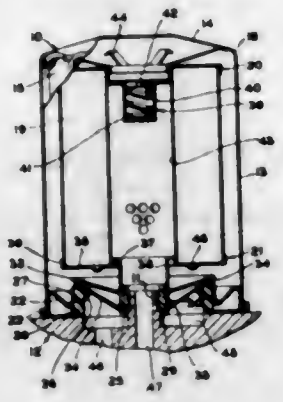
(g) a second valve means carried in said body member intermediate sad inlet and said second outlet and operable to open a fluid flow through said second outlet in response to a predetermined decrease in the pressure differential between said inlet and said first mentioned outlet.

3,224,585

THROWAWAY FILTER ARRANGEMENT

William J. Scavuzzo, Clark, Albert Walulik, Cranford, and Charles J. Casaleggi, Middletown, N.J., assignors to Purolator Products, Inc., Rahway, N.J., a corporation of Delaware

Filed Aug. 24, 1961, Ser. No. 133,634
3 Claims. (Cl. 210—232)



3. A fluid filter for attachment to a device having a threaded fluid passage stud and a second fluid passage opening adjacent thereto and a gasket seat surrounding both of said passages, said filter comprising a closed end container having an end wall provided with a threaded fluid passage bushing adapted to be screwed to said stud, said container being of metal of such thin gauge that it deforms when compressed by a conventional tightening or loosening tool and having a nut-like configuration in its periphery adjacent the closed end, said configuration having a multiplicity of flats disposed with a wide obtruse angle between each adjacent pair of flats, a rounded junction portion extending longitudinally between and being blended into the flats of each adjacent pair thereof, the junction portion being substantially convex with respect to the outer surface of the container, and an additional rounded junction portion extending circumferentially between and being blended into the flats and the closed end, the additional junction portion being substantially convex with respect to the outer surface of the container, said configuration being adapted to receive a wrench extending over said closed end and having flats matching those on the container so that turning torque applied by the wrench will be distributed uniformly to the container through the flats without distorting the container on tightening or loosening of the latter with respect to the engine, and a ring gasket adapted to fit said seat and seal thereagainst when the bushing is screwed to said stud, said end wall having at least one tongue member struck out from and forming a fluid port therein between said gasket and bushing, said tongue member extending from said end wall to engage said gasket with respect thereto.

3,224,586

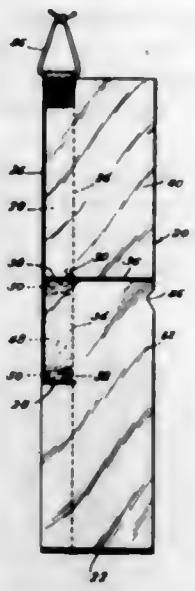
BAG ASSEMBLAGE

Kenneth L. Wade, Journey's End Road, Croton-on-Hudson, N.Y.

Filed Nov. 14, 1961, Ser. No. 152,287
5 Claims. (Cl. 210—282)

1. A bag assemblage formed of a flexible liquid impervious tubular element, a gusset formed along a longitudinal edge of said tubular element, which gusset has a liquid tight seam arranged to provide a longitudinal cavity, a liquid tight horizontally disposed seam in said tubular member arranged to form an upper liquid receiving compartment, and a lower liquid collecting compartment, said

liquid collecting compartment being provided with a liquid tight seam closing the lower end thereof and being further formed to provide an opening in the upper region thereof for removal of liquid therefrom, a filter compartment arranged in said gusset, said gusset being formed



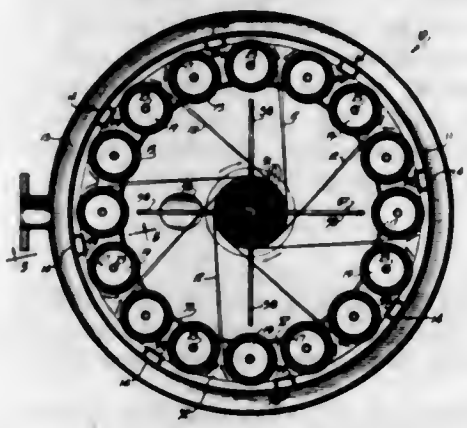
with openings establishing fluid communication between said compartments to thus allow flow of liquid from the liquid receiving compartment, through the filter compartment, and into the liquid collecting compartment, and a filter material in the filter compartment.

3,224,587

FILTRATION APPARATUS UTILIZING UNROLLABLE FILTER MEDIUM

Henry Schmidt, Jr., Hinsdale, Ill., assignor to Industrial Filter & Pump Mfg. Co., Chicago, Ill., a corporation of Illinois

Filed Dec. 4, 1957, Ser. No. 700,652
10 Claims. (Cl. 210—330)



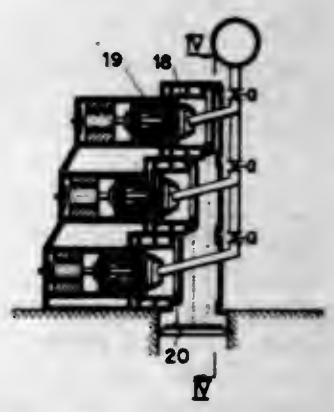
9. Apparatus adapted to filter fluid medium comprising a pressurizable chamber having an inlet for supply of the fluid medium and an outlet for discharge of filtered fluid medium, at least one pair of oppositely wound rolls of filter material in the chamber, means for connecting the outside turn of each roll to a rotatable take-up spool, spaced from said rolls, in such a manner that the outer surfaces of the turns of filter material will be in predetermined proximity to each other, in traversing the reaches between the filter rolls and the take-up spool, at least adjacent the spool, whereby rotation of said take-up spool will cause rotation of said filter rolls to wind the outside turns of each of said rolls on said take-up spool in such a manner that the facing filter cakes accumulated on said outer surfaces of adjacent oppositely wound rolls will contact in traversing the reaches between the filter rolls and the take-up spool and thereby confine the facing filter cakes between said traversing outside turns to minimize loss of the filter cakes from said rolls, a plurality of inlets for supply of the fluid medium to the chamber, each of said inlets being positioned for supply of the fluid medium at a location adjacent the spacing between a preselected pair of adjacent rolls and away from the sides of the preselected pair of filter rolls from which the outside turns of said material are unwound, and baffle means adjacent each of said inlets for directing the flow of fluid medium into the chamber from the corresponding inlets to distribute the fluid and to prevent direct action of current forces of the incoming fluid medium on either of said preselected pair of said filter rolls and on the turns of filter material spanning the reaches between the filter rolls and the take-up spool.

3,224,588

CENTRIFUGING DEVICE

Ernst Ruegg, Kusnacht, Switzerland, assignor to Escher Wyss Aktiengesellschaft, Zurich, Switzerland, a corporation of Switzerland

Filed Dec. 18, 1961, Ser. No. 160,042
Claims priority, application Switzerland, Dec. 29, 1960, 14,538/60
3 Claims. (Cl. 210—327)



1. A centrifuging device for separating the liquid from the solids of a material being centrifuged, comprising:
(a) a plurality of pusher type centrifuge drums mounted in side by side substantially parallel relationship, but spaced from one another;
(b) said drums being arranged with their outlet ends facing one side of the device;
(c) a single collecting chamber into which all of the outlet ends open;
(d) distributing means supplying material to be centrifuged to said drums in parallel flow relation;
(e) means for collecting the liquid leaving said drums;
(f) an annular trough associated with the outlet end of each drum and each receiving centrifuged solids issuing from the corresponding drum and forming them into a flowing, directed stream,
(g) the troughs being so arranged that the directed stream of centrifuged solids from each drum is separate of the other streams and directed so as to pass clear of the other drums;
(h) means for collecting all of said streams;
(i) means driving said drums independently of one another; and
(j) separate mounting means for each drum whereby each is removable as a unit from said device.

3,224,589

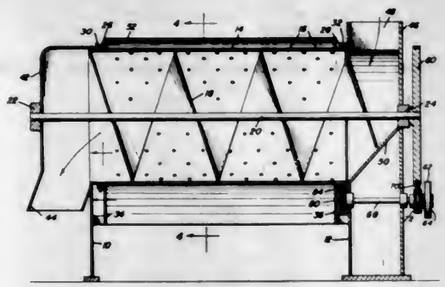
CENTRIFUGAL DRYER

Michael J. Fenrick, 1807 Arrowhead Drive, Beloit, Wis.

Filed June 1, 1962, Ser. No. 199,479
2 Claims. (Cl. 210—374)

1. A centrifugal dryer for extracting liquid from a mixture of a material suspended in said liquid and comprising a horizontally elongated hollow screen, means ro-

tatably supporting said screen inwardly of its ends for rotation about a generally horizontal axis, mixture inlet means and material outlet means positioned exteriorly of and communicating with said screen at the opposite ends thereof, a rotatable conveyor means extending longitudinally through said screen and adapted to continuously move material from said inlet means to said outlet means and having its opposite ends supported out of contact by said mixture and solely by said inlet and outlet means and exteriorly of said screen and said inlet and outlet means, means for rotating said screen and conveyor at different speeds, a liquid collecting means at least partially surrounding said screen and collecting liquid expressed through said screen by centrifugal force and including a liquid discharge means, said inlet and outlet means each comprising a stationary housing having an opening continuously communicating with the interior of the adjacent



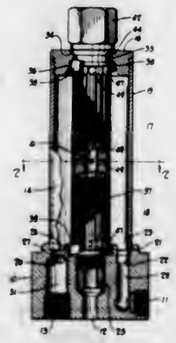
end of said screen and over the entire cross-sectional area of the latter, at least a pair of supports at the opposite ends of said screen, said inlet and outlet means being each carried by one of said supports, said supports each carrying a bracket projecting laterally therefrom and disposed beneath an end of said screen, said screen supporting means consisting of rollers mounted upon said brackets and rotatably supporting the screen solely at its underside adjacent its ends, said inlet means housing comprising an inlet chamber with a mixture inlet opening at an upper portion of said chamber, said chamber having a bottom wall below said inlet opening sloping downwardly toward the adjacent end of said screen and directing the mixture introduced into said inlet chamber through said inlet opening by gravity flow into said screen, said conveyor comprising an auger screw having an end portion of reduced diameter and extending into said inlet opening and into close proximity to and overlying said sloping bottom wall.

3,224,590
PAINT FILTER

Eric T. Nord, Oberlin, and Samuel R. Rosen, Lorain, Ohio, assignors to Nordson Corporation, Amherst, Ohio, a corporation of Ohio

Continuation of application Ser. No. 14,893, Mar. 14, 1960. This application Nov. 26, 1962, Ser. No. 241,463
4 Claims. (Cl. 210—438)

1. A paint filter comprising
a ported base and
a hollow cylindrical pressure vessel with a vertical axis mounted above and upon said ported base,
said base having a smooth, upwardly facing, female, conical metal surface with its axis coincident with the said axis of said vessel, and
said vessel having its upper end closed and having an open substantially circular lower end, said lower end being diametrically expansible under fluid pressure and being yieldable with respect to its circular form,
said lower end of said vessel having a smooth metal male surface cooperative with and entering and engaging said female surface and having exclusive metal-to-metal, sliding and sealing contact therewith,
said base having a paint inlet port and a paint outlet port communicating with said vessel adjacent said lower end of the vessel,
filtering means disposed in said vessel across the path of paint flow through said vessel from said inlet port to said outlet port,
a tension member having an axis substantially coincident with said axes and acting between the upper end of said vessel and said base and holding said male surface of said lower open end of said vessel

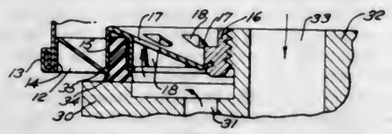


in fluid-tight, slidable, sealing engagement with said female surface of said base portion,
the angle of pitch of said conical female surface of said base with respect to the axis thereof being no greater than the angle at which sealing contact would tend to be lost between said surfaces when said tension member is stretched axially and said male surface is moved axially upwardly and expanded radially outwardly by the pressure of fluid in said vessel,
metal-to-metal sealing engagement being maintained between said male and female surface irrespective of relative movement therebetween due to changes in fluid pressure in said vessel.

3,224,591
OIL FILTER GASKET SUPPORT

William T. Sawyer, Pawtucket, R.I., assignor to Fram Corporation, Providence, R.I., a corporation of Rhode Island

Filed Apr. 19, 1963, Ser. No. 274,110
2 Claims. (Cl. 210—440)



1. In an oil filter of the screw-on throw-away type comprising a cup-shaped shell, a filter element housed therein, a thin metal member closing the inlet end of the shell and having a threaded central ring and an oil passage through such ring, said member being bent within the shell wall at some distance therefrom to form an annular reinforcing rib having an approximately vertical band and said member also having oil holes cut therethrough inwardly of the band so as to form tabs spaced inwardly from the band,

and a sealing annular gasket confined in the space between the band and tabs, that improvement comprising a gasket supporting ring separate from said thin metal member confined between the inner wall of the gasket and the tabs and forming a continuous support for this inner gasket wall.

3,224,592
OIL FILTER FOR AN INTERNAL-COMBUSTION ENGINE

Robert L. Burns, 401 Winsor Drive, Antioch, Ill., and Gerald R. Van Duzee, 50 Rolling Wood Drive, Trumbull, Conn.

Filed Sept. 4, 1963, Ser. No. 306,456
5 Claims. (Cl. 210—493)

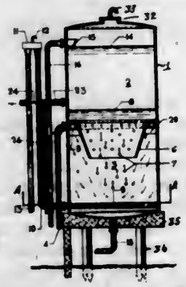


1. In an oil filter for an internal-combustion engine, a filter element composed of a fibrous material disposed in overlapping layers, and a coating of finely divided magnesium disposed on at least one surface of the filter element, said magnesium being applied to said filter element at spaced locations whereby a portion of said surface of the filter element is coated with the magnesium and the second portion of said surface of the filter element is exposed and the locations of magnesium being substantially out of direct alignment in adjacent overlapping layers.

3,224,593
APPARATUS FOR SEPARATION OF OIL FROM AQUEOUS MIXTURES

Ross Nebolsine, 64 E. 86th St., New York, N.Y.

Filed May 23, 1961, Ser. No. 112,078
1 Claim. (Cl. 210—519)

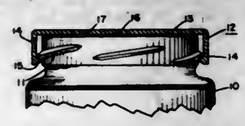


Apparatus for combined oil storage and separation of oil from aqueous mixtures thereof, consisting of a tank having a first and lowermost chamber and a second and uppermost fluid storage and settling chamber, an inverted frusto-conical open ended screen-like baffle positioned in the tank with the major diameter of the baffle substantially at the meeting line of the two chambers, the conical portion of said baffle projecting downwardly into the lowermost chamber said downwardly projecting portion of the frusto-conical screen-like baffle being spaced from the wall of the tank; and the uppermost chamber being adapted as an oil storage area above said screen-like baffle, a perforated circular fluid distributing conduit adjacent the outer top area of said screen-like baffle and discharging along the outer wall surface of the baffle, means for delivering a charge of oil-containing fluid to said distributing conduit and therefrom downwardly along the outer wall of said baffle, and thence into said lowermost chamber toward the base thereof, said screen-like baffle providing upward flow of fluid therethrough from the lowermost chamber to the uppermost fluid storage and settling chamber through the open ends of said baffle, a discharge conduit at the base area of the tank, distributing means in the base area of said tank and communicating with said discharge conduit for removing aqueous fluid from said lowermost chamber, a valve-controlled outflow conduit in the uppermost storage and settling chamber adapted to continuously discharge oil-rich fluid from said uppermost chamber as fresh aqueous oil mixture is admitted to the lowermost chamber, means for maintaining the level of the aqueous fluid above said screen-like baffle including syphon means connected to said discharge conduit, and said frusto-conical screen-like baffle having its minor diameter at its lower end and adapted to direct the flow of the aqueous mixture from the fluid distributing conduit toward the center area of the lowermost chamber.

3,224,594
JAR MOUNTING DEVICE

Earl O. Schweitzer, 29353 Luxona Ave., Wickliffe, Ohio

Filed Jan. 23, 1964, Ser. No. 339,364
13 Claims. (Cl. 211—74)



1. A jar holding strip for holding a screw top jar having a neck of a given outer diameter with integral discontinuous screw threads thereon, comprising, an elongated channel member having a substantially planar central portion and downwardly extending leg portions at either side thereof forming in cross-section a generally channel-shaped member, said leg portions terminating in inwardly directed V-shaped lips for engaging and gripping screw threads on the neck of a jar, the distance between the terminal edges of said lips dimensioned to be greater than the outer diameter of the neck of a jar and less than the outer diameter of the neck of a jar measured through the screw threads, a jar being insertable into said channel-shaped member in a direction substantially perpendicular to the said plane central portion whereby the jar neck will clear the V-shaped lips but the screw threads will not, a jar upon being turned threading up into said strip as the V-shaped lips threadingly engage between discontinuous threads on a jar neck.

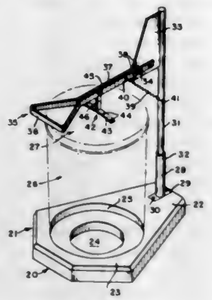
3,224,595
TRASH CAN HOLDERS

Roy William Sherley, Abilene, Tex., assignor of one-fourth to Roy L. Willis, one-fourth to Charles R. Preslar, and one-fourth to Olen R. Haggard

Filed July 20, 1964, Ser. No. 383,633
2 Claims. (Cl. 211—83)

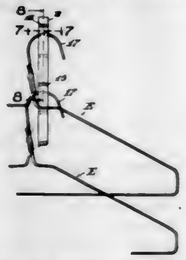
1. In a trash can holder, a base embodying a widened portion and a narrow portion, said base having a circular opening therein adjacent said widened portion, there being stepped annular shoulders in said base adjacent said opening, a vertically disposed bushing affixed to said base adjacent said narrow end portion, a vertically disposed post connected to said bushing, a cap connected to the up-

per end of said post, a collar arranged below said cap and connected to said post, a sleeve interposed between said cap and collar and rotatably mounted on said post, a plate affixed to said sleever, a handle including a triangular hand gripping portion, arms, and a pivot pin connecting said



arms to said plate, and a body member having a portion affixed to said post, and said body member having an inclined cam upper edge portion for selective engagement with said arms, and a slot in the upper portion of the body member for selectively receiving said arms.

3,224,596
CLOTHES HANGER SUPPORT
Harold E. Becker, Los Angeles, Calif., assignor of one-half to Richard S. Backlund, Los Angeles, Calif.
Filed June 29, 1964, Ser. No. 379,754
5 Claims. (Cl. 211—113)



3. In a multiple clothes hanger support having an elongate stem provided with means whereby the stem may be suspended in a vertical dependent position; said stem having a plurality of elongate rectangular openings spaced apart longitudinally thereof, and having an elongate transverse slot leading to each of said openings intermediate the ends thereof providing opposed sockets at the ends of said openings and a garment hanger having a hook adapted to pass sideways through said slots in and out of the opening associated therewith, said hook being positionable in either of said sockets.

3,224,597
LOAD DISTRIBUTION SYSTEM FOR TRACTOR-TRAILER VEHICLES
William A. Whitmire, Castro Valley, Calif., assignor to Bigge Drayage Co., San Leandro, Calif., a corporation of California
Filed Dec. 19, 1963, Ser. No. 331,812
8 Claims. (Cl. 212—59)

1. A highway tractor train for carrying a crane with with an attached boom so that the entire weight load thereof is distributed substantially equally amongst the wheels of the train comprising:

a lead tractor with front and rear wheels and a crane body rotatably mounted thereon, said crane body having a boom pivotally attached thereto and extending rearwardly;

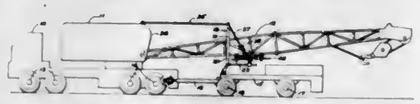
a train end trailer having wheels near its front and rear ends;

a tongue pivotally connecting the front end of said trailer with the rear end of said tractor;

a cradle means pivotally mounted on said trailer;

said cradle means having a rearwardly extending portion for pivotally supporting the boom of said crane between the center of gravity of said boom and the crane body on said lead tractor;

said cradle means having an upright portion fixed to said rearwardly extending portion;

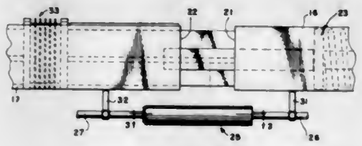


means near the upper end of said upright portion connecting said cradle means to said crane body;

and means near the outer end of said rearwardly extending cradle portion for engaging the crane boom when it is lowered into the cradle;

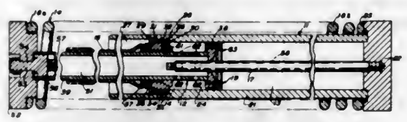
whereby the weight of the boom causes a tension load in the means connecting the upright portion of the cradle means to the crane and also a compression load in said tongue, said cradle means also serving as a fulcrum for said boom causing it to transmit an upload on the crane body, thereby distributing evenly the weight load on the wheels of the tractor and trailer vehicles.

3,224,598
TRAINLINE ARRANGEMENT
Kenneth J. Austgen, Griffith, Ind., assignor to Pullman Incorporated, Chicago, Ill., a corporation of Delaware
Filed Sept. 21, 1964, Ser. No. 401,284
7 Claims. (Cl. 213—1)



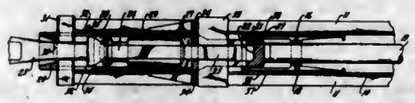
1. A trainline arrangement for a railway car of the type having a pair of sill sections, each of said sill sections being movable relative to the other and relative to an underframe portion of said car, a pair of conduits forming a part of the trainline and being carried by each of said sill sections, each conduit being fixed relative to the associated sill section to which it is joined for movement therewith, and means telescopically joining each of said conduits to the other to permit movement of said sill sections relative to each other while maintaining continuity of said trainline, said means telescopically joining said conduits including an outer tubular means extending between said conduits and flexible boot means fluid-tightly joining the conduits, said tubular means having one end fixed with one conduit and having the other end reciprocably disposed about the other conduit, said other conduit having a portion thereof extending within said tubular means, said flexible boot means having one end part connecting with the one end of the one conduit and having the other end part connected with the conduit portion, the other boot end part being folded over on itself in an invaginated position to define a variably invertible boot section stored and guided between the other end of the tubular means and the portion of the other conduit.

3,224,599
LONG TRAVEL HYDRAULIC CUSHION DEVICE
William H. Peterson, Homewood, Ill., assignor to Pullman Incorporated, Chicago, Ill., a corporation of Delaware
Filed Nov. 29, 1963, Ser. No. 326,971
5 Claims. (Cl. 213—43)



1. A hydraulic cushion device comprising a cylinder having a bore, a first cylinder head fixed to one end of said cylinder, an intermediate cylinder head fixed within said cylinder bore inwardly of the other end thereof, an axial opening in said intermediate cylinder head, a piston head disposed within said cylinder bore and defining a high pressure chamber on one side thereof with said first cylinder head and a low pressure chamber on the opposite side thereof, for movement between said intermediate cylinder head and said first cylinder head, an axial orifice formed in said piston head, a tubular piston rod fixed at one end to said piston head and extending through said axial opening, stop means on said piston rod engageable with said intermediate cylinder head for maintaining said piston head at a minimum spacing adjacent sad intermediate cylinder head, port means formed in said tubular piston rod between said stop means and said piston head and constantly communicating with said low pressure chamber, a flexible boot reservoir connected between said intermediate cylinder head and said piston rod and extending toward the remaining end of said cylinder, a second cylinder head fastened to the other end of said tubular piston rod, fluid passage means in said intermediate piston head to provide fluid communication between said low pressure chamber cylinder bore and said flexible boot reservoir, a metering pin fixed to said first cylinder head and extending through said piston head orifice and into said bore of said tubular piston rod to provide a gradually diminishing flow area through said orifice when said piston head moves toward said first cylinder head, hydraulic fluid filling said cylinder and said piston rod bore, a plurality of angularly spaced openings formed in said piston radially outwardly of said piston head orifice, and an annular plate means supported on the side of said piston head facing said first cylinder head, said annular plate means being movable from a position covering said plurality of openings upon movement of said piston head from a position adjacent said intermediate cylinder head to a position adjacent said first cylinder head, and a position spaced from said openings when said piston head returns to said position adjacent said intermediate cylinder head.

3,224,600
DRAFT GEAR RIGGING FOR RAILROAD CARS
Robert W. Gierlach, Chicago, Ill., assignor to Standard Car Truck Company, Chicago, Ill., a corporation of Illinois
Filed June 8, 1964, Ser. No. 373,360
9 Claims. (Cl. 213—67)

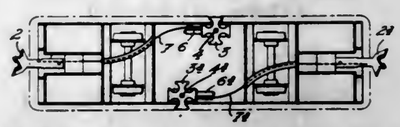


7. A railroad car, a center sill extending longitudinally thereof, a draft rigging adjacent the end of the car including horizontal and vertical draft yokes, one within the other and each yoke free to move longitudinally with respect to the other and with respect to the sill, opposed follower blocks enclosed in, supported and guided by the yokes, a draft cushion interposed between the blocks, one of the blocks abutting on one of the yokes, the other block abutting on the other,

a shank integral with each yoke, the shanks extending inwardly of the car from the yokes, one of the shanks being slotted, a key extending therethrough and held against movement therein perpendicular to the yoke axis, the center sill being slotted to permit movement of the key and yoke longitudinally of the sill, draft stops in the path of the key to positively limit outboard movement of the yoke,

means for applying pressure to the yoke in which the coupler shank is socketed tending to move it toward the coupler shank.

3,224,601
MECHANISM FOR AUTOMATICALLY UNCOCKING AND RE-COCKING AUTOMATIC COUPLINGS FOR RAILWAY VEHICLES
Maxime Sanyas, Freyming, Moselle, France, assignor to Houilleres du Bassin de Lorraine, Faulquemont, Moselle, France
Filed Feb. 26, 1964, Ser. No. 347,565
Claims priority, application France, Mar. 12, 1963, 927,641, Patent 1,359,235
10 Claims. (Cl. 213—75)

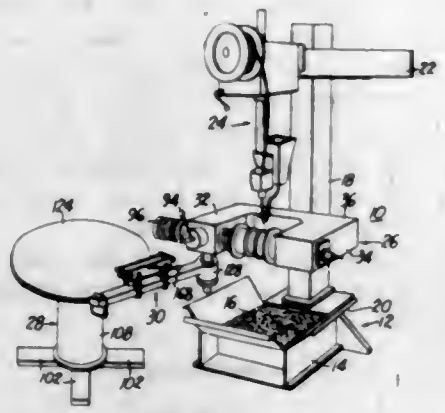


1. In an automatic uncocking and re-cocking mechanism for automatic couplings used on railway vehicles, of the type comprising a pivotal control cross member carried by the vehicle and subjected to a stepped rotation in response to retractable actuating pawls disposed at fixed points along the track, whereby an elongated transmission cam mounted on the same shaft as said cross member and actuating the coupling lock of the coupling is rotated intermittently to alternately uncock and re-cock said lock; the improvement according to which the actuating pawls are fixedly mounted and project into the loading gauge without reaching the area swept by the rolling members of the vehicle while the pivotal control cross member is mounted on the vehicle chassis from which it projects within said loading gauge at least partially, level with said pawls, the mechanism comprising an enclosure housing the transmission cam and the shaft common to said transmission cam and to the control cross member, a slidable part engaging said transmission cam and slidably mounted within said enclosure, resilient means within said enclosure for resiliently applying said part against said transmission cam, and a flexible transmission line interconnecting said part and the lock of the automatic coupling.

3,224,602
APPARATUS FOR MANIPULATING WORKPIECES
Everett L. Mattson, Brookfield, Wis., assignor to Automatic Welding Company, Waukesha, Wis., a corporation of Wisconsin
Original application Mar. 21, 1961, Ser. No. 97,378, now Patent No. 3,109,918, dated Nov. 5, 1963. Divided and this application June 6, 1963, Ser. No. 286,045
8 Claims. (Cl. 214—1)

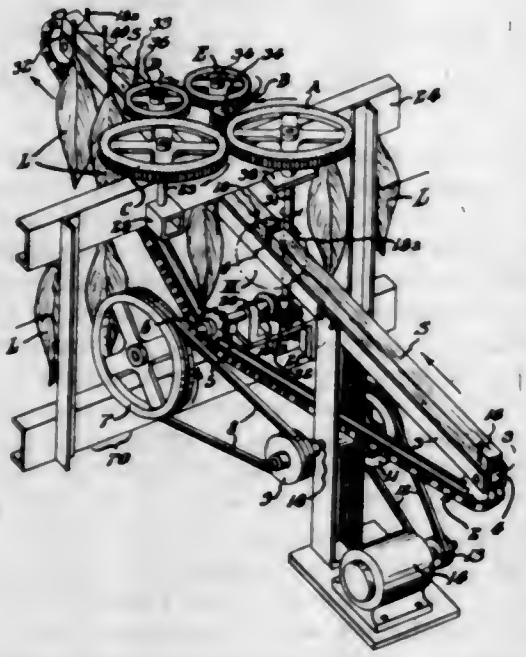
1. Apparatus for manipulating workpieces comprising mounting means, a yoke, the yoke being mounted on the mounting means at the central portion of the yoke and

being disposed in a generally horizontal plane, a workpiece supply, a transfer member mounted for swingable movement between a position adjacent the workpiece supply and a position in which a workpiece carried by the transfer member is disposed between the legs of the yoke,



opposed workpiece engaging elements carried by the legs of the yoke and means for relatively moving the opposed workpiece engaging elements toward and away from each other to take the workpiece from the transfer member and return the same thereto.

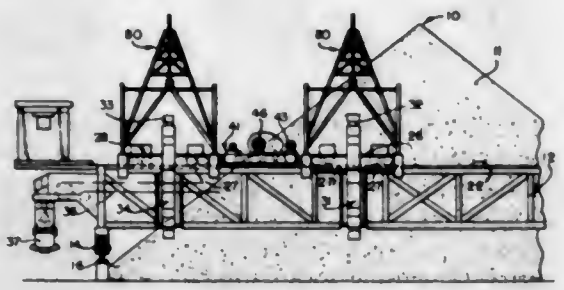
3,224,603
LEAF CURING MACHINERY
David Prewitt 304 W. 3rd St., Lexington, Ky.
Filed Nov. 20, 1963, Ser. No. 325,022
5 Claims. (Cl. 214—5.5)



1. A tieing head comprising drive means, cam means driven by said drive means, first and second rack means operatively associated with said cam means, pinion and gear means engaging said rack means, a tier gear driven by rotation of said pinion and gear means, and a tier cone operatively connected to said tier gear.

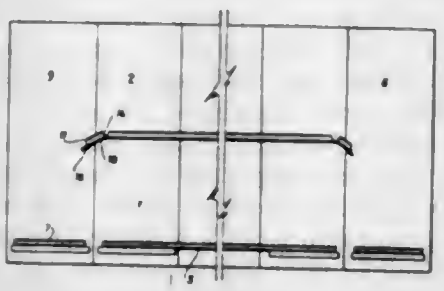
3,224,604
TRANSVERSE DRIVE FOR RECLAIMER
Imre Adler, New York, N.Y., Nelson G. Erhardt, Wayne, N.J., and Robert M. Frank, Larchmont, N.Y., assignors to Litton Industries, Inc., a corporation of Delaware
Filed May 27, 1963, Ser. No. 283,449
9 Claims. (Cl. 214—10)

1. In apparatus for removing granular material from a pile, an elongated horizontally disposed bridge structure, rails on said bridge structure extending lengthwise thereof, a first carriage supported on and guided by said rails, a bucket wheel supported by said first carriage for removing granular material from the pile, a second carriage supported on and guided by said rails, a bucket wheel supported by the second carriage for removing granular material from said pile, a carriage intermediate the first and second carriages, means connecting the first carriage to one end of the intermediate carriage, means connecting the other end of the intermediate carriage to



the second carriage, an electric motor and means associated therewith supported on said intermediate carriage for moving all of the carriages lengthwise of the bridge structure, an electrical circuit to said motor, means responsive to predetermined relative movements in one of said connecting means interrupting said circuit, and said means connecting the intermediate carriage to the other of carriages include shear pins.

3,224,605
VEHICLE PARKING INSTALLATIONS
Estanislao Buzzanca, 526 Corcega St., Barcelona, Spain
Filed Apr. 15, 1963, Ser. No. 273,103
Claims priority, application Spain, Apr. 19, 1962, 276,649
3 Claims. (Cl. 214—16.1)

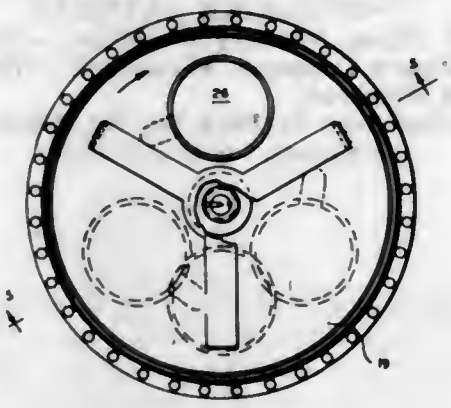


1. In a vehicle parking installation for at least two vertically spaced floor levels, a movable platform means adapted to carry a vehicle, a lift at each end of the floor levels for raising and lowering a platform means to the desired floor level, complementary tracks on each floor level and lift, a track section pivotally connected to the end of the tracks on the floor level, spring means coacting with the track section normally maintaining such section in a slightly downwardly inclined position relative to the tracks on the floor level, the leading ends of the tracks on the floor level and the leading end of the track section being bevelled in the direction of the tracks on the lift for allowing pivotal movement of the track section, complemental means on the leading end of the track section and the adjacent end of the tracks on the lift for maintaining such track section in alignment with the tracks on the floor level and lift, means on the lift for pushing the platform means carrying the vehicle from the tracks on the lift to the tracks on the floor level, and means for guiding the vehicle within the lift.

3,224,606
PRESSURE SEALING VALVE

Auxilius P. Schnyder, Bogota, N.J. (% The Lummus Company, 385 Madison Ave., New York 17, N.Y.)

Filed May 10, 1962, Ser. No. 193,745
9 Claims. (Cl. 214—17)

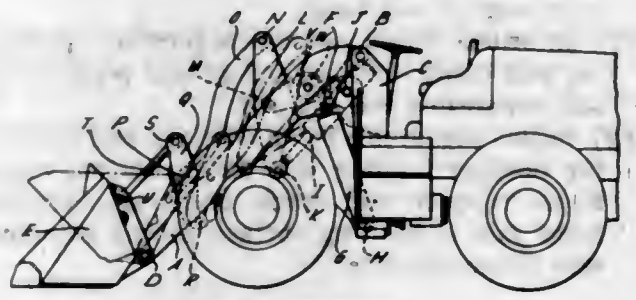


1. An improved material handling device for feeding material from a first region to a second region comprising, in combination, a first rotatable plate provided with an inlet port extending therethrough, a second rotatable plate spaced from said first rotatable plate and provided with a discharge port extending therethrough, drive means for rotating said first plate and said second plate, relatively fixed valve means forming a plurality of passageways positioned between said plates in sealing relationship therewith, said passageways each being sequentially in communication with said inlet port and said discharge port during rotation of said plates, and membrane means between at least one of said plates and said passageways, said membrane means being apertured for registry with the relative port and secured around the circumference thereof.

3,224,607
SHOVEL LOADERS

David J. B. Brown, Knaresborough, England, assignor to Chaseside Engineering Company Limited

Filed Oct. 16, 1962, Ser. No. 230,928
Claims priority, application Great Britain, Oct. 19, 1961, 37,592/61
2 Claims. (Cl. 214—140)

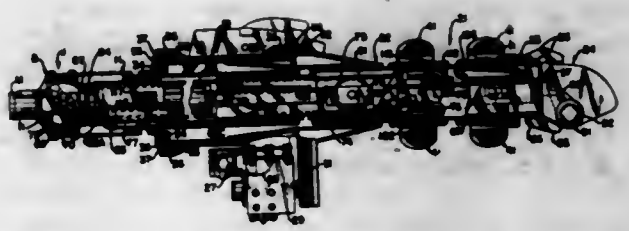


1. A shovel loader, comprising:
a chassis;
two parallel arms mounted on opposite sides of the chassis at the forward end thereof and extending forwardly therefrom;
a bucket pivotally mounted at the forward ends of said arms;
first hydraulic motor means pivotally mounted at one end on said chassis and at the other end on said arms and adapted for raising and lowering said arms;
cross members connecting said arms including a first cross member located in front of and close to the forward end of the chassis;
a plurality of serially arranged interconnected interlevers mounted between said arms for pivotal movement with respect to said cross members;
bracket means mounted on said first cross member and projecting forwardly therefrom, the central portion of the rearwardmost interlever being pivotally mounted on the forward end of said bracket means;
rod means connecting said bucket and the forwardmost one of said interlevers so that movement of said interlevers effects pivoting of said bucket;
a second hydraulic motor including an elongated cylinder and trunnion means on said chassis pivotally supporting said cylinder intermediate the longitudinal ends thereof, said motor having a piston pivotally connected to the lower end of the rearwardmost one of said interlevers, said hydraulic motor being located between said arms and being the sole power means for pivoting the rearwardmost interlever;
the pivot axis of said trunnion means lying in a horizontal plane which is below and spaced a substantial distance from the pivot axis of the arms.

3,224,608
EARTH WORKING AND MATERIALS HANDLING MACHINE

Donald E. Yadon, Littleton, and Paul H. Knutson, Denver, Colo., assignors to Universal Marion Corporation, Jacksonville, Fla., a corporation of Florida

Filed Jan. 15, 1963, Ser. No. 251,525
7 Claims. (Cl. 214—141)



1. In a telescopic boom assembly including an outer section having rearward and forward ends and an extensible inner section telescopically movable relative thereto for extension and retraction through the forward end of said outer section, a removable elongated cartridge positioned within said sections with one end secured to the rearward end of said outer section against longitudinal movement relative to said outer section and with the other end free with respect to said boom sections, said cartridge including means for causing said relative movement of said sections, a combined tool head and tool actuating means carried by one end of said movable section for releasably engaging tools and attachments and bearing means cooperatively associated with said sections for facilitating telescopic movement of said sections relative to each other.

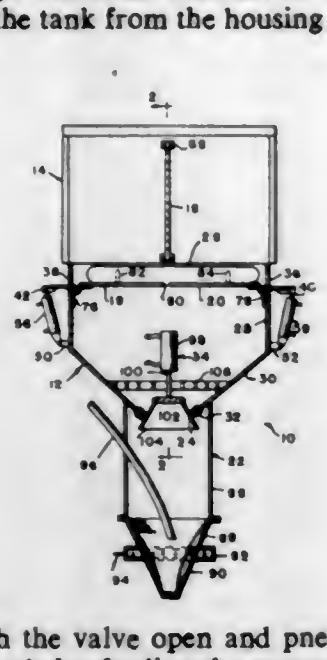
3,224,609
SACK OPENING STRUCTURE

Harry W. Dietert, Kerrville, Tex., assignor to Harry W. Dietert Co., Detroit, Mich., a corporation of Michigan

Original application Feb. 18, 1963, Ser. No. 259,069, now Patent No. 3,168,926. Divided and this application July 23, 1964, Ser. No. 384,694
8 Claims. (Cl. 214—305)

1. Sack opening structure comprising a housing having an opening therein, a closure for said opening, knife means operably associated with said housing and closure for splitting open a sack positioned in the housing in response to closing of the closure, a tank positioned beneath the housing, an opening in said housing between the hous-

ing and tank, a valve in the opening between the housing and tank through which the contents of the sack will pass by gravity into the tank from the housing on splitting open



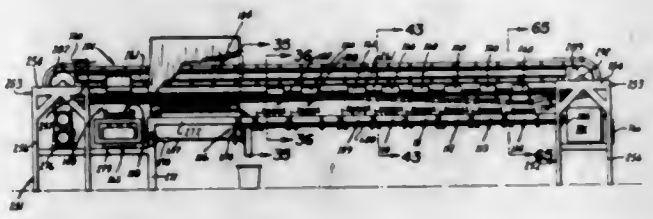
of the sack with the valve open and pneumatic conveyor means in said tank for feeding the material from the tank with the valve closed.

3,224,610

EGG HANDLING AND GRADING APPARATUS

Alvold V. Scollard, Orinda, and Alfred E. Comstock, Greenbrae, Calif., assignors to Safeway Stores, Incorporated, Oakland, Calif., a corporation of Maryland

Filed Feb. 14, 1961, Ser. No. 89,275
31 Claims. (Cl. 214—309)



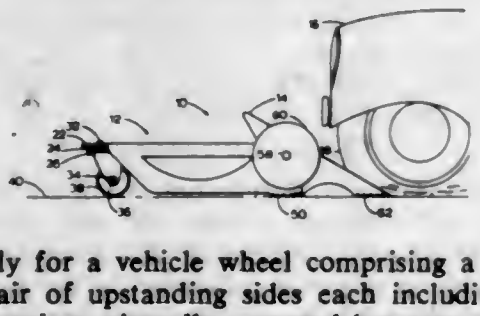
1. In a machine for handling eggs, a plurality of transport assemblies adapted to carry individual eggs, means for continuously advancing said transport assemblies between an egg pickup station and an egg discharge station, a conveyor having a portion thereof in the egg pickup station for advancing eggs arranged thereon in rows transverse to the path of travel of the conveyor and parallel to the path of travel of the transport assemblies, and means for moving the portion of the conveyor in the egg pickup station in the same direction and in synchronism with the movement of predetermined transport assemblies to deliver eggs into the predetermined transport assemblies during movement of the predetermined transport assemblies.

3,224,611

TIRE-BUOY

Joseph I. Smuck, 4 Montrose Ave., Catonsville, Md.

Filed May 27, 1964, Ser. No. 370,450
5 Claims. (Cl. 214—334)



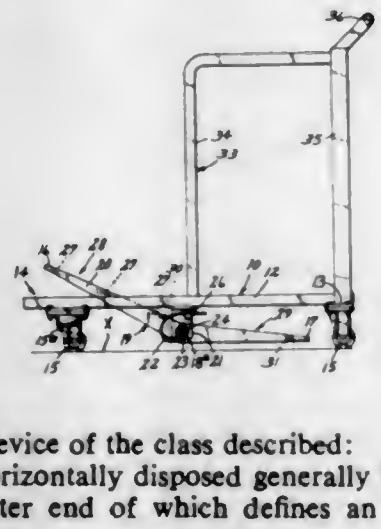
1. A dolly for a vehicle wheel comprising a platform having a pair of upstanding sides each including a slot therein, a carriage pivotally mounted between said sides, an axle secured to said carriage and having each end thereof extending through a respective slot, a pair of support wheels each pivotally mounted or respective ends of said axle, and a guide wheel pivotally mounted on said platform.

3,224,612

DOLLY FOR RETREADING MOLDS AND OTHER WHEEL-LIKE ARTICLES

Rudolph E. Olson, Minneapolis, Minn., assignor to Paul E. Hawkinson Company, Minneapolis, Minn., a corporation of Minnesota

Filed Sept. 24, 1964, Ser. No. 398,893
3 Claims. (Cl. 214—334)



1. In a device of the class described:
(a) a horizontally disposed generally U-shaped frame, the outer end of which defines an article-receiving opening,
(b) roller means mounted on stub axles adjacent the open end of the U imparting mobility to said frame and closely spacing same from a supporting surface,
(c) a generally rectangular platform received entirely within said frame and pivotally secured to the opposite side frame members thereof for rocking movements of its opposite ends toward and away from said supporting surface,
(d) the outer end of said platform being normally gravity biased toward and into engagement with said supporting surface and intersecting the transverse axis of the stub axles and defining an article-receiving ramp which terminates adjacent the pivotal connection of said platform to said frame,
(e) the inner end of said platform adjacent the closed inner end of said frame defining a cradle-forming opening, the outer limit of which is defined by the inner edge of said ramp,
(f) an article within said cradle-forming opening biasing said cradle-forming end of said platform toward said supporting surface, and
(g) means engageable by an article in said cradle-forming opening limiting said last-mentioned movement so as to space said article and cradle-forming end from said supporting surface during movement of said frame thereover.

3,224,613

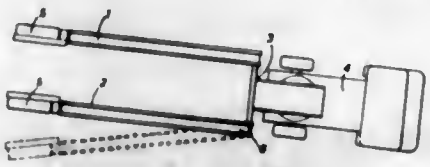
TRANSPORT VEHICLES

George Neville Bowman-Shaw, Toddington, England, assignor to Lancers Machinery Limited, Leighton Buzzard, England, a corporation of Great Britain

Filed Mar. 26, 1964, Ser. No. 355,017
Claims priority, application Great Britain, Mar. 29, 1963, 12,568/63
4 Claims. (Cl. 214—396)

1. An elongated trailer vehicle having a longitudinal axis comprising a front end mounting having means for pivotal connection to and support by a towing vehicle, a front frame member extending substantially transverse to the longitudinal axis of the vehicle and made fast with

said mounting, two spaced side frame members of substantial height extending rearwardly from said front frame member, one of said side frame members being fixed to said front frame member, a vertical pivotal connection between the forward end of the other side frame member and said front frame member to permit lateral outward splaying of the pivoted side frame member with respect to said fixed side frame member, power operated means to pivot said pivoted side frame member about said connection, a rear road wheel mounted on and supporting



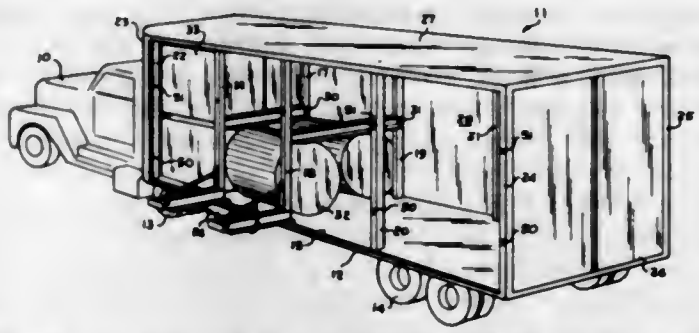
the rear end of each of said side frame members, skid means on said pivoted side frame member movable to a position between the associated wheel and the ground to raise said associated wheel off the road surface during splaying and re-aligning movements of the pivoted side frame member thereby avoiding scrubbing tire wear, lifting means supported on the upper portions of said side frame members to raise a load to a position therebetween, and means insertable under a load and between said side frame member for supporting a load in an elevated position within said side frame members.

3,224,614

BRACKET MEANS FOR SIDE-LOADING OF VEHICLES

Edwin N. Yeary, Lexington, Ky., assignor to Yeary Transfer Company, Inc., Winchester, Ky., a corporation of Kentucky

Filed Oct. 6, 1964, Ser. No. 401,779
9 Claims. (Cl. 214—500)



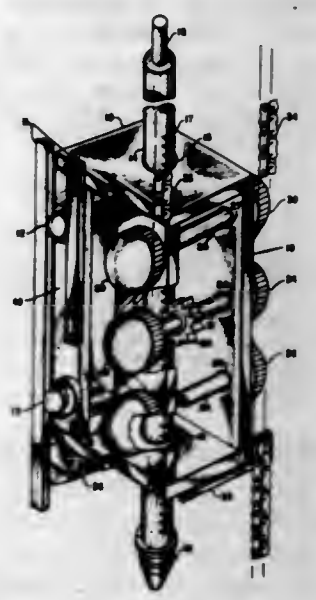
1. In combination, a vehicle adapted for side-loading and comprising an elongated flat bed frame and a mobile support therefor, a plurality of spaced pairs of vertical columns attached to said frame at the respective sides thereof, a plurality of horizontal rails having flanges for supporting heavy articles above the floor of said vehicle, said rails extending transversely of said vehicle and being affixed at the ends to the respective pairs of columns, each of said columns on the loading side of said vehicle having means for detachably engaging a bracket, and a pair of cantilever brackets mounted upon two adjacent columns at the loading side of said vehicle, and projecting outwardly therefrom; each of said brackets including a vertically extending back plate in contact with the column mounting the same, a bracket-securing means for detachably connecting the bracket and the bracket-engaging means of the column to each other, and a pair of rails affixed to said back plate below said bracket-securing means and on opposite sides of said back plate, each of said bracket rails being adapted to support articles prior to moving the same into stowed positions on corresponding sides of the column to which said brackets are respectively attached.

3,224,615

CRANE DEVICE WITH AN EXTENSIBLE GRIPPER MECHANISM

James E. Henry, deceased, late of Newark, Del., by Henriette J. Henry, administratrix, Newark, Del., assignor to the United States of America as represented by the United States Atomic Energy Commission

Filed Feb. 3, 1964, Ser. No. 342,864
15 Claims. (Cl. 214—658)



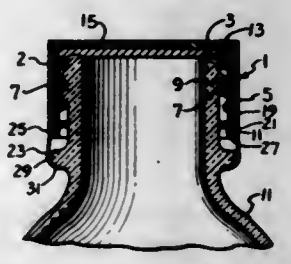
10. A manipulating device comprising:
(a) A movable carrier frame;
(b) elongated rod means extending through said carrier frame in slidable relationship therewith;
(c) pinion drive means rotatably mounted on said carrier frame engaging said elongated rod to reciprocate said rod upon rotation of said pinion;
(d) chain drive means adapted to rotate said pinion means;
(e) means on said chain drive means to cause said carrier frame to move with the chain;
(f) means to obstruct the movement of said carrier frame in one direction so that continued movement of said chain will reciprocate said rod;
(g) gripping means on one end of said rod adapted to engage an object to be manipulated and means for operating said gripping means.

3,224,616

CLOSURE AND METHOD OF MAKING SAME

Mack R. Fields, Libertyville, Ill., assignor, by mesne assignments, to Roehr Metals & Plastics Company, Hillside, N.J., a limited partnership

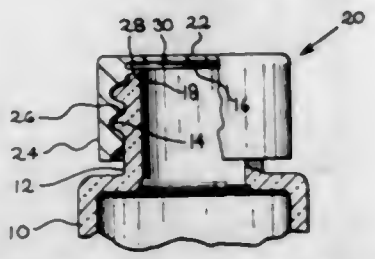
Filed Nov. 20, 1963, Ser. No. 324,912
11 Claims. (Cl. 215—7)



1. A tamper-indicating closure comprising a cap having a threaded annular sidewall for threading over the neck of a container, an annular skirt projecting below the bottom of the sidewall, flange means at the upper end of the skirt, a shoulder on the skirt below the flange means and having indicia thereon that is concealed by the sidewall, said flange means fitting into groove means on the sidewall in a manner to constitute a separable connection between the cap and skirt that inhibits reconnection of them

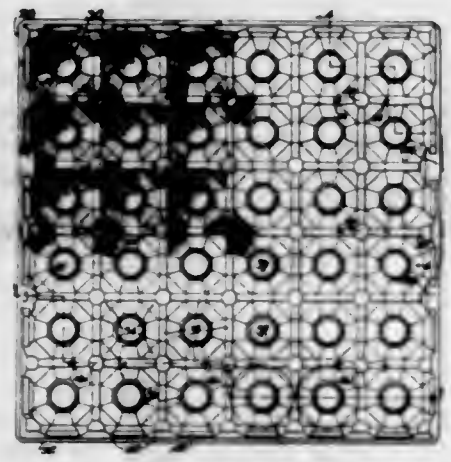
once they have been disconnnected, the flange means withdrawing from the groove means to separate axially the cap from the skirt and expose the indicia to view when the cap is unscrewed from the container with the skirt being retained against axial movement on the container.

3,224,617
CLOSURE WITH INTEGRALLY FORMED SEALING SURFACE
John Hohl, Ringgenberg, Switzerland, and Jack M. Wheaton, Toledo, Ohio, assignors to Owens-Illinois Glass Company, a corporation of Ohio
Filed Dec. 19, 1962, Ser. No. 245,904
3 Claims. (Cl. 215—31)



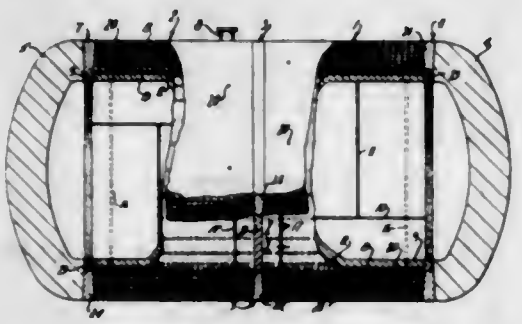
1. In combination, a container having a threaded neck portion terminating at its upper end in an annular rim defining the periphery of an open mouth and having sealing surface externally disposed between the annular rim and the upper reach of said threaded portion; and a resilient closure secured to the container comprising a top panel portion having an annular skirt depending from the periphery thereof, the inner surface of said skirt being formed with threads engaged with the threaded neck portion of said container, a horizontally disposed annular sealing ring formed on the inner surface of said skirt between the upper reach of said threads and the top panel portion, said sealing ring and said top panel portion cooperating to define an annular groove therebetween.

3,224,618
EGG PACKAGE
Henry R. Vigue, 18 Pleasant St., Waterville, Maine
Filed Mar. 9, 1964, Ser. No. 350,302
5 Claims. (Cl. 217—26.5)



1. A pocketed egg tray for holding a single layer of eggs in closely spaced array which may be inserted in a container, the tray being in the form of an integral molded pulp sheet bordered by a peripheral rim and contoured to provide a plurality of egg-receiving pockets lying generally in a common substantially flat plane, four upstanding posts surrounding every egg-receiving pocket and generally occupying the four corners of an imaginery square, some of the upstanding posts extending significantly higher above the flat plane than the remainder of the upstanding posts, the remainder of the upstanding posts and the peripheral rim extending only to a height which is no more than approximately two-thirds the height of the higher upstanding posts, the higher upstanding posts being arranged in a pattern whereby the four upstanding posts surrounding every egg-receiving pocket include at least one of the high posts and at least two of the remaining low posts, the latter two being located diagonally from each other on the imaginary square to facilitate fingertip insertion for egg removal, and the upper surfaces of the higher upstanding posts lying generally in a common substantially flat plane essentially parallel with the plane in which the bottoms of the pockets lie to form support surfaces for the upper wall of the container in which the tray may be inserted.

3,224,619
HYDROGEN PROCESSING MULTIPLE LAYER PRESSURE VESSELS
Joseph J. Maurin and Marvin B. Ziering, Milwaukee, Wis., assignors, by mesne assignments, to Chicago Bridge & Iron Company, Oak Brook, Ill., a corporation of Illinois
Filed Mar. 15, 1963, Ser. No. 264,746
1 Claim. (Cl. 220—3)



A welded pressure vessel adapted to contain hydrogen bearing substances at elevated temperatures and pressures, comprising an inner liner fabricated from a metallic material resistant to hydrogen embrittlement, a dummy layer disposed intimately around said inner liner and having a series of passageways at the interface of the liner and said dummy layer, a plurality of stress-bearing layers disposed intimately and concentrically around the dummy layer, said stress-bearing layers having a network of radially extending vent openings providing communication between said passageways and the exterior for releasing hydrogen to the atmosphere, and a girth weld joining said liner and layers to a wall of the vessel, said girth weld consisting of a metal resistant to hydrogen embrittlement in a first weld zone extending coextensively with at least the inner shell and the dummy layer and extending outwardly beyond said passageways and of a high strength metal subject to hydrogen embrittlement in a second weld zone extending outwardly of said first zone and coextensive with said stress-bearing layers.

3,224,620
GAS TIGHT SEAL
Clifford M. Orr, Western Springs, Ill., assignor to Chicago Bridge & Iron Company, Oak Brook, Ill., a corporation of Illinois
Filed Feb. 26, 1963, Ser. No. 261,073
1 Claim. (Cl. 220—5)

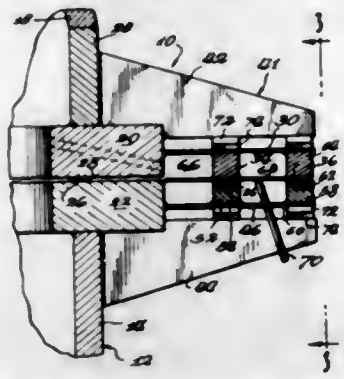
A storage tank comprising:
a dome portion having a substantially rigid first flange secured thereto;
a body portion having a substantially rigid second flange secured thereto, said first and second flanges being in confronting relation;
a first continuous flexible member secured to said first flange;
a second continuous flexible member secured to said second flange, said first continuous flexible member

and said second continuous flexible member being in confronting relation defining a continuous seam therebetween;

a plurality of spaced blocks, each having a continuous groove therein, secured to the confronting surface of one of said continuous flexible member;

an O-ring disposed in each of said grooves;

a plurality of spaced blocks attached to the confronting surface of the other continuous flexible member and in engaging registration with said O-rings, said con-



tinuous flexible members, said blocks and said O-rings extending continuously, without interruption, along the length of said seam;

a first bracket secured to said dome portion and extending over said first continuous flexible member and defining a space between said first bracket and said first continuous flexible member;

a second bracket secured to said body portion and extending under said second continuous flexible member and defining a space between said second bracket and said second continuous flexible member; and,

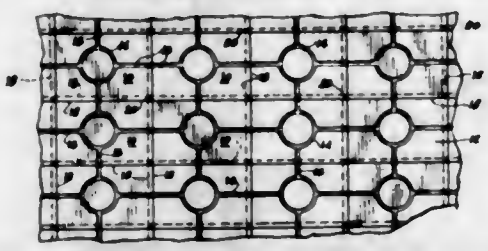
wedges inserted in said spaces to urge the O-rings and blocks in intimate contact.

3,224,621

COLD LIQUID CONTAINER AND ELEMENTS FOR USE IN SAME

William R. Upthegrove, Norman, Okla., assignor to Conch International Methane Limited, Nassau, Bahamas, a corporation of the Bahamas

Filed Oct. 30, 1961, Ser. No. 148,563
2 Claims. (Cl. 220—9)



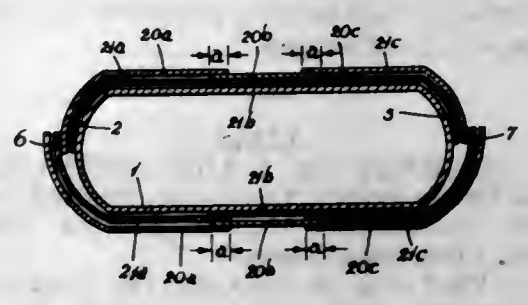
1. In an insulated container for housing liquefied gas in large volume including an outer shell, an insulation layer lining the inner surface of the outer shell and an inner shell formed of a membrane of fluid and vapor impervious material which retains its strength and ductility at the cold temperatures of the liquefied gas, said shell being formed of a plurality of modular rectangular panels of thin sheet material arranged in side-by-side and in end-to-end relation and joined one to another in sealing relation along the adjacent edges to form the continuous membrane, embossments in each of said panels comprising a ring-like embossment in the central portion of the panel and linear embossments extending radially outwardly from the periphery of the ring to the edges of the panel, and means for supporting the shell of joined panels adjacent the inner face of the insulation layer, the panels being secured at the corners formed by adjacent sides to the insulation while being free of the insulation through the remainder thereof.

3,224,622

STABILIZED INSULATED CONTAINERS

Eugene S. Kordyban, Buffalo, John A. Paivanas, Williamsville, and John M. Canty, Tonawanda, N.Y., assignors to Union Carbide Corporation, a corporation of New York

Filed Feb. 1, 1963, Ser. No. 255,470
16 Claims. (Cl. 220—9)



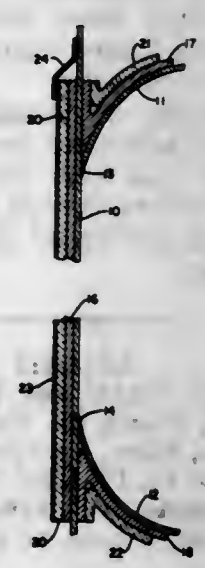
1. In an insulated container adapted for shipment and so subject to displacement of the insulation by forces encountered during shipment comprising an inner cylindrical vessel, said inner cylindrical vessel having (a) a header fitted transversely to each end thereof and (b) the outer surface entirely covered with at least one insulating layer each of which layers is composed of at least two adjacent, substantially rectangular sheets of insulating material disposed about the longitudinal axis of the cylindrical vessel so that each lateral edge of each sheet is in a plane substantially perpendicular to the longitudinal axis of the cylindrical vessel, the improvement which comprises the provision of overlapping and longitudinal load transmitting contact between each adjacent pair of sheets of the insulating material and the attachment of at least one layer of the insulating material to at least one of said headers, the amount of overlapping and the degree of contact between each adjacent pair of sheets being sufficient to permit the transmission of longitudinal inertial forces to which the insulated container is subjected during shipment through the overlapping adjacent sheets of a layer of insulating material to a header to which the layer is attached.

3,224,623

LIQUEFIED GAS CONTAINER INSULATION

Paul M. Knox, Jr., Golden, and Jay L. McGrew, Denver, Colo., assignors to Martin-Marietta Corporation, Baltimore, Md., a corporation of Maryland

Filed May 20, 1963, Ser. No. 281,603
5 Claims. (Cl. 220—9)



1. A thermally insulated liquid hydrogen container for a launch vehicle comprising:

a tank for containing said liquid hydrogen;

a first layer of insulating air-impervious material at-

tached to the walls of said tank, the inner surface of said tank being subjected to the temperature of liquid hydrogen; and

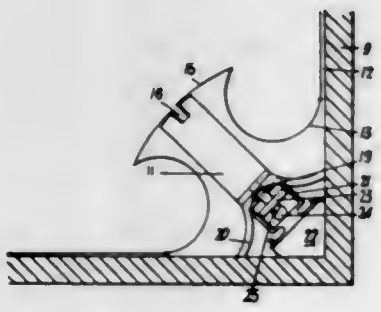
a second layer of insulating air-pervious material attached to and covering said first layer and in communication with the ambient air, the ratio of the thickness of said first layer to the thickness of said second layer being such that the temperature at the interface of said layers is just above the condensation temperature of oxygen.

3,224,624

STORAGE OF A LIQUEFIED GAS

Michael Joseph French, Cambridge, England, assignor to Conch International Methane Limited, Nassau, Bahamas, a Bahamian company

Filed Aug. 20, 1963, Ser. No. 303,290
Claims priority, application Great Britain, Nov. 6, 1962, 41,989/62
7 Claims. (Cl. 220—15)



1. A prismatic tank for the low-temperature storage of liquefied gas at atmospheric pressure comprising

(a) a rigid prismatic insulating outer container having interior wall surfaces defining generally the interior of the tank,

(b) an inner container comprising at least one impervious, semi-rigid metal membrane sheet immediately adjacent each said wall surface,

(c) a rigid framework outlining each said wall surface, with the framework members lying exteriorly of said inner container in the angles formed by adjacent wall surfaces,

(d) a metal bellows securing at least some of said sheets to said framework in liquid-tight fashion so that the entire inner containers is liquid-tight, while permitting limited relative movement between the tank and framework,

(e) and cooperating restraining means between said framework and said outer container supporting said framework on said outer container, independently of the metal bellows, in such a manner as to permit limited thermal contraction of the framework within the container.

3,224,625

RELISH TRAY OR THE LIKE

Ferdinand P. Sperl, Peoria, Ill., assignor to Service Ideas, Inc., Minneapolis, Minn., a corporation of Minnesota

Filed July 16, 1963, Ser. No. 295,421
2 Claims. (Cl. 220—23.83)

1. A portable utensil such as a relish tray having in combination,

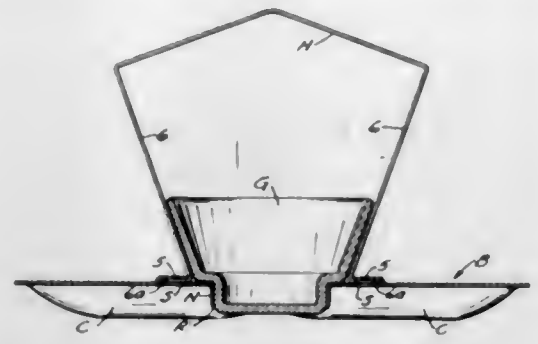
an integral body drawn and formed from a somewhat ductile metal material to constitute a plurality of separated, disbed compartments with a substantially planar top having a central portion intermediate of said compartments,

said central portion being recessed with the metal drawn downwardly about said recess to form a tubular reception neck,

a readily detachable handle of general bail shape constructed of resilient material,

said body on opposed sides of said neck being integrally formed by slitting and bulging material outwardly of such slits to define a pair of open-ended shallow sockets extending radially outward with respect to said neck,

said handle having attachment feet extending outwardly



and laterally of the legs thereof, shaped to be readily inserted into said sockets when tension is placed upon the legs of said handle, thereby to operatively interconnect said handle in an upstanding relation to said body,

and a circular receptacle having a lower end frictionally and snugly fitting within the neck of said body and having a peripheral wall,

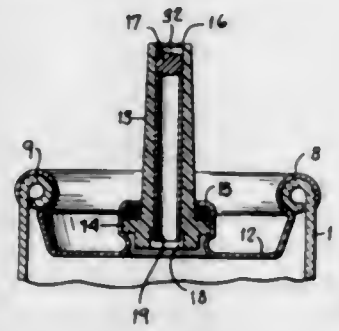
the sides of said peripheral wall being disposed in close relation to the inner sides of the legs of the handle to prevent accidental retraction and disconnection thereof.

3,224,626

CLOSURE CONSTRUCTION

Conrad Zellweger, Chene-Bougeries, Geneva, Switzerland, assignor to La Nationale S.A., a corporation of Switzerland

Filed Dec. 27, 1963, Ser. No. 333,877
Claims priority, application Switzerland, Jan. 4, 1963, 79/63
9 Claims. (Cl. 220—27)



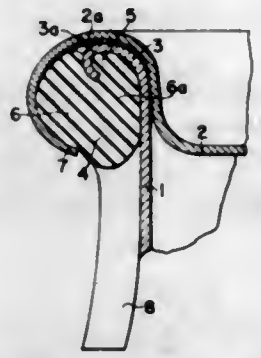
1. A receptacle comprising:

(a) a tubular part;

(b) a plug of flexible and resilient material closing one end of said tubular part, said plug being adapted for perforation by a perforation element and further adapted to seal the perforation by its resilience after withdrawal of such element, the outer tip of said tubular part having an integral shoulder serving as a stop for retention of said plug inside the tubular part, said tubular part further having an inner diameter such as to permit introduction of said plug through that end of the tubular part which is remote from the outer tip having the said shoulder; and

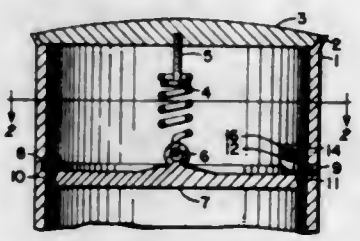
(c) an annular shaped member positioned within the tubular part for retaining said plug in place, said member being positioned behind said plug at a position providing clearance between itself and said plug.

3,224,627
CLOSURE FOR CANS AND JARS
August W. Dielmann, Lubeck, and Curt E. Henze, Pinneberg, Holstein, Germany, assignors to Lubecawerke G.m.b.H., Lubeck, Germany
Filed Mar. 16, 1962, Ser. No. 180,293
Claims priority, application Germany, Mar. 20, 1961, L 38,492
4 Claims. (Cl. 220—47)



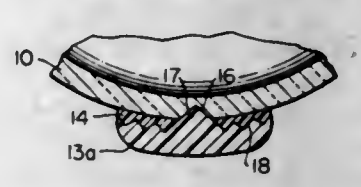
1. A closure arrangement for food preserving containers, especially cans and jars, which comprises: a first member forming a container open at one end thereof, a second member forming a closure member closing said open end, and an elastic sealing ring engaged by both said first member and said second member, said second member having its marginal portion extend over at least a section of the adjacent marginal portion of said first member and while being in tight sealing engagement with said sealing ring extending around the latter so as to leave an annular gap between the marginal portion of said second member and the adjacent portion of said first member, said sealing ring being provided with tongue means extending outwardly through said gap, the outer marginal portion of one of said members being folded inwardly so as to form an annular trough with one side wall thereof in engagement with the peripheral surface of said sealing ring and with the other side of said trough at least partially embedded in said elastic sealing ring so that opposite sides of said one side wall are firmly engaged by portions of said sealing ring thereby making it possible fixedly to connect said sealing ring to said one of said members prior to closing said open end.

3,224,628
PORT CLOSURE RELEASE ASSEMBLY
Willard F. Emigh, North Highland, Charles L. D'Ooge, Citrus Heights, and John Polackowyj, Sacramento, Calif., assignors to Aerojet-General Corporation, Azusa, Calif., a corporation of Ohio
Filed Mar. 12, 1962, Ser. No. 180,925
3 Claims. (Cl. 220—47)



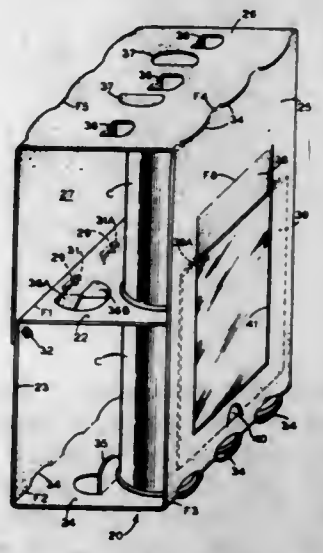
1. A port closure release assembly comprising a port, an annular groove in the inner periphery of said port, a closure plate in said port at one side of said annular groove, a snap ring lying in said annular groove and having overlapping portions near the ends of said ring, the ends being bent away from said ring to provide a pair of ears, and an explosive bolt threaded into said ears for drawing said ears together to expand the ring into a tight engagement relation with the annular groove; said bolt and ears being so mutually related that on detonation the explosive force urges the ears away from one another contracting the snap ring to release the engagement thereof within the groove.

3,224,629
HANDLED CUP
Howard B. Cummings, New Castle, Pa., assignor to Shenango Ceramics, Inc., a corporation of Delaware
Filed Mar. 4, 1958, Ser. No. 719,044
1 Claim. (Cl. 220—94)



A cup comprising a fired and glazed symmetrical curved ceramic body, a separately formed handle member comprising a bail portion and a base portion adjacent said cup body, the inner surface of said base portion being spaced from but substantially conforming to the adjacent outer curved surface of the cup body, and a pad of elastomeric material connecting and adhered to the adjacent portions of the inner surface of said handle base portion and the outer surface of said cup body, said adjacent cup body and handle base portions being provided with a mating recess and detent to index the position of said handle on said cup body and space said handle from pad is ascertained.

3,224,630
WRAPPER TYPE CAN CARRIER
Joseph C. Spery, Room 1002, 527 Madison Ave., New York, N.Y.
Continuation of abandoned application Ser. No. 71,769, Nov. 25, 1960. This application Apr. 22, 1963, Ser. No. 275,791
9 Claims. (Cl. 220—103)



1. A portable can carrier formed from a one piece blank of sheet material comprising a bottom panel defined by spaced transversely extending foldlines, a full side wall foldably hinged to said bottom panel about one fold line, a lower half sidewall foldably hinged to the bottom wall about said other fold line, a top panel foldably hinged about a foldline at the upper end of said full side wall, and an upper half side wall panel foldably hinged about

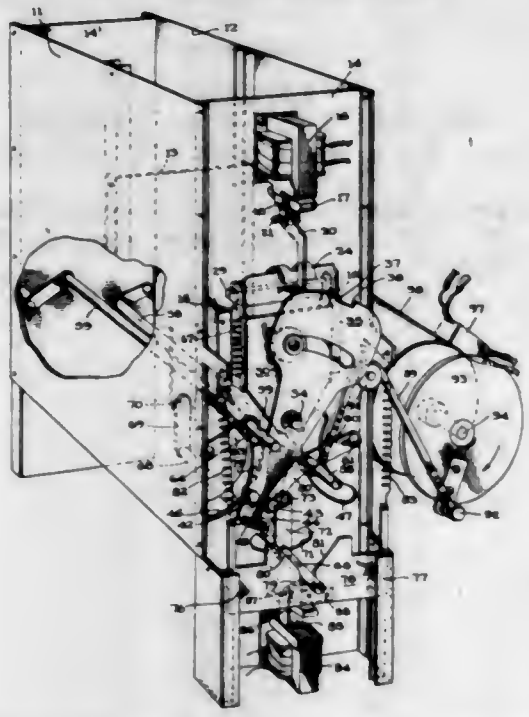
another foldline defining said top panel, said upper half side wall having a portion thereof overlapping the upper end of said lower half side wall, the overlaping portions of said half side walls having interlocking and retaining tabs cut therein for engagement with one another to firmly secure said panels in folded position, and an intermediate panel horizontally disposed between said top and bottom panels to provide for tier storage of cans within said carrier, said intermediate panel being hingedly foldable about a foldline extending along the upper edge of said lower half side wall, and said intermediate panel being adapted to rest in position on top of cans making up the lower tier, a plurality of semi-circular can retaining flaps disposed in said intermediate panel, said semi-circular flaps being split into quarter sections that are reversely bent so as to retain cans disposed above and below said intermediate panel, and said full side wall having a U-shape cut therein to define a flap hingedly connected at one end to said full side wall about a foldline disposed to to one side of said intermediate panel, an envelope for containing a premium, said envelope having an open end, said said side wall flap being foldable inwardly of said side wall and insertable into the open end of said envelope whereby said envelope is affixed within said carrier in abutting relationship against the inside surface of said full side wall so that said envelope straddles the intermediate panel.

3,224,631

DISPENSING MECHANISM FOR ARTICLES IN FRONT TO BACK STAGGERED STACKS

Harry R. Payne, Chattanooga, Tenn., assignor, by mesne assignments, to The Seeburg Corporation, Chicago, Ill., a corporation of Delaware

Filed June 6, 1963, Ser. No. 286,012
8 Claims. (Cl. 221—15)



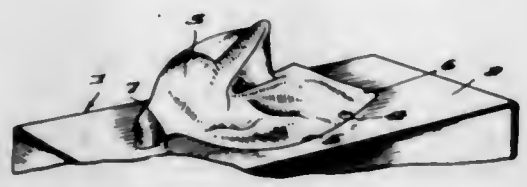
1. Mechanism for dispensing a single can at a time from two front to back staggered stacks of cans in a bin, comprising two opposed can supports adjacent the lower end of the bin for said stacks mounted for downward rotary movement from an upper normal position to can releasing position and supporting in turn the lowermost cans of the stacks of cans in the bin, latch means for the supports mounted for oscillatory movement and engaging and holding the support engaged by the lowermost cans in the stacks of cans against downward rotation when the mechanism is in stand-by condition, a notch in said latch means, a latch normally engaged in said notch locking the latch means against movement, first solenoid means for releasing the latch from said notch to thereby release the latch means whereby the weight of the cans rotates the can support beneath the two lowermost cans in the stacks downward toward can releasing position and moves the latch means beneath the other can support preventing downward rotation thereof, said latch then reentering said notch, a regulator for control of releasing said cans disposed beneath said supports in stand-by position for engagement by said supports, means actuated upon the release of said latch for controlled movement of said regulator in the paths of movement of said supports while maintaining engagement between the rotating support and said regulator, retaining means for one of said released cans in the mechanism, said other released can being dispensed, and second solenoid actuated means for releasing said retaining means for dispensing the retained one of said cans.

3,224,632

DISPENSING CARTON

Nicholas Marcalus, West Englewood, N.J.
(1 Market St., East Paterson, N.J.)

Filed Aug. 28, 1964, Ser. No. 392,818
3 Claims. (Cl. 221—48)



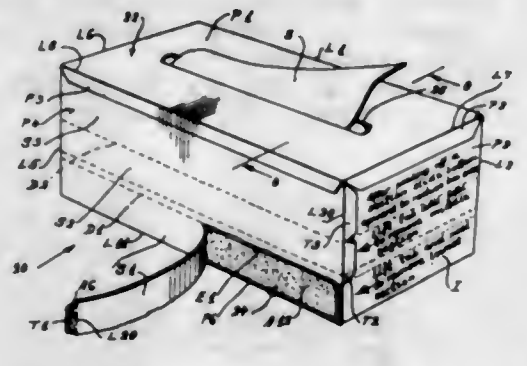
1. A dispensing carton for interleaved paper tissues, comprising a container for enclosing a stack of the interleaved tissues, said container having a face panel provided with an elongated dispensing opening arranged centrally over the stack of tissues, said opening having a generally elliptical configuration defined by major and minor axes, said face panel including curved reentrant portions extending into said opening adjacent but spaced from the longitudinal ends thereof, said reentrant portions extending from and in the same plane as the remainder of said face panel on opposite sides of said opening in opposite directions substantially parallel to said minor axis whereby tissues may be grasped at the minor axis of said opening and withdrawn therefrom, the next tissue thereby being elevated in a bellied condition with at least one of said reentrant portions serving to retard movement of an end portion of the next tissue.

3,224,633

COLLAPSIBLE BOX FOR FACIAL TISSUES

Dayton Allen, 956 Dobbs Ferry Road, White Plains, N.Y.

Filed Sept. 23, 1964, Ser. No. 398,662
12 Claims. (Cl. 221—48)



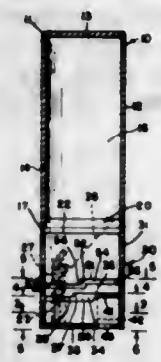
1. A collapsible box for containing and dispensing folded paper sheets, comprising a rectangular upper part having vertical opposing first side panels, vertical opposing first end panels and a horizontal top panel attached at its edges to the side and end panels, said upper part having an open bottom, said top panel having an opening for

removing the uppermost sheet from a pile thereof inside the box; a rectangular tray having a horizontal bottom panel, opposing narrow side panels and opposing narrow end panels, the narrow side and end panels being vertically disposed and extending upwardly from edges of the bottom panel; said first side and end panels having flaps folded under said bottom panel and secured thereto to hold the tray in the upper part of the box, said first side and end panels being horizontally scored by a line extending all around said upper part to define two contiguous strips, whereby the narrow side and end panels of the tray are exposed when the lowermost one of said strips is removed by tearing along the scored line, and whereby the tray is then released for insertion into the remaining portion of upper part of the box so that the box is then reduced in height to locate the top of said pile adjacent to the underside of the top panel.

ERRATUM

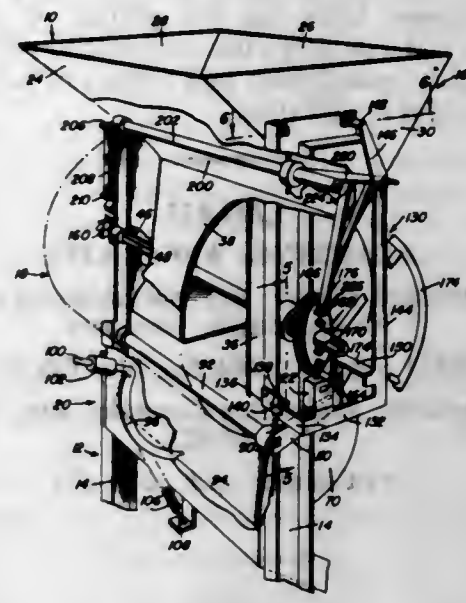
For Class 221—150 see:
Patent No. 3,224,643

3,224,634
PILL DISPENSER
Robert D. Semech, 13400 W. McGinty Road, Minneapolis 26, Minn.
Filed Mar. 22, 1963, Ser. No. 267,134
4 Claims. (Cl. 221—299)



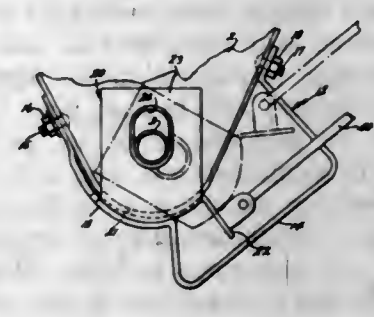
1. A pill dispenser comprising a case having a compartment for the reception of pills to be dispensed, a fixed cylindrical member carried by said case and having inner and outer ends, an eccentric longitudinal passageway in said cylindrical member and extending through said ends, the inner portion of said passageway being flared to form a funnel leading into the outer portion thereof, said fixed member having an annular circumferential groove extending through the cylindrical surface thereof, an offset in said groove forming an abutment extending in a longitudinal direction, a rotatable member mounted for rotation on said cylindrical member and having a sleeve encircling said fixed member and an end wall overlying the outer end of said fixed member, said end wall serving as a closure for the outer end of said passageway and having an opening therein adapted to register with the outer end of said passageway to open the same, a button on said sleeve adapted to enter said groove and engageable with said abutment, said fixed member having a second annular circumferential groove disposed outwardly of the throat of said funnel and of said first annular groove, said second groove intersecting said passageway, an inlet closure issuing inwardly from said sleeve and received in said second annular groove, said second annular groove having an offset therein dividing said second groove into two longitudinally spaced branches with a connecting portion therebetween, said second offset receiving said inlet closure when the first offset receives said button, the branches of both grooves being equally spaced longitudinally.

3,224,635
AUTOMATIC MEASURING AND DISPENSING DEVICE
Aureo Rivera, P.O. Box 608, Morovis, Puerto Rico
Filed Nov. 5, 1964, Ser. No. 410,349
13 Claims. (Cl. 222—36)



1. A device for measuring and dispensing flowable material comprising a support means, a reservoir for a quantity of the material on the support means, measuring means connected to the reservoir and adapted to automatically separate and measure the material into a plurality of units of a predetermined volume, said measuring means including other means adapted to automatically measure the fractional unit of material remaining in said reservoir after all the whole units of the material in said reservoir have been measured, an exhaust passage means connected to said measuring means and adapted to dispense each of said units and said fractional unit from said device after they have been measured by said measuring means.

3,224,636
LAWN SPREADER
Truman L. Atkinson, 609 Lake Shore Drive, Ludington, Mich.
Filed Dec. 14, 1964, Ser. No. 418,092
7 Claims. (Cl. 222—41)



1. A lawn spreader, comprising: a hopper adapted to receive material to be spread; an axle journaled adjacent the bottom of said hopper and having wheel means for transporting said hopper; handle means fixed to said hopper for moving said hopper; apertures formed in the bottom of said hopper for discharging material; a gate including a shutter plate conforming to the bottom of said hopper and covering said apertures; members affixed to the ends of said gate, said members each having a slot therein receiving said axle adjacent its ends; bracket means holding said gate against said bottom of said hopper; said bracket means including a first portion lying adjacent said bottom of said hopper, said shutter plate

slidable between said first portion and said bottom; said bracket means including a second portion spaced a greater distance from said bottom; control means associated with said gate for moving said gate and said shutter plate to progressively uncover said apertures and regulate discharge of material therefrom, said gate movable through said control means to a point where said shutter plate is released from said first portion of said bracket means and said gate drops into said second portion of said bracket means spaced from said bottom of said hopper as said axle moves in said slots.

3,224,637

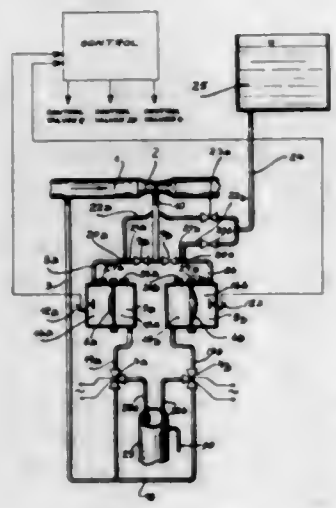
ADMIXING APPARATUS

Bernhard Müller, Am Neckardamm 4a, Neckarhausen, Germany

Filed Aug. 17, 1964, Ser. No. 390,106

Claims priority, application Germany, Aug. 17, 1963, T 24,523

12 Claims. (Cl. 222—57)



1. Apparatus for admixing a liquid additive to a principal liquid, said apparatus comprising a pipe for conveying said principal liquid under pressure, a source of said additive, first and second containers adapted to receive additive from said source, valve means for selectively and alternately coupling said containers to said pipe and to said source, pressure responsive means operatively coupled to said containers and to said pipe to respond to the pressure of the principal liquid in the pipe to urge additive from the containers via said valve means into said pipe, and sensing means to sense the exhausting of additive from said containers and to control said valve means so that one container is being filled from said source while additive is dispensed by the other container into said pipe.

3,224,638

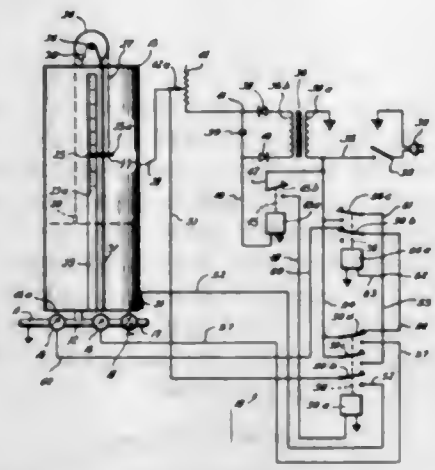
ADJUSTABLE LIQUID METERING DEVICE

David Harrell, Jr., Austin, Tex., assignor of one-half to Roy T. Walker, Austin, Tex.

Filed June 9, 1964, Ser. No. 373,808

5 Claims. (Cl. 222—64)

1. A liquid metering device, comprising:
(a) a liquid container,
(b) an upper electrical detector,
(c) an electrical conductor support connected to the upper detector,
(d) means for movably mounting the conductor support relative to the liquid container,
(e) a lower electrical detector, and



(f) electric circuit means connected to the upper and lower electric detectors for sensing the liquid level in the liquid container.

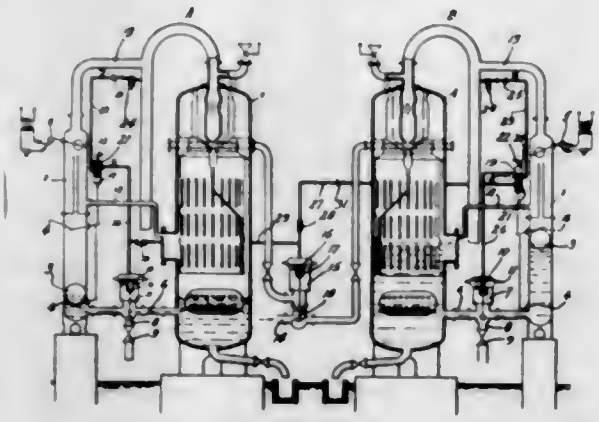
3,224,639

MEANS FOR AUTOMATICALLY CONTROLLED DISCHARGING AND METERING OF LIQUIDS FROM OIL AND GAS SEPARATORS

Socol Sebastian and Evghenide Constantin, Bucharest, and Iacob Ioan and Ionăscut Arion, Cimpina, Rumania, assignors to Ministerul Industriei Petrolului si Chimiei, Bucharest, Rumania, a firm of Rumania

Filed July 30, 1964, Ser. No. 386,357

7 Claims. (Cl. 222—68)



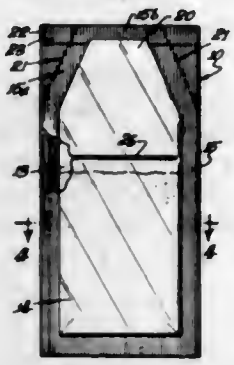
1. A device for controlling and automatically metering the flow of fluids, comprising in combination, two pairs of storage tanks, each pair of tanks including a first tank and a second tank, inlet pipe means connected to said first tank in each pair of tanks for conducting fluid thereto, first pneumatically operated check valve means operatively mounted in said inlet pipe means for selectively directing said fluid to one of said two pairs of tanks, outlet pipe means connecting each pair of tanks, second and third pneumatically operated check valve means respectively operatively mounted in said outlet pipe means for each of said two pairs of tanks for selectively alternately providing an outlet conduit for liquid respectively stored in one of said two pairs of tanks, float means operatively mounted in each metering tank of said two pairs of tanks, and pneumatic means operatively connected to said float means for operatively selectively actuating said first, second and third pneumatically operated check valves, whereby fluid is alternately selectively conducted to one of said two pairs of tanks by said first pneumatically operated check valve and is alternately selectively discharged via said outlet pipe means by the agency of said second and third pneumatically operated check valves.

3,224,640

RECLOSABLE PACKAGE

William S. Schneider, Glendale, and Arthur P. Corella, North Hollywood, Calif., assignors of ten percent to V. Wayne Rodgers, South Pasadena, Calif.

Filed June 21, 1962, Ser. No. 204,170
11 Claims. (Cl. 222—107)



1. A flexible reclosable package comprising:

two walls of similar size and shape joined together by means including heat sealed areas to define an interior product holding space,

the heat sealed areas being disposed to form adjoining one edge of the package a discharge channel, the package being of lesser width adjoining said one edge than across the adjoining product holding space;

a quantity of product in said space;

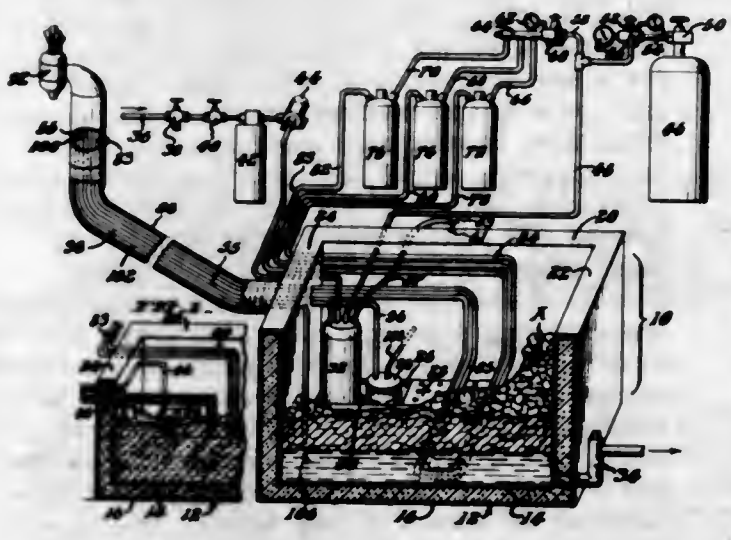
and pocket forming means externally of said two walls and attached to the package at two opposite margins thereof but free of the walls between said margins, said pocket means being open to receive and hold a portion of the package at the outer end of said channel when the package is folded over along a line extending transversely of the channel and said lesser width portion of the package including the end of the channel is inserted in said pocket forming means, said channel being closed when the package is folded along said line to inhibit the product from entering said channel.

3,224,641

COMBINATION ICE MACHINE AND REMOTE DRINK DISPENSER

Edward A. Morgan, 212 W. Franklin Ave., New Castle, Del.

Filed June 16, 1964, Ser. No. 375,438
4 Claims. (Cl. 222—129.1)



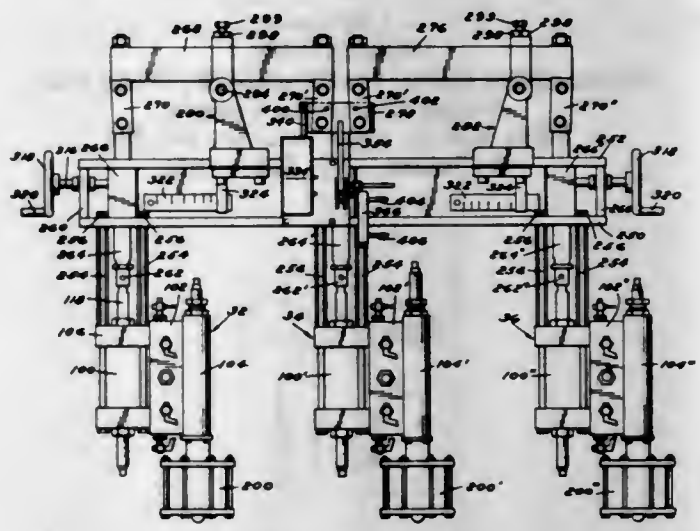
1. In apparatus for mixing, cooling and dispensing carbonated beverages, the combination comprising a machine including means providing a bin, means providing an auxiliary chamber within said bin, means for charging said chamber with water and carbon dioxide gas in controlled quantities for being mixed therein, said machine being operable for maintaining said bin charged with a bed of ice for cooling the mixed water and carbon dioxide gas within said chamber, a conduit for conducting the cooled carbonated water from said chamber to a dispensing station remote from said bin, at least one conduit for conducting flavoring syrup from a source thereof to said dispensing station, a section of said syrup conducting conduit substantial in length being arranged within said bin for exposure to said ice whereby the syrup therein is effectively cooled, a valve at said dispensing station operable for controlling discharge of carbonated water and syrup from said conduits, and auxiliary means for maintaining the contents of said conduits cool during passage thereof from said bin to said dispensing station including a cold water conduit having a section extending from the interior of said bin to said dispensing station and a section returning from said dispensing station to the interior of said bin, a pump connected in said cold water conduit and operable for circulating cold water, both of said sections of the cold water conduit being bunched with said carbonated water and syrup conducting conduits to facilitate heat transfer therebetween.

3,224,642

AUTOMATIC METERING SYSTEM FOR PLURAL COMPONENT MATERIALS

David L. De Martelaere, Southfield, and James Lenk, Roseville, Mich., assignors to Pyles Industries, Inc., Southfield, Mich., a corporation of Michigan

Filed Feb. 13, 1964, Ser. No. 344,682
10 Claims. (Cl. 222—134)



5. In a system for metering and mixing together a plurality of flowable materials having a source for each material under pressure, an independent metering means for each material coupled with a respective source, and mixing means including a mixing chamber with a rotor therein and a motor driving the rotor, control means for the system comprising actuating mechanism coupled to both said metering means and said mixing means to actuate the metering and mixing means, said mechanism including a timer operable to actuate said mixing means a predetermined time interval before the actuation of said metering means.

3,224,643

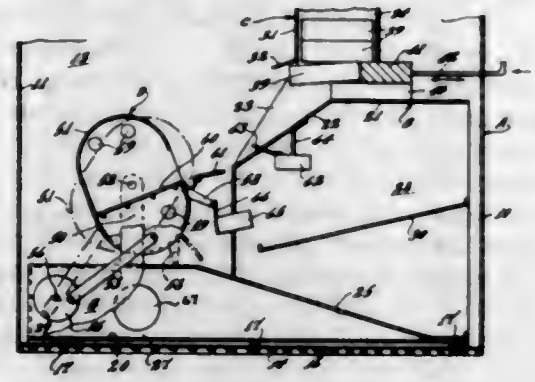
ARTICLE DISPENSER WITH NUTATING OVEN

Edward B. White, Philadelphia, Pa., assignor to Synergistic Associates, Philadelphia, Pa.

Filed Dec. 9, 1964, Ser. No. 416,990
2 Claims. (Cl. 221—150)

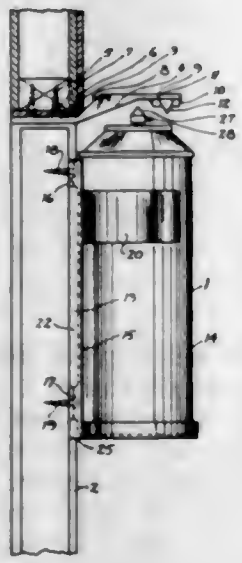
1. In a coin-operated dispenser for edible articles which benefit from heating immediately prior to their consumption; a nutating oven mounted for arcuate angular recipro-

cation of less than 180°, about an axis passing therethrough, between an upper article-receiving position and a lower article-dumping position, said oven including heaters; a magazine for storing edible articles; coin-operated means for discharging a single article at a time from said magazine; first chute means for slideably gravity delivering an article discharged from said magazine into the interior of said oven when said oven is in article-receiving position; switch means associated with said first chute



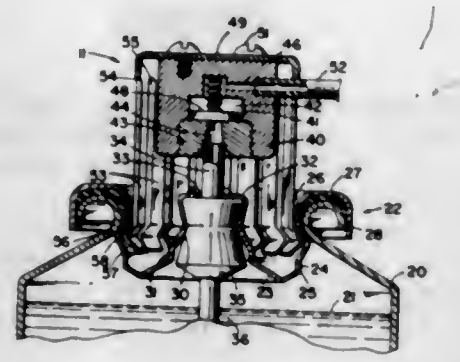
means and activated by passage of an article thereon for turning on said heaters and causing said oven, after an article has been delivered thereinto, to move from article-receiving position to article-dumping position; second chute means adapted to slideably receive the heated article dumped from said oven; means to shut off said heaters when said oven reaches dumping position and means for returning said oven to article-receiving position to await discharge of another article from said magazine.

3,224,644
DISPENSER
William John Davis, 1040 Parker St., White Rock, British Columbia, Canada
Filed Mar. 3, 1964, Ser. No. 349,036
3 Claims. (Cl. 222—162)



1. In combination with a hinged door and door jamb, an elongated plate mounted vertically on a face of the door adjacent its upper edge, a cup shaped member extending outwardly from the lower end of said plate, a deodorant dispenser supported by said cup shaped member in an upright position, said dispenser having a spring controlled cap for dispensing the deodorant when depressed, spring arms extending from opposite edges of said plate in parallel relation, said arms being curved to embrace and hold said dispenser, a tripper bracket attached to the door jamb above the upper edge of the door, said bracket extending horizontally above the cap of said dispenser and having a transverse dovetailed channel formed in its lower side adjacent its free end, a triangular block of flexible material secured in the channel of said bracket with one corner of the block depending from the channel into the path of movement of the cap of said dispenser when the door is swung on its hinges whereby the cap will be depressed by said block to dispense the deodorant.

3,224,645
PLUG-IN ATTACHED VALVED PRESSURIZED FLUID-DISPENSING RECEPTACLES
John W. Frost, 512 E. Parkway Blvd., Appleton, Wis.
Filed Nov. 29, 1963, Ser. No. 329,341
9 Claims. (Cl. 222—182)



1. In a device comprising a pressurized receptacle containing fluid under pressure and an appliance for dispensing said fluid and utilizing the potential energy stored in said fluid by reason of said pressurization,

wherein said receptacle comprises a dished metal closure member having a horizontally extending annular bottom, an outer circular portion extending upwardly from the outer edge of said annular bottom and extending inwardly at its upper portion to terminate at its upper peripheral portion with a crimped seal to the body of said receptacle, an inner portion extending upwardly from the inner edge of said annular bottom, a substantially annular top portion on said inner portion having a hole in the center thereof through which a tubular member extends, said fluid being dispensed through said tubular member;

apparatus to maintain said receptacle in engaged relation with said appliance;

said apparatus comprising as a part of said appliance a receiver having an outer wall and an inner wall defining a space therewithin, tube means extending from said appliance through said inner wall, an orifice in said receiver, said orifice communicating with said space in said receiver, means to provide communication between said space and the interior of said receptacle, so that said space is communicatingly engageable with the interior of said receptacle through said hole in said annular top portion;

a flange extending outwardly from said receiver;

a plurality of members attached in a circle to said flange and extending downward from said flange and free to move with respect to their points of attachment toward and away from said receiver in unhindered relation to said receiver, each of said members extending outwardly and thence inwardly at its lower end to define an outwardly extending protruding portion near the bottom of each member, the outer portions of said protruding portions defining substantially a circle around the axis of said orifice, said circle being greater in diameter than the interior diameter of said outer circular portion when said members are not engaged with a receptacle;

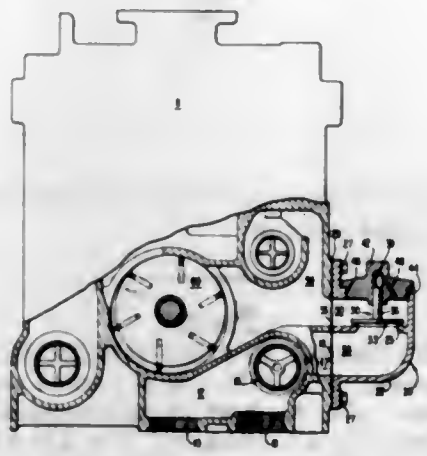
said members having said outwardly protruding portions engaged with the inwardly extending portion of said outer circular portion of said closure.

3,224,646

LIQUID DISPENSER WITH OUTER HOUSING

Frank J. Bruns, Homewood, Ill., assignor to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware

Filed July 29, 1963, Ser. No. 298,373
4 Claims. (Cl. 222—189)



1. A liquid dispenser having a first housing including a pump having an inlet means opening exteriorly of said housing chamber and a suction chamber adapted to be interconnected with a source of liquid outside of said housing and having an outlet means opening exteriorly of said housing, a pump in said pump chamber, a strainer in said suction chamber adapted to strain liquid passing therethrough, and a valve assembly comprising a valve housing detachably secured to said first housing on the outside thereof and having a passage therein the ends of which are in alignment with said inlet means and said outlet means for interconnecting said suction chamber and said pump chamber and a valve in said passage between said suction chamber and said pump chamber, said valve comprising an essentially horizontally disposed disc at the lower portion of an essentially vertical stem, means for seating the face of said valve opposite said stem to prevent flow through said passage from said pump chamber to said suction chamber, and passageway means in said valve housing and adapted to receive said vertical stem for keeping said valve vertically aligned with said valve seat while allowing upward and downward movement of said valve.

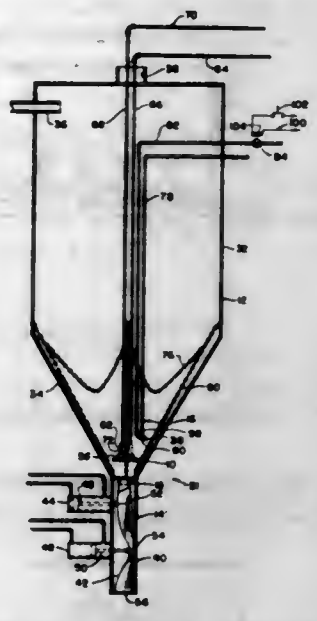
3,224,647

MATERIAL FLOW CONTROL APPARATUS

Harry W. Dietert, Kerrville, Tex., and Ralph E. Steinmueller and Randolph L. Dietert, Detroit, Mich., assignors to Harry W. Dietert Co., Detroit, Mich., a corporation of Michigan

Filed July 23, 1964, Ser. No. 384,687
8 Claims. (Cl. 222—190)

1. In storage and distribution apparatus for a bonding agent for foundry sand or the like, measuring and dispensing apparatus connected over an opening in a storage bin for the bonding agent which measuring and dispensing apparatus on operation traps air in a portion thereof into which it is desired to feed bonding agent by gravity, means positioned adjacent the opening in the storage bin for exhausting the air from the measuring and dispensing apparatus to prevent the air trapped in the measuring and dispensing apparatus from preventing flow of bonding agent thereinto including an exhaust pipe extending through the storage bin and terminating adjacent the opening therein and a check valve on the end of the exhaust pipe.

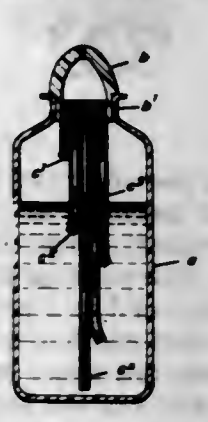


3,224,648

ATOMIZERS MOUNTABLE ON FLASKLIKE CONTAINERS

Kurt Zimmermann, Basel, Switzerland, assignor of one-third to Rudolf Gfeller and one-third to Herbert Warren Gloor, both of Basel, Switzerland

Filed Apr. 12, 1963, Ser. No. 272,744
Claims priority, application Switzerland, Apr. 24, 1962, 4,899/62
3 Claims. (Cl. 222—193)



1. An atomizer for dispensing a powder or liquid mountable on a flasklike container comprising a hollow head member forming an atomizing nozzle, said head member having a mounting part cooperating with the container neck portion, and a multiple riser tube connected at its upper end to said head member comprising a plurality of tubular elements of different lengths, one of said tubes being relatively short so that its lower end is above the normal level of the powder or liquid in the container, the remaining tubes having different lengths and being staggered in stepwise formation with the longest extending into the vicinity of the container bottom.

3,224,649

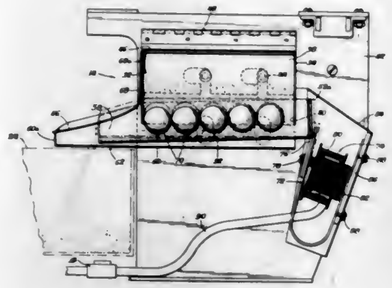
MATERIAL DISPENSING APPARATUS

Robert L. Gunto, Palatine, Ill., assignor to Addressograph-Multigraph Corporation, Charles Bruning Division, Mount Prospect, Ill., a corporation of Delaware

Filed Mar. 20, 1964, Ser. No. 353,498
10 Claims. (Cl. 222—199)

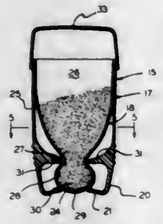
1. A pulverulent material dispenser comprising a receptacle for receiving the material and having a bottom

opening, a generally V-shaped trough disposed below the bottom opening, a plurality of spheres loosely resting



on the trough and extending upwardly into the opening, and means for vibrating the trough and the spheres.

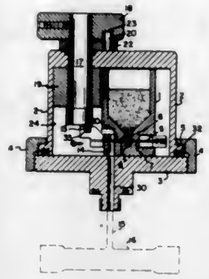
3,224,650
METERING VALVE STRUCTURE
George W. Willits, Jr., 1S 537 Kenilworth, Glen Ellyn, Ill.
Filed Oct. 14, 1964, Ser. No. 403,871
5 Claims. (Cl. 222—207)



1. A combination container and dispensing device for dispensing measured quantities of dry granular or powdered material comprising, an upstanding body of resilient material having first wall portions at the upper end defining a storage chamber, said wall portions being arranged to define an upper open end and a lower open end substantially smaller than said upper open end, second wall portions at the lower end of the body defining a measuring pocket, said second wall portions having an upper normally open end connected to the lower end of the storage chamber and a normally closed lower end having a slit therein, and means for first closing the upper open end of said pocket and then opening the lower closed end thereof to dispense the contents of the pocket, said means including bar means engageable with the second wall portions at the upper end of the pocket and connected to the second wall portions at the lower end of the pocket.

3,224,651
MERCURY DISPENSING STATION
David R. Dayton, Beverly, and David N. Brooks, West Peabody, Mass., assignors to Sylvania Electric Products Inc., a corporation of Delaware
Filed Dec. 24, 1963, Ser. No. 333,118
12 Claims. (Cl. 222—361)

3. A mercury dispenser comprising: a housing formed by a cover cap mounted upon a base plate; a mercury reservoir disposed within said housing; a transfer conduit disposed alongside of said reservoir and through said base plate; a bore extending through said reservoir and into said transfer conduit; a pair of opposed rods having their inner ends spaced from each other slidably disposed within said bore; means to move the spaced ends of said rods

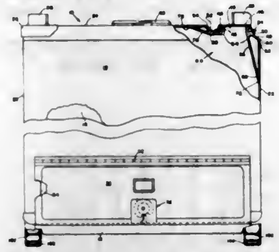


from a position within said reservoir to a new position over said transfer conduit.

3,224,652
METERING LIQUID DISPENSER
Arthur J. Ladwig, 1125 NE. 4th St., and Carl J. Ludwig, 4730 Yates Ave. N., both of Minneapolis, Minn.
Filed May 27, 1964, Ser. No. 370,632
6 Claims. (Cl. 222—442)

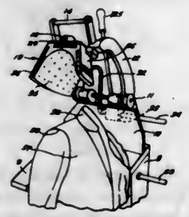
1. A fluid dispenser comprising in combination:
(a) a container;
(b) a chamber of predetermined size disposed adjacent the bottom of said container, said chamber including an opening at its top and an access opening disposed adjacent the bottom of said container;
(c) a first tube extending upwardly from the opening through the top of said container, said first tube having a vent opening in proximity to the top end thereof and adapted to lie inside of said container;
(d) a second tube extending upwardly from the top of said chamber;
(e) a third tube slidably disposed in the top end of said first tube and operable to open the vent opening in said first tube upon upward extension thereof; and
(f) means providing fluid communication intermediate the lower end of said second tube and the top of said chamber whereby fluid in said container will enter said chamber through the access opening in the bottom thereof and will rise to a level determined by the means providing fluid communication intermediate the lower end of said second tube and the top of said chamber.

3,224,653
BIN FOR BULK MATERIALS AND APPARATUS FOR MANIPULATING BINS
Arthur H. Cooke, Leamington Spa, England, assignor to Hoover Ball and Bearing Company, Saline, Mich., a corporation of Michigan
Filed June 26, 1963, Ser. No. 290,760
4 Claims. (Cl. 222—462)



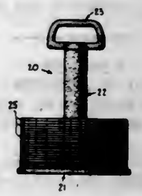
1. In a shipping container for granular materials, a rectangular bottom wall provided adjacent its corners with depending legs, substantially rectangular side walls extending upwardly from said bottom wall, a rectangular top wall secured to the upper ends of said side walls and having corner leg supporting portions at three of the corners thereof positioned in substantial vertical alignment with three of said legs, means providing a filling and discharge opening in the fourth corner of said top wall, said means comprising a unitary transition member formed of a rigid material for directing bulk material into or out of said container, said member having an upwardly directed tubular portion, an irregularly shaped flange integral with said tubular portion and extending transversely thereof, said flange being secured to the upper ends of a pair of said side walls which intersect adjacent said fourth corner and to said top wall so that said tubular portion is in a substantially fluid tight relation with said top and side walls, flow directing means formed integral with said tubular portion and secured to said pair of side walls below said flange for directing material in said container to said tubular portion on tipping of said container, a cover for the upper end of said tubular portion, and coacting means on said cover and transition member releasably maintaining said cover in a mounted position on said tubular portion.

3,224,654
COAT SHOULDER PRESSING DEVICE
Jerome Giuseffi, Cincinnati, Ohio, assignor to The Palm Beach Company, Cincinnati, Ohio, a corporation of Ohio
Filed Feb. 18, 1965, Ser. No. 433,645
1 Claim. (Cl. 223—57)



A machine for pressing a finished coat comprising a perforate buck plate having a uniform, ovoidoconical configuration in lateral section throughout its longitudinal extent, upstanding end walls connected to the end edges of the buck plate, a bottom wall connected to the lower edge of the buck plate and end walls forming with them a steam exhaust chamber, means exhausting steam from said chamber, the forward end edge of the buck plate adapted to engage the inside upper coat shoulder portion and inside upper coat portions around the armhole therein, a pressing head plate cooperative with the buck plate and having a uniform and inverted ovoidoconical shape in lateral section throughout its longitudinal extent, a casing comprising a top wall, side walls connected to the side edges of the top wall, end walls connected to the top wall and having aligned ovoidoconical openings therein connected to the end edges of the head plate, and means joining the bottom edges of the side walls to the lower side edges of the pressing head plate, said casing and the pressing head plate forming a steam chamber for the head, one opening in the head plate being aligned when in pressing condition with the forward end edge of the buck plate, said pressing head plate being somewhat larger in dimensions than the buck plate to permit movement of the pressing head plate into full cooperative pressing condition with the buck plate without stretching the coat material, the buck plate being longer than the pressing head plate to permit pressing the coat shoulder material close to the collar line thereof.

3,224,655
PHONOGRAPH-RECORD CARRIER
William V. Buchanan and Richard D. Muir, both of New York, N.Y., assignors to Command Mfg. Co., Inc., New York, N.Y., a corporation of New York
Filed Jan. 22, 1964, Ser. No. 339,404
4 Claims. (Cl. 224—48)



1. A phonograph-record carrier comprising a support for supporting a stack of records, a post upstanding from said support for engagement through said records, a handle on an upper region of said post and projecting laterally therebeyond for retaining said records on said post, and holding means removably holding said handle in position on said post, said holding means comprising a detachable connection means between said handle and post, said detachable connection means comprising a plug projecting from one of said handle and post, the other of said handle and post being provided with a socket rotatably receiving said plug, internal lateral projections in said socket extending toward an intermediate region of said plug, external lateral projections on the distal region of said plug, said projections being configured for relative rotation into and out of overlying relation for detachably connecting said handle to said post.

3,224,656
KINETOGRAPH MOVEMENT DRIVING MECHANISM
George A. Mitchell, 687 Prospect Crescent, Pasadena, Calif.
Filed Aug. 5, 1963, Ser. No. 299,796
17 Claims. (Cl. 226—57)

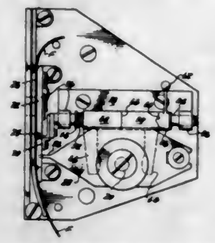
1. In a kinetograph movement the combination of
a cam driven element guided for back and forth movement along a predetermined path,
a rotative cam means mounted for rotation about a fixed axis and having two diametrically opposed peripheral circular arc portions of different radii centered on said axis and diametrically opposed substantially straight peripheral shift runs leading tan-

gentially from the ends of the arc portion of smaller radius to the ends of the arc portion of larger radius,

a pair of cam followers mounted in normally fixed spaced relation on the cam driven element,

said followers having opposing substantially circular cam engaging faces convexly curved toward the cam axis,

the centers of said convex follower curvatures lying in substantial diametric opposition about the cam axis



and their radii of curvatures being substantially that of the radius of the circular arc portion of larger radius of the cam means,

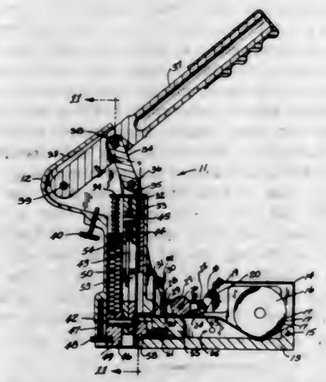
the relation between the smaller and larger cam radii and the curvature radius of the convex follower faces being such as to closely oppositely engage the cam means throughout its periphery and to give the cam driven element a shift movement of slowly increasing and decreasing acceleration and deceleration.

3,224,657

BLIND ANVIL FASTENING DEVICE

Vincent A. Zike, Elmhurst, N.Y., assignor to Speedfast Corporation, Long Island City, N.Y., a corporation of New York

Filed May 31, 1962, Ser. No. 198,998
8 Claims. (Cl. 227—88)



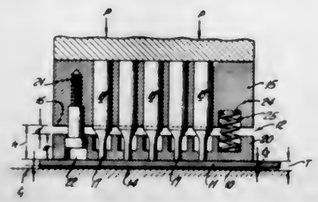
1. Feed mechanism for a fastening device utilizing a plurality of interconnected fastener blanks and having forming and driving means thereupon, comprising a former block having front and rear portions and provided with an opening therewithin, a cam retractably movable by the action of said driving means, said cam having lateral portions thereupon normally straddling and laterally aligned with the front portion of said former block but disposed rearwardly thereof when said cam is moved retractably, said cam also having a portion within said opening, spring means normally urging said cam extendably, said forming means forming leg portions upon a fastener blank while said blank is connected to the remaining blanks, said formed legs being interposed in advance of said lateral portions of said cam when said cam is in a rearward position, said cam being thence released so that said formed staple pulls the remainder of fastener blanks forwardly.

3,224,658

COLD PRESSURE WELDING APPARATUS

Verne Clair, Jr., New Hartford, N.Y., assignor to Kelsey-Hayes Company, Romulus, Mich., a corporation of Delaware

Filed Aug. 12, 1963, Ser. No. 301,472
9 Claims. (Cl. 228—1)



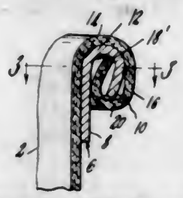
1. The combination with an indentation pressure welding tool of the type comprising a flat anvil, a cooperating tool member having a flat surface, at least one welding indenter projecting from said surface and having a cross-section conforming to the indentation weld spot to be produced, and means to move said member towards and away from said anvil with said surface remaining parallel to the anvil, for applying welding pressure to a pair of superposed cold pressure weldable members supported by said anvil; of a spring-loaded pressure plate of predetermined thickness being parallel to and spaced by a predetermined normal distance from said surface, means mounting said plate upon said member for movement towards and away from said surface, said member having a recess and said indenter mounted for relative movement within said member at right angle to said surface, and exchangeable abutment means within said recess to limit the inward movement of said indenter from said surface, said plate having a guide hole conforming to and passed by said indenter, and said indenter having a minimum projecting height from said surface in excess of the thickness of said plate.

3,224,659

ROVING CAN RIM

Elmer C. Goodwin, Jr., Greenville, S.C., assignor to Spaulding Fibre Company, Inc., North Rochester, N.H., a corporation of New Hampshire

Filed Mar. 13, 1964, Ser. No. 351,703
3 Claims. (Cl. 229—4.5)



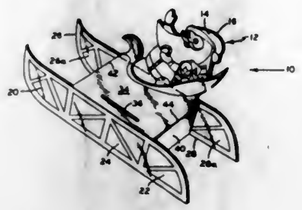
1. A container comprising a tubular non-metallic body open at its upper end and a reinforcing member for the open end of the body, said reinforcing member lying entirely on the outside of the container and comprising a metal band of inverted U shape in cross section and thus having two portions spaced from each other, said band being disposed against the outer surface of said body adjacent its open end, the open end portion of said body being curled outwardly above and outside said band and beneath one of said portions, the free end of said body portion lying outside the other of said portions.

3,224,660

STABILIZED CARTONS

John D. Willis, Manhasset, N.Y., and Christopher S. Crowell, % Chris Crowell & Co., 537 Post Road, Darien, Conn.; said Willis assignor to said Crowell

Filed Apr. 10, 1964, Ser. No. 358,724
2 Claims. (Cl. 229—8)



1. An erectable carton formed from a single foldable carton blank comprising, in combination,

(A) a front side panel and a bottom panel integrally joined together along a central scored fold line,

(B) a top panel similar in shape to the bottom panel and joined to the front side panel by connecting means including a second scored fold line,

(C) a front face panel joined to the top panel along a third scored fold line and extending upwardly therefrom,

(D) a rear side panel joined to the bottom panel along a fourth scored fold line,

(E) all of said fold lines being substantially parallel,

(F) a rear face panel forming an integral and non-folded coplanar extension of the rear side panel extending upward therefrom and positioned for juxtaposition with the front face panel when the blank is folded along the central scored fold line,

(G) cooperating locking end panel tab and slot means connected to the top panel and the bottom panel to retain the erectable carton in an erected condition,

(H) with said rear face panel being substantially similar in size and shape to the front face panel, with the front and rear face panels being bonded together in their juxtaposed position to form an upwardly protruding two-ply projection capable of carrying on substantially the entire areas of both exposed faces thereof indicia and decorative matter imprinted on only one side of the blank,

(I) and with integral, endwise-extending stabilizing members protruding from each end of each of the side panels, with the stabilizing members and rear face panel extending from the rear side panel providing therewith a continuous indicia-bearing rear surface for the carton.

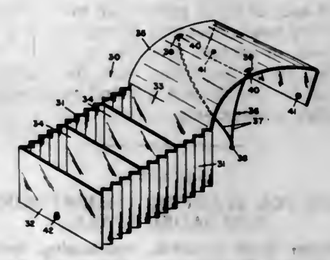
3,224,661

EXPANSIBLE STATIONERY CONTAINER

Webster Tilton, Jr., 2720 Wisconsin Ave. NW., Washington, D.C.

Filed June 6, 1963, Ser. No. 285,949
1 Claim. (Cl. 229—72)

An expansible stationery container formed from flexible cardboard-like material and having a panel-like front and rear walls, an open top, pleated side and bottom walls extending between said front and rear walls whereby the distance between the front and rear walls may be increased and decreased and the resultant capacity of the container varied by respectively expanding and contracting the pleated side and bottom walls, a flexible cover for the open top of the container connected at its rear edge to the upper edge of the rear wall and extending forwardly therefrom over the open top, the front end portion of said cover constituting a flap superposed exteriorly on said front wall when the cover is closed, and adjustable means for releasably retaining said cover in its closed position and simultaneously biasing said front and rear walls toward each other, said means comprising an elongated fastener member consisting of a pair of mutually divergent elastic elements, a pair of anchors secured to the respective divergent ends of said elements, and a connector secured to the convergent ends of said elements of said fastener member, a first pair of transversely spaced eyelets provided in said flap, a second pair of transversely



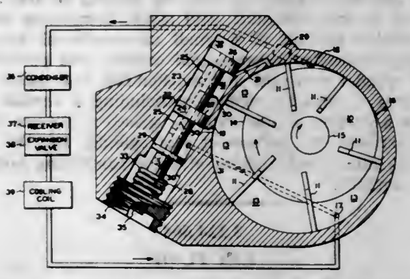
spaced eyelets provided in an intermediate portion of said cover overlying the container top, said pair of anchors being selectively engageable with said first and second pairs of eyelets whereby to vary the location at which said fastener member is anchored to said cover and flap, and front and rear connecting means provided on said front and rear walls respectively, said connector being selectively engageable with said front connecting means when said fastener member extends over said flap to said front wall and with said rear connecting means when the fastener member is extended under the container bottom to said rear wall.

3,224,662

COMPRESSOR MODULATING SYSTEM

Oscar Oldberg, 7525 Inzer St., Springfield, Va.

Filed Feb. 16, 1965, Ser. No. 433,235
5 Claims. (Cl. 230—22)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. In combination:

a refrigerant compressor unit having a wall defining a compression chamber with a low pressure side and a high pressure side,

an inlet opening at the low pressure side,

an outlet opening at the high pressure side and

a plurality of venting means located at spaced intervals in said wall intermediate said inlet and outlet openings to progressively bypass a preselected quantity of said refrigerant; and

control means for controlling progressive compression relief during the compression stroke of said compressor unit,

said control means having a suction pressure responsive means, valving means, and mechanical connecting means connected to said suction pressure responsive means and said valving means;

fluid transmitting means connected between said low pressure side and said suction pressure responsive means, and

a plurality of fluid transmitting means connected one between each of said plurality of venting means and one of each of a like plurality of said valving means;

said valving means operating in response to progressive increases in suction pressure to relieve successive venting means beginning with the venting means nearest the low pressure side and progressing toward the high pressure side.

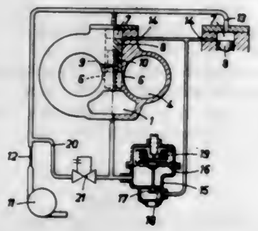
3,224,663

MEANS FOR STARTING COMPRESSORS IN UNLOADED STATE

Karl Wilhelm Bertil Lundvik, Norrkoping, Sweden, assignor to Stal Refrigeration Aktiebolag, Norrkoping, Sweden, a corporation of Sweden

Filed May 13, 1963, Ser. No. 279,775

2 Claims. (Cl. 230—29)



1. In combination in a compressor, means forming a suction chamber, means forming at least one cylinder having an extreme end portion, a reciprocable piston in said cylinder, means for allowing starting of the compressor in unloaded state, said means comprising an interruptable conduit of a small cross-sectional area of passage connected between said extreme end portion of said cylinder and said suction chamber; and means for effecting a capacity regulation including a conduit between a portion of said cylinder spaced a distance from said extreme end portion of said cylinder and the suction chamber, and a slide valve for controlling both of said conduits.

3,224,664

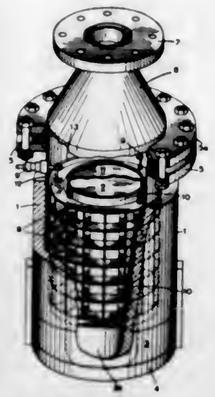
ION PUMP

Norman Wright Robinson, Reigate, England, assignor to North American Philips Company, Inc., New York, N.Y.

Filed Sept. 13, 1963, Ser. No. 308,855

7 Claims. (Cl. 230—69)

1. A vacuum ion pump comprising inner and outer reactive cylindrical cathodes, a cylindrical anode structure having a plurality of open sectors of a right annular cylinder arranged radially between the inner and outer cylin-



drical cathodes, and means to produce a radial magnetic field substantially axial to said anode sectors.

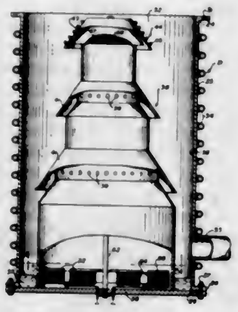
3,224,665

DIFFUSION PUMP

Norman Milleron, Berkeley, and Leonard L. Levenson, Livermore, Calif., assignors to the United States of America as represented by the United States Atomic Energy Commission

Filed Jan. 12, 1962, Ser. No. 165,971

17 Claims. (Cl. 230—101)



12. A diffusion pump comprising a substantially vertical open-ended cylindrical casing having a gas outlet transversely communicating with the lower portion thereof, means for cooling the interior surface of said casing, a base plate hermetically sealing the lower end of said casing, a liquid pool to be vaporized contained within the lower portion of said cylinder, a standpipe extending coaxially upward through said casing from within said liquid pool, said standpipe having a plurality of serially operating vapor jets, the uppermost of said jets having a first set of alternate contiguous layers of thin corugated metallic tape and flat insulating tape disposed in the path of the vapor and having the corrugations of said metallic tape oriented substantially parallel to the desired direction of flow of said vapor, a second set of alternate contiguous layers of thin corrugated metallic tape and insulated tape forming a multiplicity of small compartments which are emersed substantially normal to and extending above the surface of said liquid pool, and means for coupling electrical power to said metallic tape in both said vajor jet and said liquid pool.

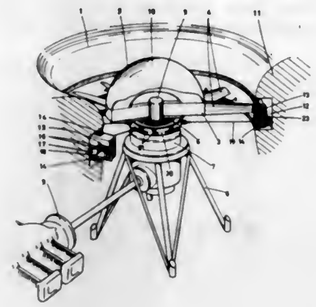
3,224,666

ROTARY FAN ARRANGEMENT

Olle Ljungström, Brevik, Lidingo, Ebbe Karl Johan Gunnarsson, Akersberga, and Per Olof Eriksson, Stockholm, Sweden, assignors to Svenska Aeroplan Aktiebolaget, Linkoping, Sweden, a corporation of Sweden

Filed Apr. 15, 1964, Ser. No. 360,034

4 Claims. (Cl. 230—120)



1. In apparatus comprising wall means defining a duct-like channel, a bearing housing coaxially fixed in said channel, a shaft coaxially rotatable in the bearing housing, and a fan in the channel having a hub fixed to said shaft and a plurality of blades projecting substantially radially from the hub with their tips equidistant from the axis of the shaft:

(A) a stiff but slightly resilient ring encircling the fan blades with a small clearance between the tips of the blades and the ring;

(B) means supporting the ring on said wall means, at the radially inner surface thereof, said means providing for radial motion of the ring relative to the wall means and providing a seal between the ring and the wall means;

(C) a plurality of substantially radially extending spokes, each having its opposite ends connected respectively to the bearing housing and to the ring, said spokes being disposed close to the plane of the blades; and

(D) means at one end of each spoke for tightening the same so that the ring can be accurately centered in relation to the axis of the shaft and so that the spokes cooperate in constraining the ring to move radially with the bearing housing relative to the channel, thus permitting a minimum of clearance to be maintained between the ring and the tips of the blades without danger that the blades will strike the ring.

3,224,667

MULTI-STAGE AIR BLOWER

John L. Strike and George N. Floor, Salt Lake City, Utah, assignors to McGraw-Edison Company, Elgin, Ill., a corporation of Delaware

Filed Jan. 29, 1965, Ser. No. 428,952

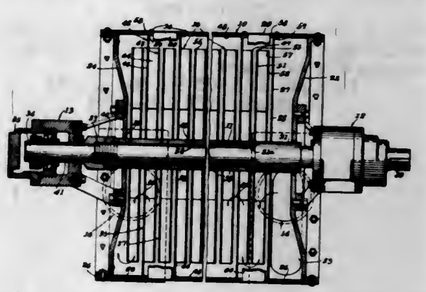
1 Claim. (Cl. 230—130)

A multi-stage air blower comprising:

(a) a cylindrical casing of uniform diameter throughout its length with a rotor shaft on the axis of said casing, an inlet and outlet being provided at the opposite ends of the casing,

(b) a plurality of stators arranged in stacked interfitted relation,

(c) each stator comprising a cup member having a flange secured to the casing and a transverse wall having an air-passing axial opening, and a disc parallel to said wall and spaced longitudinally therefrom, the disc having an outer peripheral edge smaller than the diametral size of the flange, said flange having its free annular marginal edge portion laterally offset to increase the diameter of the flange at its marginal edge portion by the thickness of said flange to provide an enlargement fitting over the annular corner of an adjacent cup thereby defining the adjacent cup flanges and the casing, filler bands occupying at least some of the annular areas of the spaces so defined,



(d) a complement of stator blades between and connecting said wall and disc, the same having a radial extent between the edge of said air-passaging opening of the wall and said outer peripheral edge of the disc,

(e) a plurality of rotors carried by the shaft and alternating with the stators, each of said rotors being provided with complements of impeller blades of the same radial extent as the stator blades,

(f) an end bell fixed to and closing one end of the casing and said rotary shaft extending through an axial opening in said bell, and

(g) a pillow block positioned adjacent said end bell to journal the rotary shaft end, said pillow block being fixed to said end bell and non-rotatably carrying said casing.

3,224,668

BLOWER WHEEL WEDGED END BLADE MOUNTING

Allan M. Olmsted and Vernon H. Williams, Columbus, Ind., assignors to Vernco Corporation, Columbus, Ind., a corporation of Indiana

Filed Jan. 22, 1965, Ser. No. 427,381

8 Claims. (Cl. 230—134)



1. In a blower wheel, an interconnection of a blade end with a blade carrying member, comprising

a blade;

a finger extending integrally from an end of the blade;

a blade carrying member having a hole therethrough;

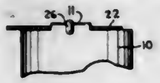
said hole being defined by a straight side wall and a wall receding from each end of the straight wall forming corners therewith;

said finger having been deformed longitudinally;

said finger extending by a length adjacent said blade

through said hole to extend beyond by a portion, said length having side edges extending into said corners;
said finger portion extending at approximately a right angle to its said hole length through a bend over said straight wall into contact with said member to one side of said hole; and
said bend maintaining said finger hole length under tension tending to flatten out its deformation and retain said finger edges in compressive lateral engagement with said walls in said corners.

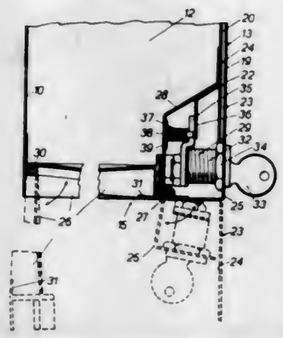
3,224,669
BLOWER WHEEL BLADE FINGER EXPANSION MOUNTING
Verner E. Sprouse and Vernon H. Williams, Columbus, Ind., assignors to Vernco Corporation, Columbus, Ind., a corporation of Indiana
Filed Jan. 22, 1965, Ser. No. 427,382
4 Claims. (Cl. 230—134)



1. In a blower wheel, the combination with a plurality of blades;
a back plate;
a ring; and
a plurality of blades between the plate and ring; of
a finger extending from each end of each blade;
said plate and said ring each having finger receiving, circular holes therethrough;
each of said fingers having the thickness of one of said blades and a normal width exceeding the diameter of said holes;
said fingers having initially a V-shape with a central zone extending longitudinally of the fingers providing a projected finger width less than the diameter of said holes;
said fingers extending through and beyond said holes;
an approximately flat finger end portion extending from each hole into intimate contact with adjacent areas of the plate and ring;
a bead extending along said zone through said hole in each instance;
the flat end finger portions inducing a lateral extension of the fingers in the holes; and
there being bead maintaining stress on the finger portions to each side of the bead, continuously holding the longitudinal edges of the fingers in firm contact with diametrically opposite sides of the holes.

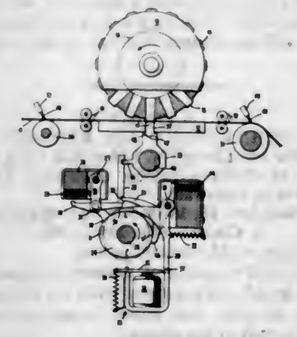
3,224,670
LITTER BASKETS
Robert B. Wetlesen, Starefossvingen 19, Bergen, Norway
Filed Dec. 19, 1962, Ser. No. 245,770
Claims priority, application Norway, Jan. 4, 1962, 142,749
3 Claims. (Cl. 232—43.1)

3. A litter basket comprising a container, a poster-bearing plate, supporting means for removably and replaceably mounting said poster-bearing plate on an outer face of the container thereby enabling the poster to be exhibited, an emptying arrangement for the container and locking means which locks said emptying arrangement and the supporting means for the poster-bearing plate to the container, said emptying arrangement comprising a closure door which provides access to the interior of the container and is pivotally disposed at the lower end of the container, so that on opening the closure door the contents of the container slide out by virtue of their own weight for collection at the under side of the container, the locking means including a lock, a removable key for said lock, a spring-loaded lock catch member for the closure door, a lock catch for the poster-bearing plate and a locking member engageable with said poster-bearing plate lock catch, the lock catch member for the closure door being urged by virtue of its spring loading to a locking position for said closure door, said key on being turned resulting in the direct turning of the lock catch of the poster-bearing plate, said plate lock catch on being turned in one direction actuating the lock catch member for the



closure door while remaining in engagement with said lock catch member so as to release said closure door, and on being turned in the other direction being released from engagement with said locking member whereby the supporting means for the plate member is released to enable removal and replacement of said poster plate, and locking means on the closure door for cooperating with the lock catch member for the releasable engagement of the closure door, said locking means and lock catch member being respectively shaped such that the said locking means can be brought into engagement with said lock catch member from the open position of the closure door to its closed and locked position.

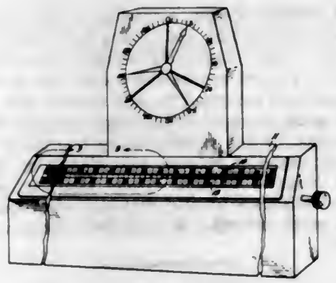
3,224,671
ROTARY PUNCHING DEVICE
Oliver D. Johnson, Vestal, and Kenneth B. Maynard, Apalachin, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Oct. 30, 1963, Ser. No. 320,177
12 Claims. (Cl. 234—50)



1. A high speed rotary punching device for punching record material and the like comprising in combination:
a rotatable punching cylinder;

a plurality of punch elements carried by said cylinder;
a support member for supporting the material to be punched out of the path of said punch elements;
a plurality of reciprocable backup members positioned in said support member; and
means selectively operable to actuate selected backup members to move said material into the path of certain of said punch elements to carry out a selective punching operation.

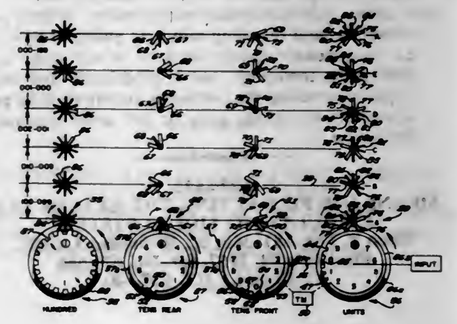
3,224,672
TIME-MONEY COMPUTER
Donald D. Johnson, Malecon de Reserva 355, Lima, Peru
Filed July 25, 1963, Ser. No. 297,529
3 Claims. (Cl. 235—61)



1. A computer for translating elapsed time into sums of money dependent upon a fixed tariff comprising a cylinder divided into a plurality of axial channels and annular rings, indicia on said cylinder representing the cost of units of elapsed time, a housing for receiving said cylinder, said housing defining a slot through which said indicia are exposed, indicia adjacent said slot identifying beginning times of a series of time periods of equal duration, a clock face, radial lines on said face dividing the face into equiangular zones corresponding in duration to the last named time periods, a plurality of minute hands cooperating with said clock face, said plurality of minute hands corresponding in number and equiangular spacing to the plurality of radial lines on the clock face to simultaneously register therewith, clock means for rotating said minute hands with respect to said clock face through a predetermined angle corresponding to one of said zones and for thereafter stepping said cylinder through an angle corresponding to the width of one of said channels.

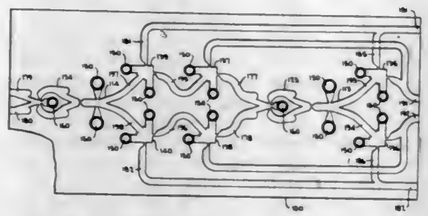
3,224,673
PREDETERMINING COUNTER
Vurnen J. Leonard, Minneapolis, Minn., assignor to Honeywell Inc., a corporation of Delaware
Filed Oct. 30, 1963, Ser. No. 320,133
10 Claims. (Cl. 235—132)

1. A predetermining counter capable of continuous forward or reverse counting from 000 to 199, comprising: a succession of different order counter wheels mounted for individual rotation on a common axis and including a units wheel, a tens wheel and a hundreds wheel; means for rotating said units wheel; tens transfer means connecting said units wheel to said tens wheel; said units wheel and said tens wheel each having the numerals 0–9 evenly indexed around the periphery thereof; said hundreds wheel having the numeral 1 indexed at one or more selected points on the periphery thereof; said units wheel having a first predetermining wheel of smaller diameter concentrically attached thereto; said tens wheel having second and third predetermining wheels of smaller diameter concentrically attached to either side thereof; said predetermining wheels each having a first notch formed in the periphery thereof; a first pair of cog members attached to an outer side of each of said predetermining wheels flanking said notch and extending therefrom parallel to said common axis; a rotatable output shaft mounted adjacent the periphery of said counter wheels and parallel to said common axis; said output shaft having at least one kicker tooth affixed thereto adjacent each of said predetermining wheels lying in a plane parallel to said outer side of the associated predetermining wheel and said plane intersecting said cog members; said output shaft having a first position with said kicker tooth of said third predetermining wheel lying in the path of said associated cog members, and said lower order kicker teeth being mounted on said output shaft out of the path of said lower order cog members; one of said third predetermining wheel cog members contacting said kicker tooth upon rotation of said counter wheels from 199 to 000 or from 100 to 099 to thereby cause partial rotation of said output shaft to place a lower order kicker tooth in line with a lower order cog member; said second predetermining wheel having a second



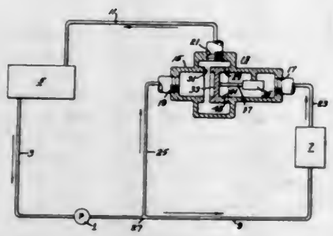
pair of cog members flanking a second notch in the periphery thereof; one of said second predetermining wheel cog members contacting said associated kicker tooth upon the rotation of said counter wheels from 099 to 100 or from 010 to 009 to rotate said shaft and place either a higher or a lower order kicker tooth respectively in position to be contacted; said first predetermining wheel having a second pair of cog members and a third pair of cog members mounted adjacent said first pair of cog members; said output shaft having a plurality of kicker teeth mounted thereon adjacent said first predetermining wheel designed to mesh with said cog members to effect rotation of said output shaft when said counter rotates from 002 to 001, from 001 to 000, or from 000 to 199 in a countdown direction, and from 000 to 001, from 001 to 002, or from 009 to 010 in a forward direction; at least one blocking tooth associated with each of said predetermining wheels; said blocking teeth being mounted on said output shaft and adapted to ride the periphery of said associated predetermining wheel to prevent spurious rotation of said output shaft; said blocking teeth each meshing with a notch in the corresponding predetermining wheel to aid said corresponding kicker tooth in rotating said output shaft; and a plurality of gear teeth mounted on said output shaft adapted to mesh with corresponding teeth on said hundreds wheel to effect rotation thereof in accordance with the movements of the lower order wheels.

3,224,674
HIGH-SPEED COUNTERS AND FLUID FORWARD-BACKWARD COUNTERS
Raymond W. Warren, McLean, Va., assignor to the United States of America as represented by the Secretary of the Army
Filed May 11, 1964, Ser. No. 366,668
4 Claims. (Cl. 235—201)
(Granted under Title 35, U.S. Code (1952), sec. 266)



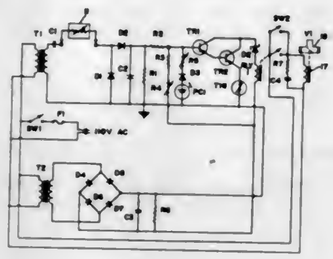
1. A high-speed pure fluid counter having a plurality of stages for counting a series of successive fluid pulses comprising:
(a) a plurality of fluid pulse converters each corresponding to a stage in the counter, and having an input passage and two output passages, and
(b) means interconnecting said plurality of fluid pulse converters and receiving said fluid pulses to be counted, said means sensing the state of all lower order fluid pulse converters and appropriately and simultaneously causing the ascending orders of fluid pulse converters to change state or not upon receiving a fluid pulse.

3,224,675
MEANS FOR PROTECTING THE HEATER IN A CIRCULATING LIQUID SYSTEM
Elton B. Fox, 681 36th St., Richmond 9, Calif.
Filed July 29, 1957, Ser. No. 674,666
13 Claims. (Cl. 237—8)



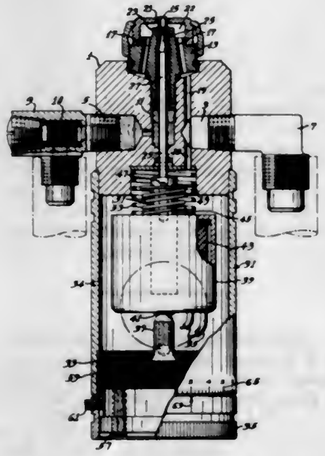
9. A flow governor system, comprising; a governor including a casing provided with two inlets and an outlet; means communicating with one of said inlets for delivering liquid to said one inlet and for heating said liquid during the course of its flow to said one inlet; means communicating with the other of said inlets in by-passing relation with said heating means for delivering liquid to said other inlet without exposing it to said heating means; valve means in said casing controlling flow through each of said inlets, said valve means permitting at least a restricted flow through said one inlet at all times and being normally partially open to permit flow through said other inlet; and a thermostatic drive element in said one inlet to further open said valve means with respect to said one inlet in response to an increased temperature of liquid delivered to said one inlet.

3,224,676
AUTOMATIC SPRINKLER CONTROL
George P. Rauchwerger, 521 Craig Road, Hillsborough, Calif.
Filed Nov. 8, 1963, Ser. No. 322,477
7 Claims. (Cl. 239—64)



1. In a sprinkler system, a conduit, a valve in said conduit, a solenoid opening and closing said valve, a source of current, a relay controlling energization of said solenoid to said current and having a coil, and a circuit including said coil energized by said current and comprising a photocell arranged to interrupt said circuit in daylight, a probe in said circuit having two electrodes and hygroscopic material between said electrodes in contact with soil irrigated by said system characterized by a change in resistance of said material when said soil is wet, said probe arranged to open said circuit when said soil is wet.

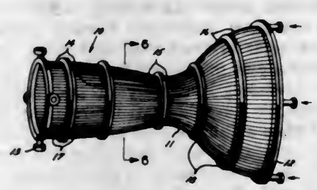
3,224,677
VAPORIZING APPARATUS
Roy A. Schmidt, Mill Neck, N.Y., and George A. P. Wallace, Greenwich, Conn., assignors to Kelroy Corp., Long Island City, N.Y., a corporation of New York
Continuation of application Ser. No. 190,708, Apr. 27, 1962. This application Sept. 14, 1964, Ser. No. 398,828
1 Claim. (Cl. 239—101)



A spray gun including a body member, a nozzle on said body member provided with a generally central passage for the flow of a liquid to be atomized, a conically tapered valve seat in said passage adjacent the exit end thereof, a closure member tapered to cooperate as a needle valve with said valve seat, said closure member being provided

with a stem extending through said passage, an actuator comprising two parts relatively movable toward and away from each other as said actuator is energized and de-energized to provide substantially rectilinear relative motion between said parts, and means reacting between the two parts of the actuator and biasing one of said actuator parts toward its extended condition; means connecting one of said actuator parts to said stem and adjustable control means to connect the other of said actuator parts to said body member for movement relative thereto in the direction of needle valve movement to control flow rate, said actuator being adapted to be energized in a pulsating manner to produce longitudinal vibrating motion of said stem and cyclically open and close said needle valve in vibratory movement in said passage a plurality of times for each duty cycle of the spray gun, said adjustable control means being movable to seat said needle valve against the force of the energized actuator, said adjustable control means connecting said other actuator part to the body member including an adjusting knob threaded into said body member and engaging said other actuator part in the direction of travel, and resilient means reacting between the body member and said other actuator part urging the latter toward said adjusting knob.

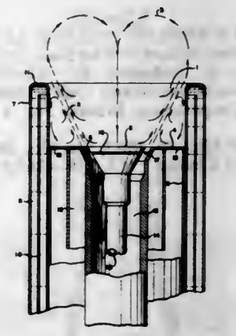
3,224,678
MODULAR THRUST CHAMBER
Irwin E. Rosman, Woodland Hills, Calif., assignor to The Marquardt Corporation, Van Nuys, Calif., a corporation of California
Filed Oct. 4, 1962, Ser. No. 228,420
10 Claims. (Cl. 239—127.1)



4. A thrust chamber comprising:
a plurality of chamber sections positioned along the length of said chamber;
each of said sections comprising a plurality of individual tubes placed adjacent one another along their length and shaped to form the desired wall surface for the section;
means for rigidly securing said individual tubes together along their length after being shaped in order for the tubes to provide a fluid tight section; and
means for joining said shaped sections end to end to form a fluid tight encompassing wall for said chamber and provide for coolant fluid flow from section to section.

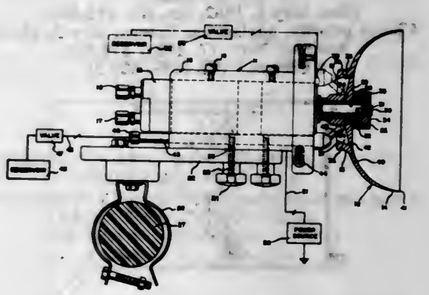
3,224,679
COMBUSTION DEVICE FOR HYDROCARBON FUEL
Robert W. Kear, Fetcham, and Alan H. Lancashire, Crowthorne, Berks, England, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Feb. 7, 1963, Ser. No. 257,044
Claims priority, application Great Britain, June 26, 1962, 24,502/62
7 Claims. (Cl. 239—132.3)

1. A combustion device for hydrocarbon fuel comprising:
a cup-shaped flame chamber adapted to be connected to a heating or reaction chamber, said flame chamber having a greater diameter than depth and a substantially flat bottom wall;
said flame chamber having a hollow liquid cooled sidewall including an intermediate circular baffle terminating near the open end of the flame chamber to form two concentric annular cooling channels through which a cooling medium may circulate;
a burner nozzle disposed in the center of the bottom wall of the flame chamber for supplying fuel and an oxidizing medium to the flame chamber, said burner



nozzle comprising an annular diverging conical channel having a cone angle between 30° and 120°, said conical channel in addition having an outlet opening in the bottom wall of said flame chamber, said burner nozzle in addition having a flat-faced tip;
the diameter of the flame chamber being larger than the diameter of the outlet of said burner nozzle.

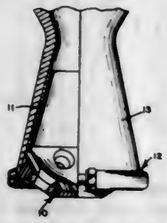
3,224,680
ATOMIZING APPARATUS HAVING A LIQUID ACCUMULATION CAVITY
Gilbert L. Burnside, Oak Park, and John W. Mistele, Detroit, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed June 11, 1964, Ser. No. 375,425
9 Claims. (Cl. 239—223)



1. An apparatus for atomizing liquids comprising a rotatable atomizing head, driving means for rotatably supporting said atomizing head, said atomizing head comprising a cup-shaped body portion on one end integrally formed with a hub portion at the other end, said cup-shaped body portion having a concave feeding zone terminating in a continuous peripheral edge, an annular recessed liquid receiving cavity located in said hub portion, said liquid receiving cavity having a continuous recessed inner corner and a continuous recessed outer corner connected by a bottom surface, at least one conduit means extending into said cavity for introducing liquids to be

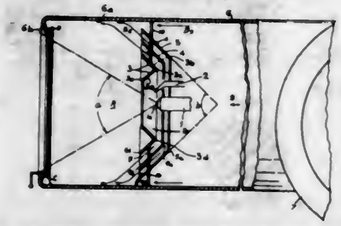
atomized at the recessed inner corner of said liquid receiving cavity, and a plurality of passages leading from said recessed outer corner of said cavity to said feeding zone, each of said passages being of a size that causes said liquids to be accumulated in said cavity before being forced through said passages at a uniform pressure and rate to said entire feeding zone under the influence of centrifugal and inertial forces.

3,224,681
ALTERABLE THRUST NOZZLE ATTACHMENT
William D. Fiser, Robert P. Van Roo, James S. Berry, Jr., and Milton D. Anderson, Jr., Huntsville, Ala., and Monte W. Korb, San Pedro, Calif., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed May 20, 1963, Ser. No. 281,503
8 Claims. (Cl. 239—265.15)



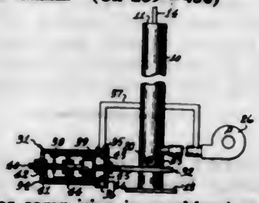
1. A nozzle attachment for a solid propellant rocket motor having a reaction motor nozzle at the aft end thereof comprising a baffle detachably secured within said reaction motor nozzle, an insulating member bonded to the inner surface of said baffle, said baffle and said insulating member having therethrough a plurality of symmetrically arranged ports canted at an angle to the axis of said baffle and an insulating nozzle protecting sleeve bonded to the peripheral edge of said baffle in contactual relation with at least a portion of the interior surface of said nozzle.

3,224,682
OIL BURNER APPARATUS
Jean Camille Hippolyte Paris, 152 Champs-Elysees, Paris, France
Filed May 1, 1962, Ser. No. 191,594
Claims priority, application France, May 3, 1961, 860,596; Nov. 17, 1961, 879,264
6 Claims. (Cl. 239—427.3)



1. In an oil burner, in combination, a substantially cylindrical shell having an open end, a source of axial air flow opening into said shell at a location forwardly of said open end and trained toward the latter, fuel-supply means including a tubular nozzle extending axially within said shell at a location intermediate said source and said open end, said nozzle having an outlet disposed ahead of said open end for discharging a substantially conical stream of atomized fuel toward said open end and centrally symmetrical annular baffle means spacedly surrounding said nozzle in the region of said outlet for intercepting an outer part of said air flow and deflecting it outwardly toward the inner wall of said shell while giving passage to a non-rotating inner part of said air flow through an annular clearance separating said baffle means from said nozzle whereby said inner part mingles with said conical fuel stream just beyond said outlet, said baffle means having a forwardly converging inner frustoconical surface for guiding said inner part toward the nozzle axis and at least one forwardly diverging outer frustoconical surface for directing said outer part as a diverging laminar flow toward said inner wall and thence as a cylindrical flow coaxial with said inner wall toward said conical fuel stream for intermingling therewith at a location close to said open end and substantially beyond its zone of merger with said inner part, said inner and outer frustoconical surfaces meeting at a flow-dividing ridge facing toward said source.

3,224,683
FOUNT AERATOR
Joseph Morreale, P.O. Box 216, Spring Grove, Ill.
Filed Jan. 28, 1964, Ser. No. 340,613
1 Claim. (Cl. 239—456)



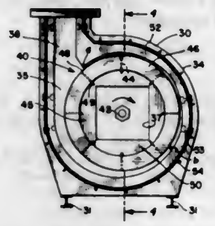
A fount aerator comprising in combination a cylindrical housing having an open end, means for mounting said housing on its end so that the longitudinal axis of said housing is substantially vertically arranged, a shaft rotatably mounted within said housing, a deflection plate mounted on said shaft within said housing adjacent said open end for rotation therewith, said plate being arranged transversely to the longitudinal axis of said shaft, a rack gear extending outwardly of said housing and threadedly connected to said shaft for rotating said shaft to move said plate axially of said housing, a fluid motor connected to said rack gear for reciprocal movement thereof, pump means connected to said housing for forcing water past said plate and out of said housing and for actuating said fluid motor, said plate deflecting the water into various displays depending on the position of said plate relative to said housing.

3,224,684
FUEL INJECTION NOZZLE
Vernon D. Roosa, West Hartford, Conn. (% Hartford Machine Screw Co., P.O. Box 1440, Hartford, Conn.)
Filed Apr. 16, 1963, Ser. No. 275,789
12 Claims. (Cl. 239—533)



11. A fuel injection nozzle comprising a nozzle body having an outwardly opening bore forming a valve chamber having a valve seat, a plunger of smaller diameter than said bore disposed within said bore, an externally threaded guide supporting the plunger for reciprocal movement longitudinally within said chamber toward and away from the valve seat, the external threads of said guide member threadably engaging mating internal threads forming in said bore and having a smaller pitch diameter than said internal threads in said bore to provide a clearance therebetween to loosely dispose said guide member in said bore, and a hardened sealant disposed in said clearance to seal and to rigidly secure said guide member in precise alignment within the bore.

3,224,685
METHOD AND APPARATUS FOR COMMINUTING MATERIALS
Leland E. Brack, Fort Collins, Alex Rein, Laporte, and Henry B. Brack, Fort Collins, Colo., assignors to Micair Exploder Trust, Fort Collins, Colo.
Filed Jan. 8, 1962, Ser. No. 164,786
20 Claims. (Cl. 241—5)

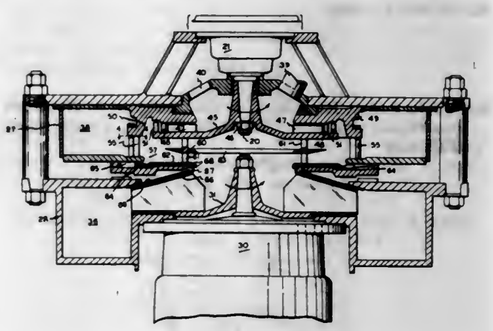


1. In a grinding apparatus, a housing forming a chamber including an outer peripheral wall portion, a materials feed inlet communicating with the central area of the chamber and an outlet leading upwardly from said chamber at one side thereof, a rotor mounted for rotation within said chamber, said rotor being defined by a series of radial impellers arranged at spaced circumferential intervals about a central drive shaft and including means mounting said impellers in outer spaced relation to the drive shaft outside the central area, rotor drive means for driving said rotor, and said peripheral wall portion forming in relation to the outer periphery of said rotor a limited clearance area extending substantially one-half the circumference of said rotor and gradually diverging into said outlet thereby with sufficient rotational speed of said rotor to contain said materials between said impellers along the limited clearance area and to permit their gradual outward movement near the end of each cycle for discharge upwardly through the outlet.

3,224,686
IMPACT PULVERIZATION-CLASSIFICATION
Curtis C. Wallace, Jr., Newark, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Apr. 27, 1962, Ser. No. 190,761
14 Claims. (Cl. 241—19)

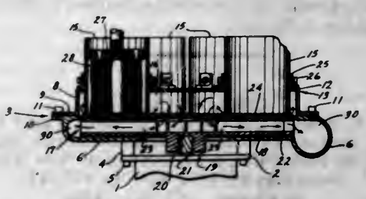
1. A method of impact pulverization-classification of solids comprising, in sequence, subjecting said solids to centrifugal impact pulverization in the presence of a concurrently flowing stream of carrier gas, thereby effecting the throwout of coarse pulverized solids by the combined effects of centrifugal force and gravity and the entrainment of fine dispersed pulverized solids in said carrier gas, introducing an additional quantity of carrier gas in co-rotational vortical flow to the carrier gas entraining said fine dispersed pulverized solids in sufficient quantity to effect a classification of said dispersed pulverized solids into a first fraction of fine particle size concentrated centrally of said vortical flow and a second fraction of coarse particle size concentrated peripherally of said vortical flow, and withdrawing at least said first fraction as a separate pulverized product.

7. An apparatus for impact pulverization-classification of solids comprising, in combination, (1) a centrifugal impact mill incorporating a power-driven rotary pulverizer disk provided on its outboard surface with radially disposed solids-directing vanes imparting extreme centrifugal force loadings to solids moved therepast mounted generally co-axial with respect to a stator ring having an axially oriented face encircling the periphery of said pulverizer disk at close clearance therewith, means for introducing solids to be pulverized, and means for introducing carrier gas in concurrent flow with said solids radially outward past the vanes of said pulverizer disk,



and (2) a generally circular cross-section chamber disposed axially adjacent of and in open endwise communication with the interspace between said stator ring and the periphery of said pulverizer disk, said chamber being provided with a centrally disposed port on the end remote from the inboard surface of said pulverizer disk for the withdrawal of fine pulverized solids entrained in carrier gas exiting from said interspace, and a plurality of gas inlet ports disposed in the peripheral wall of said chamber introducing additional carrier gas into said chamber to thereby maintain a vortical flow of carrier gas within said chamber effecting a particle size classification of pulverized solids delivered from said interspace and dispersed in said carrier gas.

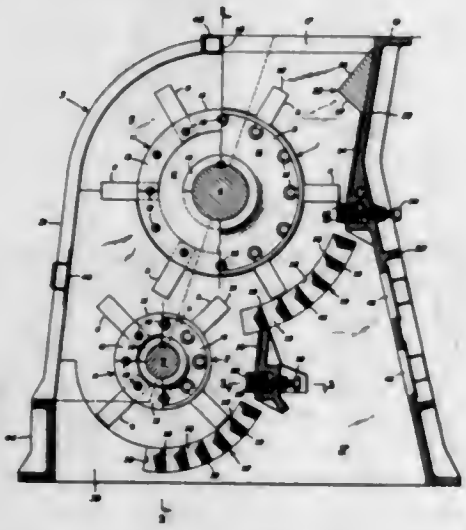
3,224,687
APPARATUS FOR DRY DEFIBERING OF FIBROUS MATERIALS
Howard Bidwell, Granby, Mass., assignor of one-half to Rachel Bidwell, Granby, Mass.
Filed Feb. 9, 1962, Ser. No. 172,321
1 Claim. (Cl. 241—55)



In reduction apparatus for defibering dry state fibrous material to a pulp of substantially individualized fibers for subsequent fabrication, the combination of, a housing, a rotatable member disposed within said housing and

having a disc and an annular member spaced from and coplanar with each other and with a plurality of fan forming vanes disposed therebetween a granular surfaced member on the upper surface of the annular member, a plurality of fibrous material receiving tubular magazines extending into said housing and each having an opening at its inner end substantially adjacent said granular surfaced member, said housing being provided with a discharge opening, means for pressing the fibrous material within each of said magazines into engagement with said granular surfaced member, drive means for moving said rotatable member relative to said magazines for freeing fibers from the bodies of fibrous material and for inducing an air flow by means of the vanes capable of drawing the freed fibers away from said rotatable member and expelling the freed fibers through the discharge opening of said housing.

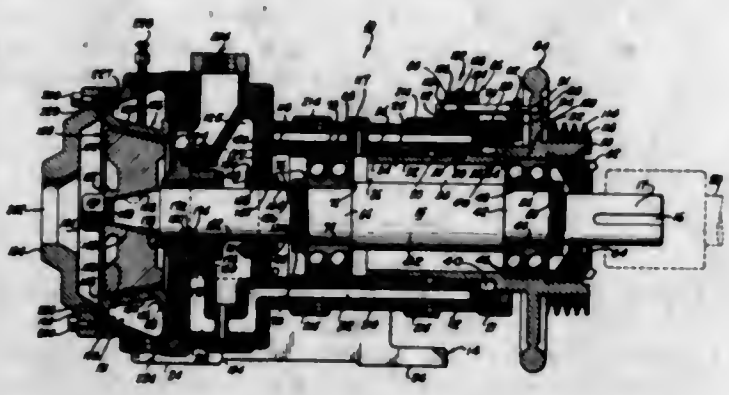
3,224,688
SHREDDER
Rudolf E. Better, Honolulu, Hawaii, assignor to Honolulu Iron Works Company, Honolulu, Hawaii, a corporation of Hawaii
Filed Jan. 22, 1962, Ser. No. 167,692
11 Claims. (Cl. 241—154)



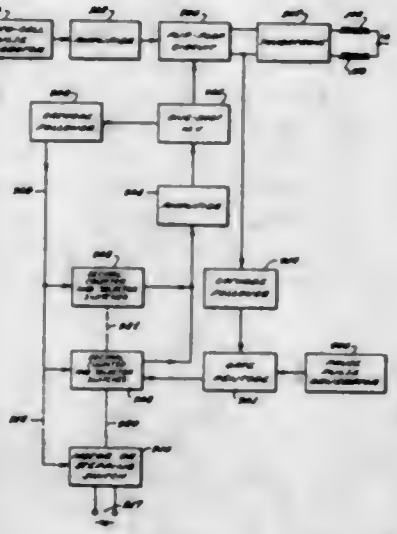
1. A shredder for shredding fibrous material comprising a pair of rotary beater members mounted for rotation in the same direction about parallel axes and arranged in series for sequentially engaging material fed to said shredder, each of said members having a hub portion and a plurality of beaters pivoted to and projecting substantially radially from said hub portion and axially staggered relative to and intermeshing with beaters of the other member for removing material caught between the beaters of either member, and an anvil bar and a plurality of cutter bars for each of said members, each of said bars extending substantially parallel to the axis of its member, and said bars of each member being arranged in circumferentially spaced relation along a periphery thereof with the anvil bar in the lead.

3,224,689
COLLOID MILLS
Walter A. Behrens and David F. O'Keefe, Valley Stream, N.Y., assignors to Chemicolloid Laboratories, Inc., Garden City Park, N.Y., a corporation of New York
Filed May 25, 1962, Ser. No. 197,711
16 Claims. (Cl. 241—256)

1. In a colloid mill, a housing having a support chamber and a milling chamber, a stator in the milling chamber, a single continuous shaft extending from end to end through the housing, a rotor for the mill mounted on the shaft in the milling chamber in milling relationship to the stator, a sleeve in the support chamber, a plurality of bearing means providing the sole support for the shaft, certain of the bearing means being positioned in the support chamber between the shaft and the sleeve and the walls of the support chamber, and means for moving the sleeve, the bearing means and the shaft as a unit lengthwise of the support chamber.



3,224,690
MACHINE FOR WINDING A BALL
Rudolph G. Holman, 2301 Ponderosa, Apt. 8A, Santa Ana, Calif.
Filed Apr. 15, 1963, Ser. No. 275,179
15 Claims. (Cl. 242—3)

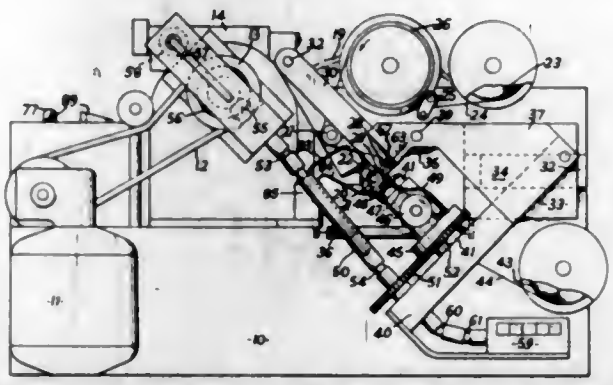


3. An electronic control system for controlling the duration of first and second periods in an apparatus for winding a ball at a winding station, said control system including a motor, a shaft actuated by said motor, a first pulse generator connected to and operated by said motor, first means to make said first pulse generator to generate a first electrical pulse only at the end of said first period for terminating said first period and simultaneously begin said second period, a second pulse generator generating a second series of electrical pulses for timing the duration of said second period, a gate and a pulse counter connected to said second pulse generator for receiving and counting said second pulses through said gate only during said second period, and generating a control signal in response to a selectable number of said second pulses, means connected to said pulse counter for selecting and setting the duration of said second period, and a common control circuit connected to said first pulse generator and to the output side of said counter and controlled by said first pulse and said control signal, said control circuit starting and terminating said first and second periods in response to said first pulse and said control signal.

3,224,691
METHOD AND APPARATUS FOR WINDING SPIRAL RESISTANCE ELEMENTS

John Anderson Oram, Leighton Buzzard, England, assignor to Reliance Manufacturing Company (Southwark) Limited, London, England, a British company

Filed Apr. 25, 1961, Ser. No. 105,353
Claims priority, application Great Britain, May 3, 1960, 15,604/60
17 Claims. (Cl. 242—9)



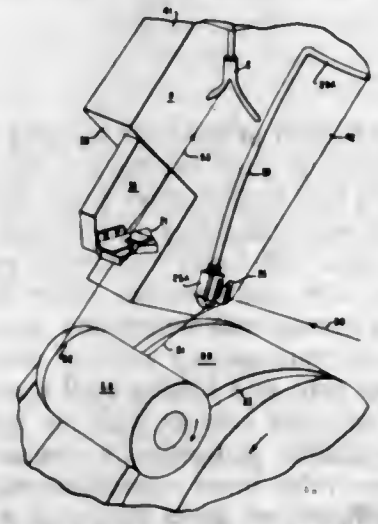
6. A method of winding a spiral resistance element, comprising the steps of passing an elongated, flexible, insulating core through a guide coiling the core into a spiral of progressively increasing diameter after it has passed through the guide, and winding wire about the core as it passes from the guide to the spiral at a distance from the axis of the spiral fixedly proportional to the increasing diameter of the spiral at any instant during winding.

8. A machine for winding a spiral resistance element, comprising a guide, a coiling head to draw an elongated, flexible, insulating core through the guide and to coil the core into a spiral, a winding head spaced from the coiling head to wind wire about the core as the core passes from the guide to the coiling head, a movable carriage, and means including a spacing device coupled to the winding head through said carriage to move the winding head so that winding takes place at a distance from the axis of the spiral fixedly proportional to the increasing diameter of the spiral at any instant during winding, the winding head being mounted on the carriage for transverse movement relative to said coiling head by means of said spacing device.

3,224,692
TRANSFER TAIL WINDING APPARATUS

Ralph Walter Nugent, Martinsville, Va., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Oct. 19, 1962, Ser. No. 231,763
9 Claims. (Cl. 242—19)



1. An apparatus for providing transfer tails on bobbins in equipment which winds onto such bobbins synthetic yarn coming in a continuous line directly from a spinning machine and which normally includes a yarn traverse means, said apparatus comprising in combination:

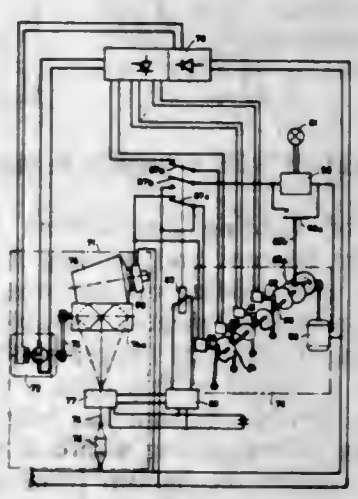
(a) means for releasably holding the incoming yarn line away from said traverse means,
(b) pneumatic means for automatically cutting the yarn after it has been aligned with and wrapped around an end of an empty bobbin,
(c) pneumatic means for automatically releasing the yarn for movement to said traverse mechanism after said cutting has been achieved, and
(d) means for controlling the length of the time interval between cutting and releasing of the yarn to the traverse mechanism, and
(e) means for achieving the operations of cutting and releasing the yarn, in automatic sequence and within said controlled time interval, by actuating a starting device after the yarn has been put into said releasable holding means (a),

all said means being assembled in operative positions in and about a single housing unit, whereby the entire assembly becomes movable as a unit for service from one bobbin winding machine to another.

3,224,693
CONTROL DEVICE FOR A WINDING MACHINE

Rudolf Jenny, Thalwil, Switzerland, assignor to Maschinenfabrik Schweiter AG., Horgen, Switzerland

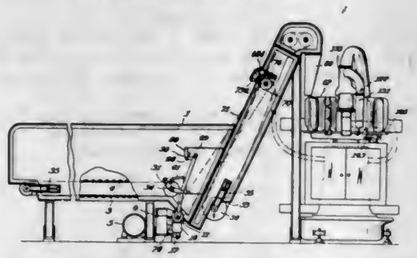
Filed May 3, 1963, Ser. No. 277,810
Claims priority, application Switzerland, May 9, 1962, 5,570/62; June 1, 1962, 6,680/62
8 Claims. (Cl. 242—35.5)



1. In a winding machine having a plurality of winding units onto each of which a respective yarn is wound in a package, and if breakage of the yarn during winding onto its winding unit occurs the broken yarn ends undergo a knotting operation, each winding unit including a winding bobbin adapted to be rotatably driven to wind a yarn package thereon, a supply cop for each winding unit for delivering yarn to its associated winding unit to be wound thereon in a package, a control mechanism for each winding unit comprising drive means for driving the winding bobbin of an associated winding unit at a predetermined normal speed in a first direction of rotation for normally winding yarn into a package, at a speed slower than said predetermined normal speed also in said first direction of rotation for winding yarn into a package upon said winding bobbin to take up the slack in the yarn between its supply cop and said winding unit produced by a knotting operation, and at a speed slower than said predetermined normal speed in a second direction of rotation opposite said first direction for unwinding a portion of yarn from the package upon said winding unit upon breakage of the yarn during winding onto the winding unit, means for controlling operation of said drive means to enable the latter to drive the associated winding unit at said slower speed in said second direction upon yarn breakage, then to drive said winding unit in said first direction of rotation at said speed slower than said predetermined normal speed upon completion of a knotting operation of the yarn being

wound onto said associated winding unit, and then to drive said associated winding unit at said predetermined normal speed in said first direction of rotation upon determination of renewed presence of the yarn for further winding by said associated winding unit, and feeler means operatively connected with said controlling means responsive to the presence of yarn to operate said controlling means for changing the speed of said drive means.

3,224,694
AUTOMATIC COP FEEDER
Isao Oishi, Kyoto-shi, Japan, assignor to Murata Kikai Kabushiki Kaisha, Kyoto-shi, and Toyo Boseki Kabushiki Kaisha, Osaka-shi, Japan, both joint-stock companies of Japan
Continuation of application Ser. No. 219,262, Aug. 24, 1962. This application Feb. 19, 1965, Ser. No. 434,055
Claims priority, application Japan, Sept. 11, 1961, 36/46,553; Dec. 14, 1961, 36/62,003; Jan. 22, 1962, 37/1,782; Feb. 26, 1962, 37/9,223
23 Claims. (Cl. 242—35.5)



1. In combination with a bobbin rewinding apparatus having

a plurality of winding mechanisms for unwinding thread from bobbins and winding it onto packages at each of said winding mechanisms,

bobbin replenishment means movable relatively to said winding mechanism for replenishing at a transfer station a wound bobbin onto a winding mechanism from which a bobbin has been removed,

thread uniting means uniting a thread from a package at a said winding mechanism from which a bobbin has been removed to a thread from a wound bobbin on said bobbin replenishment means and

package thread delivery means for delivering to said thread uniting means a package thread free end,

that improvement which consists of:

wound bobbin thread end operating means remote from said transfer station for removing a free end of thread from a wound bobbin,

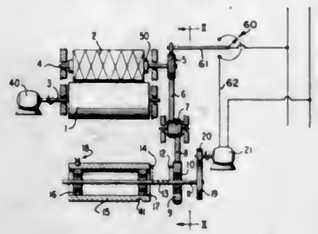
means for delivering said free end from said bobbin thread end operating means to said thread uniting means,

means for moving a wound bobbin from adjacent said bobbin thread end operating means to said bobbin transfer station and

means for delivering wound bobbins in succession to said wound bobbin thread end operating means.

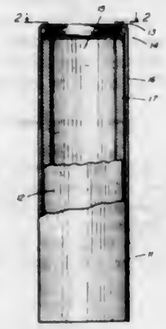
3,224,695
APPARATUS FOR THE WINDING OF ROLLER-DRIVEN, CROSS-WOUND BOBBINS
Pieter K. Noordenbos, Ede, Netherlands, assignor to American Enka Corporation, Enka, N.C., a corporation of Delaware
Filed Feb. 11, 1964, Ser. No. 344,048
Claims priority, application Netherlands, Feb. 14, 1963, 289,015
10 Claims. (Cl. 242—45)

1. An apparatus comprising a cross-wound bobbin fixedly mounted on a rotatable shaft, a rotatable roller adapted to operatively engage the surface of said bobbin and drive said bobbin, a device for guiding yarn onto the surface of said bobbin, means for causing said yarn-guiding device to traverse the surface of said bobbin including a rotatable drum having a groove in the surface thereof in which said groove said yarn-guiding device is positioned and adapted for movement along the length of said



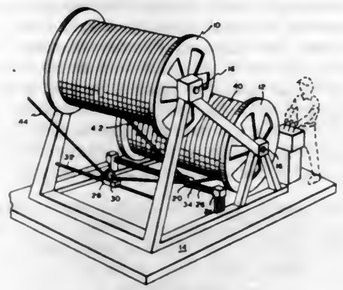
drum, and coupling means for communicating the rotation of said bobbin-mounting shaft to said drum including a force-intensifying device, said force-intensifying device including a friction member and a shaft adapted to rotate in the same direction as but at a greater speed than the speed imparted to said friction member, said friction member being in slidable frictional engagement with said shaft of said force-intensifying device.

3,224,696
BOBBIN
Glenn G. Hendry, Jr., % Fiber Industries, Incorporated, Shelby, N.C.
Filed Nov. 29, 1963, Ser. No. 326,864
1 Claim. (Cl. 242—46.3)



A disposable bobbin utilized for winding light continuous filament synthetic yarn having a denier below about 35, comprising a thin walled outer paper tubular member having its upper end containing an inturned annular edge portion and a removable inner reinforcing paper tube free of connections with said member other than frictional force, said tube having such length and outer proportions so as to make intimate contact with the inner wall of the said outer paper tube and having such inner proportions so as to make intimate contact with the movable means of a rotatable spindle, said intimate contact of the inner wall of said removable inner reinforcing paper tube with said spindle sufficient so as to turn said paper tube on the turning of said spindle and during said turning utilizing a minimum of frictional force on the outer wall of said removable inner reinforcing paper tube to turn said outer tubular member for purposes of winding synthetic yarn on said disposable bobbin.

3,224,697
BALLOON CABLE REELING DEVICE
Arthur D. Struble, Jr., 2101 Rosita Place, Palos Verdes Estates, Calif.
Filed Apr. 3, 1963, Ser. No. 270,414
8 Claims. (Cl. 242—54)



5. A reeling device for a cable with a removable protective sheath comprising:

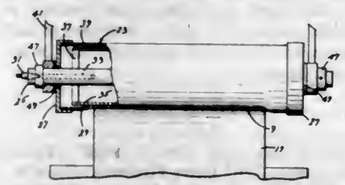
(a) a first reel adapted to receive a cable encased within a removable protective sheath,

(b) a second reel adapted to receive said removable protective sheath with the cable removed therefrom,

(c) means to separate said removable protective sheath from said cable,

(d) means to guide said cable encased within said removable protective sheath to and from said first reel and to guide said removable protective sheath with the cable removed to and from said second reel.

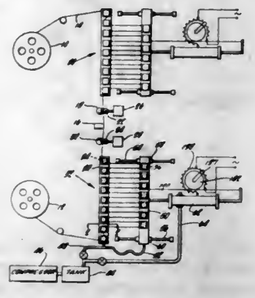
3,224,698
WINDING APPARATUS
John D. Conti, Elkins Park, Pa., assignor to FMC Corporation, Philadelphia, Pa., a corporation of Delaware
Filed May 28, 1964, Ser. No. 370,975
2 Claims. (Cl. 242—55)



1. A winding apparatus including a core on which a web is wound into a roll, means for guiding the web toward and onto said core, an inflatable follower roll, having a shaft, a pair of end plates, a sleeve formed of soft and highly resilient material extending between and secured to said end plates, and means for inflating said sleeve, said sleeve being longer than the width of the web which is being wound, and means for urging said follower roll against the surface of the web roll so that portions of the inflated follower roll sleeve project over and onto the sides of the web roll.

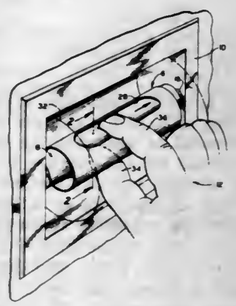
3,224,699
MAGNETIC TAPE TRANSPORT APPARATUS
Joseph J. Neff, Pasadena, Calif., assignor to Consolidated Electrodynamics Corporation, Pasadena, Calif., a corporation of California
Filed Apr. 22, 1963, Ser. No. 274,396
18 Claims. (Cl. 242—55.12)

11. In a tape transport, the combination comprising means engageable with the tape for driving the tape, means for reversing the direction of tape imparted by said drive means, a reel for storing tape, means for maintaining a slack loop of tape under tension between the reel and the tape driving means, means for sensing variations in length of the slack loop, a reel drive motor, means responsive to the loop sensing means for varying the direction and degree of torque produced by the reel motor



with variations in the length of the loop, means coupling the reel motor to the reel, means for storing kinetic energy and releasing it, and means for coupling the reel to said energy storing means when the direction of the reel motor torque is reversed to transfer kinetic energy of the rotating reel to the energy storing means.

3,224,700
TOILET PAPER CORE
Lawrence A. Heinle, 17 De Sabla Road, San Mateo, Calif; Lawrence W. Heinle, executor of said Lawrence A. Heinle, deceased
Filed May 29, 1959, Ser. No. 816,848
The portion of the term of the patent subsequent to June 1, 1976, has been dedicated to the Public
6 Claims. (Cl. 242—55.53)

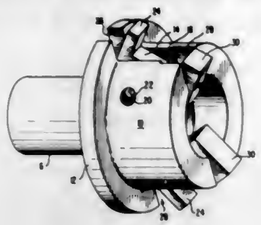


1. A toilet paper core adapted for use with a support spindle insertable within the core and requiring axial movement for its removal from spindle end support means, said core being of tubular shape and having in its sidewall opposed apertures, each of sufficient size to permit passage therethrough of fingers for access and gripping of said support spindle after the removal of the toilet paper from the core and the urging of said support spindle axially for removal from said support means.

3,224,701
ROLL LOCK-UP
Arlie B. Wynne, Rte. 3, Box 336, Saraland, Ala.
Filed Aug. 11, 1964, Ser. No. 388,840
5 Claims. (Cl. 242—68.1)

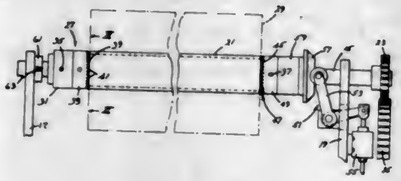
3. A roll lock-up, comprising a cylindrical head adapted to engage endwise into one end of a hollow cylindrical core having aperture means therein, means on one end of said head for rotatably mounting the same on a printing press, means on said head for limiting relative end-

wise movement of the core over the head, normally retracted lug means on said head, said lug means being radially extensible for engaging in the aperture means



in said core, means rigid with said lug means and engageable by the end of the core for moving said lug means from retracted to extended position, and means for normally biasing said lug means to retracted position.

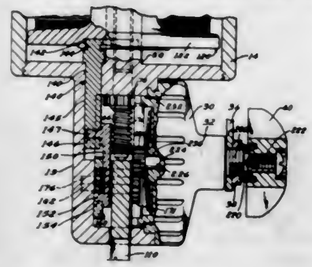
3,224,702
WEB WINDING APPARATUS
Allen P. Jones and Wade W. Jett, Fredericksburg, and Joseph A. Zitz, Stafford, Va., assignors, by mesne assignments, to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Dec. 19, 1962, Ser. No. 245,871
4 Claims. (Cl. 242—68.4)



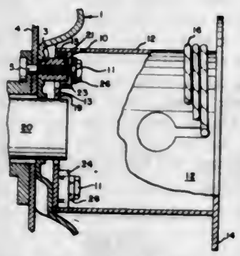
1. Web winding apparatus including a shaft, means for positively rotating said shaft, a core on which a web is to be wound mounted on said shaft for free rotation thereon, a ring mounted for free rotation on said shaft, said ring having a serrated end wall formed of a series of teeth which snugly engage with an adjacent wall of said core and extend approximately across the thickness thereof, a second ring fixed to said shaft and adapted to frictionally engage with and rotate said first-mentioned ring when said shaft is driven, and means for maintaining said core in snug engagement with the serrated end wall of said first-mentioned ring.

3,224,703
SPOOL OSCILLATING MECHANISM FOR SPINNING REEL
Joseph C. Clark, Orlando, Fla., assignor to True Temper Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Oct. 25, 1962, Ser. No. 232,941
4 Claims. (Cl. 242—84.21)

1. In a fishing reel of the character described comprising a housing having a circular recessed gear housing member, said member having an integrally formed circular disk disposed forwardly thereof having a cylindrical portion of reduced diameter extending forwardly of the said disk and integrally formed therewith, said disk and cylindrical portion being provided with a bore therethrough, a line-carrying spool member loosely mounted on said cylindrical portion, a driven shaft rotatable and axially movable through said bore and extending therethrough, winding means for winding said line on said spool member, an apertured cover plate member covering a side of said recessed gear housing member, handle means mounted adjacent said cover plate and operatively connected by a drive shaft to said driven shaft for rotating said shaft, said disk being provided with an opening through said disk laterally of and in spaced relation to the said bore, spool anchor means reciprocably mounted in said laterally disposed opening in said disk, the said spool member having a rearwardly disposed circular flange, said flange being provided with an arcuate groove terminating in an enlarged circular recess, said groove being concentric with the bore in the cylindrical portion upon which the spool is mounted and in spaced adjacent relation therewith, said spool anchor means comprising an anchor pin and a link member, said pin secured to a forward end of said link member and to said spool, a portion thereof adapted to project into the said circular recess in the said spool flange, rotation of the spool flange in one direction locking the spool anchor in secure seating in said groove and preventing further rotative movement of the spool, rotation of the flange in an opposite direction disengaging the anchor and said spool, gear transmission means driven from the said drive shaft, said link eccentrically secured to a spool oscillating gear of the gear transmission means mounted to a side wall of said recessed gear housing opposite said cover plate member wherefor rotation of said handle means causes rotation of said spool oscillating gear rotating an end of the said link causing the pin to reciprocate and causing reciprocation of the spool member and level winding the line onto the spool.



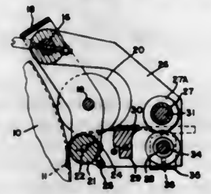
3,224,704
POWER TAKE-OFF DRUM FOR VEHICLES
Todd D. Bailey, 2767 Olive Highway, Oroville, Calif.
Filed Mar. 23, 1964, Ser. No. 353,904
5 Claims. (Cl. 242—95)



1. A power transmission drum adapted to be secured to the wheel of a vehicle which is provided with a circular row of holes and fastening elements received therethrough, said drum comprising:
- a generally cylindrical peripheral wall,
- a generally transversely extending end member fixed to one end of said wall and having an outer side adapted to abut said wheel,

said end member being formed with a plurality of spaced openings in registration with said fastening elements for receiving said elements therethrough when said outer side is in abutment with said wheel,
- a bolt threadedly received in one of said fastening elements,
- a bearing element interposed between the head of said bolt and the inner side of said end member,
- said bearing element being free for turning movement about the axis of said bolt to a position in which it passes through the opening associated with said one fastening element when said drum is moved axially away from said wheel.

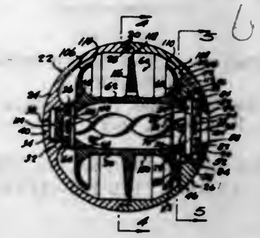
3,224,705
DISPENSER FOR PLASTIC STRAPPING
Ralph C. Nash, 61 Manchester St., Nashua, N.H.
Filed Sept. 23, 1963, Ser. No. 310,572
3 Claims. (Cl. 242—105)



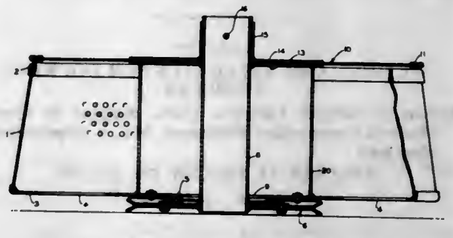
1. In a dispenser for resilient, plastic strapping in reel form, a support rotatably supporting a reel to enable the strapping to be pulled therefrom, and a device through which the strapping is threaded and by which the strapping is provided, as it is manually pulled from the dispenser, with a lengthwise deformation in the form of a stiffening channel, said device including infeed guide means through which the strapping passes and by which it is closely confined and an outfeed pair of idler rolls disposed with the roll axes parallel to the plane of the strapping established by said guide means and with said plane passing between them, said axes also being in a plane at right angles to said plane of the strapping, one roll having a peripheral channel and the other roll having a channel-entering, peripheral crest, the strapping passing between said rolls and said rolls coacting to effect said deformation, said rolls being spaced relative to the outfeed end of said guide means to receive between them and engage said strapping while still influenced thereby against misalining movements of said strapping attendant its being pulled from said reel, said device being pivotably connected to said support for movement relative thereto between an operative dispensing position and an open position in which the infeed end of said guide means is exposed to enable strapping to be fed therethrough and means attaching one of said rolls to said device for movement relative to the other of said rolls between a dispensing position in which said rolls coact and a second position in which the spacing between the rolls is such as to permit the free passage, during threading, of the strapping between the rolls.

3,224,706
REELS
Gordon C. Bastow, 7244 Inlet Drive, Burnaby 2, British Columbia, Canada
Filed July 6, 1962, Ser. No. 207,989
3 Claims. (Cl. 242—107.13)

1. A reel comprising a globular casing composed of mated first and second hemispherical sections, said first section having an internal boss having an inwardly opening axial socket having a bottom wall, said bottom wall being formed with an access opening, said second casing section having an internal boss having an axial socket opening outwardly through the second section and having a bottom wall formed with an axial opening, a pushbutton having a head slidably engaged in the second section socket and a reduced diameter ring extending inwardly from the head through the bottom wall opening and into the interior of the casing, said ring having diametrically opposed longitudinal slots, a diametrical pin extending across the ring and engaged in the slots, the bottom wall of the second section socket having outwardly opening notches in which the ends of the pin are movably engaged, a rotor having a tubular core having an internal groove at one end rotatably receiving the inner end of the ring, said core having a pintle on its other end journalled in the boss socket of the first casing section, said pintle having an enlarged diameter shoulder adapted to bear against the inner end of the first section boss, a resilient torsion member positioned in the bore of the core and secured at related ends to the core at its said other end and to said diametrical pin, said one end of the core of said rotor having circumferentially spaced detent lugs on its outer side, and circumferentially spaced detent blocks on the inner end of the second section boss located in the path of the detent lugs.



3,224,707
DEVICE FOR COILING AND STORING WIRE ROPE AND THE LIKE
Carter H. Arnold, Redwood City, Calif. (317 Rocky Point Road, Palos Verdes Estates, Calif.)
Filed Nov. 12, 1964, Ser. No. 410,798
5 Claims. (Cl. 242—129)



1. A device adapted to be used for coiling and uncoiling wire rope or a like elongated flexible element having sufficient stiffness to withstand moderate axial compression comprising:
- a receptacle having a generally annular storage space defined by a generally circular outer sidewall and an integral annular bottom wall,
- a base on which said receptacle is mounted,
- means mounting said receptacle for rotation about a central axis coinciding with the central axis of said annular space,
- means axially outwardly of said sidewall fixed relative to said base and extending radially outwardly of said central axis for restraining upward movement of coils of such rope out of said space,
- an elongated rigid guide carried by said last mentioned

said end member being formed with a plurality of spaced openings in registration with said fastening elements for receiving said elements therethrough when said outer side is in abutment with said wheel,

a bolt threadedly received in one of said fastening elements,

a bearing element interposed between the head of said bolt and the inner side of said end member,

said bearing element being free for turning movement about the axis of said bolt to a position in which it passes through the opening associated with said one fastening element when said drum is moved axially away from said wheel.

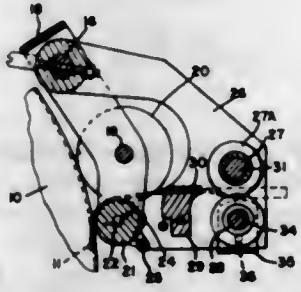
3,224,705

DISPENSER FOR PLASTIC STRAPPING

Ralph C. Nash, 61 Manchester St., Nashua, N.H.

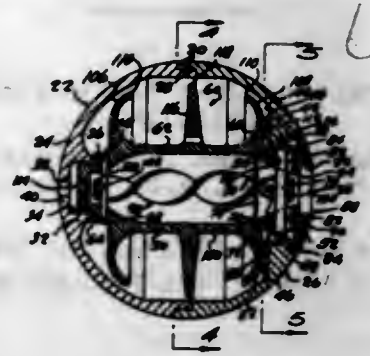
Filed Sept. 23, 1963, Ser. No. 310,572

3 Claims. (Cl. 242—105)



1. In a dispenser for resilient, plastic strapping in reel form, a support rotatably supporting a reel to enable the strapping to be pulled therefrom, and a device through which the strapping is threaded and by which the strapping is provided, as it is manually pulled from the dispenser, with a lengthwise deformation in the form of a stiffening channel, said device including infeed guide means through which the strapping passes and by which it is closely confined and an outfeed pair of idler rolls disposed with the roll axes parallel to the plane of the strapping established by said guide means and with said plane passing between them, said axes also being in a

opening outwardly through the second section and having a bottom wall formed with an axial opening, a pushbutton having a head slidably engaged in the second section socket and a reduced diameter ring extending inwardly from the head through the bottom wall opening and into the interior of the casing, said ring having diametrically opposed longitudinal slots, a diametrical pin extending across the ring and engaged in the slots, the bottom wall of the second section socket having outwardly opening notches in which the ends of the pin are movably engaged, a rotor having a tubular core having an internal



groove at one end rotatably receiving the inner end of the ring, said core having a pintle on its other end journalled in the boss socket of the first casing section, said pintle having an enlarged diameter shoulder adapted to bear against the inner end of the first section boss, a resilient torsion member positioned in the bore of the core and secured at related ends to the core at its said other end and to said diametrical pin, said one end of the core of said rotor having circumferentially spaced detent lugs on its outer side, and circumferentially spaced detent blocks on the inner end of the second section boss located in the path of the detent lugs.

3,224,707

DEVICE FOR COILING AND STORING WIRE ROPE AND THE LIKE

Carter H. Arnold, Redwood City, Calif.

(317 Rocky Point Road, Palos Verdes Estates, Calif.)

means and adapted to receive said rope longitudinally therethrough,

said guide extending along a line of action intersecting said annular space for restraining said rope to axial movement along said line of action at said guide,

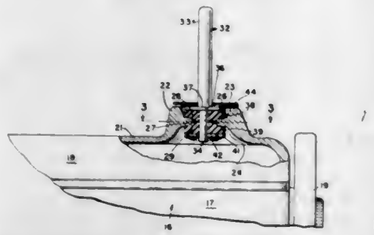
whereby movement of such rope axially toward said receptacle urges said rope against said outer sidewall to rotate said receptacle in one direction and to form coils of rope, and movement of such rope away from said receptacle rotates the latter in the opposite direction and unwinds the coils from said space.

3,224,708

SEWING MACHINE SPOOL PINS AND MOUNTINGS

Manfred R. Laidig, Union, N.J., assignor to The Singer Company, New York, N.Y., a corporation of New Jersey

Filed Sept. 18, 1963, Ser. No. 309,834
3 Claims. (Cl. 242—129.8)



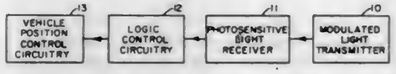
1. In combination, a sewing machine part having opposed faces and defining an aperture, a first resilient ring shaped damper located on one face of said part adjacent to said aperture, a second resilient ring shaped damper located on said opposed face and adjacent to said aperture, a spool pin extending through the aperture in said sewing machine part and through said dampers, a flange carried on said spool pin and located above said first damper, a backup washer carried on said spool pin below said second damper, and a retaining ring held to said spool pin at a location below said backup washer.

3,224,709

METHOD AND APPARATUS FOR DOCKING VEHICLES

Robert B. Blizard, Littleton, Colo., assignor to Martin-Marietta Corporation, Baltimore, Md., a corporation of Maryland

Filed Sept. 13, 1962, Ser. No. 223,390
10 Claims. (Cl. 244—1)



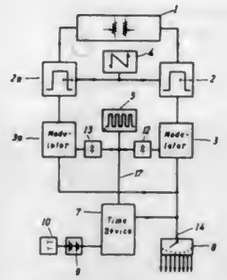
1. A system for docking a vehicle at a space station in space comprising means mounted on the vehicle and adapted for transmitting a light pattern toward a space station, a plurality of reflectors in predetermined orientation mounted on the space station, each reflector receiving and reflecting a substantially different portion of the light pattern, photosensitive receiver means mounted on the vehicle for receiving the reflected light pattern to produce signals in the receiver means, and servo means mounted on the vehicle and adapted for activation by the signals to automatically guide and control the vehicle during docking.

3,224,710

TIMED PROGRAM APPARATUS FOR MISSILE GUIDANCE

Joachim Hermann and Ralph Juergensen, Munich, Germany, assignors to Bolkow-Entwicklungen KG., Munich, Germany, a corporation of Germany

Filed Feb. 10, 1960, Ser. No. 7,947
Claims priority, application Germany, Feb. 20, 1959, B 52,180
6 Claims. (Cl. 244—14)



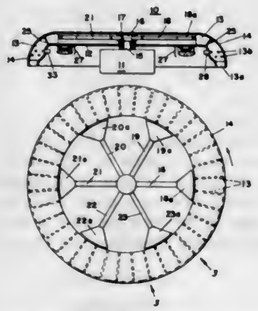
1. A control device for guided missiles comprising in combination, means for generating an operating potentional, means for generating control pulses, means including a single control stick for manually deriving control signals of two different characteristics from said control pulses, means including a manually actuated switch to couple said operating potential both to ignite the missile and to generate said control pulses for a time period covering the missile flight, and a timing device for coupling said control signals to said missile after the launching period of the missile to thereby place the missile under manual control of said means for manually deriving the signals until the time period covering the missile flight expires.

3,224,711

HEAVIER-THAN-AIR AIRCRAFT

Henry R. Warren, Coral Gables, Fla. (Apt. 206, 2300 W. 1st St., Fort Myers, Fla.), and Russell P. Warren, Neptune Beach, Fla. (3711 Kelley St., Fort Myers, Fla.)

Filed Apr. 19, 1963, Ser. No. 274,136
9 Claims. (Cl. 244—23)



1. A lifting and propelling assembly for heavier-than-air aircraft, comprising a rotatable base member mounted for rotation about a central axis thereof and having a down-turned circumferential portion, an air deflector having a central opening,

a plurality of air-compressing elements spaced circumferentially of said central opening and extending vertically between said air deflector and said rotatable base member for compressing air and directing it radially of said rotatable base member,

said air deflector being curved downwardly toward and in spaced relation with said rotatable base member for receiving and directing downwardly the air under pressure delivered from said air-compressing elements,

turbine-driving elements distributed circumferentially of said rotatable base member and forming a driving connection with said rotatable base member,

said rotatable base member having a plurality of discrete segmental combustion zones for fuel and said air under said pressure, and

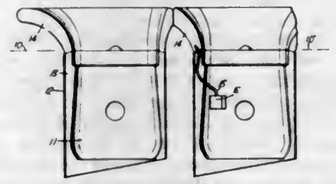
fuel supplying means having structure for sequentially delivering fuel to said plurality of said segmental combustion zones spaced one from the other to provide temperature limiting segments interposed therebetween for limiting the average temperature rise of said turbine-driving elements well below the temperatures developed in said segmental combustion zones to which said fuel is supplied.

3,224,712

JET ENGINES AND TO AIRCRAFT PROVIDED WITH SAME

Maurice Ian Taylor, Allestree, Derby, and Geoffrey Light Wilde, Derby, England, assignors to Rolls-Royce Limited, Derby, England, a company of Great Britain

Filed Jan. 30, 1964, Ser. No. 341,236
Claims priority, application Great Britain, Feb. 4, 1963, 4,554/63
9 Claims. (Cl. 244—53)



1. An aircraft comprising an aircraft structure having ing an external skin, a vertically extending housing in said aircraft structure and open at both ends with the upper end of the same being substantially flush with the external skin of the aircraft structure, at least one vertical lift jet engine mounted in said housing and spaced therefrom at least at its upper end by a space, an inflatable air intake member mounted at the upper end of said engine, said air intake member being arranged when inflated to extend outwardly of the external skin of the aircraft structure and when deflated to be stored inwardly of the external skin of the aircraft structure in the space between said engine and said housing, and means for inflating and deflating said air intake member.

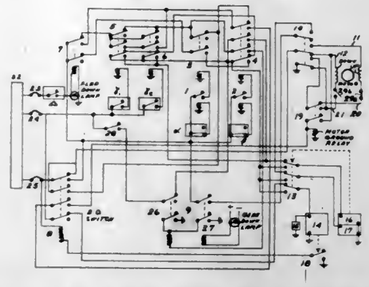
3,224,713

LANDING GEAR SYSTEM

James C. Pope, 441 Dulles Road, Des Plaines, Ill. 60016

Filed June 8, 1964, Ser. No. 373,401
6 Claims. (Cl. 244—102)

1. A landing gear system for use on an air or space vehicle employing a retractable landing gear comprising: a power source, a gear selector switch for said landing gear, said switch having gear-up and gear-down positions, and control means for selectively connecting said power source to retracting and extending means for said landing gear through said gear selector switch; a plurality of sensing means each monitoring a separate one of at least three flight conditions of said vehicle, each sensing means being operatively related to said control means; said control means including a first switching means connected to one of said sensing means for actuation thereby and additional switching means operatively connected to the remaining sensing means; said first switching means and the additional switching means being actuated in response, respectively, to a pre-determined value of the condition



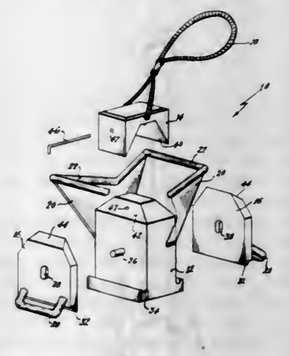
sensed by said first sensing means and a pre-determined value of at least one of the remaining conditions to complete a path to the gear extending means, regardless of the position of said gear selector switch.

3,224,714

MID-AIR PARACHUTE RELEASE DEVICE

George R. Mulcahy, Jr., Box 154, La Luz, N. Mex., and Otis B. Ferguson, Circle "M" Trailer Park, Highway 70 W., Alamogordo, N. Mex.

Filed Dec. 3, 1963, Ser. No. 327,853
7 Claims. (Cl. 244—138)
(Granted under Title 35, U.S. Code (1952), sec. 266)



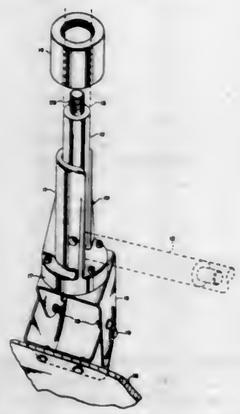
3. A system for air-borne delivery of payload by cargo craft and its retrieval by retrieval aircraft, said system comprising a payload newly discharged from a cargo craft, payload risers on said payload, a pilot parachute, a drogue line permanently attached to said payload and to said pilot parachute, means on the upper end of said drogue line adapted to be engaged by a retrieving aircraft, a parachute system having suspension lines, said system being deployable for holding said payload temporarily suspended in mid-air after discharge from said cargo craft and before retrieval thereof, severable means for attaching the lower extremities of the suspension lines of said parachute system to said payload risers, said last-named means comprising an assembly of severable components and a locking block for securing said severable components together in united relationship, said locking block being secured to said drogue line and some of said severable components being attached to said payload risers, said severable components being freed from said locking block when tension is placed on said drogue line during the retrieval operation.

3,224,715
DOOR-MOUNTING FOR A MIRROR
Joseph Maggiore, 8300 Mona Ave., Norfolk, Va.
Filed Jan. 20, 1964, Ser. No. 339,016
11 Claims. (Cl. 248—29)



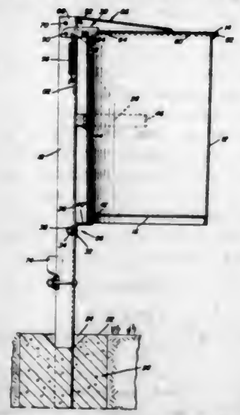
1. The method of supporting a mirror upon a door, comprising placing against the back of the mirror a flat strip having a hook at the top end and having spaced tabs, engaging said tabs over the top and bottom edges of the mirror, placing adhesive between the back of the mirror and the opposing surface of the door, placing said hook over the top of said door, and pressing said adhesive between the mirror and the door.

3,224,716
COLLAPSIBLE ANTENNA
William T. Eville, Painesville, and Arthur A. Finke, Newbury, Ohio, assignors to Antenna Specialists Co.
Filed Dec. 28, 1961, Ser. No. 162,890
10 Claims. (Cl. 248—43)



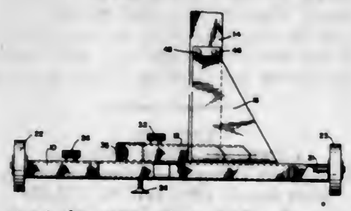
1. A communication antenna mount comprising, a pedestal, said pedestal including and having a tubular wall portion defining a vertically extending space adapted to receive an antenna base and having a vertically extending slot opening into said space, an antenna base, said antenna base including an elongated portion pivotally mounted within said pedestal and movable between an antenna signal-receiving position in which said antenna base extends vertically in said space and an antenna storage position in which said antenna base extends through said slot, and a locking and release mechanism including a movable sleeve member, said sleeve member circumferentially engaging the outside surface of said antenna base and movable from a position clear of said pedestal wall to a position engaging said pedestal wall and closing said slot to rigidly secure the antenna base to said pedestal in the signal-receiving position.

3,224,717
GARBAGE CAN SUPPORT
Raymond A. Mott, Soap Lake, Wash., assignor of fifty percent to John E. McNamara, Soap Lake, Wash.
Filed Dec. 2, 1963, Ser. No. 327,291
6 Claims. (Cl. 248—147)



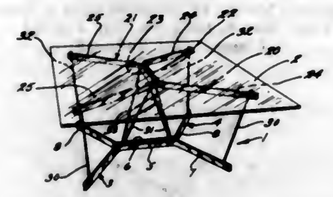
3. A garbage can support including an elongated vertical support post, a support member fixed to said post at an intermediate point thereon, said member being adapted to receive the lower edge of a garbage can, a latch pivotally mounted on the post above the support member for selective retaining engagement with the upper edge of a garbage can, a lid, means pivotally mounting the lid on the post above the latch for movement in a vertical plane, said lid being adapted to engage flush on the upper edge of a supported and retained garbage can, said lid including a slot for accommodating the latch as the lid is closed, said means pivotally mounting the lid comprising a hollow housing secured to the upper surface of the lid and extending radially thereon and therebeyond so as to enclose the slot and latch and to position its outer end juxtaposed to the post.

3,224,718
PHOTOGRAPHIC EQUIPMENT MONOPOST
Sherman M. Fairchild, New York, N.Y., assignor to Front Projection Corporation, New York, N.Y., a corporation of New York
Filed June 29, 1964, Ser. No. 378,647
9 Claims. (Cl. 248—158)



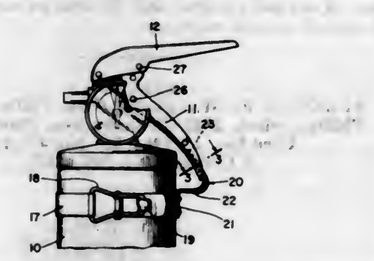
1. A stand for supporting photographic equipment comprising:
(a) a base having a cross front leg with support points at each end and a rear leg connected adjacent one end of said front leg having a third support point, said three support points defining the vertices of a support triangle,
(b) an equipment mounting post, and
(c) means for connecting said post perpendicular to said base at a connection point located to direct the total downward resultant force of the stand and mounted photographic equipment substantially through the center of a circle inscribed within said support triangle.

3,224,719
FURNITURE BASE
Ronald Beckman, New York, N.Y., and Rodney Y. Hatanaka, Montreal, Quebec, Canada, assignors to Herman Miller, Inc., Zeeland, Mich., a corporation of Michigan
Filed Dec. 21, 1962, Ser. No. 254,532
8 Claims. (Cl. 248—163)



1. A base for a unit of furniture, comprising: a generally H-shaped floor engaging member; a generally H-shaped support positioned above said member and lying in a plane parallel to the plane of said member; said support turned ninety degrees with respect to said member; elongated connecting rods extending between the ends of each leg of said member to the ends of each leg of said support positioned generally thereabove; and elongated connecting rods extending from generally each end of the connecting bar of said member to generally the ends of the connecting bar of said support.

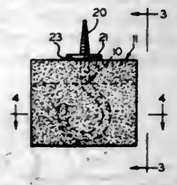
3,224,720
COMBINED HANDLE LOCK AND BRACKET FOR FIRE EXTINGUISHERS
Clifford L. Hain, Northbrook, Ill., assignor to The Fire Guard Corporation, a corporation of Illinois
Filed July 27, 1962, Ser. No. 212,837
4 Claims. (Cl. 248—313)



1. The combination comprising: a portable cylindrical type fire extinguisher having an operating lever and a downwardly directed pivoted handle for releasing said lever for operation when moved upwardly; a flexible band adapted to be buckled about said extinguisher; a clip having a lower end secured to said band and an upper end portion adapted to overlap the end of said handle when said band is buckled about said extinguisher whereby said extinguisher is locked against inadvertent operation.

3,224,721
HANGER FOR ARTICLES HAVING HOOKED OR LOOPED HANDLES
Robert E. Malmquist, Downers Grove, Ill., assignor of one-half to George C. Hodina, La Grange, Ill.
Filed Sept. 2, 1964, Ser. No. 393,878
7 Claims. (Cl. 248—339)

1. A hanger for articles having looped handles and adapted to be attached to a supporting surface comprising, a hook member having means for attaching same to a supporting surface, and a block of resilient material about said hook member and openable to permit a looped handle of an article to be received on the hook member,



whereby said block of resilient material holds the article on the hook member.

3,224,722
CLOTHES LINE PROP
Kenneth R. Flick, 1533 E. 20th St., Erie, Pa.
Filed Apr. 21, 1964, Ser. No. 361,434
3 Claims. (Cl. 248—353)

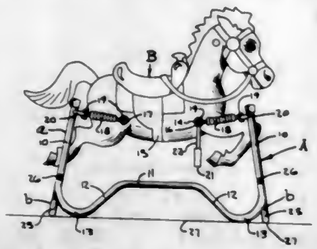


1. A clothes line prop comprising a tubular pole, a cap of flexible material on the upper end of the pole, a rod extending along one side of the pole having a clamp extending over the cap and across the top and down the side of the pole diametrically opposite said one side of the pole, said cap having an upwardly presented opening therein over the upper end of the pole, said clamp having a member fixed thereto depending through said opening into the upper end of the pole, a tension spring between the lower end of the rod and the pole pulling the rod downward, a handle on the rod for lifting the rod upward against the tension of the spring to raise the clamp and permit insertion of the clothes line between the cap and the clamp.

3,224,723
RIDING TOY
Clement R. Moore, Minneapolis, Minn., assignor to Moulded Products, Inc., Maple Plain, Minn., a corporation of Minnesota
Filed May 15, 1964, Ser. No. 367,660
2 Claims. (Cl. 248—370)

1. In a riding toy, a stand for supporting a spring-suspended mount, said stand comprising a pair of side units and a pair of end units, each side unit of the stand consisting of a length of elongated metal stock configurated to define upright end portions forming anchorage posts for suspension springs of the mount, an intermediate rail portion forming a mounting step for the rider, runs of stock bent downwardly from said step and forming legs therefor, and a relatively wide reverse bend in the stock between each leg of the step and its corresponding anchorage post, each such bend forming a foot for the side unit of the stand for contact with a stand-supporting surface, each of the said end units of the stand consisting of elon-

gated metal stock configurated to define a cross-tie member and end lugs turned therefrom, and means rigidly connecting the lugs of the end units of the stand to their corresponding anchorage posts of the side units, the forces tending to flex an anchorage post of either side unit being transmitted and distributed in part by the corresponding



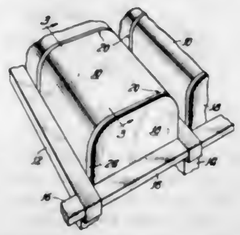
end unit to the other side unit of the stand, said cross-tie member of each end unit of the stand contacting a stand-supporting surface at a locality removed outwardly endwise, relative to the stand's side units, beyond the localities of contact of the corresponding feet of the side units thereby to obtain relatively widespread footings for the stand lengthwise thereof.

3,224,724
CHAIR FIXTURE
Arthur L. Allred, High Point, N.C., assignor to Allred Metal Stamping Works, Inc., High Point, N.C., a corporation of North Carolina
Filed Jan. 6, 1964, Ser. No. 335,921
1 Claim. (Cl. 248—417)



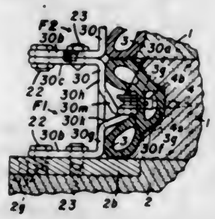
A fixture for swivel chairs comprising a chair frame supporting plate, said plate having a central dished portion and a vertically extending shaft-bearing member, said shaft member depending from said plate dished central portion, a cardioid-shaped cam having a rest position recess and a diametrically opposite cusp, a tubular stanchion secured to said cam for cooperatively receiving the depending shaft-bearing member through said cam, a cam follower arm mounted at one end thereof to said supporting plate for pivotal movement in a plane parallel to said plate in juxtaposition to said cam, said follower arm having one end free reaching toward said cam, a cam follower roller rotatably mounted at the free end of said follower arm following an arcuate path of travel complementary to the cardioid-shaped cam, said roller having a circumferential recess for cooperatively receiving and positively retaining the cam perimeter therein, a helical spring secured at one end to an intermediate portion of said cam follower arm and the other end of said spring secured to said plate to bias and urge the cam follower arm and cam follower into engagement with said cam whereby upon rotation of said plate relative to said cam, said follower arm will urge the plate to return to the cam rest position recess.

3,224,725
FLOOR PAN FORM
William J. Matteson, Palatine, Ill., assignor to Masonite Corporation, Chicago, Ill., a corporation of Delaware
Filed Mar. 9, 1962, Ser. No. 178,704
6 Claims. (Cl. 249—28)



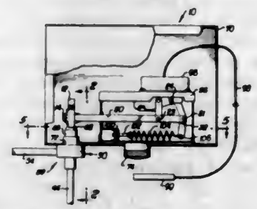
1. A form pan arrangement useful in fabrication of ribbed concrete floors and the like, which comprises a pair of spaced substantially parallel joist bottom members, a plurality of spaced U-shaped channel members positioned between the joist bottoms with the leg portions of the U-shaped channels secured to the joist bottoms, said U-shaped channels having flanges extending from the edge of at least one of the channel walls to form an angular recess between the flange surface and the outside wall of the channel, a U-shaped pan member of generally uniform cross section with the longitudinally extending side wall portions thereof contacting the spaced joist bottoms, and the end portions thereof resting in the angular recesses of the U-shaped channels to form a substantially continuous plane between the exterior surface of the pan member and the exterior surface of the U-shaped channel members.

3,224,726
FLEXIBLE PANEL FORM FOR THIN SHELLS
Phillip Graham, 2825 Glenmore Ave., Pittsburgh, Pa.
Filed Dec. 15, 1964, Ser. No. 418,494
9 Claims. (Cl. 249—207)



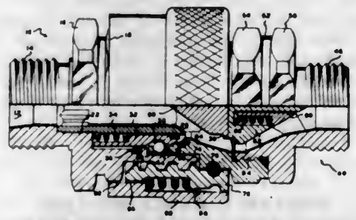
1. A fastener for a form having an elastic edge for molding a thin cementitious panel having embeddable reinforcing strand means; said fastener consisting of a single metallic wire, said wire having a lower looped portion forming a base, said lower looped portion forming at least one hole for receiving a supporting element, said wire having a substantially vertical portion and an upper looped portion, said upper looped portion forming at least one hole, said wire having a portion offset from said vertical portion, said offset portion including a terminal portion of said wire, said terminal portion forming a pin, said pin being substantially parallel to said vertical portion, said terminal portion projecting outwardly away from the plane of said base, each of said embeddable reinforcing strand means having an end portion which includes an aperture, said pin accurately positioning said strand means end portion so that said aperture faces towards the planes of the major surfaces of said panel, whereby said strand means end portion may be quickly coupled to said pin and whereby said panel may be easily and quickly pulled away from and automatically uncoupled from said fastener without disturbing said pin.

3,224,727
MAGNETICALLY ACTUATED CONTROL FOR THERMOSYPHONING REFRIGERATOR SYSTEM
Charles O. Dale, 407 S. Parkview Ave., Los Angeles, Calif., and Anthony Cantabene, 2320 W. 166th St., Gardena, Calif.
Filed Oct. 19, 1962, Ser. No. 231,651
1 Claim. (Cl. 251—65)



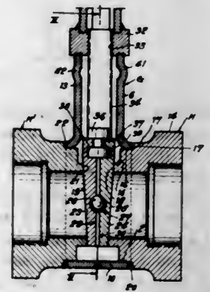
A magnetic control valve for a refrigerating system, comprising: a valve body having a ferromagnetic valve member therein, movable by gravity to a valve closing position; a pivoted lever having a magnet thereon and being swingable toward and from a position wherein said magnet is adjacent said valve body, to magnetically move said valve member to valve opening position; a hollow expandable bellows device having a portion engaging said lever to urge said magnet toward said position when said bellows expands; a remotely positioned temperature sensing bulb connected by a tube to the interior of said bellows; spring means secured at one end to said lever and at the other end to a movable member, said spring means being arranged to bias said lever in a direction to swing said magnet away from said position; and manually operable means for selectively moving said movable member to thereby adjust the tension of said spring means said movable member being a second pivoted lever and said manually operable means being a rotary cam engaging a movable portion of said second pivoted lever.

3,224,728
SELF-SEALING COUPLING
Richard A. Buseth and Elmer R. Steinert, Jackson, Mich., and Walter Kiszko, Van Nuys, Calif., assignors to Aeroquip Corporation, Jackson, Mich., a corporation of Michigan
Filed Apr. 18, 1960, Ser. No. 22,949
13 Claims. (Cl. 251—149.6)



1. In a fluid coupling having first and second bored interconnectable body members, a valve movably mounted concentrically within said first body member cooperable with a valve seat controlling the flow of fluid therethrough, a radially extending shoulder defined on said valve, first means formed on said second body member engaging said valve during movement of said body members in a coupling direction toward each other opening said valve and second means carried by said second body member engaging said valve during movement of said body members in the uncoupling direction away from each other, closing said valve, said second means comprising elements radially movable with respect to said valve operably engaging said shoulder during uncoupling of said body members.

3,224,729
SHEET METAL SECTIONAL GATE VALVES
Guy Lucien Marius Beurel, 46 Ave. A. Briand, La Frette-sur-Seine, France
Filed Jan. 28, 1965, Ser. No. 428,756
Claims priority, application France, Oct. 26, 1959, 808,436, Patent 1,253,841
2 Claims. (Cl. 251—327)



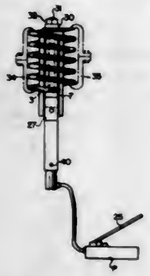
1. A gate valve construction comprising:

a gate guide consisting of two identical elongated half shells of sheet metal disposed in opposing abutting relation and welded together along complementary registering planar edge portions so as to provide a peripheral seam in the plane of the juncture, said half shells being of substantially U-shaped transverse cross section so that they form a hollow chamber therebetween said half shells each having an integral, annular, outwardly bent flange adjacent one longitudinal end thereof and forming the wall of a circular opening, said openings being coaxial and said flanges being aligned and extending away from each other, said flanges having planar outer edges which are parallel with said plane of juncture and are spaced equal distances therefrom and are disposed on opposite sides thereof;

a pair of identical one-piece tubular seat and coupling members each of which is disposed in one of said openings, each said seat and coupling member having an enlarged outer portion of larger diameter than its associated opening and disposed outwardly thereof, an intermediate portion of substantially the same external diameter as the diameter of its associated opening and snugly contacting the wall of its associated opening, and an inner portion of smaller diameter than said intermediate portion, said inner portions of said members having opposing spaced-apart end faces defining opposing valve seats one on each side of said plane of juncture, each member having a substantially radially extending annular shoulder between said outer portion and said intermediate portion, said shoulder being radially overlapped with, disposed outside of, and abutting said outer edge of the flange of its associated opening, and welded joints between said shoulders and said outer edges whereby said members are united to said gate guide;

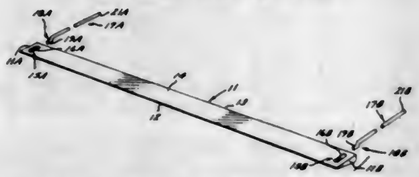
a gate disposed between said valve seats and adapted for simultaneous sealing engagement therewith; and operating means disposed in said chamber for moving said gate toward and away from said valve seats.

3,224,730
HYDRAULIC JACK ASSEMBLY
Stephan J. Fischler, 21391 Hilliard Road, Rocky River, Ohio
Filed June 29, 1962, Ser. No. 206,263
6 Claims. (Cl. 254—10.5)



1. A hydraulic jack assembly comprising a hydraulic piston-cylinder assembly, a U-shape yoke member secured to the rod end of the cylinder of such piston-cylinder assembly, said U-shape yoke member having elongated legs extending away from said piston-cylinder assembly, a U-shape puller member disposed within such yoke member at right angles thereto and secured to the piston of such piston-cylinder assembly, said puller member having elongated legs extending back along the piston-cylinder assembly, and work contact means adapted to be secured to opposite ends of the assembly to the yoke and puller respectively.

3,224,731
APPARATUS FOR LIFTING AND VERTICALLY SEPARATING A PLURALITY OF HEAVY VERTICALLY STACKED OBJECTS
Albert M. Carlson, 13225 7th St., Chino, Calif.
Filed Dec. 24, 1963, Ser. No. 333,005
2 Claims. (Cl. 254—131)



1. Apparatus for lifting and vertically separating, by a selected short distance, a plurality of heavy vertically stacked objects, comprising: a tapered pry and splitter member extending in a transverse direction and having a forward thin entry edge, a rear thick and rounded trailing edge and a tapered substantially wedge-shaped intermediate body portion smoothly tapering from said thick trailing edge to said thin forward entry edge; at least one pry and lever bar provided with a forward engagement end for forcibly applying torque to said tapered pry and splitter member; said pry and splitter member being provided with at least one forwardly and rearwardly elongated torque-applying coupling aperture-defining means cooperable for the reception of said forward engagement end of said torque-applying pry and lever bar for the application of torque thereto by forcible manual movement of the opposite end of said pry and lever bar and for the transmission of said applied torque to said tapered pry and splitter member in a direction such as to cause forcible rotation thereof about a laterally directed axis extending along the lateral length thereof whereby to forcibly rotate said tapered pry and splitter member from a substantially horizontal plane between adjacent vertically stacked heavy objects into a substantially vertically directed plane with said heavy objects positioned thereabove vertically lifted and separated from vertical objects spaced therebelow by a desired vertical distance, said thin forward edge of said tapered pry and splitter member being effectively sharpened and adapted to non-slidably engage the underneath surface of vertically adjacent ones of said heavy objects positioned thereabove during said forcible rotation of said tapered pry and splitter member from said substantially horizontal plane into said substantially vertical plane, said rear rounded trailing edge of said tapered pry and splitter member being slidably cooperable with underlying ones of said heavy objects as said tapered pry and splitter member is forcibly rotated from said substantially horizontal plane into said substantially vertical plane; said forward engagement end of said pry and lever bar comprising an offset goosenecked portion adapted to be inserted through said elongated coupling aperture-defining means of said tapered pry and splitter member with a forward part of said offset goosenecked portion of said forward engagement end underlying a forward portion of said tapered pry and splitter member and with another portion of said pry and lever bar positioned immediately behind said offset goosenecked portion of said forward engagement end being positioned for forcible abutment with the top surface of a rear part of said tapered pry and splitter member whereby to facilitate the application of torque to said tapered pry and splitter member.

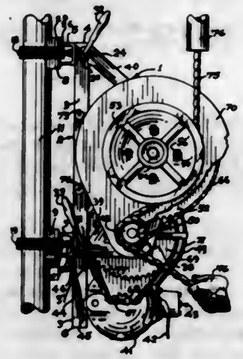
3,224,732
EQUIPMENT FOR PLACING CABLE IN CONDUITS
Frank H. Williams, 2310 Marshall St., Little Rock, Ark.
Filed Nov. 21, 1962, Ser. No. 239,182
3 Claims. (Cl. 254—134.3)



1. An electrical wire lead puller comprising an elongated resilient wire-like body, means at one end of said elongated body for attachment to the hooked end of a fish tape, said elongated body extending from said means of attachment a substantial distance to provide an extension from the hooked end of the fish tape sufficient to project from the end of a conduit and outwardly from a connection box on the end of the conduit while the means for attachment of the lead puller and the hook of the fish tape lie within the conduit, a double elongated loop means formed at the end of said body opposite the means for attachment to the fish tape, the free end portion of the body being twisted back on the body and having a hook formed on the extreme free end thereof interengaging with the inner end of the elongated loop means on said body whereby the loop means is prevented from collapse and the strength of the loop means is enhanced so the fish tape can be used to pull wires into and through the conduit in which the fish tape is located.

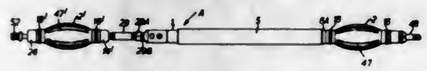
3,224,733
PORTABLE CABLE PULLER
Glover C. Ensley, 525 N. Woodland Drive, Kansas City North, Mo.
Filed May 1, 1963, Ser. No. 277,232
2 Claims. (Cl. 254—134.3)

1. Apparatus for pulling a cable through a conduit or the like adapted to be attached to a supporting member including a rope extending through said conduit and having one end attached to said cable comprising:
(a) a frame having a longitudinal member,
(b) spaced cross arms on said frame underneath said longitudinal member, one end of said arms having notches therein,
(c) longitudinally aligned U-shaped channel members secured to said cross arms and adapted to engage said supporting member,
(d) chains having one end engaging in the notches



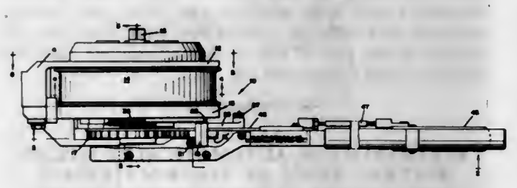
in the end of each of said cross arms and adjustable means on the other end of each of said chains cooperating with the other ends of said cross arms for adjustably securing said frame to said supporting member,
(e) motive means secured to said frame,
(f) spaced capstans mounted on said frame,
(g) aligned speed reducing means carried by said capstans and being connected to said motive means and adapted to selectively rotate said capstans for drawing rope in engagement with one of said capstans.

3,224,734
PNEUMATIC SELF-PROPELLED APPARATUS
James Douglass Hill, Caterham, Surrey, England, assignor to Her Majesty's Postmaster General, London, England
Filed Oct. 7, 1963, Ser. No. 314,379
Claims priority, application Great Britain, Oct. 10, 1962, 38,454/62
17 Claims. (Cl. 254—134.6)



1. Apparatus for self-propulsion along a duct or the like, having an elongated pneumatically operable telescopic body portion, first and second inflatable bag grips supporting the body portion at its leading and trailing ends respectively, a fluid inlet for connecting a pneumatic pressure source to the apparatus, means permitting inflation of the first and second bag grips sufficiently for a bag grip so inflated to firmly grip the duct wall preventing movement of that bag grip along the duct, the body portion including pneumatic pressure distributor valve means movable between first and second operative positions for distributing pneumatic pressure from the fluid inlet alternately to extend the body portion with the trailing end bag grip inflated to firmly grip the duct wall and with the leading end bag grip sufficiently deflated to permit sliding movement thereof along the duct, and to contract the body portion with the leading end bag grip inflated to firmly grip the duct wall and with the trailing end bag grip sufficiently deflated to permit sliding movement thereof along the duct, a first control valve operable by and during the said extension of the body portion to permit the said deflation of the first bag grip, a second control valve operable by and during the said contraction of the body portion to permit the said deflation of the second bag grip, and resilient means coupling the body portion and the distributor valve means, said resilient coupling means being responsive to the said extension and contraction of the body portion to effect the said movement of the distributor valve between said first and second operative positions.

3,224,735
WINCH
William O. Linde, Baltimore, Md., assignor to Automotive Servicenter, Inc., Baltimore, Md., a corporation of Maryland
Filed May 13, 1963, Ser. No. 279,797
18 Claims. (Cl. 254—167)



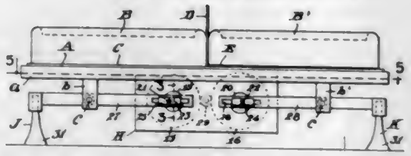
4. In a winch, a drum, a rotatable handle having a grip member thereon, means operatively connecting said handle with said drum for rotation of said drum upon oscillation of said handle, brake means engageable with said drum, means for urging said brake means into engagement with said drum, and means for connecting said grip member and said brake means in any operative position of said handle lever to affect release of said brake means upon actuation of said grip member.

3,224,736
BARBED STRIP
Daniel D. Musgrave, 8201 Caraway St., Cabin John, Md.
Filed May 31, 1963, Ser. No. 284,468
16 Claims. (Cl. 256—8)



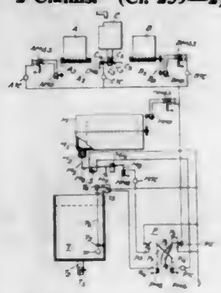
1. A barbed strip having a substantially flat cross-section and comprising: lattice members forming quadrilaterals each having one diagonal substantially parallel to the longitudinal axis of said strip; a first neck portion joining each adjacent pair of said quadrilaterals substantially at the junction of said diagonals; second neck portions at each end of the other diagonal of said quadrilaterals; and pairs of barbs extending from each said second neck portion at acute angles relative to said longitudinal axis of said strip.

3,224,737
AGITATOR TABLE
Harold E. Becker, Los Angeles, Calif., assignor of one-half to Richard S. Backlund, Los Angeles, Calif.
Filed Oct. 23, 1964, Ser. No. 406,066
13 Claims. (Cl. 259—1)



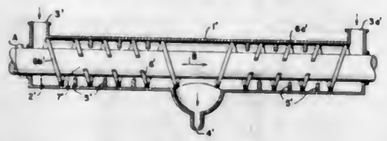
1. In an agitator, a table, a single leg supporting one side of said table intermediate its ends, a pair of legs apart from said table arranged adjacent the ends of the side thereof opposite said first named leg, a pair of lever arms fulcrumed on said pair of legs, means pivotally connecting said lever arms to said table, and powered means on said table for rocking said lever arms vertically relative to said pair of legs to thereby oscillate said table relative to said first named leg.

3,224,738
APPARATUS FOR AUTOMATICALLY MIXING SEVERAL KINDS OF STOCK-MATERIALS
Tomiji Tarukawa, 51 Higashiyamacho Itabashiku, Tokyo, Japan
Filed Sept. 14, 1960, Ser. No. 56,006
Claims priority, application Japan, Sept. 21, 1959, 34/30,146
2 Claims. (Cl. 259—2)



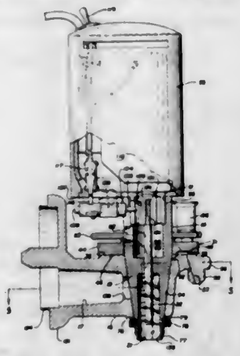
1. Apparatus for automatically mixing several kinds of materials which apparatus comprises: a plurality of feeding devices for feeding predetermined quantities of the materials to be mixed, said predetermined quantities being selected so as to obtain a preestablished mixture, each of said feeding devices including a discharge device for discharging only a predetermined quantity of the material from each device, a mixer adapted for receiving and mixing the materials discharged from said feeding devices, the mixer including a discharge device, said discharge device having a first operative position in which materials from the feeding devices can be received by the mixer to thereby fill said mixer and a second operative position in which mixed material can be discharged from the mixer, an accumulator operatively positioned relative to said mixer for receiving mixed material which is discharged from said mixer, means operative in response to said first position of the discharge device of the mixer subsequent to discharge of the contents in the mixer into the accumulator, said means controlling the feeding of the material from the feeding devices to the mixer and the mixing of the material in the mixer, and a sensing device operative in response to decrease of a predetermined quantity of material in the accumulator, the mixture from the mixer to the accumulator being fed upon operation of said sensing device.

3,224,739
MIXING AND KNEADING MACHINE
Gerrit Schuur, Delft, Netherlands, assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Sept. 5, 1963, Ser. No. 306,935
Claims priority, application Netherlands, Sept. 26, 1962, 283,627
4 Claims. (Cl. 259—4)



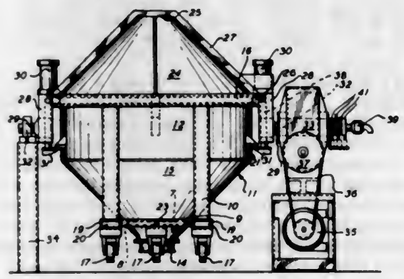
1. A mixing and kneading machine which comprises:
(a) a casing provided with at least three ports which include inlet and outlet ports and having a plurality of longitudinally spaced projections extending inwards,
(b) a worm screw mounted within said casing and being both rotatable and axially reciprocable relative to the casing, said screw having a worm which is interrupted at longitudinal intervals spaced apart by distances equal to the longitudinal intervals between said projections to form passages, whereby said projections can pass through said passages during said rotary and axial reciprocatory movements of the screw, and
(c) said worm being wound in one screw direction between one pair of different ports and in the other screw direction between another pair of different ports, whereby, during the operation of the machine, material supplied to the inlet port or ports flows in opposite directions within the casing.

3,224,740
FLAVOR MIXING AND DISPENSING DEVICE AND METHOD
Jack W. Kuehn and Harold W. Atkins, Minneapolis, Minn., assignors to Dari-Go-Round, Inc., a corporation of Minnesota
Filed Dec. 8, 1961, Ser. No. 157,984
18 Claims. (Cl. 259—8)



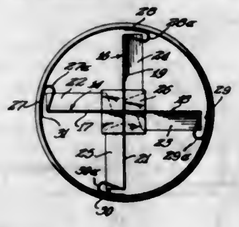
1. A flavor mixing and dispensing device for basic frozen confection comprising, a valve housing having an inner housing wall defining a valve chamber and an inlet passage opening to said wall and chamber and adapted for connection to the discharge of a continuous style frozen confection freezer, a valve members having a pheripheral wall mounted in sliding engagement with said housing wall and having an open ended product mixing and discharge chamber, said housing being formed with a plurality of passages each adapted for connection to an individual source of concentrated fluid flavor material under pressure and extending to said inner housing wall, said valve member having passages extending from said mixing chamber to said peripheral wall and arranged for simultaneous connection of said mixing chamber to said confection inlet passage and to all of said flavor material passages in said housing in one position of said valve member, valve means mounted for interrupting said flavor material passages adjacent said inner housing wall and arranged for selective one at a time opening thereof to permit flow of flavoring material to said mixing chamber, and a power driven device mounted in said mixing chamber for mixing the products therein.

3,224,741
MIXER
John L. Muench, Sr., 8 Chestnut Place, Short Hills, N.J.
Filed July 1, 1964, Ser. No. 379,578
5 Claims. (Cl. 259—30)



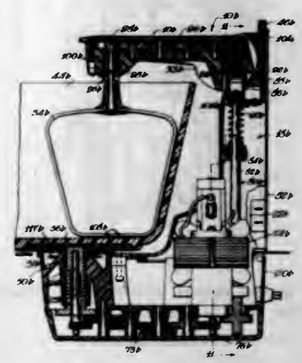
5. A mixer comprising:
(a) a generally horizontal axle,
(b) a lid attached to the axle,
(c) a support for the axle,
(d) a jack attached to the lid for lifting a vessel into sealing engagement with the lid, and for lowering the vessel from the lid, the lid and vessel collectively defining a unitary, closed blending chamber when engaged to each other, and the axle having a bore through which fluid is supplied to the jack.

3,224,742
AGITATOR
Dean Louis Hiser, 5474 W. Lindale, Decatur, Ill.
Filed Apr. 14, 1964, Ser. No. 359,700
6 Claims. (Cl. 259—75)



1. An agitator for insertion into a cylindrical can comprising a plurality of radially extending arms, a downwardly inclined scraper element extending from each of said arms, and a pointed element at the end of at least one of said arms, said arm having a U-shaped bent loop portion between the end of said arm and said pointed element, said arms being so proportioned that one leg of said U-shaped loop portion is received snugly against the interior of said can.

3,224,743
MULTIPURPOSE DOMESTIC APPLIANCE
Lawrence I. Freedman, Graylyn Crest, Wilmington, John W. Tone and Heinz Werner, Wilmington, Del., assignors to Ronson Corporation, Woodbridge, N.J., a corporation of New Jersey
Filed Nov. 16, 1961, Ser. No. 152,872
16 Claims. (Cl. 259—85)

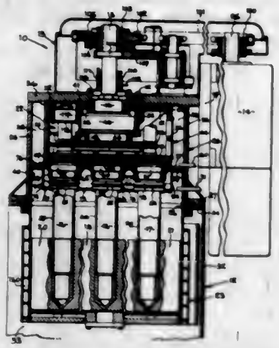


1. A multipurpose use domestic appliance capable of use with various attachments comprising a hollow casing including a base and a pedestal, said base and pedestal having communicating hollow interiors, a variable speed motor mounted within said casing, a power shaft being mounted substantially remote from said pedestal within said base, the upper end of said power shaft being accessible through said base, a connecting means upon said power shaft for operatively connecting said attachments thereto, a coupling means on said base for mounting said attachments upon said base when connected to said power shaft, transmission means in said base connecting said variable speed motor with said power shaft for rotating it, an arm mounted upon an upper portion of said pedestal, said arm incorporating rotatable beater-connecting means, and rotatable means connecting said arm to said pedestal for permitting said arm to be disposed in various operative and retracted positions whereby said power shaft in said base may be used in conjunction with a beater connected to said arm and disposed in said operative position and independently for operating said attachments when said arm is in said retracted position.

3,224,744
VERTICAL MIXER CONSTRUCTION
Robert M. Broomall, Fort Thomas, Ky., assignor to The J. H. Day Company, a corporation of Delaware
Original application Mar. 19, 1962, Ser. No. 184,629. Divided and this application Mar. 30, 1964, Ser. No. 355,637
5 Claims. (Cl. 259—102)

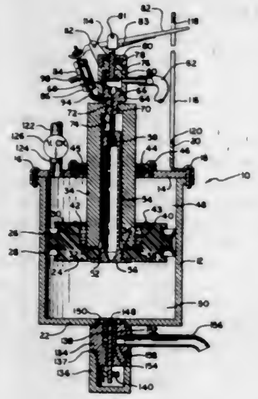
1. A vertical mixer comprising a vacuum shroud having a lower shoulder adapted for airtight engagement with the rim of a bowl, a rotatable mixing head disposed within said vacuum shroud above said shoulder, a center shaft depending from said mixing head, a planetary shaft depending from said mixing head, an electric motor mounted upon said mixer, means interconnecting said motor and said center shaft for rotating said shaft in a first direction, means interconnecting said first shaft and said planetary shaft for rotating said planetary shaft about its own axis in the opposite direction from the rotation of said center shaft and for simultaneously moving said planetary shaft planet-wise about said center shaft, first means for drawing a vacuum upon the interior of said bowl, sealing means extending inwardly from said shroud

to form a transverse seal between said shroud and said mixing head, and second means for drawing a vacuum



above said sealing means, whereby the pressure between said bowl and head is equalized.

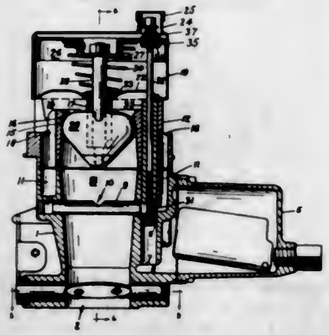
3,224,745
GAS ABSORPTION
William E. Hotchkiss, Wichita, Kans. (3528 Keswick Drive, Chamblee, Ga.)
Filed Aug. 3, 1961, Ser. No. 129,140
23 Claims. (Cl. 261—35)



1. For use in gas-liquid contact apparatus of the reciprocating piston type, a piston and piston rod construction comprising, a piston having spaces on the opposite sides thereof and having an opening therethrough, a piston rod extending from one side of and axially movable relative to said piston, said piston rod having an end adjacent the piston and an end remote from the piston, means connecting said adjacent end of the piston rod to the piston including means operative to limit axial movement of the piston rod from the piston, said piston rod being hollow with the remote end thereof being closed and the adjacent end thereof being open and communicating with the opening through the piston, said connecting means including spring means biasing axial movement of the piston rod toward the piston and the adjacent end thereof into abutting annular valving engagement with the piston at a valving position surrounding the opening through the piston, whereby all external communication with the hollow interior of the piston rod except through the opening through the piston is closed when the piston rod is in said valving engagement with the piston, and valve controlled means for introducing a gas into the hollow piston rod from the exterior thereof at a position adjacent the remote end of the piston rod, whereby a gas can be passed through the hollow piston rod and the opening through the piston to the space on the side of the piston opposite the piston rod, and whereby communication between the spaces on opposite sides of the piston through the opening through the piston is obtained upon and solely upon the piston rod being unseated from said valving engagement with the piston.

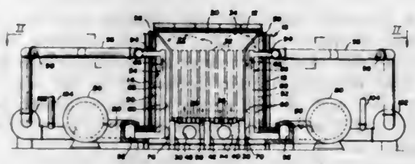
14. In gas-liquid contacting apparatus of the reciprocating piston type, a closed cylinder, a piston slidingly and sealingly received in the cylinder and separating the interior of the cylinder into first and second chambers of variable volumes at opposite ends of the cylinder, a first valve controlled means for conducting a liquid into said first chamber from a liquid supply, said piston having a first passageway therethrough affording fluid communication between said chambers, normally closed valve means in said first passageway and spaced from said second chamber for controlling communication therethrough between said chambers, pressure responsive actuating means for opening said normally closed valve means, a second valve controlled means for introducing a gas into said first passageway at a position intermediate said normally closed valve means and said second chamber, and a third valve controlled means for discharging said second chamber, said normally closed valve means including a piston rod carried by the piston that extends through said first chamber end of the cylinder, said second valve controlled means including a second passageway in the piston rod by-passing the normally closed valve means and intersecting said first passageway intermediate the normally closed valve means and the second chamber, whereby initial gas and liquid contact will occur in said first passageway.

3,224,746
AUTOMATICALLY VARIABLE CHOKE CARBURETOR
Edward Harley Boyle and Albert Frederick Geissler, Cronulla, near Sydney, New South Wales, Australia, assignors to Efficax Industries Pty. Limited, Sydney, New South Wales, Australia, a company of New South Wales
Filed Dec. 12, 1962, Ser. No. 244,084
Claims priority, application Australia, Dec. 14, 1961, 12,409/61
2 Claims. (Cl. 261—50)



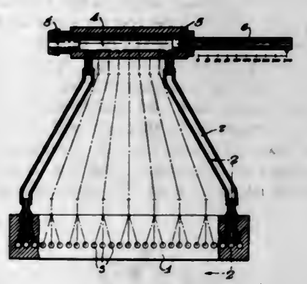
1. An automatically variable choke carburetor comprising a body defining a chamber of tear-drop shape with a lower cylindrical throat extension, a main air inlet at the top of said chamber and a throttle valve in the cylindrical throat extension of the chamber, a float chamber connected to the lower part of said body, said body having a valve chamber, a fuel inlet port connecting said float chamber to said valve chamber, a fuel delivery tube mounted transversely across said chamber and having an outlet located medially in said chamber, said outlet being in the top of said tube facing said air inlet, an atomizing air duct connected to each end of said fuel delivery tube and extending through said body to inlet ports in the top thereof, a cylinder mounted on said body above said main air inlet, a piston in said cylinder including a piston rod which passes through said main air inlet, a conoid mounted on the bottom end of said piston rod, a spring in said cylinder acting on said piston to move said conoid to a position in which said main air inlet is closed, a reverse taper valve in said valve chamber to regulate the flow of fuel to said fuel delivery tube, said valve including a stem connected to said piston, the cylinder being open at the bottom and closed at the top, the body including a spider frame above said chamber, an annular plate mounted on said spider frame, said spring being between the piston in the cylinder and the annular plate to urge the piston upwardly, said conoid being displaced downwardly upon opening of the throttle valve which subjects the conoid to suction, and a valve seat in said valve chamber and against which the valve is seated with said piston in an uppermost position in which the main air inlet is closed by the conoid, said valve which regulates the flow of fuel being moved away from its valve seat by downward movement by said piston.

3,224,747
SOAKING PIT CONSTRUCTION FOR METAL INGOTS
Edwin J. Bernard, Pittsburgh, Pa., assignor to Amsler Morton Company, a division of Textron Inc., Pittsburgh, Pa., a corporation of Rhode Island
Filed Oct. 23, 1962, Ser. No. 232,529
6 Claims. (Cl. 263—41)



1. In a soaking pit for aluminum ingots and the like, a heating chamber having a floor with openings therein which provide for vertical circulation of heated air to effect a heating action on aluminum ingots received therein, a heat exchange chamber for receiving a flow of such gases after they pass through the heating chamber and are thereafter returned under pressure for repeated recirculatory movement through said heating chamber, means for subdividing the flow of heated air within said heating chamber into substantially uniform flows so that subdivided flows will sweep uniformly the aluminum ingots therein, means for collecting such subdivided flows and thereafter directing them to said heat exchange chamber, a pump adapted to circulate under pressure a heated flow of combustion product gases through said heat exchange means, a burner for receiving a combustible flow of fuel and air for generating a high temperature flow of gases for circuation through said heat exchange means, an exhaust for removing a portion of the circulating combustion product flow to maintain the pressure conditions at a substantially constant value, and means providing an inflow of air at controllable rates together with said combustion product gases to establish the temperature of the circulating product gases.

3,224,748
REGULATING DEVICE FOR POWDER NOZZLES
Günter Büddenhagen, % Knapsack-Griesheim AG., Werk Griesheim-Autogen, Frankfurt am Main, Germany
Filed Apr. 6, 1962, Ser. No. 185,636
Claims priority, application Germany, Apr. 12, 1961, K 43,446
3 Claims. (Cl. 266—23)

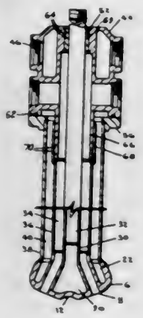


1. An apparatus for flame scarfing metallic workpieces comprising in combination a powder nozzle having a plurality of sets of outlet channels spaced over a pre-determined width dimension, each set including at least two outlet channels and a common inlet channel, powder feed means connected to each outlet channel in said sets for feeding powder thereto, pressure means connected to each of said inlet channels to accelerate the flow of powder through said outlet channels, said pressure means including pressure medium supply connecting means, a manifold communicating with said pressure medium supply connecting means, said manifold being spaced from said nozzle and having a width substantially smaller than said predetermined nozzle width dimension, a plurality of conduits connected to said manifold, each of said conduits communicating with a respective inlet channel of said sets of said outlet channels, and sliding valve means in said manifold for closing a selected number of said conduits and their respective sets of outlet channels in accordance with the extent to which said valve means is inserted into and extended out of said manifold.

3,224,749
OXYGEN INJECTION LANCE
Walter V. Berry, Pittsburgh, Pa., assignor to Berry Metal Company, Harmony, Pa., a corporation of Nevada
Continuation of application Ser. No. 189,350, Apr. 23, 1962. This application Mar. 1, 1965, Ser. No. 441,399
4 Claims. (Cl. 266—34)

1. An oxygen lance comprising a nozzle head that projects down into the furnace, three concentric tubes joined to the nozzle head and running up to a mounting assembly, said mounting assembly comprising a casting cored and tapped to provide separated entrances for oxygen and water and an exit for return water, the face of said casting being machined for union with a face plate, said face-machined surface being cut with a continuous circular groove to receive an O-ring to assure seal with said face plate, said mounting assembly cored throughout to provide for through passage of the central tube of said concentric tubes, said coring being machined at the upper end to provide a smooth-wall cylindrical bore, said central tube being fitted with a metal, elongated ring having grooves around its exterior surface that receive O-rings that effect a seal with said smooth-wall cylindrical bore of said mounting assembly while permitting linear displacement of said central tube relative to said mounting assembly, said mounting assembly having a

projected lower cylindrical extension also having grooves around it to receive O-rings that effect a seal against the interior surface of a cylindrical fitting that is joined to the intermediate tube of said concentric tubes, said seal permitting linear displacement of said cylindrical fitting and intermediate tube relative to said mounting assembly, said nozzle head cored to receive coolant water from said central tube of said concentric tubes and passageways to communicate said coolant water to the annular space between said intermediate tube and the external tube of said concentric tubes, without leaks of said coolant water to other passageways provided for said oxygen, said oxygen passageways receiving said oxygen from the annular space between said central tube and said intermediate tube and carrying said oxygen down through said nozzle through a plurality of exit jets, said exit jets diverging from each other, the angle of divergence from the longitudinal axis of said nozzle being at least 15°, thus providing a large



volume in the interior central region of said nozzle for coolant flow, said divergent passageways having openings between each but not communicating therewith, said openings situated at the front internal surface of said nozzle to permit flow of said coolant from the central internal region out around said oxygen passageways, said openings having a total area approximately equal to the internal area of said central coolant tube, said nozzle head having a bulbous external shape wherein the largest diameter is significantly larger than the diameter of said external tube so that the exit jets for oxygen are approximately opposite the region between the outer tube and the intermediate tube, said nozzle head being curved gradually to the face region, which is recessed at its center to project an intrusion into the internal central region to divert and maintain flow velocity of said coolant water while maintaining a uniform thickness of the wall of said nozzle head.

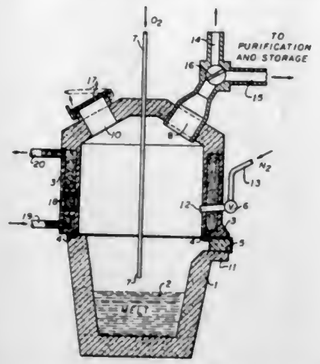
3,224,750
RECOVERY OF COMBUSTIBLE GASES IN FERRO-METALLURGICAL PROCESSES

Kurt Baum, Essen, Germany, assignor, by mesne assignments, to Kaiser Industries Corporation, Oakland, Calif., a corporation of Nevada

Original application Jan. 12, 1959, Ser. No. 786,435, now Patent No. 3,084,039, dated Apr. 2, 1963. Divided and this application May 9, 1962, Ser. No. 201,227

2 Claims. (Cl. 266—35)

1. An apparatus for refining steel and recovering combustible gases resulting from the process which comprises an upwardly facing, open mouthed converter, a hood enclosing the open mouth of said converter and adapted to form a substantially fluid tight closure with the mouth of said converter, a lance extending vertically through said hood and into said converter, an inlet in said hood adapted to introduce inert gas into a chamber enclosed within said hood and said converter and a gas outlet from said



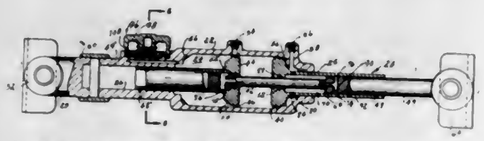
hood adapted to carry away gases formed in the refining of steel and inert gas introduced through said inlet.

3,224,751
HYDRAULIC CYLINDER-ZERO EXTERNAL VOLUMETRIC CHANGE TYPE

Zenas B. Andrews, Los Altos, Calif., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed May 15, 1964, Ser. No. 368,450

2 Claims. (Cl. 267—1)



1. A hydraulic strut for use between two relatively movable structures comprising a casing adapted to be secured to one of said structures and having a high pressure fluid chamber therein connected by an aperture through one end of said casing defining a compression cylinder and a bore in the other end defining a tension cylinder;

a compression stroke valve including a head disposed in said high pressure chamber having a hollow stem extending through said compression cylinder;

a tension stroke valve including a head disposed in said high pressure chamber and a hollow stem extending in said tension cylinder;

said heads of said compression and tension stroke valves each having a hole aligned with the hollow of its stem;

a rod having an end adapted to be secured to the other said structure and the other end inserted through the hollow of said stem of said compression stroke valve and into the hollow of said stem of said tension stroke valve;

a shoulder on the portion of said rod within the hollow of said tension stroke valve stem and a shoulder on the portion of said rod within the hollow of said compression stroke valve stem adapted to engage the under side of said head within their stems whereby inward movement of said rod unseats said compression stroke valve moving the stem thereof into said high pressure chamber, displacing fluid and creating a low pressure cavity between the rod shoulder and valve head in said compression valve stem, and outward movement of said rod unseats said tension stroke valve moving its stem into said high pressure chamber

and creates a low pressure cavity between the rod shoulder and valve head in said compression valve stem;

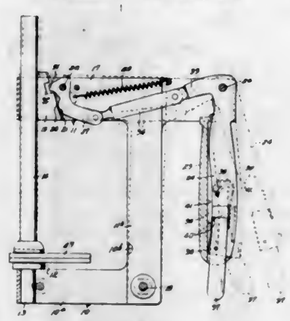
and passage means connecting said high pressure chamber of the hollows of said stems of said valves including a groove in the end wall around said aperture and said bore, a hole in the stem of said valves at the neck thereof and a passage through the intermediate portion of said rod, and said valve heads adapted to close and open said passage means with seating and unseating thereof over said groove.

3,224,752
CLAMPING DEVICE

Burtis W. Benbow, P.O. Box E, Garberville, Calif.

Filed July 22, 1963, Ser. No. 296,576

7 Claims. (Cl. 269—6)



1. In a clamping device, a substantially L-shaped body, one branch of the body having a clamping surface thereon, a substantially L-shaped rocker, one arm of said rocker extending generally parallel to the other branch of the body and having its end pivotally secured thereto, the other arm of the rocker extending generally parallel to said one branch of the body, an elongated clamping member slidably carried by the end of said other arm of the rocker, a wedge block movably carried by said other arm of the rocker and movable between release and clamping positions, said block in its clamping position serving to fix the elongated member with respect to the rocker and in its released position permitting the elongated member to be slidably moved relative to the rocker, a hand lever pivotally secured to the body, lever and linkage mechanism operatively connecting the hand lever to said block, said lever and linkage mechanism being so formed that when the hand lever is moved to its full clamping position from a released position, the block is first moved to its clamping position to fix the elongated clamping member and then the rocker is moved relative to the body to move the elongated clamping member toward said clamping surface.

3,224,753
CLAMPING STRAP AND EXTENDABLE ADJUSTABLE CLAMPING BLOCK COMBINATION

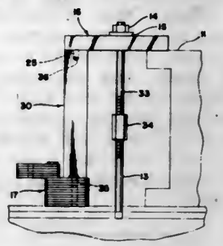
William E. Hefner, Cleveland, Ohio
(8144 Camino Del Sol, La Jolla, Calif.)

Filed Jan. 21, 1963, Ser. No. 252,713

The portion of the term of the patent subsequent to Mar. 26, 1980, has been disclaimed

3 Claims. (Cl. 269—91)

1. The combination of a clamping strap with a clamping block providing surfaces of selective height to support a portion of said strap bearing thereon and extension means insertable between a selected said surface and said strap, in a set comprising: said strap having in said portion a projecting pin; said clamping block comprising a stack of plates having therethrough aligned perforations each located toward one margin of a respective plate and fastening means passed through the perforations retaining the plates in a grouped unit and permitting plates to be pivotally displaced relative to those beneath to expose a portion of a plate of selected height adapted to provide a bearing surface for said clamp strap; each of said plates having a second aperture or perforation adapted to receive said pin when the respective plate is used to provide said bearing surface; said extension means compris-



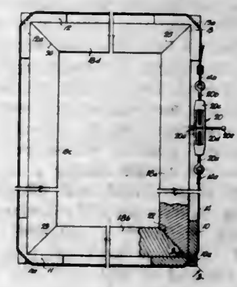
ing a plurality of bars of diverse lengths wherefrom a bar may be selected of desired extension length for cooperative insertion between said clamping strap and the topmost of a selected number of aligned plates in said stack, each bar having on one end a projecting pin and on the other a recess aligned with the said pin of the bar adapted respectively to engage with a said second aperture of a said topmost plate and with said pin of the strap.

3,224,754
FRAMING DEVICE

Ward A. Graham, 10754 Bridlespur Terrace, Kansas City, Mo.

Filed Sept. 10, 1963, Ser. No. 307,818

3 Claims. (Cl. 269—108)



1. A device for aligning and engaging the individual elements of an integral frame in proper assemblage array comprising

a plurality of corner members each adapted to engage with inner portions thereof outer portions of the two frame elements at a corner juncture thereof;

cable means engaging sequentially said corner members via passages therethrough;

means for simultaneously permitting the fixed engagement of said cable at two positions along the length thereof including the corner members therebetween and tensioning the portion of said cable carrying said member;

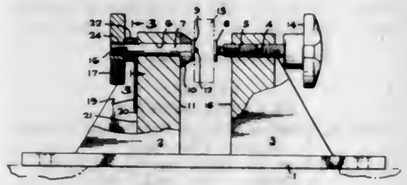
said latter means comprising a turnbuckle construction incorporating a central cage portion with loop ended screw members threadably engaging opposite ends thereof,

one turnbuckle loop fixedly engaged by said cable length at one of said positions and the other turnbuckle loop fixedly engaged by said cable length at the other of said positions;

and means at one end of said turnbuckle for one of

said fixed engagements comprising an elongate bolt externally threaded at one end thereof and having an enlarged head at the other end thereof;
said bolt extending through one of the turnbuckle loops,
an elongate member mounted on said bolt and positioned next to said turnbuckle loop on side thereof;
a washer also mounted on said bolt and positioned next to said turnbuckle loop on the other side thereof;
and nut means threadably engaged on said bolt adapted with the enlarged head of the latter to compact therebetween said elongate member and washer on said bolt toward said turnbuckle loop in such manner as to fixedly seize the cable portion passing through the turnbuckle loop against said loop;
the length of said elongate member sufficient on one side thereof that same will contact the frame in rotation of said turnbuckle screw member thereby preventing twisting of said cable as the turnbuckle is tightened down.

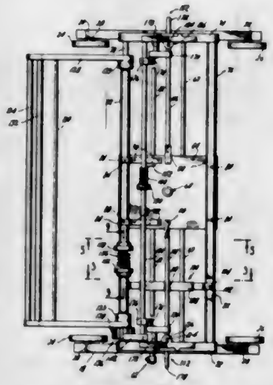
3,224,755
ANGULARLY ADJUSTABLE VISES
Walter C. Schweitzer, 3947 Redwood Ave., Los Angeles, Calif.
Filed May 27, 1963, Ser. No. 283,270
5 Claims. (Cl. 269—245)



3. In a vise for holding work pieces between synchronously movable, angularly adjustable members, a combination including: a base; first and second uprights affixed to said base; an elongated, translationally movable member carried by said first upright; means associated with said translationally movable member and said first upright for holding said translationally movable member in adjusted longitudinal position with respect to said first upright; said second upright having a recess therethrough longitudinally aligned with said elongated member; a work-engaging member pivotally mounted on one end of said elongated member; a rotatable shaft extending through said recess; a work-engaging element rigidly mounted on the end of said shaft that is closest to said work engaging member; a portion of said shaft adjacent its other end having male threads thereon; a handle having an internally threaded, transversely-extending recess therein in threaded engagement with the threads on said shaft; means carried by said shaft and said second upright for indicating their relative angular positions; and a spacer surrounding said shaft between said handle and said second upright; said handle acting when rotated on the threads of said shaft toward said second upright to press said spacer against said second upright and lock said shaft and said work-engaging element in adjusted angular position.

3,224,756
TURNTABLE CLOTH-SPREADING MACHINE
Nathan Obedin, Brooklyn, N.Y.; Alfred Obedin and Harry Ettinger, executors of Nathan Obedin, deceased, assignors to Alfred Obedin, Brooklyn, N.Y.
Filed Dec. 17, 1963, Ser. No. 331,175
8 Claims. (Cl. 270—31)

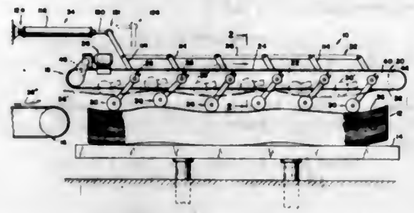
1. In a cloth-spreading machine having a carriage movable back and forth along a table surface for spreading material in a pile thereon, a turntable rotatably mounted on said carriage, means on said carriage for supporting a supply of said material, a material spreading number pivotally mounted at one end of said turntable and projecting outwardly therefrom, and guide means on said material spreading member for guiding said material from said turntable to said table surface, releasable locking means for said turntable to lock said turntable in a first operative position in which said turntable is aligned with said carriage and said material spreading member extends in a first direction therefrom, and in a second operative position in which said turntable is rotated 180° relative to said carriage and said material spreading member extends in the opposite direction, said locking means including oppositely-projecting indexing rods movably mounted on opposite sides of said turntable, one of said indexing rods being operative to lock and unlock said



turntable in the first operative position and the other indexing rod being operative to lock and unlock said turntable in the second operative position, spring means connected between said spreading member and said turntable for normally urging said spreading member in an upward direction away from said table surface, a ratchet gear fixed to said spreading member and a pawl member pivotally mounted on said turn-table for adjustably retaining said spreading member in a selected angular position relative to the carriage, and actuating levers rotatably mounted on opposite sides of said turntable with one end of each of the respective levers positioned to overlie each of the respective indexing rods and the opposite end of each of the respective levers being operatively connected to said pawl member, thereby releasing said ratchet gear when either of said indexing rods is actuated to release said turntable locking means.

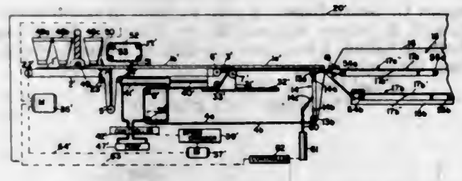
3,224,757
MAGNETIC SHEET TRANSFERRING APPARATUS
Franklin Edward Parke and Hugh Ross, Pittsburgh, Pa., assignors to Ropak Manufacturing Co., Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 7, 1964, Ser. No. 365,615
25 Claims. (Cl. 271—10)

4. In apparatus for transferring single sheets of magnetically susceptible material, the combination comprising:
a carrier;
a plurality of spaced magnetic transfer means supported on said carrier for reciprocal movement from a first position to a second position spaced from said first position, said magnetic transfer means comprising roller members including magnet means for maintaining a single sheet of magnetically susceptible material engaged with said roller members during transfer thereof from said first position to said second position;
shaft means extending from said carrier, one each supporting each of said roller members;
spherical bearings, one each connecting each of said roller members to said shaft means, said roller members being freely rotatable about the axis of said shaft means and being angularly displaceable relative to said carrier and into contact with said single sheet;



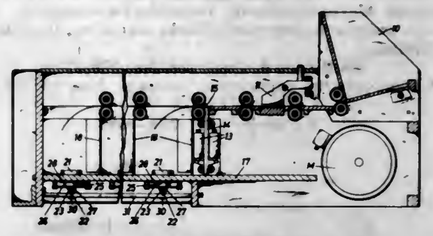
means for moving said spaced magnetic transfer means as a unit to said first position wherein each of said roller members attracts said single sheets into engagement therewith and then to said second position; and
means for moving said single sheet when in said second position in a direction perpendicular to the axes of said shaft means for discharging said single sheet from said apparatus.

3,224,758
APPARATUS FOR SEPARATING CONVEYED SHEETS
Eugen Siempelkamp, Hohenzollernstrasse 69, Krefeld, Germany
Filed Dec. 29, 1961, Ser. No. 163,114
Claims priority, application Germany, Dec. 31, 1960, S 71,905
3 Claims. (Cl. 271—64)



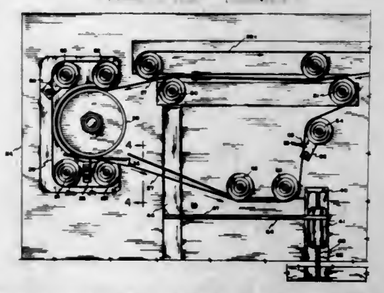
1. An apparatus for the multiple discharge of sheet material, comprising feed-conveyor means for displacing a succession of spaced-apart sheets, receiving means for said sheets positioned beyond said feed-conveyor means, said receiving means including a plurality of superimposed further conveyors and means for driving same substantially at the speed of said conveyor means, said conveyor means including an endless band having a roller at an input side of said band of a fixed height for receiving said sheets at a fixed height and vertically adjustable guide means for said band forming an output edge selectively alignable with any of said further conveyors, said guide means comprises a swingable lever with a fixed fulcrum and two extremities on opposite sides of said fulcrum, a first roller on one of said extremities in continuous engagement with said band, and a second roller on the other of said extremities engaging said band in a first lever position only while being disengaged therefrom in another lever position, said first roller being substantially aligned with respective ones of said further conveyors in said lever positions.

3,224,759
FULL POCKET INDICATIONS IN RECORD CARD MACHINES
Waldemar Wolf, Nurnberg-Reichelsdorf, Germany, assignor to Michael Maul, Schwabach, near Nurnberg, Germany
Filed Mar. 14, 1963, Ser. No. 265,180
Claims priority, application Germany, Sept. 25, 1962, M 54,308
2 Claims. (Cl. 271—64)



1. A full pocket indication device for punched card machines comprising at least one receiving pocket and full pocket indication means wherein the cards in a receiving pocket move due to their weight a yielding support to a degree causing a full pocket signal if a card pocket is filled, characterized in that a feeler is provided on the unyielding pocket bottom of each receiving pocket on which the stack of cards is placed, the feeler containing a spring cup fastened to the lower side of the pocket bottom and supporting a spring urging in upward direction a feeler cap which is projecting through a hole of the unyielding pocket bottom into the receiving pocket and a collar of which is held against the lower side of the pocket bottom, said feeler cap being lowered if loaded by the stack of cards, a pin of said cap projecting loosely through a set screw bearing the spring cup, the set screw being arranged in a thread bore of a holding plate fastened to the lower side of the pocket bottom, and being settable in axial direction for adjustment of the spring pressure acting on the feeler cap and also being lockable by means of a lock nut, and that the pin of a receiving pocket may release the full pocket signal in a manner known per se.

3,224,760
DOCUMENT TRANSFERRING APPARATUS
Malcolm Graham Smith, Phoenix, Ariz., assignor to General Electric Company, a corporation of New York
Filed May 9, 1963, Ser. No. 279,196
5 Claims. (Cl. 271—68)



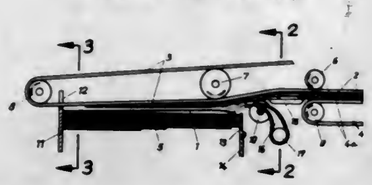
1. An apparatus for handling sheets of flexible resilient material, said apparatus comprising: a sheet receiving and storing compartment; a moving endless belt; a supply means; a portion of said endless belt, extending from said supply means to said compartment, for transporting ones of said sheets into said compartment; said supply means sequentially delivering said sheets to said portion of said endless belt; deflecting members for curv-

ing said sheets about said endless belt to a configuration infusing transverse stiffness to said sheets; said deflecting members acting with resilient forces in said sheets thereby curved to urge one surface of said sheets into operative contact with said portion of said endless belt.

3,224,761
METHOD AND APPARATUS FOR DEPOSITING SHEETS EJECTED BY A CROSS CUTTER

Günther Meyer-Jagenberg, Dusseldorf-Grafenberg, Austria, assignor to Jagenberg-Werke Akt.-Ges., Dusseldorf, Germany

Filed June 6, 1963, Ser. No. 286,027
Claims priority, application Germany, June 29, 1962, J 22,025
3 Claims. (Cl. 271—68)



1. An apparatus for depositing overlapping sheets emanating from a cross cutter and other paper processing machines, comprising a stack holder, upper and lower conveyors for moving the overlapping sheets to said stack holder, said upper conveyor extending above the entire longitudinal length of said stack holder and including a plurality of endless belts having upper and lower flights and axially spaced guide rollers for said belts, one of said guide rollers being located above the stack holder and having its periphery so located with respect to the periphery of another of said guide rollers in advance of the stack holder so as to deflect the lower flights of the belts downwardly adjacent the front of the stack holder to produce a gap between the rear edge of a leading sheet and a trailing sheet, and at least one fluid nozzle located in front of the stack holder below the lower flights of the belts for directing fluid into the gap to separate the sheets and deposit the leading sheet into the holder while holding the sheets still moving forward against the lower flights of the endless belts above the stack holder.

3,224,762
HOBBY HORSE

George C. Strader, 7826 Andasol Ave., Northridge, Calif.

Filed Oct. 10, 1963, Ser. No. 315,133
2 Claims. (Cl. 272—1)

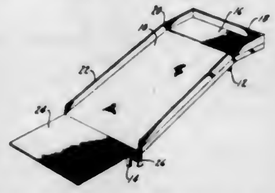


1. A child's play horse toy consisting of a single smoothly curved U-shaped main frame bar of material formed with the proper curvature to extend freely around under the crotch of the child when the toy is in place so that the opposite ends of the bar are disposed adjacent the front and rear waist of the child, respectively, the front end portion of the main bar extending upwardly above the waistline of the child, an imitation of a horse's head secured to the front end portion of the main bar, an imitation of a horse's tail secured to the rear end portion of the main bar, a belt consisting of a loop of elastic material mountable on the waist of the child for supporting the play horse in place on the child, the belt being secured to the front and rear portions of the main bar whereby, when the belt and therewith the main bar are positioned in place on the child, the main bar maintains the head firmly in proper position adjacent the child's waist without any attention on the part of the child, and a gun holster mounted on the belt.

3,224,763
DRY SKIING SURFACE

Raymond L. Hall, Morris Plains, N.J., assignor to Ski-Dek Corporation, Caldwell, N.J., a corporation of Delaware

Filed Feb. 5, 1962, Ser. No. 171,235
14 Claims. (Cl. 272—56.5)



1. A dry ski medium which is flexible, resilient and slippery and which is formed and adapted to provide edge control for skiers thereon, including an upwardly inclined continuous uninterrupted ski surface formed with a plurality of adjacent projections each of, which gradually and generally uniformly decrease in cross sectional area from the base of said surface toward the top, said projections being substantially joined at their bases, each of said projections having a surface which forms an angle with the general profile of said ski medium such as to grip skis edged thereon.

3,224,764
POLE VAULTING STANDARD

Thomas O. Olsen, Salina, Kans., assignor of one-tenth to Gerald R. Sebree and one-fifth to Milton L. Morrison, both of Salina, Kans., and one-fifth to Kenneth Morrison, Hastings, Nebr.

Filed Oct. 15, 1963, Ser. No. 316,268
15 Claims. (Cl. 272—59)

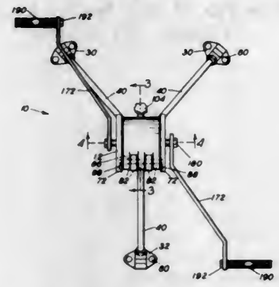


11. Standard means to support with another like standard means a horizontal rail for pole vaulting, comprising:
(a) a base and a standard upstanding from said base,
(b) pin support means on said standard having a horizontally outstanding pin means for supporting said rail, said pin support means being lowerable to a level whereby a man on the ground may directly manually position a rail on said pin means and raisable to pole vaulting heights,
(c) securing and releasing mean operative to secure said rail on said pin means and to release said rail on said pin means and operable to its releasing position by a man on the ground while said rail is at pole vaulting heights, whereby said rail may be secured in place on said pin means on occasions.

3,224,765
EXERCISING MACHINE AND BRAKE

Eugene H. Baker, 7336 York Lane; Dudley P. Osborn, Jr., 2325 S. 38th; and Melvin O. Steen, 1641 J, Apt. 305, all of Lincoln, Nebr.

Filed Nov. 8, 1962, Ser. No. 236,361
2 Claims. (Cl. 272—79)

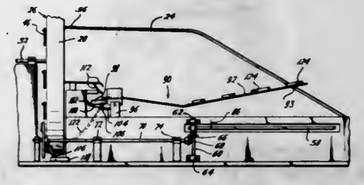


1. An exercising machine comprising a body portion, a brake drum shaft rotatably mounted in said body portion, a brake drum mounted on and fixed to said brake drum shaft for rotation therewith, a brake band means disposed about said brake drum, adjustable means operably correlated with said brake band means for drawing said brake band means tightly around said brake drum to resist rotation thereof comprising a threaded shaft, threaded means cooperative with said threaded shaft and engageable with one side of said brake band, means for causing relative rotation of said threaded means and said threaded shaft for moving said threaded shaft linearly of itself during such relative rotation, and means on said threaded shaft for preventing linear motion of said shaft with respect to the other side of said brake band during said relative rotation, arms suitably fixed to the respective ends of said brake drum shaft for imparting rotation thereto, handles disposed at the outer ends of said arms, said handles each being rotatably mounted on respective handle shafts connected to said arms and extending in parallelism with said brake drum shaft, whereby an operator by holding said handles in his hands can rotate said brake drum against said resistance for providing effective exercise, said brake band means having generally radially outwardly extending end portions at ends of said main band portion, said brake band means comprising two main portions, ends of which overlap on a side of said brake drum which is approximately diametrically opposite the said outwardly extending ends of said brake band means, an elongated hinge pin disposed through the overlapping ends of said two brake band sections, said hinge pin being disposed in parallelism with said brake drum shaft, and means mounted on said body portion and receiving ends of said hinge pin for preventing orbital movement of said hinge pin about said brake drum shaft, said brake band means including the provision of said band end portions being sufficiently rigid as to apply a continuous pressure against said brake drum for a given adjustment of said adjustable means without any substantial bending of said brake band means such as would cause an uneven pressure against said brake drum, whereby the pressure on said brake drum is smooth and continuously uniform, the outwardly extending ends of said brake band means as well as said means for drawing said brake band means tightly around said brake drum all being unconnected with said body portion except through said hinge pin, whereby the parts are free floating with respect to said body portion for assisting in the application of equal pressure on said brake drum at all times during rotation thereof.

3,224,766
BOWLING GAME APPARATUS AND BALL RESETTING AND RETURNING MECHANISM FOR THE SAME

Clarence K. Vincent, 3023 Tilden St., Houston, Tex.

Filed Sept. 28, 1962, Ser. No. 226,808
6 Claims. (Cl. 273—41)

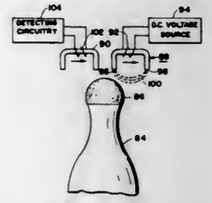


1. In bowling game apparatus for use with spotting balls and bowling balls of the same size and of different weight than the spotting balls the combination with an alley structure having a horizontally disposed playing surface including a ball spotting area at one end thereof upon which the spotting balls are positioned to be dislodged by rolling the bowling balls along said surface, of means for sorting balls which roll off of said surface and returning the bowling balls to the other end of the alley and replacing the spotting balls on said spotting area, and means responsive to the actuation of said sorting means after the rolling of a predetermined number of the bowling balls off of said surface for clearing the spotting area of spotting balls.

3,224,767
AUTOMATIC PINFALL DETECTING APPARATUS FOR BOWLING GAME

Ernest C. Webb, Bay Village, Ohio, and Thomas H. Murray, Pittsburgh, Pa., assignors to Cleveland Trust Company, as trustee, Cleveland, Ohio

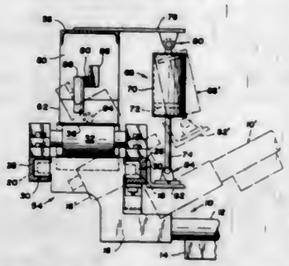
Filed Jan. 24, 1963, Ser. No. 253,629
5 Claims. (Cl. 273—54)



3. Apparatus for detecting standing pins on a bowling alley pin deck, said pins each having a coating containing a magnetizable substance on an end thereof, said apparatus comprising a member movable past said ends of the pins along a substantially horizontal path, first means on said member for magnetizing the magnetizable substance in the ends of standing pins as said member moves across the ends of the pins along its horizontal path of travel, and second means on said member behind said first means along the path of travel of the member for detecting magnetic lines of flux induced in said magnetizable substance by the first means, the arrangement being such that the second means will produce an elec-

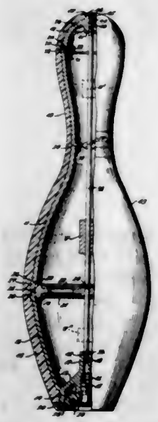
trical signal each time it passes over the end of a standing pin which has previously been magnetized by said first means.

3,224,768
APPARATUS FOR USE IN DETECTING PINFALL IN A BOWLING GAME
Ernest C. Webb, Bay Village, Ohio, assignor to Cleveland Trust Company, trustee, Cleveland, Ohio
Filed Mar. 1, 1963, Ser. No. 261,972
10 Claims. (Cl. 273—54)



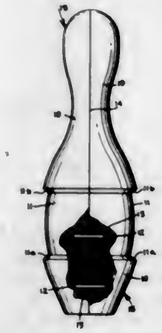
1. In apparatus for passing pin detecting elements across the tops of bowling pins standing on a pin deck of a bowling alley, which apparatus includes guideway means, a carriage mounted on said guideway means for reciprocable movement between the ends thereof, and means for driving said carriage along the said guideway means, the improvement in said apparatus comprising:
an elongated member having said pin detecting elements disposed at spaced points along its length, said elongated member extending from said carriage in cantilever beam relation;
pivot means operatively associated with said elongated member; and
means for pivoting said elongated member about said pivot means whereby said pin detecting elements are raised upwardly and away from said bowling pins only when said carriage is at the ends of said guideway means.

3,224,769
HOLLOW BOWLING PIN
Claude H. Nickell, 17809 Oakwood Blvd., Dearborn, Mich.
Filed Dec. 12, 1961, Ser. No. 158,758
5 Claims. (Cl. 273—82)



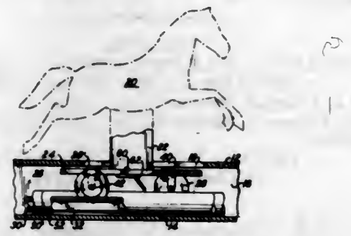
3. A bowling pin comprising a hollow shell including at least upper and lower segments, each segment having a threaded axial portion, said segments having cooperating terminal portions, transverse supporting means overlying said terminal portions and engaging said upper and lower segments, rod means threadedly engaging said axial portions, said rod means being located entirely within said segments, said shell having an opening providing communication between the interior of said shell and the atmosphere, plug means extending into said opening for closing the same and rendering said shell airtight, and a plastic coating providing a relatively hard durable outer surface for said shell.

3,224,770
TENPIN
Harry A. C. Brinkmann, 2422 E. 13th St., Indianapolis, Ind.
Filed Feb. 14, 1963, Ser. No. 258,392
1 Claim. (Cl. 273—82)



A plastic hollow tenpin having a belly subject to impact from a bowling ball and comprising
a pair of plastic pin halves having longitudinally matching marginal faces;
each pin half having a wall, the outer side of which defines the shape of half of the pin, and the inner face of which approximately follows the contour of the outer face and defines half the boundary surface of an interior cavity;
said halves abutting each other and being intimately united one with the other along said faces;
each half having a circumferential indentation in its outer wall matching that of the other wall and continuing around the wall with a vertical height extending above and below the zone of said bowling ball impact;
a band of plastic filling said indentation, intimately bonded to the plastic walls of said halves to become integral therewith, both circumferentially and at top and bottom ends, the outer surface of the band blending by its top and bottom edges smoothly into said half outer faces to form the belly of the pin;
said wall plastic being somewhat elastic and the band plastic being tougher and more rigid than the wall plastic, and forming in effect an integral part of the wall halves; and
said halves being maintained in contact one with the other by said encircling band thereby resisting deformation of the band by reason of the band being supported vertically and circumferentially over a wide area of the more elastic back-up wall of the pin halves.

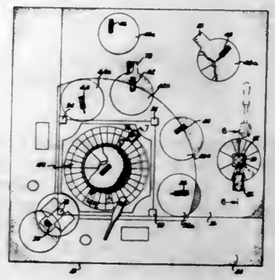
3,224,771
FLUID PRESSURE DRIVE RACING GAME APPARATUS
Frank A. Altieri, Atlantic City, N.J., assignor of one-half to Charles Trivinia, Atlantic City, N.J.
Filed Jan. 28, 1963, Ser. No. 254,290
6 Claims. (Cl. 273—86)



1. In a game apparatus, the combination of:
a plurality of movable racing objects;
means for guiding said objects along predetermined racing paths extending between start and finish locations;
first drive means reacting with each of said objects to propel each said object along one of said predetermined racing paths at a predetermined speed proportionately related to the said one path whereby the same time lapse occurs for each object in normal travel of said objects between said start and finish locations along the predetermined racing paths;
second drive means independently associated with each of said racing paths and selectively controllable by individual operators, said second drive means reacting with each object to propel the same at speeds selectively increased with respect to said predetermined speed;
each of said racing objects including deflector means;
said second drive means including tube means and means for delivering fluid under pressure through said tube means;
said tube means including tubes disposed about each said racing path, each tube having outlets therein disposed to direct fluid against the deflector means of an object traveling along the racing path about which the tube is disposed;
said second drive means further including a plurality of chamber means for storing a predetermined volume of fluid under pressure and independently selectively controllable valve means connecting each said chamber means with a different one of said tubes;
said volume having a magnitude, and said outlets in said tubes being sized such that said volume is less than the volume required to continuously maintain a fluid flow from the outlets of any one of said tubes during the time required for an object to entirely traverse the predetermined racing path about which that tube is disposed when the valve means connected with that tube is selectively controlled to permit full flow of fluid from said chamber means to that tube.

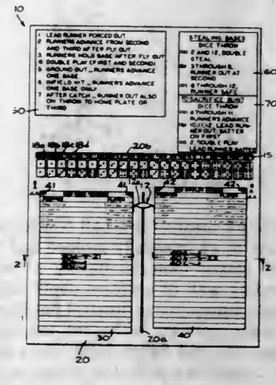
3,224,772
BASEBALL GAME
Herbert R. Wells and Mary M. Wells, both of 1458 La Riata Drive, Whittier, Calif.
Filed Mar. 25, 1963, Ser. No. 267,701
3 Claims. (Cl. 273—93)

1. A spinner device for use in a baseball game having a gameboard formed to simulate a baseball field comprising in combination, a mounting post and support means therefor, a plurality of predetermined segments on said board about said post each of which is provided with predetermined indicia corresponding to a defensive baseball play, a spinner element rotatably mounted on said post to cooperate with said segments on said board to effect selection of certain indicia thereon, said element comprising an elongated arm having an end portion and a ball on said end portion to simulate an actual baseball, stopping means formed to simulate a baseball glove to be used by one of the players of the game to



catch the ball while the spinner element is rotating to thereby cause said spinner element to indicate the defensive baseball play, and means for spacing said ball from said gameboard to permit said baseball glove stopping means to be positioned therebetween as said spinner element rotates, whereby the player manipulating said baseball glove is required to exercise skill in catching said ball to stop said spinner element at the desired defensive play.

3,224,773
TABLE BASEBALL GAME BOARD
Kenneth J. Roed, 5536 Fern Drive, San Jose, Calif.
Filed Apr. 15, 1963, Ser. No. 273,022
5 Claims. (Cl. 273—93)



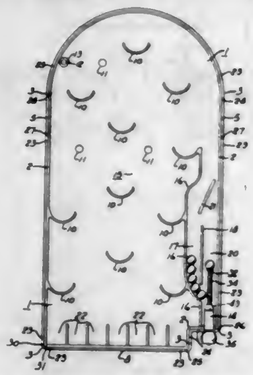
1. A table game for playing a baseball game comprising a gameboard a slidable panel formed with aligned rows of combinations of batting play results and slidably mounted on said gameboard to display certain of said combinations, each of said rows representing potentially different batting results, a roster card disposed adjacent said slidable panel, said roster card being formed with aligned names of baseball players, and alignment indicating means adjustably positioned relative to said roster card in the direction of name alignment and connected to said slidable panel for imparting movement to said slidable panel to correlate the position of said slidable panel with the name adjacent the alignment indicating means.

3,224,774
BALL AND PADDLE DEVICE
Donald L. Klotz, 5 Wayne Way, White Plains, N.Y.
Filed Aug. 8, 1963, Ser. No. 300,865
4 Claims. (Cl. 273—97)



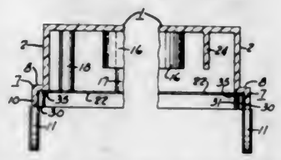
1. An amusement device comprising a support means adapted to be secured to a human torso, a pair of paddles mounted on said support means in spaced relationship and positioned to extend outwardly from said torso, and a ball secured by a flexible element to said support means intermediate said paddles, whereby said ball will be caused to alternately strike said paddles when said torso is rapidly turned from one side to another.

3,224,775
ENCLOSURE MEANS FOR BALL CONTROL GAME APPARATUS
Linus Ritz, Pittsburgh, Pa., assignor to Wolverine Toy Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Feb. 11, 1963, Ser. No. 257,377
5 Claims. (Cl. 273—121)



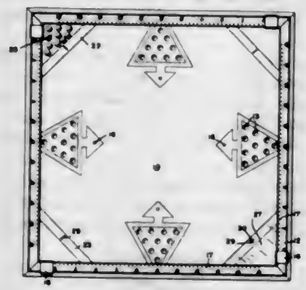
5. An enclosure means for a ball control self-contained game consisting of an integrally molded and unitary transparent top of plastic material having a con.inuous perimetral depending wall of uniform depth and terminating in an outwardly extending perimetral flat bottom flange in a common plane parallel with said top, the perimetral contour of the wall and flange following a predetermined contour that cooperates with the game, a ball projector mounted on said top and extending through said wall, a plurality of balls in said top, a plurality of depending ball engaging and ball guiding and ball intercepting elements molded integrally with said top and terminating in said common plane, leg means extending downwardly from said flat bottom flange to support said top at an angle relative to a table surface, and a flat sheet metal bottom engaging the flat bottom of said flange in said plane and the perimeter of said sheet metal bottom extending uniformly beyond said perimetral flange for its entire length but deviating around said legs, the perimeter of said sheet metal bottom being bent upwardly and inwardly over the top of said perimetral flange to enclose said top and provide a self-contained enclosed game, said perimetral depending wall has at least two corners along its continuous length forming adjacent and opposite sides in said perimetral depending wall, said flat bottom flange continuous around said corners, and notches in said sheet metal bottom aligned with and adjacent to the perimetral edge of said flat bottom flange at said corners to form a rib in said sheet metal bo.tom between adjacent sides to strengthen the enclosure of said sheet metal bottom on said flat bottom flange.

3,224,776
ENCLOSED SELF-CONTAINED BALL-CONTROLLED GAME APPARATUS
John J. Mehelich, Pittsburgh, Pa., assignor to Wolverine Toy Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 7, 1964, Ser. No. 365,675
10 Claims. (Cl. 273—121)



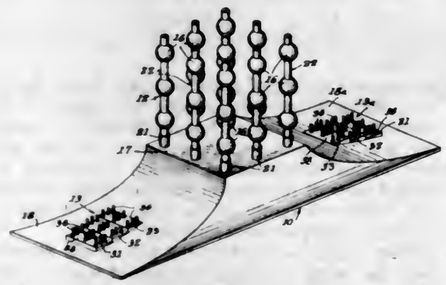
10. An inclosed self-contained ball-controlled game apparatus including a transparent top having integral depending ball intercepting and engaging members and having an integral depending perimetral wall, said wall continuous for the perimeter of said top, a downwardly and inwardly inturned flange on the bottom edge of said wall and offset therefrom, a plurality of spaced substantially cylindrical pin members formed integral within said inturned flange, and opposed independent cylindrical pin members integral with the bottom of said perimetral wall but spaced from said inturned flange, a metal bottom having perforations smaller in dimension than said pin members and aligned with said pin members to forcibly lock on the latter upon engagement of said top with said bottom.

3,224,777
POCKETED BALL GAME DEVICE WITH TALLY MEANS
Helen E. Cirasunda, St. Joseph Convent, Wall St., Hudson Falls, N.Y.
Filed Apr. 8, 1963, Ser. No. 271,427
2 Claims. (Cl. 273—123)



1. A game device comprising a flat board of square form having a flange extending upwardly from each side edge, said flanges joining at the corners of the board to provide a barrier about the perimeter of the board, a group of ball receiving depressions formed in the upper surface of said board adjacent each of said side flanges midway of the adjacent corners of the board, the depressions in each of said groups being arranged in triangular formation with the apex thereof in proximity to the contiguous side flange and the base of said triangular formation facing the center of the board, a ball spotting depression formed in the upper surface of said board adjacent the base of each of said groups of ball receiving depressions, whereby a spotted ball may be propelled by a cue or the like from said spotting depression toward the group of receiving depressions at the opposite side of the board, the upper surface of said board being free of depressions other than said triangular formations and spotting depressions, each of said flanges being provided with indicia along its upper surface, and a tally indicating member having sliding interlocking engagement with each of said side flanges and being movable to successive positions along each of said side flanges and cooperable with the indicia thereon to keep tally of the game.

3,224,778
THREE-DIMENSIONAL GAME APPARATUS
Richard R. Schram, South Gate, Calif., assignor of ten percent to Martin Nagy, Downey, Calif., and ten percent to Simeon P. Owens, South Gate, Calif.
Filed Sept. 29, 1961, Ser. No. 141,786
5 Claims. (Cl. 273—130)



1. A game apparatus for providing lines in space in a player-controlled three dimensional game apparatus, comprising a chassis, a plurality of complements of switches spaced from each other and mounted on said chassis, a plurality of sockets mounted on the chassis arranged in parallel equally spaced rows with the individual sockets equally spaced in two directions and the sockets extending in longitudinal, transverse and diagonal lines, and light units mounted in each socket and extending vertically therefrom, said light units being of translucent tubular form including equally spaced enlarged spheres separated by restricted tubular portions, the number of spheres in each unit corresponding to the number of sockets in each row occupied by operating light units, a pair of lamps arranged end to end in each sphere with the lamp of each pair being of a distinguishing color from the other lamp, a source of electric current, wiring means connecting one lamp in each sphere with one complement of switches and the other lamp in each sphere with another spaced complement of switches, whereby the players controlling each complement of switches can selectively illuminate selected spherical enlargements to establish desired points of illumination in three lines in distinguishing colors.

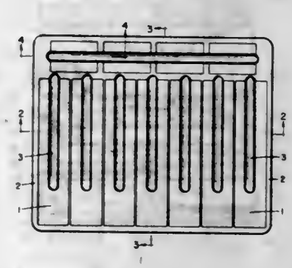
3,224,779
ROTATABLE BALL DISPENSING CHANCE DEVICE
Steve Geleshko, 3710 Laval St., Montreal 18, Quebec, Canada
Filed Oct. 24, 1963, Ser. No. 318,600
6 Claims. (Cl. 273—144)

1. A game device comprising a skirt member rotatably supported and defining a passage therethrough; a body member secured to the top of said skirt member and rotatable therewith, said body member defining a cavity therein, said cavity having a concave bottom sloping toward the centre of rotation, said cavity being in communication with said passage through a port in said bottom, a pendulum pivotally supported within said cavity above said port; at least one ball within said cavity; a port cover secured to the lower end of said pendulum, said cover occluding said port upon said pendulum being swung to



one side and a ball socket secured to said lower end of said pendulum adjacent said port cover and adapted to retain one said ball therewithin upon said pendulum being swung to said one side, and being directly above said port upon said pendulum being in the at rest position, whereby said one ball is dropped through said chute and discharged through said passage.

3,224,780
GAME BOARD FOR SOLITAIRE
Fred W. Mohl, 1580 N. Griggs St., St. Paul 13, Minn.
Filed Jan. 4, 1962, Ser. No. 164,308
1 Claim. (Cl. 273—148)



A game board for use with a deck of playing cards of predetermined length and width, the board comprising:

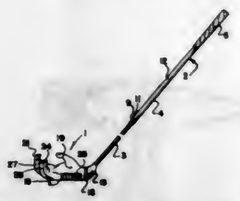
a generally rectangular flat body portion including along one edge thereof a series of four longitudinally aligned recesses, each of a size to accommodate a series of superposed cards,

a groove in said body portion extending from a point beyond an end recess of the series of recesses to a point beyond the other end recess of the series,

a series of elongated side by side recesses arranged with their longitudinal axes at right angles to said series of recesses, said side by side recesses being of a width substantially equal to the width of the cards and of a length substantially greater than the length of the cards, and

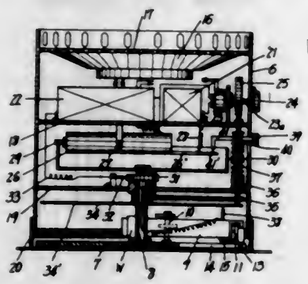
said body portion including a groove extending from a point beyond an end of each of said side by side recesses, and adjacent to said aligned recesses, to a point spaced from the other end thereof a distance less than the length of the cards.

3,224,781
COMBINED GOLF CLUB AND BALL RETRIEVER
Albert C. Hutchison, 3227 Bradford Road, Cleveland Heights 18, Ohio
Filed Dec. 20, 1962, Ser. No. 246,240
2 Claims. (Cl. 273—162)



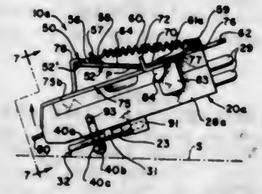
1. A golf novelty comprising a golf club head in the form of a substantial replica of a human hand having a substantially planar back adapted to rest against the ground when used as a golf club and including a thumb and four fingers bent upwardly to form a ball receiving pocket, an elongated handle connected to said hand and extending upwardly at a substantial angle to the back thereof, and a ball striking surface on one edge of said hand, said novelty being thus useable as a golf club and as a ball retriever.

3,224,782
APPARATUS FOR TRANSDUCING FROM A STATIONARY RECORD
Shinichi Isemura, Takaoka, Japan, assignor to Daiei Presscorder Company Limited, Tokyo, Japan, a corporation of Japan
Filed Dec. 19, 1960, Ser. No. 76,693
Claims priority, application Japan, Jan. 14, 1960, 35/1,120; July 25, 1960, 35/32,374, 35/32,375
7 Claims. (Cl. 274—14)



1. Sound reproducing and/or recording apparatus comprising a casing shaped for maintaining stationary in a predetermined position relative thereto a record surface, a rotatable member, supporting means articulated to said rotatable member for supporting a transducing head for movement to a position in which said transducing head is in a transducing relationship with said record surface, said supporting means and said rotatable member both being contained within said casing, and drive means to rotate said rotatable member, said apparatus including means to move said transducing head to a starting position comprising a pin secured to said supporting means and a horizontal disc having at least one spiral guide, said horizontal disc being movable to a position at which said pin engages said spiral guide to return said transducing head to the starting position on rotation of said rotatable member, said drive means including a motor contained within said casing, and said horizontal disc being mounted about a shaft connecting said motor to said rotatable member, said apparatus further including an operating rod connected to said horizontal disc and a spring biasing said horizontal disc away from engagement with said pin.

3,224,783
PHONOGRAPH PICKUP CONSTRUCTION FOR PROTECTING PHONOGRAPH RECORDS
Alpha M. Wiggins and John F. Wood, San Juan, Puerto Rico, assignors to Euphonics Corporation, Guaynabo, Puerto Rico, a corporation of Puerto Rico
Filed Apr. 25, 1963, Ser. No. 275,749
3 Claims. (Cl. 274—24)



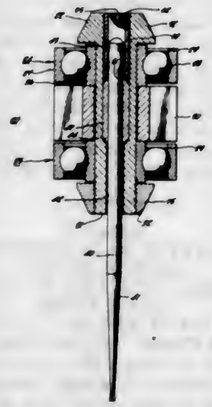
1. In a phonograph pickup including a tone arm, transducer cartridge and needle carried by said cartridge, means for preventing damage to a phonograph record by said needle upon application of excessive force to the tone arm, comprising:

a bracket having hinged parts, one part being engaged with the cartridge and pivotable with respect to the other part, said other part being adapted for mounting in a fixed position with respect to the tone arm,

spring means adjustable in tension connecting the hinged parts of the bracket for biasing the cartridge and needle outwardly of the tone arm so that the needle may contact the record, and

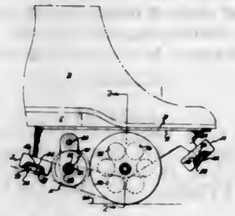
a resilient bumper carried by the pickup and disposed near the needle to engage the record upon application of said excessive force and to bear said force while the cartridge and needle pivot toward the tone arm, said bumper being in the form of a screw having a rounded tip, said cartridge having a threaded hole adjustably receiving said screw so that the rounded tip is adjustably positioned with respect to the needle.

3,224,784
APPARATUS FOR ROTATING A TOOL
Walter C. Harbart, 3239 Cahuenga Blvd., Los Angeles 28, Calif.
Filed Feb. 25, 1963, Ser. No. 260,755
3 Claims. (Cl. 279—96)



3. Apparatus for rotating a tool having a shaft, comprising a rotatably mounted tubular member for receiving said shaft, the tubular member defining a first bore extending from one end of the tubular member to a first point inside the tubular member, a second bore having a diameter larger than that of the first bore and extending from the other end of the tubular member to a second point inside the tubular member adjacent said first point, and to shoulder portion having a frustoconical surface facing toward the axis of rotation of the tubular member and extending from said first point to said second point, a solid-walled sleeve of flexible material inside the second bore, means for rotating the tubular member in a first sense of rotation as seen from said other end of the tubular member, a chuck tube for compressing the sleeve toward the axis of rotation of the tubular member, the chuck tube extending in the second bore from said other end of the tubular member to the sleeve and having a frustoconical surface facing toward the axis of rotation of the tubular member and contacting the sleeve, and the chuck tube being threadably connected to the tubular member to be removable from the tubular member by rotation of the chuck tube in a sense opposite said first sense of rotation.

3,224,785
RIDER STABILIZED ROLLER SKATE PROVIDED WITH BRAKE MEANS ACTUATED BY TILTING OF THE BRAKE
Gerald W. Stevenson, 507 Michigan St., Whittier, Calif.
Filed July 22, 1963, Ser. No. 296,609
6 Claims. (Cl. 280—11.2)



1. A roller skate, including:

(a) a foot plate;

(b) means for removably attaching said foot plate on the foot of a skater;

(c) a first roller disposed under said foot plate, parallel thereto and intermediately positioned between the ends thereof;

(d) means for rotatably connecting said roller to said foot plate; and

(e) means for braking the rotation of said roller that is actuated when said skater changes the position of a portion of his body from the position said portion normally occupies when said skater is in a skating position that comprises:

(1) a longitudinally aligned cylinder disposed under said foot plate and rearwardly of said roller;

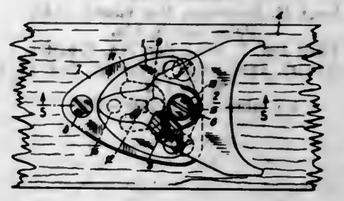
(2) a piston slidably mounted in said cylinder;

(3) a piston rod affixed to said piston and extending through an opening in the forward end of said cylinder;

(4) spring means for maintaining said piston and piston rod at positions relative to said cylinder where the forward end of said rod is rearwardly of said roller; and

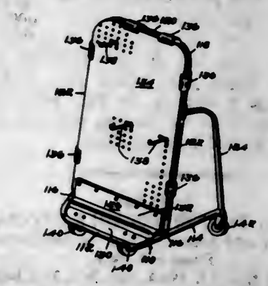
(5) a closed resilient hollow body filled with fluid that is in communication with the rear interior of said cylinder, said body when even partially collapsed increasing the pressure on said liquid therein to move said piston and piston rod forwardly against the restraint of said spring means for the forward end of said rod to frictionally contact said roller and brake the same.

3,224,786
SAFETY STOP FOR SKI ATTACHMENT
Joseph Tosalli, Sainte-Croix, Vaud, Switzerland, assignor to Reuge S.A., Sainte-Croix, Switzerland, a Swiss corporation
Filed June 3, 1963, Ser. No. 285,145
Claims priority, application Switzerland, June 14, 1962, 7,136/62
4 Claims. (Cl. 280—11.35)



1. A safety toe-holding device for ski binding comprising a base plate attached to a ski and provided with a U-shaped groove, a thrust block cooperating with said base plate, means for detaining said thrust block relative to said base plate, guiding means enabling said thrust block to move and pivot, wherein said guide means comprise a spindle secured to said thrust block guided into said groove, said groove being symmetrical with respect to the lengthwise axis of the ski and having its arms directed towards the point of the ski, and wherein said detaining means comprise two releasable spring ball detents adjacent said spindle for positioning and retaining said thrust block on said base plate under normal forces from the foot of the skier.

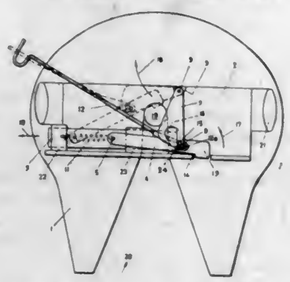
3,224,787
NESTABLE INDUSTRIAL CART
Johan M. Andersen, Hopkinton, Mass., assignor to Duplicon Company, Inc., Westboro, Mass., a corporation of Massachusetts
Filed Sept. 27, 1963, Ser. No. 312,205
5 Claims. (Cl. 280—33.99)



3. A nestable industrial cart comprising a base frame which includes a front cross member and two side frame bars diverging rearwardly, a carrier board supporting structure comprising an upper cross segment and two side segments, said side segments attached to said base side frame bars, the said two side segments being straight and parallel and inclined from the vertical in an upward and rearward direction, a carrier board detachably fastened to said two side segments, said carrier board having means extending forwardly therefrom for supporting work units, a floor disposed within the forward periphery of said base frame and terminating at the rear along a line adjacent the points of connection of said side segments with said base side frame bars, a pair of braces each extending from one of said side frame bars upwardly to one of said side segments, said braces being spaced laterally a distance greater than the maximum width of said forwardly extending work supporting means, a first pair of wheels affixed under said base frame adjacent the forward ends

of said side frame bars and a second pair of wheels affixed adjacent the trailing ends of said side frame bars and spaced apart a distance greater than that separating the said first pair of wheels.

3,224,788
LOCKING ARRANGEMENT FOR SEMITRAILER COUPLING
Josef H. Steinway, Ibis Island 2235, Palm Beach, Fla.
Filed Jan. 7, 1964, Ser. No. 336,306
Claims priority, application Germany, Jan. 12, 1963, St 20,170
6 Claims. (Cl. 280—434)



1. A locking arrangement for a semitrailer coupling constituting a detachable connection between two coupling parts, one of said coupling parts being a fifth wheel plate having a guideway adapted to receive the other coupling part, a locking bolt mounted on the fifth wheel plate for sliding movement transversely across the guideway between a locking and an open position, biasing means acting upon said locking bolt and normally holding it in the locking position, a toggle joint having two levers and a pivot, each lever having two ends, one end of each lever being respectively linked to the locking bolt and to the fifth wheel plate and the toggle joint levers being linked by said pivot connecting the respective other ends thereof, a rigid actuating member connected to said toggle joint to move the locking bolt against the force of said biasing means into the open position, and a catch on one of the toggle joint levers, said catch being arranged to engage a stop on the fifth wheel plate when said locking bolt is in the locking position and thus to secure the bolt in said latter position.

3,224,789
CASTERED TRANSPORTABLE CONTAINER
Morty Tessler and Samuel Gass, 44 Brinkerhoff Ave., Freehold, N.J.
Filed Jan. 13, 1964, Ser. No. 337,340
4 Claims. (Cl. 280—47.26)



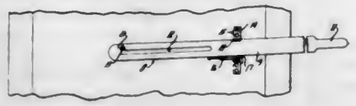
2. A transportable garbage container having sides and a flat bottom, comprising,

two spaced pairs of downwardly-directed projections disposed in said container bottom, each pair being disposed adjacent the bottom container edge and near the container side and slanted toward each other and designed to hold a flat caster base therebetween,

a pair of flat based casters disposed and held between said projections, and

a long handle having multiple rungs and attached at near the top container edge and to the container side opposite said container side which is adjacent to and between said casters.

3,224,790
MOVABLE CARTS AND THE LIKE
Raymond F. Holstein, 3018 W. Grace Ave., 117N, Mequon, Wis.
Filed Feb. 17, 1964, Ser. No. 345,162
8 Claims. (Cl. 280—47.37)



1. A slidaway handle unit including,

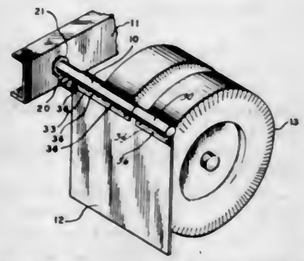
a slat-type handle,

front guide means slidably supporting the inner end of the handle and including mounting means,

a rear guide means slidably supporting the outer end of the handle and including mounting means, and

releasable locking means including a first portion and a second locking portion one of which is on the handle and the other of which is on the rear guide means, and resilient means urging said portions into releasable locking engagement with the handle extended outwardly to an operating position.

3,224,791
HANGER FOR VEHICLE SPLASH GUARDS
Nash P. Sogoian, 1417 21st St., Detroit 16, Mich.
Filed Dec. 10, 1962, Ser. No. 243,260
9 Claims. (Cl. 280—154.5)



1. A hanger for a vehicular mud flap or the like comprising

(a) an elongated tubular support member,

(b) means carried longitudinally on said support member for securing a mud flap thereto,

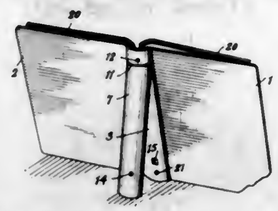
(c) means carried at one end of said support member for mounting said support member to a vehicle,

(d) said mounting means including a perforated plate member secured to the end of said support member, a bolt having a head portion carried within said support member and a threaded shank portion extending through said plate member exteriorly of said support member to be secured to said vehicle and a spring member within said support member encompassing said bolt and being compressed between said head portion and said plate member,

(e) a second elongated tubular support member carried at the free end of said first mentioned tubular support member and in axial alignment therewith, and

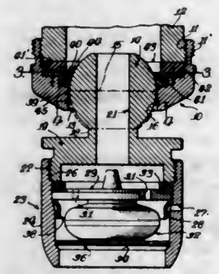
(f) resilient means carried intermediate said first mentioned support member and said second support member.

3,224,792
SUPPORTING PROP OR LEG FOR BOOK OR BINDER
Murray Vernon, New York, N.Y., assignor to S. E. & M. Vernon, Inc., New York, N.Y., a corporation of New York
Continuation of application Ser. No. 206,119, June 20, 1962. This application July 23, 1964, Ser. No. 385,833
1 Claim. (Cl. 281—33)



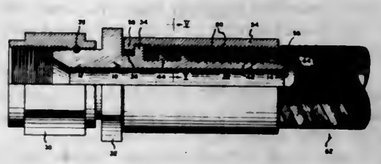
A book or the like comprising spaced covers hingedly connected at opposite sides of a relatively stiff back having an arcuate outwardly convex cross section, a prop substantially conforming in length and width to said back and having an arcuate concavo-convex cross section, means connecting juxtaposed upper end portions of said back and prop together, an arcuate transverse hinge line scored on the inner and outer surfaces of the prop substantially immediately below said last mentioned means permitting outward movement of the portion of the prop therebelow to be disposed and maintained in spaced angular relation from the adjacent similar portion of said back with which said lower portion conforms, the concavity of the prop on opposite sides of the hinge line limiting the outward movement of the lower end thereof, the sole connection between the prop and the back, while the prop is in its extended position, being at and above the hinge, the prop when extended to supporting position presenting a lower arcuately-curved lower end to rest on a supporting surface, the back including a transverse aperture intermediately thereof, said prop including a clip thereon having spring fingers projecting laterally from the inner surface thereof and removably receivable in said transverse aperture.

3,224,793
SWIVEL MOUNTING FOR AERATING DEVICE OR THE LIKE
Frank E. Benjamin, Chicago Heights, Ill., assignor to Wrightway Engineering Co., Chicago, Ill., a corporation of Illinois
Filed July 13, 1961, Ser. No. 123,823
2 Claims. (Cl. 285—8)



1. A swivel mounting for an aerator or the like comprising, in combination, a socket member having an axial opening therethrough, a ball member disposed in close clearance swivel relation in the opening of said socket member, said ball member having an axial bore therethrough with one end of the bore disposed within said socket member, retaining means at one end of said socket member coacting between said ball and socket members for retaining the same in assembled relation, said retaining means engaging said ball member at one side of an equatorial plane through said ball member, said socket member having an internal annular groove with an axially extending side wall and a transverse wall at one end of the groove, the opposite end of said groove being open and said transverse wall being spaced axially from said retaining means and being disposed at the opposite side of but closely adjacent said equatorial plane, a transverse shoulder extending radially outwardly from said opposite open end of said groove, a resilient O-ring disposed in said groove in engagement with said walls and engaging said ball member at said opposite side of and closely adjacent equatorial plane, said O-ring in its uncompressed state extending axially beyond said shoulder, and a substantially rigid annular compression member overlying said shoulder and said opposite open end of said groove in engagement with said O-ring for compressing the latter in response to attachment of the other end of said socket member to a faucet or the like and thereby effecting a fluid seal between said O-ring and said ball member, said shoulder being engageable by said compression member for limiting the extent of compression of said O-ring and said compression member when engaging said shoulder being wholly disposed within the confines of said socket member and encircling said ball member in close clearance relation approximately midway between said equatorial plane and said one end of said bore when the latter is in coaxial alignment with said socket member whereby to avoid abrading engagement of said O-ring by the edge of said one end of said bore during extreme swivel movement of said ball member relative to said socket member, said O-ring in its compressed state substantially filling the space defined between said ball member and said compression member and said walls with the clearance between said ball member and said opening at one side of said O-ring and the clearance between said compression member and said ball member at the opposite side of said O-ring being sufficiently restricted to resist extrusion of the compresed O-ring therebetween, and said compression member having an inner diameter slightly less than the maximum diameter of said ball member so as to overlie said O-ring and whereby said O-ring and said compression member coact to prevent inadvertent displacement of said ball member from sealing relation with said O-ring.

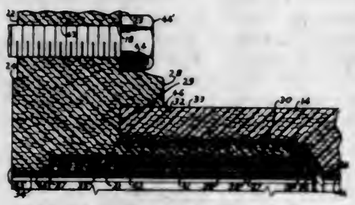
3,224,794
HIGH PRESSURE HOSE FITTING
Charles F. Crissy, Jackson, Mich., assignor to Aeroquip Corporation, Jackson, Mich.
Filed Oct. 10, 1962, Ser. No. 229,554
1 Claim. (Cl. 285—40)



In combination with a flexible hose having a tubular inner tube encased within a wire strand reinforcing covering, a hose end fitting including a tubular nipple having an outer surface and an inner end received within said inner tube and an outer end, fitting attachment means mounted on said nipple outer end, an annular socket dis-

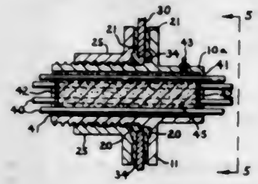
posed about said hose in axial alignment with said nipple outer surface and affixed relative to said nipple and having an inner surface engaging and confining said reinforcing covering, a spirally disposed annular projection defined upon said nipple radially extending from said nipple outer surface a distance significantly greater than the wall thickness of the inner tube mounted upon said nipple whereby said projection penetrates said inner tube and engages said reinforcing covering, said projection including a rear surface facing said fitting attachment means, a front surface disposed toward said inner end and a cylindrical terminating surface between said front and rear surfaces having an axial dimension greater than the diameter of the wire strands constituting said reinforcing covering, said rear surface being substantially perpendicular to the axis of said nipple, said front surface being obliquely disposed to the axis of said nipple extending from said terminating surface toward said inner end to said nipple outer surface, said projection being axially spaced from said nipple inner end whereby an inner tube sealing surface is defined on said nipple intermediate said projetcion and nipple inner end, said projection terminating surface being in opposed relation to said socket inner surface whereby said terminating surface and the opposed socket inner surface produce axially spaced regions of highly compressed reinforcement strands between said terminating surface and socket, and regions of lesser compressed reinforcement strands between said highly compressed regions, said regions of highly compressed reinforcement being of an axial dimension substantially equal to the axial dimension of said terminating surface, said strands of said covering engaging said projection rear surface.

3,224,795
FLANGED FITTING WITH A REINFORCING SLEEVE
Edwin E. Conley, Tulsa, Okla., assignor to Conley Corporation, Tulsa, Okla., a corporation of Oklahoma
Filed Sept. 27, 1962, Ser. No. 226,535
7 Claims. (Cl. 285—114)



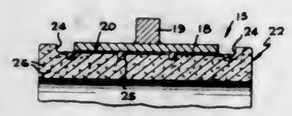
1. A flanged pipe fitting for pressure flow systems of plastic pipe and fittings comprising,
(a) a fiber reinforced plastic pipe fitting body having an open ended branch with a pipe end receiving socket extending inwardly from said open end,
(b) said branch having an outer peripheral surface adjacent said open end,
(c) a flange member having opposed faces with an axial tubular member extending from one of said faces and having an outer periphery adapted to engage in the socket of said branch,
(d) a concentric ring portion on said flange member and extending from said one face and having an inner periphery engaging the outer periphery of the branch and when said tubular member is engaged in said socket,
(e) said flange member having an axial bore and a counterbore extending from adjacent the other face of the flange member through said tubular member,
(f) a fiber reinforced plastic tubular sleeve fitting in said counterbore and extending for the length thereof, said sleeve having circumferential reinforcing fibers,
(g) and a thermosetting plastic resin material on the engaged surfaces of said sleeve, counterbore, tubular member and socket, branch end, flange member and concentric ring member to bond same together.

3,224,796
WALL BUSHING FOR PIPES AND CABLES
Harold H. Burkitt, 4777 SE. 16th Ave., Tigard, Oreg.
Filed Aug. 10, 1962, Ser. No. 216,154
2 Claims. (Cl. 285—161)



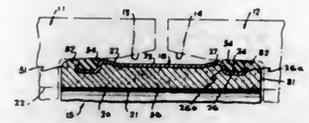
1. A wall clamping conduit bushing for sealing a wall opening about a conduit passing through said opening, comprising a hollow split bolt adapted to receive said conduit and a sealing compound, a flange on said bolt for engaging one side of the wall, a sharp, axially extending ridge on said flange extending around said bolt defining a recess for receiving sealing compound on said one side of the wall, a split nut on said bolt having a flange for engaging the opposite side of the wall, an axially extending ridge on said flange extending around the bolt defining a recess for sealing compound on said opposite side of the wall, means connecting said nut halves rigidly together on said bolt so that the nut may be turned on the bolt to clamp the wall, said ridge on said bolt flange being arranged to bite into the wall and having a noncircular configuration to prevent turning of the bolt when the nut is tightened so that the nut may be tightened from said opposite side of the wall without holding the bolt on the one side of the wall.

3,224,797
INTERNAL JOINT BAND FOR DOUBLE BELL CONCRETE PIPE
Delbert A. Hausmann, Glendale, and William Miller, La Habra, Calif., assignors to American Pipe and Construction Co., South Gate, Calif., a corporation of California
Filed May 4, 1962, Ser. No. 192,529
1 Claim. (Cl. 285—288)



An internal joint band for double bell concrete pipe, comprising a steel band of cylindrical form, a cylindrical body of cement mortar within said band projecting axially beyond the edges of the band and provided with end flanges whereby said body and said band together define a peripheral seal ring groove immediately adjacent each edge of the band, and a moisture impervious cylindrical membrane bonded between and to said band and said body, said membrane extending axially beyond the edges of said band and forming the bottom wall of said grooves.

3,224,798
INTERNAL JOINT BAND FOR DOUBLE BELL CONCRETE PIPE
Delbert A. Hausmann, Glendale, Calif., assignor to American Pipe and Construction Co., Monterey Park, Calif., a corporation of California
Filed Aug. 26, 1963, Ser. No. 304,566
2 Claims. (Cl. 285—288)



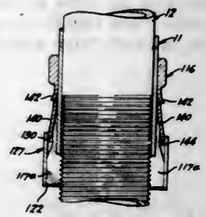
1. An internal joint band for bell end concrete pipe, comprising a generally cylindrical rolled steel band having a cylindrical central section, and having a marginal channel section at each side thereof defining a peripheral groove, said channel sections being of U-shape and of less internal diameter than said central section, and a body of cement mortar bonded to the inner surface of said band, said body extending axially beyond and over the ends of said band to terminate in portions of greater diameter than the adjacent portions of the metal band, said steel band being provided with a frusto-conical section between ecah channel section and the central section, the diameter of said frusto-conical sections being greatest adjacent said channel sections whereby said cylindrical central section is recessed.

3,224,799
THREADED TUBE JOINT HAVING A METAL-TO-METAL SEAL
Thomas L. Blose, Bradfordwoods, and Henry J. Beckert, Rochester, Pa., assignors to Armco Steel Corporation, Middletown, Ohio, a corporation of Ohio
Filed June 21, 1965, Ser. No. 470,310
6 Claims. (Cl. 285—334)



1. A joint for metallic tubular elements embodying male and female members having engageable threads of relatively long pitch disposed on a relatively steep taper, with the threads having load bearing and non-load bearing flanks, the load bearing flanks having a negative flank angle, and the non-load bearing flanks having a positive flank angle from about 30° to about 60°, the said female member having full threads, and said male member having vanishing threads, said threads on said male member, when said joint is made up, being engaged throughout their length, and said male and female members having complementary tapered sealing surfaces axially displaced and radially offset from said threads so as to make full conical surface contact throughout substantially their over-lapped length, with only surface deformation of the complementary sealing surfaces; one, at least, of said complementary sealing surfaces being contoured to present a scalloped profile, said scalloped profile being constituted by circumferentially extending pockets, and the tapered sealing surface on said female member terminating in an internal shoulder spaced from the end of the tapered sealing surface of the male member when said joint is fully made up and tonged, whereby upon each new make up and disassembly of said joint, fresh increments of complementary sealing surfaces come into engagement.

3,224,800
ADJUSTABLE SUPPORTING LEG
Robert E. Fisher, Berkeley, Calif., assignor to Up-Right, Inc., Berkeley, Calif., a corporation of California
Filed Nov. 29, 1963, Ser. No. 329,339
3 Claims. (Cl. 287—62)

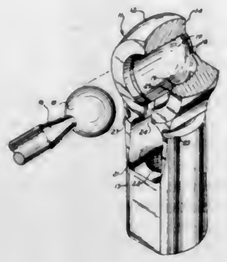


1. An adjustable leg comprising:
a tubing member;
a sleeve telescoped onto an end of said tubing member and fixed with relation thereto, said sleeve having a plurality of resilient outwardly biased gripping and locking fingers, said gripping fingers extending beyond the ends of said locking fingers;
an inner member extending telescopically into said tubing member, said inner member being externally threaded for at least a portion of the length thereof;
said gripping fingers being provided with nut segments on their ends, said nut segments each having an internal shoulder extending inwardly and adapted to abut said end of said tubing member, said nut segments being internally threaded complementarily to said inner member but being biased therefrom by said gripping fingers, said nut segments having a raised portion opposite said threaded portion and joined to said gripping finger by a cam surface;
a collar axially movable on said sleeve, said collar having an inner surface adapted to engage said cam surface to force said nut segments radially inwardly into threaded engagement with said externally threaded inner member;
and means for locking said collar in position, said means including a radially inwardly extending flange on said collar having portions of the upper horizontal side thereof substantially normal to the axis of said tube, at least one cam surface on said horizontal side as an embossment thereon and at least one additional embossment on said surface circumferentially spaced from said one cam surface a distance at least equal to the width of said locking finger, said locking finger being biased radially outwardly between said embossments whereby the free ends thereof engage said horizontal surface to lock said collar against retrograde movement from said position and said collar may be released from said position by twisting said collar about said axis thereby engaging said locking fingers and forcing them radially inwardly.

3,224,801
CONNECTING MEANS
Douglas Price-Stephens, Brentwood, and Harold E. Jackson, Plympton St. Maurice, England; said Price-Stephens assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware; said Jackson assignor, by mesne assignments, to Imperial-Eastman Corporation, Chicago, Ill., a corporation of Illinois
Filed Oct. 3, 1962, Ser. No. 228,082
Claims priority, application Great Britain, Oct. 27, 1961, 38,553/61
4 Claims. (Cl. 287—90)

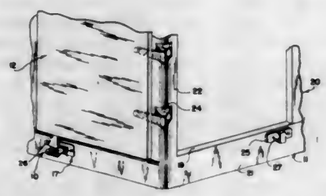
1. A socket member adapted to receive a ball attached to a rodlike element comprising a head and a shank integrally formed from a relatively resilient plastic mate-

rial; said head having a ring portion defining a first opening at one end; a web enclosing said ring portion at the other end; said web and said ring portion defining a segmental spherical-shaped cavity to receive the ball; said web being substantially thinner in section than said ring portion; said first opening being slightly smaller in cross sectional area than the cross sectional area of the ball; a second opening extending through said shank; and a slit extending inwardly from said first and second



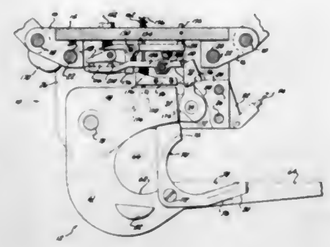
openings partially into said shank to connect said cavity and said second opening; said ring portion, said web, and said slit being resiliently deformable when the ball is projected through said first opening to allow the ball to be reecived in said cavity; said ring portion, said web, and said slit returning to their original free dimension when the ball is received in said cavity to prevent the withdrawal of the rodlike element from said socket member.

3,224,802
DOOR CONTROL APPARATUS
Albert L. Pelcin, Oakwood Village, Bedford, Ohio, assignor to The Eastern Company, Cleveland, Ohio, a corporation of Connecticut
Filed Aug. 19, 1963, Ser. No. 302,983
12 Claims. (Cl. 292—246)



1. In control apparatus for a door swingable to open and closed positions relative to a structure having a door-frame portion and a side wall; a rub-rail mounted on said side wall and having a gap therein; latch means adapted for mounting on the door comprising a latch member movable relative to the door to door-latched and door-unlatched positions, and actuating means effective to move the latch member from one to the other of said positions; and hold-open means adapted for mounting on said side wall in said gap to be engaged by a portion of said latch means when said doors has been swung to an open position adjacent said wall; said hold-open means comprising mounting means, and a door-restraining member supported by and movable relative to said mounting means and having an opening for releasably receiving the last-mentioned portion.

3,224,803
CARGO HOOK
Edwin C. Elsner, Glendale, Calif., and Erving F. White, Jackson, Mich., assignors to Aeroquip Corporation, Jackson, Mich.
Filed May 20, 1963, Ser. No. 281,491
10 Claims. (Cl. 294—83)

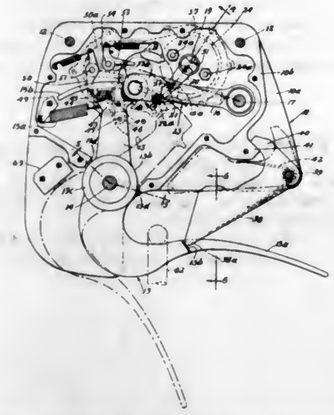


1. A releasable hook apparatus comprising, in combination,
(a) a hook support body adapted to be attached to supporting means,
(b) a throated hook pivotally mounted on said support body pivotable between latched and unlatched positions,
(c) a latch defined on said hook,
(d) latch-locking means mounted on said support body adapted to selectively, lockingly cooperate with said latch,
(e) release means associated with said locking means adapted to selectively release said locking means and said latch,
(f) a load retainer pivotally mounted on said hook pivotal between load-receivable and load-retaining positions,
(g) said load retainer including a first arm disposed within the throat of said hook when said retainer is in the load-receivable position and a second arm closing the hook throat when said retainer is pivoted to the load-retaining position, and
(h) load-retainer locking means maintaining said retainer in the load-retaining position when said hook is in said latched position.

3,224,804
AUTOMATIC LOADING CARGO RELEASE
Harris S. Campbell, Bryn Athyn, Pa., assignor to Eastern Rotorcraft Corporation, Doylestown, Pa., a corporation of Pennsylvania
Filed July 25, 1963, Ser. No. 297,543
7 Claims. (Cl. 294—83)

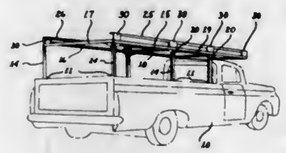
1. A cargo release hook having
(a) a frame,
(b) a load carrying beam pivotally mounted on said frame for swinging movement,
(c) mechanism for releasably engaging said beam to support it in load carrying position including
(1) a reaction strut pivotally supported on said frame and having a roller at one end,
(2) a beam connected arm against which said roller engages when in load carrying position,
(3) toggle linkage engaging said reaction strut to control its movement,
(4) an electric actuating device mechanically engageable with the toggle linkage,
(d) means for automatically releasing said mechanism upon reduction of the load on said beam to a predetermined value including

(1) a spring loaded element supported on said arm at the roller engaging location,
(2) an electrical switch having electrical connections to said electrical device



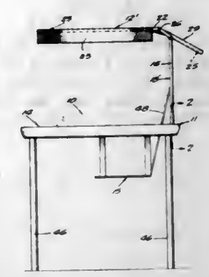
(3) and a mechanical actuator for said switch responsive to movements between said arm and said spring loaded element.

3,224,805
TRUCK TOP CARRIER
Glen W. Clyatt, Phoenix, Ariz. (2641 South J, Oxnard, Calif.)
Filed Jan. 30, 1964, Ser. No. 341,284
8 Claims. (Cl. 296—10)



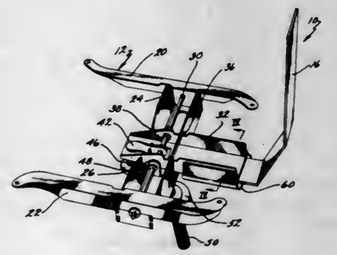
1. A truck top carrier comprising:
(A) a first and a second group of vertically extending stakes;
(B) a pair of horizontal runners each connected to a different one of said groups of stakes, each connection forming a junction;
(C) a plurality of cross braces each extending from the junction of a vertically extending stake of one of said groups and one of said horizontal runners to the junction of a vertically extending stake of the other of said groups and the other of said horizontal runners;
(D) two vertical gusset plates and two horizontal gusset plates for each of said junctions;
(E) said vertical gusset plates comprising:
(1) a vertical web
(2) a first flange perpendicular to said vertical web in abutting relation with the stake of said junction
(3) a second flange perpendicular to said first flange and to said web in abutting relation with the runner of said junction
(F) said horizontal gusset plates comprising:
(1) a horizontal web
(2) a flange perpendicular to said horizontal web in abutting relation with the cross brace of said junction.

3,224,806
INFANT'S CHAIR
William J. Butters, 320 Tower St., Anaheim, Calif., and Magdy F. Girgis, 1143 E. Washington, Pasadena, Calif.
Filed June 8, 1962, Ser. No. 200,993
5 Claims. (Cl. 297—136)



1. An article of furniture comprising: a chair; a canopy having a front portion adapted to overhang said chair and a rear portion to extend rearwardly from said front portion; and means fixed with said chair to support said canopy, said rear portion of said canopy being rotatable downwardly from an approximately horizontal position about an axis approximately dividing said front portion from said rear portion of said canopy.

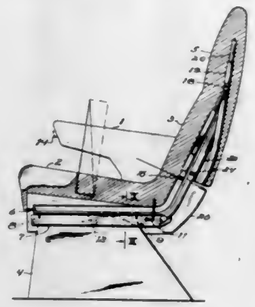
3,224,807
BACK SUPPORT ADJUSTMENT FOR TORSION CHAIR
Phillip Craig Welch, East Grand Rapids, and Roy W. Matz, Clarksville, Mich., assignors to Steelcase, Inc., Grand Rapids, Mich., a corporation of Michigan
Filed July 19, 1963, Ser. No. 296,294
3 Claims. (Cl. 297—304)



3. An adjustable torsion back chair comprising in combination: a seat frame having a pair of interconnected opposite side portions; a substantially rigid and inflexible support channel positioned centrally between said side portions and extending toward the back of said frame; a torsion bar between said channel and said side portions; said torsion bar fixedly connected to said support channel and to said side portions to support the said channel and provide limited torsional resilience thereto; a second channel member larger in cross-section than said support channel interfitted beneath the said extending portion of the latter and fixedly secured thereto to define therewith a rearwardly opening horizontal slot; an L-shaped resilient back support having a lower leg portion; said lower leg portion slidably engaged in said slot; a threaded aperture formed in said lower leg portion; an elongated aperture formed in said second channel; and turn screw locking means passing through each of said apertures and engaging said threads; said locking means and elongated aperture providing for position adjustment of said back support; and said locking means when

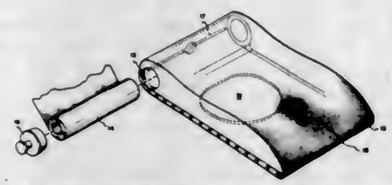
tightened in said threads drawing said leg portion and second channel member into bearing relationship to thereby lock the same together to secure said back portion in a desired adjusted position.

3,224,808
AIRCRAFT SEAT
James F. Spielman, Bantam, Litchfield, Conn., assignor, by mesne assignments, to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
Filed Jan. 17, 1964, Ser. No. 338,416
5 Claims. (Cl. 297—341)



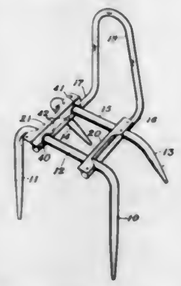
1. A passenger seat comprising a base, a lower seat frame fixed on said base, an upper seat frame movable longitudinally with respect to said lower seat frame, uprising arms on the rear of said upper and lower seat frames, a seat back comprising interconnected members, one of said back members being swingably connected to the lower fixed seat frame arms and means pivotally connecting the other back member to the upper seat frame arms substantially above the horizontal plane level of the upper seat frame, said last-named means comprising telescopic members permitting longitudinal movement of the upper seat frame with respect to the lower seat frame and the swingably connected back member whereby the pivotal connection means between the back member and the upper seat frame arms is caused to travel in a right line parallel to said upper seat frame during longitudinal movement of said seat frame so that the seat back gives continual support for the lumbar region of a passenger in said seat.

3,224,809
DENTAL NECK REST
Elbert O. Thompson, 3535 Hillside Drive, Salt Lake City, Utah
Filed Aug. 26, 1964, Ser. No. 392,106
2 Claims. (Cl. 297—391)



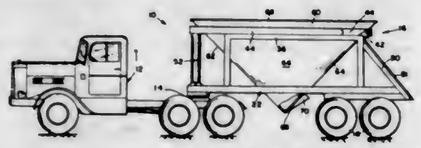
1. A dental operatory neck rest structure comprising a flat rigid base, a tapered resilient cushion overlying said base the thin edge portion of which forms the bottom edge of the rest and the thickest portion of which forms the top edge portion of the rest, an oval depression in the top surface of said cushion between said top and bottom edges, a groove in the surface of said cushion extending longitudinally thereof and connecting said oval depression and said bottom edge of said rest, said oval depression conforming generally to the occipital protuberance of a human skull and said groove following a path generally corresponding to the cervical curve of a normal human spine between the shoulder and the occipital portion of the skull, and an oval opening in said base directly below said oval depression of said cushion.

3,224,810
FURNITURE AND CHAIR BRACKET CONSTRUCTION
Lawrence M. Jenniges and Joe G. Hamic, Sr., Dallas, Tex., assignors to Carter Craft, Inc., Plano, Tex., a corporation of Delaware
Filed Oct. 31, 1963, Ser. No. 320,438
6 Claims. (Cl. 297—451)



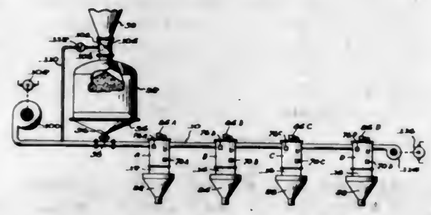
1. A bracket for a chair having legs and a back support formed of tubular members which comprises:
(a) an angle bracket having a horizontal top flange for supporting a chair seat, and
(b) a vertical flange the lower edge of which is arcuate to mate with the surface of said back support, said lower edge being pierced with at least one transverse slot the upper end of which is arcuate as a portion of a circle of diameter corresponding with the diameter of said legs with said circle tangent with said back support, and an integral disk at the front end of the arcuate portion to close the end of said back support.

3,224,811
BOTTOM DISCHARGE VEHICLE WITH BACKWARD DUMPING MECHANISM
William Horvath, 3051 Jackman Road, Ida, Mich.
Filed May 14, 1963, Ser. No. 280,302
4 Claims. (Cl. 298—10)



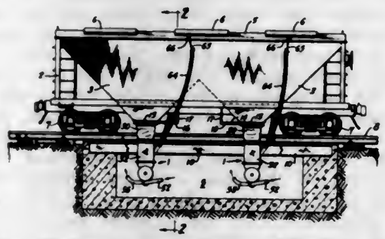
2. In a road vehicle having a wheeled main frame, upright extensions of said main frame on opposite sides thereof, each of said extensions including a substantially horizontal top frame member, a pair of lift members pivotally supported at their rear ends on said extensions for up and down pivotal movement between a transport position in which said lift members rest on said top frame members and extend substantially horizontally of said main frame and a dumping position in which said lift members are pivotally moved upwardly, an open top container body having front and rear walls which terminate at their lower ends in downwardly converging portions one of which has a dump opening formed therein, said body being secured to said lift members so that in said transport position thereof said body is in an upright position and in said dumping position of said lift arms said body is in a rearwardly tipped position for dumping of the contents thereof through the open top, and lift means on said main frame and engaged with said lift arms for moving said arms from said transport to said dumping position.

3,224,812
CONVEYING SYSTEM AND VALVE CONSTRUCTION THEREFOR
Michael J. Bozich, 1059 Bay Ridge Ave., Pittsburgh, Pa.
Original application Feb. 28, 1962, Ser. No. 176,234, now Patent No. 3,185,434, dated May 25, 1965. Divided and this application Apr. 19, 1965, Ser. No. 449,121
9 Claims. (Cl. 302—28)



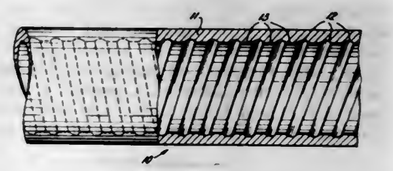
1. In a system for pneumatically conveying finely divided materials, the combination of a pneumatic conveying conduit, a device for forcing a stream of air into one end of the conduit to move finely divided material therealong, an opening in the wall of said conduit, cover means for said opening having a first position wherein it covers the opening and a second position wherein it uncovers the opening to permit granular material to pass therethrough, and means on the side of the opening opposite said one end of the conduit for creating a flow of air opposing that created by said device whereby the opposing flow of air will stop both the flow of air from said device and the granular material carried thereby adjacent the opening and cause the granular material to pass through said opening.

3,224,813
CONVEYING APPARATUS
Martin Richard Jezo, 11710 W. Hayes Ave., West Allis, Wis.
Filed Aug. 29, 1963, Ser. No. 305,297
3 Claims. (Cl. 302—49)



1. An apparatus for handling and conveying dry granular material, comprising a hopper having a pair of side walls and a pair of end walls and having an opening in the bottom whereby dry granular material is discharged by gravity through said opening, feed means communicating with the opening in the hopper and including a series of rotatable vanes defining a series of material receiving compartments, said vanes being rotatable about an axis disposed generally perpendicular to said end walls, a baffle extending between the end walls of the hopper and diverging downwardly toward one of the side walls to define a material feeding chamber, the bottom end of said sloping baffle being spaced from said side wall to provide an outlet communicating with said feed means, said baffle defining an air vent chamber with said opposite side wall of the hopper with said air vent chamber communicating with said feed means, and an elongated air permeable bag extending outwardly from said hopper and communicating with the air vent chamber, said bag being formed of a porous material to permit air to pass freely therethrough and to prevent the dry material from passing therethrough.

3,224,814
CONDUIT FOR PNEUMATIC CONVEYING SYSTEMS
Chester Donald Fisher, Muncy, Pa., assignor to Sprout, Waldron & Company, Inc., Muncy, Pa., a corporation of Pennsylvania
Filed Dec. 3, 1962, Ser. No. 241,691
5 Claims. (Cl. 302—64)

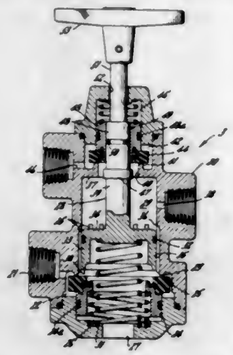


1. A pneumatic conveying conduit member of the character described for conveying therethrough plastic pellets entrained in a stream of air and susceptible to abrading contact with the inner wall surfce of said conduit, which comprises a generally tubular conduit having an inner wall surface for enclosing and conducting said particles as entrained in said air stream, internal grooves in said inner wall surface and substantially uniformly spaced therealong and extending radially below said well surface providing alternating grooves and ridges, the junctures of said grooves and ridges being rounded to avoid sharp edge portions, the radially inner surfaces of said ridges being substantially flat and in alignment forming said inner wall surface, and each of the axial spacing of said ridges and the axial extent and radial depth of said grooves all being substantially less then the size of said entrained plastic particles for avoiding entrapment of said particles in said grooves and continuous abrading contact of said particles with said inner wall surface.

3,224,815
BRAKE CONTROL VALVE AND SYSTEM
Charles Horowitz, Chicago, Ill., assignor, by mesne assignments, to Berg Mfg. & Sales Co., Des Plaines, Ill., a corporation of Illinois
Filed Nov. 13, 1963, Ser. No. 323,502
8 Claims. (Cl. 303—71)

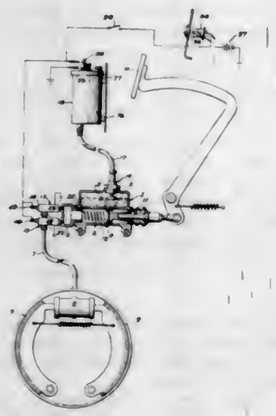
1. A brake control valve comprising a housing, a first inlet in said housing, a second inlet in said housing, a pressure outlet in said housing, an exhaust outlet in said housing, a valve positioned in said housing to control communication between said first inlet and said pressure outlet, a second valve positioned in said housing to control communication between said second inlet and said pressure outlet, a valve-operating member having a normal position, said exhaust outlet and pressure outlet being in communication when said operating member is

in said normal position, said operating member being movable in one direction from said normal position to seal said exhaust outlet from said pressure outlet and to open communication between said first inlet and said pressure outlet, said operating member being movable in an opposite direction from said normal position to seal said exhaust outlet from said pressure outlet and to open communication between said second inlet and said



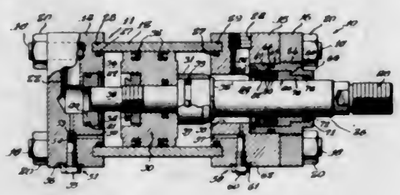
pressure outlet, said operating member having a portion extending outwardly from said housing, a laterally extending pin carried by said portion, said housing having an outlet for said portion, an annular flange extending inwardly at said outlet, a pair of diametrically opposed slots in said flange formed and adapted for passage therethrough of the opposite ends of said pin.

3,224,816
SAFETY DEVICE FOR HYDRAULIC BRAKE DEVICES
Raymond T. Wilson, 238 Leavenworth St., San Francisco, Calif., and Albert M. Goodman, P.O. Box 546, Belvedere-Tiburon, Calif.
Filed June 11, 1963, Ser. No. 287,115
3 Claims. (Cl. 303—84)



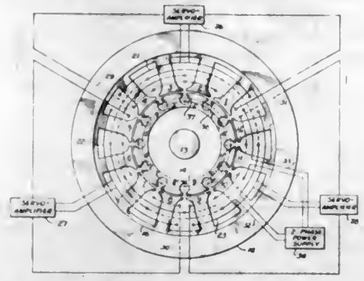
1. In a safety device for hydraulic brakes of a vehicle having a brake operating device and hydraulically actuated wheel brakes,
(a) a master cylinder,
(b) an outlet head at one end of said master cylinder,
(c) four outlets on said outlet head,
(d) a shut-off cylinder secured in each outlet,
(e) a freely reciprocable piston in each sut-off cylinder,
(f) an outlet on a side of each shut-off cylinder connected to one of said wheel brakes,
(g) means to limit the movement of the piston toward said outlet head so as to admit fluid from said master cylinder and through said outlet head into the shut-off cylinder to exert pressure on said piston toward the outlet of the shut-off cylinder,
(h) an intake port on said side of said shut-off cylinder between the piston and said outlet of said shut-off cylinder communicating with the intake end of the shut-off cylinder to transmit fluid from the intake side of the piston to the outlet side of the piston,
(i) said piston being of a length less than the distance between said limit means and said outlet port so as to leave said outlet port uncovered by the piston in the balanced position of the piston thereby to maintain substantially balanced pressure on the opposite sides of the piston,
(j) a coil spring between the outlet end of the shut-off cylinder and said piston, said coil spring being of such length that when fully expanded the coil spring pushes said piston to a shut-off position covering said intake port, thereby to return said piston to said shut-off position when said piston is moved toward said outlet end by unbalancing of pressure caused by fluid loss through said outlet port.

3,224,817
CYLINDER AND PISTON ARRANGEMENT
J. Carter Miller, Munster, and Robert W. Lanman, Hammond, Ind., assignors to Carter Controls, Inc., Lansing, Ill., a corporation of Illinois
Filed Aug. 13, 1962, Ser. No. 216,419
9 Claims. (Cl. 308—3.5)



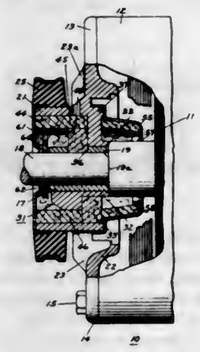
4. A bearing and seal cartridge assembly for use in a piston and cylinder arrangement, the cartridge assembly including a combination of a generally cylindrical body having a bore extending therethrough adapted to receive a piston rod and of larger diameter than the piston rod, a part in said bore having substantially the same diameter as that of said piston rod and serving as a bearing; seal means in said body for engaging the piston rod to prevent leakage from within the cylinder, said seal means comprising packing means, a washer member engaging one side of said packing means, the other side of said packing means engaging one end of said part, resilient means for urging said washer member toward said part, and means for retaining said packing means, washer member and resilient means in said body; a rod scraper floatingly retained in said body for movement radially of the axis of the piston rod for scraping foreign particles from the surface of the piston rod; and a rod wiper provided in said body adjacent the rod scraper, said rod wiper being adapted to contact the outer surface of the piston rod, said rod wiper cooperating with said rod scraper to partially define a chamber for receiving fine, foreign particles, said fine, foreign particles accumulating in said chamber during one stroke of the piston rod and being removed from the chamber on the return stroke of the piston rod.

3,224,818
COMBINED ELECTROMAGNETIC AND ELECTRO-MECHANICAL POWER CONVERTER
Herbert Sixsmith, Boulder, Colo., assignor to the United States of America as represented by the Secretary of Commerce
Filed Dec. 10, 1962, Ser. No. 243,681
18 Claims. (Cl. 308—10)



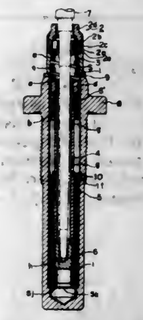
1. In an electro-mechanical converter;
a rotor positioned in a stator,
a plurality of sensing means for sensing the radial position of said rotor relative to said stator,
a plurality of control windings and a plurality of stator-motor windings positioned on said stator in such a manner that the mutual inductance between each control winding and each stator-motor winding is substantially zero,
a plurality of control means, each connected to the output of a respective one of the sensing means and each providing a signal having a magnitude dependent upon the radial position of the stator relative to said rotor,
means for applying the output of each control means to a respective one of said control windings,
a power supply generating a plurality of voltages in a selected phase relationship, and
means for applying each voltage to a respective one of said stator-motor windings.

3,224,819
BEARING SUPPORT AND LUBRICATION ARRANGEMENT FOR USE IN A DYNAMO-ELECTRIC MACHINE
William R. Hunt, Fort Wayne, Ind., assignor to General Electric Company, a corporation of New York
Filed Feb. 5, 1964, Ser. No. 342,735
7 Claims. (Cl. 308—132)



1. In a dynamoelectric machine having a rotatable member, at least one end frame for rotatably journalling the member comprising an outer elongated housing; first and second hub sections integrally joined together spaced inwardly from said housing; said hub sections having means for journalling the rotatable member; said first hub section including an unobstructed space therein communicating with the journalling means to permit access to the rotatable member; a first web connecting said first hub section and housing together at an angular location remote from said space; a second web axially spaced from said first web connecting a portion of said second section axially adjacent said space, with said first and second webs being in generally angular complementing relation; a generally T-shaped wick having transverse legs extending beyond the sides of said space in said first hub section and having a central leg depending through said space arranged to engage the rotatable member for furnishing lubricant thereto; first lubricant absorbent means disposed outwardly of said first hub section within said housing and contacting said wick for transferring lubricant thereto; second lubricant absorbent means arranged between the inner surface of said housing and the outer surface of said second hub section remote from said second web; said first and second lubricant absorbent means being in communication for transferring lubricant therebetween by capillary action.

3,224,820
SPINDLE INSERT
Takao Ito, Kohoku-ku, Yokohama-shi, Japan, assignor to Nippon Seiko Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan
Filed Aug. 19, 1963, Ser. No. 303,106
5 Claims. (Cl. 308—155)

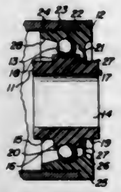


1. A spindle mounting for textile spinning and twisting machines comprising a spindle supporting bolster, a bearing casing, a bearing in the upper end region of the casing, the lower end of the casing press-fitted into the spindle bolster, a spring sleeve having an inner bore, the sleeve being tightly press-fitted in the casing and the adjacent portions of the bolster and having a helical groove in both its end portions to obtain requisite flexibility, an inner tube of which the upper end is held by the inner bore of the spring sleeve, a foot-step bearing in the inner tube for the lower end of a spindle, and damping means for the inner tube located between the lower end portion of the bolster and the inner tube.

3,224,821
BALL BEARING
Irwin R. Barr, Lutherville, Md., assignor to Aircraft Armaments, Inc., Cockeysville, Md., a corporation of Maryland
Original application Apr. 16, 1959, Ser. No. 806,899, now Patent No. 3,089,221, dated May 14, 1963. Divided and this application July 17, 1962, Ser. No. 210,536
5 Claims. (Cl. 308—187.2)

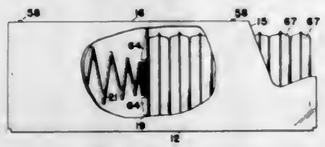
1. An anti-friction bearing comprising an inner ring having a permanent pre-assembly-formed annular groove in its outer surface, an outer ring having a permanent

pre-assembly-formed annular groove in its inner surface facing and aligned with said inner ring groove and forming a raceway therewith, anti-friction rolling elements complementary to and disposed in said raceway, said outer ring being of an elastic material which is deformable within the elastic limit thereof for effecting insertion of said anti-friction rolling elements into said raceway, and an annular constraining sleeve fitted about the outer circumferential periphery of said outer ring, said annular sleeve being formed of a materially stiffer material than



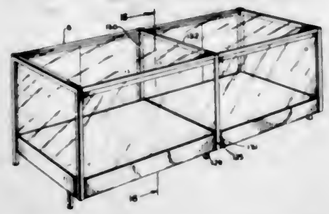
that of said outer ring and of sufficient stiffness to prevent dislodgement of said anti-friction rolling elements by radial elastic deformation of said outer ring, one of said rings having an end shoulder face formed thereon adjacent its respective said annular groove, the other of said rings having a radially extending shield formed integral therewith, said shield having an annular lateral bend terminating in an annular lip extending longitudinally toward and into deflected resilient sealing engagement with said end shoulder face of said one ring.

3,224,822
REUSABLE DISPLAY AND DISPENSING CONTAINER
Jack A. Kirby, Stockton, Calif., assignor, by mesne assignments, of one-half to Bi/fresh Dispenser Co., and one-half to Northwest Bi/fresh Dispenser Co., both of Reno, Nev., both corporations of Nevada
Filed Nov. 8, 1963, Ser. No. 322,280
5 Claims. (Cl. 312—71)



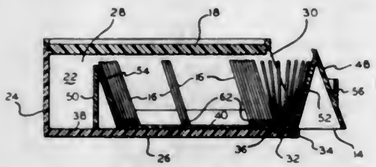
1. A knock-down sterilizable shipping and display container for use and reuse in the merchandising of perishables comprising in combination, a single polypropylene blank about 16 mils thick comprising a bottom, side, front, back and top panels with the front end panel cut away at the top and central portions and said side panels cut back at their top front portions and the top panel extending forwardly only to the terminus of the cut back of the side panels, said panels being joined together integrally by the hinge means formed in said sheet and cooperating with disengageable locking means formed along the free edges of said panels, said front, sides and top locking together to form a container having an access opening in the top front, said hinge means being a formed valley in said plastic blank of very thin section below the surface of said blank having angular sides sloping downwardly thereto, said disengageable locking means comprising mating protuberances and sockets, a movable separate compressor plate disposed within said container substantially parallel to the plane of the front panel and means for urging said compressor plate forwardly toward the front panel.

3,224,823
KNOCKDOWN SHOWCASES
Howard L. Schulze, Des Plaines, Ill., assignor to American Fixture, Inc., St. Louis, Mo., a corporation of Missouri
Filed Jan. 8, 1962, Ser. No. 164,698
18 Claims. (Cl. 312—108)



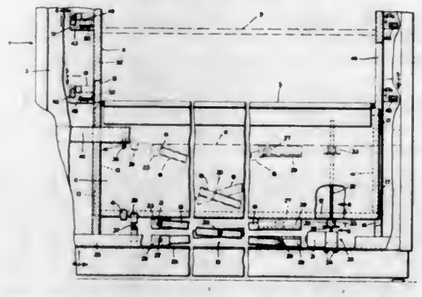
17. A knockdown display case comprising a plurality of rigid preassembled planar end frames, respectively having flat faces adapted for upright inwardly presented opposed disposition when the frames are in assembled position, and being provided in such faces with front and rear sets of apertures, front and rear facia boards each having oppositely presented lateral faces, hook-like elements mounted in and projecting beyond end faces of each of said facia boards and being adapted for locking engagement in said apertures whereby to rigid interconnect the end frames, each of said end frames, in turn, being releasably engaged with cross-bars which are located in parallel relation to each of the front and rear facia boards so that the end frames are thus interconnected in the form of an upright box-like enclosure, one of said cross-bars having inwardly extending socket portions at its ends, a pair of laterally projecting connector elements extending from the end frames and being adapted to snugly fit within the socket portion of said last-named cross-bar when attached to said end frames, end panels removably disposed in said end frames, end frame facia boards rigidly disposed within said end frames, and having their upper margins co-planar with the upper margins of the front and rear facia boards, lying in the same horizontal plane as the front and rear facia boards, matching channel-forming means rigidly secured to the undersurface of said cross-bars and the upper surfaces of said front and rear facia boards, and transparent panels removably disposed in said channel-forming means.

3,224,824
CARD FILING DEVICES
Milton E. Remke, 5154 Brown St., Skokie, Ill.
Filed Sept. 30, 1963, Ser. No. 312,773
2 Claims. (Cl. 312—183)



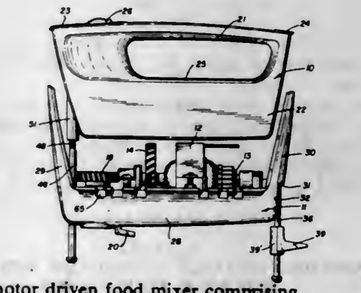
1. In a card filing device of the type described, a cabinet, a drawer adapted to slide into and out of said cabinet and adapted to support a standing array of file cards arranged in face to face relationship with each of such cards having embedded therein along the bottom marginal portions thereof a thin lamination of magnetically susceptible material, said cabinet supporting a permanent magnet immediately below said drawer for cooperation with said lamination in each card whereby the sliding movement of said drawer into and out of said cabinet enables the selective fanning of segments of said array of file cards, said permanent magnet being located adjacent the opening in said cabinet for receiving said drawer.

3,224,825
POWER FILE COUNTER CONSTRUCTION
Charles P. Sturgis, Canton, Henry W. Kumpf, Jr., Hartville, and Edward I. Maddern, Canton, Ohio, assignors to Diebold, Incorporated, Canton, Ohio, a corporation of Ohio
Filed Oct. 28, 1963, Ser. No. 319,478
6 Claims. (Cl. 312—223)



1. Power file construction of the type in which a plurality of pans are supported movable by operably connected electric pan drive motor means in a continuous orbit of travel including upper and lower turning portions and intermediate forward and rearward generally vertical portions, in which the pans are exposed at least at an access opening in a cabinet wall adjacent the intermediate forward generally vertical portion of the orbit of travel, in which a work counter is mounted at the access opening selectively vertically movable between at least an upper and a lower position, in which the access opening is formed such that a pan is exposed directly at and over the work counter and through the access opening when the work counter is at either of the upper and lower positions, and in which a selector switch corresponding to each pan is provided electrically connected to the pan drive motor means selectively operable for actuating the pan drive motor means to move the corresponding pan to the access opening; the improvements comprising, an upper position limit switch and a lower position limit switch, means operably connected to the counter for engaging the upper position limit switch when the counter is moved to the upper position for engaging the lower position limit switch when the counter is moved to the lower position, first electric circuit means including the upper position limit switch and selector switches and pan drive motor means set up and operable when the upper position limit switch is engaged as a consequence of the counter being moved to the upper position for actuating the pan drive motor means when any one of the selector switches is operated to move the pan corresponding to said one selector switch to the access opening and for stopping the pan drive motor means to position said corresponding pan exposed directly at and over the counter at said counter upper position, and second electric circuit means including the lower position limit switch and selector switches and pan drive motor means set up and operable when the lower position limit switch is engaged as a consequence of the counter being moved to the lower position for actuating the pan drive motor means when the same any one of the selector switches is operated to move the same pan corresponding to said same one selector switch to the access opening and for stopping the pan drive motor means to position said same corresponding pan at a lower location exposed directly at and over the counter at said counter lower position; whereby, movement of the work counter to the upper position and operation of any given selector switch will position the corresponding pan exposed directly at and over the work counter at said upper position, and movement of the work counter to the lower position and actuation of the same given selector switch will position the same pan at a lower location exposed directly at and over the work counter at said lower position.

3,224,826
MOTOR DRIVEN FOOD MIXER
Warren N. Kemnitz, Racine, Wis., assignor to Scovill Manufacturing Company, Waterbury, Conn., a corporation of Connecticut
Filed Sept. 16, 1964, Ser. No. 396,825
6 Claims. (Cl. 312—223)

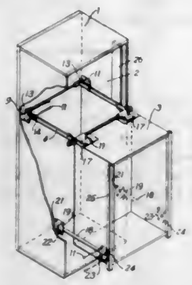


6. A motor driven food mixer comprising
(a) separate upper and lower housings,
(b) means connecting said housings together near their forward ends,
(c) a separate rear end support provided with a vertically bored projection,
(d) a rear end surface on the lower housing complemental to said rear end support, said rear end surface being provided with a vertically extending groove into which the vertically bored projection of the rear end support fits,
(e) an internally threaded boss in the upper housing adjacent its rear end, and
(f) a headed screw extending through the lower housing and the rear end support, its headed end bearing on the lower housing and its opposite end engaging the threaded boss in the upper housing, thereby connecting the housings together and fixing the rear end support on said lower housing complemental surface.

3,224,827
CABINET HARDWARE FOR LOWERING AND RETRACTING A CONTAINER
Robert D. Foster and James L. Thigpen, Houston, Tex., assignors to Winco, Inc., Houston, Tex., a corporation of Texas
Filed Nov. 12, 1963, Ser. No. 322,591
4 Claims. (Cl. 312—266)

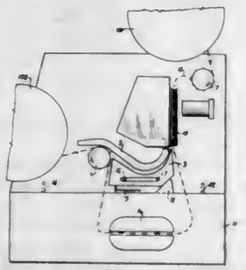
3. Hardware for permitting a container to be lowered from and retracted into a cabinet comprising:
a first pair of plates for spaced attachment to interior walls of a cabinet;
a first bar for rotatable carriage by and between the first pair of plates;
a pair of arms fixedly mounted at like ends thereof on the first bar;
a first helical spring carried by the first bar and disposed to engage with one of the first pair of arms for urging the arms upward through a vertical arc by acting against a cabinet;

a second bar fixedly carried by and between the opposite ends of the first pair of arms;
tongue means pivotally carried by the second bar and suitable for attachment near the top of the container;
a second pair of plates for spaced attachment to the interior walls of the cabinet;



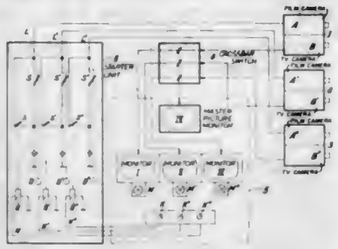
a third pair of plates for spaced attachment to the exterior walls of the container;
and a pair of struts having like ends pivotally connected to the second pair of plates and the opposite ends pivotally connected to the third pair of plates for permitting movement through a vertical arc upon lowering or retraction of the container.

3,224,828
MOTION PICTURE PROJECTOR WITH A MOVABLE FILM GUIDE
Slavomír Chytil, Prerov, Czechoslovakia, assignor to Meopta národni podnik, Prerov, Czechoslovakia
Filed Jan. 22, 1964, Ser. No. 339,540
6 Claims. (Cl. 352—27)



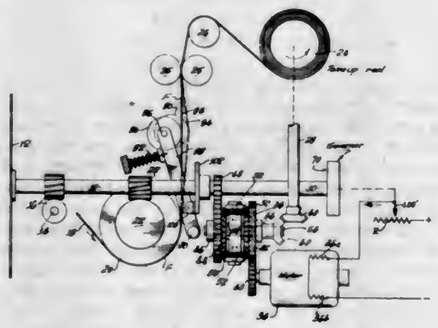
1. A motion picture apparatus comprising, in combination:
(a) a projector portion;
(b) a sound adapter portion;
(c) releasable locating means for holding said portions in a predetermined spatial relationship, said projector portion including
(1) supply reel means,
(2) take-up reel means,
(3) feed means for moving a film from said supply reel means in a predetermined path toward said adapter portion in said relationship of the portions, and
(4) guide means movable between an operative position and an inoperative position, said guide means when in said operative position deflecting said film from said path toward said take-up reel means; and
(d) actuating means responsive to said relationship of said portions for moving said guide means from said operative to the inoperative position thereof.

3,224,829
MOVING PICTURE AND TELEVISION CAMERA CONTROL APPARATUS
Gero Förster, Darmstadt-Eberstadt, Germany, assignor to Fernseh G.m.b.H., Darmstadt, Germany
Filed Sept. 5, 1961, Ser. No. 136,046
Claims priority, application Germany, Sept. 7, 1960, F 32,063; Sept. 20, 1960, F 32,156
7 Claims. (Cl. 352—131)



1. Apparatus comprising, in combination, a plurality of moving picture cameras; a plurality of television cameras each associated with a corresponding one of said moving picture cameras and having the same field of view as the associated moving picture camera; master television picture monitor means; switch means interconnected between said moving picture and televsion cameras and said master televsion picture monitor means, said switch means being selectively operable to connect one of said television cameras to said master television picture monitor means; a plurality of first control means each connected to a corresponding one of said moving picture cameras for operating the said moving picture camera independently of the other moving picture cameras and independently of operation of said switch means; and second control means cooperating with said switch means to operate that moving picture camera which is associated with that television camera which is connected by said switch means to said master television picture monitor independently of operation of any of said moving picture cameras by any of said first control means.

3,224,830
DIFFERENTIAL DRIVE FOR CINEMATOGRAPHS
George A. Mitchell, 687 Prospect Crescent, Pasadena, Calif.
Filed Sept. 24, 1962, Ser. No. 225,735
5 Claims. (Cl. 352—180)



5. In kinetographs, the combination of a film driving and feeding mechanism and a film exposing shutter,
a film take-up mechanism that pulls the film on a film run from the driving and feeding mechanism and winds it in a roll of increasing size,
a shutter shaft from which the driving and feeding mechanism is synchronously operated,
and driving means for the shutter shaft and the film take-up mechanism including,
a differential gearing of three elements,
an initial driving motor directly driving one of the three elements,
driving connections between each of the other two elements, respectively, and the shutter shaft and the film take-up mechanism,
and a governor device connected to and operating in synchronism with the shutter shaft and acting to regulate the driving motor speed to drive the shutter shaft at a predetermined speed.

CHEMICAL

3,224,831
METHOD OF TREATING ENGINE EXHAUST GAS WITH AN OXIDATION CATALYST CONTAINING PLATINUM AND PHOSPHORUS
Ruth E. Stephens, Detroit, Mich., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia
No Drawing. Filed July 12, 1961, Ser. No. 123,424
8 Claims. (Cl. 23—2)

1. A method of substantially oxidizing the unburned hydrocarbon and carbon monoxide constituents of the exhaust gas of internal combustion engines, said method comprising contacting said exhaust gas in the presence of oxygen with an exhaust gas oxidation catalyst prepared by (a) impregnating an alumina carrier with from 0.003 to 5 percent by weight of platinum as a compound of platinum and with from about 1 to 15 percent, based on the weight of said carrier, of a phosphorus compound selected from the group consisting of the acids of phosphorus and ammonium phosphate, and (b) heating the resultant material to a temperature within the range of from about 300–1000° C.

3,224,832
CALCIUM BOROHYDRIDE PRODUCTION
Richard K. Pearson, Zelienople, Pa., assignor to Callery Chemical Company, Pittsburgh, Pa., a corporation of Pennsylvania
No Drawing. Filed July 31, 1953, Ser. No. 371,793
3 Claims. (Cl. 23—14)

1. That method of making calcium borohydride comprising suspending, in a closed reactor, calcium hydride in tetrahydrofuran, removing air from the reactor, passing diborane into the reactor while stirring its contents, separating tetrahydrofuran from the reaction mixture, heating said reaction mixture to remove solvated tetrahydrofuran, and recovering calcium borohydride from the residue.

3,224,833
INORGANIC PERCHLORATE COMPOSITIONS
Gene C. Robinson, Baton Rouge, La., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia
No Drawing. Filed Nov. 28, 1961, Ser. No. 155,893
4 Claims. (Cl. 23—14)

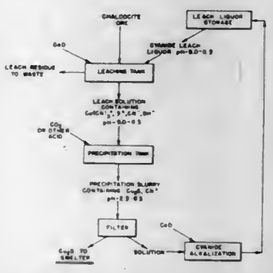
1. A compound represented by the general formula $M(ClO_4)_n \cdot N_2O_4$, wherein M is a metal selected from the group consisting of lithium and the alkaline earth metals and n is the valence of M.

3. The method of preparing a compound represented by the general formula $M(ClO_4)_n \cdot N_2O_4$, wherein M is a metal selected from the group consisting of lithium and the alkaline earth metals and n is the valence of M, which comprises reacting a substantially anhydrous perchlorate of the general formula $M(ClO_4)_n$, wherein M and n have the meaning hereinbefore defined, with dinitrogen tetroxide.

3,224,834
CHEMICAL COMPOSITION
Frederick W. Frey, Jr., and Roy J. Laran, Baton Rouge, La., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia
No Drawing. Filed Apr. 27, 1962, Ser. No. 190,835
2 Claims. (Cl. 23—14)

1. A process for the preparation of titanium-, nitrogen-, oxygen- and chlorine-containing products which comprises reacting titanium tetraperchlorate with at least four moles of nitrogen dioxide per mole of said titanium tetraperchlorate at a temperature not exceeding about 25° C.
2. The product produced by the process of claim 1.

3,224,835
TREATMENT OF SULFIDIC MATERIAL
William A. Hockings, Houghton, and Donald H. Rose, Lake Linden, Mich., and Antoine M. Gaudin, Cambridge, Mass., assignors to Copper Range Company, New York, N.Y., a corporation of Michigan
Filed Jan. 19, 1962, Ser. No. 167,245
13 Claims. (Cl. 23—135)

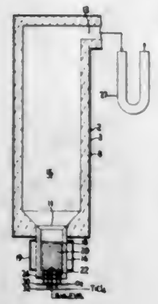


1. The method of treating sulfidic material containing copper in the cuprous form which comprises leaching such material under substantially non-oxidizing conditions with an aqueous calcium cyanide solution having a pH varying from 9 to 11.5, separating the pregnant leach solution from the leached residue, reducing the pH by adding an acidic reagent of the group consisting of carbon dioxide and sulfuric acid, whereby cuprous sulfide is precipitated therefrom, and recovering the precipitated sulfide.

3,224,836
PROCESS FOR PRODUCING TITANIUM OXIDE PIGMENTS
Edward M. Allen, Doylestown, and Floyd E. Benner, Jr., Wadsworth, Ohio, assignors to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 25, 1963, Ser. No. 290,558
7 Claims. (Cl. 23—202)

1. A method of preparing titanium dioxide which comprises burning a member of the group consisting of sulfur and sulfur halides in the presence of oxygen to pro-

duce a stream of hot, gaseous, reaction products thereof, adding titanium tetrahalide to the stream, reacting the



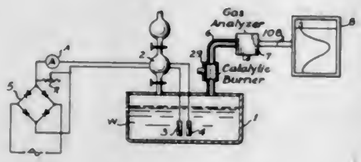
titanium tetrahalide with oxygen in the stream, and recovering titanium dioxide from the stream.

3,224,837

PROCESS AND DEVICE FOR THE DETERMINATION OF ORGANIC SUBSTANCES CONTAINED IN WATER

Peter Moyat, Bergen-Enkheim, Germany, assignor to Hartmann & Braun Aktiengesellschaft, Frankfurt am Main, Germany, a corporation of Germany

Filed Dec. 17, 1962, Ser. No. 245,280
Claims priority, application Germany, Dec. 22, 1961, H 44,462
10 Claims. (Cl. 23—230)



1. A process for determination of the content of organic substances in water by oxidation, said process comprising electrolyzing the water containing the substance to produce a mixture of hydrogen, oxygen and carbon dioxide and determining the carbon dioxide content of the mixture as a measure of organic substances in the water.

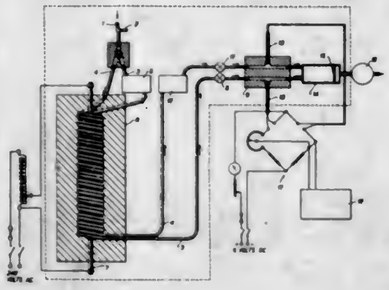
3,224,838

GAS TESTING

Norman Evans and John Ronald Wiles, Sunbury-on-Thames, England, assignors to The British Petroleum Company Limited, London, England, a British joint-stock corporation

Filed Nov. 20, 1962, Ser. No. 239,000
Claims priority, application Great Britain, Dec. 5, 1961, 43,485/61
8 Claims. (Cl. 23—232)

1. A method for determining the solid carbon content of gases comprising continously sampling the gas, splitting the sample into two streams, treating one stream to remove solid particles, subjecting each stream in the presence of an oxidizing medium selected from the group consisting of air and oxygen to combustion conditions by raising the temperature of each stream to a combustion temperature level at which any carbonaceous material in each stream is oxidized to carbon dioxide, and thereafter



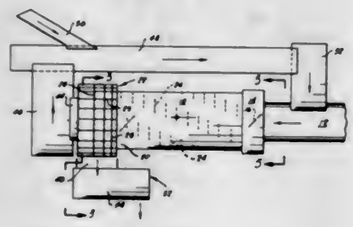
measuring and comparing the thermal conductivities of each stream.

3,224,839

SYSTEM FOR COMMINUTING REFUSE

Norman A. Pierson, P.O. Box 755, Norman, Okla.

Filed Apr. 6, 1961, Ser. No. 101,188
13 Claims. (Cl. 23—259.1)



1. A system for reducing the average particle size of a mixture of heterogeneous materials comprising the combination of a rotatably mounted, horizontal drum having pulverizing means secured to the internal wall thereof for effecting an initial particle size reduction of said materials; metering means at one end of said drum for classifying pulverized material discharged from said drum according to particle size; and a grinding device positioned alongside said horizontal drum and metering device for receiving classified material discharged laterally in a generally horizontal direction from said metering device, said grinding device cooperating with said metering means to subject the material of relatively larger particle size discharged from said drum to more extensive grinding than the material of relatively smaller particle size which is discharged from said drum.

3,224,840

METHODS AND APPARATUS FOR PRODUCING CRYSTALLINE MATERIALS

Robert A. Lefever, Palo Alto, Calif., assignor to General Telephone and Electronics Laboratories, Inc., a corporation of Delaware

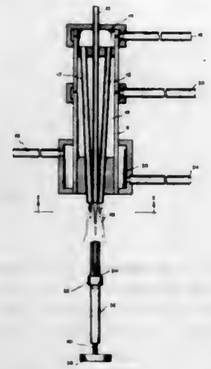
Filed Nov. 16, 1962, Ser. No. 238,301
3 Claims. (Cl. 23—273)

1. Apparatus for flame fusion crystal growth wherein a crystal is grown on a surface by subjecting the constituents of the crystal deposited thereon to a high temperature flame, said apparatus comprising

(a) a first vertically extending cylindrical tube adapted to permit the downward passage of oxygen gas therethrough;

(b) a plurality of cylindrical tubes, said tubes being distributed around said first tube at equidistantly spaced positions relative thereto and adapted to permit the passage of a first gas therethrough, said plurality of tubes being inclined from the vertical whereby the separation of said plurality of tubes with respect to each other and to said vertically extending tube is least at the lower end of said tube;

(c) a cylindrical hollow housing adapted to receive a second gas and enclosing a section of said first tube



and said plurality of tubes, said housing forming passages surrounding the tubes, the first tube and the plurality of tubes at said lower end forming passages between them and communicating with said housing passages for the discharge of said second gas, a high temperature flame being generated proximate the end of said tubes by the ignition of the gases passing from said first tube, said plurality of tubes and said housing; and

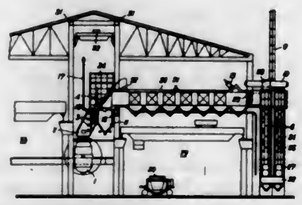
(d) the said surface being positioned below the said lower end of the tubes to receive a deposit of the constituents thereon for crystal growth.

3,224,841

PLANT FOR COOLING AND CLEANING WASTE-GASES IN STEELWORKS

Roland Kemmetmüller, Vienna, Austria, assignor to Waagner-Biro Aktiengesellschaft, Vienna, Austria, a firm of Austria

Filed Oct. 30, 1962, Ser. No. 234,082
Claims priority, application Japan, Nov. 8, 1961, 36/40,338; Austria, Apr. 3, 1962, A 2,711/62
6 Claims. (Cl. 23—277)



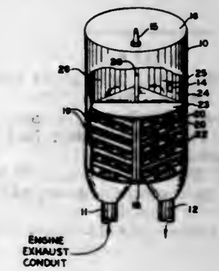
1. A plant for using and cooling waste gases of steel converters or the like comprising, in combination, a plurality of intermittently operated steel converters, each producing during operation hot waste gas gradually varying in temperature during each operation from a minimum temperature at the beginning of the operation to a maximum temperature and dropping to said minimum temperature at the end of the operation; a waste gas collecting hood for each converter for receiving waste gas therefrom, said hood having an outlet end; a common gas collecting duct communicating with the outlet end of the hood of each converter so that waste gases from all converters will pass through said common gas collecting duct, said duct having a discharge opening; means connected with said duct for maintaining at said discharge opening a substantially constant temperature of the gas passing therethrough and including heat regenerator means in said common duct which are heated up during the time the hot waste gases passing therethrough are at said maximum temperature and which give up heat to gases passing through said common duct when said gases have a temperature below said maximum temperature; and means communicating with said discharge opening of said common duct for transforming the heat content of the waste gas passing therethrough into useful energy while simultaneously cooling the waste gas.

3,224,842

WASTE GAS INCINERATING AFTERBURNERS

Wendell J. Manske, Birchwood, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Filed Jan. 10, 1963, Ser. No. 250,702
7 Claims. (Cl. 23—277)



1. A device for the incineration of combustible portions of waste gases containing at least sufficient oxygen for the oxidation of said combustible portions comprising in combination, a casing having at least one cross-flow heat exchanger of generally parallelepipedal configuration positioned therein so that at least three corner edges of the heat exchanger contact the walls of the said casing and the spaces formed by the walls of the said casing connecting the corner edges of adjacent faces of the heat exchanger block form inlet and outlet plenums for the said waste gases and the space encompassed by the walls of the said casing not occupied by the said heat exchanger forms a combustion chamber; and ignition means in said combustion chamber.

3,224,843

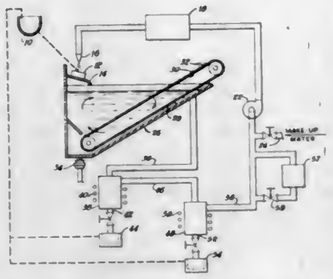
SEPARATION OF CRYSTALS FROM A BORIC ANHYDRIDE MATRIX

Willard L. Morgan and Lewis F. Scheffler, Newark, Ohio, assignors to Owens-Corning Fiberglas Corporation, a corporation of Delaware

Filed June 30, 1960, Ser. No. 40,013
3 Claims. (Cl. 23—299)

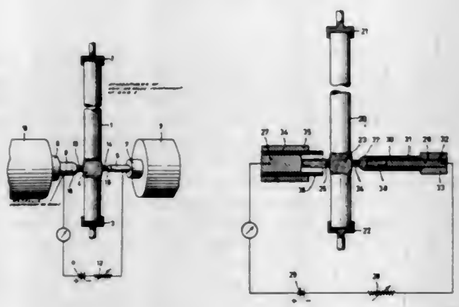
1. A method of producing crystal fibers selected from the group consisting of titania, zirconia, and zircon with the aid of a matrix comprising boric anhydride, which method comprises heating the crystal-forming

material and the matrix material in a melter to melt the matrix material and to dissolve the crystal-forming material therein, cooling the resulting melt to reduce the solubility of the crystal-forming material and to cause crystal fibers to form and grow in the matrix, subsequently draining the matrix from the melter and the resulting crystal fibers after substantially as much of the crystal-forming material as possible has come out of solution



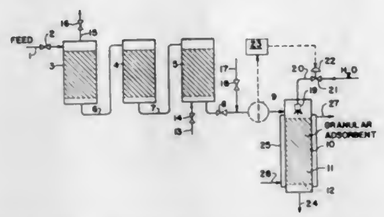
and while the melter, the crystal fibers, and the matrix are still at an elevated temperature and the matrix is still in liquid form, removing the crystal-forming material and remaining matrix from the melter, effecting relative movement between hot water and said crystal fibers and remaining matrix to cause said hot water to dissolve said matrix and to wash away any compound formed thereon, and subsequently separating the water from the crystal fibers.

3,224,844
ZONE-MELTING METHOD FOR METAL COMPOUNDS
Peter Jakob Gerthsen, Aachen, Germany, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Feb. 28, 1962, Ser. No. 176,204
Claims priority, application Germany, Mar. 1, 1961, N 19,666
6 Claims. (Cl. 23—301)



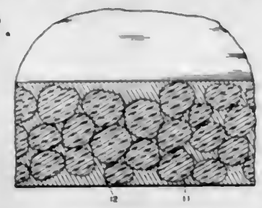
1. A method of zone-melting a body of a metal compound having poor electrical conductivity, said compound having a metal element which is electrically conductive, comprising providing a generally rod-shaped body of said metal compound, providing at least two solid electrodes each constiutued of at least one electrically-conductive metal adjacent the said body, the metal in the electrodes being the same as the electrically conductive metal element of the said compound in unreacted form, establishing an arc discharge between each of the said electrodes and a portion of the body to melt a transverse zone of the body in an atmosphere containing the other component of the metal compound, and causing relative movement of the electrodes and the rod-shaped body to pass the molten zone maintained by the arc discharge longitudinally through said body.

3,224,845
CONTROLLED WETTING OF NON-AQUEOUS FLUIDS
Robert James Thomas, Lafayette, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed July 19, 1962, Ser. No. 210,994
4 Claims. (Cl. 23—312)



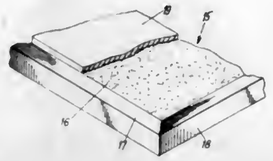
1. Method of continuously preparing a solution containing a selected concentration of water dissolved in a non-aqueous fluid which comprises the steps of:
(a) dehydrating a feed stream of said fluid containing dissolved water within a dehydrating zone and therein reducing the water concentration to a substantially constant level below said concentration, and measuring the flow rate of said fluid,
(b) flowing the dehydrated fluid stream through a wetting bed during said flow of the dehydrated fluid therethrough and at a point for flow through the bed concurrently with said stream of granular adsorbent,
(c) introducing into said wetting bed a controlled amount of water responsively to said flow measurement, and
(d) continuously discharging from said bed an effluent solution stream consisting of said fluid and water dissolved therein in the said concentration.

3,224,846
LIGHT WEIGHT STRUCTURAL MATERIAL AND MEANS FOR MAKING
William S. Fiedler and John M. Diehl, Madison, Wis., assignors to LOR Corporation, Enid, Okla., a corporation of Delaware
Filed Sept. 24, 1962, Ser. No. 225,746
3 Claims. (Cl. 29—183.5)



1. Light weight structural material comprising in combination a continuous phase solid state metal matrix, a multitude of cells within said metal matrix wherein each cell contains at least one discrete piece of aggregate, said piece being at least partially carbonized residue of organic material wherein said cells are predominantly discrete and non-communicating and wherein each of said discrete pieces of aggregate has an original size of at least one-eighth inch.

3,224,847
PROTECTED METAL ARTICLES
Paul E. Schnedler, Middletown, Ohio, assignor to Armco Steel Corporation, Middletown, Ohio, a corporation of Ohio
Original application May 25, 1959, Ser. No. 815,636, now Patent No. 3,155,530. Divided and this application Sept. 26, 1963, Ser. No. 311,884
3 Claims. (Cl. 29—195)



1. An article of manufacture comprising a metal base member having a lower-melting point metallic coating thereon, and a protective layer covering said metallic coating, said protective layer being composed of a multiplicity of individual particles, such as asbestos fibers, said particles being partially embedded in and individually anchored to the said metallic coating, said protective layer forming a rough and irregular surface capable of being penetrated by a non-metallic coating applied over said protective layer.

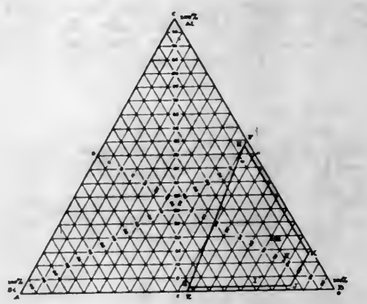
3,224,848
GASOLINE COMPOSITION
Hubert T. Henderson, Pleasant Hill, Calif., assignor to Shell Oil Company, a corporation of Delaware
No Drawing. Filed Mar. 16, 1959, Ser. No. 799,483
12 Claims. (Cl. 44—56)

1. A gasoline composition consisting essentially of a branched chain di-lower-alkyl ether having from 4 through 8 carbon atoms in a mixture of naphthene, aromatic and paraffin gasoline boiling range hydrocarbons in which mixture the concentration of naphthenes is from about 2% to about 25% by volume, the concentration of aromatics is at least 15% and no more than 75% by volume and which mixture contains no more than about 10% by volume of olefins, the concentration of ether in the composition being no more than about 50% by volume.

3,224,849
PREPARATION OF COAL SLURRIES
Roger M. Dille, La Habra, Calif., Frank E. Guptill, Jr., Fishkill, N.Y., and John C. Ahlborn, Pomona, Calif., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Mar. 23, 1962, Ser. No. 182,083
9 Claims. (Cl. 48—206)

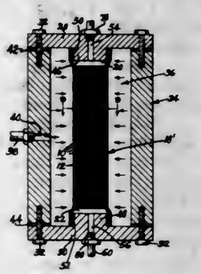
1. In a process for treating coal particles which tend to form scale in a tubular heating zone in which a flowable mixture of particles of coal in water are passed into and through said heating zone and said mixture is heated during passage through said heating zone to vaporize water therefrom and form a flowing dispersion of coal particles in steam, the improvement comprising removing ultrafine particles from said coal particles thereby reducing the scale forming tendencies of said mixture which comprises the following steps:
(a) forming a slurry of said coal particles in water comprising not more than 50 percent coal and containing particles smaller than 10 microns,
(b) adding ammonium hydroxide to said slurry in an amount equivalent to 0.05 to 0.2 volume percent of a 30 weight percent aqueous ammonium hydroxide solution based on the volume of said slurry effecting deflocculation of fine particles of solid material, and
(c) withdrawing water containing precipitated solids and coal particles smaller than 10 microns from remaining coal particles.

3,224,850
SILICON ALUMINUM BORIDE COMPLEX
Norman P. Robie, Hamburg, N.Y., assignor to Electro Refractories & Abrasives Corporation, Buffalo, N.Y.
Filed Apr. 5, 1962, Ser. No. 185,275
7 Claims. (Cl. 51—298)



5. A grinding wheel comprising, a mixture of abrasive granules of density greater than 5.0 and fused granules of a composition consisting essentially of silicon, aluminum and boron in such relative proportions that their ratios fall within area GHKJ of the accompanying diagram, said types of granules being mixed in a ratio between 1:3 and 3:1 by volume, and held together in fixed relation by a phenolic resin binder.

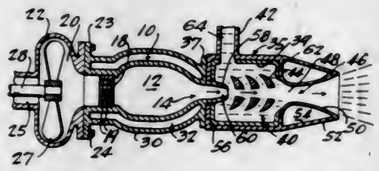
3,224,851
METHOD OF FORMING A FUSED ENERGY-CONDUCTING DEVICE
John Wilbur Hicks, Jr., Fiskdale, Mass., assignor to American Optical Company, Southbridge, Mass., a voluntary association of Massachusetts
Filed Jan. 24, 1962, Ser. No. 173,318
11 Claims. (Cl. 65—4)



1. The method of forming a fused energy-conducting component of the character described from an assembly of a plurality of energy-conducting fibers each surrounded by a cladding of heat softenable material and contained within a tubular member of heat softenable material comprising the steps of rinsing said assembly with a high purity cleansing liquid, removing residues of said liquid from said assembly, introducing a gas which will promote oxidation of organic matter into said tubular member, subjecting said assembly of fibers to heat of a temperature sufficient to oxidize existing organic residue within said tubular member and to outgas component parts of said assembly which are disposed internally of said tubular member, flushing said assembly with an inert gas to dis-

place residual gases therein and fusing together component parts of said assembly by applying heat of fusing temperature thereto while compressing said fibers into tight interfitting relation with each other by the application of external pressure upon said tubular member.

3,224,852
APPARATUS FOR FORMING FIBERS
Charles J. Stalego, Newark, Ohio, assignor to Owens-Corning Fiberglas Corporation, a corporation of Delaware
Original application Dec. 28, 1956, Ser. No. 631,218, now Patent No. 3,015,127, dated Jan. 2, 1962. Divided and this application Dec. 28, 1961, Ser. No. 162,871
4 Claims. (Cl. 65—16)



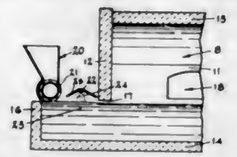
1. Apparatus for forming fibers from heat-softenable mineral material in a molten state including, in combination, an elongated tubular chamber, means for delivering combustible gases into one end of the tubular chamber, the combustible gases adapted to be burned in the tubular chamber to provide a hot high velocity blast of gases of combustion, the gases of combustion providing the blast being projected through the other end of the tubular chamber, receptacle means adapted to contain heat-softened mineral material, a plurality of spaced baffles having openings therein disposed in the receptacle, the gases of the blast passing through openings in the baffles whereby the blast entrains the molten material adjacent the baffles and attenuates the entrained material to fibers by the velocity of the blast.

3,224,853
PROCESS FOR INCREASING THE THERMAL INSULATING PROPERTIES OF VITREOUS MATERIALS AND THEIR ADHESION TO COHERENT SUBSTANCES
Tibor Pietsch, Street Santo Domingo de Silos, No. 8, Madrid, Spain
Filed Nov. 17, 1961, Ser. No. 153,210
Claims priority, application Spain, Nov. 25, 1960, 262,757, 262,758
4 Claims. (Cl. 65—18)

1. A process for increasing the thermal insulating properties of vitreous materials and their adhesion to coherent substances comprising subjecting a vitreous material crushed to a determined fineness of particles, to a cold compressing operation together with a binding material, then immediately raising the temperature to approximately the melting point thereof, then reducing said material in molten state to about one half its height and then progressively cooling the mass.

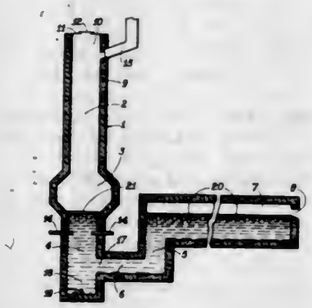
3,224,854
TREATMENT OF GLASS BATCH MATERIALS
Alfred E. Badger, Maumee, Glen J. Lehr, Oregon, and John A. Woods, Lancaster, Ohio, assignors to Libbey-Owens-Ford Glass Company, Toledo, Ohio, a corporation of Ohio
Filed May 24, 1961, Ser. No. 112,262
1 Claim. (Cl. 65—135)

In a method of producing molten glass from a glass batch including thermally explosive limestone and in which said batch is subjected to a temperature between 2500° and 2800° F. within an enclosed reaction area to melt the same, the mechanical step of popping limestone in said batch by subjecting the surface thereof to a temperature between approximately 700° and 1000° F. outside of said enclosed area without chemically



decomposing said limestone, and then subjecting said batch to said melting temperature to chemically react said exploded limestone with said other glass making materials at said glass melting temperatures within said enclosed reaction area to produce said molten glass.

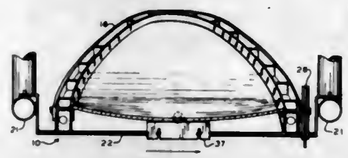
3,224,855
PROCESS AND FURNACE FOR MELTING AND WORKING PRODUCTS SUCH AS GLASS
Emile Plumat, Gilly, Belgium, assignor to S. A. Glaverbel, Brussels, Belgium, a company of Belgium
Filed Nov. 14, 1961, Ser. No. 152,348
Claims priority, application Belgium, Nov. 28, 1960, 475,203, Patent 597,564
7 Claims. (Cl. 65—135)



1. In a furnace for melting and working products such as glass having a crucible to contain melting and molten product, a vertical shaft above said crucible for introduction and preheating of raw material, a refining chamber, and a submerged duct connecting said crucible laterally to said chamber, the improvement in combination therewith of burner means adapted to inject burning gases into said crucible between the surface of said product and said duct sufficient to agitate a top zone of said product, said crucible having sufficient depth below said burner means to provide a calm molten zone below said top zone.

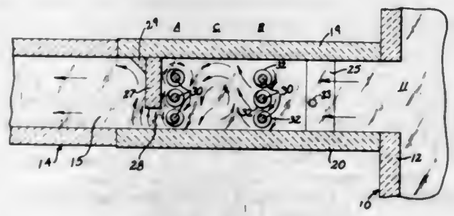
6. In a process for melting and working products such as glass in a shaft furnace having a crucible of molten and melting products and a refining chamber, said process including laterally injecting burning gases into said crucible, and removing molten glass from said crucible to said refining chamber through a channel below the molten surface thereof, the improvement in combination therewith comprising injecting at a position said burning gases at a sufficient rate and a sufficient distance below said surface to create a top melting zone of agitated product and at a sufficient distance above said channel to provide a bottom calm molten zone between said top agitated melting zone and said channel.

3,224,856
GLASS ACTUATED CONTROL FOR THE CONVEYOR MECHANISM OF A GLASS BENDING FURNACE
Harold A. McMaster, 707 Riverside Drive, Woodville, Ohio
Filed Nov. 27, 1964, Ser. No. 414,294
6 Claims. (Cl. 65—163)



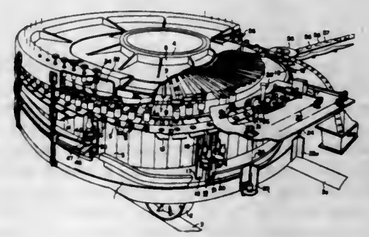
1. In a sheet glass bending furnace having a final bending zone and a conveyor for sequentially moving a plurality of glass carrying and shaping molds, all of said molds having peripheral shaping surfaces and open centers into which the central portions of the respective glass sheets sag as their edges mold into contact with the shaping surfaces, the improvement comprising, in combination, a drive mechanism for said conveyor, vertically adjustable reference means mounted on each of said molds and positionable relative to the shaping surfaces of said mold for establishing a standard level spaced beneath said surfaces to which level the central portion of a glass sheet molded thereon is to be sagged, sensing means cooperating with said reference means for generating a signal when the central portion of a glass sheet sags to such standard level as established by said reference means, and means responsive to said signal for energizing said conveyor drive mechanism for moving each of said molds out of said final bending zone and the next one of said molds into said final bending zone.

3,224,857
APPARATUS FOR HOMOGENIZING MOLTEN GLASS IN A FOREHEARTH
Orin H. Allman and Carl E. Brumm, Toledo, and Leslie F. Pither, Maumee, Ohio, assignors, by mesne assignments, to Owens-Illinois Glass Company, Toledo, Ohio, a corporation of Ohio
Filed Aug. 18, 1960, Ser. No. 50,365
4 Claims. (Cl. 65—178)



1. Apparatus for homogenizing molten glass in a glass feeder forehearth or the like comprising, in combination, a flow channel having an essentially horizontal planar bottom and upright sidewalls for conveying a molten glass stream, a stationary diverter member disposed transversely within said channel extending from the bottom of said channel vertically at least to a level above the normal level of the molten glass stream and through the major portion of the width of said channel forming a narrow side opening, at least one series of vertically-disposed similar rotary stirring elements having screw threads on their lower end portions mounted in a parallel plane adjacent and immediately upstream of said diverter member, said stirring elements depending from above into said flow channel and extending through a major portion of said channel width with their lower ends adjacent to and spaced above said bottom and their screw thread portions submerged below the normal level of said glass stream, and means adapted to rotate said stirring elements in the same direction about their respective vertical axes.

3,224,858
APPARATUS FOR BLOWING GLASS BULBS
Kiyoshi Oizumi, Tokyo, Mitsugu Fukuda, Kawasaki-shi, and Goichi Otani, Tokyo, Japan, assignors to Tokyo Shibaura Electric Co., Ltd., Kawasaki-shi, Japan, a corporation of Japan
Filed Aug. 29, 1961, Ser. No. 134,664
3 Claims. (Cl. 65—185)



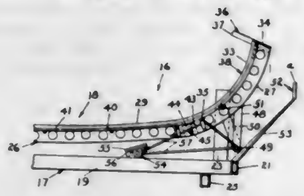
1. An apparatus for blowing glass bulbs comprising a base, a plate supported from the base and spaced thereabove; an air pressure tank supported along a portion of the peripheral edge of the plate and extending thereabove to define an arcuate pathway therebeneath; said air tank including a plurality of orifices aligned along said arcuate pathway; a spider supported from the base beneath the plate and adapted for continuous rotary movement; slotted means interposed between the plate and the top of the spider comprising a plurality of radial slot-tracks at regular intervals; a plurality of sliders respectively disposed in the slot-tracks for radial movement relative to the spider; a plurality of blow heads disposed on the outer ends of said sliders for radial movement thereby outwardly to said pathway; camming means comprising a common track in the plate and followers on the respective sliders to cause raidal displacement of the sliders and blow heads as the spider is rotated; ribbon support plates hingeably connected to the outer periphery of the spider at regular intervals corresponding to the sliders and the blow head intervals; each of said support plates having an aperture therein for registering with the blow heads respectively; means for squeezing molten glass into a flat ribbon on said support plates; said last mentioned means providing enlargements of the glass ribbon about each aperture of the support plates; fixed guide means adjacent to the supporting plates for lifting and guiding the glass ribbon carried by the plates into contact with the blow heads as the latter are moved to said pathway into contact with and beneath the air tank; a plurality of blow molds carried by the spider respectively at the spacing intervals of the blow heads and spaced therebeneath; further guiding means for raising the blow molds successively to the ribbon support plates into blowing position as the molds and plates move under the air tank; means with the blow head for opening said orifices to establish air communication with the blow heads as they successively pass under each orifice to blow the glass enlargements into bulbs in the respective blow molds; and means for rotating each blow mold about its own axis to open and close the molds to form and release the glass bulbs substantially under the air tank.

3,224,859
APPARATUS FOR BENDING GLASS SHEETS WITH AN OUTRIGGER SUPPORT

Frank J. Carson and Herbert A. Leflet, Jr., Toledo, Ohio, assignors to Libbey-Owens-Ford Glass Company, Toledo, Ohio, a corporation of Ohio

Continuation of application Ser. No. 795,654, Feb. 26, 1959, which is a division of application Ser. No. 658,982, May 14, 1957. This application June 28, 1961, Ser. No. 123,930

9 Claims. (Cl. 65—290)



1. In a bending apparatus, a sectionalized bending mold comprising a plurality of mold sections having shaping surfaces thereon and including a movable mold section, means mounting said movable mold section for movement between an open position in which to receive a flat glass sheet to be bent and a closed position in which said shaping surfaces define the curvature to which the flat glass sheet is to be bent, a stationary outrigger, and means mounting said outrigger outwardly of the confines of said mold when the mold is in closed position but in position to engage a flat glass sheet that has been received on said mold within the confines of said mold sections when said mold is in open position.

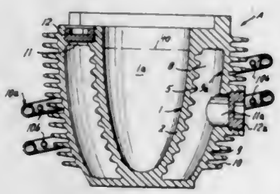
3,224,860
GLASS FORMING MOLD

Hanns Stinnes, Marien Strasse 18–20 Dorsten 2, Westphalia, Germany

Filed May 21, 1962, Ser. No. 196,112

Claims priority, application Germany, May 27, 1961, St 17,878

10 Claims. (Cl. 65—355)



1. A mold for shaping and for withdrawing heat from molten vitreous material, comprising wall means having a first surface portion which is adapted to be placed in heat receiving contact with molten vitreous material and a heat radiating second surface portion which is exposed to coolant when the first surface portion is in contact with molten vitreous material, one of said surface portions substantially surrounding the other said mold defining at least one sealable internal chamber intermediate said surface portions; and a substance with good heat conducting characteristics substantially filling and fully enclosed in said chamber, said substance having a melting point below and a boiling point above 500° C. so that said substance is liquid at temperatures to which the mold is subjected when said first surface portion is in contact with molten vitreous material and conducting heat from said first surface to said second surface when molten vitreous material is in contact with said first surface.

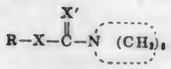
3,224,861
CONTROLLING UNDESIRED VEGETATION WITH BENZYL HEXAMETHYLENIMINE-CARBOTHIOATES

John J. D'Amico, Charleston, W. Va., assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed July 3, 1961, Ser. No. 121,335

13 Claims. (Cl. 71—2.5)

1. The method of destroying undesired vegetation which comprises applying to the soil before the plants emerge a phytotoxic concentration of an ester of 1-hexamethyleniminecarbothioic acid of the formula



where X and X' are selected from a group consisting of oxygen and sulfur at least one of which is sulfur and R represents a radical selected from the group consisting of benzyl and halobenzyl containing not more than four halogen atoms.

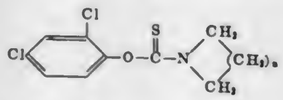
3,224,862
CONTROLLING VEGETATION WITH PHENYLTHIONOCARBAMATES

Anton G. Weiss, Basel, Switzerland, assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed Apr. 2, 1962, Ser. No. 184,487

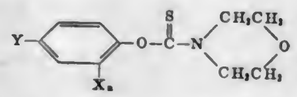
14 Claims. (Cl. 71—2.5)

3. A method of controlling vegetation which comprises applying to the soil medium as a pre-emergence herbicide a phytotoxic amount of a phytotoxic thionocarbamate of the formula



where *n* is an integer at least 2 but not more than 4.

4. A method of controlling vegetation which comprises applying to the soil medium as a pre-emergence herbicide a phytotoxic amount of a phytotoxic thionocarbamate of the formula



where X and Y represent chlorine and *n* represents an integer from zero to one inclusive.

3,224,863
VEGETATION CONTROL WITH UNSATURATED HYDROCARBON ESTERS OF N,N-DISUBSTITUTED THIONOCARBAMIC ACIDS

John J. D'Amico, Charleston, W. Va., assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed June 13, 1962, Ser. No. 202,104

9 Claims. (Cl. 71—2.5)

1. The method of destroying vegetation which comprises applying thereto a phytotoxic amount of a composition containing as an essential active ingredient an unsaturated ester of a disubstituted thionocarbamic acid containing a total of at least four carbon atoms in the said substituents, the substituents being selected from a group consisting of cyclohexenyl, cyclohexyl, lower alkyl, alkoxy substituted lower alkyl, lower alkenyl, halogen substituted lower alkenyl, phenyl and alkylene of five to eight carbon atoms inclusive which with the nitrogen form a heterocyclic ring containing at least six but no more than seven ring members and the ester radical being selected from the group consisting of cyclohexenyl and lower alkenyl.

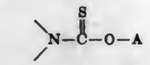
3,224,864
DESTROYING VEGETATION WITH HALOALKENYL DISUBSTITUTED THIONOCARBAMATES

Philip C. Hamm, Webster Groves, Mo., and John J. D'Amico, Charleston, W. Va., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed Sept. 26, 1962, Ser. No. 226,436

10 Claims. (Cl. 71—2.5)

1. The method of destroying vegetation which comprises applying thereto a phytotoxic amount of a composition containing as the essential active ingredient a compound of the structure



where A is halogen substituted alkenyl containing less than five carbon atoms and the valences on the nitrogen are satisfied by organic radicals selected from the class consisting of lower alkyl, lower alkenyl, halogen substituted lower alkenyl, lower alkoxy substituted lower alkyl, lower alkenoxy substituted lower alkyl, phenoxy substituted ower alkyl, cyano substituted lower alkyl, cyclohexyl, cyclohexenyl, alkylene of four to eight carbon atoms inclusive, which with the nitrogen form an heterocyclic ring containing at least five but not more than seven ring members, and radicals which with the nitrogen form an heterocyclic ring of the group consisting of 4-phenylpiperazine, morpholine and 2,6-dimethylmorpholine.

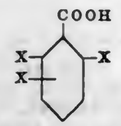
3,224,865
METHOD FOR INCREASING SUGAR CONTENT OF SUGAR CANE

Arne E. Carlson, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Nov. 20, 1962, Ser. No. 239,074

3 Claims. (Cl. 71—2.6)

1. A method for increasing the maximum sugar content of sugar cane comprising the application to maturing sugar cane ½ to three months prior to the harvest thereof, of a solution containing a benzoic acid compound of the formula



and its salts, where X is selected from the group consisting of chlorine and methyl but at least one X is methyl, the application of said solution being at the rate equivalent to apply from .1 to 10 pounds of said benzoic acid compound per acre of sugar cane being treated.

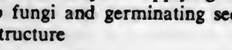
3,224,866
METHOD FOR CONTROLLING VEGETATION AND SOIL FUNGI

Richard O. Zerbe, Nitro, and John J. D'Amico, Charleston, W. Va., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Original application Oct. 12, 1959, Ser. No. 845,639, now Patent No. 3,152,163, dated Oct. 6, 1964. Divided and this application May 31, 1963, Ser. No. 297,475

5 Claims. (Cl. 71—2.7)

1. The method which comprises applying to soil a concentration toxic to fungi and germinating seedlings of a compound of the structure



where X represents halogen, R represents a member of the group consisting of alkylene and alicyclic of at least four but more than six carbon atoms and R' represents a member of the group consisting of lower alkenyl halogen substituted lower alkenyl, lower alkyl, halogen substituted lower alkyl, benzyl and halogen substituted benzyl.

3. The method of controlling vegetation which comprises applying to the soil medium a toxic concentration of 2-chloroallyl chloropentyldithiocarbamate.

3,224,867
METHOD OF TREATING AND CONDITIONING SOIL WITH A HEAT REACTION PRODUCT OF STARCH GRANULES AND AN ALKALI METAL PHOSPHATE

Robert L. Milloch, New York, N.Y., assignor to American Maize-Products Company, a corporation of Maine

No Drawing. Filed June 29, 1962, Ser. No. 206,174

5 Claims. (Cl. 71—27)

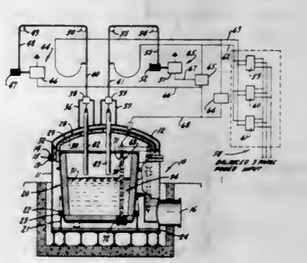
1. A method of treating and conditioning soil consisting essentially of applying to the soil a heat reaction product of starch granules and an alkali metal phosphate salt, said reaction product being formed by mixing starch granules with an aqueous solution of the phosphate salt to cause the granules to absorb some of the solution, then separating the starch granules from any excess phosphate salt solution which has not been absorbed by the starch granules, and then roasting the separated starch granules containing the absorbed phosphate salt at temperatures from about 120° C. to about 175° C.

3,224,868
METHOD AND APPARATUS FOR ADDING HEAT AND CHARGE MATERIAL TO MOLTEN METAL UNDER VACUUM

Herbert S. Philbrick, Jr., Chicago, Ill., assignor to John Mohr and Sons, Chicago, Ill., a corporation of Illinois

Filed June 14, 1962, Ser. No. 202,631

13 Claims. (Cl. 75—12)



1. Apparatus for adding heat to molten metal under vacuum, said apparatus including, in combination,
a molten metal receptacle containing a melt,
said molten metal receptacle having a non-electrically conducting lining in contact with the molten metal contained therein to thereby preclude passage of current through the receptacle,
structure forming a vacuum environment in a space above the melt,
means for creating a vacuum in the space above the melt,
a pair of electrodes,
said electrodes being spaced from, but in electrical contact with, the melt and forming, with the arc, part of an electrical circuit which includes a source of D.C. current,
a voltage probe in the circuit and immersed in the melt, said voltage probe being effective to measure the voltage drop between the electrodes and the melt, and
means, responsive to operation of the voltage probe, for controlling the current flow in the D.C. circuit.

8. A method of measuring the quantity of alloy additions to a melt under vacuum, said method including the steps of

forming a consumable conductor containing a predetermined amount of alloys to be added to the melt under vacuum,

striking and maintaining an arc between the consumable conductor and the melt,

measuring the voltage drop between the melt and the consumable conductor from a voltage probe immersed in the melt,

advancing the consumable conductor towards the melt at a predetermined rate, by motor means controlled by an indication of the voltage drop as measured by the voltage probe,

measuring the displacement of the consumable conductor, and

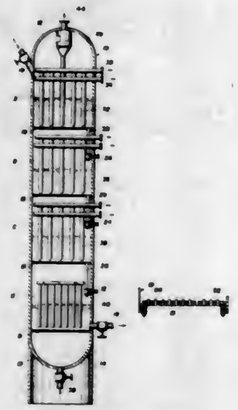
correlating the linear displacement of the consumable conductor from its initial position to the total quantity of alloys in the consumable conductor to thereby determine the quantity of alloy added to the melt.

3,224,869

METHOD OF REDUCING IRON OXIDE

Percival C. Keith, Peapack, Franklin D. Hoffert, Mountainside, and Harold H. Stotler, Westfield, N.J., assignors to Hydrocarbon Research, Inc., New York, N.Y., a corporation of New Jersey

Filed Sept. 20, 1962, Ser. No. 224,968
1 Claim. (Cl. 75—26)



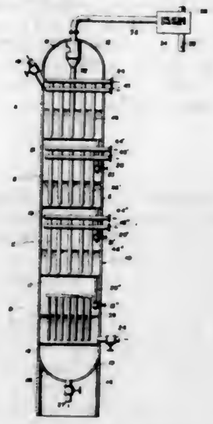
The method of reducing iron oxide with hydrogen at pressures in excess of 200 p.s.i.g. and at temperatures under 1400° F. which comprises passing hydrogen upwardly and serially through each of a series of superposed vertically spaced reaction zones, each reaction zone containing a bed of solids of iron oxide, periodically passing said solids from an upper zone to a lower zone and finally discharging the solids from the lowermost zone, introducing said hydrogen into each of said beds at a controlled velocity through nozzles uniformly distributed throughout the bottom of each bed to establish a pressure drop between the beds of the order of one to five pounds per square inch, the nozzles of each bed projecting different distances into the bed to introduce the hydrogen at points vertically spaced in the bed, 20% to 30% of the nozzles introducing the hydrogen at a level higher than the remaining nozzles, preventing the flow of solids from an upper bed to a lower bed for a predetermined period to cause the desired reduction of the solids in each bed, and thereafter removing substantially all of the solids from a lower bed before introducing the solids from an upper bed into the lower bed.

3,224,870

REDUCTION OF ILMENITE AND SIMILAR ORES

Clarence A. Johnson, La Jolla, Calif., and William Volk, Princeton, N.J., assignors to Hydrocarbon Research, Inc., New York, N.Y., a corporation of New Jersey

Filed Oct. 1, 1962, Ser. No. 227,266
5 Claims. (Cl. 75—26)



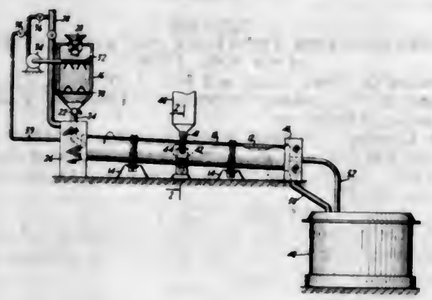
1. A process for the separate recovery of high purity iron and substantially iron free non-ferrous oxides selected from the class consisting of titanium oxides and chrome oxides from ores selected from the class consisting of ilmenite and chromiferous ores and concentrates of the same which comprises forming in a contact zone a bed of ore of a fineness to pass a 20 mesh screen, passing a high purity hydrogen gas upwardly through the bed of ore at a velocity to cause mobility of the bed, maintaining said contact zone under a temperature in the range of 1100° F. to 1400° F. and a pressure in the range of 100–400 p.s.i.g.; and for a time sufficient to accomplish at least 60% reduction of the iron oxide in said ore without substantially changing the characteristics of the non-ferrous oxide, and thereafter separating the unreduced non-ferrous oxides from the reduced iron.

3,224,871

PROCESS OF PREHEATING ORES FOR REDUCTION IN SMELTING FURNACE

Frederik Christen Collin, Ljan, Oslo, Norway, assignor to Elektrokemisk A/S, Oslo, Norway, a corporation of Norway

Filed Feb. 15, 1962, Ser. No. 173,450
Claims priority, application Norway, Feb. 24, 1961, 139,224
6 Claims. (Cl. 75—34)



1. The method of treating ores in a rotary kiln having at least one shaft associated therewith for feeding charge into the kiln which comprises the steps of introducing

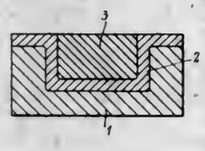
charge into the shaft to establish a column of charge therein which is relatively short with respect to the length of the kiln, moving the charge in the column downwardly in the shaft, collecting hot off gas from the rotary kiln, introducing at least a portion of the hot off gas into the lower end portion of the shaft, passing the introduced off gas upwardly in the shaft in countercurrent flow through the interstices in the column of charge, withdrawing the introduced off gas from the upper portion of the shaft and feeding the charge heated by the introduced off gas into the rotary kiln.

3,224,872

BONDING METHOD OF VALUE IN THE TREATMENT OF METALS

Alan G. Sealey and Alfred T. Andrew, Nechells, Birmingham, England, assignors to Foseco International Limited, Nechells, England, a company of Great Britain

Filed Nov. 9, 1962, Ser. No. 236,582
Claims priority, application Great Britain, Nov. 16, 1961, 41,127/61; May 25, 1962, 20,294/62
14 Claims. (Cl. 75—61)



1. A tablet comprising a conditioning agent for molten metal and a filler, the said tablet having secured thereto and covering part of its surface a layer of a composition which contains ingredients which react together exothermically on firing to generate a high melting fluid slag.

8. A method of conditioning molten metal which comprises bonding to the inside surface of a vessel for containing molten metal a block of conditioning agent for molten metal by providing between said block and said surface a composition which contains ingredients which react together exothermically when fired to generate a fluid high-melting slag, firing said composition to generate such slag and allowing the slag to cool sufficiently to bond the said block to the said surface, and thereafter charging the said vessel with the said molten metal to a level such that the block is below the surface of the molten metal.

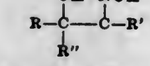
3,224,873

LIQUID-LIQUID RECOVERY OF COPPER VALUES USING α-HYDROXY OXIMES

Ronald R. Swanson, Minneapolis, Minn., assignor to General Mills, Inc., a corporation of Delaware

No Drawing. Filed Feb. 25, 1963, Ser. No. 260,848
20 Claims. (Cl. 75—101)

1. A process for the recovery of copper values from an aqeous solution comprising: (1) contacting said aqueous solution with an organic phase comprising a liquid hydrocarbon and an α-hydroxy oxime to extract at least a portion of the copper values into the organic phase, said oxime being characterized as having a solubility of at least 2% by weight in the liquid hydrocarbon and having the formula:



where R and R′ are organic hydrocarbon radicals and R″ is selected from the group consisting of hydrogen and organic hydrocarbon radicals; (2) separating the resultant copper-pregnant organic phase from the resultant coper-barren aqueous phase; and (3) recovering the copper-pregnant organic phase.

3,224,874

METHOD OF RECOVERING METALS

Charles C. Daugherty, Durham, N.C., assignor of one-third each to William E. Griffin, William Muirhead, and Mary H. Daugherty, all of Durham, N.C.

No Drawing. Filed Aug. 15, 1962, Ser. No. 216,985
12 Claims. (Cl. 75—108)

1. The method of recovering cobalt and nickel from a normally corrosion resistant solid alloy containing cobalt, nickel, and other metal values which comprises the steps of placing said alloy in a suitable reaction vessel, adding a dilute acidic solution of chloride ions to said reaction vessel, adding soluble inorganic nitrate to form a reaction mixture and conducting a reaction therewith, separating the resultant solution containing chloride ions from remaining alloy, diluting and cooling said resultant solution, aerating and adjusting the pH of said resultant solution to precipitate other metal values as oxides and separating said oxides from the diluted solution, introducing more chloride ions in the form of a chlorine gas into said resultant solution and treating said resultant solution to precipitate out cobalt and nickel and continuing the introduction of chloride ions to redissolve co-precipitated nickel and further treating said resultant solution to precipitate nickel.

3,224,875

NON-MAGNETIC COPPER BASE ALLOYS

William J. Buehler, Adelphi, and Raymond C. Wiley, Rockville, Md., assignors to the United States of America as represented by the Secretary of the Navy

No Drawing. Filed July 30, 1963, Ser. No. 298,796
6 Claims. (Cl. 75—153)
(Granted under Title 35, U.S. Code (1952), sec. 266)

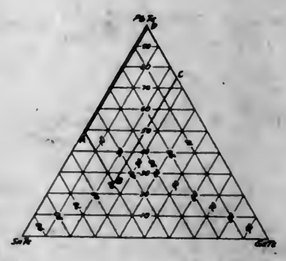
1. A hardenable, non-magnetic alloy consisting essentially of nickel, manganese, silicon and copper, said nickel being present in an amount from about 19–25 weight percent, said manganese in an amount from about 19–25 weight percent, said silicon in an amount up to about 1.5 weight percent, the remainder being copper.

3,224,876

THERMOELECTRIC ALLOY

Russell E. Fredrick, White Bear Lake, Minn., assignor to Minnesota Mining & Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Filed Feb. 4, 1963, Ser. No. 256,012
12 Claims. (Cl. 75—166)

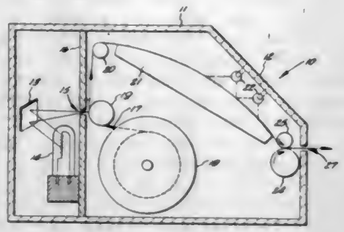


1. An alloy having thermoelectric properties consisting essentially of from 1 to 25 mol precent germanium telluride, up to 50 mol percent tin telluride, and a balance essentially of lead telluride, the total amount of said lead, germanium and tin in said alloy being without about 5 atomic percent of the stoichiometric requirements.

3,224,877
RAPID LATENSIFICATION OF SILVER HALIDE PHOTOGRAPHIC MATERIALS

John H. Jacobs, Altadena, Calif., assignor to Consolidated Electrodynamics Corporation, Pasadena, Calif., a corporation of California

Filed Oct. 26, 1962, Ser. No. 233,311
3 Claims. (Cl. 96—27)

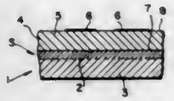


1. A method for increasing the writing speed of a silver halide develop-out emulsion of the recording type which is blue sensitive to fogging and on which information has been invisibly recorded by exposure to electromagnetic radiations, comprising the steps of heating the emulsion to a temperature which inactivates its blue sensitivity to fogging, substantially immediately thereafter exposing the emulsion to radiations having wave lengths within the blue sensitivity to fogging range of the emulsion, the radiations being limited to such a duration and intensity as only invisibly fog the emulsion when so exposed at a temperature of about 75 degrees Fahrenheit and thereafter subjecting the emulsion to development processing.

3,224,878
THERMOGRAPHIC DIAZOTYPE REPRODUCTION MATERIAL, METHOD OF MAKING AND METHOD OF USING

Robert J. Klimkowski and Luigi Amariti, Chicago, and Allan D. Janda, Berwyn, Ill., assignors to Eugene Dietzgen Co., Chicago, Ill., a corporation of Delaware

Filed Dec. 1, 1961, Ser. No. 156,260
14 Claims. (Cl. 96—49)



1. Reproduction material which comprises a supported layer of a visibly heat-sensitive composition, said composition comprising a mixture of a coupling diazo compound, an azo coupling component, a complex of cadmium sulfate and a compound producing an alkaline reaction when heated, said compound being selected from the group consisting of urea, guanidine, alkyl substituted ureas, alkyl substituted guanidines, hydroxy methyl urea, and hydroxy ethyl urea, said alkyl groups containing 1 to 4 carbon atoms, the mol ratio of said compound producing an alkaline reaction when heated to said cadmium sulfate being from about 3:1 to about 20:1, and the weight ratio of said compound producing an alkaline reaction when heated to said diazo compound being from 3–25:1.

3,224,879
PROCESS FOR PRODUCING A COFFEE EXTRACT

Albert Di Nardo, North Reading, Mass.; Eleanor Di Nardo, administratrix of said Albert Di Nardo, deceased

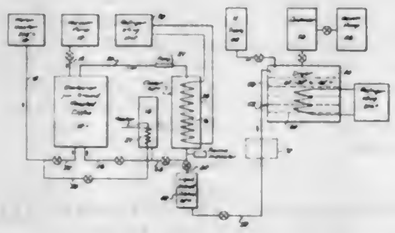
Filed July 23, 1962, Ser. No. 211,677
1 Claim. (Cl. 99—71)

A process for producing a coffee extract which comprises countercurrently contacting progressively fresher ground coffee which has had at least 15% by weight theretacting with a hydrolysis agent at least a portion of the ground coffee which has had at least 15% by weight thereof extracted as soluble solids, and recovering a coffee extract comprising water and soluble coffee solids including an essentially tasteless hydrolysis product, said hydrolysis agent being introduced into said column at a point where the coffee beans have been extracted appreciably more than 15%, the amount of hydrolysis agent being sufficient to increase the yield of soluble coffee produced by at least 4% over the percentage of soluble solids extracted without addition of such agent under similar extraction conditions of time, temperature and pressure, thereafter passing said aqueous solution containing the resultant hydrolysis product through coffee beans which have been extracted at least 15% to absorb unreacted hydrolysis agent, thereafter passing said aqueous stream through progressively less extracted coffee, the portion of the aqueous stream passing through coffee which has been extracted by less than 15% being essentially free of any hydrolysis agent.

3,224,880
PROCESS OF PRODUCING AN EXTRACT OF COFFEE, TEA OR THE LIKE

Clayton Van Ike, 10817 Cantara St., Sun Valley, Calif.

Filed Apr. 29, 1963, Ser. No. 276,446
2 Claims. (Cl. 99—71)



1. In a process for producing from a material selected from the class consisting of coffee and tea an aqueous extract that retains volatile substances present in said material, the combination of the following steps:

placing the material in a sealable container,

evacuating the container to substantially remove atmospheric oxygen from the material,

filling the container while still evacuated with hot aqueous fluid while preventing outflow from the container,

then circulating aqueous fluid upward through the container at a temperature of about 208 to about 240° F. to form an aqueous solution with release of carbon dioxide and volatile substances as vapors from the material,

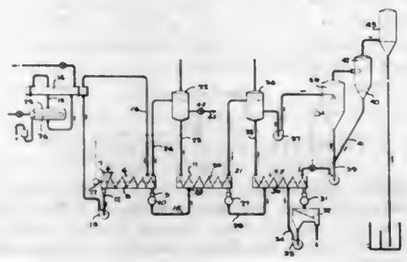
passing the resulting solution and vapors in mutual contact downward through a cooling chamber at a temperature between about 36 and about 40° F. to absorb in the cooled solution substantially the whole of said vapors,

said extraction and said cooling of the extract being carried out in a closed system with substantially complete exclusion of atmospheric oxygen and without loss of fluid from the system.

3,224,881
CONTINUOUS PROCESS OF COOKING MEAT

Maurice Holtz, Huntingdon Valley, Pa., assignor to Acme Process Equipment Company, Oreland, Pa., a corporation of Pennsylvania

Filed Oct. 18, 1963, Ser. No. 317,176
5 Claims. (Cl. 99—107)



1. A process of continuously cooking diced meat which comprises preheating said meat by passing a continuous stream of the meat against a countercurrent of hot meat juices to a temperature not exceeding about 160° F., then cooking said meat and juices with live steam in a cooking zone until the meat is adequately cooked, and subsequently passing said cooked meat and juices to a cooling zone whereat a portion of the juices is removed and cooled by evaporation; said cooled juices passing countercurrent to the flow of the cooked meat in said cooling zone to cool the cooked meat to a temperature not exceeding about 160° F.

3,224,882
AERATING COMPOSITION FOR FATS AND SHORTENINGS CONTAINING SAME

John V. Luck, Palatine, and Rudolph H. Ellinger, Mount Prospect, Ill., assignors to The Glidden Company, Cleveland, Ohio, a corporation of Ohio

No Drawing. Filed July 8, 1963, Ser. No. 293,253
7 Claims. (Cl. 99—123)

1. An aerating composition for triglyceride fats consisting essentially of a blend of about 2.3–4 parts of stearyl-1 and palmityl-1 lactylic acids with one part of free stearic and palmitic acids, the stearyl-1 lactylic acid predominating over the palmityl-1 lactylic acid, said composition containing, on the basis of said acyl-1 lactylic acids, not substantially more than about 10% acylated polylactic acids.

3,224,883
AEROSOL TOPPING

Morton Pader and Sol D. Gershon, West Englewood, N.J., assignors to Lever Brothers Company, New York, N.Y., a corporation of Maine

No Drawing. Filed Oct. 1, 1962, Ser. No. 227,534
21 Claims. (Cl. 99—139)

1. An edible whippable topping composition with excellent storage stability confined under pressure in an aerosol dispensing container which is capable of being dispensed from the pressurized container to provide a stable whipped topping that is similar to whipped cream comprising a base fat, a casein material and a phosphoric acid ester composition selected from the group consisting of (1) those obtained by reacting a derivative of phosphorus with a mono- and/or diglyceride mixture obtained by super-glycerinating a fat having an iodine value within the approximate range of 30 to 70, and (2) those obtained by combining phosphoric acid esters prepared by separately reacting a derivative of phosphorus with a saturated and with an unsaturated mono- and/or diglyceride, the saturated glyceride resulting from super-glycerination of a fat having an iodine value below about 30, and the unsaturated mixture resulting from super-glycerination of a fat having an iodine value above about 70.

3,224,884
TOPPING MIX

Morton Pader and Sol D. Gershon, West Englewood, N.J., assignors to Lever Brothers Company, New York, N.Y., a corporation of Maine

No Drawing. Filed Oct. 1, 1962, Ser. No. 227,566
16 Claims. (Cl. 99—139)

1. A whippable topping mix which has improved stability for preparing a whipped topping that is similar to whipped cream which comprises a base fat, a water dispersible protein, a phosphoric acid ester of a glyceride and at least one emulsifier selected from (1), (2), and (3), where (1) consists of a partial ester of a glycol and a higher saturated fatty acid, (2) consists of a mixture of a lactylated glycerol ester of a saturated fatty acid and an ester of a polyhydric alcohol and an unsaturated fatty acid, and (3) consists of a mixture of a lactylated glycerol ester of a saturated fatty acid and a lactylated ester of a polyhydric alcohol and an unsaturated fatty acid.

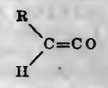
3,224,885
METHOD OF PRODUCING CELLULOSIC SAUSAGE CASINGS

Edward A. Shiner, Chicago, Ill., assignor to Union Carbide Corporation, a corporation of New York

Filed Oct. 10, 1961, Ser. No. 144,196
4 Claims. (Cl. 99—176)



1. Method for producing cellulosic sausage casings characterized by easy peelability from the sausage surface which comprises dispersing in viscose, in an amount from about 0.1 percent to 10 percent by weight of the cellulose in said viscose, at least one dimer of a ketene having the formula:



wherein R is selected from the group consisting of alkyl and alkenyl radicals containing from 12 to 22 carbon atoms inclusive, within a time insufficient to cause saponification of the ketene dimer annularly extruding the ketene dimer containing viscose composition to form continuous tubing and regenerating the cellulose in said tubing.

3,224,886

METHOD OF PREPARING FLAVOR IMPROVED PRESERVED FRUIT

Werner J. Motzel and Fredric J. Baur, Cincinnati, Ohio, assignors to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

No Drawing. Filed Sept. 6, 1962, Ser. No. 221,887
2 Claims. (Cl. 99—204)

1. The process of preparing a dehydrated banana capable of reconstitution to essentially its natural fresh flavor, said process comprising the steps of physically separating the edible fleshy portion of the raw banana from the waste materials, soaking said fleshy portion for at least about 20 minutes in a water solution of about 40% to 70% by weight of sweetening material selected from the group consisting of monosaccharides, disaccharides, and hexitols to infiltrate essentially the entire fleshy portion with said sweetening material, drying the sweetened fleshy portion to a moisture level of not substantially more than 15%, by weight, extracting flavorese enzymes from said waste materials by comminuting said waste materials, extracting said waste materials with water and precipitating said flavorese enzymes with a protein-precipitating reagent, and drying the extracted flavorese enzymes to a moisture level below about 5%, whereby the combination of the said sweetened dried fleshy portions and the dried flavorese enzymes in the presence of essentially the amount of water found naturally in the fleshy portion of said fruit reconstitutes said fruit with essentially its natural flavor.

3,224,887

SLAG COMPOSITION FOR FLUID MOLD CASTING

James Stanislaus Fox, Willoughby, Ohio, and James Henry De Bord, Huntington, W. Va., assignors to The International Nickel Company, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Original application Mar. 27, 1962, Ser. No. 182,974. Divided and this application Mar. 9, 1964, Ser. No. 350,603
5 Claims. (Cl. 106—38.27)

1. A casting slag particularly useful in the molten condition in the fluid-mold ingot casting of molten metal to produce ingots having good surface quality, said moten metal consisting essentially of up to about 30% chromium, up to about 75% iron, up to about 70% copper, up to about 10% columbium, up to about 30% cobalt, up to about 10% molybdenum, up to about 6% tungsten, up to about 5% manganese, up to about 4% silicon, up to about 0.3% carbon, up to about 2% vanadium, up to about 7.5% aluminum, up to about 7.5% titanium, up to about 0.2% zirconium, up to about 0.5% magnesium, the balance essentially nickel with the nickel content being at least about 7% and up to about 95% of the alloy and the said molten metal being reactive with casting slags of the silicate type and producing with silicate type slags fluid-mold ingot castings having poor surface quality, said casting slag consisting essentially of about 40% to about 45% alumina, about 40% to about 45% lime, about 5% to about 10% titania, not more than about 1% manganese oxide, and about 5% to about 15% cryolite.

3,224,888

REFRACTORY COMPOSITION AND PROCESS FOR MAKING SAME

Paul Metz, Dudelange, Grand-Duchy of Luxembourg, assignor to ARBED, Aciéries Réunies de Burbach-Eich-Dudelange, S.A., Luxembourg, Luxembourg, a corporation of Luxembourg

No Drawing. Filed July 13, 1961, Ser. No. 123,619
Claims priority, application Luxembourg, July 15, 1960, 38,955
6 Claims. (Cl. 106—56)

1. A process for making a refractory composition, comprising the steps of preheating a particulate ceramic material, selected from the group which consists of native and sea-water calcined magnesites and dolomites, to a decarbonating temperature lower than that at which said material is sintered into a mass having a porosity less than substantially 20%, impregnating the material so treated with at least one thermally decomposable liquid bituminous hydrocarbon having a boiling point between substantially 150° and 400° C., heating the impregnated material to a temperature of at least partial particle coalescence higher than that at which said hydrocarbon is sufficiently decomposed to leave in said particles a residue of elemental carbon, recomminuting the resulting body of at least partially coalesced particles, admixing the recomminuted material with a binder selected from the group which consists of tar and pitch and thereafter shaping the mixture of recomminuted material and binder preparatorily to a firing thereof.

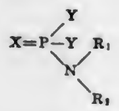
3,224,889

ANTI-STATIC HIGH MOLECULAR WEIGHT COMPOUNDS

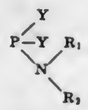
Felix Schülde, Neuenhain, Taunus, and Dietrich Schleede, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Dec. 6, 1961, Ser. No. 157,573
Claims priority, application Germany, Dec. 17, 1960, F 32,783
3 Claims. (Cl. 106—177)

1. A new composition of matter consisting essentially of (a) a high molecular weight compound selected from the group consisting of polystyrene, copolymers of styrene with butadiene, copolymers of styrene with acrylonitrile, copolymers of styrene with vinylcarbazole, polyvinyl chloride, vinyl chloride copolymers, polyterephthalates, polyolefins, polycarbonates, polyacrylonitrile, polyacrylic acid esters, polymethacrylic acid esters, polyamides, polyurethanes, polyvinyl esters, polyacetals, polymers of fluoroolefins, cellulose derivatives, unsaturated polyesters, and epoxy resins, and (b) 0.1–7% by weight, based on the weight of the high molecular compound, of at least one organic phosphorus amide having the formulae selected from the group consisting of



and



wherein X is a member selected from the group consisting of oxygen and sulfur, Y is a radical selected from the group consisting of



and $-R_2$, R_1 is an alkyl radical of 1–20 carbon atoms, and each R_2 substituent is selected from the group consisting of hydrogen, an alkyl radical of 1–20 carbon atoms, phenyl, and alkylphenyl, said phosphorus amide imparting anti-static properties to the composition.

3,224,890

FIRE RESISTANT BITUMINOUS EMULSION

William E. Skelton, Groves, and Clarence E. Wilkinson, Port Neches, Tex., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 14, 1961, Ser. No. 159,445
5 Claims. (Cl. 106—15)

1. A fire resistant coating composition comprising between about 15 and 20 wt. percent asphalt of a penetration between about 40 and 200 at 77° F. and an R. & B. between about 100 and 150° F., between about 40 and 60 wt. percent water, between about 0.1 and 1.5 wt. percent alkali metal salt of Vinsol resin, between about 0.05 and 0.35 wt. percent alkali metal hydroxide, between about 13 and 20 wt. percent asbestos fiber, between about 8 and 15 wt. percent of a member selected from the group consisting of pulverized oyster shell and mica, between about 0.25 and 1 wt. percent alkali metal carboxy methyl cellulose and between about 0.3 and 3.0 wt. percent of a member selected from the group consisting of monoammonium phosphate and diammonium phosphate.

3,224,891

COMPOSITIONS FOR PAPER COATING CONTAINING CYANOETHYLATED AMYLACEOUS PRODUCTS

Thomas E. Yeates, Merle E. Carr, and Charles L. Mehltretter, Peoria, Ill., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Filed Nov. 9, 1962, Ser. No. 236,746
3 Claims. (Cl. 106—213)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. An aqueous dispersion for coating paper, said dispersion containing from 40 percent to 60 percent total solids based on the weight of the dispersion, said solids consisting of clay pigment and from 12 parts to 15 parts based on 100 parts by weight of the clay pigment of a cyanoethylated amylaceous adhesive, said adhesive being a cyanoethylated ether of a member selected from the group consisting of dextrin and acid modified starch, said ether being characterized by containing from 1 to 9 cyanoethyl groups per 100 anhydroglucose units.

3,224,892

HIGH SURFACE AREA ALUMINUM SILICATE AND METHOD OF MAKING SAME

Glen A. Hemstock, East Brunswick, N.J., assignor to Minerals & Chemicals Philipp Corporation, Menlo Park, N.J., a corporation of Maryland

No Drawing. Filed July 27, 1962, Ser. No. 213,039
12 Claims. (Cl. 106—288)

1. A method of increasing the surface area of kaolin clay which comprises calcining kaolin clay for a time sufficient to produce dehydrated kaolin clay, cooling the dehydrated kaolin clay to a temperature below about 125° C., and subjecting said dehydrated clay to hydrothermal treatment at a pressure of at least 300 p.s.i.g. at a temperature and for a time selected to produce a partially rehydrated material containing from about 60% to about 85% of the water of hydration of the original kaolin clay and having a 12.5° 2θ basal reflection intensity which is a small fraction of that of kaolin clay.

3,224,893

POLYAMIDES OF IMPROVED SOLUBILITY FROM POLYALKYLENE POLYAMINES, HYDROXY MONOCARBOXYLIC ACID, AND HYDROCARBON POLYMERIC FAT ACIDS

Don E. Floyd, Robbinsdale, and David W. Glaser, St. Paul, Minn., assignors to General Mills, Inc., a corporation of Delaware

No Drawing. Filed Sept. 10, 1962, Ser. No. 222,651
10 Claims. (Cl. 106—316)

10. A flexographic ink binder consisting essentially of a solution of the condensation product of (A) polyalkylene polyamines of the general formula

$$H_2N(R'NH)_nH$$

where R' is an alkylene radical having from 2–3 carbon atoms and n is an integer from 1–4 with at least one-half of the polyamines employed being those in which n is 1, (B) a hydroxy monocarboxylic acid selected from the group consisting of lactic, glycolic, β-hydroxypropionic, α-hydroxy-n-caprioic, β-methylpropylhydracrylic, tetramethylhydracrylic, β-hydroxy-α-diethylbutyric, salicylic, phenylglycolic and phenylacetic acids, and (C) hydrocarbon polymeric fat acids; the equivalents of amine groups being substantially equivalent to the equivalents of carboxylic groups employed, where at least 90 equivalent percent of the carboxylic groups employed are derived from the polymeric fat acids and the hydroxy monocarboxylic acids, with the equivalent carboxyl group ratio of polymeric fat acids to hydroxy monocarboxylic acids being in the range of 88:12 to 65:35.

3,224,894

PROCESS FOR PRODUCING DECORATIVE SURFACE COVERING

Leon B. Palmer, Little Falls, N.J., assignor to Congoleum-Nairn Inc., Kearny, N.J., a corporation of New York

Filed June 30, 1961, Ser. No. 121,191
12 Claims. (Cl. 117—11)



1. A process for producing a decorative surface covering having a cellular foam layer and a textured surface which comprises applying on one surface of a base sheet a coating of a liquid foamable thermoplastic resinous composition containing a blowing agent, gelling said coating by heating to at least the elastomeric point of said resinous composition without decomposing said blowing agent, applying a second coat of a liquid thermoplastic resinous composition to the surface of said gelled coating, gelling said second coat by heating said second coat to at least the elastomeric point of said second coating composition without decomposing said blowing agent, embossing a design into the exposed surface of the second gelled coating to a depth greater than the thickness of said second coating and heating the embossed coatings to completely fuse the compositions and decompose the blowing agent causing the foamable composition to form a cellular structure containing an embossed design on its surface.

3,224,895

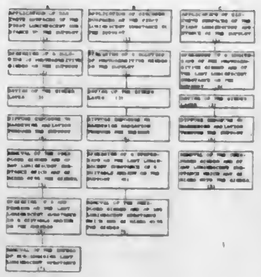
METHOD OF MANUFACTURING DISPLAY SCREENS FOR CATHODE-RAY TUBES

Johannes Willem Rebel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed June 8, 1961, Ser. No. 115,773
Claims priority, application Netherlands, Aug. 6, 1960, 254,650
5 Claims. (Cl. 117—33.5)

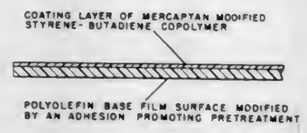
1. A method of manufacturing a display screen for a cathode-ray tube comprising the steps of depositing on

a transparent support having a luminescent material covering selected areas thereof a hardenable photosensitive binder, exposing the binder through the transparent support to a radiation which hardens the binder but which is adsorbed by the luminescent material to thereby harden the binder only between areas covered by the luminescent



material, removing the unexposed and unhardened binder covering the luminescent material, and depositing on the hardened binder a luminescent material which when excited by electrons emits light different in spectral distribution than that of said first mentioned luminescent material.

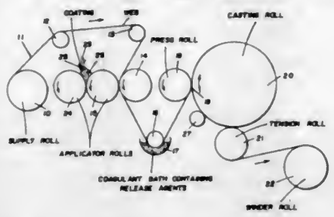
3,224,896
HEAT-SEALABLE POLYOLEFIN PACKAGING FILM
Thomas M. Quinn, Ridley Park, and Edward Barkis, Philadelphia, Pa., assignors to Avisun Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Jan. 8, 1963, Ser. No. 250,013
5 Claims. (Cl. 117—47)



1. A heat-sealable packaging film comprising a polyolefin base film selected from the group consisting of polyethylene and polypropylene which has been subjected to an adhesion-promoting pretreatment, and a heat-sealable coating on at least one side of said base film containing at least a major proportion of a resinous copolyer of from 80–92% by weight of styrene and from 20–8% by weight of butadiene-1,3 prepared in the presence of from 0.2 part to about 3.0 parts per 100 parts of monomers of a mercaptan modifier containing at least 6 carbon atoms.

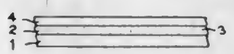
3,224,897
METHOD AND APPARATUS FOR PRODUCING CAST COATED PAPER
John W. Smith, Chillicothe, Ohio, assignor to The Mead Corporation, Dayton, Ohio, a corporation of Ohio
Filed Aug. 19, 1960, Ser. No. 50,635
7 Claims. (Cl. 117—64)

3. Web coating apparatus comprising an applicator roll, a backing roll forming an application nip with said applicator roll, and said application nip adapted to pass therethrough a web to be coated, a metering roll mounted with the axis thereof in substantially the same horizontal plane as the axis of said applicator roll to form with said applicator roll a metering nip, means for maintaining a pool of coating material above said metering nip, said rolls being in an abutting relationship under a pressure of the order of 0 to 100 pounds per lineal inch, one of said rolls forming said metering nip having a resilient surface, one of said rolls forming said application nip having a resilient surface, means for rotating said rolls in the same



predetermined angular direction to cause relative reverse travel of the surfaces thereof and to cause said surface of said applicator roll to move in the direction opposite the direction of the web.

3,224,898
RELEASE-COATED CARRIER WEBS AND METHOD OF USING SAME
Millard C. Spencer, South Portland, Maine, assignor to S. D. Warren Company, Boston, Mass., a corporation of Massachusetts
Filed Apr. 11, 1962, Ser. No. 186,659
11 Claims. (Cl. 117—76)



8. Process of making an air-permeable plastic film which comprises spreading a layer of a plastisol containing powdered resin dispersed in a plasticizer upon the surface of a carrier web coated with a release coating to which a plastic film adheres only weakly, said coating containing a blowing agent capable of suddenly releasing gas upon being heated to a critical temperature, heating said coated web carrying said layer of plastisol above said critical temperature whereby gas is released which penetrates said layer of plastisol and forms minute holes therein, further heating said layer of plastisol to consolidate the same into a tough film without closing said holes, and thereafter removing the said film from said carrier web.

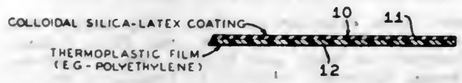
3,224,899
WETTABLE POLYURETHANE SPONGE
Christopher L. Wilson, 207 Shadow Valley, High Point, N.C.
No Drawing. Filed Aug. 17, 1961, Ser. No. 132,237
1 Claim. (Cl. 117—98)

A polyurethane foam of enhanced wettability having finely divided silica deposited on its pore surfaces said silica being an adsorbed layer of essentially spherical particles having a particle size in the range 0.007–0.022 micron.

3,224,900
METHOD OF MAKING POLYETHYLENE COATED RAZOR BLADES
Robert Marion Creamer and Ludwig Weissbecker, Richmond, Va., assignors to Philip Morris Incorporated, New York, N.Y., a corporation of Virginia
No Drawing. Filed Oct. 4, 1962, Ser. No. 228,276
9 Claims. (Cl. 117—119)

1. A method for applying a polyethylene resin coating to the cutting edge of a razor blade which comprises applying a polyethylene resin to a blade and thereafter heating the blade in an oxygen-free atmosphere at a temperature of from about 150° C. to about 500° C. for a period of from about 0.25 to 15 minutes.

3,224,901
SLIP-RESISTANT THERMOPLASTIC RESIN SHEETS AND PROCESS FOR PRODUCING SAME
Harry Telcher, Olivette, Mo., assignor to Monsanto Company, a corporation of Delaware
Filed Oct. 19, 1961, Ser. No. 145,183
13 Claims. (Cl. 117—138.8)

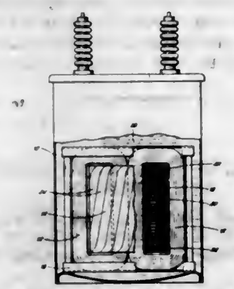


1. A transparent article comprising (1) a thermoplastic polymer sheet having at least one normally slippery surface and (2) a slip resistant, smooth, non-tacky film on said surface and adherent thereto, which film is composed of a uniform mixture of particles of an alkali-stabilized, colloidal silica and particles of a finely divided copolymer comprising the interpolymerization product of;

(a) from about 25 to 65% by weight of a monovinylidene aromatic hydrocarbon,
(b) from about 60 to 34.5% by weight of an alkyl ester of an unsaturated acid selected from the group consisting of acrylic acid and methacrylic acid, and
(c) from about 15 to 0.5% by weight of an ethylenically unsaturated carboxylic compound having at least one carboxyl group and copolymerizable with said monovinylidene aromatic hydrocarbon and said alkyl ester;

said particles of colloidal silica and interpolymerization product being present in said film in a ratio of from 10 to 500 parts by weight of SiO_2 to 100 parts by weight of interpolymerization product.

3,224,902
THERMALLY STABILIZED CELLULOSE MATERIALS
Fred S. Sadler, Orange, N.J., and James D. Wadeson, Lebanon, Pa., assignors to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware
Filed Sept. 7, 1961, Ser. No. 136,606
8 Claims. (Cl. 117—143)

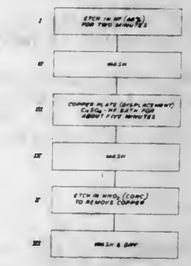


1. A cellulose material having improved thermal stability for use at elevated temperatures, comprising a base consisting of cellulose fibers impregnated solely with dimethyl formamide in an amount to provide a nitrogen content in the range of 0.2 to 2.0% in the dry base.

3,224,903
DEXTRINS AND METHOD OF MAKING SAME
John D. Commerford, Crestwood, and Barrett L. Scallet, Clayton, Mo., and Grant T. Van Duzee, Minneapolis, Minn., assignors to Anheuser-Busch, Incorporated, St. Louis, Mo., a corporation of Missouri
No Drawing. Filed Mar. 7, 1963, Ser. No. 263,428
4 Claims. (Cl. 127—38)

1. A method of making a dextrin including the steps of heating an acidified starch having about 6–9% moisture, treating the starch with additional water and acid during the heating thereof after the starch has started to roast and before the water content drops substantially below about 5.5%, and recovering a dextrin having at least about 94% solubles and characterized by its paste having substantially less viscosity than similar paste made from a dextrin produced without the additional water and acid.

3,224,904
SEMICONDUCTOR SURFACE CLEANING
Donald L. Klein, New Providence, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Mar. 18, 1963, Ser. No. 265,612
7 Claims. (Cl. 134—4)



1. A method of cleaning a body of semiconductor material selected from the group consisting of silicon, germanium and gallium arsenide having impurities thereon, which comprises immersing said body in a displacement copper plating solution for a period of several minutes, washing the body, removing the metal plating by immersing the body in a solution which does not substantially attack the semiconductor material, and washing the body.

3,224,905
TUBES FOR HOLDING THE ACTIVE MATERIAL IN ELECTRODE PLATES OF GALVANIC ELEMENTS
Fritz Hentschel, Iserlohn, Westphalia, Germany, assignor to Varta Aktiengesellschaft, Frankfurt am Main, Germany, a corporation of Germany
Filed May 21, 1962, Ser. No. 196,180
Claims priority, application Germany, May 30, 1961, A 37,556
5 Claims. (Cl. 136—55)



5. A tubular sheathing for an electrode plate of a galvanic element, said tubular sheating consisting of a fabric of closely interwoven warp yarns and multifilament filling yarns, said warp and filling yarns being formed of filaments of an electrically insulating and electrolyte resistant material, said warp yarns extending in the direction of the axis of the tubular sheathing and said filling yarns extending perpendicularly thereto, said filling yarns being composed, at given intervals, of filling threads of a filament forming material being soluble in the electrolyte,

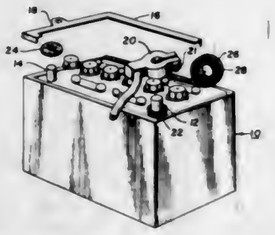
said tubular sheathing further consisting of substantially parallel oriented glass fibers placed on said fabric in the direction of the axis of said sheathing, said glass fibers held by said electrolyte-soluble filling threads on the fabric at spaced points determined by said electrolyte-soluble filling threads, said electrolyte-soluble filling threads being dissolved on immersion of the tubular sheathing into the electrolyte, thereby causing the glass fibers to completely cover the electrolyte-resistant warp yarns and filling yarns and to form a layer of glass fibers on the inside of the tubular sheathing, at least a portion of the warp yarns and the filling yarns consisting of substantially parallel ones of said filaments whereby said latter yarns assume the shape of bands.

3,224,906

ACID-RESISTANT MATERIAL FOR USE IN PROTECTING BATTERY TERMINALS AND THE LIKE

Charles Deibel, 414 N. 3rd St., and Joseph Evanicsko, Jr., Spanish Villa, R.D. 2, both of Jeannette, Pa.

Filed June 18, 1963, Ser. No. 288,837
7 Claims. (Cl. 136—135)



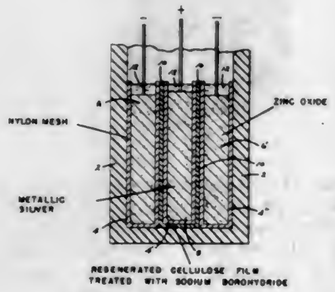
1. As an article of manufacture, a washer adapted to be placed over a storage battery terminal to prevent acid on the battery surface from rising up the terminal and onto an electrical connector on the terminal, the washer comprising compressed glass fibers impregnated with a mixture of a binder and an alkaline substance.

3,224,907

ELECTRO-CHEMICAL GENERATOR

Charles M. Rosser, Wallingford, and Richard A. Glinski, Clifton Heights, Pa., assignors, by mesne assignments, to FMC Corporation, San Jose, Calif., a corporation of Delaware

Filed May 11, 1962, Ser. No. 194,059
6 Claims. (Cl. 136—146)



1. An electro-chemical generator comprising a positive electrode, a negative electrode, an electrolyte, and a semi-permeable cellulosic electrode separator membrane treated with an alkali metal borohydride.

3,224,908

METHOD AND COMPOSITION FOR PRODUCING ADHERENT COATINGS ON METAL PARTS

Eduard Duch, Frankfurt am Main, Willy Herbst, Hofheim, Taunus, Fritz Rochlitz, and Hans Scherer, Frankfurt am Main, and Herbert Vilcsek, Hofheim, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Aug. 22, 1961, Ser. No. 133,058
Claims priority, application Germany, Aug. 31, 1960, F 32,011
3 Claims. (Cl. 148—6.15)

1. A method for producing adherent uniform coatings on clean metal, particularly for preventing corrosion and providing adherences of lacquers and varnishes, which comprises the steps of contacting said metal for from 3 minutes to 3 seconds with a solution at a temperature of from about 4° C. to about 70° C., said solution containing at least one monomeric alkene phosphonic acid selected from the group consisting of vinyl phosphonic acid, propene - 2,3 - phosphonic-1-acid, and propene-1,2-phosphonic-1-acid, and at least one compound selected from the group consisting of polyvinyl phosphonic acid, copolymers of vinyl phosphonic acid, copolymers of the acid derivatives of vinyl phosphonic acid which contain, per monomer unit, only one free hydroxyl group at the phosphorus atom, polyacrylic acid and a copolymer of vinyl methyl ether and maleic anhydride, the components of the said copolymers of vinyl phosphonic acid and the copolymers of the acid derivatives of vinyl phosphonic acid comprising at least one substance selected from the group consisting of acrylic acid, acrylic acid alkyl esters, methacrylic acid, vinyl acetate, maleic anhydride and acrylonitrile, the total concentration of said substances being within the range of about 0.8 to about 6% by weight of said solution and the ratio by weight of monomeric phosphonic acid to polymer being within the range of 98:2 to 20:80, and finally drying the solution adhering to said clean metal to form an adherent coating thereon.

3,224,909

SILICONIZING OF ELECTRICAL SHEET STEEL BY DIFFUSION

Klaus Sixtus, Bad Homburg, and Helmut Lämmel, Frankfurt am Main, Germany, assignors to Licentia Patent-Verwaltungs-G.m.b.H., Frankfurt am Main, Germany,

No Drawing. Filed Nov. 21, 1962, Ser. No. 239,340
Claims priority, application Germany, Nov. 29, 1961, L 40,575
15 Claims. (Cl. 148—113)

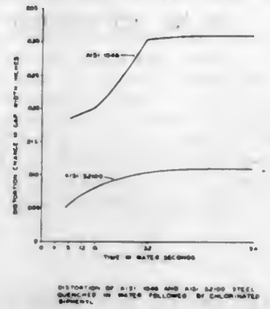
1. A method of improving the magnetic characteristics of cold-rolled sheet metal having a silicon content sufficiently low to allow said sheet metal to have been cold-rolled, said method comprising the step of subjecting the sheet metal to a temperature of between 1100° and 1250° C. in an atmosphere of a gas mixture composed of a non-oxydizing carrier gas and a volatile silicon compound, wherein the total silicon contents in said gas mixture is no greater than ⅔% by volume of the total gas, to diffuse silicon into the sheet metal to a level above that permissible for cold-rolling; and homogenizing the diffused silicon by annealing the sheet metal.

3,224,910

QUENCHING PROCESS

Malcolm McEwen, Glendale, Mo., assignor to Monsanto Company, a corporation of Delaware

Filed Feb. 18, 1963, Ser. No. 259,176
11 Claims. (Cl. 148—143)



1. A two-phase quenching composition comprising
(a) an upper aqueous phase and
(b) a lower phase of chlorinated biphenyl containing from about 20% to about 60% by weight of combined chlorine.

3,224,911

USE OF HYDROGEN HALIDE AS CARRIER GAS IN FORMING III–V COMPOUND FROM A CRUDE III–V COMPOUND

Forrest V. Williams, Ballwin, and Robert A. Ruehrwein, Clayton, Mo., assignors to Monsanto Company, a corporation of Delaware

Filed Feb. 26, 1962, Ser. No. 176,867
17 Claims. (Cl. 148—175)

1. Process for the production of a single crystal form of a compound selected from the group consisting of binary compounds and mixtures thereof comprising elements selected from the group consisting of aluminum, gallium and indium together with elements selected from the group consisting of nitrogen, phosphorus, arsenic and antimony, which comprises contacting a crude source of said compound with a hydrogen halide vapor at a first temperature sufficient to react said compound with said hydrogen halide, and subjecting the resulting gaseous reaction mixture to a region of a second and lower temperature sufficient to deposit a single crystal form of said compound from said reaction mixture.

3,224,912

USE OF HYDROGEN HALIDE AND HYDROGEN IN SEPARATE STREAMS AS CARRIER GASES IN VAPOR DEPOSITION OF II-VI COMPOUNDS

Robert A. Ruehrwein, Clayton, Mo., assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed July 13, 1962, Ser. No. 209,777
11 Claims. (Cl. 148—175)

1. Process for the production and deposition of epitaxial films comprised of compounds selected from the group consisting of the sulfides, selenides and tellurides of beryllium, zinc, cadmium, mercury and mixtures thereof, onto a substrate material selected from the group consisting of I–VII, II–VI, and III–V compounds, germanium and silicon, which comprises combining in the vapor phase (1) a gaseous mixture formed by the reaction of hydrogen halide and a Group II element selected from the group consisting of beryllium, zinc, cadmium and mercury: and (2) a gaseous mixture of hydrogen and a substance selected from the group consisting of a Group VI element selected from the group consisting of sulfur, selenium and tellurium and a volatile compound thereof while excluding oxidizing gases, and contacting the resulting reaction mixture with said substrate to deposit a single crystal form of at least one II–VI compound as an epitaxial film on said substrate.

3,224,913

ALTERING PROPORTIONS IN VAPOR DEPOSITION PROCESS TO FORM A MIXED CRYSTAL GRADED ENERGY GAP

Robert A. Ruehrwein, Clayton, Mo., assignor to Monsanto Company, a corporation of Delaware

No Drawing. Original application July 31, 1961, Ser. No. 128,237. Divided and this application Feb. 19, 1965, Ser. No. 434,116
9 Claims. (Cl. 148—175)

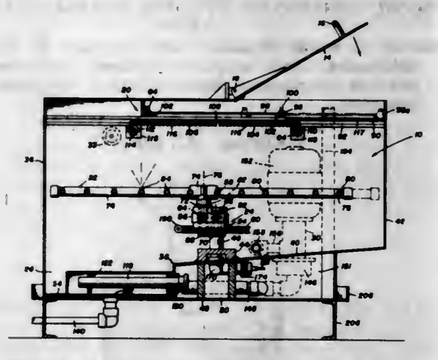
1. Process for the production and deposition of graded forbidden energy gap epitaxial films of mixed binary crystals comprising Group III–B elements selected from the group consisting of boron, aluminum, gallium and indium and Group V–B elements selected from the group consisting of nitrogen, phosphorus, arsenic and antimony onto a substrate material selected from the group consisting of I-VII, II-VI and III-V compounds, silicon and germanium, which comprises reacting in the vapor phase at least one volatile compound of said Group III–B elements with at least one member selected from the group consisting of volatile Group V–B elements and compounds, provided that the sum of the Group III–B components and Group V–B components reacted is greater than two, in the presence of hydrogen and contacting the resulting reaction mixture with said substrate while progressively altering the relative flow rates of reactants entering the reaction zone to vary the proportions of the Groups III–B and V–B components as deposition proceeds.

3,224,914

METHOD AND APPARATUS FOR ETCHING

Robert C. Benton, State College, Pa., and Gunter Decker, Solingen, Germany, assignors to Chemcut Corporation, a corporation of Pennsylvania

Filed Feb. 19, 1964, Ser. No. 346,011
13 Claims. (Cl. 156—2)

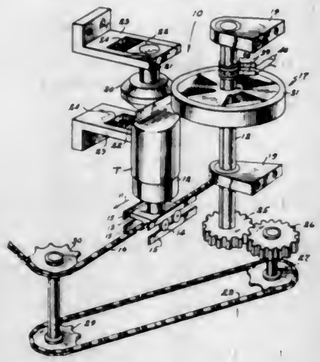


12. Process of etching objects by spraying with a multiphase etchant, comprising the steps of:
pre-agitating the etchant in pressure induced sprays, against baffles in an interposed position blocking the objects, for breaking up and emulsifying the phases into intimate dispersion with one another;
unblocking the objects by movement of the baffles to a displaced position, for spray etching the objects;
timing the period for etching; and
restoring the baffles at the end of said timed period into interposed relation to the sprays for re-blocking the objects, terminating etching, and, all at the same time, sustaining the emulsified condition by continuing to agitate and break up the etchant phases.

3,224,915
METHOD OF JOINING THERMOPLASTIC SHEET MATERIAL BY ULTRASONIC VIBRATIONS

Lewis Balamuth, New York, and Arthur Kuris, Riverdale, Bronx, N.Y., assignors to Cavitron Ultrasonics Inc., Long Island City, N.Y., a corporation of New York

Filed Aug. 13, 1962, Ser. No. 216,644
2 Claims. (Cl. 156—73)



1. A method of joining thermoplastic sheet materials along at least one elongated seam, comprising the steps of

(A) overlapping the sheet materials at least in the region where they are to be joined,

(B) continuously advancing the overlapped sheet materials along a predetermined path,

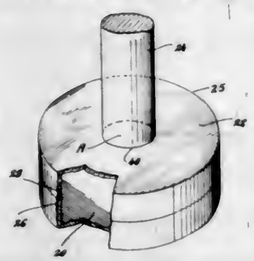
(C) disposing a rotary vibrator at a location along said path and in rolling contact at its periphery with the overlapped sheet materials, and

(D) generating high frequency radial vibrations in said rotated vibrator to act at said periphery in rolling contact with the overlapped sheet materials in directions perpendicular to the latter so as to be effective in joining together the sheet materials.

3,224,916
SONIC METHOD OF WELDING THERMOPLASTIC PARTS

Robert S. Soloff, Stamford, and Seymour G. Linsley, Bridgeport, Conn., assignors, by mesne assignments, to Branson Instruments, Incorporated, a corporation of Delaware

Filed Dec. 6, 1963, Ser. No. 328,500
8 Claims. (Cl. 156—73)



1. The method of fusion welding relatively stiff thermoplastic parts, comprising the steps of:

(A) holding at least two of said parts in intimate contact at at least one interface; and,

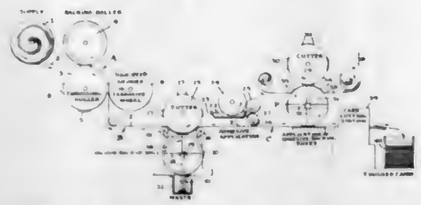
(B) introducing sonic energy into a surface of at least one of the parts at a power level per unit area below that which would cause that surface to melt and at a total power level sufficient, when the sonic energy is concentrated and dissipated at the interfaces of the parts to cause them to melt and fuse to form a weld.

3,224,917
METHOD OF MAKING AN APERTURE CARD

John F. Langan, Atlanta, Ga., assignor to Langan Aperture Cards, Inc., New York, N.Y., a corporation of Delaware

Original application Sept. 24, 1964, Ser. No. 398,981. Divided and this application July 29, 1965, Ser. No. 475,697

1 Claim. (Cl. 156—108)



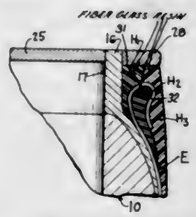
A method of making a record card of fibrous material having an aperture for projectably mounting sections of microfilm and like projectable transparencies which comprises passing a card blank through successive embossing and grinding zones, subjecting a predetermined region of said card to embossing pressure on one side of the card in said embossing zone, said region having the shape of an elongated strip extending around the outline of the aperture to be formed, and then supporting said region on said one side of the card in said grinding zone while grinding off material from said predetermined region on the opposite of said card, thereby providing throughout said region a thinned web of card material which extends integrally between and connects the outer card portion surrounding said region and the inner card portion surrounded by said region, cutting said web along lines bordering the inner portion to form an aperture in the card, applying a normally tacky pressure sensitive adhesive to one side of the remaining ledge-like web along the edge of said aperture, and applying a removable cover patch extending over said aperture with its edges overlying and bonded to the adhesively coated faces of said web, thereby maintaining a continuous, non-tacky card surface during handling and distribution of the card pending the eventual replacement of said patch by a projectable transparency.

3.224,918
METHOD OF MAKING CONTAINERS

William F. Rossi and Paul O. Huston, Bloomfield, N.J., assignors to Specialties Development Corporation, Belleville, Essex County, N.J., a corporation of New Jersey

Original application Sept. 22, 1959, Ser. No. 841,484. Divided and this application July 20, 1962, Ser. No. 211,298

6 Claims. (Cl. 156—175)

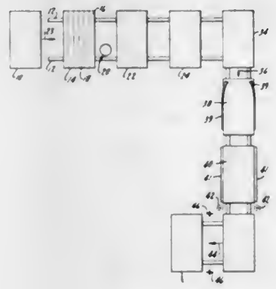


5. The method of making a generally cylindrical container, which method comprises placing an end fitting on each end of a cylindrical form, at least one of the end fittings having a collar formed with an opening; placing a ring on the collar adjacent the opening; applying a first hoop winding on the collar abutting the ring which is contoured to form an annular arcuate recess therein; placing a plate adjacently spaced from the opening and disposed, in a plane intersecting the longitudinal axis of the form at right angles; applying a longitudinally extending end-over-end winding over the form, the end fittings, the ring and the plate to provide side wall structure; applying a second hoop winding over the end-over-end winding at the recess to draw portions of the end-over-end winding into the recess while tensioning the end-over-end winding with the plate; cutting the end-over-end winding in an annular path to provide a tubular flap extending outwardly of the second hoop winding; folding the flap to place it over the second hoop winding; applying a third hoop winding over the flap to secure the flap and over the side wall structure to provide additional side wall structure; removing the ring and the plate; and removing the form.

3,224,919
HIGH SPEED VENEERING PROCESS

Armin Elmendorf, 860 Charleston Road, Palo Alto, Calif.

Filed Dec. 21, 1962, Ser. No. 246,593
3 Claims. (Cl. 156—299)



1. A method for applying veneer to one surface of a ligno-cellulosic panel by a high speed process, which includes the steps of,

applying a liquid adhesive to one surface of a panel having a ligno-cellulosic surface,

drying the adhesive,

placing the panel on means adapted to convey the panel to a splicing station,

while the panel is in motion, temporarily bonding a first veneer sheet to the panel at a bonding station by applying pressure and heat along spaced parallel lines whose position is fixed,

placing a second veneer sheet on the panel in spaced relationship to the first veneer so that there is a gap between the adjoining edges,

and while the panel is in motion, closing the gap between the temporarily bonded first veneer sheet and a second veneer sheet at the splicing station, said gap being closed by sliding said second veneer sheet on the adhesive until it comes into contact with the edge of the first veneer sheet which has been temporarily bonded to the panel,

maintaining edge contact while the panel moves and while the second veneer sheet is temporarily bonded to the panel along spaced parallel lines whose position is fixed,

moving the panel to a permanent bonding station, and permanently bonding the temporarily bonded veneer sheets over the entire panel by heated pressing means.

3,224,920
METHOD OF MAKING PLIED FIBER LAMINATES UTILIZING COACTING RESINS

Peter Bosworth, Bitterne, Southampton, England, assignor to The Borden Company, a corporation of New Jersey

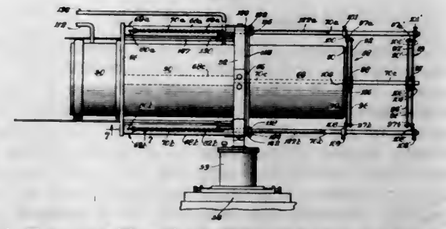
No Drawing. Filed Sept. 28, 1961, Ser. No. 143,008
6 Claims. (Cl. 156—315)

1. The process of making a fiber reinforced resin article which comprises impregnating a fibrous reinforcing sheet with epoxidized phenolic resin having at least one epoxy group per recurring phenolic group and impregnating another fibrous reinforcing sheet with the condensation product of aniline and formaldehyde, pressing together the thus impregnated sheets and heating the assembly so made at a temperature above the fusion point of the epoxidized phenolic resin and the condensation product and below the temperature of decomposition of said fibrous reinforcing sheet until the epoxidized phenolic resin and said condensation product cure each other.

3,224,921
BEAD PLACING AND SEALING APPARATUS FOR TIRE BUILDING MACHINE

Larry C. Frazier, Prescott, Ariz., assignor to National-Standard Company, Niles, Mich., a corporation of Delaware

Filed May 24, 1962, Ser. No. 197,504
20 Claims. (Cl. 156—403)

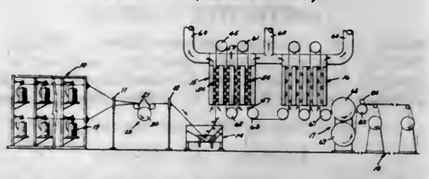


1. For use with a tire building machine, bead placing apparatus adapted to place a pair of bead rings over a cylindrical band of tire fabric, comprising, in combination, support means adapted to move axially relative to said band, a pair of bead holding members of a diameter greater than the diameter of said band and mounted on said support means for axial movement therewith, said bead holding members being movable between closed positions wherein each is adapted to hold a bead ring and open positions wherein each is adapted to release a bead ring, means for axially moving said support means so as to position said bead holders over said band, and means for opening said bead holders after the latter are positioned over said band.

3,224,922
APPARATUS FOR MAKING WEFTLESS TAPE

Horace P. Fry, Jr., West Chester, Pa., assignor, by mesne assignments, to FMC Corporation, San Jose, Calif., a corporation of Delaware

Filed Sept. 23, 1960, Ser. No. 58,121
1 Claim. (Cl. 156—433)



Apparatus for making weftless tape comprising means for applying an adhesive composition to a plurality of

juxtaposed strands to adhere the strands together in the form of a tape, means for directing the tape through a tortuous path having a plurality of vertical runs, said means comprising a plurality of upper and lower freely rotatable drums with the lower drums having axes spaced horizontally with respect to the upper drums whereby the tape may be directed first about an upper drum and then alternately about a lower drum and an upper drum, means for applying a relatively large amount of heat to the tape shortly after it leaves a drum and then a lesser amount of heat during the remainder of the run to the next drum, means for controlling the temperature of the drums to prevent overheating thereof due to heat transfer from the tape to the drum, and means for cooling the tape after its passage through the aforesaid tortuous path about said drums, said last-named means comprising a pair of relatively large driven drums which also serve to pull the tape through the aforesaid tortuous path.

3,224,923

PAPER-MACHINE FELT

Thomas Hindle, "Thornlea" Beardwood Brow, and Edward Race, Langdale, Meins Road, both of Blackburn, England

No Drawing. Filed Aug. 8, 1960, Ser. No. 47,956

Claims priority, application Great Britain, Aug. 13, 1959, 27,662/59

4 Claims. (Cl. 161—64)

1. A papermaker's felt consisting of material wherein uncoated warp and weft yarns are so intercalated as to provide a water-absorbent structure acceptable to constitute the base fabric of a conventional papermaker's felt, and wherein the warp and weft yarns are of substantially the same degree of roundness, in transverse section, as when freshly woven, the warp and weft yarns being in major proportions, at least, of synthetic fibres; the felt possessing desirable characteristics of a conventional wool felt including tensile strength, flexibility and permeability to water but possessing greater abrasive resistance and having a longer service life than an all-wool felt, one face, at least, of the felt comprising nap fibres which mask the weave pattern and collectively provide a smooth surface of the kind desirable in paper making, the felt bing substantially devoid of any substance other than that comprised in the original warp and weft yarns, as woven, and being further characterized in that, predominantly at points at which constituent fibres cross and contact one another, they are so coalesced from a gel state as to form permanent bonds thereby connecting the yarns of which the united fibres are constituent elements whereby, although the material retains substantially the same degree of flexibility and permeability which is possessed when first woven, it is comparable to a fulled wool felt as respects the permanent union of constituent fibres.

3,224,924

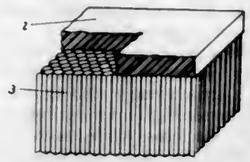
PROTECTIVE PADDING

Manfred von Ardenne, Dresden-Wiesser Hirsch, and Siegfried Panzer, Dresden, Germany, assignors to VEB Zentrale Entwicklung und Konstruktion für den Kraftfahrzeugbau, Kauffahrtei, Karl-Marx-Stadt, Germany

Filed Feb. 8, 1962, Ser. No. 171,885

8 Claims. (Cl. 161—68)

1. Padding arrangement particularly adapted for use as a protective padding in motor vehicles and the like, consisting essentially of an inner inelastic deformable core and an outer elastic compressible cover layer thereon, said inner core being subject to permanent deformation when



said outer layer is compressed to about 30–50% of its original thickness.

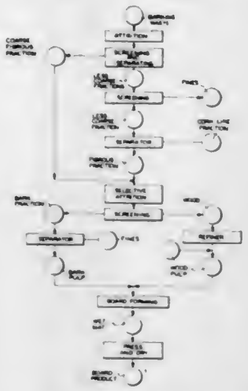
3,224,925

FIBROUS PRODUCTS FROM BARKING WASTE

Theodorus Gerardus Brandts, Donald Edmund Helleur, Robert Montgomery Hopkins, and Rodrigue Gerald Boivin, Grand'Mere, Quebec, Canada, assignors to Consolidated Paper (Bahamas) Limited, Nassau, Bahamas

Filed May 21, 1962, Ser. No. 196,510

7 Claims. (Cl. 162—93)



1. The process for making fibrous boards from waste raw cellulosic material, which comprises disintegrating barking waste obtained from wood having a stringy fibrous inner bark into a fibrous wood fraction, a fibrous bark fraction and a non-fibrous bark fraction, the disintegration being such that the wood fraction of the barking waste is substantially not disintegrated while the fibrous bark fraction is disintegrated to substantially fibre-size and the non-fibrous bark fraction is disintegrated to relatively fine dimensions, separating the said wood fraction from the said fibrous and non-fibrous bark fractions, further separating the fibrous bark fraction from the non-fibrous bark fraction, disintegrating the said wood fraction to substantially fibre-size, blending together in suitable proportions the said disintegrated fibrous bark fraction and the said disintegrated fibrous wood fraction and forming the blend into a pressed, dried product.

3,224,926

METHOD OF FORMING CROSS-LINKED CELLULOSIC FIBERS AND PRODUCT THEREOF

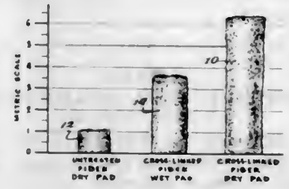
Leo J. Bernardin, Appleton, Wis., assignor to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware

Filed June 22, 1962, Ser. No. 204,528

8 Claims. (Cl. 162—146)

1. In a process of producing a cellulosic product which comprises impregnating a mass of substantially unbeaten cellulosic fibers of papermaking length with an aqueous solution containing a dissolved cross-linking agent and a dissolved catalyst for a cross-linking reaction between the cellulose and said agent, said impregnation causing said cellulosic fibers to be swollen and said agent and said catalyst to be taken up by the fibers; subsequently heating the fibers in dry form at cross-linking temperature; the improvement which comprises the combination of steps of before heating to effect the cross-linking reaction, dewatering, drying, and expanding the mass of fibers without substantial cross-linking of the fibers to provide the fibers substantially free of water and so that cross-linking agent is retained in the fibers and the fibers are in the form of a loose dry fluff in which contact between individual fibers over any material portion of the length of the fibers is minimized and the impregnated fibers are themselves substantially nonswollen, flattened and collapsed whereby, upon cross-linking, the cross-linking reaction takes place primarily within the individual impregnated, nonswollen, flattened dry fibers of the fluff; and then heating the fibers in the dry fluff form at the cross-linking temperature to the extent that the individual fibers are materially stiffened and set in the substantially nonswollen, flattened condition and while in the said fluff form, said fibers being stiffened to an extent that they are reduced to powder if subjected to a refining operation in a papermaking process.

6. Cross-linked cellulosic unbeaten wood pulp fibers in the form of a loose fluffy mass and characterized by internal cross-linking ether linkages between molecules



of the cellulose, said fibers being wettable by and dispersible in but not substantially swollen by water, the said fibers forming the fluffy mass being stiff to an extent that the fibers are reduced to powder by refining operations in a papermaking process and these stiff fibers being in the fluffy mass only in minimal contact with each other over the length of the fibers so that interconnecting capillary voids are formed between the stiff fibers, said mass being capable of retaining from at least 1.2 to 2 times as much water and having a wet pad thickness of at least as much as 1.5 to 2 times the wet pad thickness of a corresponding mass of the untreated fibers from which the cross-linked fibers are derived, the said fluffy mass of cross-linked fibers being resiliently deformable in the dry and wet state.

8. A water-laid product comprising between about 2 to 20% by weight of cross-linked cellulose fibers having little affinity for each other in the wet and the dry state and the balance of the fibers being essentially papermaking wood pulp fibers, the said cross-linked fibers being unbeaten and stiff to the extent that beating in a papermaking process reduces the fibers to powder, and said cross-linked fibers being distributed throughout said product and interrupting the natural bonding characteristics of the papermaking wood pulp fibers to the extent that the sheet is porous, readily wet pressed to release water, and resilient.

3,224,927

FORMING INORGANIC FIBER MATERIAL CONTAINING CATIONIC STARCH AND COLLOIDAL SILICA

Robert L. Brown, West Chester, Pa., and George W. Sears, Jr., Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Oct. 4, 1963, Ser. No. 313,743

1 Claim. (Cl. 162—155)

In a process for making a heat-resistant material by dispersing in an aqueous medium an inorganic fiber selected from the group consisting of asbestos, paligorskite, attapulgite, quartz, glass, aluminosilicates and potassium titanate, adding positively charged starch and colloidal silica, removing said fibers from the aqueous medium, and drying the resulting shaped product, the steps comprising (1) first adding the positively charged starch to the said dispersion in the proportion of 0.2 to 1.5% by weight based on the weight of said fibers, (2) then adding the colloidal silica in the proportion of 10 to 20% by weight based on the weight of the fibers, and (3) then adding acid in an amount sufficient to lower the pH of the dispersion to the range of 3 to 5.

3,224,928

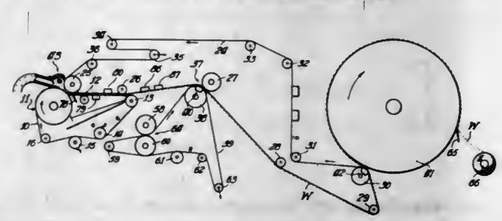
PAPERMAKING MACHINE USING A MOVING FELT THROUGH A PRESSURE FORMING SLICE AND THE SAME FELT THROUGHOUT THE MACHINE

Charles A. Lee, Knoxville, Tenn., and Charles A. Lamb, West Lafayette, Ind., assignors to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware

Filed Dec. 21, 1961, Ser. No. 161,058

20 Claims. (Cl. 162—214)

1. In a paper web forming machine, the combination of a first endless paper web forming fabric having interstices therethrough for draining paper stock deposited thereon, means for moving and supporting said fabric and including a member having a curved surface about which the fabric extends, a second endless fabric, said second fabric comprising a multitude of randomly oriented interlocked matted fibers so that said second fabric has no discernible interstices therethrough and is substantially compressible to absorb and release substantial amounts of water, means for moving and supporting said second fabric and including an element about which said second fabric moves having a curved surface approaching and in proximity to said first named curved surface, means for depositing paper stock on said first fabric and including a paper stock inlet arranged to direct the stock between said curved surfaces of said element and member and thereby between said two fabrics whereby the stock drains through said first fabric to form a web thereon which subsequently follows said second fabric.



17. In a method of making a paper web, moving and supporting in looped form an endless paper web forming fabric having interstices therethrough for draining paper stock deposited thereon, moving and supporting in looped form an endless belt so that said fabric and belt have a nip or close approach to each other, and directing dilute paper stock into said nip whereby the paper stock drains through said forming fabric to form a web thereon, said

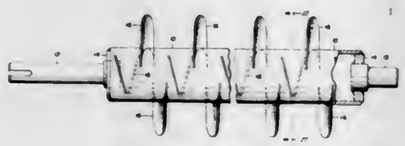
endless belt being made of a fabric comprising a multitude of randomly oriented interlocked matted fibers and having no discernible interstices therethrough whereby the paper web formed on said forming fabric follows said belt as the belt leaves said fabric.

3,224,929
HOMOGENIZING UNIT FOR PAPER MAKING MACHINE

Albert Edward Harold Fair, 101 Monmouth St., Brookline, Mass.

Original application July 11, 1962, Ser. No. 209,136, now Patent No. 3,135,654, dated June 2, 1964. Divided and this application Mar. 26, 1964, Ser. No. 355,021

3 Claims. (Cl. 162—342)



1. In a papermaking machine, a homogenizing unit disposable within a flow box for producing organized cross currents for dispersing the fibers in a flow box flow stream comprising, a rotatable roll disposed in spaced relationship transversely of the flow stream in the head box, a plurality of vanes rigidly fixed upon said roll and arranged in parallelism oblique to the longitudinal axis of said roll and axially spaced therealong as sets in rows equi-distant from each other, with the vanes of a row being arranged at an angle opposed to the angle of the vanes of the next adjacent row for producing miniature currents flowing in opposite directions.

3,224,930
FUNGICIDAL COMPOSITIONS

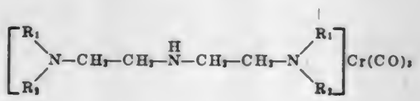
William E. Burt, Royal Oak, Mich., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Dec. 22, 1961, Ser. No. 161,384

4 Claims. (Cl. 167—22)

1. A fungicidal composition consisting of

(a) as a principal active ingredient a compound having the formula



wherein R_1 and R_2 are independently selected from the class consisting of hydrogen and alkyl radicals having from one to six carbon atoms,

(b) from 0.1 to 5 weight percent of a surface active dispersing agent as a dispersant therefor, and

(c) the remainder of said composition consisting essentially of a solid carrier selected from the class consisting of talc, attaclay, kieselguhr, chalk, diatomaceous earth, soybean fluor, tobacco fluor, walnut shell fluor, gypsum, mica, apatite, pumice and fuller's earth.

3,224,931
FUNGICIDAL COMPOSITIONS

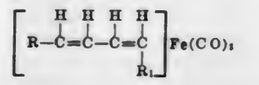
William E. Burt, Royal Oak, Mich., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Dec. 22, 1961, Ser. No. 161,386

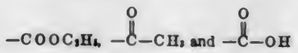
10 Claims. (Cl. 167—22)

1. A fungicidal composition consisting of

(a) as a principal active ingredient a compound having the formula



wherein R is selected from the class consisting of hydrogen and the methyl radical and R_1 is selected from the class consisting of hydrogen,



(b) from 0.1 to 5 weight percent of a surface active dispersing agent as a dispersant therefor, and

(c) the remainder of said composition consisting essentially of a solid carrier selected from the class consisting of talc, attaclay, kieselguhr, chalk, diatomaceous earth, soybean flour, tobacco flour, walnut shell flour, gypsum, mica, apatite, pumice and fuller's earth.

3,224,932
BIS(DIISOPROPYLTHIOCARBAMOYL)SULFIDE AS A FUNGICIDE

Bert Lorin Richards, Jr., Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed June 7, 1963, Ser. No. 286,192

2 Claims. (Cl. 167—22)

1. A method for controlling the growth of fungi of the order Erysiphales comprising applying to living plant tissue a fungicidal amount of bis(diisopropylthiocarbamoyl)sulfide.

3,224,933
FUNGICIDAL COMPOSITIONS

William E. Burt, Royal Oak, Mich., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Dec. 22, 1961, Ser. No. 161,383

4 Claims. (Cl. 167—30)

1. A fungicidal composition consisting of

(a) as a principal active ingredient, from 0.001 to 30 weight percent of a compound selected from the class consisting of the mercuric salt of cyclopentadienyl chromium tricarbonyl, the cadmium salt of methylcyclopentadienyl chromium tricarbonyl, the sodium salt of methylcyclopentadienyl chromium tricarbonyl, and the copper salt of cyclopentadienyl chromium tricarbonyl,

(b) from 0.1 to 5 weight percent of a surface active dispersing agent as a dispersant therefor, and

(c) the remainder of said composition consisting essentially of a solid carrier selected from the class consisting of talc, attaclay, kieselguhr, chalk, diatomaceous earth, soybean flour, tobacco flour, walnut shell flour, gypsum, mica, apatite, pumice and fuller's earth.

3,224,934
FUNGICIDAL COMPOSITIONS

William E. Burt, Royal Oak, Mich., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Dec. 22, 1961, Ser. No. 161,385

12 Claims. (Cl. 167—30)

1. A fungicidal composition consisting of

(a) as a principal active ingredient a compound having the formula

$$R—Mn(CO)_5$$

wherein R is selected from the class consisting of hydrogen, chlorine, bromine, and the propyl, cyclohexyl, phenyl, ethylphenyl, acetyl and benzoyl radicals,

(b) from 0.1 to 5 weight percent of a surface active dispersing agent as a dispersant therefor, and

(c) the remainder of said composition consisting essentially of a solid carrier selected from the class consisting of talc, attaclay, kieselguhr, chalk, diatomaceous earth, soybean flour, tobacco flour, walnut shell flour, gypsum, mica, apatite, pumice and fuller's earth.

3,224,935
FUNGICIDAL COMPOSITIONS

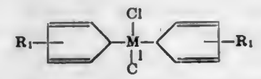
William E. Burt, Royal Oak, Mich., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Dec. 22, 1961, Ser. No. 161,387

6 Claims. (Cl. 167—30)

1. A fungicidal composition consisting of

(a) as a principal active ingredient a compound having the formula



wherein M is selected from the class consisting of titanium and zirconium and R_1 is selected from the class consisting of hydrogen and the methyl and butyl radicals,

(b) from 0.1 to 5 weight percent of a surface active dispersing agent as a dispersant therefor, and

(c) the remainder of said composition consisting essentially of a solid carrier selected from the class consisting of talc, attaclay, kieselguhr, chalk, diatomaceous earth, soybean flour, tobacco flour, walnut shell flour, gypsum, mica, apatite, pumice and fuller's earth.

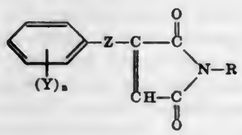
3,224,936
PESTICIDAL MALEIMIDES, MALEAMIDES AND FUMARAMIDES

Erhard J. Prill, Des Peres, Mo., and Charles J. Eby, Dayton, Ohio, assignors to Monsanto Company, a corporation of Delaware

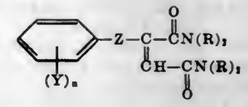
No Drawing. Original application Sept. 15, 1961, Ser. No. 138,256, now Patent No. 3,184,475, dated May 18, 1965. Divided and this application Dec. 7, 1964, Ser. No. 416,604

11 Claims. (Cl. 167—30)

3. A method of inhibiting the growth of undesired bacteria which comprises exposing said bacteria to a toxic amount of a compound selected from the class consisting of compounds of the formulas



and



wherein Y is selected from the class consisting of halogen atoms and lower alkyl, *n* is an integer from 0–5, Z is selected from the class consisting of S, SO and SO_2 and R is lower alkyl.

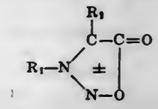
3,224,937
SYDNONE-CONTAINING INSECTICIDAL COMPOSITIONS AND METHODS

Paul F. Wiley, Indianapolis, Ind., assignor to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana

No Drawing. Filed Oct. 22, 1958, Ser. No. 768,831

5 Claims. (Cl. 167—33)

1. The process of killing insects which comprises the application to an insect habitat of a composition containing as an active insecticidal ingredient a sydnone represented by the following formula:



wherein R_1 is a radical of the group consisting of phenyl, chlorophenyl, tolyl, pyridyl and lower alkyl, and R_2 is a member of the group consisting of hydrogen, a halogen atom and lower alkyl radicals having from 1 to 3 carbon atoms.

3,224,938
ANTHELMINTIC COMPOSITIONS AND METHOD OF EMPLOYING SAME

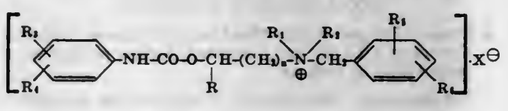
Alfred Margot, Basel, Switzerland, assignor to J. R. Geigy A.-G., Basel, Switzerland

No Drawing. Filed Jan. 19, 1962, Ser. No. 167,406

Claims priority, application Switzerland, Jan. 20, 1961, 695/61

9 Claims. (Cl. 167—53)

1. A process for the elimination of parasitic intestinal worms which comprises the oral administration, to an animal suffering from said intestinal worms, of a quaternary O-benzyl-aminoalkyl-N-phenylurethane of the for-



wherein

R is a member selected from the group consisting of hydrogen and methyl,

R_1 is lower alkyl,

R_2 is a lower alkyl,

R_1 and R_2 when taken together with the adjacent nitrogen atom is a member selected from the group consisting of an unsubstituted piperidine ring and an unsubstituted pyrrolidine ring,

R_3, R_4, R_5 and R_6 are each independently selected from the group consisting of hydrogen, methyl, methoxy, methylmercapto, nitro and halogen,

n is a whole member from 1 to 2, and

X^- is the anion of a nontoxic acid,

in an amount sufficient to control intestinal worms.

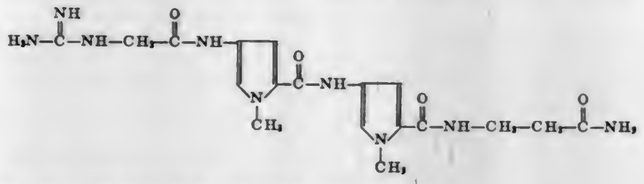
3,224,939

METHOD FOR TREATING HELMINTHIC INFECTIONS

Marvin M. Hoehn and Gerald W. Probst, Indianapolis, Ind., assignors to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana

No Drawing. Filed Mar. 21, 1963, Ser. No. 266,798
9 Claims. (Cl. 167—53)

1. The method of treating helminthic infections which comprises the administration to a parasitized animal of about 25 to about 1000 mg./kg. of host body weight of a compound selected from the group consisting of β-[4-(4 - guanidiocetamidino - 1 - methyl - 2 - pyrrolecarboxamido)-1-methyl - 2 - pyrrolecarboxamido]propionamide, the degradation product thereof having the formula



and the physiologically acceptable salts thereof.

3,224,940

ANTACID COMPOSITIONS AND METHOD OF USING SAME

Cameron Ainsworth, Frederick C. Blubaugh, and Le Roy A. Springman, Indianapolis, and James R. Zapapas, Martinsville, Ind., assignors to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana

No Drawing. Filed Dec. 18, 1961, Ser. No. 160,309
9 Claims. (Cl. 167—55)

1. An antacid composition, comprising a pharmaceutically acceptable inorganic antacid and between about 10 percent and about 60 percent by weight of a nontoxic, cross-linked polyalkyleneimine polymer selected from the group consisting of polyethyleneimine and polypropyleneimine wherein the cross-links have from 2 to 10 carbons and are attached at each end to polyalkyleneimine nitrogens.

3,224,941

RESIN COMPOSITIONS AND METHOD FOR CONTROLLING DIARRHEA

J Frank Nash and Tsung-Min Lin, Indianapolis, Ind., assignors to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana

No Drawing. Filed Jan. 21, 1963, Ser. No. 252,569
9 Claims. (Cl. 167—55)

1. A method for controlling diarrhea which comprises orally administering to a subject suffering from diarrhea a therapeutically effective amount of a copolymer of maleic anhydride, a terminally unsaturated olefinic compound of the formula

$$R—CH=CH_2$$

wherein R is a member of the group consisting of hydrogen, C_1–C_5 alkyl, and C_1–C_3 alkoxy, and a cross-linking agent selected from the group consisting of polymerizable vinyl and polymerizable vinylidene compounds, said copolymer having a viscosity between about 10,000 and about 100,000 centipoises in 1 percent aqueous solution at 25° C. and pH 9.

3,224,942

ANTI-INFLAMMATORY, ANTI-EDEMA AND ANTI-THROMBI DRUG

Gustav J. Martin, Philadelphia, Pa., assignor to William H. Rorer, Inc., Fort Washington, Pa., a corporation of Pennsylvania

No Drawing. Filed Jan. 15, 1962, Ser. No. 166,397
4 Claims. (Cl. 167—73)

4. An enterically coated dosage for mammals consisting essentially of bromelain in amount of one milligram to fifteen milligrams per kilogram of body weight of the mammal per day, and said enteric coating being of a sufficient thickness for said dosage to be ingested.

3,224,943

PROCESS FOR RETARDING THE GROWTH OF TUMORS

Herbert H. Espy, Wilmington, Del., assignor to Hercules Powder Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Mar. 6, 1964, Ser. No. 350,096
3 Claims. (Cl. 167—78)

1. A process for retarding the growth of malignant tumors selected from the group consisting of mammary adenocarcinoma, Lewis lung carcinoma, Dunning ascites leukemia, Crocker sarcoma and human sarcoma HS–1 which comprises administering to a malignant tumor-bearing mammal a daily dosage of from about 1 mg. to about 500 mg. per kilogram of body weight of an inhibiting agent selected from the group consisting of divinyl ether-maleic anhydride copolymers and physiologically tolerated salts of divinyl ether-maleic anhydride copolymers, said copolymers containing divinyl ether and maleic anhydride in a mole ratio of about 1:2 and having a reduced specific viscosity of from about 0.05 to about 2.0.

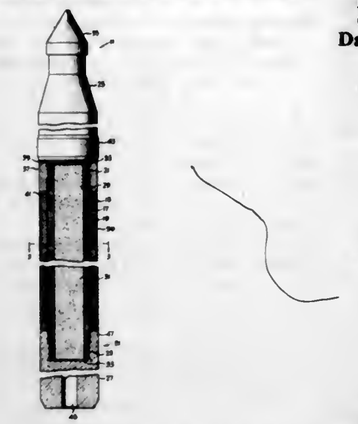
3,224,944

CERAMIC-MATRIX-TYPE FUEL ELEMENT WITH GRAPHITE FABRIC AFFIXED TO EXTERIOR SURFACE

Richard F. Turner and Ernest O. Winkler, both of San Diego, Calif., assignors, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission

Filed May 5, 1964, Ser. No. 365,224
7 Claims. (Cl. 176—69)

3. In a nuclear reactor utilizing a fluid coolant stream to extract the heat therefrom, a fuel element which comprises a fuel body including nuclear fuel particles dispersed within a ceramic matrix, means connected to said fuel body for positioning said fuel body in the core of the nuclear reactor so that an outer surface of said fuel body is in direct contact with the fluid coolant stream, and a thin fabric made of discrete threads affixed to said outer surface of said fuel body, which fabric uniformly roughens said surface so that localized turbulence is created in the coolant stream adjacent said surface, substantially improving heat transfer between the fuel element and the coolant stream.



3,224,945

PROCESS FOR THE PRODUCTION OF ERGOT ALKALOIDS

Varro E. Tyler, Jr., % College of Pharmacy, University of Washington, Seattle 5, Wash.

No Drawing. Filed May 6, 1963, Ser. No. 278,403
5 Claims. (Cl. 195—81)

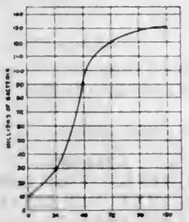
1. A process for the production of alkaloid derivatives of lysergic and isolysergic acids which comprises growing *Claviceps paspali* ATCC 14988 under aerobic conditions in a culture medium containing assimilable sources of carbon, nitrogen, and inorganic salts.

3,224,946

INCREASING RATE OF MICROBIAL FERMENTATION WITH ZEOLITES

Richard L. Raymond, Wilmington, Del., assignor to Socony Mobil Oil Company, Inc., a corporation of New York

Filed Sept. 21, 1962, Ser. No. 225,220
12 Claims. (Cl. 195—116)



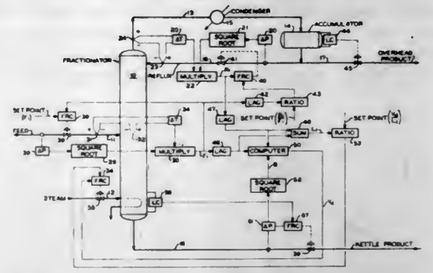
11. A process for placing a water-insoluble substrate into a highly divided molecular state in an aqueous medium and for increasing the metabolic attack of a microorganism upon said substrate which process comprises placing an aqueous medium containing nutrients for said microorganism in a vessel; effecting the division of the said water-insoluble substrate into a highly divided, molecular state by contacting the said substrate with a zeolite which is in pulverulent form and which contains sieves in the order of size from about 3 angstrom units to about 10 angstrom units and which occludes the said water-insoluble substrate; and effecting the said metabolic attack by allowing the microorganism to feed on the resultant highly divided substrate.

3,224,947

APPARATUS FOR CONTROLLING VAPOR-LIQUID FLOW RATIOS WITHIN A FRACTIONATION COLUMN

Dale E. Lupfer, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed June 19, 1961, Ser. No. 118,066
20 Claims. (Cl. 202—160)



1. In a system to separate fluid mixtures, which system includes a fractionation column, first conduit means communicating with said column to introduce a fluid mixture to be separated, means to maintain a temperature differential between the lower and upper regions of said column, second conduit means communicating with the lower region of said column to withdraw a first stream, third conduit means communicating with the upper region of said column to withdraw a second stream, and fourth conduit means to return a portion of the second stream to said column as external reflux; a control system comprising first means to sense the rate of flow of said external reflux, second means to sense the difference in temperature between the material withdrawn from the column through said third conduit means and the external reflux returned to said column, third means responsive to said first and second means to establish a first signal which is representative of the rate of flow of internal reflux in said column, fourth means to sense the rate of flow of said feed mixture, fifth means to sense the difference between the temperature of the material in the column at the region of said introduction and the temperature of the feed mixture introduced into the column, sixth means responsive to said fourth and fifth means to establish a second signal which is representative of the rate of flow of internal feed in said column, seventh means responsive to said first and second signals to establish a third signal which is representative of the rate of flow of liquid downwardly through the lower region of said column, eighth means to sense the rate of flow through said second conduit means and to establish a fourth signal which is representative of such rate of flow, and ninth means responsive to said third and fourth signals to regulate the temperature differential between the lower and upper regions of said column so as to tend to maintain the ratio of said third signal to said fourth signal constant at a preselected value.

3,224,948

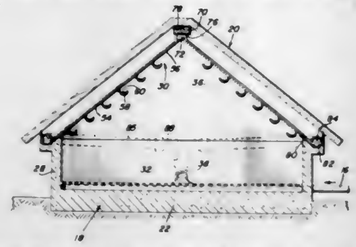
APPARATUS FOR DISTILLING NON-POTABLE WATER TO PRODUCE POTABLE WATER

John N. Akers, 2011 N. Cascade, Colorado Springs, Colo.

Filed Mar. 19, 1963, Ser. No. 266,350
1 Claim. (Cl. 202—192)

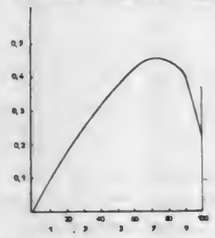
Apparatus for distilling non-potable water to produce potable distillate water at ambient temperature comprising, an elongated distillation chamber having opposite inlet and outlet ends, said chamber comprising a channel bed having a horizontally inclined surface connecting said inlet and said outlet ends for the flow of water to be distilled through said distillation chamber, means for heating said channel bed for evaporating water flowing

over said inclined surface, condenser means supported on said distillation chamber, said condenser comprising a covering roof structure including a pair of vertically inclined panel members which are interconnected at an apex portion to bridge said channel bed, said panels being heat conductive and constituting a condensing surface on the inner side thereof, a plurality of parallel spaced troughs suspended from said inner surface for collecting condensate which forms on the inner side surface, said troughs being inclined downwardly and connected to a converging manifold for inducing gravity flow of distillate water collected in said troughs for re-



covery of the same, means for flowing water to be distilled over said roof structure and comprising a feed inlet conduit connected to an elongated conduit secured to the apex portion of said roof structure, said elongated conduit having spaced apertures for discharging water at ambient temperature onto the outer surface of said roof structure to bathe the same and maintain the said outer surface at a condensing temperature and to preheat the water flowing thereover, means comprising a pair of parallel arranged troughs for collecting the preheated water after flowing over said roof structure and passing the same downwardly to said distillation chamber inlet, and discharge conduit means connected to said distillation chamber outlet.

3,224,949
POLYMERIZATION OF DI-OLEFINS
Jacques Grosmangin and Gérard Fernand Aubin, Le Havre, France, assignors to Compagnie Francaise de Raffinage, Paris, France
Filed July 19, 1960, Ser. No. 43,840
Claims priority, application France, Aug. 3, 1959, 801,907, Patent 1,241,211
7 Claims. (Cl. 204—154)



1. In a method of increasing the reaction rate and radiation utilization in the polymerization of conjugated di-olefins into solid polymer products under the action of ionizing radiation where the speed of polymerization varies for different intensities of said radiation, the steps which comprise subjecting said di-olefins to said ionizing radiation for effecting said polymerization reaction, increasing the intensity of said radiation until the resulting increase in speed of formation of said polymer products in less than directly proportional to about the first power of said increased radiation intensity, and lowering the temperature of said reaction until the speed of formation of said polymer products is directly proportional to about the first power of said increased radiation.

3,224,950
CHLORINATION OF AMINOCHLOROPYRIDINE COMPOUNDS
Howard Johnston, Concord, and Mary S. Tomita, Walnut Creek, Calif., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Mar. 6, 1962, Ser. No. 177,755
8 Claims. (Cl. 204—158)

1. A method for preparing amino-polychloro(trichloromethyl)pyridine compounds which comprises heating amino-chloropicoline compounds to a liquid state and passing gaseous chlorine therethrough at temperatures from that sufficient to maintain the reaction medium in a liquid state to about 165° C.

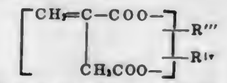
6. A method for preparing 4-amino-2,3,5-trichloro-6-(trichloromethyl)pyridine which comprises

(1) heating a 4-amino-polychloro-α-picoline compound to a temperature of from about 110° C. to about 160° C., and

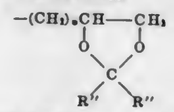
(2) passing gaseous chlorine thereinto while the reaction medium is irradiated with an ultraviolet light source.

3,224,951
RADIATIVE PROCESSING OF THERMOPLASTIC POLYMERS
Gaetano F. D'Alelio, South Bend, Ind., assignor to Scott Paper Company, Philadelphia, Pa., a corporation of Pennsylvania
No Drawing. Filed July 9, 1962, Ser. No. 208,594
8 Claims. (Cl. 204—158)

1. The process of decreasing the solubility of a thermoplastic polymer comprising an unsaturated carboxylic acid ester of a substituted alkylene dioxolane, which comprises subjecting said polymer to a radiant energy source in the 500 to 5000 angstrom region, wherein the polymer is the polymerization product of a mixture comprising a monomeric ester having a formula



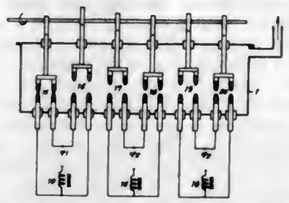
in which R''' is selected from the group consisting of H, saturated aliphatic hydrocarbon radicals containing from one to eight carbon atoms and R^{IV}, and R^{IV} is an alkylene dioxolane radical of the formula



wherein R'' is selected from the class consisting of $-CH_3$ and $-C_2H_5$ and *n* is an integer having a value of 1 to 4 inclusive.

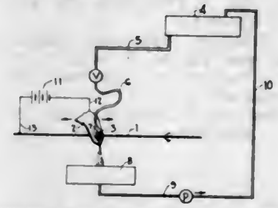
3,224,952
METHOD AND DEVICE FOR THE PRODUCTION OF GASEOUS MIXTURES CONTAINING ACETYLENE AND ETHYLENE
André Claude Vialaron, Lannemezan, France, assignor to Societe des Produits Azotes, Paris, France, a company of France
Filed Apr. 24, 1962, Ser. No. 189,740
5 Claims. (Cl. 204—171)

1. Method of production of gaseous mixtures containing acetylene and ethylene starting from a liquid hydrocarbon, which consists in producing an electric arc between two electrodes in the midst of the said liquid hydrocarbon, interrupting said arc and then restoring said electric arc at a predetermined cycle frequency by imparting to at least one of said electrodes a positive periodic alternating movement which brings said electrodes into contact for the purpose of striking said electric arc and draws said electrodes apart for the purpose of interrupting said electric arc, each of said cycles comprising a positive periodic interruption and a passage of said electric arc having a maximum time-duration of one second, and the relative movement of said electrodes



being determined so that an impact occurs therebetween in each cycle at the moment when said electrodes strike said electric arc, said impact effecting the cleaning of said electrodes.

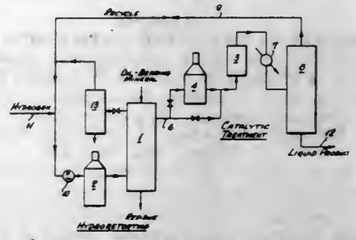
3,224,953
ELECTROLYTIC LATHE
John D. Russell, Malibu, Calif., assignor to Microdot Inc., Pasadena, Calif., a corporation of California
Filed Apr. 7, 1961, Ser. No. 103,185
10 Claims. (Cl. 204—212)



1. An electrolytic lathe comprising work holding means adapted to rotatably support a work piece, reservoir means adapted to contain a supply of electrolyte, an inclined spreader plate means having an opening therein for passage of said work piece and capable of causing said electrolyte to flow in a sheet over said work piece as said work piece is being rotated, said spreader plate means being designed and installed to provide a sheet of electrolyte over said opening having a thickness less than the length of the portion of the article being treated, reciprocatory means to produce relative motion between said work piece and said spreader plate means so that said electrolyte contacts said work piece at successive portions, and electrical means adapted to cause current to flow through said electrolyte and said work piece.

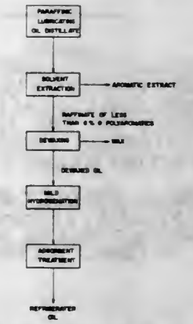
3,224,954
RECOVERY OF OIL FROM OIL SHALE AND THE LIKE
Warren G. Schlinger, Pasadena, Calif., and Du Bois Eastman, deceased, late of Whittier, Calif., by Security First National Bank of Los Angeles, Calif., executor, assignors to Texaco Inc., New York, N.Y., a corporation of Delaware
Continuation of application Ser. No. 816,755, May 29, 1959. This application Feb. 3, 1964, Ser. No. 342,852
7 Claims. (Cl. 208—11)

1. A continuous process for the production of hydrocarbon oils from oil shale by retorting with hydrogen which comprises maintaining a downwardly moving settled bed of oil shale particles in a vertically extended retorting zone, introducing hydrogen into the lower portion of said zone and passing hydrogen at a temperature within the range of from about 800 to about 950° F. at a rate of from about 25,000 to about 150,000 standard cubic feet per ton of shale per hour at a pressure within the range of about 1,000 to about 2,500 pounds per square inch gauge upwardly through said bed effecting retorting of hydrocarbons from said shale, withdrawing said hydrocarbons solely in vapor phase in admixture with unreacted hydrogen from said zone at an intermediate point below the top of said bed and passing resulting mixture at a temperature above about 700° F. directly from said retorting zone into contact with a bed of solid catalyst effective for promoting vapor phase hydrogenation of said hydrocarbons, recovering resulting hydrocarbons from the vaporous effluent of said bed of catalyst, recyling unconverted hydrogen to said process, withdrawing residual oil shale substantially free from



carbon from the lower end of said retorting zone, introducing cold raw shale in particle form into the upper end of said zone as said residual shale is withdrawn from said zone to maintain said bed of shale particles therein, withdrawing hydrogen-rich gas substantially free from readily condensible hydrocarbon vapors from the upper portion of said zone above the point of withdrawal of said hydrocarbons in vapor phase, and recycling said hydrogen-rich gas to the lower portion of said zone.

3,224,955
LUBRICATING OIL PROCESS
Alvin P. Anderson, Woodcliff Lake, N.J., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Dec. 18, 1962, Ser. No. 245,384
5 Claims. (Cl. 208—28)



1. A process for the production of refrigerator oil which comprises extracting a paraffinic lubricating oil distillate with a solvent selective for aromatics to obtain a raffinate having a polyaromatic content less than about 8% by weight, dewaxing the raffinate, catalytically hydrotreating the dewaxed raffinate under mild conditions of about 550° to 700° F., about 450 to 1500 p.s.i.g., and about 1 to 4 liquid hourly space velocity, and contacting the hydrotreated oil with a solid adsorbent.

3,224,956
SEPARATION OF WAX FROM OIL
Joseph Phillips, Petrolia, Pa., and Bernard R. Bluestein, Glen Rock, N.J., assignors to Witco Chemical Company, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed July 22, 1963, Ser. No. 296,446
6 Claims. (Cl. 208—33)

1. In the method of separating wax from oil in which a wax-oil mixture is dissolved in an organic solvent, the

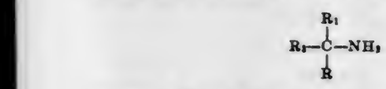
solution cooled to a temperature at which wax solidifies and the solid wax separated from the liquid phase, the improvement of maintaining a minor quantity of an oxidized micro-crystalline wax having an acid number (ASTM D1386–55T) of 15 to 40, a saponification number (ASTM D1387–55T) of 35 to 100 and a Saybolt viscosity at 210° F. (ASTM D88–56) of 150–600, in the solution during said cooling.

3,224,957
PROCESS OF REDUCING DEPOSITION OF DEPOSITS ON HEAT EXCHANGE SURFACES IN PETROLEUM REFINERY OPERATIONS

Eugene A. Kent, Naperville, Ill., assignor to Nalco Chemical Company, Chicago, Ill., a corporation of Delaware

No Drawing. Filed Jan. 12, 1962, Ser. No. 166,447
5 Claims. (Cl. 208—48)

1. In the processing of normally liquid hydrocarbons of petroleum origin in a petroleum refinery operation, the step of passing said normally liquid hydrocarbon of petroleum origin during processing thereof in a petroleum refinery operation in contact with a heated surface in heat exchange relationship therewith, which liquid hydrocarbon contains a small but sufficient amount to inhibit formation of deposits by said liquid hydrocarbon on said heated surface of a reaction product prepared by heating with the removal of water of reaction citric acid and a tertiary-alkyl primary amine of the formula:

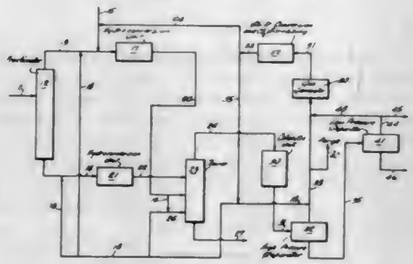


wherein R_1 and R_2 are lower alkyl groups and R_3 is an alkyl group having 8–19 carbons, the molar ratio of amine to acid in the reaction mixture lying in the range of 1–3:1, respectively, until 0.5–3.0 mols of water of reaction per mole of citric are removed from the reaction mixture.

3,224,958
HYDROCONVERSION OF LIGHT AND HEAVY HYDROCARBON FRACTIONS IN SEPARATE REACTION ZONES AND CONTACTING OF THE LIQUID PORTION OF THE HEAVY FRACTION HYDROCONVERSION PRODUCT WITH THE LIGHT FRACTION HYDROCONVERSION PRODUCT

Warren G. Schlinger, Pasadena, Calif., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware

Filed Aug. 7, 1962, Ser. No. 215,378
10 Claims. (Cl. 208—78)

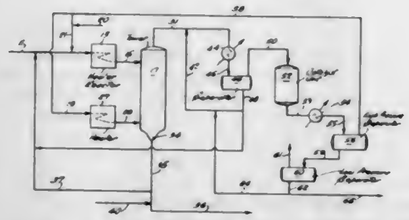


1. A process for the conversion of a wide boiling range hydrocarbon liquid into lighter hydrocarbons which comprises fractionating said hydrocarbon liquid into a light fraction having an end boiling point between about 300 and 650° F. and a heavy fraction having an initial boiling point between about 300 and 650° F., passing said light fraction through a first tubular reaction zone at a temperature between about 800 and 1,500° F. and a pressure between about 500 and 20,000 p.s.i.g. in the presence of added hydrogen under conditions of turbulent flow to produce a first effluent comprising hydrogen and vaporous hydrocarbons, passing said heavy fraction through a second tubular reaction zone at a temperature between about 700 and 950° F. and a pressure between about 500 and 20,000 p.s.i.g. in the presence of added hydrogen under conditions of turbulent flow, removing from the second tubular reaction zone a second effluent comprising hydrogen, vaporous hydrocarbons and non-vaporous hydrocarbons, separating said second effluent into a first gaseous stream comprising hydrogen and vaporous hydrocarbons and a liquid stream comprising non-vaporous hydrocarbons, contacting the separated liquid stream with said first effluent from said first tubular reaction zone, recovering from the contacting zone a second gaseous stream comprising hydrogen and vaporous hydrocarbons and combining said first and second gaseous streams.

3,224,959
HYDROCONVERSION OF HYDROCARBONS WITH THE USE OF A TUBULAR REACTOR IN THE PRESENCE OF HYDROGEN AND THE RECYCLING OF A PORTION OF THE TAR-LIKE VISCOUS RESIDUE

Warren G. Schlinger, Pasadena, Charles H. Brodeur, Claremont, and Charles P. Marion, Whittier, Calif., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware

Filed Aug. 7, 1962, Ser. No. 215,379
10 Claims. (Cl. 208—107)



1. A process for the hydroconversion of a hydrocarbon oil feed stock having a Conradson carbon residue of at least 1% by weight which comprises passing an intimate mixture of hydrogen and said oil through a tubular reaction zone under conditions of turbulent flow at a temperature between about 700 and 1000° F. and a pressure not less than about 500 and not greater than about 5,000 p.s.i.g., separating the reaction zone effluent into a gasiform portion comprising hydrogen and vaporous hydrocarbons and a liquid portion comprising unvaporized hydrocarbons, contacting the liquid portion with a hydrogen stream separately heated to a temperature between about 800 and 950° F. to strip dissolved and entrained gaseous materials from said liquid portion and produce a tar-like viscous residue and introducing at least a portion of said tar-like viscous residue with fresh feed into the tubular reaction zone.

3,224,960
HYDROCRACKING PROCESS EMPLOYING A CATALYST COMPOSITE OF SILVER INTIMATELY ASSOCIATED WITH AN ACID-ACTING REFRACTORY OXIDE SUPPORT

William B. Wilson, Pleasant Hill, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 30, 1962, Ser. No. 191,287
15 Claims. (Cl. 208—111)

14. A method of hydrocracking a heavy hydrocarbon oil which comprises contacting said oil in the presence of hydrogen under hydrocracking conditions with a catalyst comprising from about 0.1% to 20% by weight silver intimately associated wtih an acid-acting refractory oxide, said silver being incorporated into the refractory oxide by ion-exchange of silver cations into a hydrogel of the acid-acting refractory oxide substantially free from sodium.

3,224,961
CRACKING WITH POISON-RESISTANT CATALYST

Henry Erickson, Park Forest, Ill., Howard G. Russell, Munster, Ind., and Robert A. Sanford, Homewood, Ill., assignors to Sinclair Research, Inc., Wilmington, Del., a corporation of Delaware

No Drawing. Filed Sept. 25, 1962, Ser. No. 226,182
5 Claims. (Cl. 208—120)

1. A method for producing gasoline in a hydrocarbon cracking system having a catalytic cracking zone and a catalyst regeneration zone which comprises cracking at elevated temperature in said cracking zone a hydrocarbon feedstock heavier than gasoline and containing at least about 0.3 p.p.m. nickel and at least about 0.5 p.p.m. vanadium contaminants, measured as the oxides, said cracking being conducted in the presence of a fluidized catalyst consisting essentially of about 10 to 65% total alumina prepared by the addition of about 3 to 100 parts by weight of a synthetic alumina hydrate gel to 100 parts of a solid silica-alumina substrate and during which cracking the catalyst becomes contaminated with nickel and vanadium of said hydrocarbon feedstock, cycling the catalyst between the cracking zone and the catalyst regeneration zone in which latter zone carbon is oxidized at an elevated temperature and thereby removed from the catalyst, discarding from the system that portion of contaminated catalyst which satisfies the equation

$$Y=\frac{D}{Z}X-S$$

where Y equals the catalyst discard, Z equals the desired equilibrium nickel content level of the catalyst, X equals the nickel content of the feedstock, D equals the feedstock density and S equals the stack loss, thereby maintaining an equilibrium amount of nickel on the catalyst no greater than about 1000 p.p.m., measured as NiO, bleeding a portion of the vanadium-contaminated catalyst from the cracking system, removing vanadium from the catalyst and returning resulting devanadized catalyst to a hydrocarbon cracking system.

3,224,962
SULFIDE TREATMENT OF REFORMING CATALYST

Douglas Baldwin, Jr., Genoa, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

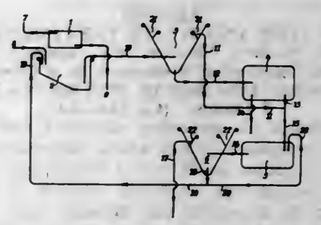
No Drawing. Filed July 27, 1962, Ser. No. 213,029
1 Claim. (Cl. 208—138)

In the reforming of naphtha with a platinum-containing catalyst wherein the catalyst is sulfided prior to contact with said naphtha to avoid excessive hydrocracking of the naphtha, the improvement which comprises partially sulfiding the catalyst with a sulfur-containing gas at a linear velocity of from 4 to 8 feet per minute, said gas being substantially free from ethane and higher boiling hydrocarbons and containing from about 10 to 200 parts per million by weight sulfur.

3,224,963
DEHYDRATION OF AQUEOUS SLUDGES

Marcel Georges Talon and Maurice René Stasse, Viroflay, France, assignors to Equipements Techniques Industriels, Somme, France, a company of the French Republic

Filed Mar. 28, 1961, Ser. No. 98,868
Claims priority, application France, Mar. 29, 1960, 822,795; Nov. 14, 1960, 843,826
10 Claims. (Cl. 210—4)



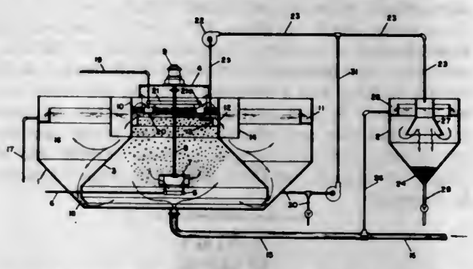
1. The method for the treatment of sludges to recover non-polluted water and to isolate constituent material therefrom, said method comprising the steps of

(a) filtering the sludge to separate coarse material from a resulting first filtrate containing floatable and non-floatable material,
(b) separating said first filtrate into two distinct aqueous fluids, one of said fluids conveying said floatable material, the other of said fluids conveying said non-floatable material,
(c) separating the magma from said non-floatable material fluid to obtain an aqueous second filtrate,
(d) reuniting said aqueous second filtrate with the floatable material fluid into a common flow,
(e) and subjecting said common flow to biochemical precipitation by the action of micro-organism, thereby obtaining non-polluted water and an aqueous precipitate.

3,224,964
APPARATUS AND PROCESS FOR BIOLOGICAL PURIFICATION OF WASTE WATER CONTAINING FOAM FORMING SUBSTANCES

Günther Derenk, Bachschlag, near Frankfurt am Main, Christian Otto Schmid, Frankfurt am Main, and Heinrich Southeimer, Falkenstein, Taunus, Germany, assignors, by mesne assignments, to Fuller Company, Catasauqua, Pa., a corporation of Delaware

Filed Apr. 3, 1961, Ser. No. 100,365
9 Claims. (Cl. 210—8)



7. In a process for biologically treating by aeration in an aeration zone waste waters containing substances producing on the liquid surface a relatively deep layer of foam with a considerable solids content, the improvement comprising aerating and mixing said waters in the aeration zone in such a manner to promote formation of a foam layer, establishing a foam collection zone in said aeration zone subjacent the surface of the foam layer formed by said substances but above the liquid sur-

face in said aeration zone, collecting and confining said foam in said collection zone, destroying said foam in said collection zone by spraying it with water, withdrawing the solids containing liquid formed by said foam and spray liquid from said collection zone to a liquid solids separation zone, withdrawing solids from one part of said separation zone and withdrawing substantially clarified liquid from another part of said separation zone.

3,224,965
WATER AND WASTE TREATMENT

Robert G. Woolery, Monroe, N.Y., assignor to Union Carbide Corporation, a corporation of New York

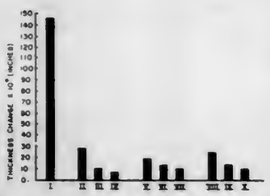
No Drawing. Filed Sept. 10, 1963, Ser. No. 307,781
7 Claims. (Cl. 210—24)

1. A process for removing suspended and colloidal matter from aqueous liquids which comprises contacting an impure aqueous liquid with a flocculating agent and opened Coalinga-type chrysotile asbestos to flocculate and retain the suspended and colloidal matter, wherein said asbestos is characterized in the dry form by a specific surface area greater than 60 square meters per gram, a water retention greater than 1.7 grams of water per gram of asbestos, and an oil adsorption greater than 0.7 gram of dioctyl phthalate per gram of asbestos, and then separating the asbestos, flocculating agent and retained matter from the so-purified aqueous liquid.

3,224,966
LOW FRICTION MATERIAL

Choh Hsien Li, Hopkins, Minn., assignor to Honeywell Inc., a corporation of Delaware

Filed Mar. 7, 1962, Ser. No. 178,151
6 Claims. (Cl. 252—12)



1. A bearing material comprising a solid polymer matrix material having a relatively low coefficient of friction selected from the group consisting of polytetrafluoroethylene, fluorinated ethylenepropylene and polychlorotrifluroethylene; said matrix material containing inert, substantially spherical, non-metallic particles in the range from about 2½% to about 70% by volume; said particles having a relatively high coefficient of friction, a relatively high modulus of elasticity with respect to said matrix material and a hardness value on the Mohs' scale of at least 7.5; said particles being further characterized in that they are selected from the group consisting of alumina, tungsten carbide, zirconia carbide and zirconia and range in size from about 2 to about 10 microns in diameter.

3,224,967
BEARING

Orlando A. Battista, Drexel Hill, Pa., assignor, by mesne assignments, to FMC Corporation, San Jose, Calif., a corporation of Delaware

Filed Aug. 3, 1962, Ser. No. 214,645
8 Claims. (Cl. 252—12)

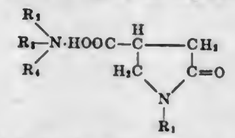
5. A bearing having a load bearing surface with a low coefficient of friction consisting essentially of a substance selected from the group consisting of cellulose crystallite aggregates, water-insoluble and organic solvent-insoluble derivatives of cellulose crystallite aggregates, the aggregates being of a size and size distribution that when a stable dispersion of the aggregates is formed in an aqueous medium, which aggregates constitute about 1% by weight of the dispersion and at least 1% of the weight of the dispersed aggregates have a particle size of up to 1 micron, and the dispersion is applied to glass and the water allowed to evaporate it forms an extremely adherent film on the glass, the aggregates being bonded together in the bearing in a solid mass by the attractive forces between the aggregates, and the bearing containing from 1% to 70% by weight, based on the weight of the aggregates, of a lubricant distributed therein, the lubricant being selected from the group consisting of liquid lubricants and solid lubricants.

3,224,968
LUBRICATING OIL COMPOSITIONS

James B. Hinkamp, Birmingham, Mich., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Dec. 3, 1962, Ser. No. 241,507
2 Claims. (Cl. 252—33.6)

1. A lubricant composition comprising a major proportion of a lubricating oil and from 0.01 to about 2 percent by weight of aliphatic amine 1-(aliphatic radical)-5-oxo-3-pyrrolidinecarboxylate having the formula



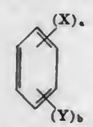
wherein R_1 and R_2 are aliphatic hydrocarbon groups containing from 8 to about 25 carbon atoms, and R_3 and R_4 are selected from the group consisting of hydrogen and aliphatic hydrocarbon groups containing from 8 to about 25 carbon atoms.

3,224,969
NON-EMULSIFYING RUST INHIBITORS IN LUBRICANTS

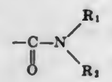
Bruce W. Hotten, Orinda, Calif., assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware

No Drawing. Filed Feb. 5, 1963, Ser. No. 256,253
7 Claims. (Cl. 252—33.6)

3. A grease composition having as grease thickeners a member of the group consisting of metal salts of fatty acids and of terephthalamic acids having incorporated therein from 0.1% to 5% by weight of a benzene polycarboxylic acid amide of the formula



wherein X is a carboxyl radical, Y is an amide radical of the formula



a is a number having a value of at least 2, *b* is a number having a value of at least 1, the sum of *a* and *b* being in the range of 3 to 6, R_1 is an aliphatic hydrocarbon radical containing from 1 to 30 carbon atoms, R_2 is selected from the group consisting of hydrogen and aliphatic hydrocarbon radicals containing from 1 to 30 carbon atoms, and wherein said amide radical is on a benzene carbon atom adjacent to a carbon atom containing a carboxyl group.

3,224,970
SILICON-CONTAINING LUBRICANT ADDITIVES

Edwin L. De Young, Milwaukee, Wis., and Roger W. Watson, Highland, Ind., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana

No Drawing. Filed Jan. 16, 1962, Ser. No. 167,224
8 Claims. (Cl. 252—463)

4. A hydrocarbon lubricating oil containing a sulfur-containing additive normally causing excessive silver wear, and a minor amount sufficient to inhibit such wear of the oil-soluble reaction product obtained by reacting under anhydrous conditions an olefinically unsaturated hydrocarbon and silicon disulfide in a molar ratio of about 1–2:1 of hydrocarbon:disulfide at a temperature of from about 200 to about 350° C. until the evolution of hydrogen sulfide ceases.

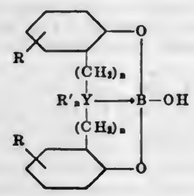
3,224,971
BORATE ESTERS AND LUBRICANT COMPOSITIONS CONTAINING SAID ESTERS

Edwin C. Knowles, Poughkeepsie, and Morris A. Wiley, Fishkill, N.Y., and Edward L. Kay, Akron, Ohio, assignors to Texaco Inc., New York, N.Y., a corporation of Delaware

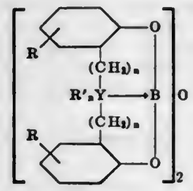
No Drawing. Filed Mar. 27, 1962, Ser. No. 182,970
13 Claims. (Cl. 252—46.3)

7. A lubricating oil containing an intracomplexed borate ester consisting of

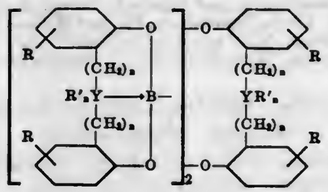
(A)



(B)



and (C)



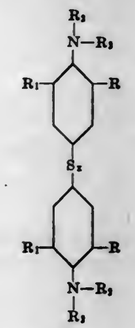
wherein R and R' are selected from the group consisting of hydrogen and an alkyl radical containing 1 to 30 carbon atoms, Y is selected from the group consisting of nitrogen and sulfur and *n* is an integer of 0 when Y is sulfur and 1 when Y is nitrogen, said borate ester is present in an amount sufficient to improve the load carrying properties of said lubricating oil.

3,224,972
STABILIZATION WITH A 4,4'-THIOBIS (2,6-DIALKYLANILINE)

Harold D. Orloff, Oak Park, and Calvin J. Worrel, Detroit, Mich., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Original application June 28, 1960, Ser. No. 39,235, now Patent No. 3,156,728, dated Nov. 10, 1964. Divided and this application July 23, 1962, Ser. No. 211,892
3 Claims. (Cl. 252—47)

1. Organic material normally tending to deteriorate in the presence of air, oxygen or ozone protected against such deterioration by the inclusion therein of a small antioxidant quantity, up to 5 percent of a 4,4'-thiobis[2,6-di(lower) alkyl)aniline] compound having the formula:



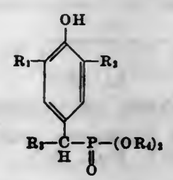
wherein R is an alkyl group having from 2 to 4 carbon atoms, R_1 is an alkyl group having from 1 to 4 carbon atoms, R_2 and R_3 are each selected from the class consisting of hydrogen and lower alkyl groups having from 1 to about 8 carbon atoms, and *x* ranges from 1 to 4 inclusive.

3,224,973
DIALKYL HYDROXYBENZYL PHOSPHONATES AS ANTIOXIDANTS

Gordon G. Knapp, Royal Oak, Mich., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Original application Sept. 1, 1960, Ser. No. 53,354, now Patent No. 3,155,704, dated Nov. 3, 1964. Divided and this application July 23, 1962, Ser. No. 211,891
15 Claims. (Cl. 252—49.8)

1. Organic material normally tending to undergo oxidative deterioration in the presence of air, oxygen or ozone, containing a small antioxidant quantity, up to 5 percent, of a compound having the formula:



wherein R_1 is an alkyl radical having from 1–12 carbon atoms, R_2 is an alkyl radical having from 3–12 carbon atoms, R_3 is selected from the group consisting of hydrogen, alkyl radicals having from 1–12 carbon atoms and mononuclear aryl radicals having from 6–12 carbon atoms, and R_4 is an alkyl radical having from 1–12 carbon atoms.

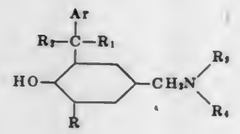
3,224,974
ORGANIC MATERIAL STABILIZED WITH SUBSTITUTED HYDROXY BENZYL AMINES

James C. Boag, Detroit, Mich., and Harry R. Dittmar, Baton Rouge, La., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia

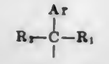
No Drawing. Original application Apr. 27, 1959, Ser. No. 808,931, now Patent No. 3,119,871, dated Jan. 28, 1964. Divided and this application July 26, 1962, Ser. No. 212,708

5 Claims. (Cl. 252—51.5)

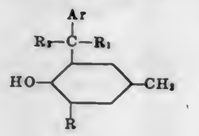
1. Organic material normally tending to undergo deterioration and selected from the group consisting of liquid petroleum hydrocarbons, tetraethyllead antiknock fluid, synthetic polymers derived from polymerization of a monoolefinic monomer of from 2–4 carbon atoms, natural rubber and synthetic diene rubber, containing a small antioxidant quantity, up to 5 percent, of a compound having the formula:



wherein R is an organic hydrocarbon radical from the group consisting of alkyl groups having from 1 to 4 carbon atoms and



R_1 is an alkyl group containing from 1–3 carbon atoms, R_2 is selected from the class consisting of hydrogen and alkyl radicals containing from 1–3 carbon atoms, Ar is an aromatic hydrocarbon radical of from 6 to about 12 carbon atoms, R_3 is selected from the group consisting of alkyl having from 1 to 12 carbon atoms, cycloalkyl having from 5 to 6 carbon atoms, aralkyl having from 7 to 11 carbon atoms, aryl having from 6 to 10 carbon atoms, alkaryl having from 7 to 12 carbon atoms and the formula:



and R_4 is selected from the group consisting of hydrogen, alkyl having from 1 to 12 carbon atoms, cycloalkyl having from 5 to 6 carbon atoms, aralkyl having from 7 to 11 carbon atoms, aryl having from 6 to 10 carbon atoms and alkaryl having from 7 to 15 carbon atoms.

3,224,975
LUBRICATING OIL COMPOSITIONS

James B. Hinkamp, Birmingham, Mich., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Dec. 3, 1962, Ser. No. 241,508

2 Claims. (Cl. 252—51.5)

1. A lubricant composition comprising a major proportion of a lubricating oil and from 0.01 to about 2 percent by weight of 1-(aliphatic radical)-3-carboxy-5-oxopyrrolidine wherein said aliphatic radical is a hydrocarbon group containing from 8 to about 25 carbon atoms.

3,224,976
DETERGENT BAR

Richard Edward Farrar, Morris Plains, and Albert Lyle Schulerud, Nutley, N.J., assignors to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 8, 1960, Ser. No. 47,925

2 Claims. (Cl. 252—119)

1. A milled and plodded detergent bar particularly suitable for cleaning dry skin comprising 40 to 60% of water soluble sodium soap of higher fatty acids of 10 to 18 carbon atoms, 25 to 60% thereof being of 10 to 14 carbon atoms, 75 to 40% being of 16 to 18 carbon atoms and the soap being 65 to 100% of soap of saturated higher fatty acids, 8 to 20% of sodium higher fatty acid monoglyceride sulfate having a fatty acyl group of 10 to 18 carbon atoms, 3 to 10% of sodium salt of higher fatty acyl amide of a lower amino sulfonic acid in which the fatty acyl group is of 12 to 18 carbon atoms and the lower amino sulfonic acid is of 2 to 3 carbon atoms between the amino and sulfonic acid groups, 4 to 7% of petrolatum, 30–70% of glycerol by weight of the petrolatum, 1 to 2.5% of lanolin, 2 to 10% of starch having a maximum alkali number of about 10 and 8 to 14% of moisture.

3,224,977
LOW POWER NUCLEAR REACTORS

Arthur T. Biehl, Danville, Calif., assignor, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission

Original application Nov. 26, 1956, Ser. No. 624,295, now Patent No. 3,042,599, dated July 3, 1962. Divided and this application Aug. 14, 1961, Ser. No. 146,390

10 Claims. (Cl. 252—301.1)

1. A core material for nuclear reactors which comprises a solid cured intimate mixture of from about 2½% to about 7½% by weight of a fuel selected from the group consisting of the thermally fissionable uranium and the trans-uranic elements, oxides, organic and inorganic salts thereof and mixtures thereof, and from about 92½% to about 97½% by weight of a solid hydrogenous organic polymeric binder material having a hydrogen density above about 5×10^{22} hydrogen atoms/cc. and having thermal stability at a temperature of at least about 100° C.

3,224,978
TRITIUM ACTIVATED SELF-LUMINOUS COMPOSITIONS

John G. MacHutchin and Donald B. Cowan, Berwick, and Ivor W. Allam, Bloomsburg, Pa., and William H. Byler, Morristown, N.J., assignors to United States Radium Corporation, Morristown, N.J., a corporation of Delaware

No Drawing. Filed Dec. 5, 1962, Ser. No. 242,358

9 Claims. (Cl. 252—301.1)

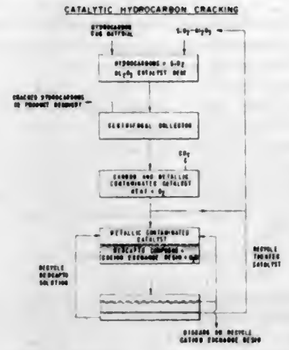
1. A tritium activated self-luminous composition comprising inorganic phosphor particles having an average particle size in the range from 6 to 30 microns intimately coated with a thin inner layer of a substantially non-volatile tritiated compound on which there is deposited a minor amount of a thin outer barrier layer of an inorganic siliciferous compound selected from the group consisting of silica, aluminum silicate, barium silicate, cadmium silicate, calcium silicate, magnesium silicate, strontium silicate, and zinc silicate.

3,224,979
REMOVAL OF METAL CONTAMINANTS BY USE OF MERCAPTO-COMPOUND AND CATION EXCHANGE RESIN

Lynn G. McLaughlin, Lynnfield, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Feb. 8, 1963, Ser. No. 257,298

6 Claims. (Cl. 252—414)



1. A composition for removing metallic impurities from the surface of silica-alumina hydrocarbon cracking catalysts consisting essentially of an aqueous solution of about .001 to 25%, by weight, of a compound of the formula



where

R is selected from the group consisting of hydrogen, —COOH, alkyl radicals containing from 1 to 4 carbon atoms, and hydroxyalkyl radicals containing from 1 to 5 carbon atoms; and

X is selected from the group consisting of $(CHR')_nOH$, $(CHR')_nNH_2$, and $(CHR')_{n-1}COOH$

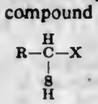
where

R' is selected from the group consisting of hydrogen, —COOH, hydroxyalkyl radicals containing from 1 to 4 carbon atoms and alkyl radicals containing from 1 to 4 carbon atoms; and

n is a whole positive number less than 3,

said aqueous solution containing suspended therein 0.5 to 50% by weight of a cation exchange resin.

3. A method for reducing the amount of carbon and hydrogen gas produced by a catalytic hydrocarbon cracking process which uses a silica-alumina cracking catalyst which is contaminated with carbon and hydrogen gas producing metallic impurities selected from the group consisting of iron, nickel and vanadium as a result of being used during the period of at least one cycle in said cracking process which comprises, removing from said process at least a portion of said contaminated catalyst at a stage subsequent to the removal of carbon from the surface thereof, contacting said catalyst for a period ranging from 1 to 8 hours with an aqueous solution of .001 to 25% by weight of a compound having the formula



where

R is selected from the group consisting of hydrogen, —COOH, alkyl radicals containing from 1 to 4 carbon atoms, and hydroxyalkyl radicals containing from 1 to 5 carbon atoms; and

X is selected from the group consisting of $(CHR')_nOH$, $(CHR')_nNH_2$, and $(CHR')_{n-1}COOH$

where

R' is selected from the group consisting of hydrogen, —COOH, hydroxyalkyl radicals containing from 1 to 4 carbon atoms and alkyl radicals containing from 1 to 4 carbon atoms; and

n is a whole positive number less than 3, separating the contacted catalyst from said aqueous solution and returning said contacted catalyst to said catalyst hydrocarbon cracking process.

3,224,980
CATALYST PREPARATION AND COMPOSITION

Harold E. Swift, Gibsonia, Pa., assignor to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed Apr. 20, 1964, Ser. No. 361,233

18 Claims. (Cl. 252—429)

1. A process for producing a solid complex which consists essentially of reacting a titanium tetrahalide with a dialkylaluminum halide, wherein the alkyl portion thereof has from one to six carbon atoms, in the presence of cyclohexane, the molar ratio of said titanium compound to said aluminum compound being from about 2:1 to about 1.3:1 and the molar ratio of cyclohexane relative to the combined moles of said titanium compound and said aluminum compound being from about 32.20:1 to about 1.75:1.

3,224,981
SUPPORTED COPPER OXIDE AND PALLADIUM CATALYST COMPOSITION

Ruth E. Stephens, Detroit, Daniel A. Hirschler, Jr., Birmingham, and Frances W. Lamb, Detroit, Mich., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Dec. 29, 1961, Ser. No. 163,077

6 Claims. (Cl. 252—460)

3. A catalyst composition especially adapted to substantially oxidize the unburned hydrocarbons and carbon monoxide constituents of the exhaust gas of internal combustion engines, said composition consisting essentially of a major portion of a high specific surface area support, selected from the group consisting of activated transitional aluminas, aluminum silicates, aluminum gels, magnesium gels, thoria, magnesia and zirconia from about 0.5 to 25 percent copper in an oxide form and from 0.01 to about 3 percent palladium.

3,224,982
METHOD OF PREPARING A FOAMED LACTONE POLYMER

Nathan L. Zutty and Frank J. Welch, Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Dec. 4, 1961, Ser. No. 156,994

1 Claim. (Cl. 260—2.5)

A process for producing a lactone-containing foam which comprises heating at from 100° C. to 250° C. and at a pressure up to 7,500 p.s.i.g. a uniform vinylidene chloride/methyl methacrylate copolymer so as to produce the lactone polymer thereof together with methyl chloride, and then releasing the pressure at from about 50° C. to 200° C. to foam said lactone polymer.

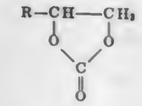
3,224,983

PROCESS OF FOAMING A CARBONATE CONTAINING POLYMER CONTAINING AN INITIATOR

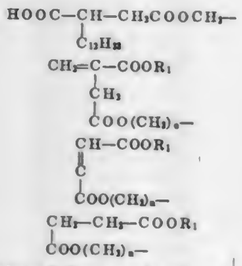
Gaetano F. D'Alelio, South Bend, Ind., assignor to Scott Paper Company, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed May 21, 1962, Ser. No. 196,431
4 Claims. (Cl. 260—2.5)

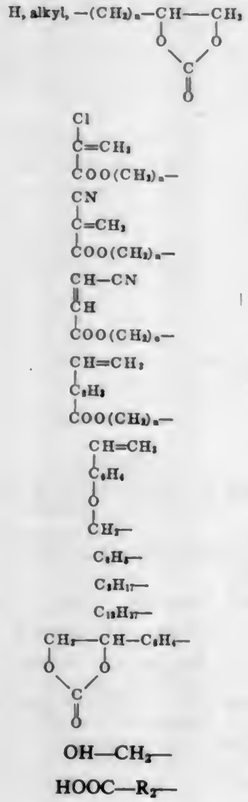
1. The process of foaming synthetic thermoplastic polymers which comprises heating to release a foaming gas, at a temperature of at least 100° C., a polymer which is softened at such temperature, said polymer containing as a chemically combined derivative, at least one member of the class consisting of an organic carbonate of the general formula



where R is



where R_1 is selected from at least one member of the class consisting of



and aromatic nucleus; provided, when R_2 is substituted, said aromatic substituents are selected from at least one member of the group consisting of alkyl, aryl, aralkyl; alkaryl; alkoxy; aryloxy, carbolkoxy, acetoxy, halogeno, nitro, oxy, amino, imino, sulfo, sulfoxy, and mercapto; *n* in the formulae is an integer from one to four; said polymer having admixed therewith an activator selected from the class consisting of the metals of Groups I, II and III of the Periodic Table, the inorganic, acidic salts of said metals, salts of weak inorganic acids, and salts of organic acids.

3,224,984

PROCESS OF PREPARING EXPANDED POLYSTYRENE CONTAINING A POLYOLEFIN

Alec N. Roper, Sale, and Edward G. Barber, East Didsbury, Manchester, England, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Jan. 2, 1963, Ser. No. 248,882
Claims priority, application Great Britain, Jan. 2, 1962, 146/62
7 Claims. (Cl. 260—2.5)

1. A method for producing expanded polystyrene having an average cell diameter below 95 microns, which comprises heating to a temperature between 90° and 120° C. a polystyrene composition containing evenly distributed therein from 0.01 to 0.5 percent by weight of finely divided particles of polyolefin having a weight average molecular weight between 1000 and 4000 and, as a volatile expanding agent, a saturated hydrocarbon boiling between 10° and 90° C.

3,224,985

ELASTOMERIC BLENDS OF AN ETHYLENE/1,4-HEXADIENE COPOLYMER AND A DIENE RUBBER

Edward K. Gladding, New Castle, and Jack L. Nyce, Newark, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Nov. 19, 1962, Ser. No. 238,753
16 Claims. (Cl. 260—5)

1. A sulfur-curable blend consisting essentially of (a) an amount of an ethylene/1,4-hexadiene copolymer sufficient to impart ozone resistance to the blend and (b) a diene rubber having at least about 20 mol per cent conjugated diene monomer units incorporated therein; said ethylene copolymer having at least about 2.4 gram-moles of C=C groups per kilogram and exhibiting an inherent viscosity of at least 0.1 (measured on a 0.1 percent by weight solution in tetrachloroethylene at 30° C.).

3,224,986

CATIONIC EPICHLOROHYDRIN MODIFIED POLYAMIDE REACTED WITH WATER-SOLUBLE POLYMERS

Robert W. Butler, Wilmington, Del., and Gerald I. Keim, West Grove, Pa., assignors to Hercules Powder Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Apr. 18, 1962, Ser. No. 188,558
The portion of the term of the patent subsequent to Feb. 23, 1977, has been disclaimed
10 Claims. (Cl. 260—9)

1. Process of preparing a highly water-insoluble and a highly water-insensitive product which comprises the steps of (1) reacting at a temperature of 110° C.–250° C. for ¼ hour–2 hours a polyalkylene polyamine and a saturated dicarboxylic acid having 3–10 carbon atoms employing a polyalkylene polyamine/dicarboxylic acid mole ratio of 0.8/1–1.4/1, thereby producing a polyamide, said polyalkylene polyamine having the formula $H_2N\{(C_nH_{2n})NH\}_yC_nH_{2n}NH_2$ where *n* is an integer of at least 2 and *y* is an integer of at least 1 to 7, (2) reacting at a temperature of 45° C.–100° C. said polyamide with epichlorohydrin employing a mole ratio of epichlorohydrin/secondary amine groups of said polyamide of 0.5/1–1.8/1, said reaction being continued until the reaction mixture has reached a Gardner viscosity of B–E and M–X in preparing a 25% and a 50% solids resins, respectively, (3) reducing the pH of an aqueous solution of said polyamide-epichlorohydrin reaction product to such an extent that 10% and 25% aqueous solutions thereof have a pH of not in excessof 6 and 4, respectively, thereby producing a highly stable cationic water-soluble thermosetting resin free of epoxide groups, (4) reacting an aqueous solution of said stable cationic thermosetting resin with an aqueous solution of a water-soluble polymer at a pH of 1.5–12, the amount of said stable cationic thermosetting resin employed being 0.5%–20% by weight of said water-soluble polymer, and (5) finally drying said resin-polymer aqueous solution, said water-soluble polymer having a group selected from those consisting of carboxyl, hydroxyl, amine and amide groups and any combination of said groups, the major part of said water-soluble polymer comprising at least 10 monomer units, said water-soluble polymer being selected from the group consisting of cellulose ethers, cellulose esters, starches, starch ethers, vegetable gums, proteins, and synthetic polymers prepared from ethylenically unsaturated monomers.

3,224,987

TRANSPARENT PRODUCTS FROM POLY-ε-CAPROLACTAM AND PROCESS OF MAKING SAME

Jacob C. F. Kessler, Rozendaal, Netherlands, assignor to American Enka Corporation, Enka, N.C., a corporation of Delaware

No Drawing. Filed Apr. 26, 1961, Ser. No. 105,554
Claims priority, application Netherlands, May 10, 1960, 251,441
8 Claims. (Cl. 260—18)

1. A process for preparing transparent articles from poly-ε-caprolactam which comprises treating poly-ε-caprolactam granules with the following materials: (1) compounds of the class consisting of hydrogen halides and alkali salts thereof, (2) aliphatic amines of the class consisting of octadecylamine, tetradecylamine, tetracosylamine, dioctadecylamine, and methyldioctadecylamine, and (3) zinc stearate, said treatments being in any order of succession and combination.

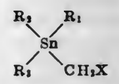
3,224,988

URETHANE OIL COATING COMPOSITION COMPRISING AN ORGANOTIN VISCOSITY CONTROL AGENT

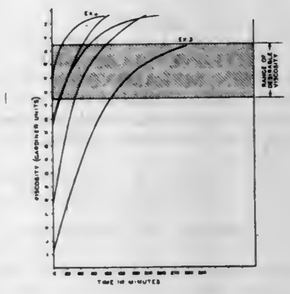
Gerald R. Skreckoski, Buffalo, N.Y., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York

Filed Dec. 29, 1960, Ser. No. 79,397
3 Claims. (Cl. 260—22)

1. A method for producing a film-forming component for protective coatings which comprises first admixing and heating from about 50° to about 75° C. a reactant mixture selected from the group consisting of ester mixtures and ester-polyol mixtures wherein the esters in said reactant mixture are predominately partial esters of unsaturated fatty acids characteristic of glyceride drying oils, wherein said reactant mixture contains from 0.5 to 5.0 free hydroxyl groups per ester linkage present, wherein from 2% to 40% of the total of (a) the free hydroxyl and (b) the ester groups present in said reactant mixture are groups bonded to structural residues of polyether polyols having molecular weights above 500, and about 0.001% by weight to about 0.5% by weight, based on the weight of the reactant mixture, of an organotin viscosity control agent of the formula



wherein CH_2X represents a hydrocarbon alkane radical of from 1 to 18 carbon atoms, wherein R_1 is a member



of the group consisting of a hydrocarbon alkane radical of from 1 to 18 carbon atoms, hydrogen, halogen and a hydrocarbon acyloxy group, wherein R_2 and R_3 are members of the group consisting of a hydrocarbon alkane radical of from 1 to 18 carbon atoms, hydrogen, halogen, a hydrocarbon acyloxy group, an oxygen atom joined to the tin atom by a double bond at positions R_2 and R_3, and a sulfur atom joined to the tin atom by a double bond at positions R_2 and R_3, and then admixing the reactant mixture and organotin viscosity control agent with an organic polyisocyanate, wherein the ratio of the number of free isocyanate groups to the number of free hydroxyl groups in said reactant mixture is greater than 0.8 and wherein said reaction product of said organic polyisocyanate and said reactant mixture is substantially free of unreacted isocyanate groups.

3,224,989

VICINAL ACRYLOXY HYDROXY LONG CHAIN FATTY COMPOUNDS AND POLYMERS THEREOF

Charles S. Nevin, Decatur, Ill., assignor to A. E. Staley Manufacturing Company, Decatur, Ill., a corporation of Delaware

No Drawing. Filed June 26, 1961, Ser. No. 119,339
11 Claims. (Cl. 260—23)

1. A polymerizable vinylated long-chain fatty compound having an aliphatic chain of from 10 to 24 carbon atoms and on said aliphatic chain vicinal acryloxy and hydroxy substituents, said acryloxy substituent having attached to the alpha carbon atom thereof a group selected from the class consisting of hydrogen, cyano, halogen, phenyl, benzyl, lower alkyl and —CH_2—COO (lower alkyl), said long chain fatty compound having no vinylation except that in said acryloxy groups, any epoxy groups being only in said aliphatic chain.

3,224,990

PREPARING A WATER SOLUBLE CATIONIC THERMOSETTING RESIN BY REACTING A POLYAMIDE WITH EPICHLOROHYDRIN AND AMMONIUM HYDROXIDE

Douglas C. Babcock, Bellevue, Wash., assignor to Pacific Resins & Chemicals, Inc., Seattle, Wash., a corporation of Washington

No Drawing. Filed Mar. 11, 1963, Ser. No. 264,057
2 Claims. (Cl. 260—29.2)

1. A process of preparing an aqueous solution of a cationic thermosetting resin which comprises reacting diethylene triamine with adipic acid to form a water-soluble pre-polymer, the molar ratio of the amine to the acid being 1.0:1.0, thereafter reacting the pre-polymer in aqueous solution with epichlorohydrin and ammonium hydroxide in a molar ratio of the pre-polymer to ammonium hydroxide to epichlorohydrin of 1.0:0.5:2.5 to form a water soluble cationic thermosetting resin having a pH in the range of 3.4 to 3.6.

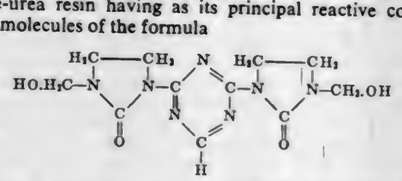
3,224,991

FINISHING PROCESS AND COMPOSITION COMPRISING ETHYLENETRIAZINE-UREA-FORMALDEHYDE RESIN, MELAMINE-FORMALDEHYDE RESIN AND UREA-FORMALDEHYDE RESIN

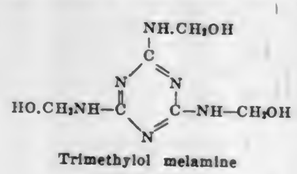
Gustav Wilfert, Wuppertal-Elberfeld, Germany, assignor to American Enka Corporation, Enka, N.C., a corporation of Delaware

No Drawing. Filed Dec. 21, 1962, Ser. No. 246,354
Claims priority, application Germany, Jan. 4, 1962, V 21,830
7 Claims. (Cl. 260—29.4)

1. A process for producing nonshrinking rayon fabric having a high degree of crease recovery comprising fininshing the fabric with an aqueous solution containing a mixture of 85 to 95 grams per liter of an ethylenetriazine-urea resin having as its principal reactive component molecules of the formula

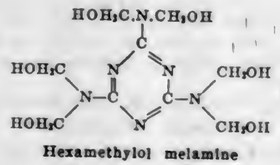


25 to 35 grams per liter of a melmamine resin having as its principal reactive components molecules of the formulae



Trimethylol melamine

and



Hexamethylol melamine

and 10–12 grams per liter or a urea resin condensation product of urea and formaldehyde in the presence of a washfast substance to impart hand and firmness, a wetting agent, a wash-fast hydrophobic softening agent and a catalytic amount of diammonium phosphate, drying the fabric to a low moisture content, curing the thus dried fabric, and calendering the fabric to obtain a satisfactory hand.

3,224,992

WATER SOLUBLE COMPOSITIONS SUITABLE FOR BAKED FILMS

James R. Stephens, Gary, Ind., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana

No Drawing. Filed Sept. 12, 1961, Ser. No. 137,518
16 Claims. (Cl. 260—29.6)

1. A composition suitable for the formation of a heat-cured surface coating film, which composition comprises:

(A) dissolved heat curable resin consisting essentially of a polyester resin which is the polycondensation reaction product of (a) an acidic member selected from the class consisting of trimellitic acid, trimellitic anhydride, hemimellitic acid, hemimellitic anhydride and trimesic acid, (b) a dihydroxyl affording material having only carbon, hydrogen and oxygen atoms, and (c) an alkanedioic acid having 4–10 carbon atoms, the reaction system containing acidic member/dihydroxyl/alkanedioic acid in molar ratio in the range of 2.3-3.5/7/0.0-3.0, the hydroxyl group affording reactants and carboxyl group affording reactants being controlled to provide a molar ratio hydroxyl groups/carboxyl groups charged to the reaction in the range of 1.05–1.50, and said polyester being characterized by an acid number of about 25–80,

(B) dissolved anti-cratering agent which agent is poly-N-vinyl-5-methyl-2-oxazolidinone, and said resin and said agent being present in a weight proportion of about 98:2 to about 75:25, and

(C) water in an amount to dissolve said resin and said agent and to impart the desired fluidity to said composition, said water containing dissolved alkaline agent selected from the class consisting of ammonia, alkyl amine, heterocyclicamine and alkanolamine, in an amount sufficient to bring said resin into aqueous solution and said composition having a pH of about 5–8.

3,224,993

TITANIUM DIOXIDE PIGMENT COATED WITH POLYVINYL ALCOHOL

Reginald George Wynne, West Hartlepool, England, assignor to British Titan Products Company Limited, Durham, England, a company of Great Britain

No Drawing. Filed Mar. 26, 1962, Ser. No. 182,686
Claims priority, application Great Britain, Apr. 10, 1961, 12,877/61
16 Claims. (Cl. 260—29.6)

1. A low viscosity, pigmented surface coating composition having reduced tendency to flocculate comprising an aqueous emulsion of at least one film-forming polymer selected from the group consisting of homopolymers and copolymers of vinyl acetate, styrene, butadiene, acrylic acid and substituted acrylic acid in which there is incorporated pigmentary titanium dioxide particles coated with a normally solid polyvinyl alcohol polymer.

3,224,994

PLASTICIZED ISOTACTIC COPOLYMERS OF STYRENE AND CHLOROSTYRENE

Robert D. Lundberg, St. Albans, and Frederick E. Bailey, Jr., Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed June 25, 1963, Ser. No. 290,329
4 Claims. (Cl. 260—30.6)

1. A flexible styrene polymer composition of (a) an isotactic, semi-crystalline copolymer of styrene and chlorostyrene containing from 10 to 60 weight percent polymerized chlorostyrene and the balance being polymerized styrene and (b) from 10 to 70 weight percent, based upon the weight of said copolymer, of a plasticizer selected from the group consisting of (1) tri(hydrocarbyl)phosphates having from 4 to 15 carbon atoms in each hydrocarbyl group thereof and (2) dicarboxylic esters of the formulae:



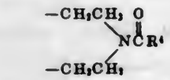
and



wherein each R, when taken individually, is selected from the group consisting of a monovalent hydrocarbon radical of from 1 to 15 carbon atoms, and an alkoxyethyl radical having from 1 to 5 carbon atoms in the alkoxy group thereof; R^1 is a divalent hydrocarbon radical of from 2 to 8 carbon atoms; each R^2 when taken individually, is an alkyl radical of from 5 to 8 carbon atoms; and R^3 is a member selected from the group consisting of a divalent radical of the formula:

$$-(CH_2CH_2O)_x-CH_2CH_2-$$

wherein x is an integer having a value of from 1 to 3, inclusive, and a divalent



radical wherein R^4 is an alkyl radical of from 4 to 8 carbon atoms.

3,224,995

POLYVINYL CHLORIDE PLASTICIZED WITH DIALKOXYALKYL HOMOTEREPHTHALATES

David O. De Pree, Baton Rouge, La., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Original application Feb. 16, 1961, Ser. No. 89,677. Divided and this application May 31, 1963, Ser. No. 287,737
4 Claims. (Cl. 260—31.4)

1. As a new composition of matter, polyvinyl chloride containing as a plasticizer therefor a dialkoxyalkyl homoterephthalate in which each alkoxyalkyl group contains from 4 to about 24 carbon atoms.

3,224,996

VINYL CHLORIDE RESINS PLASTICIZED WITH COPOLYMERS OF AN ACRYLATE AND EITHER ETHYLENE OR PROPYLENE

Clifford E. Balmer, Holland, Clarence A. Brown, Hatboro, and Melvin D. Hurwitz, Southampton, Pa., and James E. Masterson, Moorestown, N.J., assignors to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Nov. 14, 1962, Ser. No. 237,735
7 Claims. (Cl. 260—31.8)

1. A plasticized resinous composition formed from a polymer of vinyl chloride, selected from the group consisting of homopolymers of vinyl chloride and copolymers of a major portion of vinyl chloride and an ethylenically unsaturated monomer copolymerizable therewith, and, as a plasticizer, a liquid copolymer of an olefin from the class consisting of ethylene and propylene and an acrylate from the class consisting of ethyl acrylate, methyl acrylate, and methyl methacrylate, said copolymer having a viscosity in the range of from H to Z_5 for the ethylene-based copolymer and from H to Z_{10} for the propylene-based copolymer, both on the Gardner-Holdt scale, an acid number which does not exceed 3, a molecular weight of between 500 and 1500, and a molar ratio of the olefin to the acrylic monomer from 1 to 3 when ethylene is the olefin and 0.5 to 2.0 when propylene is the olefin, in which ratios the upper limit is a function of molecular weight as expressed by the equations:

(A) Moles of ethylene/mole of acrylic monomer

$$=X+\tfrac{1}{4}\left(\frac{1500}{\text{molecular weight}}\right)$$

where X=1.75 for ethyl acrylate and methyl methacrylate and X=2.25 for methyl acrylate; and

(B) Moles of propylene/mole of acrylic monomer

$$=X+\tfrac{1}{4}\left(\frac{1500}{\text{molecular weight}}\right)$$

where X=1.0 for ethyl acrylate and methyl methacrylate and X=1.25 for methyl acrylate.

3,224,997

ALUMINUM-TITANIUM DIOXIDE FILLED THERMOPLASTIC RESIN COMPOSITIONS

Paul H. Hunter, Highland Park, N.J., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Continuation of application Ser. No. 587,210, May 25, 1956. This application Mar. 23, 1962, Ser. No. 182,112
5 Claims. (Cl. 260—41)

1. An opaque pigmented calenderable normally solid thermoplastic resin composition consisting essentially of a thermoplastic resin, and in intimate admixture therein titanium dioxide pigment and a particulate metallic aluminum pigment, said titanium dioxide pigment being present in an amount of from about 2.5 to about 25 percent by weight based on the total weight of the pigmented resin composition, and said metallic aluminum being present in an amount of from about 0.01 to about 0.10 percent by weight based on the total weight of the pigmented resin composition and being of a particle size such that the covering area on water is from about 7000 to 25,000 square centimeters per gram.

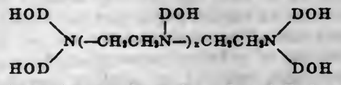
3,224,998

RUBBER COMPOSITIONS AND FORMING PROCESS

Robert W. Kirkconnell, Homewood, Ill., assignor to Nalco Chemical Company, Chicago, Ill., a corporation of Delaware

No Drawing. Filed Aug. 23, 1961, Ser. No. 133,319
14 Claims. (Cl. 260—41.5)

1. The method of reinforcing nautral and synthetic polymeric rubbers which comprises the steps of forming a mix of rubber selected from a group consisting of natural and synthetic rubber, non-reinforcing fillers and at least a cross-linking amount of a completely substituted polyamine composition, said polyamine composition having the following structural formula:



where x is an integer from 0 to 5 and D is a divalent aliphatic hydrocarbon radical containing at least 4 carbon atoms, uniformly blending all the constituents of the mix, forming said mix into a suitable shape and vulcanizing said mix sufficiently to bond said fillers with said rubbers.

3,224,999

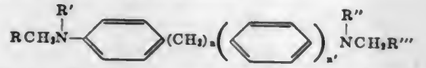
PROCESS OF PROMOTING LOW HYSTERESIS OF RUBBER USING ARYLENEBISMETHYLIMIDES

Lloyd A. Walker, Akron, Ohio, assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed Sept. 10, 1963, Ser. No. 307,813
8 Claims. (Cl. 260—41.5)

1. A process which comprises mixing at a temperature of at least 100° C. a rubber selected from the group consisting of natural rubber, synthetic rubbery homopolymers

of aliphatic conjugated diolefin hydrocarbons and synthetic rubbery copolymers containing at least 50% of an aliphatic conjugated diolefin hydrocarbon copolymerized with correspondingly not more than 50% of a copolymerizable monoethylenically unsaturated compound with a relatively large amount of rubber reinforcing pigment and a compound having the formula



where n and n' are integers zero to one inclusive with the proviso that when n' is zero n is also zero, R' and R'' are selected from a group consisting of hydrogen, nitroso and lower alkyl radicals and R and R''' are selected from a group consisting of phthalimido, thiophthalimido, dithiophthalimido, halophthalimido, lower alkyl phthalimido, lower alkoxy phthalimido, nitrophthalimido, tetrahydrophthalimido, 1,2-benzisothiazolinyl-3-one-1,1-dioxide, indazolyl, haloindazolyl, lower alkylindazolyl, lower alkoxy indazolyl, nitroindazolyl, phthalazinonyl, succinimido, thiazolidinedionyl, bicyclo [2.2.1]hept-5-enedicarboximido, hydantoinyl, phenylhydantoinyl, lower alkyl hydantoinyl and di(lower alkyl)hydantoinyl, any vulcanization ingredients if present being present in amount insufficient to cause vulcanization, thereafter incorporating accelerating and vulcanizing ingredients and vulcanizing the composition.

3,225,000

STABILIZATION OF ACROLEIN POLYMERS WITH SECONDARY AMINES

Frank J. Welch, Charleston, W. Va., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed June 9, 1961, Ser. No. 115,925
4 Claims. (Cl. 260—45.8)

3. The stabilized composition of polyacrolein, and phenothiazine in an amount sufficient to stabilize said polyacrolein against oxidation.

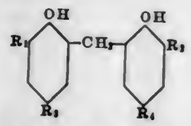
3,225,001

COLOR-STABLE VINYL CHLORIDE POLYMERS

George J. Darsa, Bronx, N.Y., assignor to National Lead Company, New York, N.Y., a corporation of New Jersey

No Drawing. Filed Mar. 27, 1961, Ser. No. 98,301
8 Claims. (Cl. 260—45.75)

1. A plastic composition stable at temperatures above 375° F. comprising a polyvinyl chloride homopolymer resin and a stabilizer present in an amount from about 0.6 to about 10 parts of resin, said stabilizer consisting essentially of (1) a primary stabilizer comprising a combination of at least one member selected from the group consisting of barium phenolates and barium monocarboxylates and at least one member selected from the group consisting of cadmium monocarboxylates and zinc monocarboxylates, and (2) an auxiliary stabilizer comprising a combination of a hindered bisphenol corresponding to the formula



where R_1, R_2, R_3, and R_4 are alkyl groups having a maximum of 4 carbon atoms and a trivalent organo-phosphorus compound corresponding to one of the following formula, $RO)_3P$ and $(RO)_2PR'$, where R and R' are radicals selected from the group consisting of alkyl and aryl radicals containing from 6 to 15 carbon atoms, said hindered bisphenol being present from about 0.005 to about 10 parts per 1 part of said trivalent organo-phosphorus compound, and where said auxiliary stabilizer is present from about 0.05 to about 10 parts per 1 part of said primary stabilizer.

3,225,002

DIESTERS OF TERMINALLY UNSATURATED MONOCARBOXYLIC ACIDS AND HALOPHENOXYMETHYL, ALKANE DIOLS

Marco Wismer and Roger M. Christenson, Gibsonia, Pa., assignors to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed Feb. 17, 1961, Ser. No. 89,919
12 Claims. (Cl. 260—47)

1. A diester of an alpha, beta, monoethylenically unsaturated monocarboxylic acid in which the unsaturation is present in a terminal $CH_2{=}C<$ group, with a halophenoxymethyl alkanediol, in which at least one of the hydroxy groups is a primary group, and wherein the halogen is selected from the class consisting of chlorine, bromine and fluorine and the alkanediol group attached to the halophenoxymethyl radical contains from about 2 to 12 carbon atoms wherein no hydroxyl group is attached to a carbon atom which is more than three carbon atoms from the either linkages.

12. An interpolymer of the diester of claim 1 with at least one polymerizable monomer containing a $CH_2{=}C<$ group.

3,225,003

LINEAR COPOLYESTER OF HYDROQUINONE WITH A MIXTURE OF HEXAHYDROISOPHTHALIC AND HEXAHYDROTEREPHTHALIC ACIDS

Arthur R. Macon, Kinston, N.C., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Jan. 29, 1962, Ser. No. 169,644
7 Claims. (Cl. 260—47)

1. The fiber-forming polymeric linear copolyester consisting essentially of poly(phenylene hexahydroisophthalate/hexahydroterephthalate).

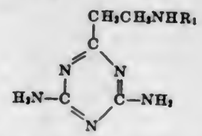
3,225,004

THERMOSETTING PLASTIC COMPOSITIONS DERIVED FROM POLYGLYCIDYL ETHERS OF BIS-(p-HYDROXYPHENYL) SULFONES AND CERTAIN FATTY GUANAMINES AND PROCESS OF PREPARING SAME

Dwight E. Peerman, 10201 Hillside Lane, Minneapolis, Minn.

Filed Dec. 1, 1964, Ser. No. 415,006
6 Claims. (Cl. 260—49)

1. A partially cured composition, stable for extended periods of time at room temperature and capable of being cured at elevated temperatures to form an infusible and insoluble polymer, consisting essentially of a reaction product prepared by the process consisting of: (1) reacting, at a temperature in the range of about 120 to 210° C., a polyglycidyl ether of a bis (p-hydroxyphenyl) sulfone and a guanamine having the formula



where R_1 is an aliphatic hydrocarbon group containing 5 to 22 carbon atoms, said guanamine being used in an amount sufficient to cure said polyglycidyl ether to an infusible and insoluble polymer; and (2) terminating the reaction by cooling when 10 to 90% complete.

3,225,005

PROCESS FOR THE MANUFACTURE OF HEAT-STABILIZED COPOLYMERS OF POLYOXYMETHYLENES

Klaus-Dieter Asmus and Edgar Fischer, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed May 18, 1962, Ser. No. 195,958
Claims priority, application Germany, May 19, 1961, F 33,957; Mar. 22, 1962, F 36,346
12 Claims. (Cl. 260—67)

1. A process for the manufacture of a heat-stabilized copolymer which comprises heating, to a temperature of 100 to 150° C. and at a pH of at least 8, an aqueous suspension of 1 to 50 parts by weight of a copolymer of (A) a member selected from the group consisting of formaldehyde and trioxane with (B) a member selected from the group consisting of ethylene oxide, ethylene glycol formal and diethylene glycol formal, said copolymer initially having terminal oxymethylene groups, in 99 to 50 parts by weight water and in admixture with 0.1 to 10% by weight of a formaldehyde-intercepting compound reactive with formaldehyde under the reaction conditions.

3,225,006

POLYMERIZATION OF ALDEHYDES USING AN ORGANIC COMPOUND OR A SALT OF MERCURY AS CATALYST

Akira Takahashi, Kawasaki-shi, Kanagawa-ken, Yukimitsu Mita, Ohta-ku, Tokyo, and Shigeo Hayashi, Shimo-machi, Kohoku-ku, Yokohama, Japan, assignors to Showa Denko Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan

Filed Oct. 9, 1962, Ser. No. 229,295
Claims priority, application Japan, Oct. 14, 1961, 36/36,799; Aug. 18, 1962, 37/34,144
8 Claims. (Cl. 260—67)

1. A process for preparing an addition polymer of formaldehyde comprising introducing substantially anhydrous monomeric formaldehyde gas into an organic solvent in the presence of a polymerization initiator at a temperature ranging from the minimum temperature at which formaldehyde can be maintained in said gaseous state to 70° C., characterized in that the polymerization reaction is carried out in the presence of at least one mercury compound selected from the group consisting of

(A) $HgnXm$ wherein X is selected from the group consisting of NO_3, halogen, CO_3, HCO_3, SO_4, and —OH, and n and m are integers ranging from 1 to 2,

(B) $R(HgNO_3)_r$ wherein R is selected from the group consisting of phenyl group, NO_2 substituted phenyl group, low alkyl substituted phenyl, and r is an integer ranging from 1 to 3,

(C) $R'(HgNO_3)$ wherein R' is selected from the group consisting of alkoxy substituted aliphatic hydrocarbon group, alkoxy substituted and carboxy substituted aliphatic hydrocarbon groups, as the polymerization initiator.

3,225,007

POLYURETHANE COMPOSITIONS CURED WITH ORGANIC PEROXIDES

Elbert E. Gruber, Cuyahoga Falls, Ohio, and Orin C. Keplinger, Flossmoor, Ill., assignors to The General Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Continuation of application Ser. No. 535,280, Sept. 19, 1955. This application Oct. 8, 1962, Ser. No. 229,210
14 Claims. (Cl. 260—75)

1. A composition comprising a curable rubbery polyurethane having activatable methylene groups and being selected from the group consisting of rubbery polyesterurethanes and rubbery polyetherurethanes and, as a curing agent for said rubbery polyurethane, an organic peroxide free of acyl groups and having a tertiary aliphatic carbon atom attached to a peroxide oxygen atom, which carbon atom is not directly connected to any other oxygen atom.

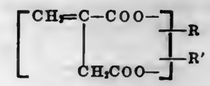
3,225,008

ITACONIC ESTERS OF 1,2 ALKANE CARBONATES, POLYMERS, AND COPOLYMERS THEREOF

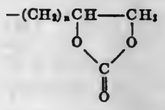
Gaetano F. D'Alelio, South Bend, Ind., assignor to Scott Paper Company, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed May 21, 1962, Ser. No. 196,430
17 Claims. (Cl. 260—77.5)

1. As new compounds, monomeric esters having structures designated by the formula



in which R is a member of the class consisting of hydrogen, a saturated hydrocarbon radical containing from one to eight carbon atoms and R', and R' represents



in which n is an integer having a value of from 1 to 4 inclusive.

6. The polymerization product of a monomer of claim 1.

11. A copolymer of a monomer of claim 1 and at least one copolymerizable ethylenically unsaturated compound.

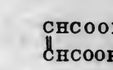
3,225,009

ETHYLENE DICARBOXYLIC ESTERS OF 1,2 ALKANE CARBONATES, POLYMERS, AND COPOLYMERS THEREOF

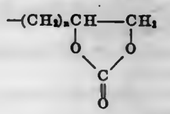
Gaetano F. D'Alelio, South Bend, Ind., assignor to Scott Paper Company, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed May 21, 1962, Ser. No. 196,484
17 Claims. (Cl. 260—77.5)

1. As new compounds, monomeric esters having structures designated by the formula



in which R is a member of the class consisting of hydrogen, saturated and olefinic unsaturated aliphatic hydrocarbon radicals containing from one to eight carbon atoms and R', and R' represents



in which n is an integer having a value of from 1 to 4 inclusive.

6. The polymerization product of a monomer of claim 1.

11. A copolymer of a monomer of claim 1 and at least one other compound containing a $CH_2{=}C<$ group.

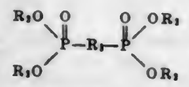
3,225,010
URETHANES FROM POLYPHOSPHOROUS HYDROXYL TERMINATED PHOSPHONATES

Lester Friedman, Beachwood Village, Ohio, assignor to Weston Chemical Corporation, Newark, N.J., a corporation of New Jersey

No Drawing. Original application May 28, 1964, Ser. No. 371,122. Divided and this application Mar. 25, 1965, Ser. No. 449,669

5 Claims. (Cl. 260—77.5)

1. A polyurethane comprising the reaction product of an organic polyisocyanate and a phosphonate having the formula



where R_3 is a 2–10 carbon atom divalent aliphatic hydrocarbon and R_2 is selected from the group consisting of hydroxyalkyl, hydroxyalkoxyalkyl and hydroxypolyalkoxyalkyl.

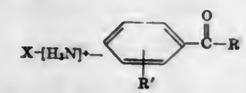
3,225,011
PROCESS FOR PREPARING POLY-PARA-AMINOBENZOIC ACID

Jack Preston, Raleigh, and Ralph W. Smith, Durham, N.C., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed Sept. 11, 1962, Ser. No. 222,934

17 Claims. (Cl. 260—78)

1. A process for the preparation of poly-p-aminobenzoic acid comprising reacting a monomer in disperse form having the general formula:



wherein X is selected from the group consisting of chlorine, bromine, sulfate and arylsulfonate, R is a halogen radical, and R′ is selected from the group consisting of hydrogen, halogen, aryl, nitro, alkyl and lower alkoxy, in the presence of a tertiary amine under anhydrous conditions with agitation to produce poly-p-aminobenzoic acid having an inherent viscosity of at least 0.6 as measured in sulfuric acid at 25° C. at a concentration of 0.5 gram of polymer per 100 milliliters of solution.

3,225,012
CARBOHYDRATE DERIVED POLYAMIDES

William A. P. Black, Falkirk, Eric T. Dewar, Dalkeith, and David Rutherford, Edinburgh, Scotland, assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Filed Sept. 20, 1962, Ser. No. 225,168

27 Claims. (Cl. 260—78)

1. A carbonamide carbohydrate selected from the group consisting of:

poly(1,6-dideoxy-2,4:3,5-di-O-methylene-1-sebacamido-D-mannitol),
poly(1,6-dideoxy-2,4:3,5-di-O-methylene-1-terephthalamido-D-mannitol),
poly(1,6-dideoxy-2,4:3,5-di-O-methylene-1-sebacamido-D-glucitol),
poly(1,6-dideoxy-2,4:3,5-di-O-methylene-1-sebacamido-L-iditol),
poly(1,6-dideoxy-2,3:4,5-di-O-methylene-1-sebacamidogalactitol),
poly(1,6-dideoxy-2,3:4,5-di-O-methylene-1-terephthalamidogalacititol),
poly(1,6-dideoxy-2,3:4,5-di-O-benzylidene-1-sebacamidogalactitol),
poly(1,6-dideoxy-2,3:4,5-di-O-isopropylidene-1-sebacamidogalactitol),
poly(1,6-dideoxy-1-sebacamidogalactitol),
poly(hexamethylene-2,4:3,5-di-O-methylene-D-glucaramide),
poly(hexamethylene-2,4:3,5-di-O-methylene-L-idaramide),
poly(decamethylene-2,4:3,5-di-O-methylene-L-idaramide),
poly(hexamethylene-2,3:4,5-di-O-methylenegalactaramide),
poly(hexamethylene-2,3:4,5-tetra-O-acetylgalactaramide), and
poly[1,6-dideoxy-2,3:4,5-di-O-methylene-1(2,3:4,5-di-O-methylenegalactaramido)-galactitol].

3,225,013
CURABLE COMPOSITIONS OF AN ORGANIC ACID ANHYDRIDE AND AN ALKYLENIMINE DERIVATIVE

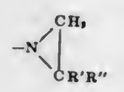
Paul Fram, Lincoln Township, Washington County, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

No Drawing. Continuation of application Ser. No. 59,833, Oct. 3, 1960. This application Oct. 12, 1964, Ser. No. 403,331

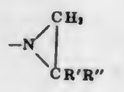
16 Claims. (Cl. 260—78)

1. An essentially anhydrous, active hydrogen free, room temperature stable admixture consisting essentially of an organic acid anhydride of a polycarboxylic acid as one reactant and, as the other reactant, from about stoichiometric amount to about 50% excess of an azirane ring containing compound selected from the group consisting of:

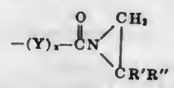
(1) a phosphine oxide having, as the sole groups capable of reacting with anhydride, from 2 to 3 radicals of the formula



(2) a phosphine sulfide having, as the sole groups capable of reacting with anhydride, from 2 to 3 radicals of the formula



(3) an organic compound containing, as the sole groups capable of reacting with anhydride, from 2 to 3 radicals of the formula



wherein Y is selected from the group consisting of —NH— and oxygen, x is either 0 or 1, and R′ and R″ are selected from the group consisting of hydrogen and a lower alkyl radical having from 1 to 8 carbon atoms

each of said reactants being free of substituents which cause opening of azirane rings at room temperature, said admixture being curable and homogeneous at an elevated temperature below the boiling point of each of the aforesaid compounds.

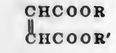
3,225,014
ETHYLENE DICARBOXYLIC ESTERS OF 1,2 ALKANE KETALS

Gaetano F. D'Alelio, South Bend, Ind., assignor to Scott Paper Company, Philadelphia, Pa., a corporation of Pennsylvania

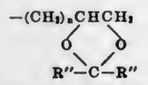
No Drawing. Filed July 9, 1962, Ser. No. 208,592

17 Claims. (Cl. 260—78.4)

1. As new compounds, monomeric esters having the general formula



in which R is a member of the class consisting of H, saturated and olefinic unsaturated aliphatic hydrocarbon radicals containing from one to eight carbon atoms and at least one R′, and R′ represents



in which n is an integer having a value of from 1 to 4 inclusive, and R″ is a member of the group consisting of methyl and ethyl radicals.

6. The polymerization product of a monomer of claim 1.

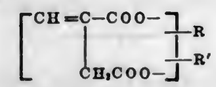
3,225,015
ITACONIC ACID ESTERS OF 1,2 ALKANE KETALS

Gaetano F. D'Alelio, South Bend, Ind., assignor to Scott Paper Company, Philadelphia, Pa., a corporation of Pennsylvania

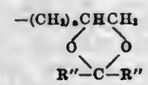
No Drawing. Filed July 9, 1962, Ser. No. 208,593

18 Claims. (Cl. 260—78.4)

1. As new compounds, monomeric esters having the general formula



in which R is a member of the class consisting of hydrogen saturated and olefinic unsaturated aliphatic hydrocarbon containing from one to eight carbon atoms and R′, and R′ represents



in which n is an integer having a value of from 1 to 4 inclusive, and R″ is a member of the group consisting of methyl and ethyl radicals.

6. The polymerization product of a monomer of claim 1.

3,225,016
NITROGEN-CONTAINING POLYMERS AND PREPARATION OF SAME

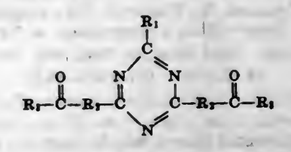
Herbert K. Reimschuessel, Flanders, N.J., and Alan M. Lovelace, Dayton, Ohio, assignors to the United States of America as represented by the Secretary of the Air Force

No Drawing. Filed Aug. 23, 1962, Ser. No. 219,080

7 Claims. (Cl. 260—78.4)

(Granted under Title 35, U.S. Code (1952), sec. 266)

1. The method of preparing nitrogen-containing synthetic resinous film and fibre forming compositions which comprises effecting a polycondensation reaction under heat at a temperature between about 200° C. to 300° C. for a period of time from about 6 to 30 hours between ingredients including (1) a triazine derivative represented by the general formula



where R_1 represents a member selected from the group consisting of monovalent lower alkyl, aryl, dialkylamine and diarylamine radicals having from 1 to 8 carbon atoms in the case of the alkyl radicals and from 1 to 12 carbon atoms in the case of the aryl radicals; R_2 represents a divalent radical selected from the group consisting of —C_6H_4—, —NHC_6H_4— and —$NH(CH_2)_n$— in which n represents an integer which is from 1 to 6 and wherein the nitrogen atom is attached to the triazine nucleus; and R_3 represents a member selected from the group consisting of hydroxy and alkoxy radicals having from 1 to 5 carbon atoms; and (2) hydrazine.

3,225,017
MODIFIED POLYSULFIDE COMPOSITION

Irvin P. Seegman and Lester Morris, Encino, and Paul A. Mallard, Woodland Hills, Calif., assignors to Products Research Company, Burbank, Calif., a corporation of California

No Drawing. Filed Oct. 30, 1961, Ser. No. 148,757

6 Claims. (Cl. 260—79.1)

1. A stable unitary liquid polymer composition protected from moisture and capable of being shipped and stored in a single container and later being deposited in place without agitation or intermixing with other material for complete curing by contact of its surface with surroundings containing essential only moisture, said composition comprising essentially (a) a liquid polyalkylene polysulfide polymer having thoroughly dispersed therein, (b) a dormant curing agent in an amount sufficient to cure said polymer which is activated by the presence of moisture, and (c) an alkaline desiccating deliquescent accelerating agent adapted and sufficient to maintain said polymer in dry condition during shipment and storage and to attract and absorb moisture from its surroundings after deposition in place to hasten the curing of said polymer by said curing agent, wherein (b) and (c) are different substances and said accelerating agent is water-soluble and composed of at least one number of the group consisting of the alkali metal and alkaline earth metal oxides, peroxides, hydroxides and salts of weak acids.

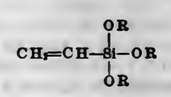
3,225,018
HEAT CURING OF ETHYLENE/VINYLSILANE COPOLYMERS

Nathan L. Zutty, Charleston, W. Va., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Dec. 15, 1961, Ser. No. 159,754

3 Claims. (Cl. 260—88.1)

1. The process for cross-linking a substantially linear copolymer consisting essentially of from 5 to 99 weight percent polymerized ethylene and from 95 to 1 weight percent of a polymerized vinyltrialkoxysilane represented in the monomeric form by the formula:



wherein each R is an alkyl radical having from 1 to 5 carbon atoms, which comprises heating said copolymer at a temperature of from 130° C. to 350° C.

3,225,019
ELASTOMERIC POLYMERS

Edward C. Leonard, Jr., Plainfield, N.J., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed June 30, 1961, Ser. No. 120,905
10 Claims. (Cl. 260—88.2)

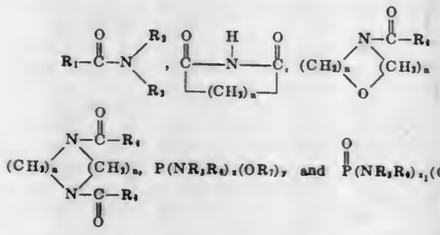
1. A method of preparing copolymers of ethylene and 1-olefins having from about 4 to 20 percent by weight 1-olefin polymerized therein which comprises the steps of contacting ethylene and 1-olefin monomers having from 3 to 5, inclusive, carbon atoms in a ratio of between about 0.03 to about 0.3 mole of 1-olefin monomer per mole of ethylene with a catalyst composition consisting essentially of a trialkyl aluminum compound wherein the alkyl groups of the said aluminum compound have from about 1 to 8 carbon atoms and purple titanium trichloride in the presence of an inert non-polar solvent for the monomers at a temperature between about 110° C. and 140° C.

3,225,020
THREE-COMPONENT ALUMINUM-TITANIUM TETRAHALIDE CATALYSTS FOR OLEFIN POLYMERIZATION

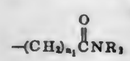
Harry W. Coover, Jr., Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Nov. 25, 1960, Ser. No. 71,383
The portion of the term of the patent subsequent to Jan. 24, 1978, has been disclaimed and dedicated to the Public
16 Claims. (Cl. 260—93.7)

13. In the polymerization of α-monoolefinic hydrocarbon containing 3 to 10 carbon atoms to form solid crystalline polymer, the improvement which comprises catalyzing the polymerization with a catalytic mixture consisting essentially of aluminum, titanium tetrahalide, and a third component selected from the amides having the formulas:



wherein R_1 is a radical selected from the group consisting of alkyl radicals containing 1 to 20 carbon atom phenyl, carboxyl, —OR, —$N(R)_2$ and

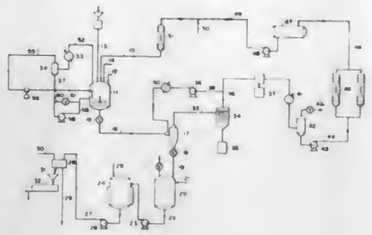


wherein each R is an alkyl radical containing 1 to 4 carbon atoms, n_1 is an integer of 1 to 4, and wherein each of R_2 and R_3 is a radical selected from the group consisting of hydrogen, alkyl radicals containing 1 to 8 carbon atoms, phenyl and cyclohexyl, R_4 is a radical selected from the group consisting of alkyl radicals containing 1 to 4 carbon atoms and phenyl and n is an integer of 1 to 4, and wherein R_5, R_6 and R_7 are alkyl radicals containing 1 to 8 carbon atoms, x and y are whole numbers from 1 to 3 and 0 to 2, respectively, the sum of x and y being 3 and x_1 and y_1 are whole numbers from 1 to 2, the sum of x_1 and y_1 being 3, the molar ratio of titanium tetrahalide to third component being within the range of 1:1 to 1:0.1.

3,225,021
PROCESS FOR POLYMERIZING ALPHA-OLEFINS IN THE PRESENCE OF A MINOR AMOUNT OF A LOWER ALKANE AS THE SOLE DILUENT

Michael Erchak, Jr., Ridgewood, N.J., assignor to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware

Filed Aug. 3, 1962, Ser. No. 214,617
5 Claims. (Cl. 260—93.7)



1. A continuous process for polymerizing an alpha-olefin which comprises: (a) continuously introducing said alpha-olefin in liquid form and a minor amount of a normally gaseous inert diluent in liquid form to a reaction zone which is maintained at a pressure sufficient to keep said alpha-olefin and inert diluent in liquid form, said amount of inert diluent being sufficient to constitute between 5 to 50% of the liquid in said reaction zone; (b) continuously carrying out the polymerization by introducing a titanium trichloride and an aluminum alkyl catalyst into said reaction zone; (c) continuously withdrawing from said reaction zone a reaction slurry comprising liquid alpha-olefin, inert diluent and polymer; (d) continuously separating polymer from said alpha-olefin and inert diluent; and (e) continuously maintaining the 5–50% of the inert diluent of step (a) in the reaction zone by venting from 1–30% of the alpha-olefin and inert diluent of step (d) and recycling the remainder to the reactor.

3,225,022
CATALYST COMPOSITIONS COMPRISING ALUMINUM CHLORIDE

Harry M. Andersen, Dayton, Ohio, and William K. Johnson, St. Louis, Mo., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed Dec. 27, 1960, Ser. No. 78,212
6 Claims. (Cl. 260—94.9)

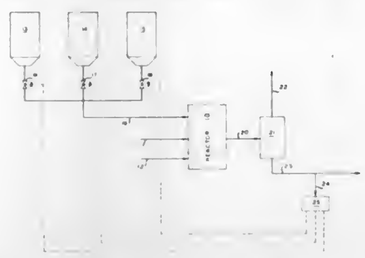
1. A process for the polymerization of an ethylenically unsaturated monoolefin hydrocarbon having from 2 to 8 carbon atoms, which comprises contacting said olefin monomer with a catalyst prepared by the interaction of (a) a titanium compound, (b) an aluminum compound of the general formula R_2AlX, wherein R is selected from the group consisting of alkyl and cycloalkyl radicals, and X is selected from the group consisting of hydrogen, halogen, alkyl and cycloalkyl radicals, and (c) a solution of an aluminum halide selected from the group consisting of aluminum chloride, aluminum bromide and aluminum iodide in a tetraalkyltin compound, wherein each alkyl radical of said tetraalkyl of tin contains from 1 to 6 carbon atoms.

3,225,023
PROCESS FOR CONTROLLING MELT INDEX

John Paul Hogan and Alonzo G. Kitchen, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed Nov. 30, 1962, Ser. No. 241,323
6 Claims. (Cl. 260—94.9)

1. A process for obtaining a polymer of regulated melt index obtained by polymerizing a 1-olefin in a reaction zone in the presence of a supported polymerization catalyst comprising an oxide of a metal selected from the group consisting of chromium at least a portion of which is hexavalent, nickel, vanadium, and molybdenum and as a support at least one oxide selected from the group consisting of silica, alumina, zirconia and thoria, which



comprises measuring the melt index of the polymer produced and increasing the average pore diameter if the melt index decreases and conversely decreasing the average pore diameter if the melt index increases, and thereby obtaining a polymer of said 1-olefin having a regulated melt index.

3,225,024
POLYETHYLENE SYNTHESIS

Gaetano F. D'Alelio, South Bend, Ind., assignor to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Filed May 7, 1963, Ser. No. 278,738
2 Claims. (Cl. 260—94.9)

1. The method of polymerizing ethylene that comprises heating ethylene in an inert hydrocarbon reaction medium at a pressure of at least 100 p.s.i. and at a temperature of 20–200° C. in the presence of a catalyst prepared by grinding at room temperature and atmospheric pressure in an inert atmosphere in the absence of ethylene a mixture consistingof Ti and $TiCl_3$ in a Ti:$TiCl_3$ weight ratio of 1–100:1–100.

3,225,025
DISAZO DISULFIDE DYESTUFFS

Charles G. Jeremias, Newberry, S.C., and Frederick E. Barwick III, Mount Holly, N.C., assignors to Martin-Marietta Corporation, a corporation of Maryland

No Drawing. Filed Mar. 11, 1963, Ser. No. 264,045
5 Claims. (Cl. 260—176)

1. A compound of the formula

$$R_1—N{=}N—R—S—S—R—N{=}N—R_1$$

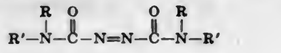
wherein R is a member selected from the group consisting of phenyl and mono-methoxylated phenyl and R_1 is an arylide of acetoacetic acid.

3,225,026
METHOD OF PRODUCING AZOBISFORMAMIDES

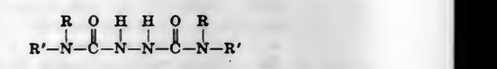
Derk T. A. Huibers, Cheektowaga, Buffalo, and Leonard E. Korczykowski, Buffalo, N.Y., assignors to Wallace & Tiernan Inc., Belleville, N.J., a corporation of Delaware

Filed Feb. 13, 1963, Ser. No. 258,206
12 Claims. (Cl. 260—192)

1. The method of producing an azo compound having the structural formula



by oxidation of the corresponding hydrazo compound having the structural formula



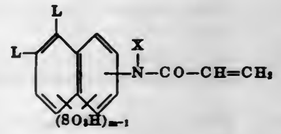
where each of the radicals R and R′ is selected from the group consisting of hydrogen, an alkyl radical containing from one to 12 carbon atoms, and a cycloalkyl radical containing from 4 to 7 carbon atoms, comprising: suspending particles of the hydrazo compound in an enclosed aqueous reaction system; maintaining chlorine as oxidizing agent dissolved in the system in major proportions relative to chlorine saturation during induction of the oxidation reaction; thereafter supplying chlorine to the aqueous system in amounts generally commensurate with the chlorine consumed as oxidizing agent until at least 70% of the hydrazo compound present has been oxidized to the corresponding azo compound, the temperature of the aqueous system during and after induction of the reaction being maintained within the range of 15° to 40° C. with agitation to provide effective dispersion of the suspended hydrazo compound and of the chlorine supplied; and recovering the azo compound particles thus formed in the aqueous system by filtering, washing, and drying.

3,225,027
REACTIVE NAPHTHOL MONOAZO DYESTUFFS

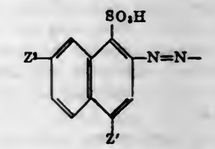
Ronald Baker and Ian Durham Rattee, Manchester, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Jan. 18, 1963, Ser. No. 252,292
Claims priority, application Great Britain, Jan. 29, 1962, 3,230/62
4 Claims. (Cl. 260—194)

1. Dyestuffs of the formula:



wherein X represents a member selected from the class consisting of hydrogen and lower alkyl; m represents an integer of from 1 to 3; and one L represents a hydroxy group and the other L represents a group of the formula:



wherein Z′ and Z^2 are selected from the group consisting of hydrogen and sulphonic acid.

3,225,028
ACROLEIN ADDUCTS OF POLYGALACTOMANNANS AND POLYGLUCOMANNANS AND PROCESS OF PREPARING SAME

Robert Nordgren, 79 Seymour Ave. SE., Minneapolis, Minn.

No Drawing. Filed June 11, 1962, Ser. No. 201,305
10 Claims. (Cl. 260—209)

1. A process of preparing an adduct of acrolein and a material selected from the group consisting of poly-

galactomannans, polyglucomannans and mixtures thereof which comprises reacting the material with about 0.25 to 1.0 equivalent of acrolein for each equivalent of anhydrous hexose unit in the material, said reaction being carried out at a temperature of about 25 to 100° C. and the pH of the reaction mixtures being in the range of about 4.5 to 7.5

3,225,029
PROCESS FOR THE PREPARATION OF NUCLEOSIDES AND PRODUCTS OBTAINED THEREBY

Naotaka Yamaoka, No. 5, 3-Chome, Yoyogi, Shibuya-ku, Tokyo, Japan

No Drawing. Filed Feb. 28, 1963, Ser. No. 261,889

Claims priority, application Japan, Mar. 8, 1962, 37/8,330

9 Claims. (Cl. 260—211.5)

1. 2,6,8-trichloro-9-(hepta-O-acetyl-β-D - cellobisyl)-purine.

3. In the preparation of nucleosides by condensing heterocyclic compounds, selected from the group consisting of purines, pyrimidines and benzimidazoles, and acyl glucosyl halides under liberation of hydrogen halide, the improvement which consists in carrying out the reaction in an anhydrous, inert solvent containing an acid acceptor for said liberated hydrogen halide, which acid acceptor is selected from the group consisting of the oxides of silver and mercury, the carbonates of silver and cadmium, and the cyanides of silver, mercury, cadmium, potassium, barium and zinc.

3,225,030
METHOD OF PREPARING LEUROSINE AND VINCALEUKOBLASTINE

Gordon H. Svoboda, Indianapolis, Ind., assignor to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana

No Drawing. Filed Feb. 15, 1965, Ser. No. 432,873

2 Claims. (Cl. 260—236)

2. The method of preparing leurosine and vincaleukoblastine in substantially pure form which comprises wetting dried ground plants of the species *Vinca rosea* Linn. with aqueous 2 percent tartaric acid solution, extracting the acidified plant material with benzene, separating the benzene extract, contacting the benzene extract with about 2 percent aqueous tartaric acid solution, separating the tartaric acid layer, extracting said tartaric acid layer with a water-immiscible organic solvent, again separating the tartaric acid layer, making the tartaric acid layer basic with ammonium hydroxide, extracting the thus fromed alkali-insoluble alkaloidal free bases into benzene, separating and concentrating said benzene extract, and then subjecting said benzene extract to a chromtographic separation procedure using deactivated alumina as the adsorbent, in which chromatographic separation procedure undesired alkaloids are eluted with benzene and leurosine and vincaleukoblastine are thereafter eluted wtih chloroform-benzene solvent mixtures, crystallizing leurosine from eluate fractions giving a positive leurosine test, and crystallizing vincaleukoblastine in the form of the sulfate salt from fractions, including mother liquors from leurosine-containing fractions, said fractions and mother liquors having previously given a positive test for vincaleukoblastine.

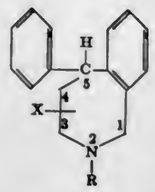
3,225,031
PHENYL-BENZAZEPINES AND METHODS FOR THEIR MANUFACTURE

Margaret H. Sherlock, Bloomfield, N.J., assignor to Schering Corporation, Bloomfield, N.J., a corporation of New Jersey

No Drawing. Filed July 22, 1963, Ser. No. 296,431

11 Claims. (Cl. 260—239)

1. A member of the group consisting of a benzazepine having the formula:



and the non-toxic acid addition salts and quaternary salts thereof wherein X is a member of the group consisting of H and methyl and R is a member of the group consisting of H, lower alkyl and phenyl lower alkyl.

11. In the process for preparing a 5-phenyl-2,3,4,5-tetrahydro-1H-2-benzazepine, the acid addition salts and quaternary ammonium salt thereof, the step which comprises heating at an elevated temperature a member of the group consisting of an o-R_1R_2-aminoethyldiphenylmethane and the acid addition salts thereof, having a lower alkyl group of at least two carbon atoms attached to the methane carbon atoms, the β-carbon atom of said alkyl group bearing a substituent selected from the group consisting of R_1R_2-amino and halogeno, wherein R_1 and R_2 are members of the group consisting of methyl and benzyl until substantial transformation into a tetrahydro-benzazepine compound is effected.

3,225,032
DERIVATIVES OF DIBENZ[b,f]AZEPINES

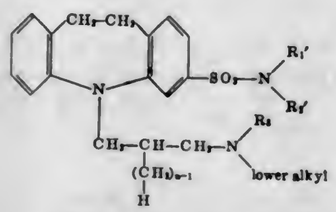
Henri Dietrich, Arlesheim, and Werner Küng, Allschwil, Basel-Land, Switzerland, assignors to Geigy Chemical Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 31, 1964, Ser. No. 393,432

Claims priority, application Switzerland, Apr. 8, 1961, 4,159/61, 4,160/61

7 Claims. (Cl. 260—239)

1. An iminodibenzyl derivative selected from the class consisting of a free base and its non-toxic addition salts, said free base having the formula



wherein each of R_1' and R_2' independently of the other represents lower alkyl, and

R_1' and R_2' taken together with the nitrogen atom to which they are attached represent a member selected from the group consisting of morpholino and piperidino,

R_3 is a member selected from the group consisting of hydrogen and lower alkyl, and

n is one of the integers 1 and 2.

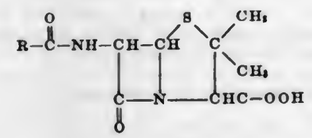
3,225,033
PENICILLIN DERIVATIVES AND PROCESS

David A. Johnson and Glenn A. Hardcastle, Jr., Syracuse, N.Y., assignors to Bristol-Myers Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 24, 1961, Ser. No. 104,802

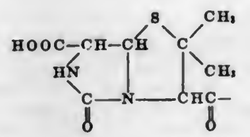
9 Claims. (Cl. 260—239.1)

3. A member selected from the group consisting of the acids having the formula

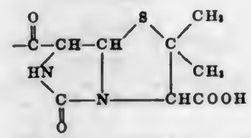


wherein R is selected from the group consisting of the following radicals:

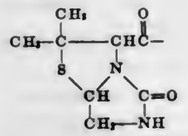
(a)



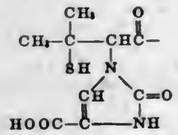
(b)



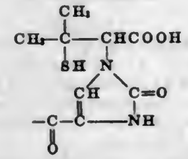
(c)



(d)



(e)



and their sodium, potassium, calcium, aluminum and ammonium salts and their nontoxic substituted ammonium salts with an amine selected from the group consisting of tri(lower)alkylamines, procaine, dibenzylamine, N - benzyl - beta - phenethylamine, 1-ephenamine, N,N' - dibenzylethylenediamine, dehydroabietylamine, N,N' - bis - dehydroabietylethylenediamine and N - (lower)alkylpiperidine.

3,225,034
2β-AMINO-STEROIDS

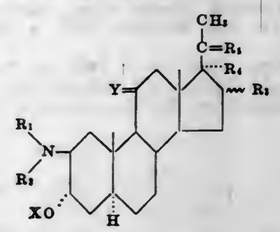
Colin L. Hewett, Bearsden, Glasgow, and David S. Savage, Newton Mearns, Glasgow, Scotland, assignors to Organon Inc., West Orange, N.J., a corporation of New Jersey

No Drawing. Filed June 21, 1963, Ser. No. 289,714

Claims priority, application Great Britain, July 9, 1962, 26,267/62

2 Claims. (Cl. 260—239.5)

1. Steroids of the formula:



in which

X is selected from the group consisting of hydrogen and acyl derived from an organic carboxylic acid having 1–12 carbon atoms and phosphoric acid,

R_1 and R_2 are selected from the group consisting of hydrogen, a lower alkyl, hydroxy-(lower) alkyl and when taken together form with the nitrogen atom a group selected from morpholino and piperidino,

Y is selected from the group consisting of H_2, H(βOH), H(αOH), H(αOacyl) and O, wherein acyl is derived from an organic carboxylic acid having 1–12 carbon atoms,

R_3 is selected from the group consisting of hydrogen and lower alkyl,

R_4 is selected from the group consisting of hydrogen, hydroxyl and acyloxy, wherein acyl is derived from an organic carboxylic acid having 1–12 carbon atoms and phosphoric acid, and

R_5 is selected from the group consisting of H(OH), H(Oacyl) and O, wherein acyl is derived from an organic carboxylic acid having 1–12 carbon atoms and phosphoric acid.

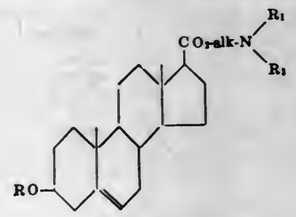
3,225,035
AMINOALKYL ESTERS OF ETIOCHOLENIC ACID

Manfred E. Wolff, San Bruno, Calif., assignor to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Feb. 12, 1964, Ser. No. 344,251

5 Claims. (Cl. 260—239.5)

1. A member selected from the group consisting of a steroidal base, its pharmaceutically acceptable salts with nontoxic carboxylic acids and its pharmaceutically acceptable nontoxic quaternary salts, said steroidal base having the formula:



in which:

R is a member selected from the group consisting of lower alkyl of 1–6 carbon atoms, acyl derived from a carboxylic acid of a maximum of 6 carbon atoms and hydrogen;

R_1 and R_2 are members selected from the group consist-

ing of lower alkyl of 1–6 carbon atoms and, when taken together with the nitrogen atom, piperidyl, morpholinyl, thiomorpholinyl, pyrrolidinyl, N-lower alkylpiperazinyl and hexahydroazepinyl; and

alk is an alkylene chain of from 2–6 carbon atoms.

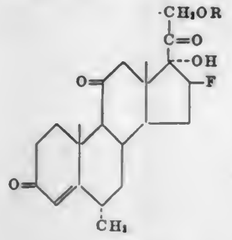
3. 4-methylpiperazinylpropyl etiocholenate hydrochloride.

3,225,036
6-METHYL-16-FLUORINATED STEROIDS

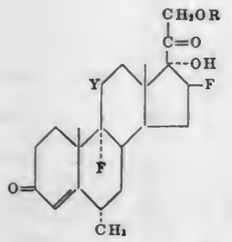
Gerald D. Laubach, Niantic, Conn., assignor to Chas. Pfizer & Co., Inc., Brooklyn, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 2, 1959, Ser. No. 850,108
13 Claims. (Cl. 260—239.55)

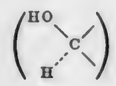
11. A compound selected from the group consisting of



and

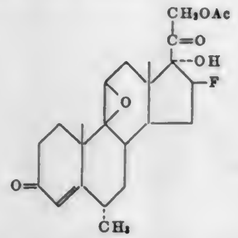


and the corresponding 1,2-dehydro derivatives thereof; wherein R is selected from the group consisting of hydrogen and acyl radical of a hydrocarbon carboxylic acid; Y is selected from the group consisting of the β-hydroxy methylene



and carbonyl (>C=O) radicals.

12. A 16β-fluoro steroid selected from the group consisting of those of the formula



and the corresponding 1,2-dehydro derivatives thereof; wherein Ac is the acyl radical of a hydrocrabon carboxylic acid containing from 1 to 8 carbon atoms.

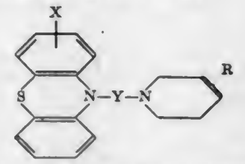
3,225,037
10-[(AMINO- AND ACYLAMINO-1-PIPERIDYL) LOWER-ALKYL]-PHENOTHIAZINES

Bernard L. Zenitz, Colonie, and Lewis P. Albro, North Greenbush, N.Y., assignors to Sterling Drug Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 30, 1959, Ser. No. 802,624
17 Claims. (Cl. 260—243)

1. A 10 - [1 - (piperidyl)lower-alkyl]phenothiazine wherein the lower-alkyl group contains from two to five carbon atoms and has its points of attachment to the phenothiazine and piperidine moieties on different carbon atoms and the piperidyl ring is substituted by a member of the group consisting of amino, lower-alkanoylamino and monocarbocyclic aroylamino radicals in other than the 2-position.

3. A compound having the formula



wherein X represents halogen, Y represents a lower-alkylene radical containing from two to five carbon atoms and having its points of attachment to the phenothiazine and piperidine moieties on different carbon atoms and R represents a lower-alkanoylamino radical in other than the 2-position.

3,225,038
BENZYL SUBSTITUTED-PYRIDINOMETHYL CEPHALOSPORINS

Edwin H. Flynn, Indianapolis, Ind., assignor to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana

No Drawing. Filed June 5, 1963, Ser. No. 285,571
2 Claims. (Cl. 260—243)

1. 7 - phenylacetamido-3-(4'-carbamylpyridinomethyl)-3-cephem-4-carboxylic acid.

2. 7 - phenylacetamido-3-(3'-carbamylpyridinomethyl)-3-cephem-4-carboxylic acid.

3,225,039
N-TRITYL-MORPHOLINES AND PROCESS FOR THEIR PRODUCTION

Clive B. C. Boyce, Herne, Kent, and Panayiotis N. Manis, Sittingbourne, Kent, England, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 23, 1962, Ser. No. 239,789
Claims priority, application Great Britain, Nov. 30, 1961, 42,890/61
3 Claims. (Cl. 260—247)

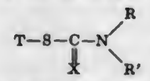
1. N-tritylmorpholine.

3,225,040
6 - (1,2,3,4 - TETRAHYDRO - 2 - THIOXO - 4,4,6-TRIMETHYL - 1 - PYRIMIDINYL) - 2 - BENZOTHIAZOLYLTHIOCARBAMATES

John J. D'Amico, Charleston, W. Va., and Ching C. Tung, Kirkwood, Mo., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Original application Sept. 15, 1961, Ser. No. 138,296, now Patent No. 3,151,114, dated Sept. 29, 1964. Divided and this application Dec. 27, 1963, Ser. No. 334,024
9 Claims. (Cl. 260—247.1)

1. A compound of the formula



where T is 6-(1,2,3,4-tetrahydro-2-thioxo-4,4,6-trimethyl-1-pyrimidinyl)-2-benzothiazolyl, X is selected from a group consisting of oxygen and sulfur, R is selected from a group consisting of lower alkyl and phenyl, R' is lower alkyl and R and R' taken together and with the nitrogen attached thereto constitute a heterocyclic radical selected from the group consisting of 1-pyrrodinyl, piperidino, morpholino, and dimethylmorpholino.

4. 6-(1,2,3,4-tetrahydro-2-thioxo - 4,4,6-trimethyl-1-pyrimidinyl) - 2-benzothiazolyl 2,6-dimethylmorpholinecarbodithioate.

3,225,041
PROCESS FOR PRODUCING 2,6-DIAMINO PYRIDINES

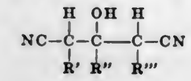
Francis Johnson, Newton Lower Falls, Mass., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Dec. 12, 1962, Ser. No. 243,994
8 Claims. (Cl. 260—247.5)

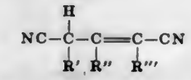
1. The process for preparing 2,6-diaminopyridines comprising reacting at a temperature between 0° C. and 200° C. and in the presence of a hydrogen halide catalyst,

(i) an amine selected from the group consisting of morpholine and amines having the formula R_1NHR_2 wherein R_1 and R_2 are selected from the group consisting of lower alkyl benzyl, phenyl, halophenyl and naphthyl radicals, and R_2 may also be hydrogen; with a

(ii) dinitrile selected from the group consisting of dinitriles having the formula



and



wherein R', R'', and R''' are each selected from the group consisting of hydrogen, lower alkyl, benzyl, phenyl, lower alkylphenyl, and halophenyl.

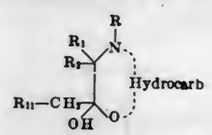
6. The process for preparing 2,6-bis(N-morpholino)-pyridine comprising reacting at a temperature between 0° C. and 200° C. and in the presence of a hydrogen bromide catalyst, 3-hydroxyglutaronitrile with morpholine.

3,225,042
HYDROXYMORPHOLINES

Robert D. Dillard and Nelson R. Easton, Indianapolis, Ind., assignors to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana

No Drawing. Filed July 31, 1962, Ser. No. 213,581
1 Claim. (Cl. 260—247.7)

The process of synthesizing a compound of the formula



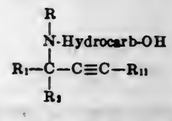
wherein

R is a member of the group consisting of hydrogen, C_1–C_{12} hydrocarbyl, hydroxyalkyl, and alkoxyalkyl;

R_1 and R_2, when taken separately, are C_1–C_{12} hydrocarbyl, and, when taken together with the carbon atom to which they are attached, are members of the group consisting of cycloalkyl and cycloalkenyl;

R_{11} is a member of the group consisting of halogen and hydrogen; and

Hydrocarb is a two-carbon linking group free from acetylenic unsaturation, which comprises treating with mercuric oxide in aqueous sulfuric acid solution a compound represented by the following formula:



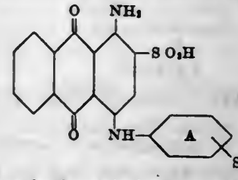
wherein R, R_1, R_2, R_{11}, and Hydrocarb have the same significance as hereinabove.

3,225,043
TRIAZINYL AND PYRIMIDINYL ANTHRAQUINONE COMPOUNDS

Robert Norman Heslop, Manchester, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Dec. 20, 1962, Ser. No. 245,993
Claims priority, application Great Britain, Jan. 11, 1962, 1,056/62
2 Claims. (Cl. 260—249)

1. An anthraquinone compound of the formula:



wherein any further substituent on the benzene nucleus A is selected from the class consisting of methyl, methoxy, chlorine and sulphamyl, and R_2 stands for a radical of the class consisting of

(a) 6-chloro-, 5,6-dichloro- and 5-cyano-6-chloropyrimidinyl, attached to the nitrogen atom by one of the carbon atoms in the 2 and 4 positions of the pyrimidine nucleus and carrying a chlorine substituent attached to the other of said atoms;

(b) 4-amino-2-triazinyl carrying a substituent selected from the class consisting of pyridinium-1-yl and carboxypyridinium-1-yl radicals in the 6-position of the triazine nucleus, and

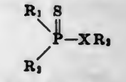
(c) 4-chloro-2-triazinyl carrying a substituent selected from the class consisting of chlorine, lower alkoxy, benzenoxy, sulfoanilino, N,N-di(lower alkyl)thiocarbamylthio and amino in the 6-position of the triazine nucleus.

3,225,044
OXIDATION OF PHOSPHOROTHIONATES WITH DINITROGEN TETROXIDE

Walter Dauterman and Richard D. O'Brien, Ithaca, N.Y., assignors to American Cyanamid Company, New York, N.Y., a corporation of Maine

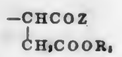
No Drawing. Filed Mar. 9, 1961, Ser. No. 94,417
8 Claims. (Cl. 260—250)

1. A readily controllable non-explosive process for converting a compound of the formula:

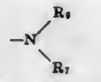


to its oxygen analogues, where in said formula X is selected from the group consisting of O and S, R_1 and R^2 are selected from the group consisting of lower alkyl, lower alkoxyl, alkylamino, alkylthio, phenyl and

phenoxyl, and R_3 is selected from the group consisting of carbamylalkyl, thiocarbamylalkyl, alkoxyalkyl, alkylmercapto, phenyl, nitrophenyl, halophenyl, alkylphenyl, cyanomethyl, pyrimidinyl, 3-halogen cumarinyl, acetyl lower alkyl, 3-pyridazinyl, 2-pyrazinyl, alkyl mercapto alkyl, alkyl sulfoxyl alkyl, alkyl sulfonyl alkyl, benzaziminomethyl, succiniminyl, $—CH_2—X—R_4$ where X is as defined above and $—R_4$ is an aliphatic hydrocarbon radical, and



where $—R_5$ is selected from the group consisting of hydrogen, aliphatic hydrocarbon and aromatic hydrocarbon, and Z is selected from the group consisting of $—OR_5$ where R_5 is as defined above, and



where R_6 is selected from the group consisting of alkyl and aryl and R_7 is selected from the group consisting of hydrogen and alkyl, which comprises dissolving said compound in an anhydrous solvent therefor, contacting said solution with gaseous dinitrogen tetroxide, said solvent being inert with respect to the dinitrogen tetroxide.

3,225,045

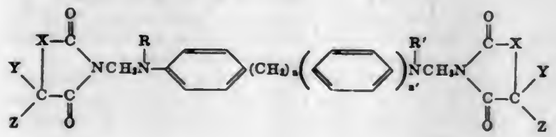
IMINOMETHYLENEBIS-HETEROCYCLES

Lloyd A. Walker, Akron, Ohio, assignor to Monsanto Company, a corporation of Delaware

No Drawing. Original application Sept. 10, 1963, Ser. No. 307,813. Divided and this application Feb. 12, 1964, Ser. No. 351,268

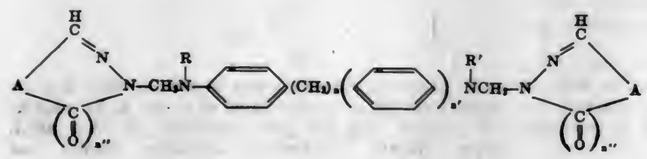
10 Claims. (Cl. 260—250)

1. A compound of the formula



where n and n' are independent integers zero to one inclusive, n being zero when n' is zero, R and R' are selected from a group consisting of hydrogen, nitroso and lower alkyl, X is selected from a group consisting of S and NH, Y and Z are selected from a group consisting of phenyl, lower alkyl and hydrogen.

7. A compound of the formula



where A is selected from a group consisting of ortho-phenylene, halogenated ortho-phenylene, lower alkyl ortho-phenylene, lower alkoxy ortho-phenylene and nitro-ortho-phenylene, n, n' and n'' are independent integers zero to one inclusive, n being bero when n' is zero, and R and R' are selected from a group consisting of hydrogen, lower alkyl and nitroso.

3,225,046

N⁶-BENZYL-8-METHYLADENINE

Kenneth D. Zwahlen, Modesto, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 31, 1960, Ser. No. 18,881

3 Claims. (Cl. 260—252)

1. N^6-benzyl-8-methyladenine.

3,225,047

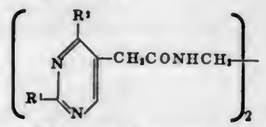
N,N'-BIS(PYRIMIDINE-5-ACETYL)ETHYLENE DIAMINES

Richard A. Partyka, Syracuse, N.Y., assignor to Bristol-Myers Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Feb. 24, 1964, Ser. No. 347,054

3 Claims. (Cl. 260—256.4)

1. A compound selected from the group consisting of compounds of the formula



wherein R^1 and R^2 are each members selected from the group consisting of hydrogen, (lower)alkyl, phenyl, hydroxy, (lower)alkoxy, mercapto, (lower)alkylmercapto, amino, (lower)alkylamino, di(lower)alkylamino, and benzyl and nontoxic pharmaceutically acceptable and addition salts thereof.

2. N,N' - bis(4-methylpyrimidine-5-acetyl)ethylene diamine.

3,225,048

PROCESS FOR THE PREPARATION OF 2,6-DIKETO-8-THIAPURINES

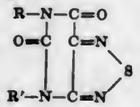
Kurt Menzl, Linz, Austria, assignor to Österreichische Stickstoffwerke Aktiengesellschaft, Linz, Austria

No Drawing. Filed Feb. 4, 1963, Ser. No. 256,133

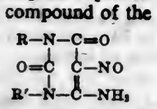
Claims priority, application Austria, Feb. 9, 1962, A 1,061/62

2 Claims. (Cl. 260—256.5)

1. A process for the preparation of a 2,6-diketo-8-thiapurine of the formula

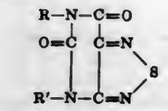


wherein R and R' are selected from the group consisting of hydrogen and alkyl, R' being alkyl when R is alkyl, which comprises reacting in aqueous suspension a 4-amino-5-nitroso-uracil compound of the formula

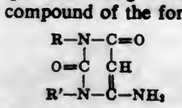


wherein R and R' have the same meaning as above with an alkali metal thiosulfate in the presence of an acid selected from the group consisting of formic acid, acetic acid, hydrochloric acid and sulfuric acid at a temperature between 40° C. and the boiling point of the reaction mixture.

2. A process for the preparation of a 2,6-diketo-8-thiapurine of the formula



wherein R and R' are selected from the group consisting of hydrogen and alkyl, R' being alkyl when R is alkyl, which comprises reacting in an aqueous medium a 4-amino-uracil compound of the formula



wherein R and R' have the same meaning as above with sodium nitrile in the presence of an acid selected from the group consisting of formic acid, acetic acid, sulfuric acid and hydrochloric acid to form the corresponding 4-amino-5-nitroso compound and reacting the resulting aqueous acid reaction mixture with an alkali metal thiosulfate at a temperature between 40° C. and the boiling point of the reaction mixture.

3,225,049

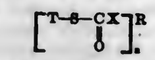
6 - (1,2,3,4 - TETRAHYDRO - 2 - THIOXO - 4,4,6 - TRIMETHYL - 1 - PYRIMIDINYL)BENZOTHIAZOLYLTHIOLCARBONATES

John J. D'Amico, Charleston, W. Va., and Ching C. Tung, Kirkwood, Mo., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Original application Sept. 15, 1961, Ser. No. 138,296, now Patent No. 3,151,114, dated Sept. 29, 1964. Divided and this application Dec. 27, 1963, Ser. No. 334,040

6 Claims. (Cl. 260—256.5)

1. A compound of the formula



where T is 6-(1,2,3,4-tetrahydro-2-thioxo-4,4,6-trimethyl-1-pyrimidinyl)-2-benzothiazolyl, X is selected from a group consisting of oxygen and sulfur, n is an integer equal to the valence of R selected from the group consisting of 1 and 2 and R is selected from the group consisting of lower alkyl, lower alkenyl, ethylene, and oxydiethylene.

3,225,050

PREPARATION OF ALKYL AMMONIUM NITRATES

Gerhard Barth-Wehrenalp, Ambler, Robert A. Bernoff, Lynnewood Gardens, Elkins Park, and David M. Gardner, North Wales, Pa., assignors to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed May 18, 1960, Ser. No. 29,794

19 Claims. (Cl. 260—268)

1. A process for the preparation of alkyl ammonium nitrates which comprises reacting dinitrogen tetroxide with an alkyl ammonium halide selected from the group of fluorides, chlorides and bromides and venting the volatile products, said reaction being conducted in an organic reaction medium comprising a polar liquid having at least partial solubility of alkyl ammonium nitrate product to the extent of 0.1 part per 100 parts of liquid reaction medium.

2. A process for the preparation of quaternary ammonium nitrates which comprises reacting dinitrogen tetroxide with a quaternary ammonium chloride obtained by quaternizing with a lower alkyl chloride, a tertiary amine selected from the group of lower alkyl amines and N,N'-lower alkyl polyalkylene diamines, said reaction being conducted in an organic reaction medium comprising a polar liquid having solubility for the quaternary ammonium nitrate product to the extent of at least 0.1 part per 100 parts of reaction medium, venting the nitrosyl chloride formed and separating halide-free nitrate product.

11. The process of claim 2 wherein the quaternary ammonium chloride reactant is a N,N'-di-(lower alkyl) substituted triethylenediammonium dichloride.

3,225,051

1,2,3,6-TETRAHYDROPYRIDINES

Rudolf Merten, Cologne-Flittard, Germany, assignor to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Dec. 12, 1961, Ser. No. 158,905

Claims priority, application Germany, Dec. 19, 1960, F 32,789; Apr. 29, 1961, F 33,814; June 21, 1961, F 34,236

2 Claims. (Cl. 260—290)

2. A compound of the group consisting of the following substituted 1,2,3,6-tetrahydropyridines:

(i) 2-phenyl-4-methyl-1,2,3,6-tetrahydropyridine,

(ii) 2-(2-aminophenyl) - 4-methyl-1,2,3,6-tetrahydropyridine and

(iii) 2-(4-aminophenyl) - 4-methyl-1,2,3,6-tetrahydropyridine.

3,225,052

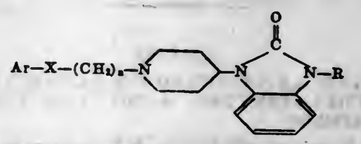
BENZIMIDAZOLINYL PIPERIDINE DERIVATIVES

Raul Adriaan Jan Janssen, Vosselaar, near Turnhout, Belgium, assignor to Janssen Pharmaceutica N.V., a corporation of Belgium

No Drawing. Filed May 6, 1964, Ser. No. 365,509

6 Claims. (Cl. 260—293.4)

1. A chemical compound selected from the group consisting of



and the therapeutically active non-toxic acid addition salts thereof wherein Ar is a member selected from the group consisting of phenyl, halophenyl, lower alkylphenyl, dilower alkylphenyl and lower alkoxyphenyl; R is a member selected from the group consisting of hydrogen, lower alkyl, lower alkyl-carbonyl, hydroxymethyl, halomethyl, lower alkoxymethyl, cyanomethyl, cyano-Z— and lower alkoxy-carbonyl-Z—, said —Z— being a

$$—CH(R_3)CH(R_2)—$$

radical wherein R_2 is a member selected from the group consisting of hydrogen and methyl; X is a member selected from the group consisting of oxygen and sulfur; and n is an integer from 2 to 5.

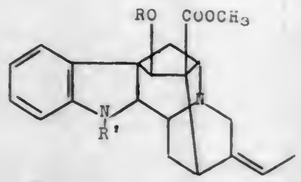
3. 1 - [3 - (4-fluoro-phenyl-thio)-propyl]-4-(2-oxo-1-benzimidazolinyl)-piperidine.

3,225,053
QUEBRACHIDINE AND DERIVATIVES

Marvin Gorman, Indianapolis, Ind., assignor to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana

Filed Jan. 10, 1963, Ser. No. 250,583
4 Claims. (Cl. 260—294.3)

1. An alkaloid or a salt thereof wtih a pharmaceutically acceptable strong acid, said alkaloid being represented by the structural formula:



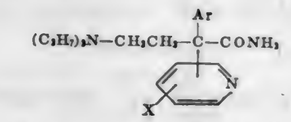
wherein R and R′ are members of the group consisting of hydrogen and acetyl.

3,225,054
4-DIPROPYLAMINO-2-ARYL-2-PYRIDYL-ALKANAMIDES

John W. Cusic, Skokie, and Henry W. Sause, Deerfield, Ill., assignors to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed July 3, 1962, Ser. No. 207,433
3 Claims. (Cl. 260—295)

1. A compound of the formula



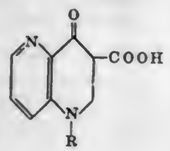
wherein Ar is selected from the group consisting of phenyl, tolyl, xylyl, naphthyl, halophenyl, anisyl, and dimethoxyphenyl; X is selected from the group consisting of hydrogen and chlorine.

3,225,055
1,5 AND -1,6-NAPTHYRIDINE-3-CARBOXYLIC ACID-1,4-DIHYDRO 4-OXO AND ESTERS THEREOF

George Yohe Lesher, Schodack, N.Y., assignor to Sterling Drug Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Feb. 27, 1964, Ser. No. 347,693
19 Claims. (Cl. 260—295.5)

1. A compound of the formula



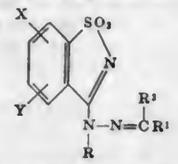
where R is lower-alkyl.

3,225,056
CERTAIN SUBSTITUTED BENZISOTHIAZOLES

John J. Traverso and Calvert W. Whitehead, Indianapolis, Ind., assignors to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana

No Drawing. Filed Nov. 18, 1964, Ser. No. 412,258
8 Claims. (Cl. 260—301)

1. The compounds having the following formula



wherein R and R^2, when taken alone, are hydrogen; R^1, when taken alone, is selected from the group consisting of C_1–C_6 alkyl, and C_2–C_7 alkenyl; X and Y are selected from the group consisting of hydrogen, halogen, lower alkyl, trifluoromethyl, and lower alkyloxy; R^1 and R^2, when taken together with the carbon atom to which they are attached, form C_5–C_6 cycloalkyl; and R and R^1, when taken together with the

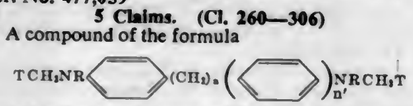
grouping to which they are attached, form a heterocyclic ring selected from the group consisting of pyrazole, halopyrazole, lower-alkyl pyrazole, hydroxypyrazoline, and lower-alkyl hydroxy pyrazoline.

3,225,057
3,3-[p-PHENYLENEBIS(IMINOMETHYLENE) BIS](2-THIAZOLINETHIONES)

Lloyd A. Walker, Akron, Ohio, assignor to Monsanto Company, a corporation of Delaware

No Drawing. Original application Feb. 17, 1965, Ser. No. 433,467. Divided and this application June 21, 1965, Ser. No. 477,059
5 Claims. (Cl. 260—306)

1. A compound of the formula



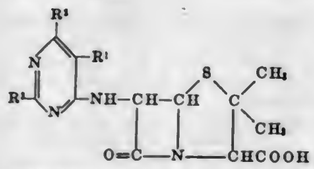
where n and n' are integers zero or one with the proviso that when n' is zero n is also zero, T is a radical selected from the group consisting of 2-thioxo-3-thiazolinyl, lower-alkyl - substituted 2 - thioxo - 3 - thiazolinyl, lower-carboalkoxy-substituted 2-thioxo-3-thiazolinyl, 2-thioxo-3-benzoxazolinyl, 2-thioxo-3-benzothiazolinyl, and nitro-, chloro-, phenyl-, lower-alkoxy-, and lower-alkyl-substituted 2-thioxo-3-benzothiazolinyl and R is selected from the group consisting of hydrogen and lower alkyl.

3,225,058
SUBSTITUTED N-(4-PYRIMIDINYL)-6-AMINOPENICILLANIC ACIDS

Peter F. Juby, Syracuse, N.Y., assignor to Bristol-Myers Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Sept. 4, 1963, Ser. No. 306,602
5 Claims. (Cl. 260—306.7)

1. A member selected from the group consisting of a compound of the formula



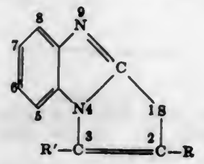
wherein R^1 represents carbalkoxy and R^2 represents hydrogen and R^3 represents a member selected from the group consisting of hydrogen and (lower)alkyl; and nontoxic, pharmaceutically acceptable salts thereof.

3,225,059
CERTAIN THIAZOLO [3,2-a]BENZIMIDAZOLES AND THEIR PRODUCTION

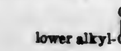
John J. D'Amico, Charleston, W. Va., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Sept. 3, 1963, Ser. No. 306,270
11 Claims. (Cl. 260—306.8)

1. A compound of the formula



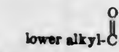
where R is selected from a group consisting of,



lower alkoxycarbonyl, carboxy, hydroxy-lower alkyl, carbaniloyl and



and R′ is selected from a group consisting of lower alkyl and



8. 1-(2-benzimidazolylthio)-1-propen-2-ol acetate.

9. 3 - (2 - benzimidazolylthio) - 4 - hydroxy - 3 - penten-2-one acetate.

10. The process which comprises heating 3-(2-benzimidazolylthio)-2,4-pentanedione with acetic anhydride and pyridine for a time sufficient to effect ring closure and isolating methyl 3-methylthiazolo[3,2-a]benzimidazolyl ketone.

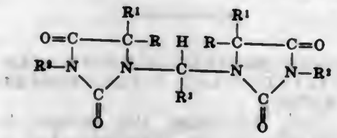
11. The process which comprises heating ethyl 2-(2-benzimidazolylthio)acetoacetate with acetic anhydride for a time sufficient to effect ring closure and isolating ethyl 3-methylthiazolo[3,2-a]benzimidazole-2-carboxylate.

3,225,060
BIS-HYDANTOINS AND A METHOD FOR THE PREPARATION THEREOF

Herbert E. Johnson, South Charleston, W. Va., assignor to Union Carbide Corporation, a corporation of New York

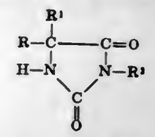
No Drawing. Filed July 6, 1961, Ser. No. 122,072
12 Claims. (Cl. 260—309.5)

1. A 1,1′-alkylidene bis-hydantoin having the formula:

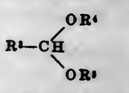


wherein R and R^1 are members selected from the group consisting of hydrogen and alkyl of 1 to 3 carbon atoms inclusive, R^2 is a member selected from the group consisting of hydrogen, alkyl of 1 to 10 carbon atoms inclusive and phenyl and R^3 is a halo-substituted alkyl of 1 to 2 carbon atoms inclusive.

6. A method for preparing a 1,1′-alkylene bis-hydantoin which comprises reacting, as sole reactants, in an organic acid medium, a hydantoin having the formula:



wherein R and R^1 are members selected from the group consisting of hydrogen and alkyl of 1 to 3 carbon atoms inclusive and R^2 is a member selected from the group consisting of hydrogen, alkyl of 1 to 10 carbon atoms inclusive and phenyl, an acetal of an aliphatic aldehyde in an amount of at least about 0.1 mole, per mole of said hydantoin, said acetal having the formula:



wherein R^3 is a member selected from the group consisting of hydrogen, alkyl and halo-substituted alkyl, said alkyl and halo-substituted alkyl having 1 to 2 carbon atoms inclusive, and R^4 and R^5 are alkyl of 1 to 20 carbon atoms inclusive, and an inorganic acid in an amount of at least about 0.15 mole, per mole of said hydantoin, to produce the said hydantoin.

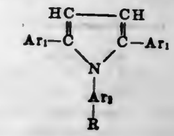
3,225,061
DERIVATIVES OF 2,5-DIARYLPYRROLE

Harry Braus, Springdale, and Fred D. Waas, Cincinnati, Ohio, assignors to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia

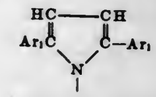
No Drawing. Filed Oct. 17, 1962, Ser. No. 231,276
5 Claims. (Cl. 260—313)

1. 1-(4′-aminophenyl)-2,5-diphenylpyrrole.

4. A compound of the formula



wherein Ar_1 is a member selected from the group consisting of phenyl anthryl, naphthyl, and phenanthryl, Ar_2 is a member selected from the group consisting of phenyl, anthryl, naphthyl, and phenanthryl, and R is a member selected from the group consisting of $—NH_2$, $—NHCOCH_3$,

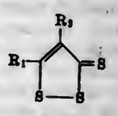


3,225,062
PROCESS FOR 1,2-DITHIOLE-3-THIONES

Erwin Klingsberg, Mountainside, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

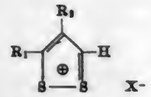
No Drawing. Filed Feb. 11, 1963, Ser. No. 257,747
5 Claims. (Cl. 260—327)

1. A process of preparing a 1,2-dithiole-3-thione of the formula:



wherein R_1 and R_2 are individually selected from the group consisting of hydrogen, phenyl, nitrophenyl and

N,N-di-lower alkylaminophenyl, at least one of the R_1 and R_2 radicals being hydrogen, which comprises heating a weakly basic solution of a dithiolium salt of the formula:



wherein R_1 and R_2 are defined as above and X^- is an anion, in the presence of sulfur.

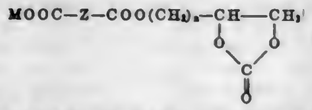
3,225,063

ORGANIC CYCLIC CARBONATES

Gaetano F. D'Alelio, South Bend, Ind., assignor to Scott Paper Company, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed May 21, 1962, Ser. No. 196,470
6 Claims. (Cl. 260—340.2)

1. As a new composition of matter a compound of the structure



in which the MOOC—Z—COO— moiety is derived from an acid selected from the group consisting of oxalic acid, succinic acid, halo succinic acid, citraconic acid, glutaric acid, allyl succinic acid, acetylene dicarboxylic acid, alkyl mercapto succinic acid, S-acetyl thiomalic acid, phthalic acid, tetrahydrophthalic acid, hexahydrophthalic acid, endomethylene tetrahydrophthalic acid, 1,2,4,5 benzene tetracarboxylic acid, 3-chlorophthalic acid and 3-nitrophthalic acid, and M is selected from the group consisting of hydrogen, alkali and alkaline earth metals and *n* is an integer of from 1 to 4.

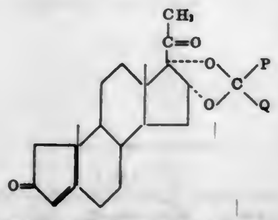
3,225,064

KETALS OF 16 ALPHA, 17 ALPHA-DIHYDROXY-A-NORPROGESTERONES

Frank L. Weisenborn, Somerset, N.J., assignor to Olin Mathieson Chemical Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Jan. 15, 1962, Ser. No. 166,353
4 Claims. (Cl. 260—340.5)

1. A compound of the formula



wherein P is selected from the group consisting of hydrogen, lower alkyl, halo lower alkyl, monocyclic cycloalkyl, monocyclic cycloalkyl lower alkyl, monocyclic aryl, monocyclic aryl lower alkyl, monocyclic heterocyclic and monocyclic heterocyclic lower alkyl; Q is selected from the group consisting of lower alkyl, halo lower alkyl, monocyclic cycloalkyl, monocyclic cycloalkyl lower alkyl, monocyclic aryl, monocyclic aryl lower alkyl, monocyclic heterocyclic and monocyclic heterocyclic lower alkyl; and together with the carbon to which they are joined P and Q is selected from the group consisting of monocyclic cycloalkyl and monocyclic heterocyclic.

2. The acetonide of 16α,17α-dihydroxy-A-norprogesterone.

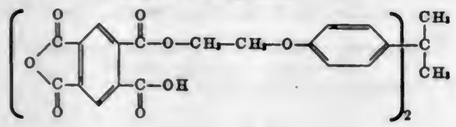
3,225,065

DIESTER COMPOSITIONS FORMED BY THE REACTION OF PYROMELLITIC DIANHYDRIDE AND POLYHYDRIC ALCOHOLS

Thomas Joseph Hyde, Woodbury, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Sept. 16, 1959, Ser. No. 840,251
4 Claims. (Cl. 260—346.3)

1. The following new compound:



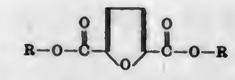
3,225,066

PROCESS FOR THE PREPARATION OF TETRAHYDROFURAN-CIS, 2,5-DICARBOXYLIC ACID AND SALTS THEREOF

Baak W. Lew, Wilmington, Del., assignor to Atlas Chemical Industries, Inc., Wilmington, Del., a corporation of Delaware

No Drawing. Filed Apr. 18, 1963, Ser. No. 273,849
5 Claims. (Cl. 260—347.3)

1. A process of preparing tetrahydrofuran-cis 2,5-dicarboxylic acid and salts thereof which comprises the steps of reacting a starting material having the general formula of



wherein each R is independently a member of the group consisting of hydrogen, ammonium, and an alkali metal, in the presence of a supported noble metal catalyst with hydrogen under a pressure of from about 30 p.s.i. to about 2,000 p.s.i and at a temperature of from about 15° C. to about 150° C., for a period sufficiently long that two mols of hydrogen for each mol of starting material are reacted with the starting material to produce tetrahydrofuran-cis 2,5-dicarboxylic acid and salts thereof.

3,225,067

EPOXIDIZED DIESTERS OF POLYOXYETHYLENE ISOSORBIDE

John W. Le Maistre, Claymont, and Ernest C. Ford, Jr., Wilmington, Del., assignors to Atlas Chemical Industries, Inc., Wilmington, Del., a corporation of Delaware

No Drawing. Filed June 29, 1962, Ser. No. 206,149
3 Claims. (Cl. 260—347.4)

1. An epoxidized diester of a polyoxyethylene isosorbide containing from 2 to 8 oxyethylene groups per mol and two mols of an ethylenically unsaturated fatty acid wherein at least 25% of the unsaturation is converted to epoxide groups.

3,225,068

EPOXIDIZED DIESTERS OF FATTY ACID AND POLYOXYETHYLENE TETRAHYDROFURAN DICARBINOL

John D. Zech, Wilmington, Del., assignor to Atlas Chemical Industries, Inc., Wilmington, Del., a corporation of Delaware

No Drawing. Filed June 29, 1962, Ser. No. 206,150
3 Claims. (Cl. 260—347.4)

1. An epoxidized diester of a polyoxyethylene tetrahydrofuran dicarbinol containing from 2 to 8 oxyethylene groups per mol and two mols of a higher ethylenically unsaturated fatty acid wherein at least 25% of the unsaturation is converted to epoxide groups.

3,225,069

PROCESS OF PRODUCING ESTERS OF HYDROXYMETHYLTETRAHYDROFUROIC ACID

Baak W. Lew, Wilmington, Del., assignor to Atlas Chemical Industries, Inc., Wilmington, Del., a corporation of Delaware

No Drawing. Filed Apr. 18, 1963, Ser. No. 273,851
3 Claims. (Cl. 260—347.5)

1. A process of producing esters of hydroxymethyltetrahydrofuroic acid which comprises the steps of

reacting hydrogen, hydroxymethylfuroic acid, and an excess of an aliphatic alcohol having from 1 to 12 carbon atoms,

in the presence of sufficient supported noble metal catalyst to furnish from about 0.1% to about 5.0% of noble metal, based on the weight of hydroxymethylfuroic acid starting material,

for a time of between about 0.5 and 3.5 hours,

at a hydrogen pressure of at least about 30 p.s.i.g.,

at a temperature of between 25 and 150° C., and

recovering the formed ester product.

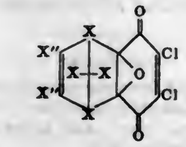
3,225,070

POLYCYCLIC COMPOUNDS

Hsing Yun Fan, Modesto, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 28, 1961, Ser. No. 162,965
8 Claims. (Cl. 260—348)

1. The compound of the formula:



wherein X and X'' each individually represents a member of the group consisting of hydrogen and middle halogen.

3,225,071

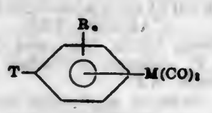
ARENE GROUP VIB METAL TRICARBONYLS AND PROCESS FOR PREPARING SAME

Mark Crosby Whiting, Oxford, England, assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Nov. 27, 1963, Ser. No. 326,399
16 Claims. (Cl. 260—397.2)

1. [Pi-(tricarbonyl chromium)phenyl] ether of cholesterol.

2. A process for the preparation of a substituted arene Group VIB metal tricarbonyl having the formula:



wherein

R is an alkyl radical having from 1 to about 3 carbon atoms,

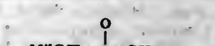
a is an integer having a value of zero to three,

M is a Group VIB metal, and

T is a substituent group selected from the class consisting of alkoxide, phenoxide, mercapto, amino, amido, cyclopentadienyl, alkynyl, triarylmethyl, and ketonyl radicals;

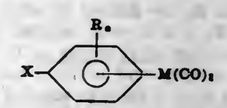
said process comprising:

(A) reacting, in the presence of dimethyl sulfoxide, a compound selected from the class consisting of alcohols, phenols, mercaptans, primary and secondary amines, amides having at least one hydrogen bonded to the amido nitrogen atom, terminal acetylenes having at least three carbon atoms, cyclopentadienes, ketones and triaryl methanes; with an alkali metal salt of the conjugate base of dimethyl sulfoxide, said salt having the formula



wherein M' is an alkali metal; whereby a dimethyl sulfoxide solution of an alkali metal nucleophilic reagent having the formula M'T is produced, wherein M' and T are as defined above; and

(B) subsequently reacting said alkali metal nucleophilic reactant in said dimethyl sulfoxide solution with a halogen-substituted arene Groupe VIB metal tricarbonyl having the formula:



wherein X is a halogen and R, *a*, and M are as defined above.

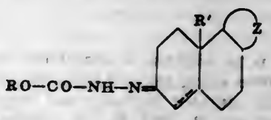
3,225,072

CARBALKOXYHYDRAZONES OF THE ANDROSTANE SERIES

Romano Deghenghi, Westmount, Quebec, Canada, assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed July 28, 1964, Ser. No. 385,773
8 Claims. (Cl. 260—397.5)

1. A steroid compound of the formula:



in which R is selected from the group consisting of lower alkyl groups containing from 1 to 3 carbon atoms; R' is selected from the group consisting of hydrogen and methyl; and Z represents the C and D rings of the usual steroid nucleus, together with their respective substituents, said steroid compound being selected from the group consisting of

17α-methyl-4-androsten-17β-ol-3-carbethoxyhydrazone,

17α-ethyl-19-nor-18-methyl-4-androsten-17β-ol-3-carbethoxyhydrazone,

17α-methyl-9α-fluoro-4-androsten-11β,17β-diol-3-carbethoxyhydrazone,

17α-methyl-9α-fluoro-4-androsten-11β,17β-diol-3-carbomethoxyhydrazone,

17β-hydroxy-5α-androsten-3-carbomethoxyhydrazone,

17β-hydroxy-5α-androstan-3-carbethoxyhydrazone,

17β-hydroxy-5α-androstan-3-carbopropoxyhydrazone,

2α-methyl-17β-propionoxy-5α-androstan-3-carbethoxyhydrazone,

1-methyl-17β-acetoxy-5α-androst-1-ene-3-carbethoxyhydrazone,

17α-ethyl-17β-hydroxy-19-nor-4-androstene-3-carbomethoxyhydrazone,

4-chloro-17β-acetoxy-4-androstene-3-carbethoxyhydrazone,

17α-methyl-4-hydroxy-4-androsten-17β-ol-3-carbethoxyhydrazone,

17β-propionoxy-4-androsten-3-carbomethoxyhydrazone,

17β-propionoxy-4-androsten-3-carbethoxyhydrazone, and

17β-hydroxy-19-nor-4-androstene-3-carbopropoxyhydrazone.

3,225,073
SULFURIC ACID SEMI-ESTER QUATERNARY AMMONIUM COMPOUNDS

Dietrich Glabisch, Leverkusen, Martin Wandel, Dormagen, and Josef Witte, Cologne-Stammheim, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Oct. 10, 1961, Ser. No. 144,037
Claims priority, application Germany, Nov. 8, 1960, F 32,495
3 Claims. (Cl. 260—401)

1. A quaternary ammonium compound of the formula



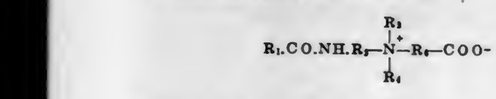
wherein R_1 and R_2 are defined as alkyl containing 1–4 carbon atoms, R_3 is a member selected from the group consisting of hydroxy alkyl having up to 2 carbon atoms esterified with a fatty acid of 2–18 carbon atoms and cyclohexyl; and R_4 is a member selected from the group consisting of ethylene and propylene.

3,225,074
BETAINES

Frank M. Cowen, North Plainfield, N.J., and Gloria Bellis, New Rochelle, N.Y., assignors to American Cyanamid Company, New York, N.Y., a corporation of Maine

No Drawing. Filed Dec. 28, 1959, Ser. No. 862,087
10 Claims. (Cl. 260—404.5)

1. Betaines having the formula



wherein R_1 is an aliphatic hydrocarbon radical of from 10 to 20 carbon atoms selected from the group consisting of long-chain saturated aliphatics and long-chain alkenyl aliphatic radicals, R_2 and R_6 are alkylene radicals of from 1 to 12 carbon atoms, R_4 is a member of the group consisting of $-C_nH_{2n+1}$ in which n is a whole number from 1 to 10 and $-C_nH_{2n}.OH$ in which n is a whole number from 1 to 3 and $-(C_2H_4.O)_xH$ in which x is a whole number from 2 to about 100, and R_3 is a member of the group consisting of R_4, $R_1CO.NH.R_2-$,

$$-R_6-COOH$$

and $-R_6COOMe$ in which R_1, R_2, R_4 and R_6 are as defined above and Me is a monovalent salt-forming radical.

3,225,075
METHOD OF PRODUCING BASIC CADMIUM SALTS OF ALIPHATIC CARBOXYLIC ACIDS

John G. Hendricks, Boonton, N.J., and Leonard M. Kebrich, Ridgewood, N.Y., assignors to National Lead Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed July 25, 1960, Ser. No. 44,903
6 Claims. (Cl. 260—414)

1. A method of producing a basic cadmium compound corresponding to the formula $CdO \cdot Cd(C_nH_{2n\pm1}COO)_2$, where n represents an integer of from 3 to 21, which comprises mixing a cadmium compound selected from the group consisting of cadmium oxide and cadmium hydroxide and an aliphatic carboxylic acid containing from 4 to 22 carbon atoms in an aqueous medium containing a water soluble organic compound selected from the group consisting of alcohols and glycol ethers, and mixing the same until the cadmium compound and the aliphatic carboxylic acid are chemically combined.

3,225,076
PROCESS FOR PREPARING DERIVATIVES OF STANNOGLUCONIC ACID

Leonard M. Edwards, Cranford, N.J., assignor, by mesne assignments, to M & T Chemicals Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 2, 1962, Ser. No. 227,938
15 Claims. (Cl. 260—429.7)

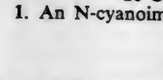
1. The process for preparing salts of stannogluconic acid characterized by their freedom from objectionable color, taste, and odor which comprises mixing an aqueous solution of an acid selected from the group consisting of gluconic acid and gluconolactone with stannous hydroxide thereby forming an aqueous solution of stannogluconic acid, treating said aqueous solution of stannogluconic acid with activated carbon before neutralizing said stannogluconic acid and neutralizing said stannogluconic acid with a base thereby forming an aqueous solution of a salt of said stannogluconic acid characterized by freedom from objectionable color, taste, and odor.

3,225,077
N-CYANOIMIDATES AND PROCESSES FOR PREPARING SAME

Frederic Charles Schaefer, Munich-Solln, Germany, and Kenneth Robert Huffman, Stamford, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Mar. 5, 1963, Ser. No. 262,851
10 Claims. (Cl. 260—453)

1. An N-cyanoimidate of the formula:



in which R is selected from the group consisting of hydrogen, alkyl, halo-, carbethoxy and phenyl-substituted lower alkyl, phenyl, halo-, nitro-, and lower alkyl-substituted phenyl and R′ is lower alkyl.

3,225,078
2-(PHENOXY) ETHYL DIALLYLDITHIO-CARBAMATE

Anton G. Weiss, Nitro, W. Va., and Philip C. Hamm, Webster Groves, Mo., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Original application Oct. 7, 1959, Ser. No. 844,872, now Patent No. 3,142,693, dated July 28, 1964. Divided and this application Sept. 26, 1962, Ser. No. 231,315
3 Claims. (Cl. 260—455)

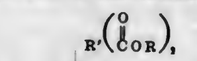
1. 2-(p-chlorophenoxy)ethyl diallyldithiocarbamate.

3,225,079
2,5-DIMETHYLHEXANE-2,5-DI(PEROXY CARBONATES)

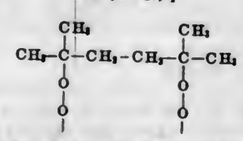
James B. Harrison, Elyria, Ohio, and Orville L. Magell, Kenmore, N.Y., assignors to Wallace & Tiernan Incorporated, Newark, N.J.

No Drawing. Original application June 1, 1959, Ser. No. 817,094, now Patent No. 3,117,166, dated Jan. 6, 1963. Divided and this application Jan. 6, 1964, Ser. No. 336,028
5 Claims. (Cl. 260—463)

1. A percarbonate of the formula:



where R′ is



and R is selected from the group consisting of lower alkyl radicals and the monochlor derivatives thereof.

3,225,080
PROCESS FOR PRODUCING NITRILES

Kunio Nakagawa, Nishinomiya-shi, Hyogo, and Teruji Tsuji, Suita-shi, Osaka, Japan, assignors to Shionogi & Co., Ltd., Osaka, Japan

No Drawing. Filed Oct. 2, 1962, Ser. No. 227,723
Claims priority, application Japan, Oct. 3, 1961, 36/35,934
5 Claims. (Cl. 260—465)

1. A process for oxidizing an amine selected from the group consisting of hexylamine, octylamine, dodecylamine, benzylamine, methylbenzylamine, methoxybenzylamine, chlorobenzylamine and nitrobenzylamine in the presence of nickel peroxide and in the liquid phase at a temperature between 30° and 90° C., thereby producing the corresponding nitrile.

3,225,081
METHOD OF PRODUCING 2,6-DICHLORO-BENZONITRILE

Harmannus Koopman, Van Houtenlaan, Weesps, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 29, 1962, Ser. No. 233,872
Claims priority, application Netherlands, Oct. 30, 1961, 270,819
5 Claims. (Cl. 260—465)

1. The method of producing 2,6-dichlorobenzonitrile, wherein β-2,6-dichlorobenzaldoxime is treated with an aqueous solution of an alkali metal base at a temperature between about 20° C. and 90° C.

3,225,082
2-CARBOALKOXY-4-CYANO-1-BUTENE PRODUCTION

James D. McClure, San Francisco, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed May 13, 1963, Ser. No. 280,125
4 Claims. (Cl. 260—465.4)

1. The process for the production of 2-carboalkoxy-4-cyano-1-butene by reacting acrylonitrile and alkyl acrylate of the formula

$$CH_2{=}CH{-}COOR''$$

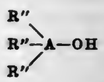
wherein R″ is alkyl of from 1 to 8 carbon atoms, the molar ratio of the acrylate to acrylonitrile being from about 2:1 to about 1:2, under substantially anhydrous conditions in the presence of from about 0.0001 mole to about 0.1 mole per mole of reactant of tertiary phosphine catalyst selected from the group consisting of RRRP and RRP—R′—PRR wherein R is selected from the group consisting of alkyl of up to 12 carbon atoms, aralkyl of up to 12 carbon atoms, aryl of up to 10 carbon atoms and alkaryl of up to 10 carbon atoms, and R′ is a divalent radical corresponding to R, in solution in tertiary alkanol of from 4 to 10 carbon atoms, at a temperature from about 50° C. to about 190° C.

3,225,083
DIMERIZATION PROCESS OF PREPARING 1,4-DICYANO-1-BUTENE FROM ACRYLONITRILE

James D. McClure, San Francisco, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 15, 1963, Ser. No. 302,474
15 Claims. (Cl. 260—465.8)

1. The process for the production of 1,4-dicyano-1-butene by dimerizing acrylonitrile in the presence of from about 0.0001 mole to about 0.1 mole per mole of acrylonitrile of a tertiary aromatic phosphine catalyst of only atoms of carbon, hydrogen and phosphorus selected from the group consisting of RRRP and RRP—R′—RRP wherein R is selected from the group consisting of monovalent hydrocarbon aryl of up to 20 carbon atoms and monovalent hydrocarbon alkaryl of up to 20 carbon atoms and R′ is selected from the group consisting of divalent hydrocarbon aryl of up to 20 carbon atoms, divalent hydrocarbon alkaryl of up to 20 carbon atoms and divalent saturated aliphatic hydrocarbon moiety of 2 to 3 carbon atoms, in substantially anhydrous tertiary hydroxylic solvent of the formula



wherein A is selected from the group consisting of carbon and silicon and R″ is alkyl of 1 to 10 carbon atoms, at a temperature of from about 100° C. to about 200° C.

3,225,084
PROCESS FOR PREPARING 1,4-ENDOALKYLENE-Δ^5-CYCLOHEXENE-2,3-TRANS-DICARBOXYLIC ESTERS

Heinrich Koch, Vienna, Austria, assignor to F. Joh. Kwizda-Chem. Fabrik, Vienna, Austria, a corporation of Austria

No Drawing. Filed Aug. 7, 1962, Ser. No. 215,278
Claims priority, application Austria, Apr. 10, 1962, A 2,984/62
3 Claims. (Cl. 260—468)

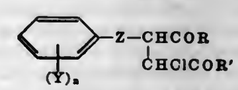
1. A process of preparing a lower alkyl ester of 1,4-endoalkylene-Δ^5-cyclohexene-2,3-trans-dicarboxylic acid which comprises reacting a lower alkyl fumarate with a cycloalkadiene monomer selected from the group consisting of cyclopentadiene, hexachloropentadiene, a mixture of tetrachlorocyclopentadiene and pentachlorocyclopentadiene, and cyclohexa-1,3-diene, at normal pressure and a temperature not exceeding the boiling point of the cycloalkadiene monomer.

3,225,085
SUCCINIC ACID DERIVATIVES

Charles J. Eby, North Springfield, Va., and Erhard J. Prill, Des Peres, Mo., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed Sept. 15, 1961, Ser. No. 138,255
4 Claims. (Cl. 260—470)

1. A compound of the formula



wherein Y is selected from the class consisting of halogen atoms and lower alkyl, n is an integer from 0 to 5, Z is selected from the class consisting of S, SO and SO_2, and R and R′ taken together are the—O— radical and taken singly are selected from the class consisting of hydroxy and lower alkoxy.

3,225,086
PROCESS FOR MAKING MAHOGANY SULFONIC ACIDS

Roy C. Sias and Paul C. Kemp, Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware

No Drawing. Filed Apr. 3, 1963, Ser. No. 270,204
11 Claims. (Cl. 260—504)

1. A process for preparing oil soluble mahogany sulfonic acid which process comprises the sequential steps: (a) physically treating a sour oil, obtained by sulfuric

acid treating of a hydrocarbon oil, to remove pepper sludge and gases therefrom, said sour oil containing oil soluble mahogany sulfonic acid;

(b) intermingling said treated oil with liquid water in an amount of about 1–6 weight percent, based on said treated oil, at a temperature of about 60°–125° F. for a time of about 3–180 minutes;

(c) intermingling essentially anhydrous liquid methanol with said treated oil-water mixture, in an amount of about 3–16 weight percent, based on said treated oil, at a temperature of about 60°–125° F. for a time of about 1–180 minutes;

(d) separating a raffinate phase consisting essentially of oil of substantially decreased sulfonic acid content from an extract phase consisting essentially of methanol, water, oil soluble mahogany sulfonic acid and other acidic bodies including methyl hydrogen sulfate;

(e) intermingling said extract phase with a calcium base, at a temperature of about 50°–100° F. for a time of about 5–60 minutes, in an amount corresponding to about 1–2 theories of calcium base, where a "theory" corresponds to the theoretical amount of calcium base needed to neutralize the other acidic bodies in said extract phase to form solid insoluble reaction products; and

(f) separating the solid bodies present in said calcium treated extract phase to obtain a liquid phase consisting essentially of oil-soluble mahogany sulfonic acid, water and methanol, which liquid phase is essentially free of inorganic salt.

3,225,087

PROCESS FOR PRODUCTION OF SODIUM 2,3,6-TRICHLOROPHENYLACETATE

Edwin Dorfman, Grand Island, Edward D. Weil, Lewiston, and Jack S. Newcomer, Wilson, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed Mar. 21, 1960, Ser. No. 16,115

7 Claims. (Cl. 260—515)

1. A process for the production of sodium 2,3,6-trichlorophenylacetate which comprises chlorinating toluene to a total of 2.4 to 2.8 chlorine atoms on the ring in the presence of a catalytic amount of a catalyst selected from the group consisting of ferric chloride, antimony chloride, aluminum chloride, zinc chloride, iodine, tin chloride, boron trifluoride and molybdenum chloride, separating by fractional distillation a trichlorotoluene fraction, chlorinating this trichlorotoluene fraction on the side chain to a total of 0.5 to 0.9 chlorine atom, treating the resulting product with an alkali cyanide, hydrolysing the resulting product with a material selected from the group consisting of an alkali hydroxide and a mineral acid, and where mineral acid is so employed, diluting the hydrolysis reaction mixture with water, separating the aqueous layer resulting from the organic acid layer, mixing the organic acid layer with caustic soda until the organic acid is dissolved, bringing the hydrolysis product into aqueous solution at a pH of near neutrality and diluting with water to a specific gravity of less than 1.19 (measured at 25 degrees centigrade) and extracting and removing impurities from the resultant aqueous solution of sodium 2,3,6-trichlorophenylacetate product with a water-immiscible organic solvent selected from the group consisting of benzene, an alkylbenzene, a chlorobenzene, a chlorinated lower aliphatic hydrocarbon, trichloroethylene and perchloroethylene.

3,225,088

METHOD OF PRODUCING ALKALI METAL TEREPHTHALATE

Eiichi Takagi and Katsuto Matsuzawa, Setagaya-ku, Tokyo, and Kiyoshi Yoshida, Shinjuku-ku, Tokyo, and Ryohei Shimomura and Genjiro Hashizume, Setagaya-ku, Tokyo, Japan, assignors to Mitsubishi Chemical Industries, Limited, Tokyo, Japan

Filed Sept. 18, 1962, Ser. No. 224,493

5 Claims. (Cl. 260—515)

1. A method of producing alkali metal terephthalate which comprises shaping into granules a mixture composed of an alkali metal salt of benzene carboxylic acids selected from the group consisting of phthalic acid, isophthalic acid, and benzoic acid and mixtures thereof and a catalyst selected from the group consisting of cadmium, zinc and lead and oxides and salts thereof, said granules having a thickness of about 1 mm. as the minimum to about 30 mm. as the maximum, introducing said granules into a reactor to form a bed therein, said bed having voids between said granules, passing carbon dioxide gas at temperatures of about 300°–500° C. through said granules at a velocity lower than the minimum fluidizing velocity of said bed, said granules moving downward in a non-fluidized bed and said gas flowing upwardly countercurrent to said granules and through said voids, thereby to convert said alkali metal salt of benzene carboxylic acid to the alkali metal terephthalate.

3,225,089

IMPROVEMENT IN THE CARBONATION OF ALKALI METAL-CONTAINING POLYMERS

James N. Short, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Aug. 18, 1960, Ser. No. 50,310

6 Claims. (Cl. 260—537)

1. In a process for carbonating a polymer of a vinylidene-containing monomer selected from the group consisting of conjugated dienes and aryl-substituted olefins, said polymer having a molecular weight in the range of about 1000 to 150,000 and containing at least one terminal alkali metal atom per molecule, the improvement which comprises introducing dry gaseous carbon dioxide in an amount at least twice that required for stoichiometric carbonation of said polymer and under pressure into a flowing polymer solution containing not over 20 weight percent of said polymer passing through a mixing zone, maintaining the pressure within said zone below said pressure of the carbon dioxide added so that expansion of said carbon dioxide occurs within said zone producing cooling and turbulent mixing of said solution and carbon dioxide, thus maintaining the temperature of the reaction mixture below 60° F. and withdrawing the resulting mixture from said zone within about 5 seconds.

3,225,090

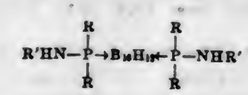
BIS(AMINODIARYLPHOSPHINE) DECABORANES

Joseph R. Reiner, Northford, and Hansjuergen A. Schroeder, New Haven, Conn., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia

No Drawing. Filed May 17, 1963, Ser. No. 281,325

5 Claims. (Cl. 260—551)

1. A bis(phosphine) decaborane of the formula:



wherein R is an aryl radical selected from the group consisting of phenyl, tolyl, xylyl, naphthyl, or biphenylyl and R′ is a member selected from the group consisting of hydrogen, alkyl of 1 to 4 carbon atoms, and NH_2.

3,225,091

ANTICHOLINERGIC SUBSTITUTED BUTYRAMIDES

Cameron Ainsworth and Charles W. Ryan, Indianapolis, Ind., assignors to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana

No Drawing. Filed Feb. 1, 1962, Ser. No. 170,506

6 Claims. (Cl. 260—558)

1. 2,2-diphenyl-4-(N-n-alkyl-t-hydrocarbylamino) - butyramide wherein n-alkyl has from 1 to 4 carbon atoms and t-hydrocarbyl is a saturated C_4–C_8 tertiary hydrocarbon radical.

2. An acid addition salt of a compound of claim 1 with a pharmaceutically acceptable acid.

3,225,092

PREPARATION OF AMIDES

Edward F. Zaweski, Oak Park, Mich., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia

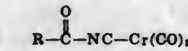
No Drawing. Filed May 8, 1963, Ser. No. 278,988

10 Claims. (Cl. 260—558)

1. Process for the preparation of an amide, said process comprising reacting a compound having the formula

$$HNR_1R_2$$

wherein R_1 and R_2 are independently selected from the class consisting of hydrogen and hydrocarbon radicals having from one to eight carbon atoms, said radicals being free from hydrogen atoms which are more reactive than a hydrogen atom bonded to the nitrogen atom in said compound; with a reactant having the formula



wherein R is a hydrocarbon radical having from 1 to about 16 carbon atoms.

3,225,093

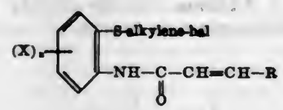
HALOALKYLENETHIOPHENYL AMIDES

John Krapcho, Somerset, N.J., assignor to Olin Mathieson Chemical Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Mar. 1, 1965, Ser. No. 436,316

11 Claims. (Cl. 260—558)

1. A compound of the formula



wherein:

the alkylene group has up to about 12 carbon atoms,

R is a member of the group consisting of hydrogen, lower alkyl, $(X)_n$-phenyl, furyl, thienyl, pyridyl and piperonyl, X is a member of the group consisting of hydrogen, halogen, trifluoromethyl, nitro, lower alkyl, lower alkoxy and lower alkanoyl, *n* is an integer from 1 to 3 and hal is halogen.

3,225,094

PREPARATION OF POLYAMINES BY STEAM HYDROLYSIS OF POLYISOCYANATE REACTION PRODUCTS

Herbert Otto Wolf, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed June 15, 1962, Ser. No. 202,659

12 Claims. (Cl. 260—570)

1. A process for obtaining a polyamine which comprises hydrolyzing in the absence of condensed water a phosgenation tar with steam superheated to a temperature between 200–400° C.

3,225,095

N-ARYL-SUBSTITUTED-PROPAN-(1)-ONES AND -OLS OF ARYLAMINOALKANOLS AND SALTS THEREOF

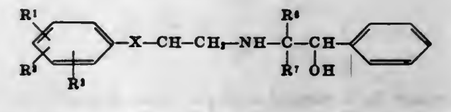
Kurt Thiele, Frankfurt am Main, Germany, assignor to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler, Frankfurt am Main, Germany

No Drawing. Filed Mar. 28, 1963, Ser. No. 268,579

Claims priority, application Germany, Mar. 31, 1962, D 38,551; May 9, 1962, D 38,868; July 27, 1962, D 39,477; Jan. 17, 1963, D 40,704, D 40,705

6 Claims. (Cl. 260—570.5)

1. A compound of the formula



wherein X is a divalent radical selected from the group consisting of —CO— and —CH(OH)—, each of R^1, R^2 and R^3 is selected from the group consisting of —H, —OH, —Cl, $-OCH_3$ and $-NO_2$, R^6 is selected from the group consisting of —H, $-CH_3$ and $-C_2H_5$, each of R^8 and R^7 is selected from the group consisting of —H and $-CH_3$ and each of R^9 and R^{10} is selected from the group consisting of —H, —Cl and $-OCH_3$.

3,225,096

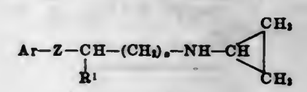
N-CYCLOPROPYLAMINE ARALKANONE AND ARALKANOL AMINE DERIVATIVES

Jack Mills and Richard W. Kattau, Indianapolis, Ind., assignors to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana

No Drawing. Filed Mar. 2, 1964, Ser. No. 348,814

6 Claims. (Cl. 260—570.5)

1. A compound of the group having the formula



and the salts thereof with physiologically acceptable acids, wherein Z is a member of the group consisting of



and —CHOH—, R^1 is a member of the group consisting of hydrogen and methyl, *n* is a number from 0 to 1, and Ar is a member of the group consisting of β-naphthyl, phenyl, and phenyl substituted by one to three substituents selected from the group consisting of halogen, trifluoromethyl, methyl, and methoxy.

3,225,097

METHOD OF PREPARING POLY(GAMMA-AMINOPROPYL)INDENE

Hans Dressler, Pitcairn, Pa., assignor to Koppers Company, Inc., a corporation of Delaware

No Drawing. Filed May 28, 1962, Ser. No. 197,929

3 Claims. (Cl. 260—570.8)

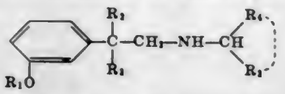
1. Method of making mixed 1,1-bis(aminopropyl)indene and 1,1,3-tris(aminopropyl)indene comprising contacting poly(beta-cyanoethyl)indene with hydrogen in an inert organic solvent in the presence of 3–5 moles of ammonia per mole of poly(beta-cyanoethyl)indene, and a nickel catalyst, supported on an inert carrier, consisting essentially of 10–70% by weight nickel and promoted by an alkali metal hydroxide, at a temperature of 150–250° C. and under a total pressure of 750–2500 p.s.i.g.

3,225,098
N-SUBSTITUTED PHENYLALKYLAMINES

Walter Krohs, Bad Soden, Taunus, and Leopold Ther and Gerhard Vogel, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed July 17, 1962, Ser. No. 210,538
Claims priority, application Germany, July 19, 1961, F 34,467
7 Claims. (Cl. 260—570.8)

1. The compounds selected from the group consisting of (1) phenylalkylamines of the general Formula I



(I)

in which R_1 is selected from the group consisting of hydrogen, an alkyl group having from 1 to 4 carbon atoms and the benzyl group, R_2 represents an alkyl group having from 2 to 4 carbon atoms, R_3 is selected from the group consisting of a pentyl group and a cyclopentyl group, and R_4 and R_5 are selected from the group consisting of an alkyl group having from 1 to 4 carbon atoms and, together with the combining carbon atom, members of a saturated carbocycle having from 5 to 6 carbon atoms, and (2) addition salts of said compounds with physiologically compatible acids.

3,225,099
N-METHYL-N-PHENYL-N-(3,5-DI-TERTIARY-BUTYL-4-HYDROXYBENZYL)AMINE

Thomas H. Coffield, Farmington, Mich., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Dec. 3, 1964, Ser. No. 415,783
1 Claim. (Cl. 260—570.9)

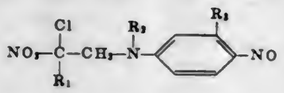
N - methyl - N - phenyl - N - (3,5 - di - tert - butyl - 4-hydroxybenzyl)amine.

3,225,100
NITROSOANILINONITROALKANES

Darrell D. Mullins, Nitro, W. Va., and Lloyd A. Walker, Akron, Ohio, assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed Feb. 12, 1964, Ser. No. 344,230
4 Claims. (Cl. 260—577)

1. A compound of the formula



where R_1 is lower alkyl, R_2 is selected from a group consisting of hydrogen, lower alkyl, and nitroso and R_3 is selected from a group consisting of hydrogen, chlorine, and lower alkyl.

3,225,101
PROCESS FOR PURIFYING HYDRAZINIUM CHLORIDES

George L. Braude, North Linthicum, and Joseph A. Cogliano, Baltimore, Md., assignors to W. R. Grace & Co., a corporation of Connecticut

No Drawing. Filed Dec. 26, 1962, Ser. No. 247,280
2 Claims. (Cl. 260—583)

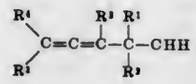
1. A method for purifying water insoluble hydrazinium chlorides containing ammonium chloride as an impurity which comprises dissolving the mixture in a non-aqueous solvent selected from the group consisting of 2-propanol and chloroform, filtering the mixture to remove undissolved ammonium chloride, passing the mixture through an anion exchange resin of polystyrene divinyl benzene copolymer quaternary ammonium in the hydroxyl form, collecting the effluent and evaporating the volatile components contained therein converting the hydrazinium hydroxide remaining after evaporation to the chloride salt, and finally recovering the pure hydrazinium chloride.

3,225,102
ALLENIC ALDEHYDES

Benjamin Thompson, Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Dec. 13, 1960, Ser. No. 75,475
13 Claims. (Cl. 260—598)

1. Allenic alehydes of the formula



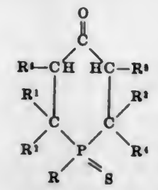
wherein R^1 represents a member selected from the group consisting of lower alkyl radicals and lower alkenyl radicals, R^2 represents lower alkyl radicals and wherein R^1 and R^2 together with the alpha carbon atom to which they are attached can be a member selected from the group consisting of cyclopentyl, cyclohexyl, cyclohexenyl and norboranayl, R^3, R^4 and R^5 each represents a member selected from the group consisting of hydrogen and lower alkyl radicals and wherein R^4 and R^5 together with the carbon atom to which they are attached can be a member selected from the group consisting of cyclopentyl, cyclohexyl and lower alkyl substituted cyclohexyl radicals.

3,225,103
4-PHOSPHORINANONE-1-SULFIDES

Richard Parke Welcher, Old Greenwich, Conn., assignor to American Cyanamid Company, New York, N.Y., a corporation of Maine

No Drawing. Filed Dec. 22, 1961, Ser. No. 161,438
2 Claims. (Cl. 260—606.5)

1. A 4-phosphorinanone-1-sulfide of the formula



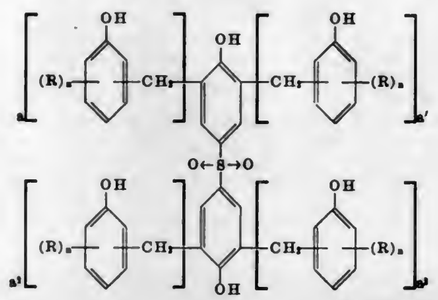
wherein R is a member selected from the group consisting of substituted and unsubstituted, branched and straight chain alkyl having from 1 to 18 carbon atoms, cycloalkyl, substituted and unsubstituted aryl; said substituents for alkyl being selected from the group consisting of lower alkoxy, phenyl and cyano, and said substituents for aryl being selected from the group consisting of halogen and lower alkyl; R^1, R^2, R^3 and R^4 each represent a member selected from the group consisting of hydrogen, lower alkyl, phenyl, chloro-substituted phenyl, lower alkyl-substituted phenyl, cyclohexyl and lower alkoxyalkyl; and R^5 and R^6 each represent a member selected from the group consisting of hydrogen, lower alkyl and phenyl.

3,225,104
HYDROXYBENZYLATED SULFONES AND COMPOSITIONS CONTAINING SAME

James Harding, Greenbrook Township, Somerset County, Ralph F. Sellers, Middlebush, and Cal Y. Meyers, Princeton, N.J., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Sept. 1, 1961, Ser. No. 135,453
19 Claims. (Cl. 260—607)

1. A hydroxybenzylated 4,4′-dihydroxydiphenyl sulfone of the formula:



where a, a', a^3, a^3 are integers having values of 0 to 1 inclusive with the sum of said integers being at least one and with the further limitation that each methylene group is bonded to the hydroxyphenyl group in a position other than meta to the hydroxy group; each individual R is a member selected from the group consisting of alkyl radicals containing a maximum of 6 carbon atoms, alkoxy radicals containing a maximum of 5 carbon atoms and halogen atoms; and each n is an integer having a value of 0 to 1 inclusive.

3,225,105
MANUFACTURE OF MERCAPTIDES

Paul F. Warner and Edward J. Horning, Phillips, Tex., assignors to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed June 25, 1962, Ser. No. 205,116
9 Claims. (Cl. 260—609)

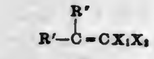
1. A process for the preparation of substantially pure mercaptides comprising: contacting an olefin with hydrogen sulfide to form a reaction product comprising a major amount of alkyl mercaptan and a minor amount of dialkyl sulfide; contacting the entire reaction product with substantially non-aqueous alkali metal hydroxide having an alkali metal oxide content of at least 60 percent effecting the precipitation of an alkali metal alkyl mercaptide; said minor amount of dialkyl sulfide serving as a reaction medium; and recovering substantially pure said mercaptide as product.

3,225,106
TERMINALLY HALOGENATED OLEFINIC COMPOUNDS

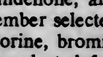
Robert Rabinowitz, Stamford, Conn., assignor to American Cyanamid Company, New York, N.Y., a corporation of Maine

No Drawing. Filed Jan. 15, 1962, Ser. No. 166,412
7 Claims. (Cl. 260—649)

1. A method for the production of compounds of the formula



which comprises reacting together as sole reactants a tertiary phosphine of the formula R_3P, a polyhalomethane of the formula $CX^1X^2X^3X^4$, and a carbonyl compound of the formula

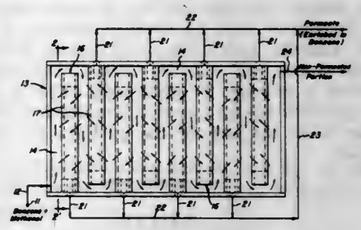


by bringing said reactants into intimate contact with each other at a temperature in the range of −25° C. to 200° C.; R, above, representing a member selected from the group consisting of alkyl having from 1 to 18 carbon atoms, substituted alkyl having from 1 to 18 carbon atoms, aryl, substituted aryl, and cycloalkyl, said substituents for alkyl and aryl being selected from the group consisting of cyano, lower alkoxy and halo; R′ represents a member selected from the group consisting of hydrogen, alkyl having from 1 to 12 carbon atoms, alkenyl having from 1 to 12 carbon atoms, phenyl, naphthyl, cyclohexyl, benzoyl, furfuryl, styrenyl, halo-substituted alkyl having 1 to 12 carbon atoms, and halo-substituted phenyl; R″ represents a member selected from the group consisting of hydrogen, alkyl having from 1 to 12 carbon atoms, alkenyl having from 1 to 12 carbon atoms, phenyl, naphthyl, cyclohexyl, furfuryl, styrenyl, halo-substituted alkyl having from 1 to 12 carbon atoms, and halo-substituted phenyl, and R′ and R″ combined represent the residue of a member of the group consisting of fluorenone, 1-indanone, 2-indanone, 1-tetralone, indenone, anthrone, and benzanthrone; X^1 represents a member selected from the group consisting of hydrogen, chlorine, bromine and fluorine, and X^2 represents a member selected from the group consisting of chlorine, bromine and fluorine; and X^3 and X^4 each represent a member selected from the group consisting of chlorine, bromine and iodine.

3,225,107
SEPARATION PROCESS

Earl V. Kirkland, Springfield Township, Union County, N.J., and Joseph F. Jennings, Texas City, Tex., assignors, by mesne assignments, to Standard Oil Company, Chicago, Ill., a corporation of Indiana

Filed Aug. 24, 1960, Ser. No. 51,604
16 Claims. (Cl. 260—652)



1. A process for separating a mixture of organic chemicals which process comprises introducing a liquid feed mixture of organic chemicals into the feed zone of a permeation apparatus, said permeation apparatus being comprised of a feed zone which is sealed from a permeate zone by a polymeric film onto the surface of which has been grafted a polymeric coating, permeating a portion of the mixture in the feed zone through the film into the permeate zone, rapidly withdrawing the permeated portion from the permeate zone, said permeated portion having a higher concentration of one of the components of the feed mixture than the concentration of the same component in the feed mixture, and withdrawing a non-permeated liquid portion from the feed zone.

3,225,108
STABILIZED VINYL CHLORIDE MONOMER

Adah P. Sturgis, Baton Rouge, La., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Nov. 30, 1960, Ser. No. 72,556
3 Claims. (Cl. 260—652.5)

1. Vinyl chloride monomer containing ½ to 30 parts phenol per million of monomer.

3,225,109
HALOGEN SATURATION OF NON-TERMINAL DOUBLE BOND

Theodore B. Simpson, Plainfield, N.J., and Frederick W. Evans, West Hill, Ontario, Canada, assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed June 27, 1963, Ser. No. 290,952
6 Claims. (Cl. 260—653.7)

1. The process for the saturation of a non-terminal carbon-to-carbon double bond with a chlorine atom and a fluorine atom in an unsaturated aliphatic perchlorofluorocarbon starting material having from four to eight carbon atoms wherein the saturated carbon atoms are perfluorinated, and wherein the non-terminal double bond has a chloro substituent on each of its carbon atoms, which comprises: introducing the starting material, hydrogen fluoride and chlorine into a reaction zone containing a catalyst consisting essentially of carbon and maintained at substantially atmospheric pressure and at a temperature between about two hundred and forty degrees centigrade and about six hundred degrees centigrade, and withdrawing the product from said zone.

3,225,110
METHOD FOR THE PRODUCTION OF ALKALI METAL ACETYLIDES

Abraham N. Kurtz, Charleston, W. Va., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Feb. 8, 1963, Ser. No. 257,113
17 Claims. (Cl. 260—665)

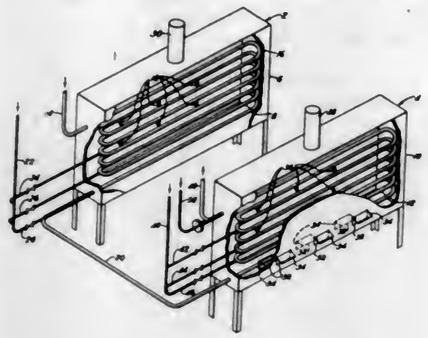
1. In the method for producing an alkali metal acetylide by the reaction of an alkali metal with a terminally-acetylenically unsaturated hydrocarbon in an inert organic diluent, the improvement of conducting said reaction in contact with an effective amount of an alkali metal aliphatic hydrocarbyloxide having from 1 to 20 carbon atoms, said effective amount being an amount sufficient to promote the production of alkali metal acetylide particles having a particle size which is substantially smaller than the size of the particles of alkali metal charged.

3,225,111
HYDRODEALKYLATION PROCESS AND APPARATUS

William R. Lehrian, Verona, Elwood E. Nelson, Gibsonia, and Vernon J. Yeakley, Oakmont, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

Filed Dec. 19, 1962, Ser. No. 245,846
4 Claims. (Cl. 260—672)

1. Apparatus comprising a first housing and a second housing, each provided with a stack therefor, a first elongated coil extending into said first housing, disposed therein and extending outwardly thereof, heat-producing elements within said first housing, a second elongated coil extending into said second housing, disposed therein and extending outwardly thereof, means communicating between said first coil and said second coil, means adjacent the entry of said second coil into said second housing for



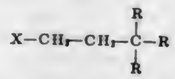
permitting entrance of air into said second housing, and heat-producing elements in said second housing adjacent the exit end of said second coil.

3,225,112
PROCESS FOR PRODUCING 2,3-DIALKYL-2-ALKENES

William D. Hoffman, Park Forest, and Robert M. Eichhorn, Chicago Heights, Ill., assignors to Sinclair Research, Inc., Wilmington, Del., a corporation of Delaware

No Drawing. Filed June 25, 1962, Ser. No. 205,132
4 Claims. (Cl. 260—677)

1. A method for the production of 2,3-dialkyl-2-alkenes which comprises contacting with a catalyst consisting essentially of elemental iron at a temperature of about 400 to 1000° F., a halogenated hydrocarbon feed having the structural formula:



wherein R is a lower alkyl radical, the total carbon atoms being up to 18; and X is a halogen atom having an atomic number of 17 to 35.

3,225,113
PROCESS FOR PURIFYING A LIQUID OLEFINIC HYDROCARBON OF ITS ETHER IMPURITY

John G. McNulty, Glenshaw, and William L. Walsh, Shaler Township, Allegheny County, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed Oct. 25, 1962, Ser. No. 233,151
6 Claims. (Cl. 260—677)

1. A process for separating a liquid olefinic hydrocarbon from an ether selected from the group consisting of saturated aliphatic and saturated cyclic ethers wherein the carbon atom to oxygen ratio in the molecule is from 2:1 to 8:1 difficult to separate therefrom which comprises adding an aqueous solution of calcium chloride to the mixture in an amount sufficient to form a complex with said ether and thereafter separating said complex from said liquid olefinic hydrocarbon.

3,225,114
METHOD OF IMPROVING YOUNG'S MODULUS OF POLYAMIDE BY CONDENSATION IN PRESENCE OF POLYCARBONATE

Richard D. Chapman, Durham, N.C., assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed July 21, 1964, Ser. No. 384,237
6 Claims. (Cl. 260—857)

1. A process for increasing the modulus of elasticity of fiber-forming synthetic linear polycarbonamides which comprises subjecting polyamide-forming reactants which are capable of forming polyamides having recurring carbonamide groups as an integral part of the polymer chain, which groups are separated by at least two carbon atoms, to a condensation reaction by heat treatment at a temperature in the range of from 180° C. to 300° C.; thereafter reacting the reaction mass at a point before said reaction mass has reached a relative viscosity of 20 with a polycarbonate having a molecular weight in excess of 5,000 and in an amount of from 1.5 to 20 percent based on the weight of the polyamide to be formed.

3,225,115
CURABLE COMPOSITIONS CONTAINING EPOXY ALCOHOL, UNSATURATED POLYCARBOXYLIC ACID AND UNSATURATED MONOMER

Charles W. McGary, Jr., and Charles T. Patrick, Jr., South Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Dec. 28, 1960, Ser. No. 78,847
6 Claims. (Cl. 260—861)

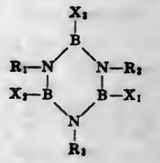
1. A curable, polymerizable composition comprising
(1) a saturated monoepoxy alcohol compound selected from the group consisting of:
(a) 4-oxatetracyclo[6.2.1.0^{2,7}.0^{3,5}]undecan-9-ol,
(b) 4-oxatetracyclo[6.2.1.0^{2,7}.0^{3,5}]undec-9-oxyalkanol,
(c) 4-oxatetracyclo[6.2.1.0^{2,7}.0^{3,5}]undec-9-oxyalkane-poly-ol,
(d) 4-oxatetracyclo[6.2.1.0^{2,7}.0^{3,5}]undecane-9,10-diol,
(e) 4-oxatetracyclo[6.2.1.0^{2,7}.0^{3,5}]undecane-10,11-diol,
(f) 10-oxapentacyclo[6.3.1.1^{3,6}.0^{2,7}.0^{9,11}]tridecan-4-ol,
(g) 10-oxapentacyclo[6.3.1.1^{3,6}.0^{2,7}.0^{9,11}]tridecane-4,5-diol,
(h) 10-oxapentacyclo[6.3.1.1^{3,6}.0^{2,7}.0^{9,11}]tridec-4-ylalkanol,
(i) 10-oxapentacyclo[6.3.1.1^{3,6}.0^{2,7}.0^{9,11}]tridec-4,5-ylenedialkanol,
(j) 10-oxapentacyclo[6.3.1.1^{3,6}.0^{2,7}.0^{9,11}]tridec-4-oxyalkanol,
(k) 10-oxapentacyclo[6.3.1.1^{3,6}.0^{2,7}.0^{9,11}]tridec-4-oxyalkane-poly-ol,
(l) 10-oxapentacyclo[6.3.1.1^{3,6}.0^{2,7}.0^{9,11}]tridec-4-ylmethylene-oxyalkanol,
(m) 10-oxapentacyclo[6.3.1.1^{3,6}.0^{2,7}.0^{9,11}]tridec-4-ylmethylene-oxyalkane-poly-ol,
(n) the 4-oxatetracyclo[6.2.1.0^{2,7}.0^{3,5}]undec-9-oxy(mono- and polyalkyleneoxy)alkanols,
(o) the 4-oxatetracyclo[6.2.1.0^{2,7}.0^{3,5}]undec-9-10,ylene-di[oxy(mono- and polyalkyleneoxy)alkanols],
(p) the 4-oxatetracyclo[6.2.1.0^{2,7}.0^{3,5}]undec-10,11-ylene-di[oxy(mono- and polyalkyleneoxy)alkanols],
(q) the 10-oxapentacyclo[6.3.1.1^{3,6}.0^{2,7}.0^{9,11}]tridec-4-oxy(mono- and polyalkyleneoxy)alkanols,
(r) the 10-oxapentacyclo[6.3.1.0^{3,6}.0^{2,7}.0^{9,11}]tridec-4,5-ylene-di[oxy(mono- and polyalkyleneoxy)alkanols],
(s) 10-oxapentacyclo[6.3.1.1^{3,6}.0^{2,7}.0^{9,11}]tridec-4-ylalkyleneoxyalkanol,
(t) the 10-oxapentacyclo[6.3.1.1^{3,6}.0^{2,7}.0^{9,11}]tridec-4-ylalkyleneoxy(mono- and polyalkyleneoxy)alkanols,
(u) 10-oxapentacyclo[6.3.1.1^{3,6}.0^{2,7}.0^{9,11}]tridec-4,5-ylene-di(alkyleneoxyalkanol),
(v) the 10-oxapentacyclo[6.3.1.1^{3,6}.0^{2,7}.0^{9,11}]tridec-4,5-ylene-di[alkyleneoxy(mono- and polyalkyleneoxy)alkanols],
(w) mono visinal-epoxycycloalkanol,
(x) mono vicinal-epoxycycloalkylalkanol, and
(y) mono vicinal-epoxybicycloalkanol;
(2) an olefinically unsaturated hydrocarbon dicarboxylic acid anhydride; and (3) a monomeric ethylenically unsaturated compound which is polymerizable with said anhydride, said monomeric ethylenically unsaturated compound containing no functional groups which are reactive with vicinal epoxy groups and carboxy groups; in such relative amounts so as to provide from about 0.1 to about 5.0 carboxy groups of said anhydride per epoxy group of said monoepoxy alcohol compound, and from about 0.002 to about 5.0 ethylenic groups of said monomeric ethylenically unsaturated compound per ethylenic group of said anhydrides.

3,225,116
HALOGENATED BORAZOLES AS GELATION INHIBITORS FOR UNSATURATED POLYESTER RESINS

Howard J. Wright and Darwin A. Dalzell, Kansas City, Mo., assignors to Cook Paint & Varnish Company, Kansas City, Mo., a corporation of Delaware

No Drawing. Filed July 16, 1963, Ser. No. 295,523
8 Claims. (Cl. 260—864)

1. A composition comprising a polymerizable polyester of an α,β-ethylenically unsaturated dicarboxylic acid and a polyhydric alcohol and a stabilizing amount of a boron compound having the formula:



wherein X_1, X_2 and X_3 are halogen and R_1, R_2 and R_3 are selected from the group consisting of hydrogen, alkyl, alkoxy and aryl.

3,225,117
WEATHER-RESISTANT PLASTICS

Robert C. Harper, Loveland, Ohio, assignor to The Cincinnati Milling Machine Company, Cincinnati, Ohio, a corporation of Ohio

Filed June 15, 1962, Ser. No. 202,774
12 Claims. (Cl. 260—872)

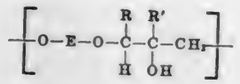
1. In a plastic molding composition for molding plastic articles under conventional polyester resin molding conditions, said composition being of the type which comprises a mixture of an unsaturated alkyd resin, a lower alkyl methacrylate and styrene, the improvement which comprises from 0.2% to 40% by weight of a lower dialkyl itaconate incorporated in said mixture to improve the weather resistance of articles molded therefrom.

3,225,118
POLYSTYRENE CONTAINING THERMOPLASTIC POLYHYDROXY ETHER

Frank A. De Mello, Middlesex County, N.J., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Feb. 12, 1962, Ser. No. 172,778
5 Claims. (Cl. 260—874)

1. Polystyrene composition having good gloss and freedom from haze and a lowered coefficient of friction comprising 100 parts by weight of a normally solid polystyrene and incorporated thereinto from 1 to 15 parts by weight of a thermoplastic polyhydroxyether having recurring units of the general formula:



wherein E is the nucleus of a dihydric polynuclear phenol in which the hydroxyl groups are attached to different nuclei and each of R and R' is selected from the group consisting of hydrogen and methyl, said thermoplastic polyhydroxyether having a reduced viscosity of at least 0.45 when measured as a 0.2 gram sample in 100 milliliters of tetrahydrofuran at 25° C., and said thermoplastic polyhydroxyether being substantially free of 1,2-epoxy groups.

3,225,119
THERMOPLASTIC COPOLYMER OF VINYL MONOMER AND CYANATE MONOMER

William P. Baker, Jr., Chadds Ford, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed May 16, 1962, Ser. No. 195,318
13 Claims. (Cl. 260—874)

1. A normally solid thermoplastic copolymer having at least one constituent incorporated singly as a non-recurring central discrete segment, said constituent being a polymerized vinyl monomer, said central segment being composed of at least 10 units of said vinyl monomer and having attached at each end at least one additional polymer segment of a cyanate monomer of the formula

$$R—N=C=X$$

where R is selected from the group consisting of alkyl of 1 through 18 carbons, phenyl, bipbenyl and alkylphenyl where the alkyl portion is of 1 through 18 carbons, and X is selected from the group consisting of oxygen and sulfur, said vinyl monomer being devoid of groups containing an active hydrogen atom as determined by the Zerewitinoff test, and said cyanate monomer constituting 0.5–98% of the sum of the moles of said copolymer.

3,225,120
THERMOPLASTIC COPOLYMER OF VINYL MONOMER AND SULFUR

William P. Baker, Jr., Chadds Ford, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed May 16, 1962, Ser. No. 195,324
7 Claims. (Cl. 260—874)

1. A normally solid thermoplastic copolymer having at least one constituent incorporated singly as a non-recurring central discrete segment, said constituent being a polymerized vinyl monomer, said central segment being composed of at least 10 units of said vinyl monomer and having attached at each end at least one additional polymer segment of elemental sulfur monomer, said vinyl monomer being devoid of groups containing an active hydrogen atom as determined by the Zerewitinoff test, and said elemental sulfur monomer constituting 0.5–98% of the sum of the moles of said copolymer.

3,225,121
THERMOPLASTIC COPOLYMER OF VINYL MONOMER AND ALDEHYDE MONOMER

William P. Baker, Jr., Chadds Ford, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed May 16, 1962, Ser. No. 195,327
11 Claims. (Cl. 260—874)

1. A normally solid thermoplastic copolymer having at least one constituent incorporated singly as a non-recurring central discrete segment, said constituent being a polymerized vinyl monomer, said central segment being composed of at least 10 units of said vinyl monomer and having attached at each end at least one additional polymer segment of an aldehyde monomer of the formula R—CH=O where R is selected from the group consisting of hydrogen, aryl and alkyl having no hydrogen atoms attached to the carbon atom connected to the carbonyl carbon, said vinyl monomer being devoid of groups containing an active hydrogen atom as determined by the Zerewitinoff test, and said aldehyde monomer constituting 0.5–98% of the sum of the moles of said copolymer.

3,225,122
PREVENTION OF COLD FLOW IN CIS-POLYBUTADIENE BY ADDING HYDROGENATED DIENE POLYMER

Nelson A. Stumpe, Jr., Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

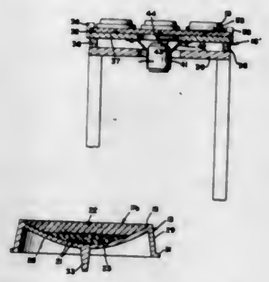
No Drawing. Filed Oct. 12, 1962, Ser. No. 230,272
5 Claims. (Cl. 260—894)

1. A rubbery, unvulcanized composition of matter comprising a blend of (1) a major amount of cis-polybutadiene containing at least 85 percent cis-1,4 addition, and (2) a minor amount of a material selected from the group consisting of a hydrogenated homopolymer of 1,3-butadiene and a hydrogenated copolymer of 1,3-butadiene and styrene, in which the residual unsaturation of said hydrogenated polymer is less than 50 percent of that originally present in the unsaturated polymer.

3,225,123
METHOD OF PRODUCING TRAFFIC MARKERS

Grant A. Wiswell, Palo Alto, Calif. (% Botts-Line, Inc., 2431 Spring St., Redwood City, Calif.)

Filed Sept. 1, 1961, Ser. No. 135,668
2 Claims. (Cl. 264—1)

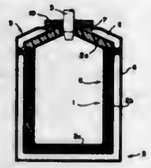


1. A method of forming traffic markers and the like, comprising mixing together a polymer, catalyst, reflective pigment and glass spheres to impart retro-reflectivity, depositing the mixture into molds, panning said molds to settle said spheres to the bottom and outside of said molds and form a flat bottom of mixture in said mold, said panning comprising moving said mold in a horizontal plane in a circular path of .05 to .25 inch diameter at a frequency of around 1750 r.p.m. until said glass spheres are worked uniformly toward and against the surface of said mold, depositing a roughening agent on the top surface of the mixture in said molds, heating said mixture to cure said polymer, subjecting the molded marker to a bath of stripping solvent, and cleaning said marker to expose said glass spheres at the surface.

3,225,124
METHOD OF MOLDING A FOAMED PLASTIC COVERING ON AN ARTICLE

Robert T. Wallace, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio

Filed June 16, 1961, Ser. No. 117,556
8 Claims. (Cl. 264—45)



1. In a method of molding in situ about an article a covering having walls of variable density from a charge of heat expansible thermoplastic beads, the steps comprising partially filling a mold cavity with said charge, centrally positioning said article in the mold cavity on said charge, introducing additional heat expansible thermoplastic beads but not as to fill the mold cavity completely, closing the mold cavity, thereafter applying heat to said charge for the purpose of expanding and surface fusing the beads, cooling the resulting charge, and removing the article with the enveloping cover from the mold whereby that foamed portion corresponding to said first charge is more dense than the remaining foamed portion.

3,225,125
METHOD OF FORMING REGENERATED CELLULOSE FIBERS

Joseph H. Anderer, Charlotte, N.C., Anthony P. Da Vinci, Chester, Pa., and Thomas F. McHugh, Leominster, Mass., assignors, by mesne assignments, to FMC Corporation, San Jose, Calif., a corporation of Delaware

Original application Mar. 25, 1960, Ser. No. 17,712, now Patent No. 3,156,605, dated Nov. 10, 1964. Divided and this application Aug. 28, 1962, Ser. No. 219,990
4 Claims. (Cl. 264—50)

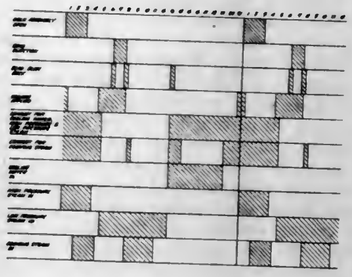


1. The method of forming thin-walled regenerated cellulose fibers having an average wall thickness not exceeding about three microns which comprises adding to and incorporating in viscose a small amount of a surface-active agent, mixing a gas into the viscose, vigorously agitating the mixture to disperse the gas in the viscose and form a uniform, stable dispersion of the gas in the form of small bubbles and extruding the viscose into an acid bath through an orifice having a diameter of about twice the average diameter of the bubbles at atmospheric pressure.

3,225,126
EXPANDABLE BEAD MOLDING

Roy G. Bridges, Rivera, Robert N. Aleson, San Fernando, Douglas B. Hutchings, North Hollywood, Ralph E. Whited, Altadena, and Miron L. Dyrness, North Hollywood, Calif., assignors to Tempo Plastic Company, Inc., Los Angeles, Calif., a corporation of California

Original application Oct. 10, 1960, Ser. No. 61,566. Divided and this application May 6, 1963, Ser. No. 286,099
8 Claims. (Cl. 264—51)

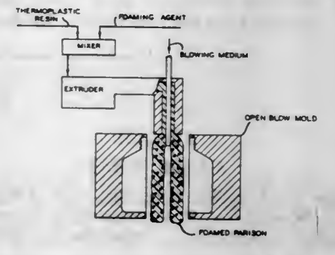


1. The method of forming a cup with pre-expanded polystyrene beads in a cup mold cavity, the method consisting of the steps of preheating the mold cavity, injecting the pre-expanded beads into the pre-heated cavity, concurrently and coextensively applying heat to the mold from a first source and applying steam at substantially the same temperature as is the average temperature to which the mold cavity is preheated to the mold cavity from a second source, so as to cause the beads to expand and fill the mold cavity, and removing the formed cup from the mold cavity.

3,225,127
BLOW MOLDING FOAM BOTTLES

John N. Scott, Jr., Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Original application Sept. 16, 1960, Ser. No. 56,337. Divided and this application May 20, 1963, Ser. No. 281,581
11 Claims. (Cl. 264—54)

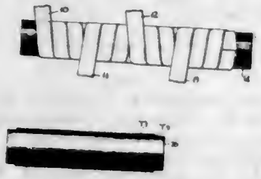


1. In a process for the production of blow molded hollow plastic articles wherein a parison of said plastic is formed and then said parison is expanded within a mold to conform to the contour of said mold by a fluid medium, the improvement comprising incorporating a foaming agent into said plastic prior to formation of said parison so that said parison is foamed before being molded, thereby forming a foamed plastic article as a product of the process.

3,225,128
METHOD OF FORMING POLYVINYL ALCOHOL FILM
Hideo Suzumura, Katsuaki Hirano, and Saburo Kawamura, Okayama-ken, and Koichi Nagano, Osaka-fu, Japan, assignors to Kurashiki Rayon Co., Ltd., Okayama Prefecture, Japan, a corporation of Japan
No Drawing. Filed Jan. 31, 1963, Ser. No. 255,217
Claims priority, application Japan, Aug. 12, 1958, 33/22,737
2 Claims. (Cl. 264—216)

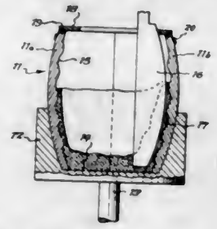
1. The method of forming a film of polyvinyl alcohol from an aqueous polyvinyl alcohol solution which comprises depositing said solution upon a rotatable film-casting surface coated with a coating consisting essentially of a phenol-formaldehyde resin and a polyvinyl butyral resin having a degree of polymerization of 800 to 1200 and a degree of acetalization of at least 60%, said phenol-formaldehyde resin constituting at least 20 percent and up to about 70 percent by weight of the total resin in said coating, said polyvinyl alcohol solution thereby forming a liquid film upon the coated metal casting surface, whereby upon evaporation of the solvent from said solution a solid polyvinyl alcohol film is deposited upon said coated casting surface, said film being readily stripped therefrom but said coating remaining adherent to said metal film-casting surface upon stripping of said polyvinyl alcohol film.

3,225,129
METHOD OF MAKING MEMORY RE-SHAPED PLASTIC TUBES, ESPECIALLY FLUOROCARBON CYLINDER JACKETS
John S. Taylor and William L. Graves, Newark, Del., assignors to The Budd Company, a corporation of Pennsylvania
Continuation of application Ser. No. 43,844, July 19, 1960. This application June 26, 1962, Ser. No. 207,144
1 Claim. (Cl. 264—230)



A method for forming a composite article having a rigid cylindrical member of a given diameter and a polytetrafluoroethylene tube memory fitted to an external surface of said member, said method comprising the ordered steps of: helically winding about a cylindrical mandrel having a diameter less than said given diameter, an unsintered extruded polytetrafluoroethylene tape exhibiting substantially all of its orientation and tensile strength in the lengthwise direction of said tape; sintering the polytetrafluoroethylene tape without completely relaxing its orientation to provide a tube having its tensile strength oriented helically about the major axis of the tube; removing tube from said mandrel; expanding said tube radially to a diameter greater than said given diameter, inserting said member into the interior of said tube of enlarged diameter, and heating and maintaining tube at a temperature sufficient to memory shrink the tube to said given diameter.

3,225,130
ROTATIONAL METHOD FOR MAKING A METAL MELTING CRUCIBLE
John W. Courtney, Dearborn, Mich., assignor to Electro Refractories & Abrasives Corporation, Buffalo, N.Y.
Filed July 31, 1962, Ser. No. 213,701
4 Claims. (Cl. 264—312)

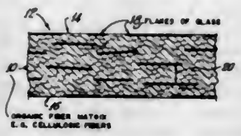


1. In the manufacture of crucibles, the method which consists of:
(a) providing an open top closed bottom cylindrical split mold having a helical corrugated surface;
(b) charging said mold with a mix containing at least fifty percent by weight of particles of flat shape and plastic binder therefor;
(c) inserting an elongated forming tool having a forming edge into said mold and into engagement with said mix, said forming edge being disposed a distance from said mold surface equal to the desired wall thickness of said crucible;
(d) rotating said mold and said forming tool with respect to each other so that the mix is forced outward and packed against said corrugated mold surface;
(e) successively adding additional mix until the entire crucible wall has been formed;
(f) removing said forming tool; and
(g) pulling said split mold apart to free said crucible formed in the mold.

ELECTRICAL

3,225,131
CABLE WRAP
Llewellyn M. Conklin, Riverside, and Alfred Winsor Brown, Woonsocket, R. I., assignors to Owens-Corning Fiberglas Corporation, a corporation of Delaware
Filed Jan. 18, 1963, Ser. No. 252,458
8 Claims. (Cl. 174—25)

1. In a sheet of electrical insulating material,
a fibrous matrix, comprising a kraft-type pulp, glass flakes dispersed in said matrix and oriented in the plane of the sheet with interstitial spaces therebetween,
said interstitial spaces containing oil, and being discretely distributed through the thickness of the sheet, the length of an oil molecule thereby precluding and said interstitial spaces being of a thickness less than

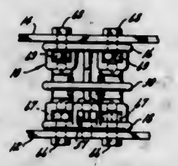


erection of oil molecules perpendicular to the flake faces.

3,225,132
DEVITRIFIED GLASS-TO-METAL COMPRESSION SEAL
Gerardus Baas and Coenraad Maria La Grouw, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Apr. 12, 1961, Ser. No. 102,579
Claims priority, application Netherlands, Apr. 14, 1960, 256,600
1 Claim. (Cl. 174—151)

A devitrified glass-to-metal compression seal comprising a metal conductor, a metal ring surrounding and spaced from said conductor, and an insulating material under compressive stress in the space between the conductor and the ring, said insulating material being composed of a devitrified glass having a composition in percent by weight of about 11.6% of SiO_2, 14.9% of B_2O_3, 9.1% of MgO, 48% of BaO, 8.2% of Al_2O_3 and 8.2% of ZnO, and having a temperature coefficient of expansion less than that of the ring.

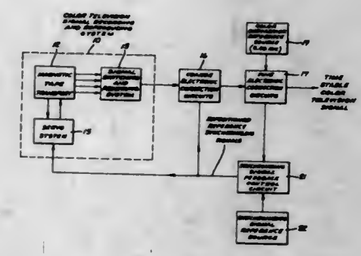
3,225,133
MOLDED ELECTRICAL INSULATOR
Maurice G. Knoy, West Lafayette, Ind., assignor to Rostone Corporation, Lafayette, Ind., a corporation of Indiana
Filed July 31, 1964, Ser. No. 386,562
28 Claims. (Cl. 174—212)



1. An electrical insulator for supporting a conductor from a support, comprising
a molded body of insulating composition adapted to be connected between a conductor and a support, said body being substantially composed of integrally-joined molded sections of similar thickness and including a mounting wall defining an outwardly-disposed mounting seat at one end of the body,
said wall having a bolt hole therethrough to receive a fastening bolt,
walls forming a pocket for a nut on such fastening bolt, including a transverse wall spaced from the mounting wall and positioned to lie between the nut and the opposite end of the body and to extend laterally beyond the nut for electrically shielding the nut from such opposite end,
said nut pocket being open laterally of the body to permit insertion of a nut therein,
mounting means at the opposite end of the body,
and strut walls extending between said mounting means at one end and said nut pocket and mounting walls at the other end for supporting the same in spaced relation.

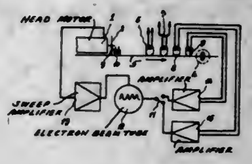
3,225,134
TAPE REPRODUCING SYSTEM
Peter W. Jensen, Fremont, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California
Filed Mar. 30, 1962, Ser. No. 183,886
11 Claims. (Cl. 178—5.4)

1. A color television signal reproducing system comprising:
a wideband signal reproducing system operating in synchronism with externally applied reference synchronizing pulses for reproducing the color television signals;
means providing reference synchronizing pulses;
means providing color subcarrier reference signals;
electronic correction means responsive to the reproduced color television signals and the color subcarrier reference signals for adjusting the time base of the reproduced color television signals;
the electronic correction means including phase comparison means providing a phase error signal representative of the phase error of reproduced color bursts relative to the color subcarrier reference signals;



means responsive to the phase error signal for deriving the slow varying components thereof; and
means coupled to the wideband signal reproducing system and responsive to the slow varying components of the phase error signal and to the reference synchronizing pulses for applying repositioned reference synchronizing pulses to the wideband signal reproducing system.

3,225,135
METHOD AND APPARATUS FOR MONITORING A TELEVISION TAPE RECORDING OPERATION
Izumi Osawa and Saneyuki Takeuchi, Tokyo, Japan, assignors to Fuji Telecasting Co., Ltd., Tokyo, Japan
Filed June 7, 1961, Ser. No. 115,447
Claims priority, application Japan, June 25, 1960, 35/28,800
4 Claims. (Cl. 178—6.6)

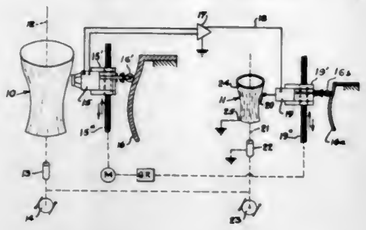


1. An apparatus for monitoring a television tape recording operation, comprising, in combination, magnetic tape recording means for producing, in accordance with received television signals, on a tape moving at a predetermined speed a recording of said television signals; stationary monitoring pick-up head means arranged along the path of said moving tape for producing output signals based on said recordings of said television signals; and oscilloscope means connected with said magnetic tape recording means and with said monitoring pick-up head means for producing an oscillographic display of said output signals whereby irregularities of the recording of said television signals are made visible during a tape recording operation.

3,225,136
SYSTEM FOR THREE-DIMENSIONAL RECORDING

Leon D. Furon, Woodland Hills, Calif., assignor, by mesne assignments, to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Sept. 26, 1962, Ser. No. 226,219
5 Claims. (Cl. 178—6.6)

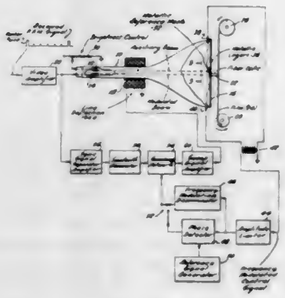


1. A non-destructive testing system for the analog recordation of information during inspection of an irregularly shaped three dimensional workpiece, said system comprising condition sensing means including a transducer generating information signals related to the information when operatively oriented with respect to an area of the workpiece surface, first scanning means scanning the transducer over a surface of the workpiece along a defined path with respect thereto, recording means including a three dimensional analog scale model record having a recording surface geometrically similar to the workpiece surface under inspection, a recording coating on the recording surface responsive to electric transmissions therethrough generating at the positions of the transmissions visible indications of variable magnitude proportional to the magnitude of the transmissions, an output transducer responsive to the information signals generating the transmissions when operatively oriented with respect to an area of the recording coating, and a second scanning means coupled with the first scanning means scanning the output transducer over the recording coating along a path geometrically similar to the path followed by the first scanning means.

3,225,137
CATHODE-RAY DISPLAY SYSTEM

Wayne R. Johnson, Los Angeles, Calif., assignor to Winston Research Corporation, Beverly Hills, Calif., a corporation of California

Filed July 23, 1962, Ser. No. 211,647
5 Claims. (Cl. 178—6.7)

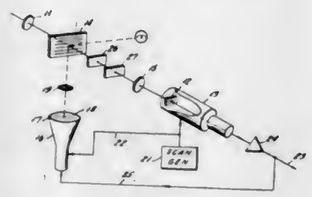


1. A cathode-ray tube display system for displaying the information represented by an input signal, which input signal includes information signal components and synchronizing signal components, said display system including: a cathode-ray tube having a display screen, cathode-ray beam producing and directing means, cathode-ray beam intensity modulating means, and cathode-ray beam deflection means; first circuit means coupled to said beam modulating means and responsive to the input signal for causing the intensity of a cathode-ray beam in said tube to be modulated in accordance with the information signal components of said input signal and coupled to said deflection means and responsive to the synchronizing signal components of said input signal for causing recurrent reciprocal beam deflection of the modulated beam along a single path across said display screen in synchronism with the input signal; and electrically conductive apertured mask member positioned in said cathode-ray tube and displaced at least partially from said path to be recurrently scanned by a cathode-ray beam in said tube; a conductive member positioned in said cathode-ray tube adjacent said apertured mask member and partially masked thereby; second circuit means coupled to said mask member and to said conductive member for producing a control signal having a characteristic varying in correspondence with variations in the beam deflection speed across said display screen; and further circuit means coupled to said second circuit means and to said deflection means and responsive to said control signal for compensating for such speed variations in the beam deflection across said display screen.

3,225,138
APPARATUS FOR REDUCING BRIGHTNESS VARIATION USING PHOTOCHROMIC MATERIAL

Angelo Montani, Great Neck, N.Y., assignor to Sperry Rand Corporation, Ford Instrument Company Division, Long Island City, N.Y., a corporation of Delaware

Filed June 21, 1963, Ser. No. 289,540
12 Claims. (Cl. 178—7.2)



1. A device for decreasing the variations of light intensity of an image formed on a television camera tube target surface, comprising:

(a) a photochromic layer adapted to be optically aligned with said target surface such that the image of the televised scene passes through said layer,

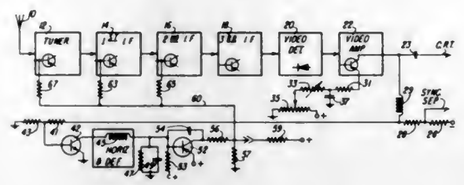
(b) a cathode ray tube whose face is optically aligned with said layer such that a masking image produced in the photochromic layer by light transmitted from the face of the cathode ray tube is registered with the image of the televised scene projected through said layer, and

(c) means for electrically connecting the television camera tube with said cathode ray tube for forming a raster on the face of the cathode ray tube corresponding to the raster on the target surface of said television camera tube and for modulating the intensity of the light produced by the phosphor elements on the face of the cathode ray tube responsive to the output video signal produced by the television camera tube.

3,225,139
GATED TRANSISTOR A.G.C. IN WHICH GATING CAUSES BASE TO COLLECTOR CONDUCTION

Albert W. Massman, Wheaton, Ill., assignor to Motorola, Inc., Chicago, Ill., a corporation of Illinois

Filed Feb. 26, 1963, Ser. No. 261,054
7 Claims. (Cl. 178—7.3)



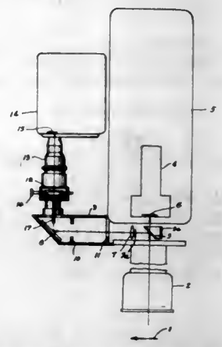
2. In a television receiver the combination including, signal amplification means for amplifying received television signals, bias circuit means connected to said signal amplification means to supply the gain control potential thereto, detector means coupled with said signal amplification means for providing a composite video signal containing a synchronizing signal component, video amplification means for coupling said composite video signal to utilization means, a source of periodically recurring negative-going voltage pulses including a winding on the horizontal output transformer from said receiver, an NPN gating transistor having base, collector and emitter electrodes, circuit means direct current coupling said video amplification means to the base electrode of said NPN transistor to couple composite video signals thereto, time constant circuit means including a storage capacitor, means connecting said winding on the horizontal output transformer between the collector electrodes of said NPN transistor and said storage capacitor, with recurring negative-going voltage pulses induced in said winding and coupled to said collector providing conduction between the base and collector in said NPN gating transistor in time coincidence with synchronizing signals applied to the base thereof, said capacitor being charged so that said time constant circuit means develops a control voltage in accordance with changes in the average level in said synchronizing signals, and second transistor means responsive to said control voltage to produce a corresponding change in the gain control potential supplied to said signal amplification means by said bias control circuit means.

3,225,140
COMBINATION MOTION PICTURE AND TELEVISION CAMERA

Robert R. Ferber, Pittsburgh, Pa., Warren R. Smith, Totowa, N.J., and Donald A. Trimmer, Bridgeville, Pa., assignors to Tele Cam Inc., Pittsburgh, Pa.

Filed Dec. 11, 1963, Ser. No. 329,632
13 Claims. (Cl. 178—7.8)

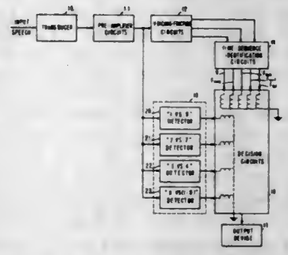
1. In combination, a television camera having an image orthicon, a motion picture camera alongside said camera, an optical system common to both cameras and including a semi-transparent plate disposed at an angle relative to the optical path so as to transmit some of the light from an object to said image orthicon and the remainder of the light to said motion picture camera, said optical system including a collimating lens located in front of the objective lens of said camera, and means for adjustably sliding said collimating lens toward and away from said objective lens of the camera so as to enable matching of the motion picture film image with the television image size.



3,225,141
SOUND ANALYZING SYSTEM

William C. Dersch, Los Gatos, Calif., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed July 2, 1962, Ser. No. 206,818
11 Claims. (Cl. 179—1)

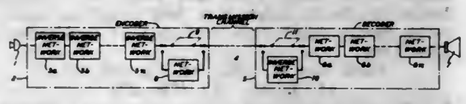


1. A speech recognition system including the combination of means for identifying frictional characteristic sounds by the axis crossing density thereof, means for identifying voicing characteristic sounds by asymmetry characteristics therein, means responsive to the frictional and voicing identifications for establishing the time relationship of the frictional characteristics relative to the voicing characteristics, and means responsive to the identifications and the established time relationship for representing the occurrence of specific spoken words by variable amplitude signals.

3,225,142
PRIVACY SYSTEM

Manfred R. Schroeder, Gillette, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Dec. 18, 1961, Ser. No. 159,885
12 Claims. (Cl. 179—1.5)



1. Apparatus for scrambling a message signal to render it unintelligible to an unauthorized recipient which comprises,

means at a transmitter station for adding a sequence of variously delayed replicas of a message signal to the message signal to form a composite signal

means for transmitting said composite signal in analog form to a receiver station,

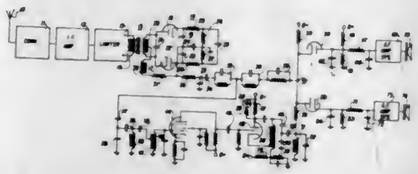
and at the receiver station,

means for canceling the delay replicas of the received composite signal to reconstitute said message signal.

3,225,143
MULTIPLEX STEREOPHONIC RECEIVING SYSTEM

Norman W. Parker, Wheaton, Ill., assignor to Motorola, Inc., Chicago, Ill., a corporation of Illinois

Continuation of application Ser. No. 117,191, June 14, 1961. This application Nov. 30, 1962, Ser. No. 242,049
4 Claims. (Cl. 179—15)



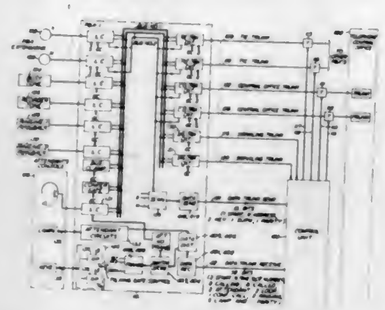
1. A multiplex stereophonic receiver for deriving a right stereo signal and a left stereo signal from a received signal which includes a sum signal composed of the sum of the right and left stereo signals, a difference signal composed of a suppressed carrier wave amplitude modulated by the difference between the right and left stereo signals, and a pilot tone signal having a frequency for reconstituting the suppressed carrier wave, said receiver including in combination, circuit means for deriving the sum signal and the difference signal with a demodulating wave of suppressed carrier frequency controlled by the pilot tone signal, a demodulating circuit to develop the right and left signals including first and second detector circuits connected to said circuit means, said detector circuits each having a diode connected with polarities to conduct on opposite phases of the demodulating wave, the sum and difference signals being translated in said demodulating circuit and said demodulating wave having an amplitude and phase so that a right stereo signal component is developed by conduction and nonconduction of said first detector circuit and a left stereo signal component is developed by conduction and nonconduction of said second detector circuit, direct current supply means to forward bias said diodes with a potential such that said diodes are conductive in the absence of the demodulating wave for conducting monaural signals therethrough from said circuit means, and first and second output circuits coupled to said first and second detector means respectively for translating the right and left stereo signals therefrom.

3,225,144
TELEPHONE SWITCHING SYSTEM

Robert C. Gebhardt, Parsippany, William L. Shafer, Jr., Short Hills, Albert E. Spencer, Jr., Livingston, Wing N. Toy, Berkeley Heights, Frank S. Vigliante, Piscataway Township, Middlesex County, and Robert D. Williams, Middletown, N.J., and Oscar H. Williford, Bronxville, N.Y., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed May 16, 1962, Ser. No. 195,199
45 Claims. (Cl. 179—27)

1. A telephone switching system comprising a telephone central office, a plurality of private branch exchanges, a control unit common to said plurality of private branch exchanges, a switching network at each of said private branch exchanges, a plurality of extensions terminating on each of said networks, a plurality of trunks terminating on each of said networks, independent scanning and memory means at each of said private branch exchanges for maintaining records of the supervisory states of said extensions and said trunks, data communication means

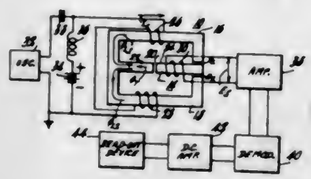


interconnecting said private branch exchanges and said control unit for transmitting information between said private branch exchanges and said control unit, memory means in said control unit for maintaining a system status record and means in said control unit for generating and transmitting control information over said data communication means to control said switching network.

3,225,145
MAGNETIC TRANSDUCER

Henry Ray Warren, Haddonfield, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed Nov. 1, 1960, Ser. No. 66,464
7 Claims. (Cl. 179—100.2)



1. A magnetic transducer for transducing a magnetic signal into an electrical signal which comprises,

a core structure of magnetic material having a first loop characterized by a first magnetization curve and a second loop characterized by a second magnetization curve different from said first magnetization curve,

said loops including a common signal gap across which said magnetic signal can be applied,

said magnetization curves each having a non-linear region between regions corresponding to saturated and unsaturated conditions of said core structure,

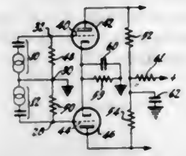
means for applying a first magnetomotive force to said first loop to bias said core structure in said nonlinear region of said first magnetization curve and for applying a second magnetomotive force different in intensity from said first magnetomotive force to said second loop to bias said core structure in said non-linear region of said second magnetization curve, and

an output winding linking said loops and responsive to the signal condition establisbed in said loops by said magnetomotive forces and said magnetic signal.

3,225,146
STEREOPHONIC PHONOGRAPH SYSTEM

John A. Tourtellot, Merchantville, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed Mar. 14, 1958, Ser. No. 721,474
28 Claims. (Cl. 179—100.4)

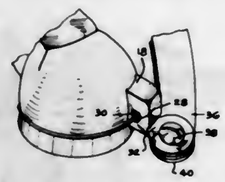


7. An audio-frequency signal amplifier for stereophonic phonograph recording and reproducing systems for records having a pair of stereophonically related recordings in the same record groove at substantially the same angle with respect to the record surface, said system including a stereophonic phonograph pickup for deriving a pair of stereophonically related signals corresponding to said pair of stereophonically related recordings, comprising in combination, a pair of amplifying devices each including an input electrode, an output electrode and a common electrode, means for applying one of said signals between the input electrode and common electrode of one of said amplifying devices and for applying the other of said signals between the input electrode and common electrode of the other of said amplifying devices, a pair of signal output circuits connected one with each output electrode of said amplifying devices, and frequency responsive impedance means providing a common circuit connection for said amplifying devices with one of said signal output circuits and said signal applying means for attenuating one of the vertical and lateral signal components corresponding respectively to the vertical and lateral record groove undulations substantially to the exclusion of the other.

3,225,147
TELEPHONE HANDSET SUPPORT

Joseph Dollinger, 190 Dover St., Brooklyn 35, N.Y.

Filed Sept. 26, 1961, Ser. No. 140,837
5 Claims. (Cl. 179—156)

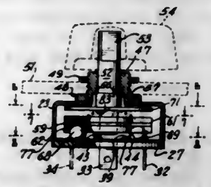


1. A telephone handset support comprising in combination a rigid block for mounting upon a telephone handset and radially outward relative to the receiver end of the handset, an annular wire band for securing said main mounting block to the receiver end of said handset, said wire having one end secured to said block, and its other end adjustably received within said block for tightening said wire band on said handset receiver end, a folding headband pivotally mounted upon said mounting block for movement between a normally folded and open position, and means for adjusting the size of said headband.

3,225,148
ROTARY SWITCH WITH MAKE-BEFORE BREAK CONTACT STRUCTURE

Wesley T. Sorenson, West Hartford, Conn., assignor to Carling Electric, Inc., West Hartford, Conn., a corporation of Connecticut

Filed Oct. 11, 1963, Ser. No. 315,574
9 Claims. (Cl. 200—11)

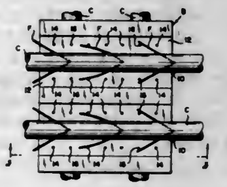


1. A rotary switch comprising a case, a rotatable actuator mounted in said case, a base of insulating material on said case, an electrically conductive armature mounted on said actuator and rotated thereby, means on said actuator yieldably urging said armature toward said base, a first electrically conductive ball and a second electrically conductive ball maintained captive between said armature and said base, said balls being spaced apart relative to the axis of rotation of said armature and being in electrical connection therewith, means on said armature to move said balls in respective arcuate paths, an arcuate common contact element on said base, said first ball cooperating with said common contact element, a plurality of separate circuit elements in arcuate array on said base, said second ball cooperating with said separate circuit elements in succession, plural means on said common contact element operative upon said first ball to cause said second ball to be indexed upon any selected one of said circuit elements.

3,225,149
PROGRAMMING SYSTEM-CABLE TAPE TYPE SWITCH WITH DEFLECTABLE SPRING CONTACT MEANS

Bernard Edward Shlesinger, Jr., 906 Bruce Lane, Annandale, Va.

Filed July 27, 1964, Ser. No. 385,348
31 Claims. (Cl. 200—16)



1. A programming system comprising

(a) a block

(b) at least one passageway extending through said block

(c) at least one continuous slot interconnected and coextensive with said passageway

(d) a longitudinally extending movable circuit actuator slidably mounted for axial movement in said passageway and extending into, through, and out of said passageway

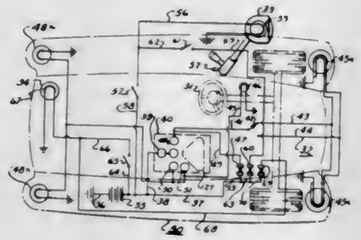
(e) means in said block for preventing rotation of said actuator

(f) said actuator including a plurality of radially extending spaced feeler members secured to said actuator and extending into and travelling in said slot

(g) at least one fixed circuit in said block having circuit operating means extending into said slot into the path of travel of said feeler members,

(h) said circuit operating means and said feeler members including spring deflecting means for permitting said feeler members to pass said circuit operating means whereby when said actuator is moved in said passageway, said feeler members move in said slot and engage said circuit operating means thereby operating said circuit in a programmed sequence as determined by the spacing of said feeler members and the rate of travel of said actuator.

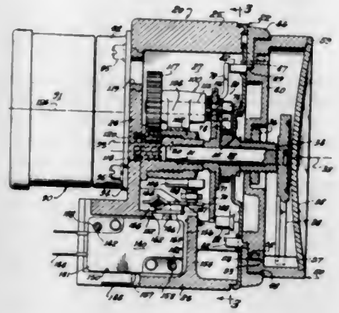
3,225,150
VEHICLE LIGHTING, TIMING, AND WARNING SYSTEM
Gerald R. Hershberger, Birmingham, Mich. (285 E. Long Lake Road, Troy, Mich.)
Original application Jan. 7, 1957, Ser. No. 634,094. Divided and this application Mar. 23, 1960, Ser. No. 30,699
13 Claims. (Cl. 200—33)



1. In a time switch, housing means, electrically conductive contactor means for movement into circuit making position reciprocally carried by said housing means, electrically insulated contact carriage means assembled with said contactor means for movement as a unit with said contactor means, force applying means interposed between said contactor means and said carriage means for urging said contactor means and said carriage means in opposite direction against said housing means, time switch knob extending from said housing to actuate and in direct connection with said carriage means, a timing means initiated into a potentially energized state by the shifting of said carriage means by said knob in one direction, a holding member to suspend said timing means temporarily in said potentially energized state, and means actuated by the shifting of said carriage means in the opposite direction to release said holding member in predetermined time controlled relation to the movement of said carriage means.

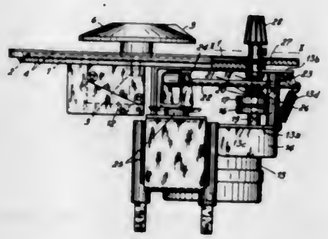
3,225,151
TIME DELAY RELAY STRUCTURE
Eugene F. Lagasse, Chester, Conn., assignor to Giannini Controls Corporation, Duarte, Calif., a corporation of New York
Filed Dec. 17, 1963, Ser. No. 331,143
6 Claims. (Cl. 200—35)

1. Time delay mechanism comprising in combination a frame,
a shaft journaled on the frame on a main axis and carrying a main gear for driving the shaft,
settable means for placing the shaft in a variable initial position,
output mechanism coupled to the shaft for actuation at a definite position thereof,
lever means swingable about the main axis between first and second positions and carrying a clutch gear journaled on a clutch gear axis parallel to the main axis and offset therefrom,
means continuously rotatively coupling the clutch gear and the main gear,
solenoid means for shifting the lever means selectively between its said positions,
an input gear journaled on the frame in position to be engaged by the clutch gear in only one of said positions of the lever means, lever movement toward said one position causing rotation of the clutch gear in a forawrd direction,



driving means,
an overrunning clutch interconnecting the driving means and the input gear for positively driving the input gear in a forward direction while permitting free forward rotation of the input gear relative to the driving means, said forward rotation of the input gear driving the engaged clutch gear in its said forward direction,
and circuit means for selectively energizing the solenoid means.

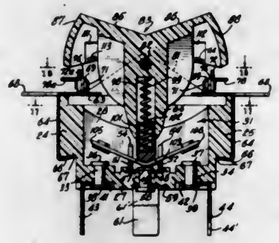
3,225,152
PROGRAM CONTROLLER USING A PUNCHED CARD DISC AND AN ELECTROMAGNETIC CLUTCH
Gottfried Leuenberger, Schlieren, Zurich, Switzerland, assignor to Maschinenfabrik Ad. Schulthess & Co. AG, Zurich, Switzerland, a firm
Filed June 25, 1963, Ser. No. 290,494
2 Claims. (Cl. 200—46)



1. A program controller using a punched card disc and an electromagnetic clutch, comprising in combination: a bracket consisting of a first flange and a second flange, said flanges being arranged parallel with each other and interconnected by at least one web, a flat casing mounted on the outside of the first flange, a drive motor mounted on the outside of the second flange and comprising a gearing shaft traversing said second flange, a coupling shaft carried by the flat casing and traversing

the first flange, a selector knob fixed to the outer end of the coupling shaft, a pinion fixed to said coupling shaft and meshing with a rim gear of the punched card disc rotatably mounted in said flat casing, a stationary coupling disc rigidly mounted on the gearing shaft, a shiftable coupling disc mounted on the coupling shaft, a coupling lever at one end pivoted to said web of the bracket and at the other end engaging the armature of an electromagnet connected in series with the drive motor, said coupling lever being adapted to engage said shiftable coupling disc to said stationary coupling disc against spring action upon excitation of said electromagnet.

3,225,153
INTERLOCKING MECHANISM FOR A DUAL ROCKER-BUTTON ACTUATED ELECTRIC MULTI-SWITCH
Conrad I. Carling, Hartford, Conn., assignor to Carling Electric, Inc., West Hartford, Conn., a corporation of Connecticut
Filed June 28, 1963, Ser. No. 291,469
3 Claims. (Cl. 200—50)



2. A switch comprising a case, first and second switch buttons mounted pivotally side by side on said case, each button being pivotable on a common pivot axis from a center-off position alternatively into either of two opposite circuit closing positions, a pair of spaced apart projections on said first button, said projections being disposed at opposite sides of the pivot axis of said button, one of said projections engaging a corresponding edge of said second button when a first selected one of said two buttons has previously been pivoted in one direction to a circuit closing position and the other button is then pivoted in the opposite direction into a circuit closing position to cause the first selected button to return to its center-off position.

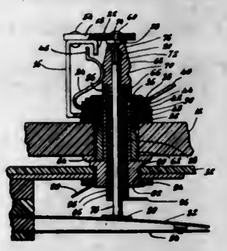
3,225,154
ELECTRIC LIGHTING FIXTURE HANGER
Fred M. Henne, 104 William Howard Taft Road, Cincinnati, Ohio
Filed Apr. 2, 1962, Ser. No. 184,296
7 Claims. (Cl. 200—51.09)

2. An electrical lighting fixture hanger, comprising a first unit and a second unit, said first unit having a portion adapted for attachment to a support means and having guiding and bearing surfaces for the reception and support of the second unit, said second unit having guiding and bearing surfaces complementary with said surfaces of said first unit for interconnection with and disconnection from said surfaces of said first unit so that the second unit may be separably and suspendingly coupled with the first unit, said guiding surfaces of said units functioning when said units are coupled to maintain said bearing surfaces in contact, said unit having means for connection to a lighting fixture, electric contact means carried on said surfaces of said first unit and having current conductors connected therewith, electric contact means carried on said surfaces of the second unit and having current conductors connected therewith, an electric switch electrically connected to the current conductors of said first unit,



means connected to said switch for closing the same in response to the weight of said second unit when the same is suspended from said first unit.

3,225,155
PLUG-TYPE SWITCHING CONNECTOR
Edward T. Duncan, Westport, Conn., assignor to Product Research Associates Incorporated, Westport, Conn., a corporation of Connecticut
Filed Sept. 7, 1962, Ser. No. 221,952
5 Claims. (Cl. 200—51.09)

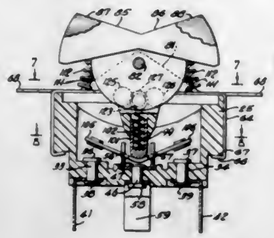


1. In electrical connecting apparatus including jack means and plug means, the improvement which comprises:
actuating pin means contained within said plug means in longitudinal sliding relationship thereto and having a first end extending therefrom;
first switch means in substantially fixed spatial relationship to said plug means and actuatable by said first end of said actuating pin means;
second switch means in substantially fixed spatial relationship to said jack means and actuatable by said plug means upon its insertion into said jack means; and
stud means in substantially fixed spatial relationship to said jack means to contact a second end of said actuating pin means to actuate said first switch means upon mating of said plug and jack means.

3,225,156
DUAL BUTTON SWITCH WITH AUTOMATIC DETENT BALL RETURN ACTION
Edward V. Sakrbacker, Manchester, Conn., assignor to Carling Electric, Inc., West Hartford, Conn., a corporation of Connecticut
Filed Jan. 10, 1964, Ser. No. 336,928
7 Claims. (Cl. 200—67)

1. A switch comprising a case, a first switch button and a second switch button mounted adjacent each other on the same pivot axis on said case, each of said buttons

being separately pivotable from a central open circuit position into either of two circuit closing positions, means on each button for yieldably retaining it in either of its circuit closing positions, means connected to each button at least partially urging the latter into its respective open circuit position, means frictionally engaged between op-



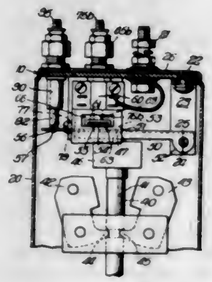
posing faces of said first and second buttons, said friction means being operative in conjunction with said second mentioned means when one of said buttons is in a circuit closing position to return said button to its central open circuit position when the other button is moved into a circuit closing position.

3,225,157

SPEED RESPONSIVE SWITCH MECHANISM FOR ACTUATING A PAIR OF SEQUENTIALLY OPERATED SWITCHES

William J. Williams, 2800 Black Hawk Road, Wilmette, Ill.

Filed Apr. 23, 1964, Ser. No. 362,103
2 Claims. (Cl. 200—80)



1. A speed responsive switch mechanism including a housing, a rotatable shaft in said housing, a speed translation means the axial movement of which depends upon the speed of rotation of said shaft, an operating lever pivotally mounted at a fixed axis at one end to said housing, said translation means contacting said operating lever at a first point remote from said fixed axis, a pressure plate pivotally contacting said operating lever at a second point remote from said fixed axis, adjustable force means pivotally contacting said operating lever at a third point remote from said fixed axis, a pair of independently adjustable spring-load pressure assemblies contacting opposite ends, respectively, of said pressure plate, and a corresponding pair of switches actuated by said pressure plate, whereby said adjustable force means and said adjustable pressure assemblies acting at said specified points provide a wide adjustable range of rotatable speeds of said shaft at which said switches actuate.

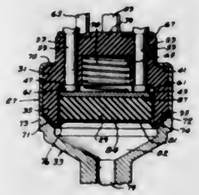
3,225,158

FLUID PRESSURE OPERATED SWITCH WITH LOOSE, FLEXIBLE DIAPHRAGM

Charles W. Jeep, Jr., Webster Groves, and Edgar W. Niemeyer, Normandy, Mo., assignors to ACF Industries Incorporated, New York, N.Y., a corporation of New Jersey

Filed Jan. 14, 1964, Ser. No. 337,667
1 Claim. (Cl. 200—83)

A fluid pressure switch assembly comprising a cup-shaped body having an annular rim defining the edge of a cylindric switch chamber, said annular rim being of conical form with its inner marginal edge rounded to provide a smooth inwardly projecting portion, a cup-shaped head defining a pressure chamber having an annular shoulder of conical form facing and parallel to the annular conical rim of said cup-shaped body, the inner diameter of the wall of said cup-shaped head adjacent its rim being greater than the diameter of the inwardly projecting marginal portion of the inner wall of said cup-shaped body, whereby the inwardly projecting marginal portion of the conical annular rim of the cup-shaped body projects inwardly of the inner marginal edge of the second conical surface, a flexible diaphragm means having its peripheral edge clamped between the conical faces of the cup-shaped body and said head and extending across the cup-shaped head to form a flexible wall of the pressure chamber, the projecting marginal edge of the annular rim of the cup-shaped body engaging said diaphragm adjacent its clamped peripheral marginal edge to



direct the diaphragm downwardly in a direction away from said cup-shaped body, the diaphragm between the clamped marginal edges including excess diaphragm material for free movement thereof, a plurality of electrical contacts fixed within said cup-shaped body, an electrical contactor bridge within said body for movement into contact with said electrical contacts, spring means for moving said contactor bridge in one direction, means for moving said contactor bridge in the other direction, said last-named means being of piston form and positioned adjacent said diaphragm whereby pressure in the pressure chamber will move said diaphragm upwardly to actuate said contactor bridge, said diaphragm when under operating pressure being deformed to provide an annular bight about the inwardly projecting rounded marginal edge of said cup-shaped body extending toward said pressure chamber, and a fluid inlet formed in said head for supplying pressure to said pressure chamber.

3,225,159

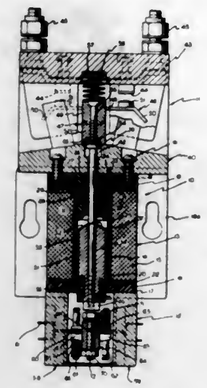
RELAY WITH COATED PLUNGER

Chester H. Flader, Wheeling, Harry L. Myrent, Wilmette, and Matthew R. Heeney, Niles, Ill., assignors to Vapor Corporation, Chicago, Ill., a corporation of Delaware

Filed Aug. 5, 1963, Ser. No. 299,935
4 Claims. (Cl. 200—87)

1. A relay comprising, a coil having a hole extending therethrough, a frame receiving said coil, a tubular member of nonmagnetic material extending through said coil hole and having a plunger stop of magnetically permeable material mounted therein at one end, a plunger of magnetically permeable material slidably received in said

tubular member and having a plunger face adapted to abut against said plug when the coil is energized, said plunger having a coating of nylon completely thereover



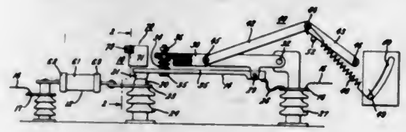
including said plunger face, whereby the coating on said plunger face controls the drop out of the relay and the coating of the plunger otherwise reduces frictional wear, and contact means operated by said plunger.

3,225,160

ELECTRIC SWITCH

Philip Barkan, Lima, Pa., assignor to General Electric Company, a corporation of New York

Filed Oct. 25, 1963, Ser. No. 319,040
9 Claims. (Cl. 200—87)



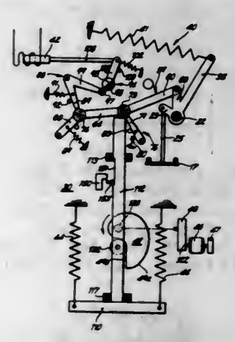
1. An electric switch comprising:
(a) a pair of contacts that are relatively movable into and out of engagement with each other,
(b) means including a switch-operating mechanism coupled to a contact for producing engagement of said contacts when said switch-operating mechanism is operated to a closed position,
(c) one of said contacts popping out of engagement with the other of said contacts in response to magnetic contact-separating forces developed when the instantaneous current flowing through the contacts exceeds a predetermined value,
(c') means for holding said switch-operating mechanism in said closed position during high currents that cause said one contact to pop out of engagement with said other contact,
(d) spring means coupled to said one contact and urging it toward said other contact, said spring means permitting said one contact to move out of engagement with said other contact while said switch-operating mechanism is in closed position and for forcing said one contact back into engagement with other contact,
(e) and magnetic means responsive to current flow through said contacts for delaying reengagement of said one contact with the other contact by said spring means until the current through said contacts reaches substantially zero,
(f) said spring means urging said one contact in a direction toward said other contact irrespective of the distance that said one contact moves away from the other contact while said switch-operating mechanism is in its closed position, whereby said spring means consistently returns said one contact into a position of engagement with said other contact after the flow of high current that causes contact-popping.

3,225,161

REPEATING CIRCUIT INTERRUPTER

Edmund J. Stramowski, University City, Mo., assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware

Filed June 5, 1963, Ser. No. 285,761
11 Claims. (Cl. 200—92)



2. A circuit breaker having main switch means, opening spring means coupled to said main switch means for moving the same to an open position, linkage means coupled to said opening spring means, latch means for holding said linkage means in a switch closed position and to maintain said opening spring means in a charged condition, latch release means, a switch closing member movable into engagement with said linkage means for moving the latter to its switch closed position, closing spring means urging said closing member toward engagement with said linkage means, motor means for normally holding said closing member away from said linkage means and said closing spring means in a charged condition, said motor means being operable to release said closing member for movement by said closing spring means into engagement with said linkage means to close said main switch means and to charge said opening spring means, said motor means also being operable after a switch closing operation to move said closing member out of engagement with said linkage means wherein said closing spring means is charged.

3,225,162

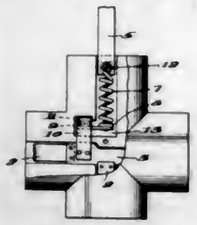
ELECTRICAL CONNECTOR WITH A HELICAL BIMETAL OVERLOAD

Kenneth M. Delafrange, 96 Washington Ave., Westwood, N.J.

Filed Feb. 24, 1964, Ser. No. 346,780
7 Claims. (Cl. 200—115.5)

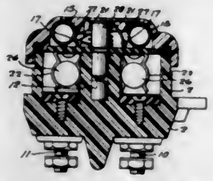
1. In combination with multiple terminal conductors of an electric power input circuit, a current overload control connector device connected with said conductors and having attachment plug receiving contacts adapted for separable connection with associated attachment plug contacts in a power consuming output circuit extension, said connector having an insulating housing and separate electric current conductive assemblies including said plug receiving contacts therein, one of said conductive assemblies having directly embodied therein a thermal cutout

comprising a fixed contact and a movable contact normally engaged therewith and a helical spring form conductor mounting the movable contact at a free end thereof and conductively fixed at the other end against movement, said helical spring form conductor normally



maintaining the contacts in engagement within a predetermined normal load current flow range but subject to linear expansion to separate the contacts under heat generated in the helical conductor by flow therethrough of an overload current above said range.

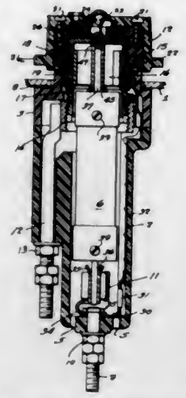
3,225,163
INDICATOR FUSEHOLDER WITH CURRENT RESPONSIVE DEVICE
Ulle C. Linton, 4322 Alton Place NW., Washington 16, D.C.
Filed Mar. 28, 1961, Ser. No. 98,910
16 Claims. (Cl. 200—121)



1. A fuseholder comprising a body having at least one recess for receiving at least one electrical cartridge-type fuse, a cap for closing said body recess, terminals carried by said body and cap, a fuse positioned in said body recess and connected in series with said body and cap terminals, a magnet mounted on said body, a ferrous member mounted on said cap for engaging said magnet tending to retain said cap on said body, and means connected to said terminals capable of temporarily magnetizing said member for repulsing said magnet upon said fuse becoming inoperative.

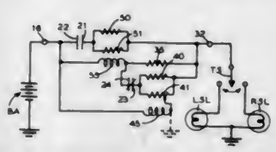
3,225,164
FUSEHOLDERS FOR HOUSING KNIFE BLADE CARTRIDGE FUSES
William C. Linton, Bethesda, Md., assignor to Fuse Indicator Corporation, Rockville, Md., a corporation of Maryland
Filed Nov. 27, 1964, Ser. No. 414,056
8 Claims. (Cl. 200—121)

1. The combination with a blade type fuse holder comprising a body molded from insulating materials having an opened end cavity formed therein for receiving a fuse, contact terminals connected to said body and extending within the opened end cavity thereof, a stationary fuse clip connected to one of said terminals for contact with one blade of the fuse, a cap removably received to said body for closing the opened end cavity thereof, a fuse socket having an opened end cylindrical cavity therein, a rotatable fuse clip, a split ring connected to said fuse socket freely supporting said rotatable fuse clip within said fuse socket, said rotatable fuse clip consisting of two sections, a resiliently supported semi-circular contact connected to one end of each of said sections and having its opposite or free end extending therefrom, and a lug formed with the opposite end of each section of said rotatable clip retaining the latter in spaced rela-



tion with respect to one another whereby when the other blade of the fuse is inserted within the space between said sections said semi-circular contact thereof will be retained in electrical contact the said fuse socket.

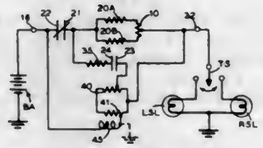
3,225,165
2-VANE VOLTAGE COMPENSATED SHUNT FLASHER
Arthur F. Bleiweiss, Great Neck, George Colombo, East Rockaway, John B. Dickson, Kew Gardens, and Boris Orlov, Woodhaven, N.Y., assignors to Signal-Stat Corporation, Brooklyn, N.Y., a corporation of New York
Filed Aug. 17, 1962, Ser. No. 217,647
7 Claims. (Cl. 200—122)



1. A flasher for use between a source of operating potential and a lamp, said flasher comprising at least part of an electrical circuit between said source and said lamp, and including a pair of contacts which, when they engage each other, complete the circuit between said source and lamp to energize the latter, one of said contacts being permanently in electrical connection with said source of operating potential, a vane carrying the other of said contacts and movable between a stress-deformed condition and a restored condition, said vane when in said restored condition placing said other contact in engagement with said one contact to energize said lamp, a pull ribbon connected to said vane for maintaining the latter in said stress-deformed condition when said pull ribbon is cold, and a winding surrounding said ribbon and connected in parallel with said pair of contacts for heating said pull ribbon to expand the latter so that said vane will snap into said restored condition thereof to energize said lamp and to terminate heating of said ribbon by said winding so that said ribbon will cool to return said vane to said stress-deformed condition and move said other contact away from said one contact to deenergize said lamp, whereby said lamp will flash during normal operations, and further including a resistor in series with said winding across said contacts, and means including a shunt circuit connected in parallel with said resistor and responding solely to a given increase in the operating

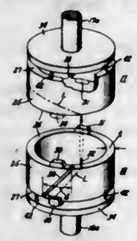
potential of said source above a given operating potential for opening said shunt circuit to electrically place said resistor in series with said winding to maintain the operation of the flasher substantially unchanged when the operating potential of said source increases undesirably above said given potential, said means being substantially insensitive to fluctuations in ambient temperature.

3,225,166
2-VANE VOLTAGE COMPENSATED SHUNT FLASHER
Arthur F. Bleiweiss, Great Neck, George Colombo, East Rockaway, John B. Dickson, Kew Gardens, and Boris Orlov, Woodhaven, N.Y., assignors to Signal-Stat Corporation, Brooklyn, N.Y., a corporation of New York
Filed Aug. 17, 1962, Ser. No. 217,648
10 Claims. (Cl. 200—122)



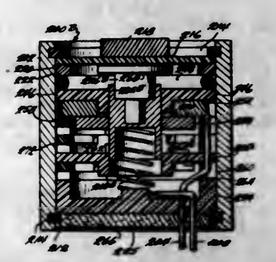
1. For use between a source of operating potential and a lamp, a flasher comprising a first cyclically operable circuit opening and closing means for cyclically opening and closing a circuit between such source and lamp at a given cycling rate when said source is substantially at a given nominal operating potential, a shunt circuit connected in parallel with said first cyclically operable means and including a resistor and a pair of normally open contacts, and second cyclically operable means operatively connected to said normally open contacts and connected to said source of operating potential for automatically closing said normally open contacts in response to a rise in the operating potential by a given increment above said nominal operating potential, so as to automatically connect said resistor in parallel with said cyclically operable means to maintain said cycling rate substantially constant when the operating potential rises undesirably.

3,225,167
VACUUM CIRCUIT BREAKER WITH ARC ROTATION CONTACT MEANS
Allan N. Greenwood, Media, Pa., assignor to General Electric Company, a corporation of New York
Filed Mar. 16, 1964, Ser. No. 351,937
8 Claims. (Cl. 200—144)



1. An electric circuit interrupter comprising:
(a) a pair of electrodes between which an arc is developed during circuit interruption,
(b) one of said electrodes comprising a tubular member of relatively high conductivity metal,
(c) said tubular member having a pair of end surfaces extending transversely of the longitudinal axis of the tubular member and located in spaced-apart relationship along said longitudinal axis,
(d) one of said end surfaces facing the other of said electrodes and constituting an arc-running surface for arcs developed between said electrodes, the other end surface constituting a back surface,
(e) current-directing means for forcing the net current flowing through said tubular member to an arc terminal located at any point on said arc-running surface to follow a path through said tubular member that has a component extending circumferentially of said tubular member,
(f) said current-directing means comprising:
(1) a slot in said tubular member extending between said two end surfaces and intersecting the respective end surfaces at points circumferentially spaced from each other,
(2) and means for forcing the major portion of the current flowing through said tubular member to an arc terminal at any point on said arc-running surface to enter said tubular member through an entry region located adjacent the point where said slot intersects said back surface and on the opposite side of said slot from the location of any point on said arc running surface that is circumferentially aligned with said entry region,
(g) and means for supporting said tubular member comprising a plurality of elements of relatively low conductivity material circumferentially spaced about said tubular member and joined to said tubular member at said back surface.

3,225,168
MINIATURE ELECTRIC SWITCH
Kenneth D. Grimes and William C. Dunnington, Peoria, Ill., assignors to Metamora Electronics Corporation, Metamora, Ill., a corporation of Illinois
Filed Dec. 26, 1962, Ser. No. 247,263
10 Claims. (Cl. 200—159)



1. An electric switch comprising a capsule, the capsule including a housing formed from heat conductive material and having a cylindrical opening formed therethrough, a rigid material sealingly closing one end of the opening and a resilient disk-like diaphragm sealingly closing the opposite end of the opening; movable switch components mutually coaxially positioned within the capsule at the longitudinal axis of the capsule, the movable switch components comprising a plunger, an annular washer-like contact member secured to the plunger intermediate the ends thereof so as to circumscribe the plunger, and an upper and a lower helical spring supporting the plunger between the resilient and rigid ends of the capsule respectively; and stationary switch components mutually coaxially positioned within the capules closely adjacent the inner periphery thereof, the stationary switch components comprising an upper annular contact member positioned above the movable contact member and a lower annular contact member positioned beneath the movable contact member, the lower spring biasing the plunger upwardly whereby the contact member mounted thereon abuts the upper stationary contact member in the rest position of

the switch, the switch being actuatable by a downwardly directed force on the resilient end of the capsule which moves the plunger downwardly compressing the lower spring thereby moving the contact mounted on the plunger out of engagement with the upper stationary contact member and into engagement with the lower stationary contact member the stationary contact members being separated from the ends of the capsule by a plurality of annular spacing members and separated from one another a distance greater than the thickness of the movable contact by an annular spacer formed from an instulating material and having circumferentially spaced radially extending serration-like vents formed in the upper and lower surfaces thereof through which heat generated at the contact member surfaces during repeated switch actuation flows to the switch capsule and is dissipated.

3,225,169

SILVER-REFRACTORY METAL ELECTRICAL CONTACT HAVING REFRACTORY METAL CARBIDE IN THE MARGINAL LAYER OF ITS ACTIVE CONTACT FACE

John C. Kosco, St. Marys, Pa., assignor to Stackpole Carbon Company, St. Marys, Pa., a corporation of Pennsylvania

No Drawing. Filed Feb. 24, 1964, Ser. No. 347,006
2 Claims. (Cl. 200—166)

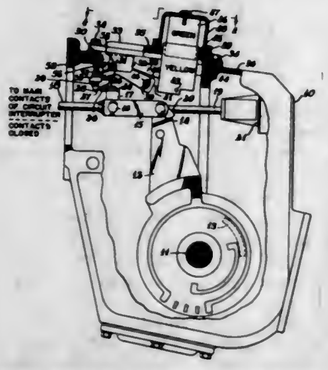
1. An electrical contact having an active contact face, the contact consisting essentially of a sintered body of silver, a finely divided metal of the group consisting of tungsten, molybdenum, titanium and silicon, and a carbide of said metal, the silver providing a matrix through which said metal is distributed, and said carbide being present in and restricted to the exposed marginal layer of said contact face, the silver consisting of from about 30 to 65 volume percent of the contact with the remainder of the contact said metal and said carbide.

3,225,170

MEANS FOR INDICATING THE POSITION OF THE CONTACTS OF A CIRCUIT INTERRUPTER

Leonard V. Chabala, Maywood, and Quentin H. Wherfel, Chicago, Ill., assignors to S & C Electric Company, Chicago, Ill., a corporation of Delaware

Filed Mar. 9, 1964, Ser. No. 350,499
11 Claims. (Cl. 200—167)



1. Contact position indicating means for a high voltage circuit interrupter having separable contacts hidden from view comprising:

(a) a mechanism housing,

(b) an operating arm rotatable in said housing about a fixed axis,

(c) a contact operating member pivotally connected to the distal end of said operating arm and translatorily movable therewith between one position corresponding to a first position of said contacts and another position corresponding to a second position of said contacts,

(d) an actuating lever pivotally mounted on said housing about an axis parallel to said operating arm axis with one arm in the path of a part of said contact operating member in its movement toward said one position,

(e) an indicator mounted on said housing and movable from a first position corresponding to said first position of said contacts to a second position corresponding to said second position of said contacts,

(f) means operatively interconnecting said indicator and said lever to move said indicator between said first and second position, and

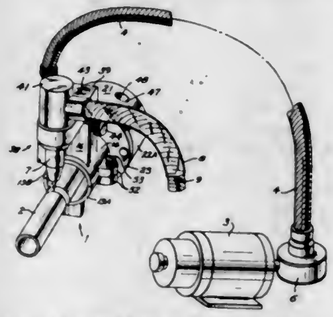
(g) means biasing said indicator toward one of its positions.

3,225,171

AUTOMATIC PIPE WELDING APPARATUS

Leroy Tinnes, 744 Ohio St., Vallejo, Calif.

Filed Feb. 17, 1964, Ser. No. 345,539
2 Claims. (Cl. 219—60)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. Apparatus for welding pipe comprising:

a worm wheel housing provided with a continuous cylindrical bore formed of an enlarged diameter portion and a reduced diameter portion, the latter portion being adapted to closely engage said pipe,

pipe-clamping means carried by said housing and retractably extending radially into said latter bore portion for securing said housing in a fixed position on said pipe,

a tubular shaft extending coaxially with said bore and having its major length disposed externally of said housing with a portion of its length projecting internally into said enlarged bore portion of said housing,

an annular flange projecting radially outwardly from said interior end of said shaft,

gear teeth spaced from said housing on said flange periphery for forming a worm wheel,

a worm meshed with said gear teeth and journaled in said housing with its rotational axis disposed perpendicularly to the axis of said shaft,

a remotely-driven elongate flexible drive shaft operatively coupled to said worm for rotatably driving the worm as well as the worm wheel and said shaft,

an annular cover plate detachably secured to one end of said housing radially outwardly of said shaft,

said cover plate having an internal diameter sized to closely receive and provide bearing support for said shaft whereby said shaft and worm wheel form an independent assembly supported by said worm and cover plate,

an electrode holder flange carried by an extending substantially radially outwardly from said exterior portion of said shaft, and

a welding electrode assembly carried by said holder flange in position for welding said pipe,

said housing, worm wheel, shaft and cover plate each being formed of complementary halves adapted to be assembled around said pipe,

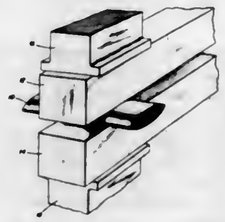
whereby said apparatus may be assembled in a fixed position on a length of pipe and said worm remotely driven for rotating said electrode assembly relative to the pipe.

3,225,172

RESISTANCE WELDING PROCESS

Eugene L. Nooker, Silver Spring, Md., and George W. Galloway, Arcadia, Calif., assignors to the United States of America as represented by the Secretary of the Navy

Filed May 26, 1961, Ser. No. 113,592
1 Claim. (Cl. 219—94)



A method for resistance welding two pieces of material of substantial thickness in which the value of the total electrical resistance of the work is maintained substantially constant, consisting of; placing an elongated shim on one of said pieces of material, said shim having a length corresponding to the width of the weld region and having thereon at least one protuberance extending throughout its length and terminating in a crest line extending parallel to and lying in the same plane as the longitudinal axis of the shim, positioning the other of said pieces of material over said first-mentioned piece and said shim so that said crest line is in line contact with said other piece, positioning said pieces of material and said shim between a pair of spaced opposed electrodes so that said electrodes contact the outer surfaces of said pieces in the region of said shim, exerting pressure upon said electrodes to clamp said pieces and said shim therebetween, simultaneously with the exertion of said pressure passing an electric current from one of said electrodes through said pieces and said shim to the other of said electrodes for creating heat sufficient to cause fusion of said two pieces and said shim to begin at said line of contact between said other piece and said crest, and maintaining said pressure until said shim and said pieces of material are completely fused, the maintenance of said pressure urging said shim into said other piece of material whereby as welding progresses the area of contact between said shim and said other piece increases and resistance therebetween decreases and with increases in temperature the resistance across said pieces and shim increases.

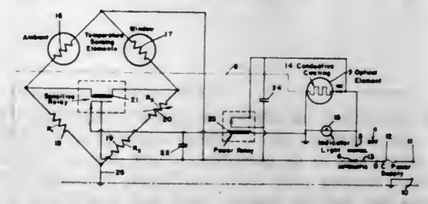
3,225,173

ANTI-FROST APPARATUS FOR OPTICAL ELEMENT

Richard T. Cook, Berlin, N.J., and Warren D. Hallermeier, Philadelphia, Pa., assignors to the United States of America as represented by the Secretary of the Army

Filed July 12, 1963, Ser. No. 294,770
3 Claims. (Cl. 219—202)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. The combination with an optical instrument having enclosure means and an outer optical element providing a light-transmitting and viewing window in said enclosure means, of electrical control apparatus for keeping an exposed outer surface of said optical element free from deposition of moisture from the surrounding atmosphere under varying ambient temperature conditions, said apparatus comprising first temperature-sensing electrical resistance means contiguous to the exposed outer surface of said optical element, second temperature-sensing electrical resistance means in the outer ambient atmosphere surrounding said surface in spaced relation to said first resistance means, a source of electrical operating current, electrically-conductive translucent heating means for the outer surface of said optical element, an electrical bridge



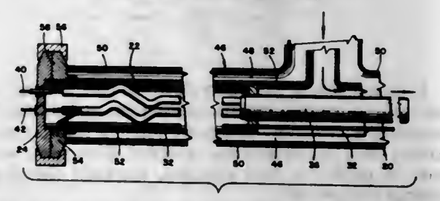
circuit having said first and second temperature-sensing means in separate arms thereof, means for balancing said bridge circuit at a predetermined temperature of said exposed outer surface above the ambient temperature, electrical relay means connected with said bridge circuit to operate in response to an unbalance therein corresponding to a rise in the ambient temperature and a reversal of said temperature relation, and means connected with said relay means and responsive to its operation for applying heating current from said source to said heating means thereby to effect a temperature increase on said first temperature-sensing means to restore said predetermined temperature relation and the bridge balance.

3,225,174

APPARATUS FOR MAINTAINING CONSTANT THE TEMPERATURE OF A FLOW OF CRYOGENIC GAS

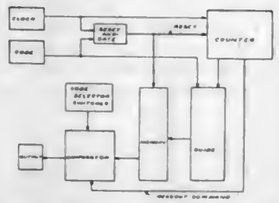
Charles R. Welsend, Columbus, Ohio, assignor to Cryovac, Inc., Columbus, Ohio, a corporation of Ohio

Filed Aug. 10, 1962, Ser. No. 216,085
4 Claims. (Cl. 219—381)



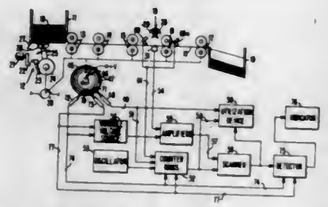
2. An apparatus for maintaining constant the temperature of a flow of cryogenic gas at various temperature values within a selected control range, said apparatus comprising, in combination conduit means for said flow of cryogenic gas, temperature sensing means disposed in said flow and including a bulb containing a saturated cryogenic gas having a boiling point temperature falling within said selected control range; an electrical heating coil disposed in said flow; a variable power transformer; a plurality of conductors connecting said heating coil with said transformer; pressure responsive control means for varying the power output of said transformer; passage means for said saturated cryogenic gas connecting said bulb with said pressure responsive control means; a tubular housing provided with an end closure, said passage means being extended through said end closure; and vacuum jacketing means surrounding said conduit means and provided with an opening, said tubular housing being extended through said opening and within said conduit means.

3,225,175
CASE SELECTOR
Erkki K. Hyypolainen, Chester, Pa., assignor to Scott Paper Company, Chester, Pa., a corporation of Pennsylvania
Filed July 18, 1960, Ser. No. 43,567
8 Claims. (Cl. 235—61.7)



1. An object identification system comprising a series of code markings and a related series of clock markings on the object to be identified, a first detector device for serially sensing said clock markings, a second detector device for serially sensing said code markings, a logic system coupled to said detector devices and including means for storing in binary number form the series of simultaneous occurrences and non-occurrences of clock and code markings sensed by said first and second detector devices, and a presettable read-out system responding to the binary number condition of said storage means.

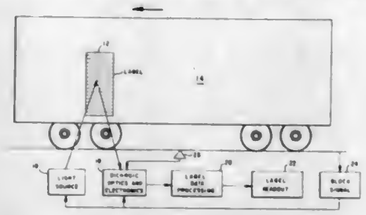
3,225,176
MARGINAL CHECKING APPARATUS
John C. Jones, Apalachin, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 18, 1961, Ser. No. 159,980
16 Claims. (Cl. 235—61.7)



1. In a machine having an electrical date sensing circuit operable to indicate data manifestations and to which are presented successively in sensing relation record members having data manifestations recorded thereon at selected ones of particular data positions, marginal checking apparatus comprising:
(a) means for simulating the presence and absence of said data manifestations for said sensing circuit at least once for each said member presented in sensing relation thereto; and
(b) means controlled by said simulating means for modifying said sensing circuit during said simulation to induce failure of said sensing circuit when of marginal capability.

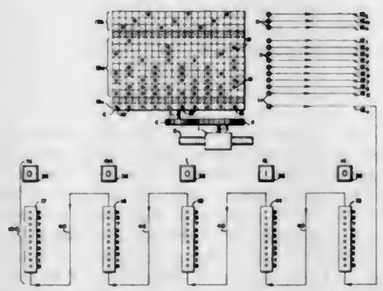
3,225,177
MARK SENSING
Francis H. Stites, Wayland, Mass., and Raymond Alexander, East Aurora, N.Y., assignors to Sylvania Electric Products Inc., a corporation of Delaware
Filed Sept. 13, 1961, Ser. No. 137,918
22 Claims. (Cl. 235—61.11)

1. For the identification of objects in motion past a scanning station, an optical to electronic signal translating system comprising: a label carried by each object to be identified comprising a vertical array of substantially parallel horizontally oriented reflective stripes of substantially equal width arranged in accordance with a preestablished code to define alpha-numeric data unique to the object; at said scanning station, a source of radiant energy arranged to illuminate the area of said objects on which said labels are carried, means in close association with said source operative to scan said label in a direction substantially orthogonal to the direction of motion of



said objects for receiving successively energy reflected from the individual stripes in said label including means operative to limit the energy received at any one time to that reflected from an area on said label having a vertical dimension no larger than the width of one of said stripes, translating means for generating a train of electrical pulse signals in response to said received energy, and means for converting said train of pulse signals into intelligent form.

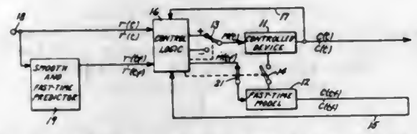
3,225,178
METERING AND COMPUTING APPARATUS
Maurice Henri Fernand Giot, Bernard Jobart, Charles Roger Fevrot, and Jean-Loup Giros, Paris, France, assignors to S.A.T.A.M. Societe Anonyme pour Tous Appareillages Mecaniques, Paris, France, a French company, and to Sud-Aviation, Societe Nationale de Constructions Aeronautiques, Paris, France, a French company
Filed July 27, 1962, Ser. No. 212,884
2 Claims. (Cl. 235—92)



1. Metering and computing apparatus comprising a volumetric meter having a rotational output, a drum coupled to said meter for rotation therewith, a plurality of circumferential rows of holes through said drum, each of said rows including a different number of holes, said drum further comprising hole-free areas between said holes along predetermined lines parallel to the axis of said drum, at least one additional circumferential row of holes on said drum, each hole of said additional row being located along a separate one of said predetermined lines, a separate photocell associated with each said row disposed adjacent said drum in position to be illuminated by light passing through the holes of its associated row, a multi-order pulse totalizing means, carry storage means connected between adjacent orders of said pulse totalizing means, means for coupling the output of the photocell

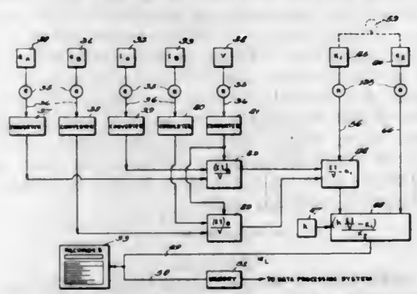
associated with said additional row of holes to said carry storage means, and a plurality of multi-position switches arranged to interconnect the outputs of a plurality of the remaining photocells to a plurality of said orders of said totalizing means.

3,225,179
PREDICTIVE CONTROL SYSTEM
Harold Chestnut, Paul H. Troutman, and William E. Sollecito, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York
Filed Feb. 2, 1962, Ser. No. 170,587
16 Claims. (Cl. 235—151)



13. A predictive control system for a variable controlled device including in combination means for deriving signals representative of the present position and present rate of change of the variable controlled device, a fast-time model means of the controlled device having a transfer function similar to that of the controlled device, but operating on a fast-time basis, selectively operable switching means for operatively coupling the present position signal and the present rate of change signal to the fast-time model to initiate a prediction operation which generates signals having values proportional to a predicted future position and a predicted future rate of change at said future position, and actuating means operatively coupled to the fast-time model means and to the selectively operable switching means for actuating the switching means in response to said predicted rate of change signal of the fast-time model means passing through zero, each of said means being distinct and separate from each of the other said means.

3,225,180
WEIGHT MEASURING AND INDICATING APPARATUS AND METHOD
Peter J. Zorena, Hammond, and Hugh G. Smith and Josef S. Kapitan, St. John, Ind., assignors to Inland Steel Company, Chicago, Ill., a corporation of Delaware
Filed Mar. 15, 1962, Ser. No. 179,928
9 Claims. (Cl. 235—151.33)

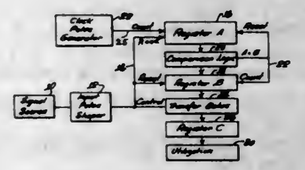


1. In an arrangement including a material-transferring car, cable means for hoisting said car up an inclined ramp to an elevated position, a revolving drum for said cable means, and electric motor means drivingly connected to said drum; the improvement comprising apparatus for measuring and indicating the weight of material in said car, said apparatus comprising:
means for simultaneously measuring the voltage and amperage of said motor means and the velocity of said material-transferring car and for converting the measurements into electric signals in the millivolt range;
computer means;
and means for automatically introducing said electric signals into said computer means while the car is being hoisted to an elevated position and the motor means is operating at a substantially constant speed;
said computer means comprising analog computer means for determining the weight of said load in accordance with the formula:

$$W_L=\frac{k(P_L/V_L-K_1)}{K_2}$$

where
W_L=weight of load in pounds
k=conversion factor for converting kilowatts into foot-pounds per minute=44,300
$K_1=Po/Vo$
K_2=sine $\theta+kPo/2VoWo$
θ=angle of incline of ramp
Wo=weight of empty car in pounds
Po=total power, in kilowatts, for hoisting empty car ($IoEo$)
Vo=velocity of empty material-transferring car, in feet per minute
P_L=total power, in kilowatts, for hoisting loaded car (I_LE_L)
V_L=velocity of loaded material-transferring car, in feet per minute.

3,225,181
DIGITAL COMPUTING SYSTEM FOR SQUARE ROOTS
Jerry H. Styner, Woodland Hills, Calif., assignor to Giannini Controls Corporation, Duarte, Calif., a corporation of New York
Filed Sept. 28, 1962, Ser. No. 226,821
4 Claims. (Cl. 235—158)

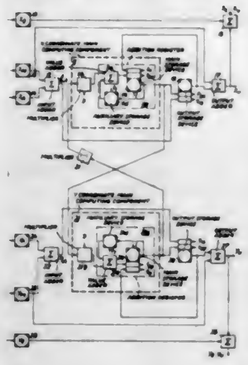


3. A system responsive to a series of input signals which occur at an average rate that is inversely proportional to the square of an independent variable, said system being adapted to comput a number proportional to said independent variable and comprising in combination
first and second counting registers,
means for increasing the count in the first register at a predetermined uniform rate that is large compared to the maximum rate of said input signals,
means acting to develop a control signal each time that said count increases by an amount equal to the count standing in the second register,
means for increasing the count in the second register by a uniform amount in response to each said control signal,
means for resetting the second register to initial condition in response to each input signal,
and output means for producing a representation of said number in response to the number represented by the second register immediately prior to said resetting thereof.

3,225,182
DIGITAL CURVE COMPUTER FOR USE IN CONTROLLING THE PATH OF A WORK TOOL OR WORK PIECE

Elmar Götz, Hattenheimer Str. 15,
Berlin-Frohnau, Germany

Filed Mar. 22, 1962, Ser. No. 181,685
Claims priority, application Germany, June 29, 1961, L 39,395
8 Claims. (Cl. 235—164)



1. A digital computer for computing the coordinates x_ν, y_ν, of points P, along a circular curve portion having a known starting point P_A, end point P_E and center P_M, the coordinates of which center point P_M are x_M, y_M, said computer calculating said cordinates in accordance with the following equations:

$$x_\nu = x_M + \zeta_\nu = x_M + \zeta_A - \sum_0^{\nu-1}\left(\eta_\nu + \zeta_\nu \frac{K}{2}\right)K$$

$$y_\nu = y_M + \eta_\nu = y_M + \eta_A + \sum_0^{\nu-1}\left(\zeta_\nu + \eta_\nu \frac{K}{2}\right)K$$

wherein ζ, η, is a coordinate system having as its origin said point P_M, wherein ζ_A, η_A, are the coordinates of said starting point P_A in said coordinate system ζ, η, wherein ζ_ν, η_ν, are the coordinates of the points P, in said coordinate system ζ, η, and wherein K is a multiplying factor, said computer comprising, in combination:

(1) a first controlled multiplier for multiplying by the factor $-K$ or $-K/2$;
(2) a second controlled multiplier for multiplying by factor K or $K/2$;
(3) a first main storage device;
(4) a second main storage device;
(5) a first auxiliary storage device;
(6) a second auxiliary storage device;
(7) a first output storage device;
(8) a second output storage device; and
(9) a first output adder;

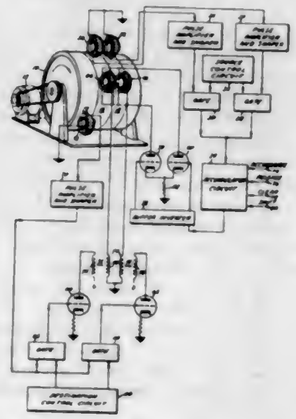
said computer further comprising:

(a) first means for applying the coordinates ζ_ν, η_ν, of a previous point and stored in said first and second output storage devices to said first and second main storage devices, respectively, as well as to said first and second auxiliary storage devices, respectively;
(b) second means for thereafter applying the output of said first main storage device to said second controlled multiplier, for causing the same to multiply by $K/2$, and for applying the thus-obtained value $\zeta_\nu K/2$, to said second main storage device;
(c) third means for thereafter applying the output of said second main storage device to said first controlled multiplier, for causing the same to multiply by $-K$, and for applying the output of said first controlled multiplier to said first main storage device;
(d) fourth means for thereafter applying the output of said first main storage device to said first output storage device; and
(e) fifth means for thereafter applying the value $\eta_\nu + (\zeta_\nu - \eta_\nu K/2)K$ appearing at the output of said first output storage device to said first output adder, and for also applying to said first output adder the coordinate x_M of the center of said circular curve portion, whereby there appears at the output of said first output adder the coordinate $x_{\nu+1}$.

3,225,183
DATA STORAGE SYSTEM

Maurice W. Horrell, Playa Del Rey, Calif., assignor to The Bendix Corporation, a corporation of Delaware

Filed July 22, 1955, Ser. No. 523,883
18 Claims. (Cl. 235—167)



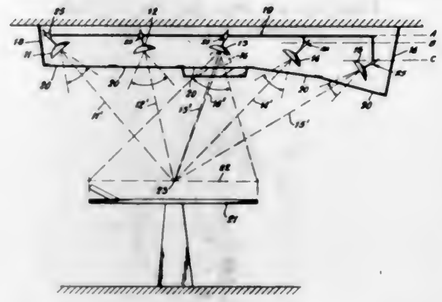
17. A magnetic data storage system comprising: a rotatable magnetic drum register having a plurality of tracks; means for rotating said magnetic drum register; a plurality of magnetic recording heads positioned contiguous to certain of said tracks; a plurality of magnetic reading heads positioned contiguous to certain of said tracks; in certain of said tracks, said recording head being displaced from said reading head such that areas of registration on said magnetic drum will pass under a recording head a predetermined time interval after passing under a reading head; a computing means having a plurality of outputs for different delay periods, one of said delay periods of which is equal to said predetermined time interval; first switching means for selectively coupling certain of said magnetic reading heads to said computing means during certain intervals; and second switching means for selectively coupling during certain other intervals outputs from said computer means to certain of said magnetic recording heads.

3,225,184
OPERATING ROOM LIGHTING FIXTURE

Heinz-Joachim Reiber, Berlin-Zehlendorf, Germany, assignor, by mesne assignments, to Quarzlampengesellschaft G.m.b.H., Hanau (Main), Germany, a corporation of Germany

Filed Mar. 22, 1962, Ser. No. 181,750
Claims priority, application Germany, Mar. 30, 1961, Z 8,649
1 Claim. (Cl. 240—1.4)

In a fixedly mounted lighting fixture, means defining a frame, a plurality of individual searchlights, means supporting said searchlights on said frame for tilting movement of each searchlight about two intersecting axes, a control rod unit, a plurality of universally movable cross joint means spacedly mounted on said control rod unit, means connecting each of said searchlights with one of said cross joint means, the initial arrangement being such as to focus the light from said searchlights upon one and the same point, means supporting said control rod unit on said frame for independent movement of said control rod unit relative to said frame in two intersecting directions, and separate reversible drive means for effecting

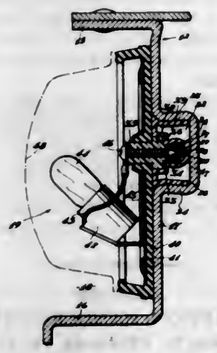


said movement of the control rod unit in said intersecting directions, whereby actuation of said separate drive means individually as well as simultaneously causes simultaneous tilting of said searchlights so as to move said focal point in a single plane, each said cross joint means including a guide block, means supporting said guide block for rotary movement about two intersecting axes, and a stem rigidly secured to the corresponding searchlight and slidably extending through a bore in said guide block.

3,225,185
MOUNTING FOR MARKER LIGHT

William A. Bertolini, Raymond A. Klein, and Clifford W. Selm, Cincinnati, Ohio, assignors to Pullman Incorporated, Chicago, Ill., a corporation of Delaware

Filed Feb. 10, 1964, Ser. No. 343,599
1 Claim. (Cl. 240—8.2)

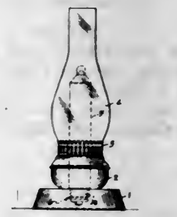


In a cargo container for a highway vehicle, a marker light mounting comprising,
an elongated metal section,
said section having a longitudinally extending recessed portion coextensive with said section,
said recessed portion including overhanging side walls,
an elongated plastic strip disposed in said recessed portion and having inclined side walls mating with said recess side walls to provide a dovetail retention of said strip in said recessed portion,
said plastic strip having a recessed portion having an elongated cable receiving groove coextensive therewith and having guide walls extending outwardly of the groove and defining an opening communicating with the groove,
a cable disposed in said groove,
a marker light mounted on said section and having a pointed contact piercing said cable,
a guide bushing engaging with the side walls and receiving the contact therethrough to align the contact for bringing same into substantially complete piercing relation with the cable to insure proper electrical conductivity therebetween, and stop means in the recessed portion limiting movement of the bushing toward the groove.

3,225,186
ELECTRONIC LAMPS

Edward T. Duncan, Westport, Conn., assignor to Product Research Associates, Incorporated, Westport, Conn., a corporation of Connecticut

Filed July 3, 1961, Ser. No. 121,515
9 Claims. (Cl. 240—10.64)



7. A lamp unit comprising a casing, a connector mounted in the casing provided with a plurality of contacts adapted to engage similar contacts in a second connector, a rechargeable cell in the casing, a lamp socket comprising spaced contacts mounted in the casing, an electrical connection from one of the lamp socket contacts to a first contact in the connector, an electrical connection from the other lamp socket contact to one pole of the cell, an electrical connection from the other pole of the cell to a second contact in the connector, and an electrical connection from the first pole of the cell to a third contact in the connector.

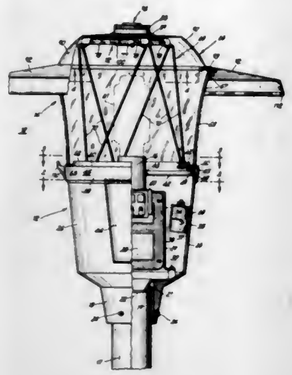
3,225,187
LUMINAIRE ASSEMBLY

Paul J. Curtin, South Milwaukee, Wis., assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware

Filed Mar. 29, 1963, Ser. No. 268,885
19 Claims. (Cl. 240—25)

1. A lighting unit including a base portion having refractor support means on its upper end, open-ended refractor means having a lower end engaging said support means and extending upwardly therefrom, hood means including an inverted dished reflector disposed above and extending generally outwardly from the upper end of said refractor means reflector, support means secured at one end to said base portion and extending upwardly therefrom, coupling means spaced from the upper end of said refractor for releasably securing said hood means to said support means and for drawing said hood means

downwardly toward said base, said reflector comprising a relatively thin resilient metallic member, said coupling means holding said reflector in resilient engagement with



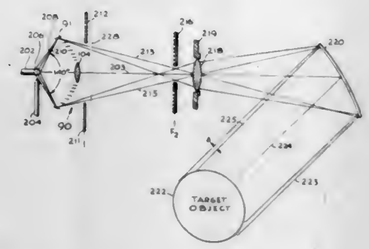
the upper end of said refractor to resiliently clamp said refractor to said base and to permit expansion and contraction thereof without the loss of clamping pressure.

3,225,188

BEAM FORMING APPARATUS

Allan D. Le Vantine, Tarzana, Calif., assignor, by mesne assignments, to TRW Inc., a corporation of Ohio

Filed Mar. 25, 1963, Ser. No. 267,702
6 Claims. (Cl. 240—41.1)



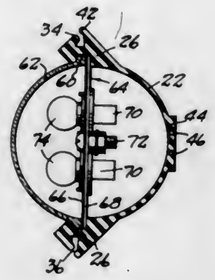
2. In a light projection system:
a light source;
reflecting means formed of a group of annular segments of substantially ellipsoidal surfaces, said segments having substantially coincident proximate and remote foci and having boundary edges defined by parallel planes normal to the longitudinal axis which includes said foci;
said segments having respectively different mean diameters, with the segment having the smallest diameter being most distantly spaced along said axis from the proximate focus and with the segments of successively larger diameters being indivdually axially positioned more closely adjacent said focus so that light from said source impinging on the inner surface of a given one of said larger diameter segments is reflected therefrom, through the interstitial space between said one segment and the next smaller diameter segment, toward the remote focus, the radial distances from said light source to the mean diameter circles of said segments are substantially the same whereby all of said segments are illuminated with light of approximately the same intensity, each of said segments having a width in the axial direction substantially smaller than the minimum straight line distance from the same segment to said light source.

3,225,189

LAMP MOUNT

Larry S. Pendell, Elkhart, Ind., assignor to Key Machine Tool Corporation, Elkhart, Ind., a corporation of Indiana

Filed Oct. 15, 1962, Ser. No. 230,660
1 Claim. (Cl. 240—90)



A lamp mount adapted to be positioned in an opening of a support, comprising
a cup-shaped body of resilient material and
an electric lamp unit mounted in said body with clearance and including a marginal mounting portion larger than the inner dimension of said body and electric leads,
said body having
an internal circumferential groove extending thereabout adjacent its open end for releasably and sealingly receiving the marginal mounting portion of said lamp unit,
an external circumferential groove adjacent and substantially parallel to and substantially coplanar with said internal groove for releasably and sealingly receiving the marginal portion of a support around an opening therein, and
openings in the portion of said body outlined by said grooves and of smaller size than said electric leads to constrictively and sealingly receive said leads,
said resilient body having a free edge of V-shape in cross-section projecting forwardly from said grooves and from the margin of the lens portion of said lamp unit to define inner and outer bevels, said inner bevel guiding said lamp unit into said inner groove, and said outer bevel guiding application of said body to interlock with said support at said outer groove.

3,225,190

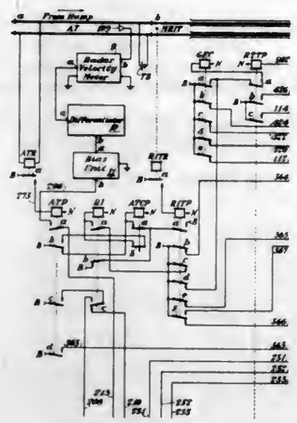
INFORMATION HANDLING SYSTEM

William A. Robison, Jr., Pittsburgh, Pa., assignor to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania

Filed Feb. 26, 1959, Ser. No. 795,672
21 Claims. (Cl. 246—4)

1. In a signal storage system, in combination, a series of signal storage devices, means for storing in the first and each succeeding device of said series of devices void

of a stored signal one of a series of consecutive signals in analog form from a single source; means for storing in each device only when it contains a signal storage in analog form an associated group of signals in digital



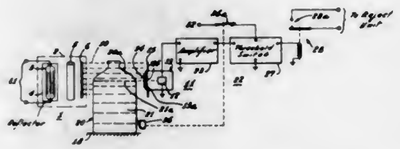
form, and means for reading out at any time any said signal from its respective storage device regardless of the order in which said signals were stored.

3,225,191

INFRARED LIQUID LEVEL INSPECTION SYSTEM

Fredrick L. Calhoun, Torrance, Calif., assignor to Industrial Dynamics Company, Ltd., Los Angeles, Calif., a corporation of California

Filed June 1, 1962, Ser. No. 199,382
17 Claims. (Cl. 250—43.5)



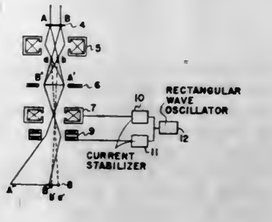
1. In combination for indicating a particular level of liquid in a container having characteristics of passing energy in the infrared band of wavelengths where the liquid has properties of blocking the passage of energy at wavelengths in the infrared band and at wavelengths above the infrared band,
means disposed relative to the container for directing energy in the infrared band toward the container,
means disposed relative to the container for receiving the energy passing from the container at substantially the particular level and having characteristics for blocking energy in a range of wavelengths below the infrared band and for producing signals in accordance with the occurrence of energy in the infrared band, and
means responsive to the signals produced by the last mentioned means for indicating whether the liquid is at the particular level in the container.

3,225,192

APPARATUS FOR PRODUCING ELECTRON MICROSCOPE AND DIFFRACTION IMAGES SEPARATELY AND SIMULTANEOUSLY ON THE IMAGE PLANE

Shinjiro Katagiri, Kodaira-shi, and Susumu Ozasa, Hachioji-shi, Japan, assignors to Kabushiki Kaisha Hitachi Seisakusho, Tokyo-to, Japan, a joint-stock company of Japan

Filed Dec. 5, 1963, Ser. No. 328,247
Claims priority, application Japan, Dec. 28, 1962, 37/59,176
4 Claims. (Cl. 250—49.5)



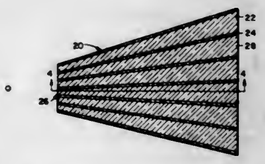
1. In an electron microscope of the type provided with at least a source of electrons, an anode, a condenser lens, means for supporting a sample, an objective lens, a field limiting aperture, an intermediate lens, and a fluorescent screen disposed in the order named, the improvements which comprise, in combination, first means to form alternately a microscope image and a diffraction image by varying periodically the focal length of said intermediate lens, and second means to cause only the deflection of an image forming electron beam of said microscope image at the image side of said intermediate lens in synchronism with the periodic variation of said focal length, thereby producing separately and simultaneously said microscope image and diffraction image on said fluorescent screen within the same visual field.

3,225,193

SCINTILLATION DEVICE AND SYSTEM

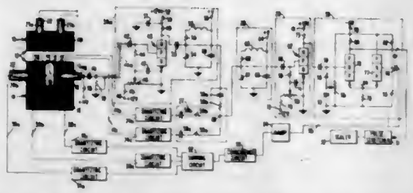
John L. Hilton, Walnut Creek, and Robert K. Squire, Danville, Calif., assignors, by mesne assignments, to Aerojet-General Corporation, El Monte, Calif., a corporation of Ohio

Filed Feb. 24, 1961, Ser. No. 91,516
9 Claims. (Cl. 250—71.5)



5. A nondestructive test system comprising: a scintillation converter adapted to receive radiation from a radiation source, light gathering means directly coupled to said converter, an electronic scanning means having a signal output associated with said light gathering means, and means for converting said scanning means signal output to a visible readout, said converter comprising a plurality of closely packed, long, tapered, narrow scintillation fibers having lateral and end surfaces and a material holding said fibers together on their lateral surfaces to form a honeycomb scintillation crystal.

3,225,194
SCINTILLATION DETECTION APPARATUS
Gerard J. Sprokel, Endicott, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Apr. 30, 1962, Ser. No. 191,062
17 Claims. (Cl. 250—71.5)



1. In scintillation detection apparatus employing multiple pluralities of electrical energy sources in which each said source independently produces electrical pulses of varying width and amplitude, a discrimination circuit comprising, in combination:

a circuit means for each said source responsive to said varying pulses for providing substantially uniform electrical output signals;

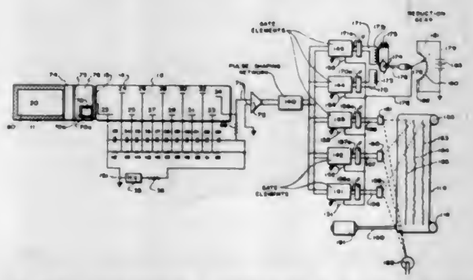
means for each said plurality of said sources connected to each said circuit means of a plurality for differentiating and summing said electrical signals from its respective plurality;

a coincidence means connected to each said differentiating and summing means responsive to a predetermined signal sum of said differentiated signals for producing a coincidence signal;

anti-coincidence means associated with each said coincidence means for generating a count signal when a coincidence signal from a selected one of said coincidence means occurs in the absence of a coincidence signal from other said coincidence means; and

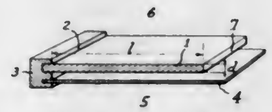
means for utilizing said count signals.

3,225,195
STABILIZED SCINTILLATION TYPE RADIATION DETECTOR
Serge A. Scherbatskoy, 804 Wright Bldg., Tulsa 3, Okla.
Original application Aug. 17, 1959, Ser. No. 834,182, now Patent No. 3,089,955, dated May 14, 1963. Divided and this application Mar. 25, 1963, Ser. No. 267,430
2 Claims. (Cl. 250—71.5)



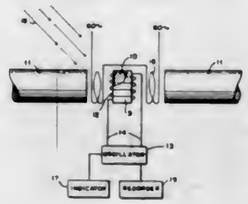
1. The combination comprising a scintillation-type radiation detector including a photomultiplier, adapted to produce first electric pulses in response to light flashes produced by incident nuclear radiation, a source of reference scintillations comprising a scintillating phosphor and a radioactive substance at least partially dispersed therewithin, said substance being characterised by emission of nuclear radiation of known characteristics, said source being optically coupled to said photomultiplier and operative to produce in the output thereof second electric pulses representing said known radiation, a system fed by said photomultiplier for measuring the respective magnitudes of said first pulses and said second pulses, and means for comparing said magnitudes.

3,225,196
DEVICE FOR MEASURING DOSES OF THERMAL NEUTRONS
Jean Gigon, Romorantin, and Guy Mayer, Paris, France, assignors to Commissariat a l'Energie Atomique, Paris, France
Filed Nov. 6, 1958, Ser. No. 772,376
Claims priority, application France, Nov. 8, 1957, 751,191
10 Claims. (Cl. 250—83.1)



1. An analyzer for neutrons comprised of a glass body having a plurality of glass parts with different density response to neutrons, and means to measure the deformation of the body under irradiation.

3,225,197
FAST NEUTRON DETECTION AND FLUX DENSITY MEASUREMENT
Michael J. Basso, Asbury Park, N.J., assignor to the United States of America as represented by the Secretary of the Army
Filed May 10, 1963, Ser. No. 279,645
3 Claims. (Cl. 250—83.1)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A method of measuring neutron flux as a function of time in a fast neutron environment comprising first supporting a sample of material having a high content of hydrogen nuclei in a neutron free environment while contained in a nonmagnetic receptacle, applying a magnetic field to said material whereby some of the gyromagnetic bodies in said material will be oriented in a common attitude, disposing a radio frequency coil within said magnetic field with the turns thereof arranged to produce a field having its longitudinal axis extending at 90° to the flux lines of said magnetic field and passing through said sample material, energizing said coil and adjusting the frequency of the input current to that of the resonant frequency of the sample, measuring the input current to said coil, then immersing the hydrogenous sample in a high intensity fast neutron environment while the nuclei are in their resonant state whereby the neutrons will collide with some of the nuclei momentarily disrupting their resonance, and again measuring the radio frequency input to said coil, the summation of the effects of the collisions

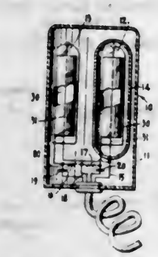
indicating the changing neutron flux of said environment corresponding to the change in absorption of the radio frequency input as a function of time.

3,225,198
METHOD OF MEASURING NUCLEAR RADIATION UTILIZING A SEMICONDUCTOR CRYSTAL HAVING A LITHIUM COMPENSATED INTRINSIC REGION
James W. Mayer, Pacific Palisades, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed May 16, 1961, Ser. No. 110,499
11 Claims. (Cl. 250—83.3)



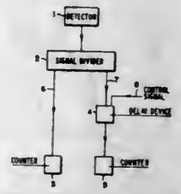
1. The method of measuring nuclear radiation which comprises: exposing to said radiation a semiconductor detector crystal having a lithium compensated intrinsic region therein between P and N type regions and measuring the electrical pulse generated by said radiation between said N and P type regions.

3,225,199
RADIOISOTOPE IDENTIFIER
Ronald W. Tolmie, Ottawa, Ontario, Canada, assignor to Atomic Energy of Canada Limited, Ottawa, Ontario, Canada
Filed May 14, 1962, Ser. No. 194,384
Claims priority, application Canada, Jan. 8, 1962, 839,547
5 Claims. (Cl. 250—83.6)



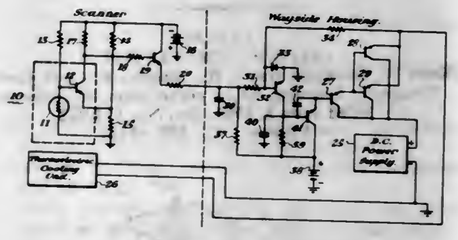
1. In apparatus for measuring the energy of local radiation which includes, a pair of radiation detectors of the counting pulse type, whose rate of counting depends upon the number of radiations quanta intercepted in a given time interval, a radiation absorbing shield for absorbing a proportion of the radiation falling on one of said detectors, said proportion being dependent upon the energy of the radiation, and means for deriving the ratio of the number of counts of said shielded detector and the sum of the number of counts of both said detectors as a potential difference, said ratio being a function of the local radiation energy, the improvement comprising said radiation absorbing shield being formed of at least two dissimilar materials of different absorption coefficients for a given energy of radiation, for providing different attenuations for radiation encountering said one detector from separate chosen directions, the rate of counting of said one detector being determined by that material which is interposed between said one detector and a source of radiation.

3,225,200
DETERMINATION OF THE NUMBER OF NEUTRONS EMITTED SIMULTANEOUSLY BY A SOURCE
Albert Gey, Sceaux, and Jacques Jacquesson, Fresnes, France, assignors to Commissariat a l'Energie Atomique, Paris, France
Filed Aug. 8, 1962, Ser. No. 215,662
Claims priority, application France, Aug. 11, 1961, 870,965
4 Claims. (Cl. 250—83.1)



1. Apparatus for determining, from the neutrons emitted by a source thereof, the proportion of those neutrons emitted simultaneously, comprising: detector means for detecting an emitted neutron and generating a signal pulse upon such detection; means arranged to receive said pulses and simultaneously direct the same to first and second counting lines; said first counting line including a pulse counter and being free of signal delaying means; said second counting line including a pulse counter and time delay means for delaying delivery of a pulse to its counter, said time delay means being arranged to delay a pulse for a predetermined time interval of the same order of magnitude as the time between emission of a neutron by said source and generation of a signal pulse upon detection thereof by said detector means.

3,225,201
CONSTANT TEMPERATURE HOT BEARING DETECTOR
James A. Cook, Jr., Wilkinsburg, Pa., assignor to Westinghouse Air Brake Company, Swissvale, Pa., a corporation of Pennsylvania
Filed Mar. 11, 1963, Ser. No. 264,172
4 Claims. (Cl. 250—83.3)

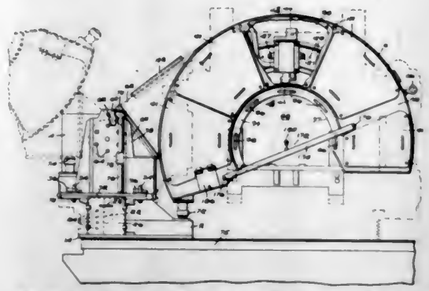


1. In a hot bearing detector which includes an infrared energy sensitive element for detecting an overheated bearing on a moving railway vehicle, the combination comprising, a thermal compartment, means for mounting said infrared energy sensitive element in said thermal compartment, a thermoelectric cooling unit including a cold junction, means for mounting said thermal compartment in thermal relation with the cold junction of said thermoelectric cooling unit, a thermistor mounted in said thermal compartment, a bridge circuit including said thermistor, a transistor for amplifying an output signal from said bridge circuit, means for mounting said transistor in said thermal compartment, and means responsive to the output signal of said transistor for energizing said thermoelectric cooling unit whenever the temperature in said thermal compartment exceeds a predetermined temperature.

3,225,202
MOUNTING MEANS FOR TRANSDUCERS

Charles A. Rich, Jr., Southboro, and Kenneth L. Klusmier and John Adams Holbrook, Worcester, Mass., assignors to Morgan Construction Company, Worcester, Mass., a corporation of Massachusetts

Filed May 26, 1964, Ser. No. 371,176
11 Claims. (Cl. 250—83.3)

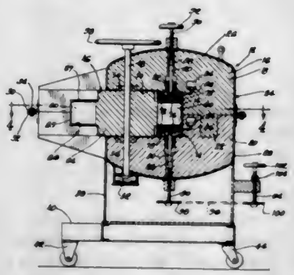


7. In a rolling mill, means for measuring a plurality of cross-sectional dimensions of moving material in a single strand merchant mill, said means comprising a support mounted independently of the roll housings in fixed relation to the pass line, a portable gauge measuring unit removably mounted on said support, said gauge measuring unit adapted for quick disengagement from said support and including an arched protective housing, said housing provided with front and rear arched walls held in spaced relationship by a curved inner wall partially surrounding said pass line and a curved outer wall, said curved inner wall provided with a plurality of apertures, a plurality of infrared micrometer gauges mounted within said arched protective housing in a manner permitting the circumferential, radial, and pivotal adjustment thereof, said arched front wall provided with access doors adjacent each said infrared micrometer gauges, and means for directing a flow of filtered cooling air to each said infrared micrometer gauges in order to maintain the temperature of said infrared micrometer gauges within a safe operating range while keeping the lens of said gauges free of foreign particles.

3,225,203
ATOMIC IRRADIATOR

Dieter W. Gombert, Itasca, Ill., assignor to Cook Electric Company, Chicago, Ill., a corporation of Delaware

Filed June 5, 1961, Ser. No. 114,922
4 Claims. (Cl. 250—106)

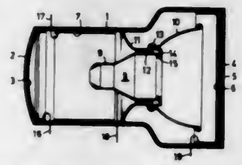


1. In an irradiator for subjecting specimens to atomic radiation, the combination comprising a housing having an irradiation chamber therein, said housing including a shield for substantially preventing the escape of atomic radiation from said chamber, a wheel rotatably mounted in said housing and having an edge portion movable through said chamber, said housing having an opening therein for receiving a sectoral portion of said wheel, the remaining portion of said wheel projecting outside said housing to an accessible point, said wheel including shielding material for substantially preventing the escape of atomic radiation from said chamber through said opening, said wheel having a pair of diametrically opposite specimen holding notches in the edge portion thereof and movable from said accessible point into said irradiation chamber by rotation of said wheel, each of said notches having a lower wall therein for supporting specimens to be irradiated, a shaft connected to said wheel and extending out of said housing for rotating said wheel, upper and lower radioactive plates in said irradiation chamber above and below the edge portion of said wheel, each of said notches being movable into register with said plates for irradiating the specimens in said notches, upper and lower receptacles received around said upper and lower plates and filled with mercury so as to immerse said plates, each of said plates having an operating rod connected to said plate and extending out of the corresponding receptacle, a flexible metal bellows connected between said receptacle and said rod and forming a seal therebetween, an adjusting screw extending out of said housing, and a swivel coupling connected between said adjusting screw and said rod, whereby said screw is operative to move said plate in said mercury toward and away from said wheel so as to afford variable attenuation of the atomic radiation penetrating through said mercury and into said notches in said wheel.

3,225,204
ELECTRON-OPTICAL IMAGE INTENSIFIER SYSTEM

Pieter Schagen, Redhill, Donald George Taylor, Horley, and Alfred Walters Woodhead, Caterham, England, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Oct. 9, 1961, Ser. No. 143,757
Claims priority, application Great Britain, Oct. 28, 1960, 37,158/60
16 Claims. (Cl. 250—213)

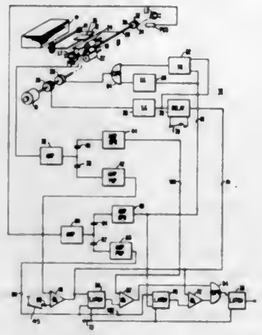


1. An electron-optical image converter tube comprising a first portion transmissive to radiation and a second light-transparent portion, a photo-emissive layer positioned to receive radiation transmitted through said first portion, a luminescent screen positioned within said envelope to be viewed through said second portion, first and second anode electrodes positioned intermediate said photo-emissive layer and said luminescent screen, a focussing electrode positioned intermediate said photo-emissive layer and said first anode for focussing an electron image produced on said photo-emissive layer by radiation incident thereon onto the luminescent layer, said focussing electrode and said first anode electrode constituting a first electron lens system for providing an intermediate virtual image of the electron image on the photo-emissive layer, said first and second anode electrodes constituting a second electron lens system serving as a converging lens with a constant potential applied to the second anode electrode, means to apply a given potential to said second anode, means to apply a focussing potential to the focussing electrode, and means to apply a potential to the first anode which is less than that applied to the second anode including means to vary the potential applied to the first anode whereby variable magnification of the image produced on the luminescent screen is achieved.

3,225,205
SEQUENCE CHECKING MEANS WITH PLURAL GATE AND LATCH MEANS

George M. Berkin, Endicott, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Dec. 17, 1962, Ser. No. 245,257
3 Claims. (Cl. 250—214)

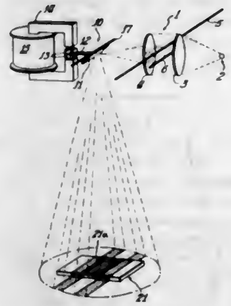


1. A sequence checking system comprising
(a) means for producing a recurring sequence of a plurality of related signals,
(b) latch means activated by a first one of said signals and reset by a second one,
(c) gate means activated by concurrence of the latch activated condition and a third one of said signals,
(d) an additional latch activated by the second one of said signals and reset by the fourth of said signals, and
(e) additional gate means activated by concurrent activation of the additional latch and recurrence of the first of said signals.

3,225,206
PHOTOSENSITIVE INSPECTION APPARATUS FOR FILAMENTARY MATERIAL

Stanley J. Strong, Pomona, and Charles M. Wolfe, Glendora, Calif., assignors to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois

Filed Mar. 14, 1962, Ser. No. 179,730
2 Claims. (Cl. 250—219)

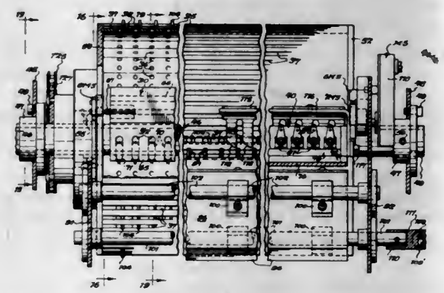


1. A filamentary material inspection apparatus comprising a housing having a first wall and a base, a generally cylindrical barrel extending through said first wall into said housing, a heater adjacent one terminal portion of said barrel directing a beam of radiation into said housing; means in said barrel defining a slot for receiving a running length of filamentary material thereby forming a shadow image of said material; reference element means in said barrel forming a shadow image of said element generally parallel to and spaced from said filamentary material shadow image; detector means adjacent the base of said housing comprising an electrical bridge circuit including a photosensitive cell, said bridge circuit having a variable output dependent on the quantity of radiation impinging on said photosensitive cell; and oscillating reflector means in said housing in line with the beam of radiation adapted to alternately project the respective shadow images on and off opposed peripheral portions of said cell, whereby the output of said detector means is a function of the difference between the filamentary material diameter and the reference element diameter.

3,225,207
RADIATION RESPONSIVE SELECTIVELY PROGRAMMED CONTROLLER

William D. Connors, Horseheads, N.Y., and Marshall E. Evans, Millerton, Pa., assignors to Hardinge Brothers, Inc., Elmira, N.Y.

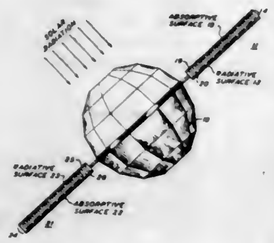
Filed Sept. 28, 1962, Ser. No. 227,019
24 Claims. (Cl. 250—237)



15. An automatic selectively programmed controller for actuating and cycling the operation of an electrically energized machine and for controlling the same which comprises:
a hollow drum supported for rotation about its longitudinal axis,
the wall of said drum having openings therethrough arranged in longitudinal rows,
an individual shutter for each of said openings,
said shutters carried by said drum and movable to selectively cover and uncover said openings,
means for selectively moving said shutters to uncover said openings,
a holder disposed, spaced from and supported within said drum and having a row of spaced apart recesses alined with one of the rows of said openings,
a photosensitive resistor disposed in each of said recesses with a sensitive portion thereof directed outwardly of said recess in a direction toward said drum,
a row of spaced apart illuminating sources alined with said row of recesses and disposed and supported on the side of said drum opposite said holder, whereby said openings are intermediate said sources and said recesses,
motor means for selected stepwise rotation of said drum whereby successive rows of openings will be interposed between said recesses and said sources,
circuit switching means electrically connected between said resistors and said machine for energizing said machine in accordance with the illumination of said

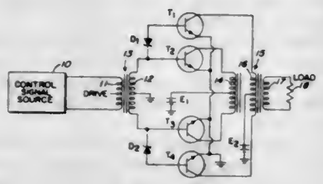
resistors whereby the activity of said machine will be controlled by the positions of said shutters as the drum is rotated.

3,225,208
THERMOELECTRIC POWERED SATELLITE
Raymond Wolfe, New Providence, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Feb. 23, 1962, Ser. No. 174,971
7 Claims. (Cl. 307—43)



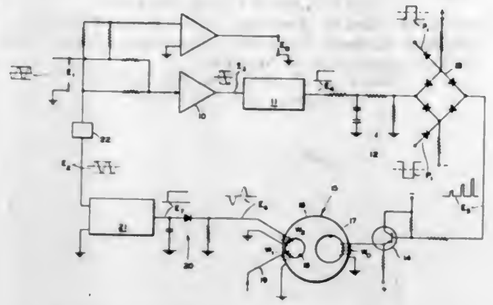
1. An earth satellite power supply comprising a plurality of thermoelectric generators each having normally hot and normally cold junctions, one portion of said generators having their normally hot junctions and the remainder of said generators having their normally cold junctions oriented in substantially the same direction whereby said one portion produces a first current of one polarity and said remainder produces a second current of the opposite polarity when illuminated by solar radiation from said one direction, a load circuit, and solar activated means for directing said first and second currents through said load in the same direction and for reversing the connection of each portion to said load when the direction of said solar radiation is reversed.

3,225,209
TWO-LEVEL D.C./A.C. POWER CONVERTER OR AMPLITUDE MODULATOR
Donald H. Schuster, Cedar Rapids, Iowa, assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa
Filed Dec. 17, 1962, Ser. No. 245,057
5 Claims. (Cl. 307—80)



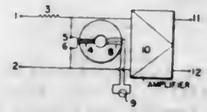
1. A D.C. to A.C. power converter comprising a first transformer having a primary and a secondary, a control signal supplied to the primary of the first transformer, a first pair of transistors connected to opposite ends of the secondary of the first transformer, a second transformer having a first primary winding connected across the outputs of the first transistors, a pair of Zener diodes, a second pair of transistors connected in series with the Zener diodes, a second primary winding of the second transformer with opposite ends connected to the outputs of the second pair of transistors, the opposite ends of the secondary of the first transformer connected to the Zener diodes, and an output winding connected to the second transformer and supplying an output signal.

3,225,210
TRANSFLUXOR SYNCHRONIZER FOR FLIGHT CONTROL SYSTEMS
Arthur S. Robinson, Allendale, N.J., assignor to The Bendix Corporation, a corporation of Delaware
Filed Feb. 12, 1960, Ser. No. 8,317
13 Claims. (Cl. 307—88)



1. A synchronizer having an input adapted to receive command signals, means for providing pulses corresponding to the command signals, and a transfluxor having a control winding connected to the pulse means and energized by the pulses, said transfluxor having an output connected in opposition to the input.

3,225,211
D.C.-A.C. CONVERSION METHOD AND APPARATUS
Katsumi Takami and Zenmon Abe, Kitatama-gun, Tokyo-to, Kiyokata Matsuura, Chikusa-ku, Nagoya-shi, and Yoshio Furuhata, Hachioji-shi, Japan, assignors to Kabushiki Kaisha Hitachi Seisakusho, Tokyo-to, Japan, a joint-stock company of Japan
Filed Jan. 3, 1964, Ser. No. 335,613
Claims priority, application Japan, Jan. 11, 1963, 38/458
5 Claims. (Cl. 307—88)

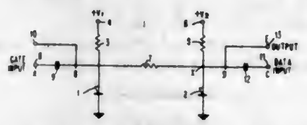


1. A method of converting direct current into alternating current which comprises applying a direct current input to a ferroelectric capacitor, imparting, at the same time, a mechanical stress to the dielectric material of the said capacitor, and thereby causing the capacitance of the said capacitor to vary at stress values in the vicinity of stress values at which the rate of capacitance variation with stress is high.

3,225,212
TUNNEL DIODE GATING CIRCUIT WITH SELF RESET
Manfred Hilsenrath, Hyde Park, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 7, 1960, Ser. No. 74,368
1 Claim. (Cl. 307—88.5)

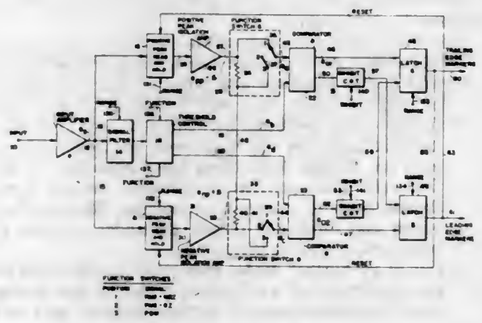
A self-resetting gate circuit comprising, a first tunnel diode, first biasing means coupled to the first diode for establishing a bistable operating mode for said first diode, a second tunnel diode, second biasing means coupled to the second diode for establishing a normally monostable operating mode for said second diode, resistive impedance means coupling like terminals of said diodes, a source of gate signals, first capacitive means coupling

said source to said first diode and responsive to gate signals to shift the operation of said first diode between its two stable operating states, said second biasing means and said resistive impedance means being responsive to a shift in operating condition of said first diode from a first stable state to a second stable state to establish a bistable operating mode for said second diode, a source of input signals, and second capacitive means connected in series between said input signal source and said second diode and responsive to said input signals to shift the operation of said second diode between its two stable



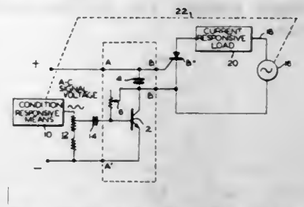
states when said second diode is in its bistable operating mode, said first and second capactive means providing spike signals of one polarity to the first and second diodes respectively on the occurrence of the beginning edge of a gate signal and an input siganl respectively so that the operation of the first diode is shifted between its operating states and to shift the second diode between its operating states when it operates bistably and said capacitive means providing spike signals of the opposite polarity to self-reset the first and second diodes on the occurrence of the trailing edge of the gate and input signals respectively.

3,225,213
TRANSITION DETECTOR
Karl Hinrichs and Robert E. Eastman, Fullerton, and John R. Kolden, Riverside, Calif., assignors to Beckman Instruments, Inc., a corporation of California
Filed May 18, 1962, Ser. No. 195,695
5 Claims. (Cl. 307—88.5)



1. A device for detecting transitions of an input signal comprising, a threshold circuit,
first means for applying said input signal to said threshold control circuit, first and second peak read and hold circuits,
second means for applying said input signal to said first and second peak read and hold circuits,
switch means connected with the outputs of said first and second peak read and hold circuits,
first and second comparators connected with the outputs of said switch means and said threshold control circuit for comparing the input signals applied thereto and providing output signals indicative of the difference between the input signals thereto, latch means, and
means connecting said comparators with said latch means whereby said latch means are triggered by predetermined inputs thereto to provide output signals indicative of the transitions of said input signal.

3,225,214
TRANSISTORIZED R-C NETWORK
Billy Burley, Dallas, Tex., assignor, by mesne assignments, to Johnson Service Company, Milwaukee, Wis., a corporation of Wisconsin
Filed June 29, 1962, Ser. No. 206,346
1 Claim. (Cl. 307—88.5)

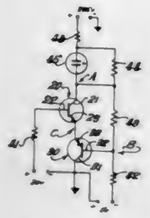


An electronic control system having an adjustable time constant network for supplying power to a load, comprising
network means including a pair of input terminals, a pair of output terminals, a transistor having emitter, collector and base electrodes, a capacitor, and circuit means connecting said capacitor and the emitter to collector circuit of said transistor in series between said input terminals to define a resistive-capacitive network wherein the time constant is determined by the conductivity of the transistor, said output terminals being connected with opposite ends of said capacitor, respectively;
load means connected between said output terminals to define a direct current path in parallel with said capacitor;
means applying a direct-current potential across said input terminals;
means applying a direct-current biasing potential upon said base electrode to establish a quiescent flow of direct current through the emitter to collector circuit of said transistor for establishing a selected time constant for said network, said biasing means comprising an adjustable resistor connected at one end with said base electrode and at the other end with at least one of said emitter and collector electrodes;
and means connected with said base electrode for superimposing an alternating-current signal voltage upon said direct-current biasing potential to control the conductivity of the transistor and vary the time constant of the network established by said adjustable resistor.

3,225,215
BISTABLE SWITCHING CIRCUIT EMPLOYING OPPOSITE CONDUCTIVITY TRANSISTORS
Arthur J. Winter, Encino, Calif., assignor to Anadex Instruments, Inc., Los Angeles, Calif., a corporation of Nevada
Filed July 23, 1962, Ser. No. 211,787
5 Claims. (Cl. 307—88.5)

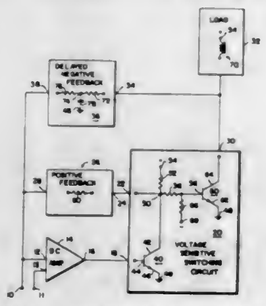
1. A bistable switching circuit comprising, in combination:
(a) a first transistor of a predetermined conduction characteristic type, said first transistor having a base and an emitter and a collector;
(b) a second transistor of the opposite conduction characteristic type, said second transistor having a base and an emitter and a collector, the emitters of said first and second transistors being directly connected only to each other;

(c) first and second voltage input terminals for connection to a source of direct current operating potential, said second voltage input terminal being connected to a point of common potential;
(d) load impedance means coupled between said first voltage input terminal and the collector of said first transistor, the collector of said second transistor being direct current coupled to said point of common potential whereby the series combination of said load impedance means and said first and second transistors is coupled across said first and second voltage input terminals;
(e) first resistance means coupled between said point of common potential and the base of said second transistor;



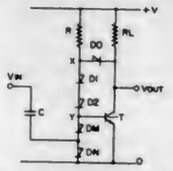
(f) direct current feedback means coupled between the collector of said first transistor and the base of said second transistor;
(g) second resistance means, said second resistance means including at least one resistance means, each of said one resistance means having one terminal thereof coupled to said base of said first transistor and another terminal thereof coupled only to a source of fixed potential external to said switching circuit, said second resistance means serving as the only path for bias to be established at said base of said first transistor; and
(h) an output terminal coupled to the collector of said first transistor.

3,225,216
CONTROL APPARATUS INCLUDING A SWITCH AND BOTH POSITIVE AND NEGATIVE FEEDBACK
John H. Grabowski, Minneapolis, Minn., assignor to Honeywell Inc., a corporation of Delaware
Filed Sept. 6, 1962, Ser. No. 221,732
10 Claims. (Cl. 307—88.5)



1. Pulse width modulated apparatus comprising, in combination:
differential amplifier means including input means adapted to provide an output signal;
means for providing an input control signal to said differential amplifier means;
positive feedback means for inducing a regenerative action in said differential amplifier connected to supply an amplified portion of said input signal to said input means of said differential amplifier means;
delayed negative feedback means connected to supply an amplified portion of said input signal to said input means of said differential amplifier means which is delayed in time with respect to the signal provided by said positive feedback means, the time delay being a function of the difference in amplitude between the output and the input signals, the signal being supplied by said delayed negative feedback means being enough larger than the signal being supplied by said positive feedback means to overcome the effect of the input signal and the positive feedback signal for a predetermined period of time; and
switching means connected to receive the output signal from said differential amplifier means.

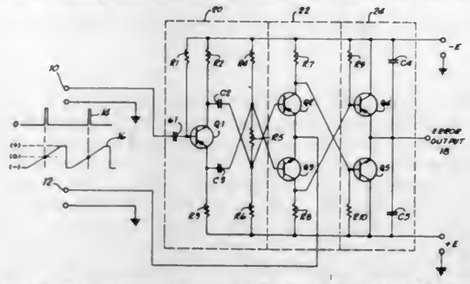
3,225,217
MONOSTABLE PULSE GENERATOR WITH CHARGE STORAGE PREVENTION MEANS
John Victor James Corney, London, England, assignor to Ferguson Radio Corporation Limited, London, England
Filed Nov. 26, 1962, Ser. No. 240,115
2 Claims. (Cl. 307—88.5)



1. In a pulse generator comprising a transistor having an input and an output electrode, means for biasing said transistor normally to a heavily conductive state, a coupling capacitor and means for applying an input waveform to said input electrode through said capacitor to bias said transistor to a cut-off state which continues for an interval determined by a circuit time constant, the improvement consisting in the provision of the following features in combination:
a feedback path from said output electrode to said input electrode, said path including a diode connected to said output electrode and poled to limit bottoming of said transistor, said path including at least one further diode connected between said means for biasing said transistor and said input electrode, said at least one further diode being poled oppositely to the first said diode so that a quiescent current flows therethrough to maintain a potential difference between said input and output electrodes opposed to bottoming of the transistor, and
a pair of yet further diodes connected between said input electrode and a reference potential and having said capacitor connected to their junction, said pair of diodes being poled to pass said quiescent current when said transistor is in its normally conductive state and as to pass to said input electrode only input waveform transitions of a sense to cut-off said transistor.

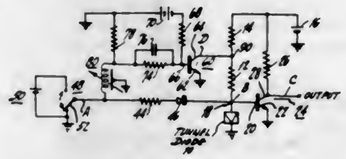
3,225,218
SERVO ERROR DETECTOR
Donald J. Cochran, Pacifica, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California
Filed June 26, 1963, Ser. No. 290,825
3 Claims. (Cl. 307—88.5)

1. A servo loop error detector comprising a reference input terminal; a controlled variable input terminal; an error output terminal; a source of positive reference potential; a source of negative reference potential; a first transistor; means connecting the emitter and collector of said first transistor to said positive and negative sources of reference potential, respectively; means coupling said reference input terminal to the base of said first transistor; second and third transistors of opposite impurity types; means connecting the collectors of said second and third transistors to said negative and positive sources of reference potential, respectively; means connecting the emitters of said second and third transistors to said controlled variable input terminal; means respectively connecting the collector and emitter of said first transistor to the bases of said second and third transistors for forward biasing said second and third transistors in response



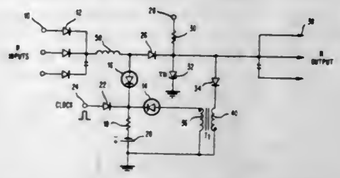
to said first transistor being off-biased and for off-biasing said second and third transistors in response to said first transistor being forward biased; fourth and fifth transistors of opposite impurity types; means respectively connecting the collectors of said fourth and fifth transistors to said negative and positive sources of reference potential; means connecting the emitters of said fourth and fifth transistors to said error output terminal; means respectively connecting the collectors of said second and third transistors to the bases of said fifth and fourth transistors; means connecting a first capacitor across the emitter and collector of said fourth transistor; and means connecting a second capacitor across the emitter and collector of said fifth transistor.

3,225,219
MONOSTABLE PULSE GENERATOR EMPLOYING DELAYED SWITCH MEANS SHUNTING TUNNEL DIODE FOR CONTROLLING STATE THEREOF
Carl Neitzert, Haddonfield, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Aug. 7, 1963, Ser. No. 300,532
4 Claims. (Cl. 307—88.5)



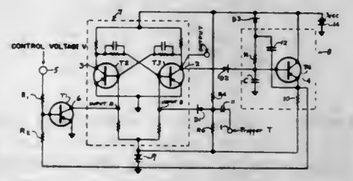
1. The combination comprising:
a negative resistance diode having a volt-ampere characteristic characterized by two regions of positive resistance joined by a region of negative resistance;
means connected to said diode for biasing it bistably;
input signal means coupled to said diode and being operable to supply a signal to set said diode;
signal operated switch means connected between the terminals of said diode and being operable in response to a signal from said input signal means to reset said diode; and
delay means coupled between said input signal means and said switch means.

3,225,220
LOGIC CIRCUIT USING STORAGE DIODES TO ACHIEVE NRZ OPERATION OF A TUNNEL DIODE
Jack Saul Cubert, Willow Grove, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Aug. 29, 1963, Ser. No. 305,439
8 Claims. (Cl. 307—88.5)



1. A non-inverting logic circuit comprising, at least one input means for supplying input signals having two different levels, a bistable device exhibiting negative resistance characteristics between different stable operating regions, a first current source connected to said bistable device to bias said device for bistable operation, first unilaterally conducting means connected between said bistable device and said input means, a second current source, first charge storage means connected between said second current source and said input means, said first charge storage means exhibiting charge storing capabilities only when said input signal has one level but not when said input has a different level, a transformer having one terminal of each of the primary and secondary windings thereof connected to said second current source, second unilaterally conducting means connected between said bistable device and another terminal of said primary winding of said transformer, second charge storage means connected between said second current source and another terminal of said secondary winding of said transformer and exhibiting charge storing capabilities only when said first charge storage means is not storing charge therein, and a source of periodic pulses connected to said first and second charge storage means for alternatively causing reverse current in one of said charge storage means subsequent to the storage of charge therein.

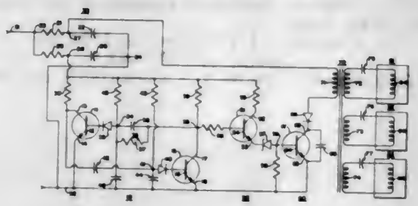
3,225,221
LINEAR DELAY CIRCUIT
Samuel W. Scott, Jr., Las Cruces, N. Mex., assignor to the United States of America as represented by the Secretary of the Army
Filed Oct. 11, 1963, Ser. No. 315,725
2 Claims. (Cl. 307—88.5)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A linear delay circuit comprising in combination: first and second transistors each having base, emitter and collector electrodes; means cross-connecting said base electrodes and said collector electrodes to provide a bistable circuit; an input terminal connected to the base electrode of said first transistor; an input terminal connected to the base electrode of said second transistor; the emitter electrode of said first transistor and said sec-

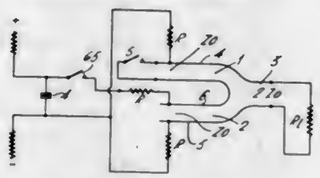
ond transistor being connected to ground; an output terminal connected to the collector electrode of said second transistor; a sawtooth generator consisting of a third transistor having base, emitter and collector electrodes and a timing circuit comprising a series connected resistor and capacitor and having an RC time constant; a junction formed by one terminal of said resistor and one terminal of said capacitor connected to the base electrode of said third transistor, the other terminal of said capacitor being connected to ground; a collector supply voltage means having one terminal grounded; the collector electrodes of said first, second and third transistors connected to another terminal of said collector supply voltage means; a first diode having a cathode connected to said collector supply voltage means and an anode to the resistor of said timing circuit; a second diode having an anode connected to the collector electrode of said second transistor and a cathode connected to said junction of the timing circuit; a trigger amplifier consisting of a fourth transistor having base, emitter and collector electrodes, the emitter electrode of said fourth transistor being connected to ground and the collector electrode thereof connected to the input terminal connected to the base electrode of said first transistor of the bistable circuit; a feedback resistor, said feedback resistor coupling an output of the sawtooth generator at the emitter electrode of the third transistor to the base electrode of said fourth transistor whereby the sawtooth generator output of the sawtooth generator is applied to the base electrode of said fourth transistor; a control voltage; an input resistor having one terminal thereof connected to the base of said fourth transistor and the other terminal thereof to said control voltage; and means for applying a trigger pulse to the input terminal connected to the base electrode of said second transistor; the width of the pulse obtained at the said output terminal of the second transistor of the bistable circuit being determined by the ratio of the ohmic value of the feedback resistor to ohmic value of the input resistor times the ratio of the value of the control voltage to the value of the collector supply voltage means times the RC time constant of the timing circuit of the sawtooth generator.

3,225,222
CONTROL APPARATUS
John F. Petersen, New Brighton, Minn., assignor to Honeywell Inc., a corporation of Delaware
Filed Dec. 6, 1960, Ser. No. 74,108
10 Claims. (Cl. 307—101)



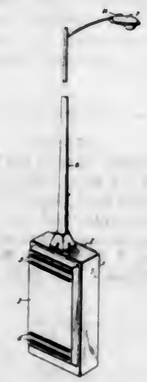
1. Apparatus comprising: a transformer having a primary and at least one tuned secondary, said secondary being characterized by oscillating when electrically pulsed; diode means; switching means; means adapted to be connected to an energizing source; means connecting the primary of said transformer, said diode means and said switching means in series with said adaptive means; control means for producing an oscillatory signal, said signal having a period slightly longer than the duration of the oscillations of said tuned secondary of said transformer; and means connecting said control means to said switching means.

3,225,223
PULSE GENERATOR
John Christopher Martin, Boundary Hall, Tadley, Hampshire, England (% United Kingdom Atomic Energy Authority, 11 Charles II St., London SW. 1, England)
Filed Jan. 7, 1963, Ser. No. 249,873
Claims priority, application Great Britain, Jan. 12, 1962, 1,313/62
8 Claims. (Cl. 307—108)



1. A unit pulse generator circuit comprising at least three metal foils arranged in spaced parallel relationship to form at least one pair of superimposed parallel strip transmission lines, each pair of lines sharing a common coil, connections for charging said lines so that the two foils other than the common foil have the same polarity relative to the common foil, output connections from adjacent ends of said two foils other than the common foil and switch means for short-circuiting the end of one of said pairs of lines remote from said output connections.

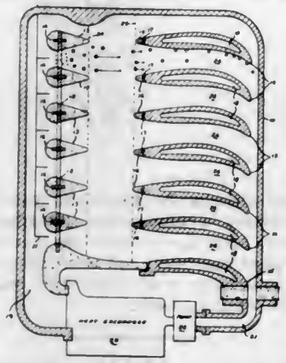
3,225,224
DISTRIBUTION TRANSFORMER LIGHTING ASSEMBLY
Vernon A. Rydbeck, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Oct. 22, 1962, Ser. No. 231,943
10 Claims. (Cl. 307—157)



3. In an electrical distribution system, the combination comprising:
a foundation supported on the ground;
an enclosure mounted on said foundation;
a transformer comprising primary and secondary windings positioned within said enclosure;
said primary winding having a disconnect switch connected thereto and said secondary winding having an output bus connected thereto;
a substantially vertically extending pole supported from said enclosure and having lighting means attached adjacent its upper extremity;
means whereby a high voltage may be supplied from an underground input cable through said switch to said primary winding;
means for supplying output current from said bus through separate output underground cables to a plurality of external loads; and

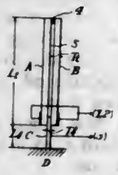
ventilating louvers located adjacent the bottom and top of said enclosures for promoting the circulation of cooling air over said transformer.

3,225,225
HIGH VOLTAGE ELECTROSTATIC GENERATOR
Frank L. Wattendorf, New York, N.Y., and Hans J. P. von Ohain, Brookville, and Maurice O. Lawson and Siegfried H. Hasinger, Dayton, Ohio; said Von Ohain, Lawson, and Hasinger assignors to the United States of America as represented by the Secretary of the Air Force
Filed July 18, 1963, Ser. No. 296,140
7 Claims. (Cl. 310—6)
(Granted under Title 35, U.S. Code (1952), sec. 266)



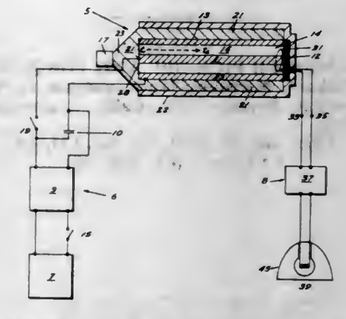
1. An electrostatic generator comprising a plurality of needle discharge electrodes, a plurality of receiver electrodes, a grid electrode located between said discharge electrodes and said receiving electrodes, a plurality of expansion nozzle means attached to said grid electrode, means for applying a first potential to said discharge electrodes, means for applying a second potential to said grid electrode, means for directing a stream of high pressure high temperature gas past said discharge electrodes through said nozzle means toward said receiving electrodes, to thereby condense said gas around charge particles leaving said discharge electrodes, means within the gas stream for cooling said gas and output means connected to said receiver electrodes.

3,225,226
ELECTRICAL VIBRATOR
Masamitsu Kawakami, Setagaya-ku, Tokyo-to, Japan, assignor to Kabushiki Kaisha Toko Radio Coil Kenkyusho, Ota-ku, Tokyo-to, Japan, a joint-stock company of Japan
Filed Aug. 15, 1962, Ser. No. 217,060
Claims priority, application Japan, Sept. 8, 1961 36/32,937
6 Claims. (Cl. 310—8.6)



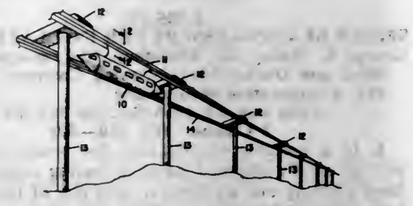
1. An electric vibrator comprising, in combination, two parallel vibrating elements; a spacer between said elements near their top ends providing a gap therebetween; a member of higher compliance than said elements inserted therebetween from the bottom thereof, also acting as a spacer and connected, at its bottom, to a base; said bottom spacer reducing losses to the base; both said top plus bottom spacers preventing shear losses; electrodes disposed at the inner and outer surfaces of said elements; the elements being caused to vibrate upon impressing a voltage thereon.

3,225,227
MINIATURE MAGNETOHYDRODYNAMIC GENERATOR
Arthur T. Biehl, Diablo, Calif., assignor to MB Associates, a corporation of California
Filed July 2, 1962, Ser. No. 206,763
3 Claims. (Cl. 310—11)



1. A magnetohydrodynamic generator comprising a first inner electrically conductive material, a second outer electrically conductive material coaxially aligned with said first material and defining an annular space therebetween, a source of electrical energy connected to said first and second materials for generating a magnetic field in said space, conductive means interconnecting said materials at one of their ends, an explosive charge surrounding said second material and having detonating means adjacent the other ends of said materials for initiating an axially progressing wave in said charge to progressively collapse said second material toward said conductive means, and means for extracting the generated electrical energy from the compression of said magnetic field.

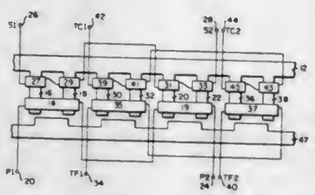
3,225,228
LINEAR MAGNETIC DRIVE SYSTEM
John L. Roshala, 3646 Big Dalton Ave., Baldwin Park, Calif.
Filed Oct. 10, 1963, Ser. No. 315,252
3 Claims. (Cl. 310—12)



1. A linear magnetic drive system for moving a member relative to a stationary structure, comprising, in combination: a plurality of stationary magnetically responsive bars evenly spaced along a given direction and supported by said stationary structure; a plurality of electromagents evenly spaced along in a direction parallel and adjacent to said given direction and supported by said member, the spacing between said bars being different from the spacing between said electro-magnets; and switch means responsive to the juxtaposition of any one magnet

to any one bar to de-energize said one magnet and substantially simultaneously energize the next successive magnet whereby said next successive magnet will be attracted to the next successive bar following said one bar, said switch means including first cooperating means on said stationary structure and second cooperating means on said member; signal generating means connected to said second cooperating means and responsive to juxtaposition of said first and second cooperating means to provide triggering signals; a power supply; a plurality of switches connected between said power supply and said magnets; and means passing said triggering signals to said switches to effect said de-energization of one magnet and energization of said next successive magnet to move said member relative to said stationary structure.

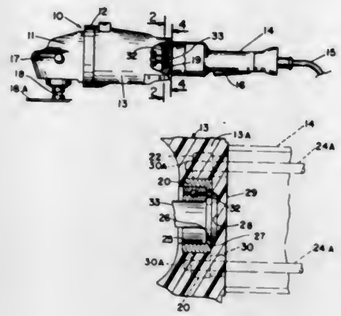
3,225,229
COMBINED PICK-OFF AND TORQUER
Henry Packard, Norwood, Mass., assignor to Northrop Corporation, Beverly Hills, Calif., a corporation of California
Filed Aug. 29, 1961, Ser. No. 134,768
3 Claims. (Cl. 310—40)



1. In a combined pickoff and torquer, a stator having a plurality of salient poles, a rotor disposed for movement relative to said stator, a pickoff primary coil wound on at least a first pair of adjacent poles of said stator, a pickoff secondary coil wound on each of the individual poles of said first pair of adjacent poles, a torquer fixed field coil wound on at least a secondary pair of adjacent poles of said stator, said first pair of poles being adjacent said second pair of poles, and a torquer control field coil wound on each of the individual poles of said second pair, said pickoff secondary coils being wound in opposite directions and said torquer control field coils being wound in opposite directions whereby cross-coupling between said torquer coils and said pickoff coils is eliminated.

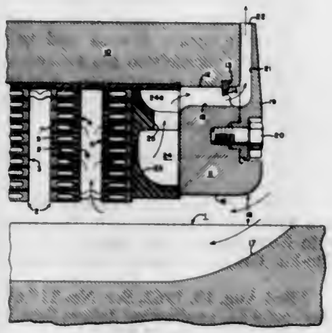
3,225,230
SPIDER BEARING INSERT FOR INSULATED TOOL
George E. Maffey, Jr., Timonium, Md., assignor to The Black and Decker Manufacturing Company, Towson, Md., a corporation of Maryland
Filed Aug. 13, 1963, Ser. No. 301,788
2 Claims. (Cl. 310—50)

1. In a portable electric tool, the combination of a pair of axially disposed housings having respective surfaces abutting one another, at least one of the housings being molded from an insulating material, a spider bearing insert molded within the one housing, said insert being fully enclosed within the one housing and being spaced axially from the respective abutting surfaces, said insert comprising a hub having a bearing seat formed therein, said insert further comprising a plurality of arms formed integrally with the hub and projecting radially therefrom, the arms being arranged circumferentially of one another, substantially equally spaced from one another, and generally defining therebetween an outer periphery of said insert, the respective abutting surface of the other of the housings having a respective outer periphery which is closely spaced, radially, from the outer periphery of said insert, each arm of said insert having a tapped aperture formed in its end, and screws passing through the housings and being received within the tapped apertures,



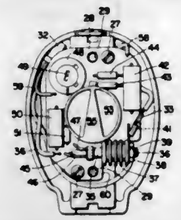
respectively, whereby the molded insulating material is stressed generally in compression, and substantially to an equal degree, upon tightening of the screws in their respective tapped apertures, and whereby said insert performs the dual function of providing a bearing seat and securing the housings together.

3,225,231
GAS-COOLED END WINDING FOR DYNAMO-ELECTRIC MACHINE ROTOR
Henry W. Kudlacik, Scotia, N.Y., assignor to General Electric Company, a corporation of New York
Filed Sept. 19, 1963, Ser. No. 309,985
12 Claims. (Cl. 310—64)



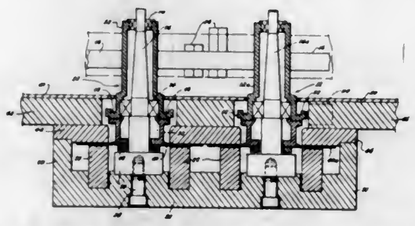
1. In a gas-cooled dynamoelectric machine rotor having a winding with circumscribed coils and end turns extending beyond the rotor body, the combination of:
a retaining ring holding the coils in place,
a centering ring blocking off an annular chamber beneath the retaining ring,
means supplying a flow of gas cooling the conductors, said gas being discharged at a first blocked-off zone in said chamber, and
means defining a circumferentially extending duct having an inlet communicating with said first zone and having a plurality of outlets disposed on the outside of the centering ring and spread over a substantially greater portion of the rotor circumference than is covered by said first zone.

3,225,232
VARIABLE SPEED PORTABLE TOOL
James F. Turley, Cranford, N.J., and Don B. Winchester, Pickens, S.C., assignors, by mesne assignments, to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed Oct. 17, 1962, Ser. No. 231,144
4 Claims. (Cl. 310—68)



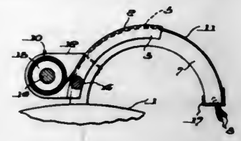
1. In a portable tool powered by an electric motor, a housing for said motor formed with a rearwardly extending bearing bracket having diametrically positioned bosses integral therewith, an armature having one of its ends journaled in said rearwardly extending bearing bracket, a motor-control circuit board secured to said diametrically positioned bosses and positioned transversely of the axis of rotation of said armature, an end-cover containing air inlet openings and a knob aperture and forming with said motor housing a protective enclosure for said circuit board, fan means providing a flow of cooling air through said air inlet openings around said circuit board and along the axis of said armature, and stationary electrical components mounted on said circuit board including an operator-adjustable control element having an insulated turnable knob projecting through the knob aperture in said end cover, said knob being turnable on an axis substantially parallel to the axis of rotation of said armature.

3,225,233
CAPSTAN DRIVE MECHANISM
Albert C. Kirilouckas, Los Angeles, Calif., assignor to Winston Research Corporation, Los Angeles, Calif., a corporation of California
Filed Jan. 8, 1963, Ser. No. 250,084
3 Claims. (Cl. 310—154)



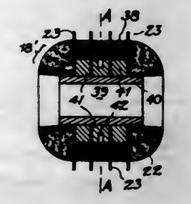
1. A capstan drive assembly including: a stationary housing; first and second stationary shafts mounted in said housing and extending out of said housing along respective first and second spaced parallel axes; first and second hollow capstan shafts rotatably supported on respective ones of said stationary shafts for rotation about corresponding ones of said axes and extending out of said housing; first and second electric motor armatures respectively affixed to said hollow capstan shafts and positioned in said housing; and first and second groups of magnets mounted in said housing, said groups being respectively disposed around said first and second axes in magnetically coupled relationship with respective ones of said armatures to produce rotatable movement of said armatures and of said hollow capstan shafts about corresponding ones of said axes.

3,225,234
ELECTRIC BRUSH AND BRUSH HOLDER ASSEMBLY
John E. Diehl, % Stackpole Carbon Co., St. Marys, Pa.
Filed Sept. 4, 1963, Ser. No. 306,988
10 Claims. (Cl. 310—246)



1. An electric brush and brush holder assembly comprising a holder having an arcuate wall with a longitudinally concave inner surface provided with inner and outer ends, means for supporting the holder with its inner end adjacent a rotating current collector, said wall being provided with a slot through it extending from a point adjacent its inner end to the opposite end of the wall, an arcuate brush having a longiutdinally convex outer surface fitting against said inner surface of the holder and slidable lengthwise of it, the brush projecting from the inner end of the holder, a constant pressure spring in the form of a spiral coil of metal tape, and separate connecting members secured to the inner end of the holder and the outer end of the brush, said coil being rotatably supported by one of said members, the outer end of said spring tape being fastened to the other of said members, the portion of the tape between its outer end and the coil extending along said convex brush surface and said slot with the inner end of said portion disposed between the coil and brush, whereby the tendency of the spring tape to maintain itself coiled will hold the brush against the inner surface of the holder and pull the outer end of the brush toward the inner end of the holder as the brush wears.

3,225,235
DYNAMO-ELECTRIC MACHINE STATOR STRUCTURE
Royal Lee, Box 267, Elm Grove, Wis.
Filed Sept. 29, 1961, Ser. No. 141,693
2 Claims. (Cl. 310—268)

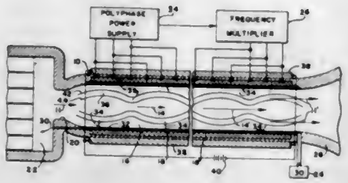


1. A stator core block for use in making dynamo-electric machine stator cores with axially extending peripherally spaced pole pieces, comprising a winding form including a pair of axially spaced end plates and a circular series of outwardly opening, angularly spaced, axially extending channel members secured at their opposite ends to the respective end plates, and a drum-type iron wire core winding carried by said form and including bundled wire parts extending longitudinally in said channel members, said core block being severable in a plane normal to the block axis and intersecting said channel members, the opposite side walls of said channels confining and shaping the iron wire bundles therein.

3,225,236
PROPULSION ARRANGEMENT

Rudolf X. Meyer, Pacific Palisades, Calif., assignor, by mesne assignments, to TRW Inc., a corporation of Ohio

Filed Jan. 3, 1961, Ser. No. 80,143
5 Claims. (Cl. 313—63)

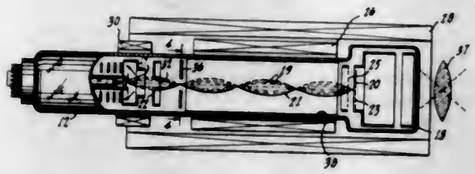


1. A plasma pump comprising: a conduit having one end arranged to receive a plasma flowing at a relatively low initial velocity and being arranged to exhaust the plasma at its other end; a polyphase power source; a first plurality of windings along said conduit adjacent to the one end, arranged to be energized by said power source to develop a magnetic field along said conduit, which magnetic field moves parallel to the motion of said plasma and at a phase velocity greater than the initial velocity whereby currents are induced in said plasma and a magnetic coupling between said plasma and the moving magnetic field will thrust said plasma through the conduit at a second velocity greater than the initial velocity; a frequency multiplier coupled to be energized by said power source to provide a higher frequency power output; and a second plurality of windings along said conduit adjacent to the other end arranged to be energized by said higher frequency power output to develop a magnetic field along said conduit which moves parallel to the motion of said plasma and at a phase velocity greater than the second velocity to accelerate further said plasma.

3,225,237
PHOTOEMISSIVE PICKUP TUBE

Appleton Danforth Cope, Hightstown, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed June 1, 1961, Ser. No. 114,056
7 Claims. (Cl. 313—65)

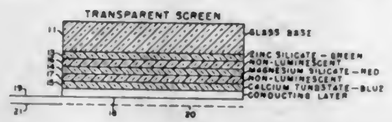


1. A television camera tube comprising an elongated envelope, an electron gun in one end of said envelope, a photocathode in the other end of said envelope, a target electrode between said electron gun and said photocathode and in said envelope, a separation electrode between said electron gun and said target electrode and within said envelope, and at least three electrically separate steering electrodes between said separation electrode and said target electrode and within said envelope, said steering electrodes being finger-like structures extending in a plane normal to the axis of the envelope.

3,225,238
CATHODE RAY TUBE WITH TRANSPARENT COLOR SCREEN

Charles Feldman, Hollin Hills, Va., assignor to Davohn Corporation, a corporation of Delaware

Original application Apr. 19, 1957, Ser. No. 653,867. Divided and this application July 20, 1962, Ser. No. 211,458
2 Claims. (Cl. 313—92)
(Granted under Title 35, U.S. Code (1952), sec. 266)

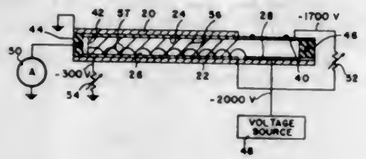


1. In a cathode ray tube for producing colored images, an electron beam source, a transparent image screen arranged to receive a beam of electrons from said source, said transparent image screen having a plurality of superposed transparent layers comprising a thin transparent luminescent zinc silicate layer in proximity to a thin transparent luminescent magnesium silicate layer which emits light of a color different than that emitted by said luminescent zinc silicate layer on excitation by a beam of electrons, said luminescent silicate layers being separated from each other by a thin transparent non-luminescent layer and arranged in order in the screen such that said luminescent zinc silicate layer precedes said luminescent magnesium silicate layer relative to the face of the cathode ray tube.

3,225,239
ELECTRON MULTIPLIER

Robert R. Thompson, Livonia, Mich., assignor to The Bendix Corporation, Southfield, Mich., a corporation of Delaware

Filed Nov. 15, 1960, Ser. No. 69,455
8 Claims. (Cl. 313—103)

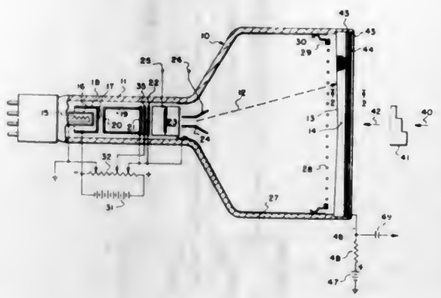


1. A multiplier apparatus for receiving and multiplying charged particles comprising
at least one magnet means having a north pole and a south pole with lines of magnetic force extending between said poles,
a secondary emissive resistive coating being on a surface of said one magnet means,
the material of said one magnet means on which said secondary emissive resistive coating is formed having a resistance greater than said resistive coating,
a voltage source connected across said secondary resistive surface in a direction substantially perpendicular to a line between said north pole and said south pole,
said voltage source causing current to flow through said resistive secondary emissive coating,
said voltage source supplying an electric field having a component perpendicular to the surface of said one magnet means to cause charged particles including electrons to cycloid into the surface of said magnet means,
and means for collecting the charged particles.

3,225,240
IMAGE TUBE HAVING EXTERNAL SEMICONDUCTIVE LAYER ON TARGET OF WIRES IN GLASS MATRIX

James A. Sybeldon, deceased, late of West Allis, Wis., by Sylvia A. Sybeldon, administratrix, Green Bay, Wis., assignor to General Electric Company, a corporation of New York

Filed Sept. 24, 1962, Ser. No. 225,927
1 Claim. (Cl. 313—65)



An image transducer tube including an evacuated envelope, electron beam producing means therein, a faceplate means comprising a plurality of fine adjacent wires that are insulated from each other, said faceplate means being mounted vacuum tight in the envelope and having inside and outside surfaces near which opposite ends of the wires terminate, the electron beam being adapted to impinge on the wire ends that are near the inside surface, a semiconductive layer whose electric properties change in different regions in accordance with the intensity variations of a latent image impinging thereon, said layer having an inner surface in contact with the ends of the wires at the outer surface of the faceplate, a radiation transparent conductive film covering the outer surface of said layer, the said film being exposed to the atmosphere and preventing the semiconductor layer from being exposed thereto, and means for sensing variations in electric current flowing from the conductive film due to changes in the electric properties of said semiconductive layer.

3,225,241
APERTURE FLUORESCENT LAMP

Domina Eberle Spencer, Cambridge, and Sandford Christopher Peek, Jr., Hamilton, Mass., assignors to Sylvania Electric Products Inc., a corporation of Delaware

Original application July 9, 1959, Ser. No. 825,915, now Patent No. 3,115,309. Divided and this application May 2, 1962, Ser. No. 197,211
4 Claims. (Cl. 313—109)

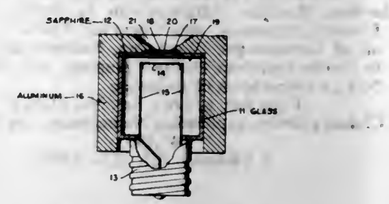


1. A fluorescent lamp comprising a sealed elongated tube, a coating of phosphor inside said tube and subtending the major portion of the angle around the axis of said tube, a portion of the tube being free from phosphor coating and subtending a minor portion of said angle, said phosphor coating being thick enough to reflect back into the tube substantially all light falling on the coating.

3,225,242
INFRARED CALIBRATION LAMP

Ephraim Regelson, China Lake, Calif., assignor to the United States of America as represented by the Secretary of the Navy

Filed May 3, 1963, Ser. No. 277,962
5 Claims. (Cl. 313—110)
(Granted under Title 35, U.S. Code (1952), sec. 266)

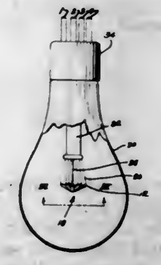


1. An infrared calibration apparatus comprising in combination:
a cylindrical vessel having two ends;
a housing disposed around said vessel;
an electrical source base sealed to one end of said vessel and adapted to be connected through said housing to a source of electrical power;
a disk composed of infrared transmitting material sealed to the other end of said vessel forming a closed vessel;
an alloy filament mounted within the vessel;
means for supporting said filament to said source base;
said housing having an aperture in the top positioned in alignment with said filament;
an oxidizing resistant material coating a portion of the inside of said disk leaving a void area opposite the aperture in said housing;
said aperture and said void area positioned in alignment with said filament whereby the infrared radiation is effective through an angle determined by the aperture and void area.

3,225,243
COLOR LAMP WITH SPECTRAL FILTER AROUND FILAMENT

William C. Dauser, 458 Melody Lane, North Muskegon, Mich.

Filed Oct. 29, 1962, Ser. No. 233,585
16 Claims. (Cl. 313—112)



12. A lamp, comprising: an enclosing sealed envelope having electrical connections; a plurality of lamp cartridges in said envelope and connected to respective ones of said electrical connections; said cartridges each having a filament wound in a helical pattern on a support along an axis; a translucent, cylindrical tube spaced from said filament; different multifilm spectral selector coatings on said tube causing a plurality of output colors; helically-oriented, light ray limiting means radiating away from said axis and toward said tube and restricting the light from said filament incident to said coatings to a specific angular range to provide the controlled color from each

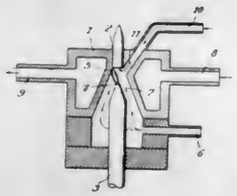
tube; and a variable electrical input control means for cartridges of different colors enabling the composite overall lamp color to be varied by variation of the electrical input to different color cartridges.

3,225,244
SODIUM-VAPOUR DISCHARGE LAMP
Martinus Henricus Adrianus van de Weijer, Raymond Francois Spiessens, and Coenraad Maria La Grouw, all of Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Jan. 6, 1961, Ser. No. 81,121
Claims priority, application Netherlands, Jan. 9, 1960, 247,199
3 Claims. (Cl. 313—185)



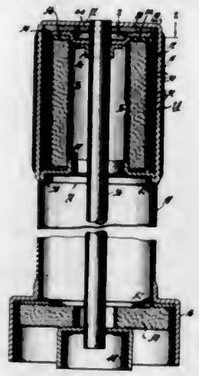
1. A sodium vapor discharge device adapted to operate with a positive column discharge comprising an envelope, a pair of electrodes within said envelope and a mixture of a rare gas and sodium within the envelope for maintaining a discharge between the electrodes, said rare gas having a pressure of about 1 to 8 mms. of Hg at room temperature and said envelope having dimensions and thermal characteristics whereby with a potential applied between said electrodes a positive column is produced having a voltage gradient of about 0.25 to 2.5 volts per cm.

3,225,245
PLASMA JET GENERATOR
Sachio Takei, Kodaira-shi, and Manabu Yamamoto, Odawara-shi, Japan, assignors to Kabushiki Kaisha Hitachi Seisakusho, Tokyo, Japan, a joint-stock company of Japan
Filed Dec. 12, 1962, Ser. No. 244,187
Claims priority, application Japan, Dec. 16, 1961, 36/62,089
5 Claims. (Cl. 313—231)



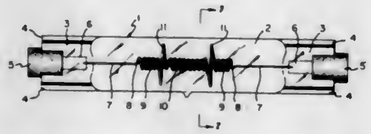
1. A plasma jet generator comprising a hollow electrode having a nozzle portion, a rod-shaped electrode disposed around the central portion of the said hollow electrode and pointed toward the said nozzle portion, a first means for creating an arc discharge between the tip of the said rod-shaped electrode and the inner wall surface of the said hollow electrode, a second means for introducing a first inactive gas current into the space between the said two electrodes in the direction toward the said nozzle portion, a third means, pointed toward the said tip of the said rod-shaped electrode, for introducing a second gas current in a direction opposite to the said first inactive gas current such as to cause suppression of fluctuation of the path of the said arc discharge, thereby effecting the mixture of said first with said second gas current to the hottest point in the arc.

3,225,246
INDIRECTLY HEATED CATHODE
James William Hollingsworth and Murray Robert Horton, Lancaster, Pa., assignors to Radio Corporation of America, a corporation of Delaware
Filed Mar. 27, 1963, Ser. No. 268,387
10 Claims. (Cl. 313—270)



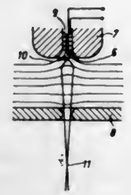
1. A cathode-heater structure for an electron tube comprising:
(a) a tubular cathode,
(b) a heater assembly within said cathode,
(1) said assembly including a conducting rod coaxial with said cathode,
(2) means including a metal collar conductively engaging said rod and supporting said heater on said rod, said collar having opposite end faces and a smaller axial dimension than lateral dimension, and
(3) an insulating disc seated on said one of said end faces of said collar and having an opening snugly receiving said rod, said disc extending transversely of said cathode and snugly engaging the internal surface of said cathode,
(4) said collar having a smaller outer diameter than said disc whereby said disc electrically insulates said collar from said cathode.

3,225,247
INCANDESCENT LAMP
Emery G. Audesse, Salem, Mass., James J. Palermo, Salem, N.H., and Robert F. Scoledge, Danvers, Mass., assignors to Sylvania Electric Products Inc., a corporation of Delaware
Filed June 13, 1962, Ser. No. 202,309
9 Claims. (Cl. 313—271)



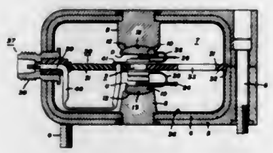
1. An incandescent lamp comprising a sealed tubular light-transmitting envelope, a coiled-coil filament having a primary and a secondary coil within said envelope, said coiled coil filament including at least two separate coils, and a wire of larger diameter than that of said filament, each end of said wire fitting into the adjacent end of the secondary coil of each coiled coil filament, the wire being formed between its ends to a loop fitting against the inner wall of said tubular envelope.

3,225,248
DEVICE FOR PRODUCING A HIGH-INTENSITY BEAM OF CHARGE CARRIERS OF SMALL APERTURE
Wilhelm Scheffels, Aalen, Wurttemberg, Germany, assignor, by mesne assignments, to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed May 22, 1962, Ser. No. 196,802
Claims priority, application Germany, May 27, 1961, Z 8,773
1 Claim. (Cl. 315—31)



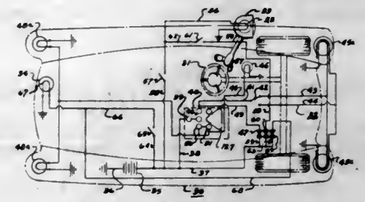
A source for the generation of a high-intensity narrow angle electron beam comprising a heated cathode for the emission of electrons, an anode having an aperture therein, said anode being positioned at a distance from said cathode and strongly biased positively with respect to said cathode to accelerate the emitted electrons toward said anode and to pass the accelerated electrons through said aperture in a high-intensity beam, a cylindrical modular electrode surrounding said cathode to modulate beam emission, and means to establish a magnetic focusing field within said modulator electrode to coact with the emitted electrons before substantial acceleration thereof by said acceleration field and to concentrate said emitted electrons into a narrow angle beam, said field establishing means comprises a coil surrounding said cathode, said cathode being serially coupled with said coil so that current flow therethrough is utilized both for cathode heating and for the establishment of said magnetic field.

3,225,249
MAGNETRON HAVING EVACUATED DISCHARGE SUB-ASSEMBLY UNITED WITH UNEVACUATED MAGNETIC AND RESONANT CAVITY STRUCTURE
George A. Krug, Jr., Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Apr. 27, 1962, Ser. No. 190,548
14 Claims. (Cl. 315—39.71)



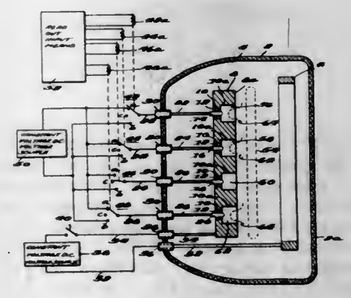
1. Radio frequency apparatus comprising a magnet structure including a pair of opposed spaced pole pieces defining a gap, supporting means supporting said pole pieces for angular adjustment to vary the configuration of the magnetic field in said gap, retaining means carried by said magnet structure supporting an electric discharge device in a fixed position in said gap, said device including at least one external contact member, and means including at least one flexible conductive element interconnecting said contact member and one of said pole pieces to complete an R.F. circuit therebetween.

3,225,250
VEHICLE LIGHTING, TIMING AND WARNING DEVICE
Gerald R. Hershberger, 285 E. Long Lake Road, Birmingham, Mich.
Filed Jan. 7, 1957, Ser. No. 634,094
7 Claims. (Cl. 315—82)



1. In combination with a motor vehicle lighting system having a source of electric energy and an electric driving lamp mounted to cast a beam of light exterior of the vehicle, a timing system comprising, a manually operated time switch knob, contactor means responsive to said knob for movement into a plurality of circuit controlling positions including a closed position for maintaining energization of the lamp from the source of electric energy, an off position for de-energizing said lamp, and a time delay position, catch means mounted adjacent the vehicle, latch means connected to the contactor means for engaging said catch means when said contactor means is moved by the switch knob to said delay position to close a circuit to the lamp for timed energization of said lamp from the source of electric energy, and thermal electric translating means operable to release said catch from said latch to return said contactor means to off position following the elapse of an interval of time, said thermal means operable to de-energize said lamp following the elapse of an additional interval of time.

3,225,251
CATHODE GLOW DISPLAY USING A SINGLE CATHODE ELECTRODE
Hugo L. L. van Paassen, Richard J. Allen III, and Emil C. Muly, Jr., Baltimore, Md., assignors to Martin Marietta Corporation, New York, N.Y., a corporation of Maryland
Filed Jan. 15, 1963, Ser. No. 251,603
18 Claims. (Cl. 315—84.5)



1. An information read-out and storage device, comprising
housing means defining a chamber containing an ionizable gas at a subatmospheric pressure;
a single anode in said chamber;

a single cathode in said chamber and spaced from said anode, said cathode comprising a plate having a uniform surface containing a plurality of cavities, said housing means including a transparent wall portion opposite said cavities;

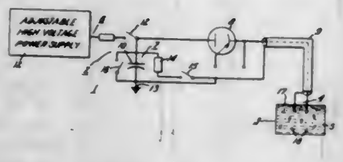
means biasing said cathode to a constant negative direct-current potential relative to said anode to establish a diffused glow discharge in said chamber;

and means for initiating hollow cathode glow discharges in a selected group of said cathode cavities.

3,225,252
ELECTROHYDRAULIC SYSTEM AND WORKING FLUIDS THEREFOR

Edward C. Schrom and Merton Allen, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York

Filed Nov. 13, 1963, Ser. No. 323,363
5 Claims. (Cl. 315—111)

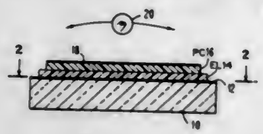


1. An electrohydraulic spark discharge system which comprises a source of high voltage electrical energy, capacitor storage means for the electrical energy, electrical discharge means for releasing the stored electrical energy in pulse form, and conductor means for transmitting the energy pulse to a spark gap immersed in a working fluid, said working fluid comprising a multiphase composition having a continuous phase of dielectric liquid and a dispersed phase of electrically conductive substantially insoluble particulates.

3,225,253
ELECTROLUMINESCENT PHOTOCONDUCTIVE DISPLAY DEVICE

Bernt Narken and Allan S. Miller, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Dec. 28, 1961, Ser. No. 162,896
12 Claims. (Cl. 315—150)

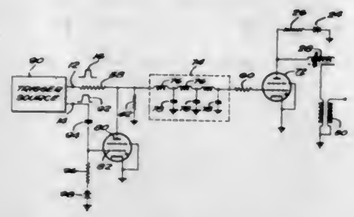


1. An electroluminescent display screen capable of producing light images in response to electrical signals comprising: a photoconductive layer; an electroluminescent layer mounted adjacent to said photoconductive layer; and means for establishing electrodes across the said electroluminescent layer in each of two directions which are at right angles to one another; said means for establishing electrodes including a means for irradiating the photoconductive layer with a scanning narrow width strip of light which stretches in length substantially from one end of the said photoconductive layer to the other end of said photoconductive layer whereby an electrode of the width and length of the strip of light continuously moves over the electroluminescent layer.

3,225,254
PROTECTIVE CIRCUIT

George L. Clark and John J. Hickey, both of Hawthorne, Calif., assignors, by mesne assignments, to TRW Inc., a corporation of Ohio

Filed June 2, 1961, Ser. No. 114,472
13 Claims. (Cl. 315—163)

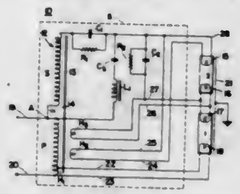


10. In combination, a main thyratron having an input circuit and adapted to switch to a conducting state after the application to the input circuit thereof of an electrical control signal of at least a predetermined time duration, thereby giving rise in said input circuit to a spurious signal; a terminal for receiving said control signal, means for coupling said control signal from said terminal to the input circuit of said main thyratron tube; and means for blocking the transmission of said spurious signal from said input circuit of said main thyratron tube to said terminal, said last mentioned means comprising a protective thyratron connected in shunt relation to said terminal, a current limiting impedance connected in series between said protective thyratron and said input circuit of said main thyratron, means for applying a separate trigger pulse independent from said control signal to said protective thyratron, with said trigger pulse being delayed with respect to said control signal to maintain said protective thyratron at a relatively high impedance, after application to said terminal of said control signal, at least for said predetermined time duration, means for transforming said protective thyratron to a relatively low impedance, and means for delaying the arrival of said spurious signal at said terminal until after the transformation of said protective thyratron.

3,225,255
BALLAST APPARATUS

Roger E. Hume, Danville, Ill., assignor to General Electric Company, a corporation of New York

Filed Apr. 9, 1962, Ser. No. 186,129
11 Claims. (Cl. 315—232)



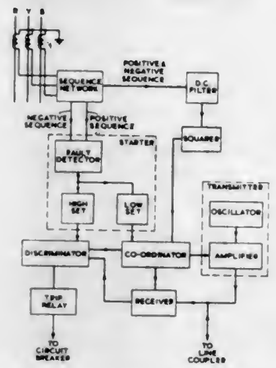
1. A ballast apparatus for fluorescent lamps comprising a high reactance transformer with a primary winding and a secondary winding inductively coupled on a magnetic core, said magnetic core having at least one bridged section under the secondary winding, a first output lead and capacitor connected in series circuit with the secondary winding of the high reactance transformer, a second output lead connected in circuit with said high reactance transformer so that the transformer output appears at said first and second output leads, and a shunting circuit connected in parallel circuit relation with the secondary winding of said high reactance transformer,

said shunting circuit including a shunting capacitor discharging in the early portion of each half cycle of the lamp current to provide a current spike sufficient in magnitude to aid reignition of a lamp connected across said first and second output leads and further including an inductive impedance element connected in series circuit with the shunting capacitor across said secondary winding of the high reactance transformer and inductively isolated from said high reactance transformer.

3,225,256
ELECTRICAL PROTECTION SYSTEMS

Ronald Philip Carter and William Alan Cowin, Stafford, and Martin Clifford Hall, Kidsgrove, Stoke-on-Trent, England, assignors to The English Electric Company, Limited, London, England, a British company

Filed June 18, 1962, Ser. No. 203,176
Claims priority, application Great Britain, June 20, 1961, 22,234/61
5 Claims. (Cl. 317—28)



1. An electrical protection system for protecting a section of polyphase alternating current power supply line, comprising equipment for connection to one end of the said section of line, similar equipment for connection to the other end of the said section of line, means for interconnecting the two equipments, the said equipment including means for generating a carrier wave, modulating means for cyclically modulating the amplitude of the said carrier wave by a modulating signal derived from the current in the said one end of the section, phase comparing means for phase comparing the said modulated carrier wave with a corresponding modulated carrier wave received from the said similar equipment and for generating pulses whose lengths are dependent on the extent of the instantaneous displacement, if any, from the normal phase relationship between the two compared modulated carrier waves, such displacement indicating the presence of a fault on the line, measuring means for measuring the length of each said pulse and means adapted to perform a protective function when the length of a pulse exceeds a predetermined minimum length indicative of a predetermined minimum phase displacement.

3,225,257
HIGH SPEED DIRECT CURRENT VOLTAGE FAULT SENSING, INDICATING AND LOAD PROTECTING APPARATUS

Albert P. Fegley, Birchrunville, Pa., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

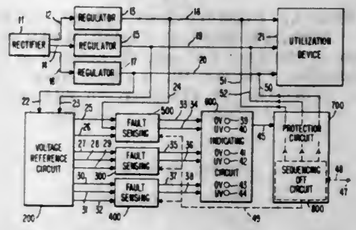
Filed Oct. 9, 1962, Ser. No. 229,328
20 Claims. (Cl. 317—33)

7. A high speed direct current voltage fault sensing, indicating, and protecting apparatus comprising:

a source of regulated direct current power;

voltage divider means for deriving, from a relatively low power source, adjustable direct current under-voltage and over-voltage reference levels;

semiconductor sensing means coupled to said regulated voltage and adapted to receive said under-voltage and over-voltage reference levels to provide a constant voltage level output signal only when the magnitude of said regulated voltage becomes less than the magnitude of said under-voltage reference level or greater than the magnitude of said over-voltage reference level;



said constant voltage level output signal of said sensing means being indicative of a fault in said regulated power source;

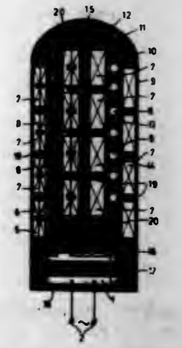
full indicating means, including a plurality of illuminable devices, coupled to, and adapted to receive, the constant voltage level output signal of said sensing means for providing a visual indication, whenever said fault causes an over-voltage or an under-voltage in the regulated power source; and

semiconductor circuit protecting means coupled to said indicating means and responsive to said output signal of said sensing means for disabling said regulated power source whenever a fault occurs in said regulated power source.

3,225,258
HIGH TENSION DIRECT CURRENT GENERATOR WITH CIRCUIT ELEMENTS ARRANGED IN CONCENTRIC TUBULAR ARRAY

Hendrikus Petrus Jacobus Brekoo and Adrianus Verhoeff, Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Dec. 6, 1962, Ser. No. 242,666
Claims priority, application Netherlands, Dec. 8, 1961, 272,363
5 Claims. (Cl. 317—99)



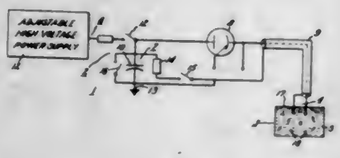
1. A generator of high-voltage direct-current comprising a housing of insulating material defining three coaxial hollow cylinders, a plurality of individual capacitors disposed partly in the innermost cylinder and partly in the space between the outermost cylinder and the central

a single cathode in said chamber and spaced from said anode, said cathode comprising a plate having a uniform surface containing a plurality of cavities, said housing means including a transparent wall portion opposite said cavities;
means biasing said cathode to a constant negative direct-current potential relative to said anode to establish a diffused glow discharge in said chamber;
and means for initiating hollow cathode glow discharges in a selected group of said cathode cavities.

3,225,252
ELECTROHYDRAULIC SYSTEM AND WORKING FLUIDS THEREFOR

Edward C. Schrom and Merton Allen, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York

Filed Nov. 13, 1963, Ser. No. 323,363
5 Claims. (Cl. 315—111)

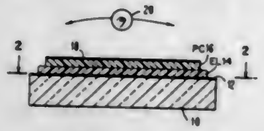


1. An electrohydraulic spark discharge system which comprises a source of high voltage electrical energy, capacitor storage means for the electrical energy, electrical discharge means for releasing the stored electrical energy in pulse form, and conductor means for transmitting the energy pulse to a spark gap immersed in a working fluid, said working fluid comprising a multiphase composition having a continuous phase of dielectric liquid and a dispersed phase of electrically conductive substantially insoluble particulates.

3,225,253
ELECTROLUMINESCENT PHOTOCONDUCTIVE DISPLAY DEVICE

Bernt Narken and Allan S. Miller, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Dec. 28, 1961, Ser. No. 162,896
12 Claims. (Cl. 315—150)

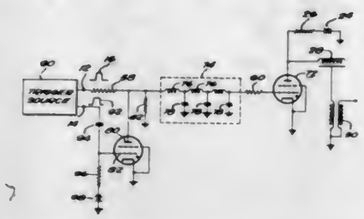


1. An electroluminescent display screen capable of producing light images in response to electrical signals comprising: a photoconductive layer; an electroluminescent layer mounted adjacent to said photoconductive layer; and means for establishing electrodes across the said electroluminescent layer in each of two directions which are at right angles to one another; said means for establishing electrodes including a means for irradiating the photoconductive layer with a scanning narrow width strip of light which stretches in length substantially from one end of the said photoconductive layer to the other end of said photoconductive layer whereby an electrode of the width and length of the strip of light continuously moves over the electroluminescent layer.

3,225,254
PROTECTIVE CIRCUIT

George L. Clark and John J. Hickey, both of Hawthorne, Calif., assignors, by mesne assignments, to TRW Inc., a corporation of Ohio

Filed June 2, 1961, Ser. No. 114,472
13 Claims. (Cl. 315—163)

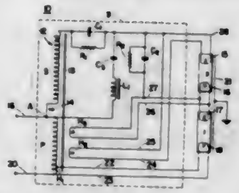


10. In combination, a main thyratron having an input circuit and adapted to switch to a conducting state after the application to the input circuit thereof of an electrical control signal of at least a predetermined time duration, thereby giving rise in said input circuit to a spurious signal; a terminal for receiving said control signal, means for coupling said control signal from said terminal to the input circuit of said main thyratron tube; and means for blocking the transmission of said spurious signal from said input circuit of said main thyratron tube to said terminal, said last mentioned means comprising a protective thyratron connected in shunt relation to said terminal, a current limiting impedance connected in series between said protective thyratron and said input circuit of said main thyratron, means for applying a separate trigger pulse independent from said control signal to said protective thyratron, with said trigger pulse being delayed with respect to said control signal to maintain said protective thyratron at a relatively high impedance, after application to said terminal of said control signal, at least for said predetermined time duration, means for transforming said protective thyratron to a relatively low impedance, and means for delaying the arrival of said spurious signal at said terminal until after the transformation of said protective thyratron.

3,225,255
BALLAST APPARATUS

Roger E. Hume, Danville, Ill., assignor to General Electric Company, a corporation of New York

Filed Apr. 9, 1962, Ser. No. 186,129
11 Claims. (Cl. 315—232)

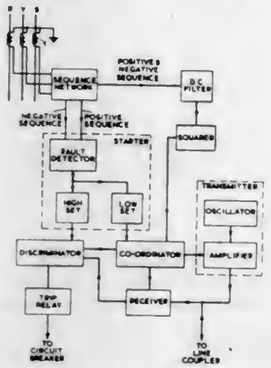


1. A ballast apparatus for fluorescent lamps comprising a high reactance transformer with a primary winding and a secondary winding inductively coupled on a magnetic core, said magnetic core having at least one bridged section under the secondary winding, a first output lead and capacitor connected in series circuit with the secondary winding of the high reactance transformer, a second output lead connected in circuit with said high reactance transformer so that the transformer output appears at said first and second output leads, and a shunting circuit connected in parallel circuit relation with the secondary winding of said high reactance transformer, said shunting circuit including a shunting capacitor discharging in the early portion of each half cycle of the lamp current to provide a current spike sufficient in magnitude to aid reignition of a lamp connected across said first and second output leads and further including an inductive impedance element connected in series circuit with the shunting capacitor across said secondary winding of the high reactance transformer and inductively isolated from said high reactance transformer.

3,225,256
ELECTRICAL PROTECTION SYSTEMS

Ronald Philip Carter and William Alan Cowin, Stafford, and Martin Clifford Hall, Kidsgrove, Stoke-on-Trent, England, assignors to The English Electric Company, Limited, London, England, a British company

Filed June 18, 1962, Ser. No. 203,176
Claims priority, application Great Britain, June 20, 1961, 22,234/61
5 Claims. (Cl. 317—28)



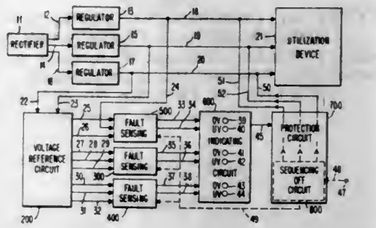
1. An electrical protection system for protecting a section of polyphase alternating current power supply line, comprising equipment for connection to one end of the said section of line, similar equipment for connection to the other end of the said section of line, means for interconnecting the two equipments, the said equipment including means for generating a carrier wave, modulating means for cyclically modulating the amplitude of the said carrier wave by a modulating signal derived from the current in the said one end of the section, phase comparing means for phase comparing the said modulated carrier wave with a corresponding modulated carrier wave received from the said similar equipment and for generating pulses whose lengths are dependent on the extent of the instantaneous displacement, if any, from the normal phase relationship between the two compared modulated carrier waves, such displacement indicating the presence of a fault on the line, measuring means for measuring the length of each said pulse and means adapted to perform a protective function when the length of a pulse exceeds a predetermined minimum length indicative of a predetermined minimum phase displacement.

3,225,257
HIGH SPEED DIRECT CURRENT VOLTAGE FAULT SENSING, INDICATING AND LOAD PROTECTING APPARATUS

Albert P. Fegley, Birchrunville, Pa., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed Oct. 9, 1962, Ser. No. 229,328
20 Claims. (Cl. 317—33)

7. A high speed direct current voltage fault sensing, indicating, and protecting apparatus comprising:
a source of regulated direct current power;
voltage divider means for deriving, from a relatively low power source, adjustable direct current under-voltage and over-voltage reference levels;
semiconductor sensing means coupled to said regulated voltage and adapted to receive said under-voltage and over-voltage reference levels to provide a constant voltage level output signal only when the magnitude of said regulated voltage becomes less than the magnitude of said under-voltage reference level or greater than the magnitude of said over-voltage reference level;



said constant voltage level output signal of said sensing means being indicative of a fault in said regulated power source;
full indicating means, including a plurality of illuminable devices, coupled to, and adapted to receive, the constant voltage level output signal of said sensing means for providing a visual indication, whenever said fault causes an over-voltage or an under-voltage in the regulated power source; and
semiconductor circuit protecting means coupled to said indicating means and responsive to said output signal of said sensing means for disabling said regulated power source whenever a fault occurs in said regulated power source.

3,225,258
HIGH TENSION DIRECT CURRENT GENERATOR WITH CIRCUIT ELEMENTS ARRANGED IN CONCENTRIC TUBULAR ARRAY

Hendrikus Petrus Jacobus Brekoo and Adrianus Verhoeff, Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

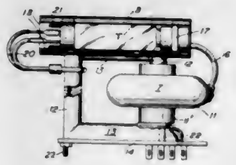
Filed Dec. 6, 1962, Ser. No. 242,666
Claims priority, application Netherlands, Dec. 8, 1961, 272,363
5 Claims. (Cl. 317—99)



1. A generator of high-voltage direct-current comprising a housing of insulating material defining three coaxial hollow cylinders, a plurality of individual capacitors disposed partly in the innermost cylinder and partly in the space between the outermost cylinder and the central

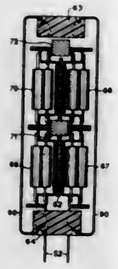
cylinder, and a plurality of rectifying elements disposed in the space between the innermost cylinder and the central cylinder, said capacitors and said rectifiers being embedded in a hardened resin, the rectifiers and capacitors respectively being connected in series arrangement, and the capacitors being connected in parallel with the rectifiers to thereby form a cascaded arrangement in which the capacitors are charged through said rectifiers and discharged in series.

3,225,259
ELECTRICAL COMPONENT, TUBE, AND TUBE-HOLDER-SHIELD COMBINATION
Theodore E. Handing, Chicago, Ill., assignor to Amplifone Corporation, Chicago, Ill., a corporation of Illinois
Filed Oct. 19, 1964, Ser. No. 404,825
3 Claims. (Cl. 317—99)



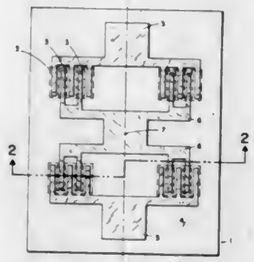
1. A combination of a terminal plate, a supporting leg secured to the plate in axial disposition thereto, an electrical component embracively positioned on the leg, a tube-supporting element of flame-retardent material of high dielectric strength, a rib of the same material as the supporting element fixed exteriorly on and extending radially outward from the element, the rib being attached to the leg, and a tube frictionally embraced within the supporting element.

3,225,260
MODULAR PACKAGE UNIT FOR ELECTRICAL COMPONENTS
Pierre Brochier, Paris, Ronald Kloos, Argenteuil, and Jean Henri Cocquart, La Courneuve, France, assignors to Compagnie des Machines Bull (Societe Anonyme), Paris, France
Filed July 10, 1963, Ser. No. 293,955
Claims priority, application France, July 18, 1962, 904,312
11 Claims. (Cl. 317—101)



1. A modular package unit comprising electronic components and having plug pins for establishing circuits including such components, said unit further comprising a substantially symmetrical metal grid formed from a single foil and having parallel strips spaced from one another transversely to their longitudinal extents with elongated apertures intervening therebetween but being connected by two sets of links comprised in said grid and being respectively on opposite sides of the axis of symmetry of said grid transverse to said strips, said strips having portions defining a web and other portions providing side limbs extending at angles from edges of said web on opposite sides of said axis of symmetry, said web and said side limbs being bent into a substantially U-shaped structure, said side limbs further emerging remotely from said web with end parts extending generally parallel to said web to provide welding surfaces to which component wires are welded, said web being formed with first slots in the central portions of certain of said strips adjacent said axis of symmetry and with second slots in certain of said links; and an insulating plate adhered to said web.

3,225,261
HIGH FREQUENCY POWER TRANSISTOR
Helmut F. Wolf, San Mateo, Calif., assignor to Fairchild Camera and Instrument Corporation, Long Island, N.Y., a corporation of Delaware
Filed Nov. 19, 1963, Ser. No. 324,806
7 Claims. (Cl. 317—101)



1. A planar power transistor capable of readily dissipating heat generated by current passing therethrough, comprising:

a monocrystalline wafer of semiconductor material having a flat surface, and having formed therein;

a collector region of one conductivity type,

a plurality of base subregions of the opposite conductivity type from said collector region formed within said collector region and extending to said flat surface, each of said base subregions being separated laterally from the others by a distance at least equal to the thickness of said wafer, thereby reducing the thermal coupling between said subregions,

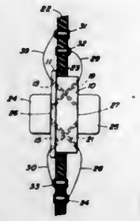
a plurality of emitter subregions of said one conductivity type, at least one formed within each of said base subregions and extending to said flat surface;

an insulating coating on at least part of said surface;

means ohmically collectively connecting said base subregions, said means comprising metallized interconnections deposited upon said insulating coating except where they make ohmic connection with said base subregions, said coating preventing contact of said metallized interconnections with the regions and subregions of said transistor other than said base subregions; and

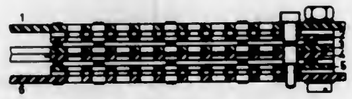
means ohmically collectively connecting said emitter subregions, said means comprising metallized interconnections deposited upon said insulating coating except where they make ohmic connection with said emitter subregions, said coating preventing contact with the regions and subregions of said transistor other than said emitter subregions.

3,225,262
DUAL-TRANSISTOR HOLDER
Lester M. Myers, Cedar Rapids, Iowa, assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa
Filed Nov. 17, 1964, Ser. No. 411,773
4 Claims. (Cl. 317—101)



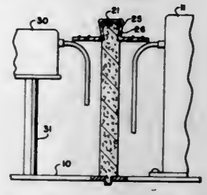
1. A holder for electrical components comprising a body of insulating material, a first plurality of openings formed through the body of insulating material at an angle such that the openings are relatively near the center on one side of the holder and emerge relatively near the edge on the other side of the holder and a second plurality of openings formed through the holder at an angle and said second plurality of openings being relatively near the center on the other side of the holder and emerging near the edge on the one side of the holder.

3,225,263
DIODE MATRIX
Johannes Steenberg, Enschede, Netherlands, assignor to N.V. Hollandse Signaalapparaten, Hengelo, Overijsel, Netherlands, a firm of the Netherlands
Filed Dec. 28, 1962, Ser. No. 247,999
Claims priority, application Netherlands, Jan. 2, 1962, 273,115
6 Claims. (Cl. 317—112)



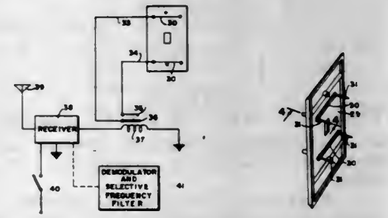
1. A matrix circuit board comprising, a first planar electrically insulating support member having a plurality of groups of apertures therethrough, a first set of conductors supported by said first planar member and arranged thereon so that each conductor is in partial registration with each aperture of one group of apertures only, a second set of conductors supported by said first planar member and arranged thereon so that each conductor is spaced from and electrically insulated from the conductors of the first set and each is in partial registration with each aperture of one group of apertures only, a second planar support member identical with said first planar support member, means joining said first and second planar support members in spaced registration so that the corresponding apertures are in alignment, a third set of conductors supported by said second planar support member and arranged thereon so that each conductor is in partial registration with each aperture of one group only, and circuit means inserted in at least one pair of aligned apertures in the first and second planar support members for selectively electrically connecting one only of the first and second sets of conductors in partial registration with the selected apertures in the first planar support member with the third set conductor in partial registration with the corresponding aligned aperture in the second planar support member.

3,225,264
WIRE WAY FOR ELECTRICAL CONTROL PANEL
Irving F. Weiss, University Heights, Ohio, assignor to ECP Corporation
Filed Oct. 13, 1961, Ser. No. 145,031
11 Claims. (Cl. 317—119)



2. An electrical panel comprising, a panel board, a plurality of electrical devices mounted on said board, said devices arranged in spaced, substantially parallel rows so as to form a wire way channel extending longitudinally between the rows, a plurality of anchor posts carried by the panel board and aligned substantially along the centerline of each channel, said anchor posts having a maximum lateral dimension in the wireway channel substantially less than the width of the space between the rows so as to permit electrical wires connected to the devices to extend longitudinally through the wireway channel, each anchor post having a wedge top cam form with a neck spaced from the top, and a resilient strip cover plate carried by said anchor posts and disposed in spaced, substantially parallel relation to the panel board so as to substantially cover the wireway channel, said cover plate having a central channel defined by converging side walls, said side walls formed and adapted to snap over said anchor post top and hold thereto with a grip fit.

3,225,265
REMOTE CONTROL ELECTRICAL SWITCH AND RADIO FREQUENCY ACTUATING SYSTEM THEREFOR
Stephen Robert Krause, Pikesville, and Harvey Leonard Miller, Baltimore, Md., assignors to K & M Electronics Company, a corporation of Maryland
Filed Sept. 8, 1961, Ser. No. 136,946
3 Claims. (Cl. 317—138)

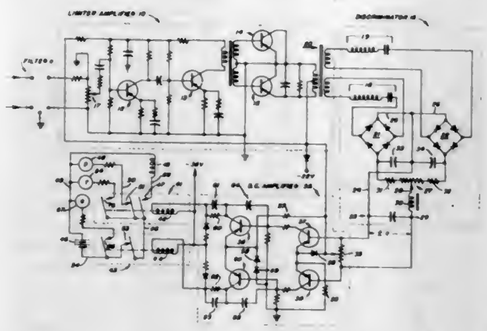


1. For use with a normally off electrical switch in an electrical circuit having an electrically actuated device in series therewith and connected to a source of electrical potential, said electrical switch having bare electrical terminals, a remote control device comprising a switch cover plate having bus bars in electrical contact with said bare electrical terminals, terminal jacks in said cover plate in communication with said bus bars, a relay having a coil and contacts, said contacts connected across the terminal jacks, the contacts being biased to a normally open position, radio frequency actuated receiving means connected to actuate said relay coil to close the contacts of said relay to by-pass the normally off electrical switch and energize the electrically actuated device, and a portable remote radio frequency transmitter operable to transmit a radio frequency signal at a frequency receivable by said radio frequency actuated receiving means.

3,225,266
PROTECTIVE RELAYING CIRCUIT

Gaspare Charles Baudo, Bloomingdale, N.J., assignor to Radio Frequency Laboratories, Inc., Boonton, N.J., a corporation of New Jersey

Filed Dec. 19, 1962, Ser. No. 245,771
6 Claims. (Cl. 317—138)



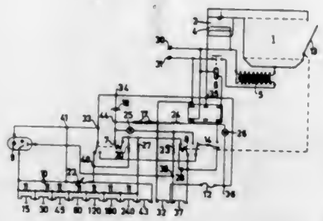
2. Protective relaying apparatus comprising,
(a) an A.C. amplifier responsive to first and second signals, which signals have predetermined different frequencies,
(b) a discriminator energized by the output voltages of the amplifier, said discriminator producing a D.C. output voltage having a sign depending upon the signal received by the amplifier,
(c) a pair of D.C. amplifiers, one amplifier providing an output voltage when the discriminator output voltage is of one sign and the other amplifier providing an output voltage when the discriminator output voltage is of reverse sign,
(d) a first relay having an operating coil energized by the output voltage of said one D.C. amplifier and a set of normally-open contacts,
(e) a second relay having an operating coil energized by the output voltage of said other D.C. amplifier and having a set of normally-closed contacts,
(f) a control member having an operating coil,
(g) a source of voltage, and
(h) circuit elements connecting the control member to the source of voltage through both said sets of relay contacts.

3,225,267
TIMED ELECTRIC HEATING APPARATUS

Göran A. R. Öjelid, Huskvarna, Sweden, assignor to Husqvarna Vapenfabriks Aktiebolag, Huskvarna, Sweden

Filed May 5, 1961, Ser. No. 107,994
Claims priority, application Sweden, May 9, 1960, 4,564/60
4 Claims. (Cl. 317—142)

1. In a timed electric heating apparatus: an electric heating device having an energizing source, first means connected with the energizing source for providing a direct current voltage which is directly proportioned to a voltage of the energizing source; a capacitor; an adjustable resistor interconnected between said capacitor and said first means and through which said capacitor is charged from said first means; a gas filled tube; an ignition electrode in said gas filled tube; second means connecting said capacitor to said ignition electrode for ionizing the gas in said gas filled tube when the voltage of said capacitor has reached the break down voltage of said gas filled tube; a first relay having an energizing winding which is connected in series with the main discharge path of said gas filled tube and said first means; said relay having a movable contact connected with said heating device for breaking the current to said electric heating device when said relay contact becomes transferred through the ionization of the gas in said gas filled tube and the appurtenant current through the energizing winding of said relay; and a second relay having a holding circuit for maintaining said second relay energized until

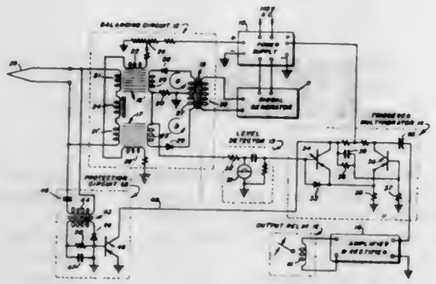


the heating device is manually switched off entirely, and an energizing winding which is connected to said first means and a parallel circuit having a first branch in which the energizing winding of said first relay and the main discharge path of said gas filled tube are comprised, and a second branch in which said adjustable resistor and said capacitor are interconnected.

3,225,268
PROTECTION CIRCUIT FOR CONTROL APPARATUS

Carlos B. Metzadour, Fort Lee, N.J., assignor to Thermo Electric Co., Inc., Saddle Brook, N.J., a corporation of New Jersey

Filed Sept. 11, 1962, Ser. No. 222,843
8 Claims. (Cl. 317—148.5)



3. Control apparatus for maintaining a variable condition at a predetermined state comprising,
(a) sensing means of the closed electrical circuit type for producing a D.C. signal which varies in correspondence with the actual state of the condition,
(b) means for establishing a predetermined reference state at which the condition is to be maintained,
(c) means including said first signal for producing a second signal when the actual state of the condition deviates from the reference state,
(d) control means actuated by the second signal to effect a change in the condition,
(e) means developing a third signal only when the electrical circuit of the sensing means is open, and
(f) circuit elements applying the third signal to the control means in a sense to prevent actuation thereof by the second signal.

3,225,269
ELECTRICAL APPARATUS

Willis G. Worcester, 748 10th St., Boulder, Colo.

Original application Jan. 3, 1955, Ser. No. 479,315. Divided and this application Oct. 4, 1961, Ser. No. 144,007
6 Claims. (Cl. 317—158)

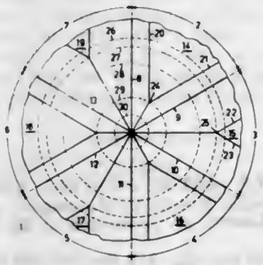


1. An elongated solenoid comprising a central support; a series of coils, disposed in axial relationship along said support, the end of each coil corresponding in contour to the end of each adjacent coil and each said coil including a center, alternating layers of thin metal foil and insulation extending in spiral relation about said center and insulating material at each end of said coil; a separate electrical connection to each of an inner foil turn and an outer foil turn of each said coil; and a series of heat conducting plates, each extending radially between the ends of two adjacent coils and outwardly beyond said coils, the number of such plates being such that at least one end of at least each intermediate coil abuts one of said heat conducting plates.

3,225,270
POLE SHOE ASSEMBLY FOR A CYCLOTRON ELECTROMAGNET

Nico Frederick Verster and Hendrik Lourens Hagedoorn, Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company Inc., New York, N.Y., a corporation of Delaware

Filed Apr. 15, 1963, Ser. No. 273,037
Claims priority, application Netherlands, Apr. 16, 1962, 277,304
3 Claims. (Cl. 317—158)



1. A pole shoe assembly for a cyclotron electromagnet in which at least in the central region the axial stability of the particles is improved by azimuthal dependence of the magnetic flux, comprising a pair of opposed pole-shoes each having the same number of segments of alternately large and small heights which are positioned relative to one another so that the segments of large height, as well as the segments of small height, are opposite one another, and with a given axis passing through the center of each pole-shoe, the difference in height between a segment of greater height and a segment of smaller height being substantially zero in the vicinity of the center of each shoe, the difference between the greatest height and the height at the center of each pole-shoe being smaller than the difference between the height at the center and the smallest height, the variation between the level of greatest height and that of the height at the center being less steep than the variation between the level of the height at the center and the smallest height, the variation between the level of the greatest height and that of the height at the center being at an angle between 20° and 90° to said axis, and the variation between the level of the height at the center and that of the smallest height being at an angle between 10° and 90° to said axis.

3,225,271
DEFLECTION COIL SYSTEM

Johannes Kaashoek and Gerrit Jan Lubben, Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed July 2, 1963, Ser. No. 292,232
Claims priority, application Netherlands, July 19, 1962, 281,181
4 Claims. (Cl. 317—200)



1. A deflection coil system for deflecting an electron ray about a longitudinal axis in a cathode ray tube, comprising a cylindrical core of magnetic material encircling the said axis, a toroidal winding on said core comprising two winding sections spaced apart in diametrical confronting relationship, each of said sections comprising two coils adjacently arranged and having current flow in the same direction, said winding producing a deflection field having an intensity

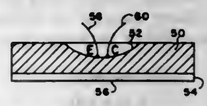
$$h=\frac{H_z}{H_0}=\frac{-3+4\cos^2\Psi}{R^2}$$

where H_0 is the magnteic field strength in the axis of the deflection coil system, H_z is the value in amperes per cubic meter of the winding, Ψ is half the acute angle between said adjacently arranged coils, and R is the mean radius of the winding in cm., the coils of each of said sections being separated by a varying amount along the longitudinal axis thereby to vary the said angle Ψ in the longitudinal direction and produce variations of the said value h along the said longitudinal direction whereby h has a positive value at one end of the deflection system and a negative value at the other end thereof.

3,225,272
SEMICONDUCTOR TRIODE

Donald C. Cronemeyer, Birmingham, Mich., assignor to The Bendix Corporation, Southfield, Mich., a corporation of Delaware

Filed Jan. 23, 1961, Ser. No. 84,269
11 Claims. (Cl. 317—235)

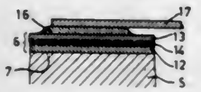


1. A semiconductor triode comprising an emitter section, base section, and collector section, at least a portion of said base section being between said emitter section and collector section, the width of base section material between said emitter section and collector section being less 300 angstrom units, said base section being of a material having one of an N and P doping and said emitter section and collector section being of materials having the other of the N and P doping, the doping of all the materials being sufficiently high to provide for movement of the carriers from one material to an adjacent material through the potential barrier between the sections, between a valence band in one material and a conduction band in the other material.

3,225,273
SEMI-CONDUCTOR DEVICES AND METHODS FOR THEIR MANUFACTURE

Martinus Antonius Maria Bakker and Aalbert Van Vulpen, Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed May 5, 1961, Ser. No. 108,099
Claims priority, application Netherlands, May 13, 1960, 251,613
10 Claims. (Cl. 317—237)

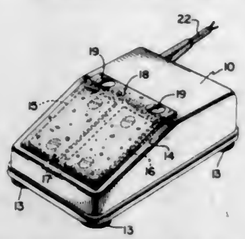


10. A semiconductor device comprising a body of a semiconductive chalcogenide of a bivalent metal having a portion of n-type conductivity, and an ohmic contact to said n-type portion, said contact comprising an alloy of two elements in major and minor amounts, the major element being selected from the group consisting of gold, silver, and alloys thereof, the minor element being selected from the group consisting of indium, gallium and aluminum.

3,225,274
CAPACITANCE TYPE FOOT CONTROLLER

John A. Herr, Garwood, and Edward W. Taylor, Martinsville, N.J., assignors to The Singer Company, a corporation of New Jersey

Filed May 21, 1962, Ser. No. 196,399
1 Claim. (Cl. 317—249)



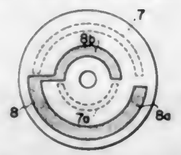
An electrical foot controller of the non-conducting capacitance type consisting of a single insulated base, spaced stationary coplanar electrically conducting plates secured to said base, electrical means connecting the coplanar plates together, a resilient non-conducting dielectric pad secured to said base to overlay said plates and form a variably compressible medium responsive to differential pressure applied thereto by relative movement of an external object whereby said object may be positioned in differentially variable spaced insulated relation with respect to said plates thereby to provide a relatively variable capacitance effect between said object and said plates.

3,225,275
GANGED VARIABLE CAPACITORS

Shozo Uchida, Kawagoe-shi, Japan, assignor to Toko Kabushiki Kaisha, Ota-ku, Tokyo-to, Japan, a joint-stock company of Japan

Filed Dec. 1, 1964, Ser. No. 415,059
Claims priority, application Japan, Dec. 9, 1963, 38/92,008
3 Claims. (Cl. 317—249)

1. Ganged variable capacitors comprising a rotor, a stator, a ceramic plate sandwiched between said rotor and stator, an electrode on said rotor and an electrode on said stator, either one of said electrodes comprising a first pair of concentric semicircular segments of different radii disposed in the regions on opposite sides of a lateral diametrical center line, the other of said electrodes comprising a corresponding second pair of concentric semicircular segments of different radii, and said second pair of semi-

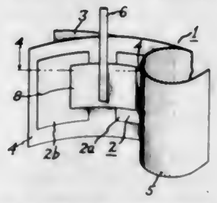


circular electrode segments being electrically interconnected and grounded to provide complete electrostatic shielding of said first pair of semicircular electrode segments.

3,225,276
ELECTRICAL CAPACITOR WITH THERMAL FUSE

Franklin W. Daniels, Glens Falls, N.Y., assignor to General Electric Company, a corporation of New York

Filed Sept. 14, 1961, Ser. No. 138,141
4 Claims. (Cl. 317—256)

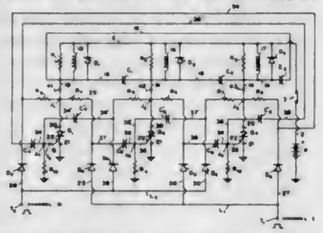


1. An electrical capacitor comprising, in combination, a convolutely wound roll formed of a pair of insulated electrodes at least one of which is aluminum, and fuse means electrically connected to said aluminum electrode in said roll, said fuse means comprising a fusible conductor having a composition different from the aluminum electrode and being electrically connected to said aluminum electrode through opposed surfaces thereof having contact solely produced by the pressure exerted by the capacitor roll winding, said fusible conductor having a coating of aluminum overlying and intimately joined to its contact surface and separating said opposed surfaces.

3,225,277
STEPPER MOTOR CONTROL CIRCUIT

Orson G. Fouiger, Goleta, Calif., assignor to the United States of America as represented by the Secretary of the Navy

Filed July 22, 1963, Ser. No. 296,871
3 Claims. (Cl. 318—138)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A control system for a direct current motor having a driven rotor and a plurality of rotor driving magnetic field establishing inductance coils, comprising in combination:

a direct current voltage source having a positive and a negative terminal for imposing a direct current voltage across each of the coils of said motor;

a plurality of silicon controlled rectifiers so disposed as to provide a single silicon controlled rectifier between each of said coils and the negative terminal of said source;

a positive voltage signal pulse source;

means for connecting the positive voltage signal pulse source with the gate of each of said silicon controlled rectifiers;

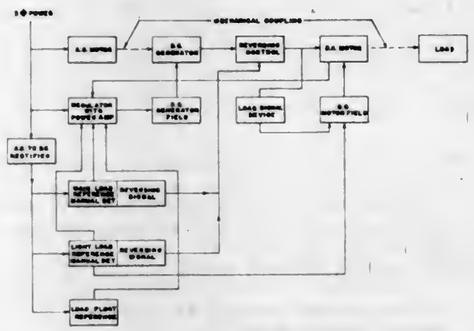
a plurality of gate capacitors arranged within the signal pulse source connecting means so as to provide a single gate capacitor disposed between the gate of each of the silicon controlled rectifiers and the signal pulse source; and

a plurality of current interrupting capacitors singularly connected between the coils, at the negative terminal sides thereof, so as to provide a single silicon controlled rectifier interrupting capacitor between each of the coils, whereby when a given first silicon controlled rectifier of said plurality of silicon controlled rectifiers is conducting a current, and a first coil of said plurality of coils is energized, a positive pulse applied to the pulse source connecting means serves to activate a second silicon controlled rectifier to thus sequentially energize a second coil adjacent said first coil and effect an interruption of current through said first silicon controlled rectifier to impart a rotation to said rotor of said motor through a thus sequentially established rotating magnetic field.

3,225,278
GENERATOR-FED HOIST MOTOR CONTROL WITH LOAD FLOAT CONTROL

Morton S. Rundel, Menlo Park, Calif., assignor, by mesne assignments, to Pacific Coast Engineering Company, Alameda, Calif., a corporation of California

Filed Apr. 7, 1958, Ser. No. 726,824
3 Claims. (Cl. 318—145)

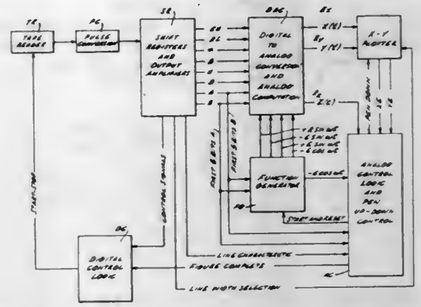


1. A hoist system comprising a hoist motor having a hoist mechanism drive-connected thereto; means for altering the speed of said hoist motor for heavy loads, within a predetermined low speed range; means for altering the speed of said hoist motor for light loads, within a predetermined speed range extending above said low speed range; means for rendering impotent, either of said speed altering means upon operation of the other; a load float control involving means for electrically balancing a load on said motor to immovably suspend such load, and means for altering said electrical load balancing means to selectively cause a lowering or lifting of such load; and means for shifting operation of said hoist motor from both said heavy load and light operations to said load float control.

3,225,279
PROGRAMMED DIGITAL TO ANALOG FUNCTION GENERATOR MOTOR CONTROL FOR AN X—Y PLOTTER

William J. Muldoon, Palos Verdes Estates, and Robert W. Peterson, Sepulveda, Calif., assignors to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed Dec. 29, 1961, Ser. No. 163,155
17 Claims. (Cl. 318—162)



1. A line generating system, comprising:

a pair of servos having respective input circuits and having respective output motors;

a device having a pair of input members connected to and driven by said motors, respectively, and having a movable line generating output member connected to and driven by both of said input members in substantially mutually perpendicular directions;

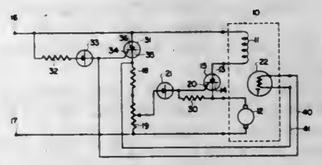
control means, including a variable frequency oscillator, for producing time varying line generating voltages and having respective output circuits connected to said respective input circuits of said servos for controlling said servos;

and means connected to said oscillator for varying the frequency thereof substantially inversely proportionally to the length of a line.

3,225,280
LOAD PROTECTION CIRCUITS

Reynold Happe, Greenville, S.C., and Lawrence R. Goetz, Morristown, N.J., assignors to The Singer Company, Elizabeth, N.J., a corporation of New Jersey

Filed Aug. 12, 1963, Ser. No. 301,311
4 Claims. (Cl. 318—246)



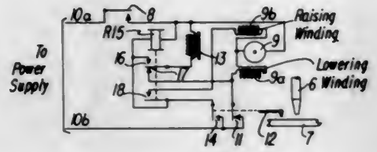
1. A combined motor protection and speed control circuit comprising a pair of terminals for connection to an A.C. voltage source, motor windings, a first controlled rectifier, means connecting said motor windings in series with the anode-cathode circuit of the first rectifier and said terminals, adjustable voltage-divider means connected to said terminals for obtaining an adjustable voltage, a second controlled rectifier, means including the anode-cathode circuit of the second rectifier for rendering the adjustable voltage effective to supply adjustable gating signals

to the gate-cathode circuit of the first rectifier, means coupled to said terminals for supplying a fixed gating signal to the second rectifier sufficient to cause it normally to fire, and a thermistor connected electrically in shunt with the gate and cathode of the second rectifier and physically located in good heat transfer relation with the motor windings.

3,225,281
AUTOMATIC POSITIONING APPARATUS FOR CUTTING TORCHES

Robert G. Petrinec, Chicago, Ill., assignor to Chemetron Corporation, Chicago, Ill., a corporation of Delaware

Filed Jan. 31, 1961, Ser. No. 86,174
2 Claims. (Cl. 318—261)



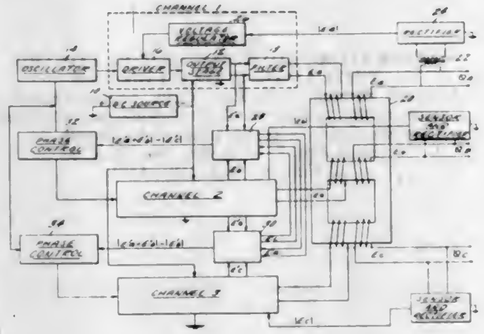
1. Automatic positioning apparatus for a torch, comprising: a torch, torch moving means including a reversible electric motor, brake means for immediately stopping said motor and for enabling said motor to move said torch, said brake means including an electrically energizable solenoid, a sensing member movably mounted adjacent said torch for riding over and responding to inclinations in a work surface, and control means for actuating said motor and said solenoid, said control means including a first switch operable by said sensing member for causing energization of said solenoid to enable movement of said torch moving means and for causing energization of said motor to move said torch in one direction, an electrically energizable relay, a second switch operable by said sensing member for causing energization of said relay, and switch means operable by said relay for causing energization of said solenoid to enable movement of said torch moving means and for causing energization of said motor to move said torch in the opposite direction so that said torch can be prevented from moving outside predetermined distance limits relative to the work surface.

3,225,282
THREE PHASE INVERTER SYSTEM WITH VOLTAGE AND PHASE CONTROL

Vinton V. Haas, Jr., Storrs, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed Dec. 24, 1962, Ser. No. 246,746
6 Claims. (Cl. 321—3)

1. A three-phase static inverter comprising:
an oscillator circuit;
first switch means coupled to and controlled by the output signals from said oscillator circuit for converting direct current to alternating current, said first switch means providing a first A.C. output voltage and being adapted to have its input terminals connected to a source of direct current;
a first phase control circuit coupled to the output of said oscillator circuit for generating a signal having the same frequency but shifted in phase with relation to the oscillator output signal;
second switch means connected to said first phase control circuit and controlled by the signal generated thereby for converting direct current to alternating current, said second switch means providing a second A.C. output voltage differing in phase from said first A.C. voltage and being adapted to have its input terminals connected to a source of direct current;
a second phase control circuit coupled to the output of said oscillator circuit for generating a signal having the same frequency but shifted in phase with relation to the output signals of said oscillator and said first phase control circuit;
third switch means connected to said second phase control circuit and controlled by the signal generated thereby for converting direct current to alternating current, said third switch means providing a third A.C. output voltage differing in phase from said first and second A.C. voltages and being adapted to have its input terminals connected to a source of direct current;
a three-leg transformer having a primary and a secondary winding on each leg thereof;
means applying the A.C. output voltages provided by said first, second and third switch means respectively to first, second and third primary windings on said three-leg transformer;
means for connecting a three-phase load across the three secondary windings on said three-leg transformer;
means for sensing the magnitudes of the voltages across the secondary windings on the first, second and third legs of said three-leg transformer and for generating signals commensurate therewith;

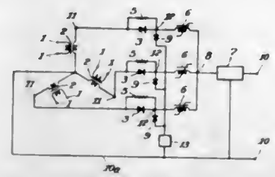


voltage regulator means connected to said sensing means and responsive to said signals commensurate with magnitude for generating first, second or third error signals whenever any of said magnitude signals departs from a desired value;
means applying said first, second and third error signals respectively to said first, second and third switch means to control the magnitude of the A.C. output voltages provided thereby;
means responsive to the A.C. output voltages provided by said first, second and third switch means for generating a fourth error signal commensurate with any variation from the desired phase relationship between the A.C. voltages provided by said first and second switch means;
means for applying said fourth error signal to said first phase control circuit for controlling the phase of the signal generated thereby;
means responsive to the A.C. output voltages provided by said first, second and third switch means for generating a fifth error signal commensurate with any variation from the desired phase relationship between the A.C. voltages provided by said first and third switch means; and
means applying said fifth error signal to said second phase control circuit for controlling the phase of the signal generated thereby.

3,225,283
REGULABLE-OUTPUT RECTIFYING APPARATUS

Toshio Kurimura and Kazuomi Yamamura, Tokyo-to, Japan, assignors to Kokusai Denshin Denwa Kabushiki Kaisha, Tokyo-to, Japan, a joint-stock company of Japan

Filed June 6, 1961, Ser. No. 115,193
Claims priority, application Japan, June 9, 1960, 35/27,115, 35/27,116; Dec. 26, 1960, 35/50,226
4 Claims. (Cl. 321—16)



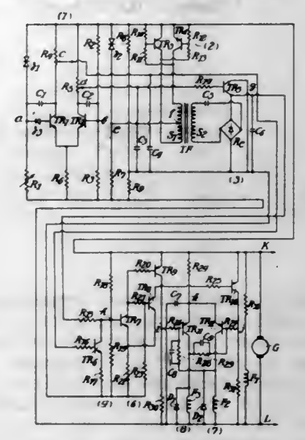
1. A rectifying apparatus for obtaining a regulable direct current output from an alternating current comprising an alternating current source having a plurality of output terminals, rectifying means connected to said alternating current source for rectifying the output of said source comprising a plurality of series-connected circuits equal in number to the number of output terminals of said alternating-current source, each of said circuits comprising a rectifier, a resistor connected in parallel with said rectifier and a saturable reactor having a winding, connections connecting said winding of each saturable reactor to a common point, each of said rectifiers having a terminal connected in the same polarity to a respective output terminal of said alternating current source, regulating means comprising a regulative direct current voltage source, a plurality of rectifying elements connected to said direct current voltage source, connections connecting each of the rectifying elements to a respective junction between a rectifier and a respective saturable reactor and connecting said rectifiers and said rectifying elements in the same sense to each other, thereby to vary the voltage of the output of said regulative direct current source, and a smoothing circuit connected between said common point of the saturable reactors and said direct current voltage source.

3,225,284
GENERATOR VOLTAGE REGULATING APPARATUS

Yoshinori Kawai, Katsuta-shi, and Takanori Shibata, Hitachi-shi, Ibaragi-ken, Japan, assignors to Kabushiki Kaisha Hitachi Seisakusho, Tokyo-to, Japan, a joint-stock company of Japan

Filed Nov. 5, 1962, Ser. No. 235,371
Claims priority, application Japan, Nov. 6, 1961, 36/39,498, 36/39,499
5 Claims. (Cl. 322—28)

1. A generator voltage regulating apparatus which comprises, in electrical connection with a generator having a field winding, a field regulating means including a semiconductor switching element connected in series to the said field winding, a comparison detecting means which, when a deviation from a predetermined voltage value occurs in the terminal voltage of the said generator, generates, in accordance with the magnitude of the said deviation, two comparison detection signals having mutually-opposite increasing and decreasing characteristics, a circuit for generating periodic, pulse-form voltage, a circuit wherein the said pulse-form voltage is applied through a controllable impedance means to charge a capacitor, and a controllable determination element for detecting the terminal voltage of the said capacitor and generating rectangular output pulse, and which is so adapted that one of the said two comparison detection signals is applied to the said controllable impedance means, and the other is applied to the said controllable determination element

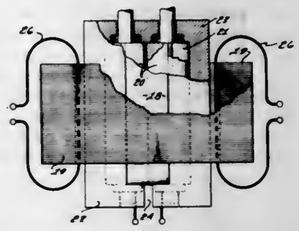


so as to cause the said two signals to operate in mutual response, and the said semiconductor switching element is controlled by the output of the said controllable determination element.

3,225,285
BRUSHLESS GENERATOR FOR HIGH-POWERED ELECTRICAL PULSES

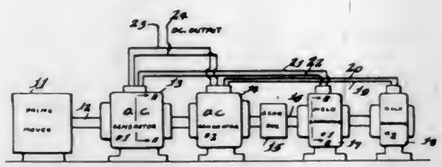
Harold P. Furth, Berkeley, Calif., assignor to Advanced Kinetics, Inc., Costa Mesa, Calif., a corporation of California

Filed July 16, 1962, Ser. No. 210,078
8 Claims. (Cl. 322—51)



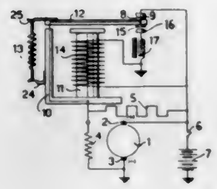
1. In an electric generator for producing high current pulses,
an auxiliary energy source,
a conductor responsively connected to said energy source for creating a magnetic field,
rotating element means having part low reluctance material and part electrical conducting material disposed within said magnetic field,
said rotating element means being in an open position with respect to said field when said low reluctance material is within said magnetic field and in a closed position when said electrical conductive material is within said magnetic field,
said rotating element means decelerated by the interaction between said magnetic field and said electrical conductive material when said rotor is in said closed position.

3,225,286
VOLTAGE AND FREQUENCY REGULATOR FOR A MOTOR-GENERATOR INVERTER
Henry J. Wysocki, 1737 Pennsylvania, Gary, Ind.
Filed Mar. 8, 1962, Ser. No. 178,405
7 Claims. (Cl. 322—61)



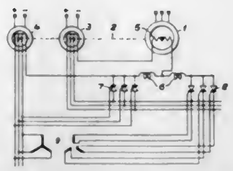
1. A direct current generator comprising: means, including a field alternator having a first armature and a first stator having a first coil thereon, for developing an alternating current signal of predetermined wave shape; means, including a generator having field producing windings coupled to and receiving said alternating current signal and having a movable second armature and a second stator carrying said windings, said second armature having a second coil thereon for developing a direct current signal therein; and means for maintaining a constant ratio of angular rotation between said first and second armatures.

3,225,287
VOLTAGE REGULATING CIRCUIT
Floraldo Tamburini, Turin, Italy, assignor to Fiat Società per Azioni, Turin, Italy
Filed Oct. 19, 1962, Ser. No. 231,659
Claims priority, application Italy, Nov. 11, 1961, 20,531/61
3 Claims. (Cl. 322—68)



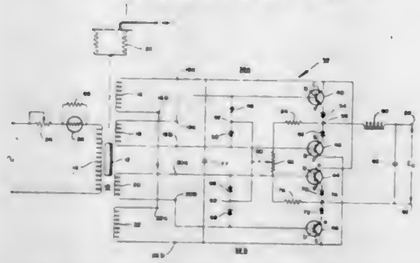
1. A vibrating-contact two-stage voltage-regulating circuit comprising: a direct-current generator having a pair of output terminals, a voltage-sensitive relay having a "break" contact and a "make" contact and moreover having its energizing winding connected across the output terminals of the generator, a field winding in the generator having one end connected to one of the terminals in the pair, a control resistor connecting the other end of the field winding to the other terminal in the pair, a shunt loop controlled by the "break" contact connected across the resistor, and a second shunt loop controlled by the "make" contact connected across the field winding, said second shunt loop providing in its closed condition a current path extending from said other terminal to said one of the terminals through the resistor and the "make" contact; said circuit comprising moreover included an auxiliary induction coil included in said current path for limiting mass transfer between the contacts of said "make" contact.

3,225,288
EXCITER SET FOR SYNCHRONOUS GENERATORS
Gunnar Engstrom, Ludvika, Sweden, assignor to Allmanna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a corporation of Sweden
Filed Oct. 16, 1962, Ser. No. 230,864
Claims priority, application Sweden, Nov. 17, 1961, 11,442/61
8 Claims. (Cl. 322—73)



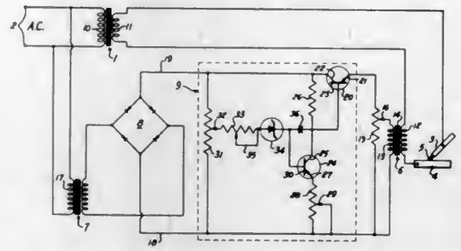
1. In combination with a synchronous generator having a rotating field system, an exciter set comprising an exciter generator having a rotating armature and at least one multiphase synchronous control voltage generator having a rotating armature, a shaft, said two armatures of said exciter set together with said rotating field system of said synchronous generator being mounted on said shaft, means to feed the output of said exciter to the field winding of said synchronous generator, said feeding means including a plurality of controlled semi-conductor rectifiers each provided with a control electrode and having ionic rectifier characteristic, said rectifiers forming two converter groups, one group operating as an inverter and the other as a rectifier, said rectifiers being mounted on said shaft and means to feed the output of each phase of said control voltage generator to one of the control electrodes of the rectifiers in each group, the field of at least one of said exciter and control voltage generators being variable.

3,225,289
M.C.T. TRANSMITTER
Harold H. Koppel, University Heights, and Philip I. Wajs, Cleveland, Ohio, assignors to Bailey Meter Company, a corporation of Delaware
Filed Sept. 14, 1962, Ser. No. 223,742
10 Claims. (Cl. 323—51)



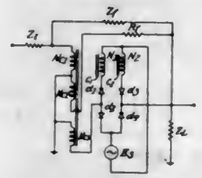
2. In a transmitting device the combination comprising; a transformer having a movable core adapted to be displaced relative to a center position, a primary winding coupled to a source of alternating voltage, a pair of secondary signal windings positioned on opposite sides of said center position, a pair of secondary supply windings positioned on opposite sides of said center position and connected in a series adding circuit, said core being operative to establish a variable inductive coupling between said primary winding and each of said secondary windings to establish an alternating signal across each of said secondary signal windings of magnitude dependent upon position of said core and a potential across said series circuit of constant magnitude irrespective of the position of said core; a pair of full-wave rectifier circuits coupled to said secondary signal windings respectively for producing full-wave rectified signals proportional to the position of said core relative to said signal windings respectively; and second means connecting the ends of said series adding circuit to said rectifier circuits respectively to establish a self compensated power supply for said transmitter.

3,225,290
SUPPLY VOLTAGE COMPENSATION
Franklin James Grist, Appleton, Wis., assignor to Miller Electric Mfg. Co., Appleton, Wis., a corporation of Wisconsin
Filed Nov. 3, 1960, Ser. No. 67,057
5 Claims. (Cl. 323—89)



1. An incoming voltage compensation circuit connected to a power supply having an output connection for supplying current to a load, which comprises a control amplifying device series connected in the output circuit of the power supply and connected in series with the output connection for said load to establish a series connection to the load and for establishing a proportional current control to the load, a first voltage dividing network including a fixed circuit element and a biasing amplifying device connected in series across the power supply, said control amplifying device including a control element connected to the junction of the fixed circuit element and the biasing amplifying device, means to establish a minimum percentage voltage at the junction to continuously bias said control amplifying device to conduct, a second voltage dividing network connected across the power supply, said biasing amplifying device including a control element, and a coupling circuit including a variable voltage dropping element and a voltage regulating device in series connected between the control element of the biasing amplifying device and the second voltage dividing network to variably bias the biasing amplifying device and establish an operating level about which a selected degree of compensation for variations in the incoming power supply voltage is provided.

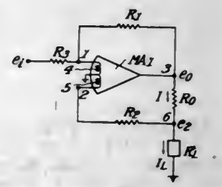
3,225,291
OPERATIONAL MAGNETIC AMPLIFIER
Takeo Miura, Kitatama-gun, and Chikafusa Hirano, Tachikawa-shi, Tokyo-to, Japan, assignors to Kabushiki Kaisha Hitachi Seisakusho, Chiyoda-ku, Tokyo-to, Japan, a joint-stock company of Japan
Filed May 1, 1962, Ser. No. 191,580
3 Claims. (Cl. 323—89)



3. In a feedback type operational circuit utilizing a magnetic amplifier having magnetic cores; an alternating current source; two diodes connected to each said amplifier and to said current source; one output winding wound about each said core and connected in parallel to said current source and in series to said diodes; and a control coil wound commonly about said cores; said amplifier constituting a full-wave amplifying circuit; the improvements which comprise, in combination, a voltage compensating winding and a current compensating winding, both wound about said magnetic cores; an output voltage feedback resistance connected in series to said compensating windings; said voltage compensating winding forming a positive feedback circuit by supplying a current proportionate to a voltage E_o; an input impedance Z_1 connected to said feedback and to said current and voltage compensating windings; an input voltage E_1 thus being conducted into said control coil; a feedback impedance Z_f being connected to said control winding thus conducting said output voltage E_o thereto; whereby

$$E_o = \frac{Z_f}{Z_1} \cdot E_1$$

3,225,292
CURRENT REGULATOR
Takeo Miura, Tokyo-to, Japan, assignor to Kabushiki Kaisha Hitachi Seisakusho, Tokyo-to, Japan, a joint-stock company of Japan
Filed June 5, 1962, Ser. No. 200,246
Claims priority, application Japan, June 7, 1961, 36/19,613
2 Claims. (Cl. 323—89)



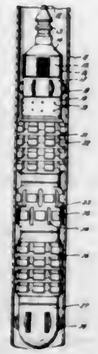
1. A current regulator which comprises an amplifier having a first and a second control input terminal and an output terminal; said amplifier generating a control voltage corresponding to the difference between the input voltages having the same polarity and applied on said input terminals; a negative feedback resistance connected between said output terminal and said first input terminal; a resistance adapted to determine the conversion coefficient; a load resistance; a positive feedback resistance connected to said second input terminal and said output terminal; and an input resistance connected to said first input terminal; said resistance for determining the conversion coefficient being disposed between said output terminal and said load resistance; and said load resistance being disposed at a junction of said resistance for determining the conversion coefficient and said positive feedback resistance; said negative and positive feedback resistances being equal to each other so that a current proportional to the input voltage applied on said input resistance is caused to flow through said load.

3,225,293
APPARATUS FOR INSPECTING PIPE FOR DEFECTS
Fenton M. Wood, 110 Sorrento, Sugarland, Tex., and William T. Walters, 506 Forest Oaks, Houston, Tex.
Filed Feb. 20, 1964, Ser. No. 346,303
7 Claims. (Cl. 324—37)

1. In an apparatus for inspecting pipe for defects comprising:
a housing for passing axially through said pipe,
means for effecting relative movement of said housing through said pipe,

a magnet centrally positioned in said housing and having north and south poles,

a pair of resilient, expandable, magnetically permeable annular members, one of which surrounds each of the poles of said magnet and which are of a size to resiliently contact the inside of said pipe when in the expanded condition, whereby a longitudinal



magnetic field is established in said pipe by said magnet,

means for expanding said magnetically permeable annular members at a predetermined time, and

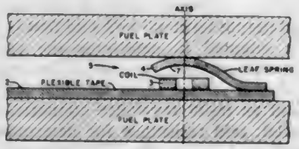
magnetic responsive means mounted adjacent said magnet at about midpoint between said magnetically permeable annular members for detecting flux leakage from said pipe.

3,225,294

METHOD AND APPARATUS FOR MEASURING THE SPACE BETWEEN SURFACES OR OBJECTS

Robert W. McClung and Caius V. Dodd, Knoxville, Tenn., and John W. Allen, Jr., and Roy A. Nance, Malvern, Pa., assignors to the United States of America as represented by the United States Atomic Energy Commission

Filed Sept. 29, 1961, Ser. No. 141,921
3 Claims. (Cl. 324—40)



1. An eddy-current probe for insertion between two opposed surfaces for determining spacing comprising an expandable body for engagement with spaced surfaces, a coil mounted on the body and having a series of turns of conducting material for the passage of electric current to set up a magnetic field to induce eddy current in the body for altering the impedance of the coil, and means for positioning the probe between the surfaces whose spacing is to be measured.

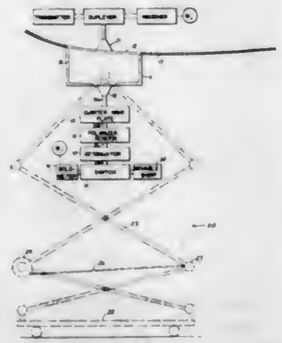
3,225,295

UNITARY MICROWAVE TESTER FOR TRANSMIT-RECEIVE SYSTEMS INCLUDING POWER MEASURING AND REFLECTIVE MEANS

Jerome L. Altman, Waban, and Myron S. Rubin, Framingham Center, Mass., assignors to Laboratory for Electronics, Inc., Boston, Mass., a corporation of Delaware

Filed Sept. 1, 1961, Ser. No. 135,482
6 Claims. (Cl. 324—58)

1. Apparatus for successively testing the transmitter section and the receiver section of a microwave transmitting-receiving system having a common system antenna, comprising, an anechoic chamber, means for mounting the anechoic chamber adjacent to the system antenna to intercept the microwave energy radiated therefrom, a sampling antenna affixed to the anechoic chamber to receive a predetermined portion of the microwave energy in the anechoic chamber, a turnstyle junction including an input waveguide and first and second output waveguides, a coupling waveguide connecting the input waveguide of the turnstyle junction to the sampling antenna, adjustable attenuating means disposed in the coupling waveguide, means for sequentially orienting the first and the second output waveguides with respect to the input waveguide



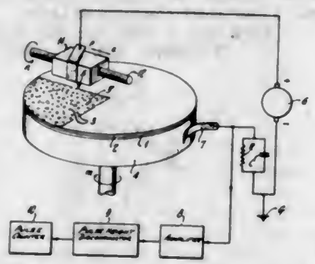
successively to switch the microwave energy in the input waveguide between the first and the second output waveguides, a power measuring device in circuit with the first output waveguide to provide an indication proportional to the microwave power radiated by the system antenna and reflecting means movably mounted in the second output waveguide to redirect the energy impinging thereon back through the turnstyle junction, the waveguide means, the sampling antenna and the anechoic chamber to the system antenna to present, to the receiver section of the microwave transmitting-receiving system, a microwave signal of known strength and phase for measuring the sensitivity of such section.

3,225,296

APPARATUS FOR ELECTRONICALLY ANALYSING PARTICLE AGGREGATES BY SCANNING A MOSAIC CAPACITOR AND COUNTING AND DISCRIMINATING PULSES RESPONSIVE TO MOSAIC ELECTRODES

Heinz Roth, Neuenhof, Switzerland, assignor to Aktiengesellschaft Brown, Boveri & Cie., Baden, Switzerland

Filed Mar. 28, 1962, Ser. No. 183,186
Claims priority, application Switzerland, Mar. 30, 1961, 3,855/61; Feb. 6, 1962, 1,433/62
9 Claims. (Cl. 324—61)



1. Apparatus for electronically analysing a particle aggregate of widely varying particle size and constituted by a mosaic capacitor composed of a large-surface conducting base electrode, a highly insulating dielectric layer of uniform thickness overlying said base electrode and a multiplicity of discrete mutually spaced mosaic electrodes overlying said dielectric layer and forming with said base electrode and dielectric layer a multiplicity of capacitor elements providing a replica as to size, configuration and spacing of the particles of the aggregate to be analysed, said apparatus comprising in combination:

(1) a first large-surface conducting support movable along a first scanning trace and adapted for mounting thereon a capacitor to be analysed with its base electrode in electrical and mechanical connection with said support,

(2) a second support movable along a second scanning trace coordinated with said first trace,

(3) a conducting scanning stylus carried by said second support in effective current pickup relation to said mosaic electrodes in the mounted position of said capacitor,

(4) an electric circuit including a source of substantially constant direct current voltage connected to said first support and said stylus, and

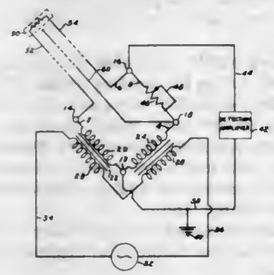
(5) operating mechanism to simultaneously displace said first and second supports along said first and second scanning traces, respectively, to consecutively scan said mosaic electrodes by said stylus, said source having a voltage such as to produce a charging current flow between said stylus and said first support, said current flow resulting in a pulse sequence in said circuit with the number of pulses thereof corresponding to the number of mosaic electrodes scanned and with the height of the pulses being proportional to the size of the respective electrodes, substantially independently of the relative size and configuration of said electrodes.

3,225,297

WHEATSTONE BRIDGE CIRCUIT FOR THE MEASUREMENT OF A PHYSICAL VARIABLE REMOTE FROM THE BRIDGE, WITH COMPENSATING MEANS FOR INTERLEAD CAPACITANCE

Billy Burley and Karlheinz Joel, Dallas, Tex., assignors, by mesne assignments, to Johnson Service Company, Milwaukee, Wis., a corporation of Wisconsin

Filed Jan. 6, 1961, Ser. No. 81,179
7 Claims. (Cl. 324—62)



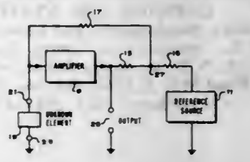
3. A bridge circuit comprising a first arm having a pair of terminals, a remotely located condition responsive variable element connected between the terminals of said first arm by a pair of elongated leads, a second arm having a pair of terminals one of which is a common terminal with said first arm and includes a second variable element for balancing out variations in said first variable element, said second variable element being connected at its one end to said common terminal and having a second end, third and fourth arms connected in series between said first and second arms and completing the bridge circuit, said third arm being connected to the second end of the second variable element, means for compensating for the stray impedance introduced in said bridge circuit by said pair of elongated leads comprising a second pair of elongated leads connected in series between the second end of said second variable element and the adjacent connection to the third bridge arm to form a part of the second bridge arm, said second pair of elongated leads being adjacent and coextensive with said first pair of elongated leads and symmetrically disposed with respect thereto whereby the resistive and reactive components of said stray impedance introduced by said first pair of elongated leads are balanced out.

3,225,298

IMPEDANCE TO VOLTAGE CONVERTER INCLUDING A POSITIVE FEEDBACK PATH FOR SUPPLYING IMPEDANCE TESTING CURRENT

David S. Cochran, Palo Alto, Calif., assignor to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California

Filed July 30, 1962, Ser. No. 213,302
5 Claims. (Cl. 324—62)



1. A circuit for measuring the impedance of an element under test which has one terminal connected to a conductor of reference potential and which has another terminal, said circuit comprising:

a source of reference signal having one terminal connected to said conductor and having another terminal;

a non-inverting amplifier having an input and an output;

a signal divider connected between the other terminal of said source of reference signal and said output;

means connecting the other terminal of the element under test to said input; and

means connected between said input and said signal divider at a terminal thereon which is intermediate the connections of said signal divider to said source and said output for providing a positive feedback path between said terminal on said signal divider and said input;

the circuit providing a signal at said output which is related to the impedance of said element under test.

3,225,299

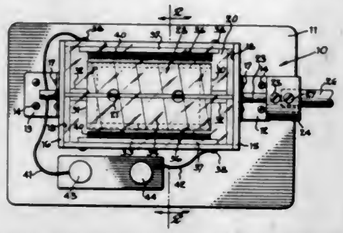
ELECTROSTATIC CHARGE TRANSFER TACHOMETER

William H. Middendorf, 407 Kentucky Drive, Fort Wright, Covington, Ky.

Filed May 16, 1961, Ser. No. 110,570
13 Claims. (Cl. 324—70)

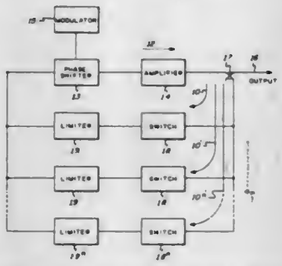
1. Apparatus for measuring the speed of a rotating member, said apparatus comprising a tachometer, said tachometer including a rotor rotatable about an axis and having a cylindrical conductive surface and a dielectric sheath overlying said surface, means for connecting said rotor for rotational movement with said rotating member, a first electrode disposed closely adjacent to said rotor but spaced from the dielectric sheath thereof, and a second electrode disposed closely adjacent to the rotor but spaced from the dielectric sheath portion thereof, said second electrode being spaced from said first electrode circumferentially with respect to said rotor, said electrodes extending axially of said rotor, means for applying a D.C.

potential across said electrodes, said first electrode being effective to emit electrons, said second electrode being effective to collect electrons previously deposited on said



sheath by said first electrode, and means responsive to the current flowing between said electrodes for indicating the velocity of said rotating member.

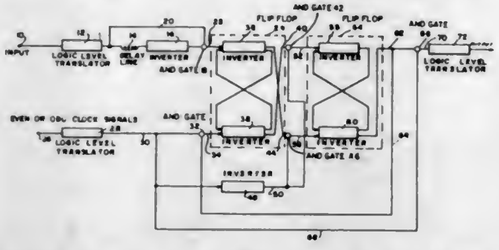
3,225,300
AUTOMATIC NOISE JAMMING MULTI-CARRIER F.M. SYSTEM
Kay H. Barney, Searingtown, and Lewis J. Graber, Westbury, N.Y., assignors to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware
Filed May 2, 1962, Ser. No. 191,993
13 Claims. (Cl. 325—132)



1. A multifrequency modulated signal generator comprising
(a) a plurality of closed signal circulating loops each being tuned to a different frequency,
(b) each of said loops sharing a common loop segment,
(c) means to switch the overall gain characteristic of any given loop to a value above unity in response to signals in that loop,
(d) means for initiating signals of various frequencies within said loops,
(e) and means for changing the electrical length of said common loop segment.

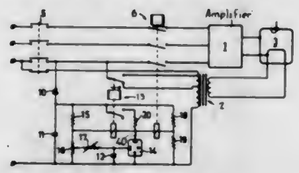
3,225,301
PULSE RESYNCHRONIZING SYSTEM FOR CONVERTING ASYNCHRONOUS, RANDOM LENGTH DATA SIGNAL INTO DATA SIGNAL SYNCHRONOUS WITH CLOCK SIGNAL
Robert E. McCann, Minneapolis, Minn., assignor to Control Data Corporation, Minneapolis, Minn., a corporation of Minnesota
Filed June 4, 1963, Ser. No. 285,492
7 Claims. (Cl. 328—63)

1. A resynchronizing system for converting an asynchronous random length data input signal to a data processing machine into an output data signal synchronous with a clock signal employed in said machine comprising bistable means, means for SETTING said bistable means in response to said asynchronous random length data input signal, said SETTING means including a delay device and a gating arrangement to which said data input signal is applied to produce a pulse having a length approximating that of said delay device, and connecting means for applying said pulse to the bistable means; and



means responsive to the SET output of said bistable means and said clock signal to produce an output data signal synchronous with said clock signal.

3,225,302
MAGNETRONS FOR DIELECTRIC HEATING
Göran Axel Runo Öjelid, Huskvarna, Sweden, assignor to Husqvarna Vapenfabriks Aktiebolag, Huskvarna, Sweden
Filed Mar. 6, 1962, Ser. No. 177,866
Claims priority, application Sweden, Mar. 13, 1961, 2,631/61
16 Claims. (Cl. 328—270)

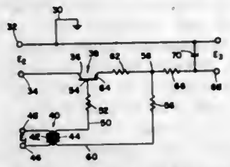


1. In apparatus for dielectric heating:
a magnetron having an anode, a cathode and a filament for heating said cathode,
a current source for said filament,
a voltage source for said anode,
means supplying to said filament from said current source a current sufficient to maintain said cathode at an elevated readiness temperature above the ambient temperature but below its ordinary operation temperature,
means temporarily increasing the current through said filament during the starting period of the magnetron to thereby raise the temperature of the cathode to a heating temperature, which is at least equal to its ordinary operating temperature during said starting period, said means increasing the current including manually actuatable switch means connected to said voltage source, and
means for preventing the application of anode voltage to said anode before the expiration of said time interval.

3,225,303
MODULATING AND DEMODULATING APPARATUS
Joseph F. Hauber, Minneapolis, Minn., assignor to Honeywell Inc., a corporation of Delaware
Filed May 31, 1962, Ser. No. 198,793
7 Claims. (Cl. 329—102)

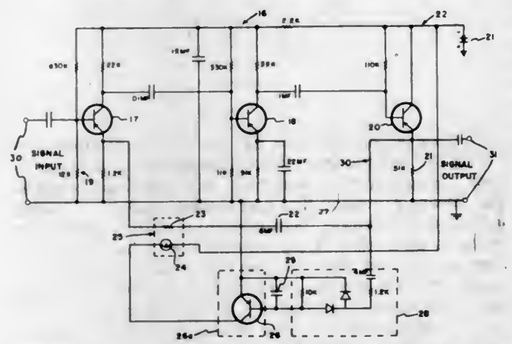
7. Signal converting apparatus comprising, in combination:
first signal supplying means for supplying a first signal;
reference potential means;
second signal supplying means for supplying a second signal;

signal responsive switching means operable to change from a first condition to a second condition at a rate which is in a function of a characteristic of one of said signals;
output means;
means connecting said first signal supplying means, said second signal supplying means and said switch-



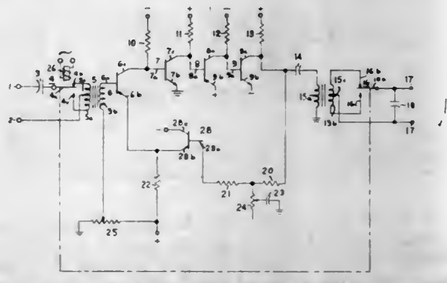
ing means in series relationship between said reference potential and said output means to obtain an output signal which varies in accordance with said first signal and provides a bias signal indicative of said second signal in the absence of said first signal; and capacitive means connected between said reference potential and said output means.

3,225,304
CONSTANT OUTPUT AMPLIFIER INCLUDING LIGHT RESPONSIVE FEEDBACK MEANS
William J. Richards, 1315 Montana, El Paso, Tex.
Filed Aug. 22, 1963, Ser. No. 303,970
2 Claims. (Cl. 330—28)
(Granted under Title 35, U.S. Code (1952), sec. 266)



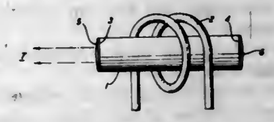
1. A constant output amplifier comprising a first stage and a second stage common-emitter amplifier coupled to an emitter-follower stage, a potential source for said amplifier, the transistor of each stage having base, collector and emitter electrodes the negative pole of said potential source connected to the collector electrode and base electrode of the transistor of each of said stages and the positive pole connected to the emitter electrode of the transistor of each of said stages, the signal input applied across the base and emitter of said first stage and output signal taken at the emitter of the emitter-follower, a negative feedback loop including a series connected capacitor and feedback element coupling the emitter of said emitter-follower to the emitter of the first stage of the common-emitter amplifier, the feedback element comprising a light sensitive resistor having series connected tungsten lamps faced in its surface, a voltage multiplier-rectifier, a D.-C. amplifier, the input of said rectifier coupled to the emitter of the emitter-follower and its output applied across the base and emitter electrodes of the D.-C. amplifier the emitter electrode of the D.-C. amplifier being connected to the positive pole of said potential source, the series connected lamps having one terminal connected to the negative pole of said potential source and the other terminal connected to the collector of the D.-C. amplifier, the resistance of the light sensitive resistor varying in response to the illumination intensity of the lamps whereby the degree of negative feedback is controlled in proportion to the signal output level of the amplifier and control response time means for the D.-C. amplifier.

3,225,305
SYMMETRICAL TRANSISTOR AMPLIFIER WHICH IS SELF-COMPENSATING WITH RESPECT TO CHANGES IN TEMPERATURE
Franklin F. Offner, 1890 Telegraph Road, Deerfield, Ill.
Original application Apr. 29, 1954, Ser. No. 426,325, now Patent No. 3,018,444, dated Jan. 23, 1962. Divided and this application Jan. 3, 1962, Ser. No. 164,020
1 Claim. (Cl. 330—30)



In a symmetrical transistor type amplifier producing an output in response to the difference between two signals, and which is self-stabilizing with respect to change in temperature, the combination comprising first and second transistors of the same polarity type, said transistors each including base, emitter and collector elements, circuit means interconnecting the emitters of said transistors, a resistor element connected in common to said emitters, the connection of said resistor element to said emitters being such that the sum of the currents of said transistors flows therethrough, circuit means connecting a first direct current potential of a selected polarity to said resistor element, circuit means connecting a second direct current potential having a polarity opposite to that of said first potential to the collectors of said transistors, a second resistor element connected between the collector of at least one of said transistors and its respective direct current potential, means connecting the two signals respectively to the bases of said transistors, and an output connection from the collector of one of said transistors to establish a temperature stabilized output representative of the difference between the two signals.

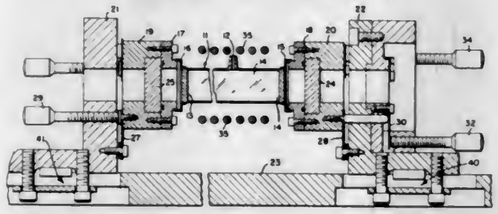
3,225,306
OPTICAL MASER USING TRIVALENT NEODYMIUM IONS IN A CALCIUM TUNGSTATE HOST LATTICE
Leo F. Johnson, Plainfield, and Kurt Nassau, Springfield, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Sept. 19, 1961, Ser. No. 139,266
4 Claims. (Cl. 331—94.5)



1. An optical maser comprising a negative temperature medium consisting essentially of a substantially monocrystalline calcium tungstate host lattice in which a portion of the calcium ions have been replaced by neodymium

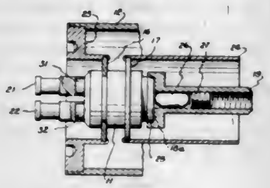
ions in the trivalent state, the portion of calcium ions so replaced being in the range of from 0.01 percent to 5 percent, means for producing a population inversion between a pair of optically connected energy levels of said neodymium ions, and means for stimulating coherent emission at the wavelength corresponding to the energy separation of said levels.

3,225,307
OPTICAL MASER USING A LIQUID RARE-EARTH CHELATE
Samuel I. Weissman, St. Louis, Mo. (6926 Princeton, University City, Mo.)
Filed Feb. 12, 1962, Ser. No. 172,707
5 Claims. (Cl. 331—94.5)



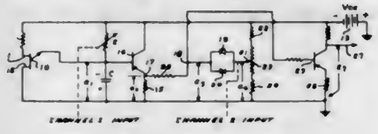
1. In an optical providing a housing adapted to contain a liquid and providing a resonant optical cavity for light emitted from the liquid, a liquid solution of a chelate of a rare-earth metal of the lanthanide series disposed in said housing, a source of activating light, means admitting said light to the solution to excite the chelate molecules in said solution thereby stimulating the emission of fluorescent light, and means permitting egress of said stimulated light.

3,225,308
TEMPERATURE COMPENSATED RESONANT CAVITY STRUCTURE
Charles A. Beaty, Tampa, Fla., assignor to RFD, Inc., Tampa, Fla.
Filed Feb. 3, 1964, Ser. No. 342,142
6 Claims. (Cl. 331—98)



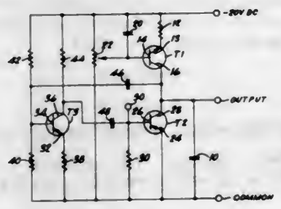
1. A microwave device comprising
an electron tube means of the planar variety having a plurality of electrodes substantially centered in axial alignment with significant spacing therebetween,
at least one of said electrodes including a flexible resilient planar support member, the flexure condition of which determines an interelectrode spacing;
means for energizing said electron tube means to produce an output;
means for utilizing the output of said electron tube means when energized;
temperature compensation means adapted to change the flexure condition of said planar support member in response to temperature deviations of said microwave device,
said temperature compensation means including a hollow sleeve member having a selected axis and attached to the edge of said planar support member in axial alignment with said plurality of electrodes,
said hollow sleeve being of a material having a relatively high thermal coefficient of expansion;
a dimensionally stable elongated bar member disposed within said hollow sleeve with one end in contact with said planar support member;
said bar member being adapted for free movement relative to said hollow sleeve;
and bar member holding means connected to said hollow sleeve and in physical contact with the other end of said bar member,
said holding means being adapted to hold said bar member under compression force against said planar support member such that said planar support member has a predetermined reference flexure condition.

3,225,309
PULSE WAVE GENERATOR WITH INDEPENDENT CONTROL OF PULSE REPETITION FREQUENCY AND DUTY CYCLE
John H. Phelps, Liverpool, N.Y., assignor to the United States of America as represented by the Secretary of the Air Force
Filed Dec. 5, 1963, Ser. No. 328,438
1 Claim. (Cl. 331—111)



A pulse wave generator for use as a transmitter providing two independent information transmission channels over a single transmission path, said generator comprising: means providing first and second conductors having a fixed direct voltage therebetween; a resistor variable in value as an analog of the information to be transmitted over one of said channels, one end of said resistor being connected to said first conductor and the other end being connected through a capacitor to said second conductor, and a unijunction transistor having two base terminals and an emitter terminal, one of said base terminals being connected to said first conductor, the other base terminal being connected to said second conductor and the emitter terminal being connected to the junction of said variable resistor and said capacitor, whereby a constant amplitude sawtooth voltage wave is generated across said capacitor the frequency of which depends upon the instantaneous value of said variable resistor; a limiting network having an input terminal and an output terminal, a resistor connected between said input and output terminals, an adjustable potential divider connected between said first and second conductors providing a point of reference potential relative to said second conductor the value of which reference potential is variable as an analog of the information to be transmitted over the other of said channels, and a pair of parallel connected oppositely poled semiconductor diodes connected between said output terminal and said point of reference potential, said diodes being alike and of the type having a high impedance for forward potentials below a certain value and a low impedance for forward potentials above this value; means coupled between said capacitor and said limiting network for applying said sawtooth wave between the input terminal of said limiting network and said second conductor; a transistor having its collector connected through a collector resistor to said first conductor, its emitter connected through an emitter resistor to said second conductor and its base connected to the output terminal of said limiting network, whereby the waveform appearing at the output terminal of the limiting network is clipped by the process of emitter cutoff and amplified, resulting in a substantially rectangular pulse wave appearing between said collector and said second conductor; and an output circuit constituting said single transmission path connected between said collector and said second conductor for receiving said substantially rectangular pulse wave, the repetition rate of said pulse wave being representative of the information in one of said channels and the duty cycle thereof being representative of the information in the other of said channels.

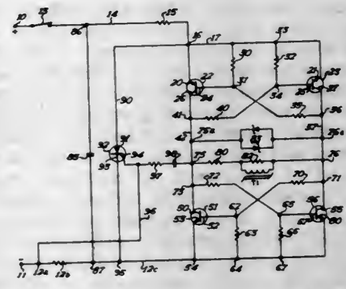
3,225,310
AVALANCHE-TRIGGERED SAWTOOTH GENERATOR
Boyd L. Stratton, Woodside, and Donald E. Morgan, Mountain View, Calif., assignors to Ampex Corporation, Redwood City, Calif., a corporation of California
Filed Jan. 7, 1964, Ser. No. 336,168
5 Claims. (Cl. 331—111)



1. A circuit for generating sawtooth waveforms including: a charging capacitor, an avalanche-breakdown off-on conducting element having first and second electrodes connected in parallel with said capacitor and having a third control electrode, said conducting element being conductive in response to a predetermined threshold breakdown potential difference between said first and third electrodes, means coupled to said capacitor to supply charging current thereto, said current charging said capacitor to establish said predetermined breakdown potential difference whereupon said conducting element is rendered conductive to discharge said capacitor and a feedback circuit coupled between said first and third electrodes, said feedback circuit including sensing means coupled to said first electrode for sensing the initiation and termination of discharge of said capacitor and responsively generating a signal persisting for the duration of discharge, and switched bias means coupled to said sensing means and to said third electrode for applying a bias thereto responsive to said signal to maintain said predetermined threshold potential until said discharge is terminated.

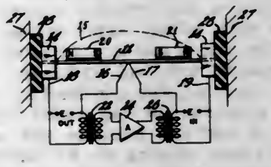
3,225,311
PRESET CIRCUIT FOR A SOLID STATE MAGNETIC OSCILLATOR
Roman C. Ruhland, Minneapolis, Minn., assignor to Honeywell Inc., a corporation of Delaware
Filed Nov. 14, 1962, Ser. No. 237,550
6 Claims. (Cl. 331—113)

1. Apparatus for presetting the magnetic state of the core of a semiconductor magentic timer oscillator to a predetermined saturation point after the removal of the energizing potential therefrom, comprising:
semiconductor oscillator means including saturable core timing means energized from a source of potential;
semiconductor current control means having a control electrode and a pair of output electrodes said current control means having a normally non-conductive state and being operative by a suitable signal to low impedance conductive condition;
means interconnecting said output electrodes of said current control means with said oscillator means so as to provide a current path parallel with said oscillator means when said current control means is in the low impedance conductive condition;
means connecting the output signal from said oscillator means to said control electrode;



capacitor energy storage means connected in parallel with said oscillator means;
and switching means for disconnecting said source of potential from said oscillator means, whereupon said capacitor energy storage means provides sufficient potential to said oscillator means to continue oscillation therein for the remainder of the cycle until the signal output therefrom causes said semiconductor current control means to become conductive to discharge said capacitor means and quench said oscillation.

3,225,312
MAGNETOSTRICTIVE RESONATOR OF THE "WIEDEMANN EFFECT" TYPE
Jacob Tellerman, Bayside, N.Y., assignor to Tempo Instrument, Incorporated, Plainview, N.Y., a corporation of New York
Filed Sept. 10, 1963, Ser. No. 307,850
14 Claims. (Cl. 331—157)

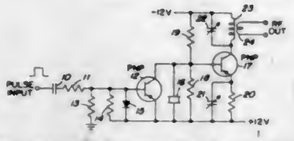


1. A magnetostrictive device comprising in combination:
(a) an elongated magnetostrictive rod;
(b) a fixed pair of spaced reflecting masses clamped to said rod;
(c) signal input means connected to one of said reflecting masses and a terminal point on said rod;
(d) signal output means connected to the other of said reflecting masses and a terminal point on said rod; and
(e) a pair of magnets adapted to longitudinally magnetize said rod, each one of said pair of magnets being positioned between a different one of said reflecting masses and a said terminal point.

3,225,313
PULSE TRIGGERED VHF CRYSTAL CONTROLLED OSCILLATOR

William D. Rexroad, Cedar Rapids, Iowa, assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa

Filed Apr. 12, 1963, Ser. No. 272,582
1 Claim. (Cl. 331—173)



A pulse controlled crystal RF oscillator system including: D.C. pulse input terminal means; a voltage ground source; RF output terminal means; RF signal generating means with a crystal; a first transistor including an emitter and a collector connected to two points of said RF signal generating means at opposite sides of the crystal; means for coupling D.C. input pulses to the base of said first transistor for bias control with D.C. pulses and no signal input for conduction and nonconduction between said emitter and said collector of said first transistor; a second transistor as amplifying means in said RF signal generating means; voltage biasing means; circuit means including feedback means and interconnecting the various components of said RF signal generating means including, said second transistor amplifying means, said voltage bias means, impedance means for developing bias, and including tuned subcircuit means; means coupling circuitry of the RF signal generating means to said RF output terminal means; and, wherein said crystal in said RF signal generating means is a piezoelectric crystal connected between the emitter and collector of said first transistor; said means for coupling D.C. input pulses from said D.C. pulse input terminal means to the base of the first transistor includes, serially, a capacitor and a first resistor; a second resistor connected between the base of said first transistor and said voltage ground source; a third resistor connected in parallel with a solid state diode between the base and the emitter of the first transistor; said voltage biasing means includes a positive voltage supply connected to the emitter of said first transistor, one side of the crystal, the third resistor, and said diode; a minus voltage supply connected through impedance means to the collector of the first transistor and the other side of the crystal; said tuned subcircuit means includes a tuned parallel capacitor and resistive subcircuit connected between one of said voltage supplies and said second transistor, and a tuned capacitive and inductive subcircuit connected between the other voltage supply and said second transistor; with the base of said second transistor having a common connection with said crystal and the collector of said first transistor; with said feedback means including the base connection of said second transistor with the collector of said first transistor and said crystal; and with said means coupling the RF oscillator to said RF output terminals being a transformer coupling from the tuned capacitor and inductive subcircuit.

3,225,314
MODULATION SYSTEM FOR A MICROWAVE TUBE HAVING DEPRESSED COLLECTOR

Sheldon I. Rambo, Baltimore, Md., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

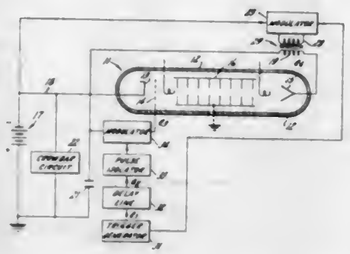
Filed Oct. 8, 1963, Ser. No. 314,822
2 Claims. (Cl. 332—7)

1. A modulation system for a microwave tube comprising;

a microwave tube including a cathode electrode, a grid electrode, and a collector electrode,

a single power supply connected between said cathode electrode and said collector electrode,

a storage capacitor connected between said cathode electrode and one terminal of said power supply, and pulsing means for providing to said grid electrode and



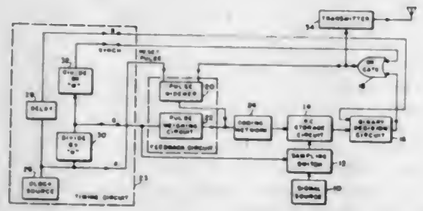
said collector electrode, said collector electrode being connected to said pulsing means through a line-type pulse modulator.

2. A modulation system as set forth in claim 1 wherein a crowbar circuit is connected across said storage capacitor for protecting said microwave tube.

3,225,315
DIFFERENTIAL CODE MODULATOR

Johann Holzer, Elberon, N.J., assignor to the United States of America as represented by the Secretary of the Army

Filed July 5, 1963, Ser. No. 293,216
8 Claims. (Cl. 332—11)
(Granted under Title 35, U.S. Code (1952), sec. 266)

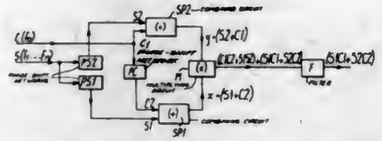


1. A differential code modulator comprising a source of input signal voltage, a source of periodic pulses, means for generating pulses periodically at a prescribed submultiple of said periodic pulses, means for sampling said input signal voltage by said sub-multiple pulses, means responsive to said sampled signal for producing an attenuated replia of said input signal delayed with respect thereto by said sub-multiple interval, means including a coding network for producing a signal approximating said attenuated replica but opposite in polarity thereto, said attenuated replica producing means being responsive to said approximated signal whereby there is produced an error signal at the output of said attenuated replica producing means, means for sampling said error signal at said periodic pulse rate, means responsive to said sampled error signal for producing pulses of constant amplitudes when said sampled error signal exceeds a prescribed level, said last mentioned means having its output in circuit with the opposite polarity signal approximating means.

3,225,316
PHASE-SHIFT SINGLE SIDE-BAND MODULATORS

Wolja Saraga, Orpington, Kent, England, assignor to Associated Electrical Industries Limited, London, England, a British company

Filed Nov. 27, 1961, Ser. No. 155,049
Claims priority, application Great Britain, Dec. 2, 1960, 41,574/60
6 Claims. (Cl. 332—45)



1. A modulation circuit arrangement comprising

a first combining circuit connected to receive a carrier oscillation signal and an alternating current signal to be frequency translated and operable to produce a first combination signal composed of said carrier oscillation signal and alternating current signal;

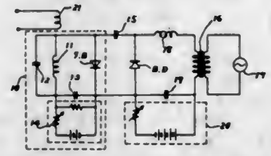
a second combining circuit connected to receive said carrier oscillation signal and said alternating current signal each phase displaced with respect to the corresponding signal as received by the first combining circuit, said second combining circuit being operable to produce a second combination signal composed of said carrier oscillation signal and alternating current signal; phase shifting means for giving to said alternating current signal as received by the two combining circuits and also to the carrier oscillation signal as received thereby a selected phase difference;

and multiplying means connected to receive said first and second combination signals and operable to multiply them together, the amplitudes and phase differences of said carrier oscillation signal and alternating current signal giving a resultant output signal from the multiplying means containing frequency components corresponding to frequencies of one side-band of the modulation product of said carrier oscillation signal and said alternating current signal.

3,225,317
NEGATIVE RESISTANCE CIRCUIT UNIT AND CIRCUITS THEREFOR

Junichi Yasuda and Motomu Tadama, Tokyo, Japan, assignors to Sony Corporation, Tokyo, Japan, a corporation of Japan

Filed Feb. 28, 1961, Ser. No. 92,396
Claims priority, application Japan, Mar. 4, 1960, 35/7,168
14 Claims. (Cl. 332—52)

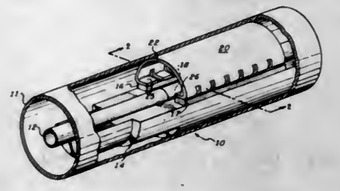


14. A modulator comprising an oscillator generating a signal and having a tunnel diode, a connecting means connected to said tunnel diode, a transducer having a backward diode connected to said oscillator through said connecting means, a bias source supplying a bias voltage to said backward diode, and a signal source supplying a signal to said backward diode transducer whereby said backward diode transducer varies the amplitude of said oscillator signal.

3,225,318
HEAT TRANSFER MEMBER FOR COAXIAL WAVEGUIDE DEVICE

William C. Helthaus, Dunedin, Fla., assignor to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware

Filed Nov. 21, 1962, Ser. No. 239,187
11 Claims. (Cl. 333—24.2)



1. Means for providing a heat transfer path from an internally located element that is disposed between and thermally isolated from the conductors of a TEM mode transmission line that has at least first and second conductors, said means comprising,

a head transfer member having a transverse cross-sectional shape that includes a first region that conforms to and is in surface contact with a large transverse area of one of said conductors throughout the region of the transmission line occupied by said element,

the transverse cross-sectional shape of said member also including a second region in good thermal contact with said internally located element, thereby to provide a good heat transfer path from said element to said one conductor,

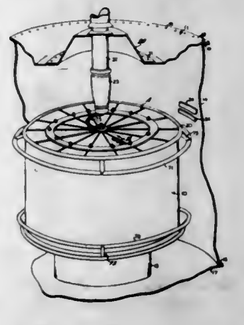
said heat transfer member having high thermal conductivity and being transversely spaced from the other of said conductors to present power breakdown therebetween,

said member being thin throughout its transverse cross-sectional shape so as not to constitute a significant discontinuity in said transmission line.

3,225,319
SHUNT REACTORS

Anthony Barclay Trench, Galt, Ontario, Canada (Toronto, Ontario, Canada)

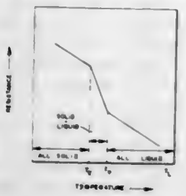
Filed Jan. 25, 1963, Ser. No. 254,020
4 Claims. (Cl. 336—180)



1. An air core shunt reactor comprising a plurality of concentric, radially spaced coils of equal length electrically connected in parallel and confined between a pair of axially spaced, interconnected, opposed end members, such coils each comprising a plurality of individual annular elements disposed in axial spaced relationship and electrically connected in series, terminal means disposed on the axis of said coils at each end of the latter for elec-

trically connecting the parallel coils of said reactor in series in an electrical circuit, said terminal means being secured one to each of said end members, a casing enclosing said reactor, an insulating pedestal disposed between the lower end of said coil and the casing thereby to support said coils in spaced relationship with respect to said casing, and a pair of metallic annular members circumscribing the outermost coil in radially spaced relationship with respect thereto, said annular members being disposed respectively adjacent opposed ends of the coils.

3,225,320
TEMPERATURE-SENSITIVE ELEMENTS
Cyril Solomons, Edina, Minn., assignor to Honeywell Inc., a corporation of Delaware
Filed Dec. 19, 1962, Ser. No. 245,841
4 Claims. (Cl. 338—22)



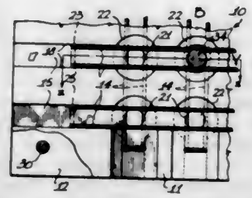
2. A hetero-phase thermistor which provides a continuous incremental indication of a change in electrical resistance over a predetermined temperature range, comprising: a container means including a nonconductive, porous matrix impregnated with a solid, nonconductive, non-eutectic mixture consisting essentially of potassium nitrate and sodium nitrate, and a pair of spaced electrodes contacting said mixture.

3,225,321
ELECTRICAL CONNECTION FOR A RESISTANCE HEATER
Fred S. Walter, Allendale, N.J., assignor to Thermo Electric Co. Inc., Saddle Brook, N.J., a corporation of New Jersey
Filed June 30, 1961, Ser. No. 121,221
4 Claims. (Cl. 338—274)



1. An electrical heater comprising an elongated tubular metallic sheath open at each end, a resistance heating element coaxially positioned in the sheath, insulated therefrom and terminating at both ends externally of the sheath a spaced distance from the respective sheath ends, sealing means at each end of said sheath, at least one of said sealing means comprising a low resistance tubular member in which is fitted and secured one end of the heating element, said member terminating at one end within the sheath and at the other end externally of the sheath, an insulated lead wire having an end fusion bonded in butt fashion to said one end of the resistance element, an H-shaped clamp having one end crimped about said tubular member and the other end crimped about an insulated portion of said lead wire, a sleeve having one end secured to the said sheath and surrounding the tubular member, the end of the lead wire and the clamp, and sealing material substantially filling the sleeve.

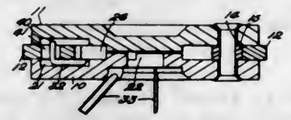
3,225,322
PATCHING BOARD
Bernard J. Reel, Deep River, Ontario, Canada, assignor to Atomic Energy of Canada Limited, Ottawa, Ontario, Canada, a corporation of Canada
Filed Jan. 27, 1964, Ser. No. 340,474
2 Claims. (Cl. 339—18)



1. A patching board comprising a rectangular insulating panel member having side edges and flat opposed front and back surfaces, said front surface having a plurality of parallel grooves therein extending in a direction at right angles with respect to one of said side edges, said back surfaces having a plurality of parallel grooves therein extending in a direction at right angles with respect to the grooves in the front surface, each groove being defined by a flat bottom surface and opposed flat side surfaces disposed perpendicularly with respect to said bottom surface and said front and back surfaces, each groove in the front surface crossing at longitudinally spaced points the grooves in the back surface, the bottom surfaces of the grooves in the front surface being separated from the bottom surfaces of the grooves in the back surface at the points of crossing by web sections, said panel member having a pair of wire receiving bores at each end of each groove extending from the bottom surface of the groove to the opposite surface of the panel member, one bore of each pair being adjacent one side surface of the groove and the other bore of the pair being spaced from said one bore and adjacent the opposite side surface, a length of conductor wire for each groove having its free ends extending from the groove through one pair of the bores, each length of wire extending along the groove juxtaposed one side surface and being looped through the pair of bores opposite the pair of bores receiving the free ends of the wire and back along the groove juxtaposed the other side surface to present a pair of spaced conductors in each groove, the free ends of the wire being wound together at the surface of the panel member opposite to the groove containing the conductors to maintain the pair of spaced conductors under tension, each web section having a peg receiving bore therethrough communicating at opposite ends with one groove in the front surface and one groove in the back surface, each peg receiving bore having its central axis passing between the pair of conductors in each groove with which it communicates and having a diameter greater than the distance between the conductors of one pair, each groove being enlarged in width around each peg receiving bore so that the distance between each side surface of the groove and the bore is greater than the diameter of one conductor, a pair of plate members secured to the panel member and covering said front and back surfaces, said plate members having a plurality of peg receiving bores therethrough of a

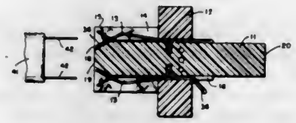
diameter at least as great as said peg receiving bores in said web sections, each bore in each plate member being axially aligned with one peg receiving bore in said web sections, and a plurality of peg members for reception in said axially aligned peg receiving bores, each peg member including a conductor engaging, cylindrical stem portion formed of conducting material and of a diameter to snugly fit in the peg receiving bores in the web sections, and a handle portion connected to said stem and defining a shoulder for engaging one of said plate members when said stem projects through one of the peg receiving bores in said web sections and the bores in said plates aligned therewith.

3,225,323
ELECTRIC SOCKETS AND SOCKET CONTACTS THEREFOR
Stanley Thomas Deakin, Walton-on-Thames, Surrey, England, assignor to Sealectro Corporation, Mamaroneck, N.Y., a corporation of New York
Filed Aug. 20, 1963, Ser. No. 303,226
Claims priority, application Great Britain, Aug. 21, 1962, 32,115/62
2 Claims. (Cl. 339—174)



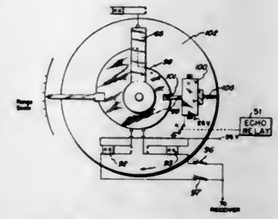
1. A multi-contact electrical socket comprising an insulating base, an insulating rotatable cover thereon and defining therewith an internal cavity, with a central boss, a plurality of strip metal contacts within the cavity, edgeon to the base and radiating from the boss, each contact being doubled on itself at its radially outer end to provide two spaced apart side-by-side limbs of which the radially inner end of one is hook-shaped and held in a recess in the boss and the radially inner end of the other limb is flat and enters into the hook-shape, and co-operating means on the base and the cover for flexing the contacts on rotation of the cover partly to withdraw the flat end from the hook end, access for contact pins into the hook ends being provided.

3,225,324
SOCKET FOR MICRO-MODULES
Walton E. Comfort, Havertown, Pa., assignor to the United States of America as represented by the Secretary of the Army
Filed Mar. 18, 1964, Ser. No. 353,007
5 Claims. (Cl. 339—192)



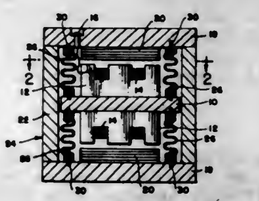
2. A socket connector comprising: an elongated body of insulating material having a plurality of longitudinal slots around the periphery thereof, said body having a working end and a gripping end, each of said slots having a hole in the base thereof approximately midway between said ends, said slots having sidewalls which are low in the vicinity of said holes and which abruptly become higher toward said working end; a plurality of contacts, one being positioned at the base of each of said slots, each of said contacts having two adjacent legs which diverge at one end to form a receptacle for connector pins and which are joined at the end opposite said one end to form a solder tab, one of said legs having a projecting tab which extends into the hole of the slots in which said contact is positioned; and a clamping plate positioned over the portion of said slots having low walls, the solder tab of said contacts extending through said clamping plate and being bent away from said body.

3,225,325
RANGE GATING MEANS
Paul C. Gardiner, Scotia, N.Y., and Lawrence E. Jewett, Springfield, and George Lupton Broomell, Jr., Lower Gwynedd Township, Montgomery County, Pa., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Oct. 4, 1950, Ser. No. 188,470
1 Claim. (Cl. 340—3)



In an echo signalling system of the character described, a transmitter for projecting wave energy, a motorized timing shaft, a circuit including a pinger switch for controlling operation of said transmitter, a pinger cam fixed on said shaft actuating said switch to effect operation of said transmitter during spaced transmission periods separated by listening intervals, a receiver adapted to translate echoes of said projected wave energy, upon reception, into electrical signals, a switch support fixed on said timing shaft, a blanking circuit including a switch carried by said support, a blanking cam adapted upon synchronization with said timing shaft to actuate said blanking switch so as to blank operation of said receiver for a portion of each listening interval, and means synchronizing said blanking cam with said timing shaft upon the receipt of an echo by said receiver.

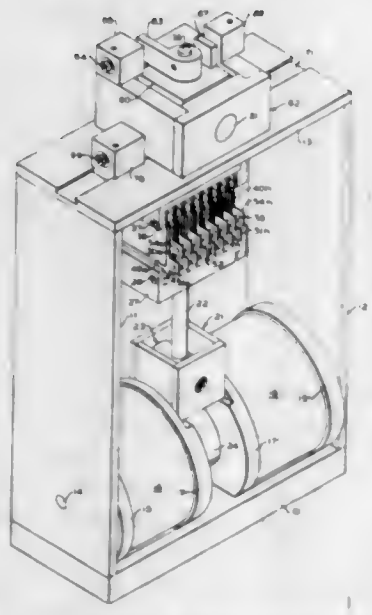
3,225,326
COMBINATION TUBULAR BAFFLE WITH ELECTROACOUSTIC TRANSDUCER
Frank Massa, Cohasset, Mass., assignor, by mesne assignments, to Dynamics Corporation of America, New York, N.Y., a corporation of New York
Filed June 8, 1960, Ser. No. 34,731
21 Claims. (Cl. 340—8)



1. The improvement of an electroacoustic transducer comprising a sealed housing formed of a tubular body having an end plate at each end thereof, a center plate having a pair of axially opposed faces, resilient means suspending said center plate for axial movement between said end plates, a first electromagnetic assembly having a portion mounted on one end plate and a portion mounted on one face of said center plate, a second electromag-

netic assembly having a portion mounted on the other end plate and a portion mounted on the other face of said center plate, magnetizing coil means associated with each one of said electromagnetic assemblies, sealed electrical terminal means in said housing connected to each magnetizing coil means for enabling electrical connection to be established through said housing to said magnetizing coil means.

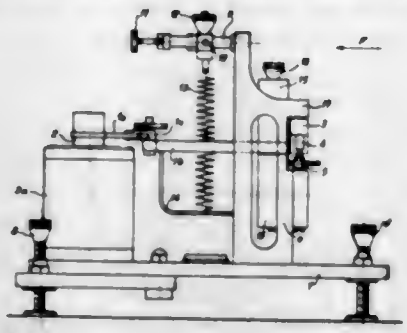
3,225,327
ROTATIONAL SEISMOMETER
John P. Greening and Ralph A. Doubt, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Mar. 16, 1962, Ser. No. 180,098
2 Claims. (Cl. 340—17)



2. A vibration responsive device comprising a housing; first and second magnets secured to said housing; pole pieces of magnetic material secured to said magnets to form first and second annular air gaps spaced from one another and having a common axis; a support secured to said housing; a member pivotally secured to said support for rotational movement relative thereto; a plurality of first capacitor plates secured to one end of said member in parallel spaced relationship with one another; an electrically conductive hollow cylinder secured to the second end of said member to move through said air gaps when said member is rotated relative to said housing, said member being secured to said support at the center of gravity of the assembly formed by said member, said first capacitor plates and said cylinder; a plurality of pairs of second capacitor plates secured to said housing so that each pair of said second plates is parallel to and surrounds a respective one of said first plates and is spaced therefrom; and means secured to said housing to form a magnetic field which extends across said conductive element so that rotation of said member relative to said housing is damped.

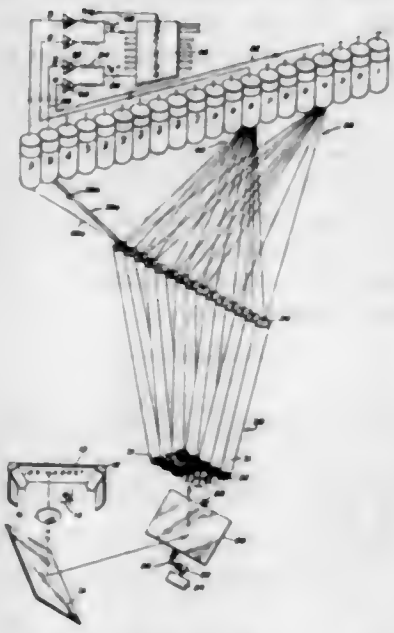
3,225,328
TRANSPORTABLE SEISMOGRAPH
François Lecroart, Paris, France, assignor to Commissariat a l'Energie Atomique, Paris, France
Filed Apr. 10, 1962, Ser. No. 186,438
Claims priority, application France, Apr. 24, 1961, 859,628
3 Claims. (Cl. 340—17)

1. A transportable seismograph, comprising: a stationary frame, heavy lever means, means for pivotally mounting said lever means at one end thereof on said frame about a horizontal axis, said pivotal means including two spaced-apart pivots fast with said one end of said lever and symmetrically located with respect to the vertical midplane of said lever means and fixed bearing means rigid with said frame for receiving said pivots; said pivots being readily separable from said fixed bearing means upon vertical movement of said one end of said lever means; resilient return means on said frame and engaging said lever means for biasing said lever toward a rest



position; means on said frame for creating a magnetic field; a coil carried by said lever at the end thereof opposite said pivotal means for movement in said magnetic field; and optionally actuatable means for engaging and moving said one end of said lever means toward a predetermined abutting position where said pivots are clear from said fixed bearing means.

3,225,329
OPTICAL LOGIC READING MACHINE
Jacob Rabinow, Bethesda, Md., assignor, by mesne assignments, to Control Data Corporation, Minneapolis, Minn., a corporation of Minnesota
Filed Oct. 30, 1963, Ser. No. 320,182
10 Claims. (Cl. 340—146.3)

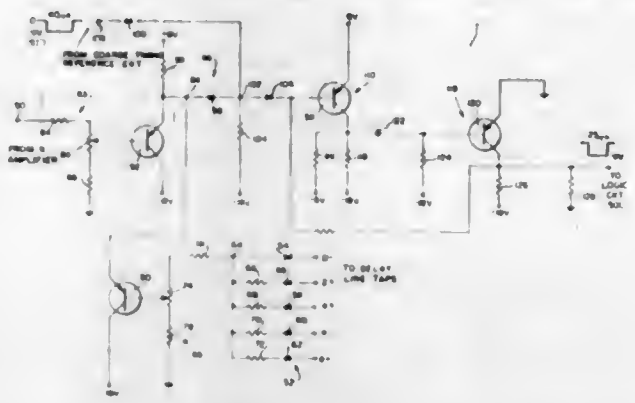


9. In an optical character reading machine for characters on a contrasting background; means for forming an image of one of said characters and its background; a receiving surface on which said image is formed; means to conduct light from discrete parts of said surface on which said image is formed to individual light distribution areas in a manner such that the total of all of said areas emits a dissected image of the character and its background; a group of assertion photocells for the character; a plurality of negation photocells; and optical logic combining means including a group of light conductive members for each character, for optically coupling preselected light distribution areas containing said dissected image to said photocells; each of said groups of members including members coupled between said assertion photocells and preselected distribution areas, and at least one of said groups having one member coupling a predetermined distribution area with a preselected negation photocell.

3,225,330
SIGNAL REJECT CIRCUIT FOR MONITORING MIXED PLURAL SIGNALS

Harvey Rosenberg, Drexel Hill, and John W. Steckert, Hazleton, Pa., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed Feb. 26, 1960, Ser. No. 11,344
8 Claims. (Cl. 340—147)



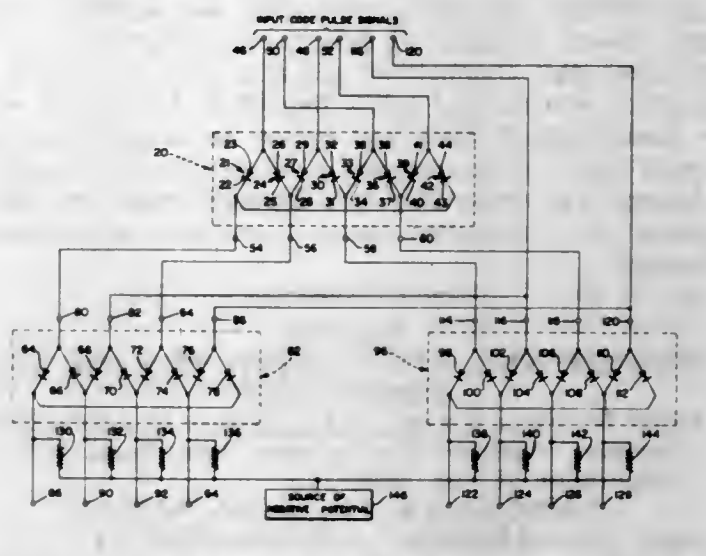
1. A signal reject circuit comprising in combination, a mixer-attenuation means having individual input terminals for receiving a plurality of signals from a dynamic source of electromagnetically stored signals representing an instantaneous pattern voltage waveform, and deliver a mixed-attenuated signal which is a function of the highest magnitude of said plurality of signals, additional attenuation means connected to receive power amplified signals and deliver an additional attenuated signal, buffer-mixer means for receiving both said attenuated signals and for delivering a mixed signal which is equal in magnitude to the higher of said both attenuated signals, AND gating means enabled by a predetermined signal and connected to receive said mixed signal and for delivering a linear gating signal at its output, comparator means connected to receive said gating signal at its input and for electrically comparing the amplitude of said linear gating signal with a fixed reference voltage and for delivering a trigger signal when said fixed reference voltage is exceeded, said fixed reference voltage being chosen in relation to the amplitude of said monitored signals so as to cause a trigger signal to be delivered when the instantaneous peak of one of said monitored signals exceeds a desired level, and univibrator means coupled to said comparator means for delivering an output monitoring signal of fixed time width upon receipt of the leading edge of said triggering signal.

3,225,331
DIODE MATRIX FOR DECODING PULSE SIGNALS

Robert Steeneck, New York, N.Y., assignor to The Western Union Telegraph Company, New York, N.Y., a corporation of New York

Filed June 14, 1961, Ser. No. 117,113
7 Claims. (Cl. 340—166)

1. In a mixing module matrix an assemblage comprising a first output unit means; a second output unit means; a third output unit means; a fourth output unit means; a fifth output unit means; a sixth output unit means; a seventh output unit means; an eighth output unit means; a ninth output units means; a tenth output unit means; an eleventh output unit means; a twelfth output unit means; a thirteenth output unit means; a fourteenth output unit means; a fifteenth output unit means; a sixteenth output unit means; a first intermediate unit means coupled to feed said third, fourth, seventh, eighth, eleventh, twelfth, fifteenth, and sixteenth output unit means; a second intermediate unit means coupled to said first intermediate unit to receive a common signal and coupled to feed said first, second, fifth, sixth, ninth, tenth, eleventh and twelfth output unit means; a third intermediate unit means coupled to feed said ninth, tenth, eleventh, twelfth, thirteenth, fourteenth, fifteenth, and sixteenth output unit means; a fourth intermediate unit means coupled to said third intermediate unit means to receive a common

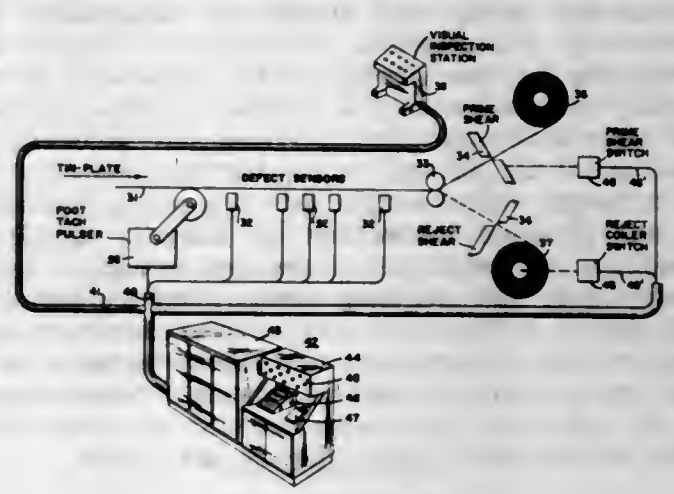


signal and coupled to feed said first, second, third, fourth, fifth, sixth, seventh, and eighth output unit means; a first input unit means coupled to feed said first and second intermediate unit means; and a second input unit means coupled to feed said third and fourth intermediate unit means, the sixteen output units means, four intermediate unit means and two input units means being twenty-two identical circuit modules.

3,225,332
DATA ACCUMULATION SYSTEMS

Frederick C. Hallden, Huntington, Louis S. Conover, Jr., North Babylon, Julius J. Farkas, Huntington Station, and Curtis H. Richmond, Plainview, N.Y., assignors to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware

Filed Feb. 3, 1961, Ser. No. 87,037
5 Claims. (Cl. 340—172.5)



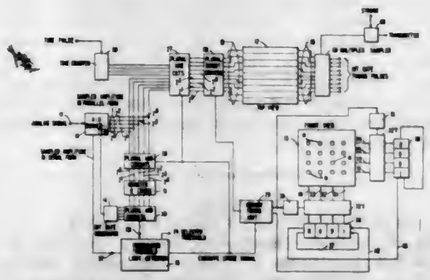
1. In a data accumulation system in which different characteristics of a moving strip of material are detected at a distance from a predetermined point, the combination which comprises a loop storage system for recirculating signals applied thereto, means for establishing a plurality of data channel intervals in a loop cycle, means for establishing a plurality of sub-intervals within said channel intervals, means for applying input signals representing different strip characteristics to said loop storage system in respective different channel intervals and in sub-intervals therein corresponding to the distances from

said predetermined point at which the characteristics are detected, means for shifting signals in said loop storage system to successive sub-intervals in respective channels in timed relationship with the strip movement, means for extracting signals from the loop storage system when the signals arrive at predetermined sub-intervals in respective channels, a second loop storage system having at least one data accumulating channel and an auxiliary channel, means for establishing a plurality of cyclically recurring data channels in said accumulating and auxiliary channels, means for applying said extracted signals to corresponding data channels of said accumulating channel to produce accumulated totals thereof in accordance with a predetermined code, and means for transferring said totals from said accumulating channel to said auxiliary channel in corresponding data channels thereof and eliminating the transferred totals from said accumulating channel.

3,225,333
DIFFERENTIAL QUANTITIZED STORAGE AND COMPRESSION

Albert W. Vinal, Owego, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Dec. 28, 1961, Ser. No. 162,816
15 Claims. (Cl. 340—172.5)



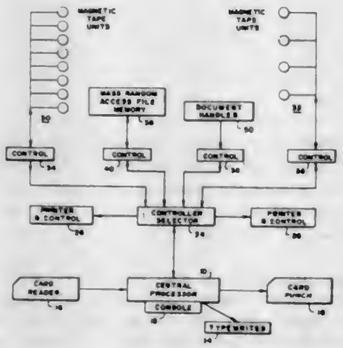
1. A system for compressing redundant information by storing samples of the redudant information only when significant changes in information occurs comprising a memory for storing samples of the redundant information along with identifying information for identifying the samples, a comparison means for comparing the most recently stored sample with the redundant information as it is received, deviation information generated by said comparison means for indicating the deviation of the currently received information from the most recently stored sample, detecting means responsive to said deviation information for detecting significant changes in the redundant information, an execute signal generated by said detecting means when the deviation information is in excess of a selected threshold, said memory being responsive to said execute signal so as to store the currently received information as a new sample of the redundant information and also to store identifying information for identifying the new sample.

3,225,334
DATA PROCESSING SYSTEM INCLUDING PLURAL PERIPHERAL DEVICES WITH MEANS FOR THE SELECTION AND OPERATION

John H. Fields, Phoenix, Ariz., and Charles H. Propster, Jr., San Jose, and David W. Masters, Palo Alto, Calif., assignors to General Electric Company, a corporation of New York

Filed May 1, 1962, Ser. No. 191,619
10 Claims. (Cl. 340—172.5)

1. In an electronic data processing system comprising a central processor and a plurality of peripheral devices, said central processor including data storage means containing input and output instructions, said last named instructions comprising a plurality of instruction words, an instruction word comprising a prescribed number of binary bits in a given combination, each of said peripheral devices having discrete control means associated therewith; selecting means in circuit with said central processor and said control means for enabling communication between said central processor and said peripheral devices to initiate the execution of said instructions and for enabling communication between said peripheral devices and said central processor during the execution of said instructions, a plurality of first means connecting said selecting means and each of said control means respectively, each of said first connecting means represent-



ing a different configuration of a chosen number of bits, one of the instruction words including said configuration, means included in said selecting means for effecting the transmission of said bits in one of said configurations in response to the occurrence of said one instruction word to effect the selection for operation of a particular peripheral device, a plurality of second means connecting said selecting means with each of said control means, a second of said words effecting the type operation that said selected peripheral device is to perform and a third of said words indicating the starting location in the data storage means of said peripheral device operation, said second and third words being transmitted to said control means over said second connecting means.

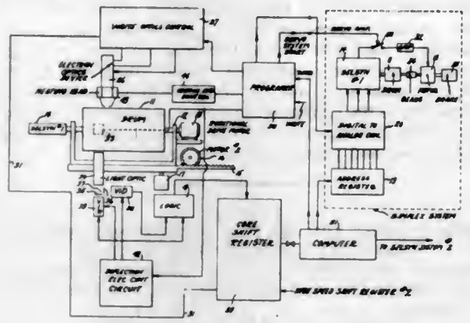
3,225,335
THERMOPLASTIC FILM DATA STORAGE EQUIPMENT

William C. Hughes, Scotia, John E. Wolfe, Schenectady, and William E. Glenn, Scotia, N.Y., assignors to General Electric Company, a corporation of New York

Continuation of abandoned application Ser. No. 756,775, Aug. 25, 1958. This application Mar. 7, 1963, Ser. No. 263,442
26 Claims. (Cl. 340—173)

1. In a data storage device, the combination of an impressionable solid thermoplastic film recording medium, an electron writing apparatus for impressing electrons on said impressionable solid thermoplastic recording medium in desired patterns to form permanent light modifying gratings thereon, readout means for inspecting said impressionable recording medium having light modifying gratings formed thereon in intelligence conveying patterns by electron writing for deriving an output electric signal indicative of such intelligence, said readout means comprising an optical assembly for projecting an optical image of the intelligence patterns formed on the impressionable medium, color separating means, and

electron optical means positioned to view such projected optical image through said color separating means for deriving output electric signals representative of the intelligence formed in said patterns, automatic positioning means for moving said impressionable medium in two

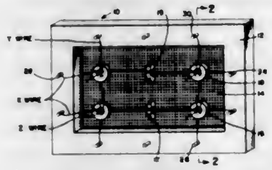


transverse directions in response to a control signal to position said medium in any desired location with respect to said electron beam writing apparatus and said readout means, and position control means for accurately controlling the operation of said positioning means.

3,225,336
MAGNETIC CORE MATRIX

Robert J. Foster, Box 373, 338 Charring Cross Drive, Munroe Falls, Ohio

Filed Jan. 29, 1962, Ser. No. 169,419
4 Claims. (Cl. 340—174)



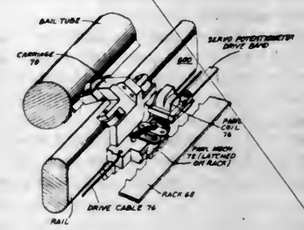
4. A magnetic matrix comprising
a plurality of electrically insulative sheets of mesh screen arranged in side by side relationship,
each sheet having at least one magnetic core adhesively secured thereto,
an electrical conductor means coupling the cores of the respective sheets,
and frame means secured to and surrounding the core containing sheets of mesh screen holding the sheets in spaced parallel relation and forming a conduit for the passage of cooling fluid through said sheets of mesh screen.

3,225,337
POSITIONING MECHANISM

Marvin Jacoby, 7032 Lafayette Ave., Fort Washington, Pa.

Filed Apr. 20, 1960, Ser. No. 23,529
9 Claims. (Cl. 340—174.1)

8. In combination, a positioning mechanism for accurately positioning a member comprising a first device connected to said member, said first device adapted to be positioned approximately to a desired location; a second device adapted to be moved a short distance with an accuracy exceeding that of said first device; means for cooperatively engaging said first and second devices with each other whereby movement of said first device and movement of said second device act to position said member in a rough and fine adjustment respectively;

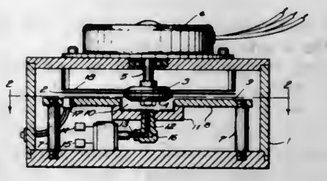


means for receiving an electrical signal; means responsive to a portion of said electrical signal for moving said second device; and means responsive to said entire signal for moving said first device.

3,225,338
MAGNETIC DISC STORAGE DEVICE

Robert Kelner, Concord, Robert Pearson, Beverly, Roger K. Lee, Watertown, and Ascher H. Shapiro, Arlington, Mass., assignors to Laboratory for Electronics, Inc., Boston, Mass., a corporation of Delaware

Filed Mar. 21, 1961, Ser. No. 97,303
9 Claims. (Cl. 340—174.1)



1. A magnetic recorder utilizing a flexible recording disc and a plurality of magnetic transducers, each one of the magnetic transducers having substantially the same sensitivity, comprising, means for mounting the flexible recording disc and each one of the plurality of magnetic transducers in a fluid, the magnetic transducers being disposed in a plane at different radial distances from the center of the flexible recording disc, means for rotating the disc to create dynamic, elastic and fluid forces to cause the disc to rotate at a small distance from the plane, and means for regulating the fluid pressure gradient between the disc and the plane to establish an equilibrium condition between the dynamic, elastic and fluid forces on the disc wherein the spacing between each one of the magnetic transducers and the surface of the disc is directly proportional to the radial distance of each one of the magnetic transducers from the center of the disc.

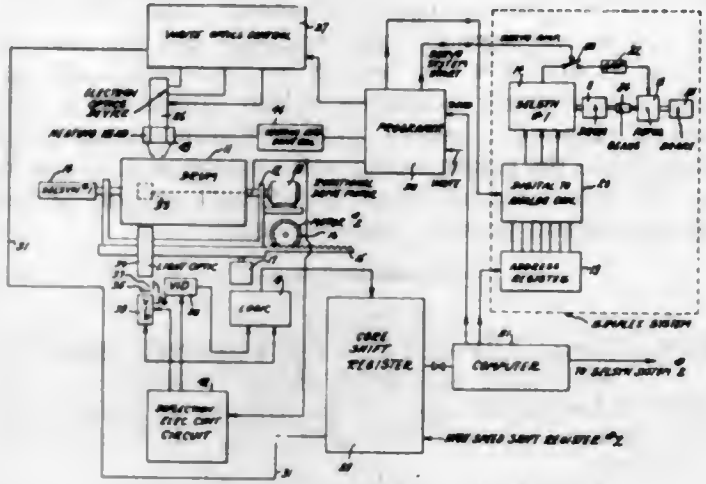
3,225,339
SYNCHRO TAKE-OFF DEVICE

Robert M. Welsh, Jr., 171 S. Clearview Ave., Langhorne, Pa.

Filed Dec. 31, 1963, Ser. No. 334,949
10 Claims. (Cl. 340—198)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. In a range indicating system the combination comprising:
first, second and third transmitting synchros each including a rotor and a stator,
corresponding first, second and third receiving synchros each including a rotor and a stator,

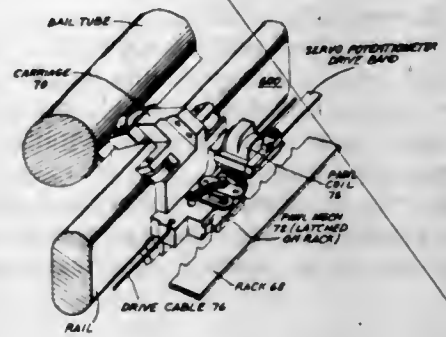
electron optical means positioned to view such projected optical image through said color separating means for deriving output electric signals representative of the intelligence formed in said patterns, automatic positioning means for moving said impressionable medium in two



transverse directions in response to a control signal to position said medium in any desired location with respect to said electron beam writing apparatus and said readout means, and position control means for accurately controlling the operation of said positioning means.

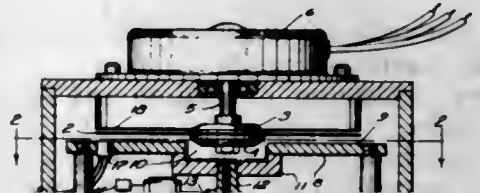
3,225,336
MAGNETIC CORE MATRIX
Robert J. Foster, Box 373, 338 Charring Cross Drive, Munroe Falls, Ohio
Filed Jan. 29, 1962, Ser. No. 169,419
4 Claims. (Cl. 340—174)

cooperatively engaging said first and second devices with each other whereby movement of said first device and movement of said second device act to position said member in a rough and fine adjustment respectively;



means for receiving an electrical signal; means responsive to a portion of said electrical signal for moving said second device; and means responsive to said entire signal for moving said first device.

3,225,338
MAGNETIC DISC STORAGE DEVICE
Robert Kelner, Concord, Robert Pearson, Beverly, Roger K. Lee, Watertown, and Ascher H. Shapiro, Arlington, Mass., assignors to Laboratory for Electronics, Inc., Boston, Mass., a corporation of Delaware
Filed Mar. 21, 1961, Ser. No. 97,303
9 Claims. (Cl. 340—174.1)



relays means electrically connected to said third transmitting synchro and operable to move a series of switches between an activated and a deactivated position,

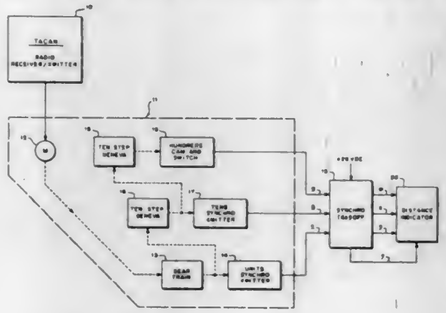
said switches when in the activated position electrically connecting each transmitting synchro to the corresponding receiving synchro,

said first transmitting synchro electrically connected to a control transformer including a rotor and a stator,

amplifier means operated by said control transformer,

motor means controlled by said amplifier means and driving a gear train,

said gear train mechanically coupled to the rotor of a fourth synchro transmitter, said synchro transmitter having the stator thereof electrically connected to



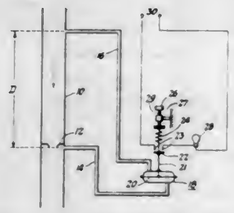
said first receiving synchro when said switches are in the deactivated position,

a geneva mechanism coupled to and driven by said gear train,

a fifth synchro transmitter including a rotor and a stator having the rotor thereof mechanically coupled to said geneva mechanism and having the stater thereof electrically connected to said second receiving synchro when said switches are in the deactivated position,

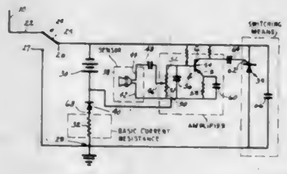
and said stator of said second transmitting synchro being electrically connected to said third receiving synchro when said switches are in the deactivated position.

3,225,340
SELF-COMPENSATING LOW VELOCITY TRIP OR ALARM DEVICE
Edward L. Kochey, Jr., Colebrook, Conn., assignor to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware
Filed Sept. 26, 1961, Ser. No. 140,850
8 Claims. (Cl. 340—239)



1. A velocity measuring device, a vertical pipe through which a fluid is flowing, a restriction in said pipe for developing a difference in pressure in said fluid having a definite relation to the velocity of the fluid, a first pressure tap below and on the downstream side of the restriction, a second pressure tap above and on the upstream side of said restriction, the vertical distance between said first and second pressure taps being such that when the fluid flowing through the pipe is at a predetermined velocity, the pressure differential between said first and second taps is zero, regardless of the temperature or density of the fluid flowing, pressure responsive means connected to the first and second pressure taps for comparing the pressure existing at said first and second pressure taps, and normally de-energized indicating means connected to the pressure responsive means, said indicating means being connected to the pressure responsive means in such a manner that it is energized when the pressure existing at said first and second pressure taps are equal.

3,225,341
SIGNALLING APPARATUS INCLUDING REMOTE BATTERY RECHARGING SYSTEM
Patrick J. Devine, St. Louis, Mo., assignor to Potter Electric Signal Company, St. Louis, Mo., a corporation of Missouri
Filed Jan. 20, 1964, Ser. No. 338,787
5 Claims. (Cl. 340—261)



1. For use with a central observation station from which monitored current is transmitted from a direct current source and over a signalling wire to a remote station having an electrically powered component,

the improved remote station circuitry, comprising

an input terminal for connection to the signalling wire,

a reference potential terminal,

first and second circuits branching from said input terminal and converging to said reference potential terminal,

said first circuit comprising

a rechargeable remote station battery for supplying electrical power to such electrical component at the remote station and rechargeable by current supplied thereto by the signalling wire said battery having terminals connectable to such electrically powered component, unidirectional current conducting means in said first circuit in series with said remote station battery, to isolate the flow of the current of said remote station battery from said second circuit and

an electrical element in series with said rechargeable battery,

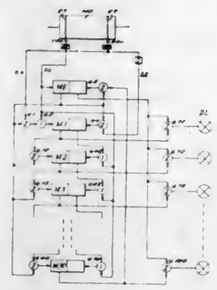
said element being characterized by having resistance of a value selected to establish a predetermined basic current in the first series circuit and the signalling wire, by which a normally-persistent condition at the remote station is identifiable at the observation station,

said second circuit comprising

switching means for maintaining said second circuit normally nonconducting, and

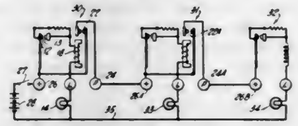
sensor means electrically coupled to said switching means for rendering said second circuit conducting when an abnormal condition is detected at the remote station, thereby to increase the current flow in the signalling wire.

3,225,342
SHIFT REGISTER WITH MEANS FOR DISPLAYING STORED INFORMATION
Thomas Harold Clark, Taplow Court, Taplow, England, assignor to British Telecommunications Research Limited, Taplow, England, a British company
Filed July 1, 1959, Ser. No. 824,363
Claims priority, application Great Britain, July 4, 1958, 21,522/58
6 Claims. (Cl. 340—324)



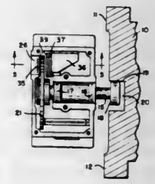
1. In a display arrangement for a waveform composed of a predetermined number of elements each corresponding to one or other of two values, a series of bistable devices equal in number to said predetermined number and connected to form a shift register, a gating device for gating the application of said waveform to the first device of said shift register, means for supplying a control pulse to operate said gating device, means for operating the first bi-stable device of said shift register when said waveform corresponds to one of said values, means for suplying regularly repeated control pulses to transfer the operation of said first bi-stable device down the shift register, means for resetting said gating device responsive to the operation of the last of said bi-stable devices forming said shift register, a plurality of visual indicating devices equal in number to said predetermined number and respectively associated with bi-stable devices forming said shift register, and means for operating said indicating devices when the associated bi-stable devices are operated to give a visual indication of the values of said predetermined number of elements in said waveform.

3,225,343
SEQUENTIAL FLASHER
Harry Kratochvil, Fords, N.J., assignor to Tung-Sol Electric Inc., a corporation of Delaware
Filed May 20, 1963, Ser. No. 281,570
1 Claim. (Cl. 340—331)



A sequential flasher control for repetitively lighting a plurality of signal lamps in sequence comprising a source of energy, a plurality of flasher units of successively higher rates, each including a pair of contacts, heat expansible pull means connected to hold said contacts open when cold and to permit closure thereof when expanded by passage of current therethrough, said contacts when closed shunting said pull means, a control switch connecting one terminal of said source to one contact of the flasher of lowest rate and to the heat expansible means thereof, means coupling one contact of the flasher of next lower rate and the heat responsive means thereof through said switch to one terminal of the source when the contacts of said flasher of lowest rate are closed, flashers of consecutively higher rate being similarly coupled, whereby one contact of the flasher of highest rate and the heat responsive means of such flasher are coupled through said switch to said one terminal of said source when the contacts of all the flashers of lower rate are closed, a plurality of signal lamps, each connected between the other terminal of the source and the other contact of a flasher so as to be lighted when the contacts of such flasher are closed, whereby when said control switch is closed, said signal lamps will successively light, then extinguish simultaneously when the heat responsive means of the flasher of lowest rate has cooled sufficiently to open the contacts of said flasher and initiate further sequential lighting of the signal lamps.

3,225,344
MEASURING DEVICE
Robinson D. Bullard, Springfield, Vt.
(Perkinsville Post Office, Weathersfield, Vt.)
Filed Jan. 11, 1960, Ser. No. 1,702
12 Claims. (Cl. 340—347)

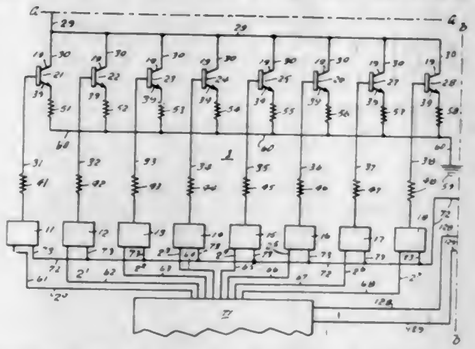


1. In an apparatus for determining, decimally, positions in space of a linearly movable member adapted to be moved in either direction along a path of motion, a coded member for representing decimal places of the motion of said member; means responsive to the movement of said member for moving said coded member past a source of light; a plurality of light-sensitive means adapted to be subjected to light from said source passing through said coded member; separate converting means including output circuits for each digit on the righthand side of the decimal point; means for connecting each of said light-sensitive means to its corresponding converting means, for converting said coded information into a decimal system; and means responsive to the energization of certain different discrete combinations of said output circuits, depending upon the direction of movement of said coded member for successively energizing other means.

3,225,345
DIGITAL-TO-ANALOG CONVERTER
Seymour Absatz, Plainview, and John Lewis Clfu, Jr., Flushing, N.Y., assignors to Sperry Rand Corporation, Ford Instrument Company Division, Wilmington, Del., a corporation of Delaware
Filed Apr. 11, 1961, Ser. No. 102,244
7 Claims. (Cl. 340—347)

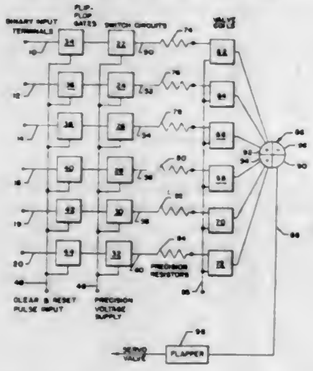
1. In a digital to analog converter of the character described, a source of digital information including a computer, a digital input circuitry which comprises; a plurality of "and" gates which are adapted to receive digital information imparted thereto in binary form from said source of information in accordance with the magnitude of the information being imparted, a plurality of transistors

one each of which connected to each of said "and" gates by a conductor through which the information imparted to said "and" gates is fed to base electrodes of said transistor, each of the emitters of said transistors being connected to a ground through an emitter resistor, and each of the collectors of said transistors being conected to conductor means through which a low collector voltage is constantly applied, said emitter resistors being so selected that each one thereof proportionately weights the binary input information imparted thereto; an A.C. amplifier; means by which said digital information is imparted to said amplifier in A.C. form; a full wave demodulator,



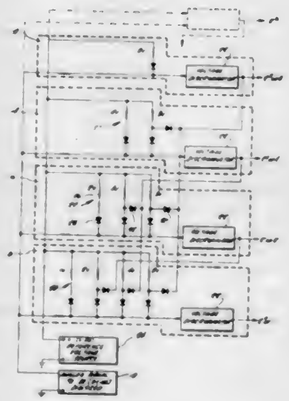
means by which the A.C. output voltage of said amplifier is imparted to said demodulator, said demodulator being operative to convert the A.C. voltage imparted thereto to a proportional D.C. output voltage of either positive or negative polarity, said computer being adapted to transmit positive and negative pulses according to the polarity of the digital information received by the "and" gates from said computer, a logic circuitry which is connected between said demodulator and said computer and by said computer is operative to determine the polarity of said D.C. output in accordance with the polarity of the said digital information imparted to said input circuitry, and an output circuit through which said D.C. output voltage is imparted to a load.

3,225,346
BINARY INPUT SERVOMECHANISM
Theodore F. Buddenhagen, Williamsville, N.Y., assignor to Bell Aerospace Corporation, Wheatfield, N.Y.
Filed Oct. 16, 1961, Ser. No. 145,312
13 Claims. (Cl. 340—347)



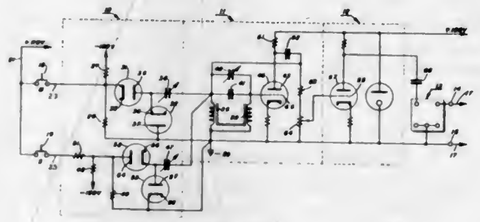
1. A binary input servomechanism comprising a servo member having an actuator, a control member for effecting movement of said actuator and a torque motor for actuating said control member, said torque motor comprising a plurality of coil means for effecting different torques upon said control member in response to individual and combinational operation of said coil means, and means adapted for connection to a digital computer to operate said individual coil means selectively in accord with binary command input.

3,225,347
ANALOG DIGITAL CONVERTER
James H. Doyle, Garden Grove, Calif., assignor to General Data Corporation, Orange, Calif., a corporation of California
Filed Feb. 28, 1962, Ser. No. 176,216
7 Claims. (Cl. 340—347)



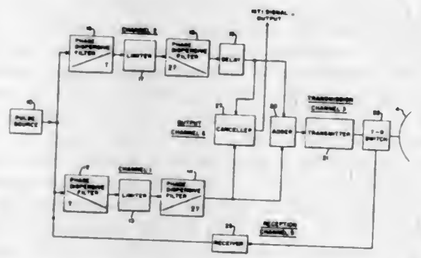
7. In an analog to digital converter:
a plurality of comparison stages of descending order;
each of said comparison stages comprises a plurality of comparators for indicating a different digital value in a preselected binary number system;
each of the comparators being normally arranged to be in a preselected indicating condition and to be switchable to another indicating condition whereby the condition of all the comparators define a single binary digit in the number system;
each of said comparators including:
individual input circuit means directly connected to be responsive to an output indication from each of the higher valued comparators for modifying the input response of each of the lower valued comparators only when at least one of the higher valued comparators is switched to said another indicating condition to provide the correct output at each of the remaining comparators to correctly digitize the applied analog signal, and means for applying an analog signal to be digitized to each of the comparators substantially simultaneously by means of said individual input circuits;
a summing circuit connected to be responsive to the analog signal to be digitized;
further circuit means connected to be responsive to the output indications from each of the comparators for providing a binary weighted signal to the summary circuit corresponding to the binary order of the comparator;
and means for applying the portion of the analog signal represented by the output of said summary circuit to a lower order comparison stage to comprise the analog signal to be digitized by said lower order comparison stage.

3,225,348
TRANSMITTER HAVING AN OSCILLATOR CONTROLLED BY SELECTIVELY SWITCHED CAPACITORS
Robert J. Gilman, Wayne, N.J., assignor to Radio Frequency Laboratories, Inc., Boonton, N.J., a corporation of New Jersey
Filed Nov. 17, 1960, Ser. No. 70,011
7 Claims. (Cl. 340—351)



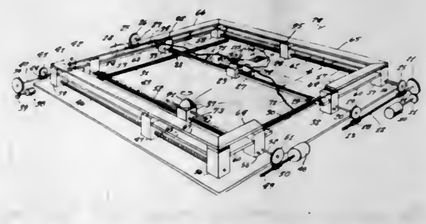
1. In a transmitter of the type which includes only one normally functioning oscillator having a tuned circuit resonant at a predetermined frequency, an oscillator keying circuit for shifting the frequency of oscillation to a frequency which is either higher or lower than the said predetermined oscillator frequency, the said keying circuit comprising first and second switching circuits, first and second capacitors directly connecting the respective first and second switching circuits to the said tuned oscillator circuit, the first switching circuit when closed including the said first capacitor in the tuned oscillator circuit and the second switching circuit being normally open to effectively remove the said second capacitor from the tuned oscillator circuit, and control means for individually closing and, opening the first switching circuit and closing and opening the second switching circuit.

3,225,349
MOVING TARGET INDICATING RADAR SYSTEM
Robert C. Thor, Liverpool, N.Y., assignor to General Electric Company, a corporation of New York
Filed Dec. 17, 1962, Ser. No. 245,077
24 Claims. (Cl. 343—7.7)



1. In combination:
(a) first means for periodically generating a pair of spaced-phase-modulated pulses at a predetermined group repetition frequency having a first and a second spectrum,
(b) means for transmitting said pulses,
(c) means for receiving echoes thereof,
(d) a first channel coupled to said receiving means including first dispersive delay filter means having a transfer function which is the complex conjugate of the spectrum exhibited by the initial pulse of said pair,
(e) a second channel coupled to said receiving means including a second dispersive delay filter means having a transfer function which is the complex conjugate of the spectrum exhibited by the trailing pulse of said pair,
(f) time delay means in one of said channels selected to bring desired output pulses in said respective channels into timed correspondence,
(g) means coupled to the outputs of said first and second channels for subtractively combining the outputs thereof.

3,225,350
AUTOMATIC SYSTEM FOR DETERMINING POINT OF ORIGIN OF ANGULAR VALUES AT RESPECTIVE PLACES OF MAPS USED IN NAVIGATION INDICATORS
Manuel Castro Fernandez, Madrid, Spain, assignor of fifty percent to Carlos C. Goetz, Lisbon, Portugal
Filed Jan. 4, 1963, Ser. No. 249,488
9 Claims. (Cl. 343—112)



1. In an automatic system for positioning the point of origin of direction indicating means at a corresponding point of maps or charts employed in navigation instruments carried by air or water craft, a chart having said point of origin coinciding with the position of a land-based radio transmitter station marked with coordinates, said chart being made of electrically insulated material, each of said coordinates being provided with a hole, and drive means controlled by said holes to translate the point of origin of the direction indicating means which must occupy a position precisely at the point which in the said chart shows the location of the said land-based radio transmission station for the purpose of determining the point of origin of the direction indicating means by means of which the position of the craft is determined.

3,225,351
VERTICALLY POLARIZED MICROSTRIP ANTENNA FOR GLIDE PATH SYSTEM
Maurice G. Chatelain, 3976 Kenosha Ave.; Jorgen Aasted, 5075 San Joaquin Drive; and Jean-Claude Bensimon, 2083 Cardinal Drive, all of San Diego, Calif.
Filed Mar. 9, 1962, Ser. No. 178,758
9 Claims. (Cl. 343—731)



1. A vertically polarized glide path antenna, comprising:
an elongated, conductive ground plane;

an elongated, conductive, driven microstrip element vertically spaced from said ground plane, whereby radio frequency energy may be transmitted longitudinally therethrough;

a pair of endfire arrays of longitudinally spaced radiator elements spaced on opposite sides of said microstrip element;

said radiator elements causing periodic disturbances in the passage of radio frequency energy to produce a vertically polarized endfire radiation from the antenna.

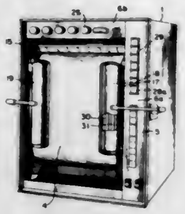
3,225,352

METHOD FOR RECORDING

Roger D. Erickson, Littleton, Colo., assignor to Honeywell Inc., a corporation of Delaware

Original application Apr. 11, 1962, Ser. No. 186,750. Divided and this application Jan. 20, 1964, Ser. No. 344,157

1 Claim. (Cl. 346—1)



The method of latesifying images which have been recorded on print-out material comprising the steps of heating said material bearing said images to a temperature as high as practical in the range of 170° F. to 400° F., and while so heated exposing said material initially and briefly to a low intensity state of radiation including wavelengths in the range of initial recording sensitivity of said material and thereafter to high intensity radiations defining substantially the same wavelengths.

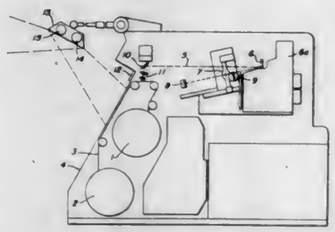
3,225,353

APPARATUS FOR RECORDING

Roger D. Erickson, Littleton, Colo., assignor to Honeywell Inc., a corporation of Delaware

Filed Aug. 11, 1961, Ser. No. 130,808

9 Claims. (Cl. 346—109)



1. Apparatus for recording the time-variations of phenomena under observation comprising a source of radiation principally in the invisible portion of the spectrum, a recording material coated with an emulsion primarily responsive to such radiations, means operative to focus radiations from said source into a spot of high intensity on said recording material and to move said spot of radiation along a path on said recording material such that the spot position is representative of the value of the phenomena under observation, first means operative to expose said recording material for a short time to a low intensity state of radiation having wavelengths to which said recording material is primarily responsive, second means operative to expose said recording material to a high intensity latensifying radiation defining substantially the same wavelengths last referred to, and means operative to move said recording material relatively to said radiation spot to produce a latent image or trace of said spot on said recording material, and thereafter to move said recording material with said latent image or trace thereon successively past said first and second exposure means, thereby to produce rapid forced latensification of said image or trace without fogging.

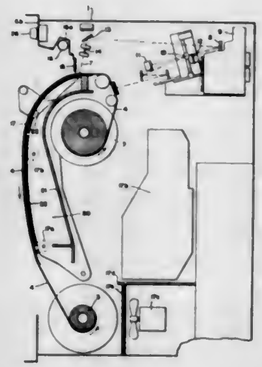
3,225,354

APPARATUS FOR RECORDING

Harold J. Brikowski, Englewood, Colo., assignor to Honeywell Inc., a corporation of Delaware

Filed Apr. 11, 1962, Ser. No. 186,744

12 Claims. (Cl. 346—109)



1. Apparatus for recording comprising a source of radiation including wavelengths between 3000 A. and 4000 A., a recording material coated with an emulsion primarily responsive to such radiations, means operative in a recording plane to form radiations from said source into an image of high intensity on said recording material to produce a latent trace of said image on said recording material, a platen heating structure over which said recording material is drawn to elevate the temperature of said recording material to a temperature in the range of 170° F. to 400° F. from a region immediately prior to its entry into the recording plane to a region spaced from said recording plane, and means cooperating with said platen heating structure while the recording material is so heated and is between said regions to expose said recording material initially to a low intensity state of radiation including wavelengths in the range between 3000 A. and 4000 A. and thereafter to expose said recording material to a high intensity latensifying radiation defining substantially the same wavelengths.

3,225,355

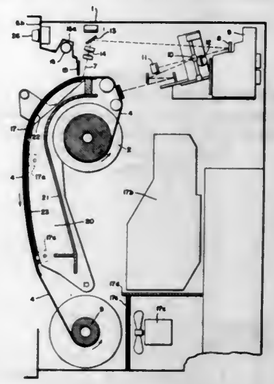
APPARATUS FOR RECORDING

Roger D. Erickson, Littleton, Colo., assignor to Honeywell Inc., a corporation of Delaware

Filed Apr. 11, 1962, Ser. No. 186,750

10 Claims. (Cl. 346—109)

1. Apparatus for recording the time variations of phenomenon under observation comprising a source of radiation principally in the blue and ultra-violet portion of the spectrum, a recording material coated with an emulsion primarily responsive to such radiations, means operative to focus radiations from said source into a spot of high intensity on said recording material and to move said spot of radiation along a path on said recording material such that the spot position is representative of the value of the phenomenon under observation, first exposure means comprising heating means operative to heat said recording material substantially above the ambient temperature, second exposure means operative to expose said recording material for a short time to a low intensity state of radiation having wavelengths to which said recording material is primarily responsive, third exposure means operative to expose said recording material to a high intensity latensifying radiation defining substantially the same wavelengths last referred to, and means operative to move said recording material relatively to said radiation spot to produce a latent image or trace of said spot on said recording material, and thereafter to move said recording material with said latent image or trace

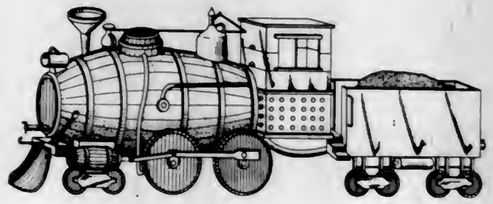


thereon past said first, second and third exposure means, thereby to produce rapid forced latensification of said image or trace without fogging.

DESIGNS

DECEMBER 21, 1965

203,248
ADVERTISING DISPLAY UNIT OR THE LIKE
John G. Schramm, 2564 N. 33rd St., Milwaukee, Wis.
Filed Nov. 10, 1964, Ser. No. 82,548
Term of patent 3½ years
(Cl. D1—12)



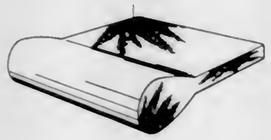
203,249
SIGN FOR DRIVE-IN CAMPING SITES
Howard J. Leichner and Floyd D. Leichner, both of 1510 N. Neil St., Champaign, Ill.
Filed Mar. 3, 1965, Ser. No. 84,060
Term of patent 14 years
(Cl. D1—12)



203,250
REVERSIBLE VEST
Maurice H. O'Link, St. Cloud, Minn., assignor to Stearns Manufacturing Co., St. Cloud, Minn., a corporation of Minnesota
Filed Oct. 22, 1964, Ser. No. 82,277
Term of patent 14 years
(Cl. D3—4)



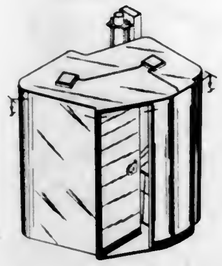
203,251
CONTOUR PILLOW OR THE LIKE
Abe L. Barber, Oklahoma City, Okla., assignor to A & B Instrument Co., Inc., Oklahoma City, Okla., a corporation of Oklahoma
Filed May 7, 1965, Ser. No. 85,168
Term of patent 14 years
(Cl. D3—9)



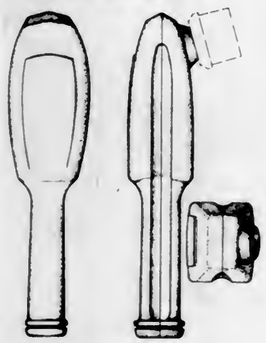
203,252
SAFETY HAT
Herbert A. Raschke, Greenbrae, Calif., assignor to E. D. Bullard Company, Sausalito, Calif.
Filed Jan. 29, 1965, Ser. No. 83,622
Term of patent 14 years
(Cl. D3—13)



203,253
PREFABRICATED BATH FACILITY
Hendrik de Kanter, 4620 Alla Road, Culver City, Calif.
Filed Aug. 28, 1964, Ser. No. 81,501
Term of patent 14 years
(Cl. D4—4)



203,254
ELECTRIC SHOE POLISHER
Gordon Florian, Fairfield, Conn., assignor to The Iona Manufacturing Company, Inc., Manchester, Conn., a corporation of Connecticut
Filed Apr. 5, 1965, Ser. No. 84,608
Term of patent 14 years
(Cl. D9—2)



203,255
CAR
John W. Ryan, 688 Nimes Road, Bel Aire, Calif.
Filed Feb. 4, 1964, Ser. No. 78,505
Term of patent 14 years
(Cl. D14—3)

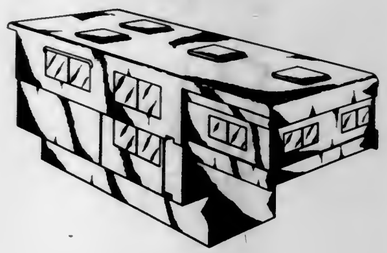


203,256
CAMPER
Lesley H. Varwig, 871 Osage, Salina, Kans.
Filed Mar. 30, 1965, Ser. No. 84,507
Term of patent 14 years
(Cl. D14—3)

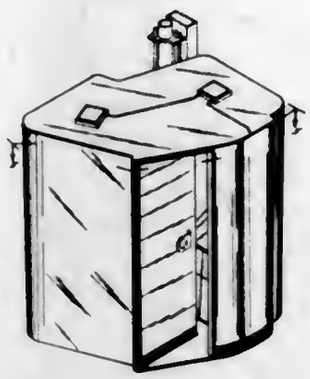


203,257
VEHICLE
Eugene R. Fox, Minneapolis, Minn., assignor to Cat-A-Gator Corporation, Minneapolis, Minn., a corporation of Minnesota
Filed Mar. 31, 1965, Ser. No. 84,541
Term of patent 14 years
(Cl. D14—3)

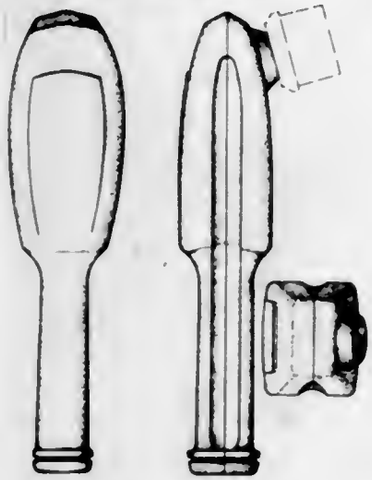
203,258
FOUR SLEEPER CAMPER
Frank E. Mann, 5430 W. 43rd St., Houston, Tex.
Filed Mar. 31, 1965, Ser. No. 84,545
Term of patent 14 years
(Cl. D14—3)



203,253
PREFABRICATED BATH FACILITY
Hendrik de Kanter, 4620 Alla Road, Culver City, Calif.
Filed Aug. 28, 1964, Ser. No. 81,501
Term of patent 14 years
(Cl. D4—4)



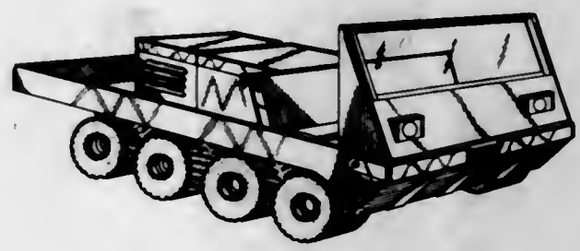
203,254
ELECTRIC SHOE POLISHER
Gordon Florian, Fairfield, Conn., assignor to The Iona Manufacturing Company, Inc., Manchester, Conn., a corporation of Connecticut
Filed Apr. 5, 1965, Ser. No. 84,608
Term of patent 14 years
(Cl. D9—2)



203,256
CAMPER
Lesley H. Varwig, 871 Osage, Salina, Kans.
Filed Mar. 30, 1965, Ser. No. 84,507
Term of patent 14 years
(Cl. D14—3)

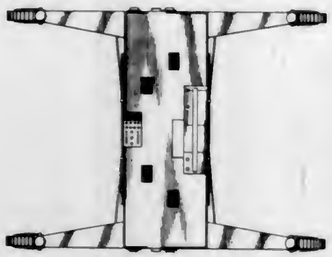


203,257
VEHICLE
Eugene R. Fox, Minneapolis, Minn., assignor to Cat-A-Gator Corporation, Minneapolis, Minn., a corporation of Minnesota
Filed Mar. 31, 1965, Ser. No. 84,541
Term of patent 14 years
(Cl. D14—3)

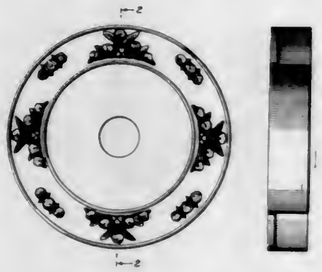


203,258
FOUR SLEEPER CAMPER
Frank E. Mann, 5430 W. 43rd St., Houston, Tex.

203,259
ROAD CONSTRUCTION MACHINE OR THE LIKE
George W. Swisher, Jr., Oklahoma City, Okla., assignor to Concrete Machinery, Inc., Oklahoma City, Okla., a corporation of Oklahoma
Filed Apr. 7, 1965, Ser. No. 84,664
Term of patent 14 years
(Cl. D14—3)



203,260
VEHICLE WHEEL
Frank J. McNulty, P.O. Box 375, San Bernardino, Calif.
Filed Feb. 8, 1965, Ser. No. 83,740
Term of patent 7 years
(Cl. D14—30)



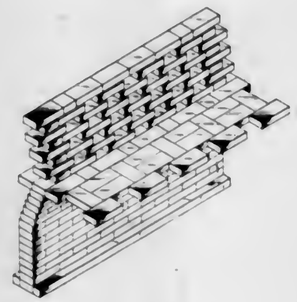
203,261
CHAIR
Carl W. Sundberg and Montgomery Ferar, Southfield, Mich., assignors to American Seating Company, Grand Rapids, Mich., a corporation of New Jersey
Filed Nov. 17, 1964, Ser. No. 82,653
Term of patent 14 years
(Cl. D15—1)



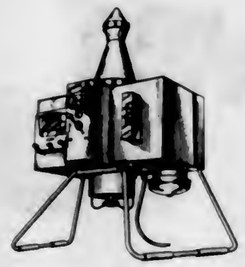
203,262
CHAIR
Allen Davison, 10513 S. Hale Ave., Chicago, Ill.
Filed Mar. 29, 1965, Ser. No. 84,486
Term of patent 14 years
(Cl. D15—1)



203,263
BRICK BENCH
Donald J. Dirkse, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Mar. 26, 1965, Ser. No. 84,710
Term of patent 14 years
(Cl. D15—11)



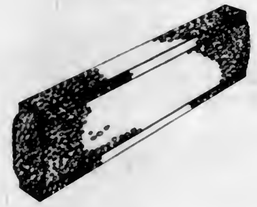
203,264
BUILDING AIR MONITOR
James G. Phillips, Santa Fe, N. Mex., assignor to Eberline Instrument Corporation, Santa Fe, N. Mex.
Filed Feb. 26, 1965, Ser. No. 83,989
Term of patent 14 years
(Cl. D16—2)



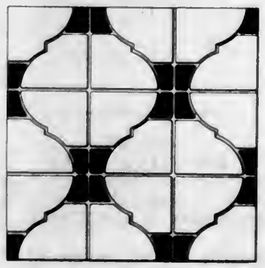
203,265
CLIP FOR AN ELECTRIC LIGHT BULB SOCKET
Maxwell H. Conman, 53 Roosevelt Drive, Glen Head, N.Y.
Filed Dec. 23, 1964, Ser. No. 83,138
Term of patent 14 years
(Cl. D17—3)



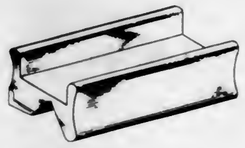
203,266
BRICK
Michael Pascucci, 5 Bruce Lane, Manhasset, N.Y.
Filed July 6, 1964, Ser. No. 80,728
Term of patent 14 years
(Cl. D18—2)



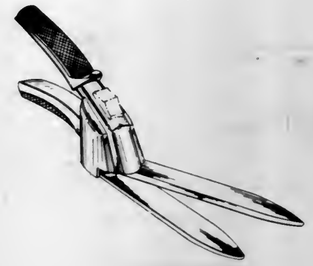
203,267
ORNAMENTAL CERAMIC TILE
Sidney Goldman, 1786 E. 47th St., Brooklyn, N.Y.
Filed Mar. 29, 1965, Ser. No. 84,462
Term of patent 7 years
(Cl. D18—2)



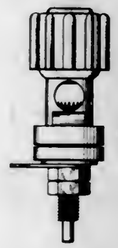
203,268
TOOL FOR OPENING BOXES
Ernest E. Swann, Jr., 2703 Whispering Pines Road, Albany, Ga.
Filed Oct. 12, 1964, Ser. No. 82,136
Term of patent 14 years
(Cl. D22—3)



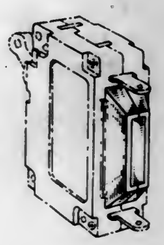
203,269
GRASS SHEARS
John D. Beinert, Babylon, N.Y., assignor to International Patent Research Corp., New York, N.Y., a corporation of New York
Filed Feb. 10, 1965, Ser. No. 83,763
Term of patent 7 years
(Cl. D22—4)



203,270
BINDING POST OR SIMILAR ARTICLE
Dennis William Bell, 34 Chertsey Rise, Stevenage, England
Filed Nov. 3, 1964, Ser. No. 82,453
Term of patent 7 years
(Cl. D26—1)



203,271
CIRCUIT BREAKER
William W. Camp, Lawrence Township, Mercer County, N.J., assignor to Heinemann Electric Company, Trenton, N.J., a corporation of New Jersey
Filed Mar. 31, 1965, Ser. No. 84,531
Term of patent 14 years
(Cl. D26—13)



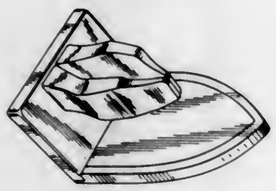
203,272
TAPE CARTRIDGE
Kunio Ace Sumida, Los Angeles, Calif., assignor to Dashew Business Machines, Inc., Los Angeles, Calif., a corporation of Delaware
Filed Dec. 21, 1964, Ser. No. 83,113
Term of patent 14 years
(Cl. D26—14)



203,273
ROLLER GUIDE FOR A FISHING ROD
Christ Chion, Plainview, N.Y., assignor to Allan Manufacturing Co., Hicksville, N.Y.
Filed May 10, 1965, Ser. No. 85,190
Term of patent 14 years
(Cl. D31—4)



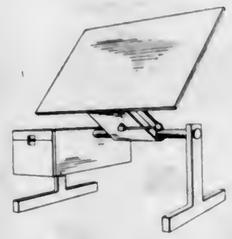
203,274
BOOK HOLDER
Lois R. Freeberg, 1507 W. 23rd Terrace, Independence, Mo.
Filed Aug. 27, 1964, Ser. No. 81,481
Term of patent 14 years
(Cl. D33—3)



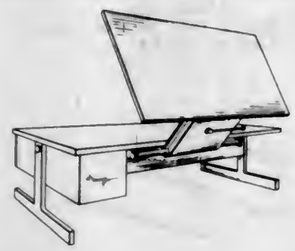
203,275
DRAFTING TABLE
Alfred William Faux and Russel Earl Helland, Toronto, Ontario, Canada, assignors to Norman Wade Company Limited, Scarborough, Ontario, Canada, a corporation of Canada
Filed May 6, 1965, Ser. No. 85,132
Term of patent 14 years
(Cl. D33—14)



203,276
DRAFTING TABLE
Alfred William Faux and Russel Earl Helland, Toronto, Ontario, Canada, assignors to Norman Wade Company Limited, Scarborough, Ontario, Canada, a corporation of Canada
Filed May 6, 1965, Ser. No. 85,133
Term of patent 14 years
(Cl. D33—14)



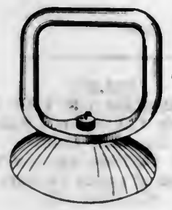
203,277
DRAFTING TABLE
Alfred William Faux and Russel Earl Helland, Toronto, Ontario, Canada, assignors to Norman Wade Company Limited, Scarborough, Ontario, Canada, a corporation of Canada
Filed May 6, 1965, Ser. No. 85,134
Term of patent 14 years
(Cl. D33—14)



203,278
DOLL
David M. Levy, 443 Avenue S, Brooklyn, N.Y.
Filed Oct. 9, 1964, Ser. No. 82,108
Term of patent 3½ years
(Cl. D34—4)



203,279
ISOMETRIC EXERCISER
Robert R. Spackman, Jr., and Marvin E. Johnson, Carbondale, Ill., assignors to Southern Illinois University Foundation, Carbondale, Ill., a corporation of Illinois
Filed June 22, 1964, Ser. No. 80,498
Term of patent 14 years
(Cl. D34—5)



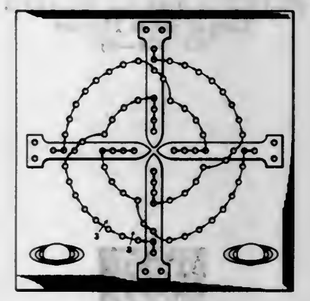
203,280
GOLF PRACTICE VIEWING MIRROR
Jack Pleasants, Somerville, N.J, assignor to Nova Products, Inc., Springfield, N.J., a corporation of New Jersey
Filed Nov. 20, 1964, Ser. No. 82,730
Term of patent 14 years
(Cl. D34—5)



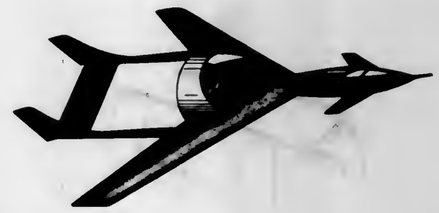
203,281
THROWER FOR TARGETS OR THE LIKE
Edward R. Reed, Dallas, Tex., assignor of one-half to W. J. Langley, Dallas, Tex.
Filed Dec. 18, 1964, Ser. No. 83,082
Term of patent 3½ years
(Cl. D34—5)



203,282
GAME BOARD
Robert E. Rumpf, Jr., 2706 Eisenhower Drive, South Bend, Ind.
Filed May 3, 1965, Ser. No. 85,058
Term of patent 3½ years
(Cl. D34—5)



203,283
TOY AIRPLANE
James F. Woods, Santa Monica, Calif., assignor, by mesne assignments, to American Machine & Foundry Company, New York, N.Y., a corporation of New Jersey
Filed Oct. 14, 1964, Ser. No. 82,176
Term of patent 7 years
(Cl. D34—15)



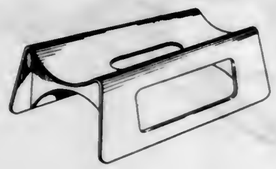
203,284
VEHICULAR TOY OR SIMILAR ARTICLE
Jarvis W. Rockwell, 3003 W. Wilson Ave., Chicago, Ill.
Filed Mar. 18, 1965, Ser. No. 84,349
Term of patent 14 years
(Cl. D34—15)



203,285
TUMBLER OR SIMILAR ARTICLE
Floyd E. Pettengill, Lancaster, Ohio, assignor to Anchor Hocking Glass Corporation, Lancaster, Ohio, a corporation of Delaware
Filed Jan. 29, 1965, Ser. No. 83,624
Term of patent 14 years
(Cl. D36—8)



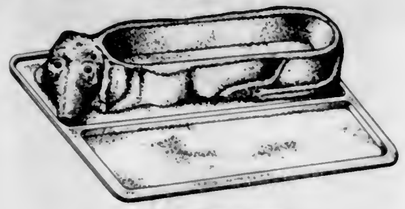
203,286
SUPPORTING BLOCK FOR WHEELS
Emil Veselik, Flossmoor, Ill., and Marion C. Wilson, Dyer, Ind., assignors to Calumet Steel Castings Corporation, Hammond, Ind., a corporation of Indiana
Filed Mar. 8, 1965, Ser. No. 84,134
Term of patent 14 years
(Cl. D41—1)



203,287
DRIP STAND FOR A COFFEE MAKING STRAINER OR THE LIKE
Napoleon Rodriguez, 33—24 56th St., Woodside, N.Y.
Filed Sept. 23, 1964, Ser. No. 81,846
Term of patent 3½ years
(Cl. D44—10)



203,288
TRAY
Alfred D. Duncan, Elmhurst, Ill., assignor to Duncanlite Laboratory, Inc., Villa Park, Ill., a corporation of Illinois
Filed Feb. 3, 1965, Ser. No. 83,676
Term of patent 14 years
(Cl. D44—10)



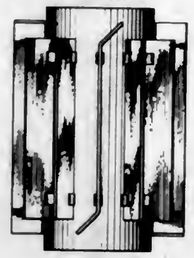
203,289
SALT SHAKER OR THE LIKE
David L. Morris, 123 Sir Francis Drake Blvd., Kentfield, Calif.
Filed Dec. 14, 1964, Ser. No. 83,036
Term of patent 14 years
(Cl. D44—22)



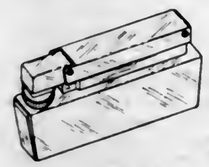
203,290
CANDLE HOLDER
John Pennington, R.D. 1, Hellam, Pa.
Filed Sept. 10, 1964, Ser. No. 81,667
Term of patent 3½ years
(Cl. D48—2)



203,291
LAMP SHADE
Graham E. Bell, 9827 SE. 91st Place, Kennydale, Wash.
Filed Sept. 15, 1964, Ser. No. 81,733
Term of patent 14 years
(Cl. D48—16)



203,292
LIGHTER
Curt Heuckeroth, Odenwald, Germany, assignor to Rowenta Metallwarenfabrik G.m.b.H., Waldstrasse, Germany, a company of Germany
Filed July 6, 1964, Ser. No. 80,704
Term of patent 14 years
(Cl. D48—27)



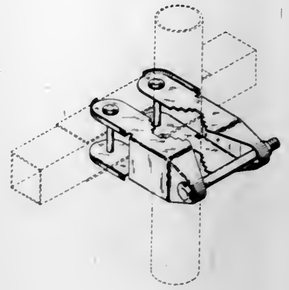
203,293
LUMINAIRE
Myron F. Pettengill, Hendersonville, N.C., assignor to General Electric Company, a corporation of New York
Filed June 12, 1964, Ser. No. 80,367
Term of patent 14 years
(Cl. D48—31)



203,294
LUMINAIRE
Donald P. Cianca, Elmhurst, Ill., assignor to Joslyn Mfg. and Supply Co., Chicago, Ill., a corporation of Illinois
Filed Mar. 5, 1965, Ser. No. 84,117
Term of patent 14 years
(Cl. D48—31)



203,295
ANTENNA MAST CLAMP
Donald H. Wells, Oregon, Ohio, assignor to S & A Electronics, Inc., Oregon, Ohio, a corporation of Ohio
Filed Mar. 10, 1965, Ser. No. 84,189
Term of patent 14 years
(Cl. D54—1)



203,296
REVERSE HOLE CUTTER AND SHARPENER FOR SEWN-IN BICYCLE TUBE TIRES OR THE LIKE
Philip Quartararo, 2309 Avenue Y, Brooklyn, N.Y.
Filed June 3, 1964, Ser. No. 80,256
Term of patent 3½ years
(Cl. D54—13)



203,297
SCUFFING TOOL FOR REPAIRING SEWN-IN BICYCLE TUBE TIRES OR THE LIKE
Philip Quartararo, 2309 Avenue Y, Brooklyn, N.Y.
Filed June 3, 1964, Ser. No. 80,257
Term of patent 3½ years
(Cl. D54—13)



203,298
TOOL FOR SCREW EYES
Peter F. Di Martino, 315 W. Louden St., Philadelphia, Pa.
Filed July 29, 1964, Ser. No. 81,064
Term of patent 3½ years
(Cl. D54—13)



203,299
OIL-SEAL PULLER TOOL
Roy N. Bowden, 42 E. Shore Drive, Denville, N.J.
Filed Mar. 4, 1965, Ser. No. 84,088
Term of patent 14 years
(Cl. D54—13)



203,300
PORTABLE TRACER ATTACHMENT FOR LATHES
James B. Barsby, 2126 Berkeley Ave., Los Angeles, Calif., and Charles E. Whittington, 1709 Matchleaf Ave., La Puente, Calif.
Filed June 17, 1964, Ser. No. 80,436
Term of patent 14 years
(Cl. D55—1)



203,301
STRINGED MUSICAL INSTRUMENT
Robert E. Frazier, 122 Walnut Lane, Santa Barbara, Calif.
Filed Dec. 16, 1964, Ser. No. 83,052
Term of patent 14 years
(Cl. D56—1)



203,302
PORTABLE RADIO OR THE LIKE
Sam Jack Phillips, New York, N.Y., assignor to Inter-Ocean Electronic Corporation, New York, N.Y.
Filed Sept. 15, 1964, Ser. No. 81,731
Term of patent 3½ years
(Cl. D56—4)



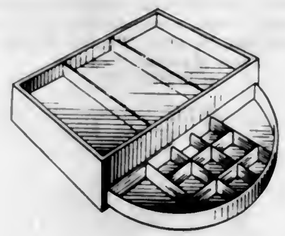
203,303
ROTATABLE TURRET MAGNIFIER
Paul A. Hoogesteger, Brighton, and Kenneth D. Maier, Mendon, N.Y., assignors to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed Oct. 19, 1964, Ser. No. 82,228
Term of patent 14 years
(Cl. D57—1)



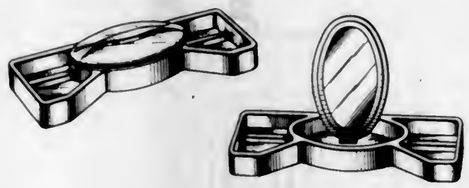
203,304
BOTTLE OR SIMILAR ARTICLE
Livingston C. Douglas, Leonia, N.J., assignor to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware
Original application Dec. 28, 1962, Ser. No. 72,987, now Design Patent No. 199,414, dated Oct. 20, 1964. Divided and this application July 30, 1964, Ser. No. 81,404
Term of patent 14 years
(Cl. D58—9)



203,305
JEWELRY BOX
John H. Ax, % London Leather Novelties, Inc., 19 W. 18th St., New York, N.Y. 10011
Filed Mar. 22, 1965, Ser. No. 84,375
Term of patent 14 years
(Cl. D58—12.7)



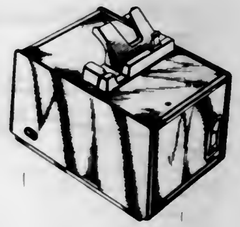
203,306
JEWELRY TRAY AND REMOVABLE COVER THEREFOR
Erwin Kalla, Pittsburgh, Pa., assignor to Reliable Luggage, Inc., West Pittsburg, Pa., a corporation of Pennsylvania
Filed Apr. 2, 1965, Ser. No. 84,584
Term of patent 14 years
(Cl. D58—12.7)



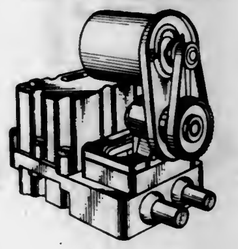
203,307
TYPEWRITER
Carl W. Sundberg, Bloomfield Hills, and Montgomery Ferar, Huntington Woods, Mich., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Mar. 12, 1964, Ser. No. 78,978
Term of patent 14 years
(Cl. D64—11)



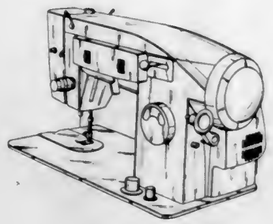
203,308
LIBRARY CARD PRINTING MACHINE
Arthur J. Pulos, Fayetteville, and Paul B. Sweeney, Jr., Syracuse, N.Y., assignors to Gaylord Bros., Inc., Syracuse, N.Y., a corporation of New York
Filed Oct. 26, 1964, Ser. No. 82,311
Term of patent 14 years
(Cl. D64—11)



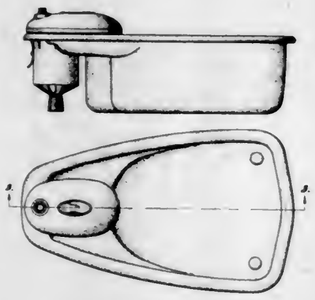
203,309
PUMP
Linus E. Russell, Springfield, Ohio, assignor to Peters & Russell, Inc., Springfield, Ohio, a corporation of Ohio
Filed July 8, 1964, Ser. No. 80,758
Term of patent 14 years
(Cl. D65—1)



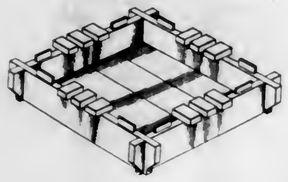
203,310
SEWING MACHINE OR SIMILAR ARTICLE
Sidney J. Hamlett, Parma, Ohio, assignor to White Consolidated Industries, Inc., Cleveland, Ohio, a corporation of Delaware
Filed May 21, 1965, Ser. No. 85,393
Term of patent 14 years
(Cl. D70—1)



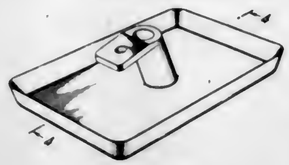
203,311
HYDROTHERAPY BATH UNIT
Samuel L. McNair, Fullerton, Calif., assignor to The Songrand Corporation, a corporation of Missouri
Filed Mar. 31, 1965, Ser. No. 84,525
Term of patent 14 years
(Cl. D83—1)



203,312
ASH TRAY
Lucious E. Rogers, Jr., 2313 NW. 24th St., Fort Worth, Tex.
Filed Feb. 12, 1965, Ser. No. 83,790
Term of patent 14 years
(Cl. D85—2)



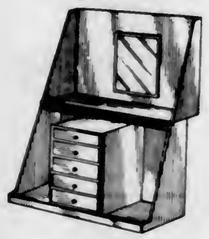
203,313
ASH TRAY
John N. Bartlett, 88 Washington St., Denver, Colo., and Elmer A. Osmon, 156 S. Grand Oaks, Pasadena, Calif.
Filed Apr. 26, 1965, Ser. No. 84,944
Term of patent 14 years
(Cl. D85—2)



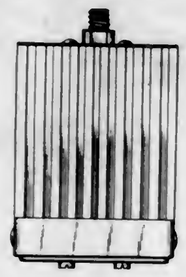
203,314
HAIR CLIP
Lewis E. Thatcher, Chicago, Ill., assignor to Gaylord Products, Incorporated, Chicago, Ill., a corporation of Delaware
Filed Nov. 9, 1964, Ser. No. 82,521
Term of patent 14 years
(Cl. D86—10)



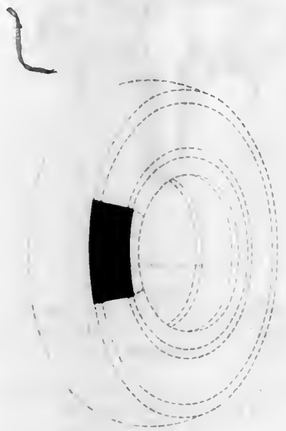
203,315
PORTABLE VALET
Harry C. Bullock, Aurora, Colo., assignor to Motor Valet, Inc., Denver, Colo., a corporation of Colorado
Filed May 25, 1964, Ser. No. 80,134
Term of patent 3½ years
(Cl. D87—5)



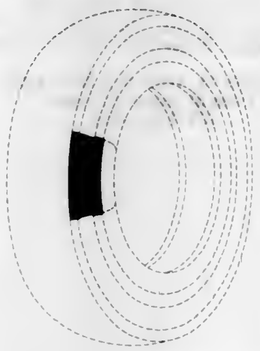
203,316
BICYCLE PEDAL
Donald J. Schrum, South Bend, Ind., assignor to American Safety Equipment Corporation, New York, N.Y., a corporation of New York
Filed Apr. 9, 1965, Ser. No. 84,702
Term of patent 14 years
(Cl. D90—14)



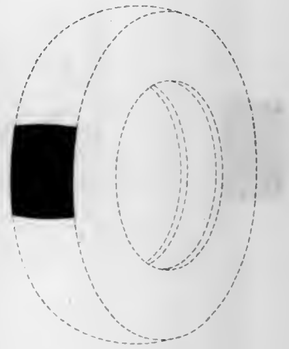
203,317
TIRE
Robert F. Busch, St. Clair Shores, and John W. Taylor, Grosse Pointe Farms, Mich., assignors to United States Rubber Company, New York, N.Y., a corporation of New Jersey
Filed Apr. 9, 1965, Ser. No. 84,698
Term of patent 14 years
(Cl. D90—20)



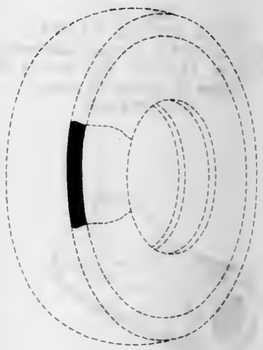
3,203,318
TIRE
Marco Maxemovich, Warren, and John W. Taylor, Grosse Pointe Farms, Mich., assignors to United States Rubber Company, New York, N.Y., a corporation of New Jersey
Filed Apr. 12, 1965, Ser. No. 84,724
Term of patent 14 years
(Cl. D90—20)



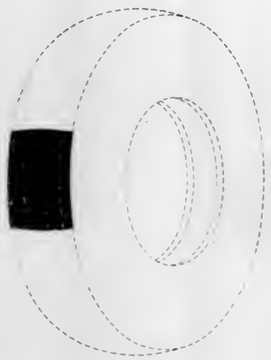
203,319
TIRE
Robert F. Busch, St. Clair Shores, and Marco Maxemovich, Warren, Mich., assignors to United States Rubber Company, New York, N.Y., a corporation of New Jersey
Filed Apr. 14, 1965, Ser. No. 84,811
Term of patent 14 years
(Cl. D90—20)



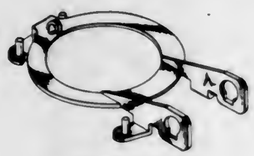
203,320
TIRE
Arthur C. Blankenship, Detroit, Robert F. Bogan, Grosse Pointe Farms, and William L. Shesterkin, Roseville, Mich., assignors to United States Rubber Company, New York, N.Y., a corporation of New Jersey
Filed May 6, 1965, Ser. No. 85,137
Term of patent 14 years
(Cl. D90—20)



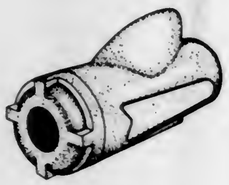
203,321
TIRE
Arthur C. Blankenship, Detroit, and William L. Shesterkin, Roseville, Mich., assignors to United States Rubber Company, New York, N.Y., a corporation of New Jersey
Filed May 6, 1965, Ser. No. 85,145
Term of patent 14 years
(D90—20)



203,322
FLUSH TANK FLAPPER VALVE FRAME
Robert E. Harold, 615 Brightside Lane, Pasadena, Calif.
Filed Aug. 21, 1964, Ser. No. 81,387
Term of patent 14 years
(Cl. D91—1)



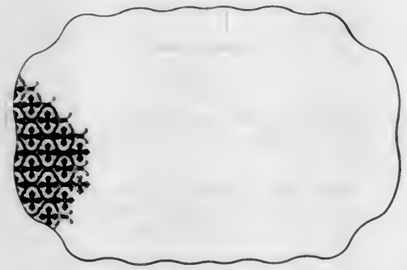
203,323
BALL CHECK VALVE
Domer Scaramucci, 3245 S. Hattie, Oklahoma City, Okla.
Filed Sept. 18, 1964, Ser. No. 81,789
Term of patent 14 years
(Cl. D91—3)



203,324
FAUCET FIXTURE
Harper Landell, Whitemarsh, Pa., assignor to Speakman Company
Filed Dec. 8, 1964, Ser. No. 82,958
Term of patent 14 years
(Cl. D91—3)



203,325
PLACE MAT OR THE LIKE
John E. Stengel, Bon Air, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed July 16, 1965, Ser. No. 86,184
Term of patent 14 years
(Cl. D92—26)



203,326
PLACE MAT OR THE LIKE
John E. Stengel, Bon Air, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed July 16, 1965, Ser. No. 86,187
Term of patent 14 years
(Cl. D92—26)



203,327
PLACE MAT OR THE LIKE
John E. Stengel, Bon Air, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed July 16, 1965, Ser. No. 86,188
Term of patent 14 years
(Cl. D92—26)



LIST OF PLANT PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 21ST DAY OF DECEMBER, 1965

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

Armstrong, David L., and H. C. Swim, to Armstrong Nurseries, Inc. Nectarine plant. 2,580, 12–21–65, Cl. 41.
Armstrong Nurseries, Inc.: *See*—
Armstrong, David L., and Swim. 2,580.
Swim, Herbert C.: *See*—
Armstrong, David L., and Swim. 2,580.

LIST OF DESIGN PATENTEES

A & B Instrument Co., Inc.: *See*—
Barber, Abe L. 203,251.
Allan Mfg. Co.: *See*—
Chion, Christ. 203,273.
American Machine & Foundry Co.: *See*—
Woods, James F. 203,283.
American Safety Equipment Corp.: *See*—
Schrum, Donald J. 203,316.
American Seating Co.: *See*—
Sundberg, Carl W., and Ferar. 203,261.
Anchor Hocking Glass Corp.: *See*—
Pettengill, Floyd E. 203,285.
Ax, John H. Jewelry box. 203,305, 12–21–65, Cl. D58—12.7.
Barber, Abe L., to A & B Instrument Co., Inc. Contour pillow or the like. 203,251, 12–21–65, Cl. D3—9.
Barsby, James B., and C. E. Whittington. Portable tracer attachment for lathes. 203,300, 12–21–65, Cl. D55—1.
Bartlett, John N., and E. A. Osmon. Ash tray. 203,313, 12–21–65, Cl. D85—2.
Bausch & Lomb Inc.: *See*—
Hoogesteger, Paul A., and Maier. 203,303.
Beinert, John D., to International Patent Research Corp. Grass shears. 203,269, 12–21–65, Cl. D22—4.
Bell, Dennis W. Binding post or similar article. 203,270, 12–21–65, Cl. D26—1.
Bell, Graham E. Lamp shade. 203,291, 12–21–65, Cl. D48—16.
Blankenship, Arthur C., R. F. Bogan, and W. L. Shesterkin, to United States Rubber Co. Tire. 203,320, 12–21–65, Cl. D90—20.
Blankenship, Arthur C., and W. L. Shesterkin, to United States Rubber Co. Tire. 203,321, 12–21–65, Cl. D90—20.
Bogan, Robert F.: *See*—
Blankenship, Arthur C., Bogan, and Shesterkin. 203,320.
Bowden, Roy N. Oil-seal puller tool. 203,299, 12–21–65, Cl. D54—13.
Bullard, E. D., Co.: *See*—
Raschke, Herbert A. 203,252.
Bullock, Harry C., to Motor Valet, Inc. Portable valet. 203,315, 12–21–65, Cl. D67—5.
Busch, Robert F., and J. W. Taylor, to United States Rubber Co. Tire. 203,317, 12–21–65, Cl. D90—20.
Busch, Robert F., and M. Maxemovich, to United States Rubber Co. Tire. 203,319, 12–21–65, Cl. D90—20.
Calumet Steel Castings Corp.: *See*—
Veselik, Emil, and Wilson. 203,286.
Camp, William W., to Heinemann Electric Co. Circuit breaker. 203,271, 12–21–65, Cl. D26—13.
Cat-A-Gator Corp.: *See*—
Fox, Eugene R. 203,257.
Chion, Christ, to Allan Mfg. Co. Roller guide for a fishing rod. 203,273, 12–21–65, Cl. D31—4.
Cianca, Donald P., to Joslyn Mfg. and Supply Co. Luminaire. 203,294, 12–21–65, Cl. D48—31.
Colgate-Palmolive Co.: *See*—
Douglas, Livingston C. 203,304.
Concrete Machinery, Inc.: *See*—
Swisher, George W., Jr. 203,259.
Conman, Maxwell H. Clip for an electric light bulb socket. 203,265, 12–21–65, Cl. D17—3.
Dashew Business Machines Inc.: *See*—
Sumida, Kunio A. 203,272.
Davison, Allen. Chair. 203,262, 12–21–65, Cl. D15—1.
De Kanter, Hendrik. Prefabricated bath facility. 203,253, 12–21–65, Cl. D4—4.
Di Martino, Peter F. Tool for screw eyes. 203,298, 12–21–65, Cl. D54—13.
Douglas, Livingston C., to Colgate-Palmolive Co. Bottle or similar article. 203,304, 12–21–65, Cl. D58—9.
Dirkse, Donald J., to The Dow Chemical Co. Brick bench. 203,263, 12–21–65, Cl. D15—11.
Dow Chemical Co., The: *See*—
Dirkse, Donald J. 203,263.
Duncan, Alfred D., to Duncanlite Laboratory, Inc. Tray. 203,288, 12–21–65, Cl. D44—10.
Duncanlite Laboratory, Inc.: *See*—
Duncan, Alfred D. 203,288.
Eberline Instrument Corp.: *See*—
Phillips, James G. 203,264.
Faux, Alfred W., and R. E. Helland, to Norman Wade Co. Ltd. Drafting table. 203,275, 12–21–65, Cl. D33—14.
Faux, Alfred W., and R. E. Helland, to Norman Wade Co. Ltd. Drafting table. 203,276, 12–21–65, Cl. D33—14.
Faux, Alfred W., and R. E. Helland, to Norman Wade Co. Ltd. Drafting table. 203,277, 12–21–65, Cl. D33—14.
Ferar, Montgomery: *See*—
Sundberg, Carl W., and Ferar. 203,261.
Sundberg, Carl W., and Ferar. 203,307.
Florian, Gordan, to The Iona Mfg. Co., Inc. Electric shoe polisher. 203,254, 12–21–65, Cl. D9—2.
Fox, Eugene R., to Cat-A-Gator Corp. Vehicle. 203,257, 12–21–65, Cl. D14—3.
Frazier, Robert E. Stringed musical instrument. 203,301, 12–21–65, Cl. D56—1.
Freeberg, Lois R. Book holder. 203,274, 12–21–65, Cl. D33—3.
Gaylord Bros., Inc.: *See*—
Pulos, Arthur J., and Sweeney. 203,308.
Gaylord Products, Inc.: *See*—
Thatcher, Lewis E. 203,314.
General Electric Co.: *See*—
Pettengill, Myron F. 203,293.
Goldman, Sidney. Ornamental ceramic tile. 203,267, 12–21–65, Cl. D18—2.
Hamlett, Sidney J., to White Consolidated Industries, Inc. Sewing machine or similar article. 203,310, 12–21–65, Cl. D70—1.
Harold, Robert E. Flush tank flapper valve frame. 203,322, 12–21–65, Cl. D91—1.
Heinemann Electric Co.: *See*—
Camp, William W. 203,271.
Helland, Russel E.: *See*—
Faux, Alfred W., and Helland. 203,275.
Faux, Alfred W., and Helland. 203,276.
Faux, Alfred W., and Helland. 203,277.
Heuckeroth, Curt, to Rowenta Metallwarenfabrik G.m.b.H. Lighter. 203,292, 12–21–65, Cl. D48—27.
Hoogesteger, Paul A., and K. D. Maier, to Bausch & Lomb Inc. Rotatable turret magnifier. 203,303, 12–21–65, Cl. D57—1.
Inter-Ocean Electronic Corp.: *See*—
Phillips, Sam J. 203,302.
International Patent Research Corp.: *See*—
Beinert, John D. 203,269.
Iona Mfg. Co., Inc., The: *See*—
Florian, Gordan. 203,254.
Johnson, Marvin E.: *See*—
Spackman, Robert R., Jr., and Johnson. 203,279.
Joslyn Mfg. and Supply Co.: *See*—
Cianca, Donald P. 203,294.
Kalla, Erwin, to Reliable Luggage, Inc. Jewelry tray and removable cover therefor. 203,306, 12–21–65, Cl. D58—12.7.
Landell, Harper, to Speakman Co. Faucet fixture. 203,324, 12–21–65, Cl. D91—3.
Langley, W. J.: *See*—
Reed, Edward R. 203,281.
Leichner, Howard J. and F. D. Sign for drive-in camping sites. 203,249, 12–21–65, Cl. D1—12.
Leichner, Floyd D.: *See*—
Leichner, Howard J. and F. D. 203,249.
Levy, David M. Doll. 203,278, 12–21–65, Cl. D34—4.
Maier, Kenneth D.: *See*—
Hoogesteger, Paul A., and Maier. 203,303.
Mann, Frank E. Four sleeper camper. 203,258, 12–21–65, Cl. D14—3.
Maxemovich, Marco, and J. W. Taylor, to United States Rubber Co. Tire. 203,318, 12–21–65, Cl. D90—20.
Maxemovich, Marco: *See*—
Busch, Robert F., and Maxemovich. 203,319.
McNair, Samuel L., to The Songrand Corp. Hydrotherapy bath unit. 203,311, 12–21–65, Cl. D83—1.
McNulty, Frank J. Vehicle wheel. 203,260, 12–21–65, Cl. D14—30.
Morris, David L. Salt shaker or the like. 203,289, 12–21–65, Cl. D44—22.

Motor Valet, Inc.: *See*—
Bullock, Harry C. 203,315.
Nova Products, Inc.: *See*—
Pleasants, Jack. 203,280.
O'Link, Maurice H., to Stearns Mfg. Co. Reversible vest. 203,250, 12–21–65, Cl. D3—4.
Osmon, Elmer A.: *See*—
Bartlett, John N., and Osmon. 203,313.
Pascucci, Michael. Brick. 203,266, 12–21–65, Cl. D18—2.
Pennington, John. Candle holder. 203,290, 12–21–65, Cl. D48—2.
Peters & Russell, Inc.: *See*—
Russell, Linus E. 203,309.
Pettengill, Floyd E., to Anchor Hocking Glass Corp. Tumbler or similar article. 203,285, 12–21–65, Cl. D38—8.
Pettengill, Myron F., to General Electric Co. Luminaire. 203,293, 12–21–65, Cl. D48—31.
Phillips, James G., to Eberline Instrument Corp. Building air monitor. 203,264, 12–21–65, Cl. D16—2.
Phillips, Sam J., to Inter-Ocean Electronic Corp. Portable radio, or the like. 203,302, 12–21–65, Cl. D56—4.
Pleasants, Jack, to Nova Products, Inc. Golf practice viewing mirror. 203,280, 12–21–65, Cl. D34—5.
Pulos, Arthur J., and P. B. Sweeney, Jr., to Gaylord Bros., Inc. Library card printing machine. 203,308, 12–21–65, Cl. D64—11.
Quartararo, Philip. Reverse hole cutter and sharpener for sewn-in bicycle tube tires or the like. 203,296, 12–21–65, Cl. D54—13.
Quartararo, Philip. Scuffing tool for repairing sewn-in bicycle tube tires or the like. 203,297, 12–21–65, Cl. D54—13.
Raschke, Herbert A., to E. D. Bullard Co. Safety hat. 203,252, 12–21–65, Cl. D3—13.
Reed, Edward R., ½ to W. J. Langley. Thrower for targets or the like. 203,281, 12–21–65, Cl. D34—5.
Reliable Luggage, Inc.: *See*—
Kalla, Erwin. 203,306.
Reynolds Metals Co.: *See*—
Stengel, John E. 203,325.
Stengel, John E. 203,326.
Stengel, John E. 203,327.
Rockwell, Jarvin W. Vehicular toy or similar article. 203,284, 12–21–65, Cl. D34—15.
Rodrigues, Napoleon. Drip stand for a coffee making strainer or the like. 203,287, 12–21–65, Cl. D44—10.
Rogers, Lucious E., Jr. Ash tray. 203,312, 12–21–65, Cl. D85—2.
Rowenta Metallwarenfabrik G.m.b.H.: *See*—
Heuckeroth, Curt. 203,292.
Rumpf, Robert E., Jr. Game board. 203,282, 12–21–65, Cl. D34—5.
Russell, Linus E., to Peters & Russell, Inc. Pump. 203,309, 12–21–65, Cl. D65—1.
Ryan, John W. Car. 203,255, 12–21–65, Cl. D14—3.
S & A Electronics, Inc.: *See*—
Wells, Donald H. 203,295.
Scaramucci, Domer. Ball check valve. 203,323, 12–21–65, Cl. D91—3.
Schramm, John G. Advertising display unit or the like. 203,248, 12–21–65, Cl. D1—12.
Schrum, Donald J., to American Safety Equipment Corp. Bicycle pedal. 203,316, 12–21–65, Cl. D90—14.
Shesterkin, William L.: *See*—
Blankenship, Arthur C., Bogan, and Shesterkin. 203,320.
Blankenship, Arthur C., and Shesterkin. 203,321.
Songrand Corp., The: *See*—
McNair, Samuel L. 203,311.
Southern Illinois University Foundation: *See*—
Spackman, Robert R., Jr., and Johnson. 203,279.
Spackman, Robert R., Jr., and M. E. Johnson, to Southern Illinois University Foundation. Isometric exerciser. 203,279, 12–21–65, Cl. D34—5.
Speakman Co.: *See*—
Landell, Harper. 203,324.
Sperry Rand Corp.: *See*—
Sundberg, Carl W., and Ferar. 203,307.
Stearns Mfg. Co.: *See*—
O'Link, Maurice H. 203,250.
Stengel, John E., to Reynolds Metals Co. Place mat or the like. 203,325, 12–21–65, Cl. D92—26.
Stengel, John E., to Reynolds Metals Co. Place mat or the like. 203,326, 12–21–65, Cl. D92—26.
Stengel, John E., to Reynolds Metals Co. Place mat or the like. 203,327, 12–21–65, Cl. D92—26.
Sumida, Kunio A., to Dashew Business Machines, Inc. Tape cartridge. 203,272, 12–21–65, Cl. D26—14.
Sundberg, Carl W., and M. Ferar, to American Seating Co. Chair. 203,261, 12–21–65, Cl. D15—1.
Sundberg, Carl W., and M. Ferar, to Sperry Rand Corp. Typewriter. 203,307, 12–21–65, Cl. D64—11.
Swann, Ernest E., Jr. Tool for opening boxes. 203,268, 12–21–65, Cl. D22—3.
Sweeney, Paul B., Jr.: *See*—
Pulos, Arthur J., and Sweeney. 203,308.
Swisher, George W., Jr., to Concrete Machinery, Inc. Road construction machine or the like. 203,259, 12–21–65, Cl. D14—3.
Taylor, John W.: *See*—
Busch, Robert F., and Taylor. 203,317.
Maxemovich, Marco, and Taylor. 203,318.
Thatcher, Lewis E., to Gaylord Products, Inc. Hair clip. 203,314, 12–21–65, Cl. D86—10.
United States Rubber Co.: *See*—
Busch, Robert F., and Taylor. 203,317.
Maxemovich, Marco, and Taylor. 203,318.
Busch, Robert F., and Maxemovich. 203,319.
Blankenship, Arthur C., Bogan, and Shesterkin. 203,320.
Blankenship, Arthur C., and Shesterkin. 203,321.
Varwig, Lesley H. Camper. 203,256, 12–21–65, Cl. D14—3.
Veselik, Emil, and M. C. Wilson, to Calumet Steel Castings Corp. Supporting block for wheels. 203,286, 12–21–65 Cl. D41—1.
Wade, Norman, Co. Ltd.: *See*—
Faux, Alfred W., and Helland. 203,275.
Faux, Alfred W., and Helland. 203,276.
Faux, Alfred W., and Helland. 203,277.
Wells, Donald H., to S & A Electronics, Inc. Antenna mast clamp. 203,295, 12–21–65, Cl. D54—1.
White Consolidated Industries, Inc.: *See*—
Hamlett, Sidney J. 203,310.
Whittington, Charles E.: *See*—
Barsby, James B., and Whittington. 203,300.
Wilson, Marion C.: *See*—
Veselik, Emil, and Wilson. 203,286.
Woods, James F., to American Machine & Foundry Co. Toy airplane. 203,283, 12–21–65, Cl. D34—15.

LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 21ST DAY OF DECEMBER, 1965

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

ACF Industries Inc.: *See*—
Jeep, Charles W., Jr., and Niemeyer. 3,225,158.
AEL Development and Research Division, Inc: *See*—
Hawley, George F., and Moulder. 3,224,306.
AEL Food Automation Division, Inc.: *See*—
Moulder, Jean E., Hoffinger, and Scherr. 3,224,554.
A. V. Electronics, Inc.: *See*—
Auernheimer, Clarence L. 3,224,115.
Aasted, Jorgen: *See*—
Chatelain, Maurice G., Aasted, and Bensimon. 3,225,351.
Abe, Zenmon: *See*—
Takami, Katsumi, Abe, Matsuura, and Furuhata. 3,225,211.
Abraham, Harry M., ½ to J. Howarth, and L. C. Johnson. Clip for paper currency. 3,224,052, 12–21–65, Cl. 24—3.
Absatz, Seymour, and J. L. Cifu, Jr., to Sperry Rand Corp., Ford Instrument Co. Digital-to-analog converter. 3,225,345, 12–21–65, Cl. 340—347.
Achey, Norwood. Drainage tile. 3,224,200, 12–21–65, Cl. 61—13.
Acme Process Equipment Co.: *See*—
Holtz, Maurice. 3,224,881.
Acushnet Process Co.: *See*—
Kudrlavetz, Peter, Jr. 3,224,224.
Adams, Kenneth D., J. A. Herr, and I. G. Schwartzberg, to The Singer Co. Automatically actuated sewing machines. 3,224 393, 12–21–65, Cl. 112—2.
Addressograph-Multigraph Corp., Charles Bruning Division: *See*—
Gunto, Robert L. 3,224,649.
Addressograph-Multigraph Corp.: *See*—
Schulze, John J. 3,224,327.
Adee, Raymond A., to Hesston Mfg. Co., Inc. Method of cutting, conditioning and windrowing a crop. 3,224,177, 12–21–65 Cl. 56—23.
Adler, Imre, N. G. Erhardt, and R. M. Frank, to Litton Industries, Inc. Transverse drive for reciaimer. 3,224,604, 12–21–65, Cl. 214—10.
Advanced Kinetics, Inc.: *See*—
Furth, Harold P. 3,225,285.
Aerojet-General Corp.: *See*—
Beecher, David W. 3,224,557.
Emigh, Willard F., D'Ooge, and Polackowyj. 3,224,628.
Henriksen, Erik K. 3,224,238.
Hilton, John L., and Squire. 3,225,193.
Kramer, Jack M. 3,224,373.
Mazelsky, Bernard, and Amey. 3,224,265.
Ming, Donald L., and Case. 3,224,250.
Tew Richard W., Sane and Geckler. 3,224,143.
Wolnes, George I. 3,224,814.
Aeroquip Corp.: *See*—
Buseth, Richard A., Steinert, and Kiszko. 3,224,728.
Crissy, Charles F. 3,224,794.
Elsner, Edwin C. 3,224,385.
Elsner Edwin C., and White. 3,224,803.
Willis, William M. 3,224,400.
Agfa Aktiengesellschaft: *See*—
Strasser, Helmut. 3,224,351.
Ahlborn, John C.: *See*—
Dille, Roger M., Guptill, and Ahlborn. 3,224,849.
Ahlström, Allan E. Apparatus for grinding drills. 3,224,146, 12–21–65, Cl. 51—90.
Ainsworth, Cameron, F. C Blubaugh, L. A. Springman, and J. R. Zapapas, to Lilly Eli and Co. Antacid compositions and method of using same. 3,224,940, 12–21–65, Cl. 167—55.
Ainsworth, Cameron, and C. W. Ryan, to Lilly Eli and Co. Anticholingeric substituted butyramides. 3,225,091, 12–21–65, Cl. 260—558.
Air Conditioning Corp.: *See*—
Nickell, Grason T., Glass, and Cheek. 3,224,214.
Aircraft Armaments, Inc.: *See*—
Barr, Irwin R. 3,224,821.
Airtex Products, Division of United Industrial Syndicate, Inc.: *See*—
Hicks, William J. 3,224,377.
Akers, John N. Apparatus for distilling non-potable water to produce potable water. 3,224,948, 12–21–65, Cl. 202—192.
Alberts, Claes Y. H.: *See*—
Brannfors, Sten H., and Alberts. 3,224,203.
Albritton, James W., to Phillips Petroleum Co. Fractionation with constant flow rate feed. 3,224,210, 12–21–65, Cl. 62—21.
Albro, Lewis P.: *See*—
Zenitz, Bernard L., and Albro. 3,225,037.
Aleson, Robert N.: *See*—
Bridges, Roy G., Aleson, Hutchings, Whited, and Dyrness. 3,224,040.
Bridges, Roy G., Aleson, Hutchings, Whited, and Dyrness. 3,225,126.
Alexander, Jack P., to The Samuel R. Noble Foundation Inc. Soil sampler. 3,224,512, 12–21–65, Cl. 173—19.
Alexander, Raymond: *See*—
Stites, Francis H., and Alexander. 3,225,177.
Alfieri, Giuseppe, to Fabbrica Italiana Magneti Marelli S.p.A. Three-way servo deviator for pressurized fluid systems and more specifically for pneumatic braking systems. 3,224,455, 12–21–65, Cl. 137—113.
Allbrandi, Joseph A., A. M. Campbell, and J. A. Maynard, to Honeywell Inc. Control apparatus. 3,224,245, 12–21–65, Cl. 73—1.
Allam, Ivor W.: *See*—
MacHutchin, John G., Cowan, Allam, and Byler. 3,224,978.
Allen, Dayton. Collapsible box for facial tissues. 3,224,633, 12–21–65, Cl. 221—48.
Allen, Edward M., and F. E. Benner, Jr., to Pittsburgh Plate Glass Co. Process for producing titanium oxide pigments. 3,224,836, 12–21–65, Cl. 23—202.
Allen, John W., Jr.: *See*—
McClung, Robert W., Dodd, Allen, and Nance. 3,225,294.
Allen, Merton: *See*—
Schrom, Edward C., and Allen. 3,225,252.
Allen, Richard J., III: *See*—
Van Paassen, Hugo L. L., Allen, and Muly. 3,225,251.
Allied Chemical Corp.: *See*—
Skreckoski, Gerald R. 3,224,988.
Allis-Chalmers Mfg. Co.: *See*—
May, John W., and Benham. 3,224,280.
Allman, Orin H., C. E. Brumm, and L. F. Pither, to Owens-Illinois Glass Co. Apparatus for homogenising molten glass in a forehearth. 3,224,857, 12–21–65, Cl. 65—178.
Allmanna Svenska Elektriska Aktiebolaget: *See*—
Engstrom, Gunnar. 3,225,288.
Allred, Arthur L., to Allred Metal Stamping Works, Inc. Chair fixture. 3,224,724, 12–21–65, Cl. 248—417.
Allred Metal Stamping Works, Inc.: *See*—
Allred, Arthur L. 3,224,724.
Altieri, Frank A., ½ to Charles Trivinia. Fluid pressure drive racing game apparatus. 3,224,771, 12–21–65, Cl. 273—86.
Altman, Jerome L., and M. S. Rubin, to Laboratory for Electronics, Inc. Unitary microwave tester for transmit-receive systems including power measuring and reflective means. 3,225,295, 12–21–65, Cl. 324—58.
Altrock, Gordon M. Scrubbing and polishing device. 3,224,026, 12–21–65, Cl. 15—119.
Amariti, Luigi: *See*—
Klimkowski, Robert J., Amariti, and Janda. 3,224,878.
American Biltrite Rubber Co., Inc.: *See*—
Elliott, Robert H. 3,224,566.
American Cyanamid Co.: *See*—
Cowen, Frank M., and Bellis. 3,225,074.
Dauterman, Walter, and O'Brien. 3,225,044.
Klingsberg, Erwin. 3,225,062.
Rabinowitz, Robert. 3,225,106.
Schaefer, Frederic C., and Huffman. 3,225,077.
Welcher, Richard P. 3,225,103.
American Enka Corp.: *See*—
Kessler, Jacob C. F. 3,224,987.
Noordenbos, Pieter K. 3,224,695.
Wilfert, Gustav. 3,224,991.
American Fixture, Inc.: *See*—
Schulze, Howard L. 3,224,823.
American Home Products Corp.: *See*—
Deghenghi, Romano. 3,225,072.
American Machine & Foundry Co.: *See*—
Dearsley, George. 3,224,451.
American Maise-Products Co.: *See*—
Milloch, Robert L. 3,224,867.
American Metal Climax, Inc.: *See*—
Richter, John H. 3,224,091.
American Optical Co.: *See*—
Hicks, John W., Jr. 3,224,851.
American Pipe and Construction Co.: *See*—
Hausmann, Delbert A. 3,224,798.
Hausmann, Delbert A., and Miller. 3,224,797.
Amey, Harry B., Jr.: *See*—
Mazelsky, Bernard, and Amey. 3,224,265.
Ampex Corp.: *See*—
Cochran, Donald J. 3,225,218.
Jensen, Peter W. 3,225,134.
Stratton, Boyd L., and Morgan. 3,225,310.
Amplifone Corp.: *See*—
Handing, Theodore E. 3,225,259.
Amsler Morton Co., a Division of Textron Inc.: *See*—
Bernard, Edwin J. 3,224,747.
Amsted Industries Inc.: *See*—
Wills, William T., Jr. 3,224,304.
Anadex Instruments, Inc.: *See*—
Winter, Arthur J. 3,225,215.
Anciens Etablissements Goldenberg & Cie: *See*—
Durget, Andre. 3,224,202.

Anderer, Joseph H., A. P. Da Vinci, and T. F. McHugh, to FMC Corp. Method of forming regenerated cellulose fibers. 3,225,125, 12–21–65, Cl. 264—50.

Andersen, Edward O., to General Electric Co. Method of manufacturing a thermally responsive switch. 3,224,075, 12–21–65, Cl. 29—155.5.

Andersen, Harry M., and W. K. Johnson, to Monsanto Co. Catalyst compositions comprising aluminum chloride. 3,225,022, 12–21–65, Cl. 260—94.9.

Andersen, Johan M., to Dupilcon Co., Inc. Nestable industrial cart. 3,224,787, 12–21–65, Cl. 280—33.99.

Anderson, Alvin P., to Shell Oil Co. Lubricating oil process. 3,224,955, 12–21–65, Cl. 208—28.

Anderson Co., The: *See*—
Peras, Lucien, and Suisse. 3,224,028.

Anderson, Howard A., and R. W. Herring. Device for lifting bed patients. 3,224,016, 12–21–65, Cl. 5—627.

Anderson, Milton D., Jr.: *See*—
Fiser, William D., Van Roo, Berry, Anderson, and Korb. 3,224,681.

Andrew, Alfred T.: *See*—
Sealey, Alan G., and Andrew. 3,224,872.

Andrews, Zenas B., to United States of America, Navy. Hydraulic cylinder-zero external volumetric change type. 3,224,751, 12–21–65, Cl. 267—1.

Anheuser-Busch, Inc.: *See*—
Commerford, John D., Scallet, and Van Duzee. 3,224,903

Antenna Specialists Co.: *See*—
Eville, William T., and Finke. 3,224,716.

Arbed, Acieries Reunies de Burbach-Eich-Dudelange: *See*—
Metz, Paul. 3,224,888.

Ardern, Milton W. Variable control means. 3,224,295, 12–21–65, Cl. 74—568.

Arion, Ionascut: *See*—
Sebastian, Socol, Constantin, Ioan, and Arion. 3,224,639.

Armco Steel Corp.: *See*—
Blose, Thomas L., and Beckert. 3,224,799.
Schnedler, Paul E. 3,224,847.

Arnold, Carter H. Device for coiling and storing wire rope and the like. 3,224,707, 12–21–65, Cl. 242—129.

Arpaia, Michael A. Fuel supply system, carburetor and method. 3,224,425, 12–21–65, Cl. 123—122.

Asmus, Klaus-Dieter, and E. Fischer, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Process for the manufacture of heat-stabilized copolymers of polyoxymethylenes. 3,225,005, 12–21–65, Cl. 260—67.

Associated Electrical Industries Ltd.: *See*—
Gregory, Sydney A. 3,224,168.
Saraga, Wolja. 3,225,316.

Associated Engineering Ltd.: *See*—
Westbrook, Michael H. 3,224,322.

Atkins, Harold W.: *See*—
Kuehn, Jack W., and Atkins. 3,224,740.

Atkinson, Truman L. Lawn spreader. 3,224,636, 12–21–65, Cl. 222—41.

Atlas Chemical Industries, Inc.: *See*—
Le Maistre, John W., and Ford. 3,225,067.
Lew, Baak W. 3,225,066.
Lew, Baak W. 3,225,069.
Zech, John D. 3,225,068.

Atomic Energy of Canada Ltd.: *See*—
Reel, Bernard J. 3,225,322.
Tolmie, Ronald W. 3,225,199.

Aubin, Gérard F.: *See*—
Grosmangin, Jacques, and Aubin. 3,224,949.

Audesse, Emery G., J. J. Palermo, and R. F. Scoledge, to Sylvania Electric Products Inc. Incandescent lamp. 3,225,247, 12–21–65, Cl. 313—271.

Auernheimer, Clarence L., to A.V. Electronics, Inc. Automatic muting system. 3,224,115, 12–21–65, Cl. 35—35.

Austgen, Kenneth J.: *See*—
Gutridge, Jack E., and Austgen. 3,224,383.

Austgen, Kenneth J., to Pullman Inc. Trainline arrangement. 3,224,598, 12–21–65, Cl. 213—1.

Autoclave Engineers, Inc.: *See*—
Epprecht, Edward H. 3,224,410.

Automatic Welding Co.: *See*—
Mattson, Everett L. 3,224,602.

Automotive Servicenter, Inc.: *See*—
Linde, William O. 3,224,735.

Autrum, Werner, to NSU Motorenwerke Aktiengesellschaft, and Wankel G.m.b.H. Rotary mechanism housing construction. 3,224,422, 12–21–65, Cl. 123—8.

Avisun Corp.: *See*—
Quinn, Thomas M., and Barkis. 3,224,896.

Baas, Gerardus, and C. M. La Grouw, to North American Philips Co., Inc. Devitrified glass-to-metal compression seal. 3,225,132, 12–21–65, Cl. 174—151.

Babcock, Douglas C., to Pacific Resins & Chemicals, Inc. Preparing a water soluble cationic thermosetting resin by reacting a polyamide with epichlorohydrin and ammonium hydroxide. 3,224,990, 12–21–65, Cl. 260—29.2.

Bachhuber, Theodore J. Automatic primer cap feeder for shotgun shell reloaders. 3,224,318, 12–21–65, Cl. 86—38.

Backlund, Richard S.: *See*—
Becker, Harold E. 3,224,596.
Becker, Harold E. 3,224,737.

Badger, Alfred E., G. J. Lehr, and J. A. Woods, to Libbey-Owens-Ford Glass Co. Treatment of glass batch materials. 3,224,854, 12–21–65, Cl. 65—135.

Bailey, Frederick E., Jr.: *See*—
Lundberg, Robert D., and Bailey. 3,224,994.

Bailey Meter Co.: *See*—
Koppel, Harold H., and Waja. 3,225,289.

Bailey, Peter J., B. D. Baines, and H. K. Lindstaedt, to Nuclear Chemical Plant Ltd. Conveyor systems. 3,224,562, 12–21–65, Cl. 198—131.

Bailey, Todd D. Power take-off drum for vehicles. 3,224,704, 12–21–65, Cl. 242—95.

Baines, Bernard D.: *See*—
Bailey, Peter J., Baines, and Lindstaedt. 3,224,562.

Baker, Eugene H., D. P. Osborn, Jr., and M. O. Steen. Exercising machine and brake. 3,224,765, 12–21–65, Cl. 272—79.

Baker Perkins Inc.: *See*—
Stram, George H. 3,224,556.

Baker, Ronald, and I. D. Rattee, to Imperial Chemical Industries Ltd. Reactive naphthol monoazo dyestuffs. 3,225,027, 12–21–65, Cl. 260—194.

Baker, William P., Jr., to E. I. du Pont de Nemours and Co. Thermoplastic copolymer of vinyl monomer and cyanate monomer. 3,225,119, 12–21–65, Cl. 260—874.

Baker, William P., Jr., to E. I. du Pont de Nemours and Co. Thermoplastic copolymer of vinyl monomer and sulfur. 3,225,120, 12–21–65, Cl. 260—874.

Baker, William P., Jr., to E. I. du Pont de Nemours and Co. Thermoplastic copolymer of vinyl monomer and aldehyde monomer. 3,225,121, 12–21–65, Cl. 260—874.

Bakker, Martinus A. M., and A. Van Vulpen, to North American Philips Co., Inc. Semi-conductor devices and methods for their manufacture. 3,225,273, 12–21–65, Cl. 317—237.

Balamuth, Lewis, to Cavitron Ultrasonics Inc. Method of high frequency vibration fitting. 3,224,086, 12–21–65, Cl. 29—525.

Balamuth, Lewis, and A. Kuris, to Cavitron Ultrasonics Inc. Method of joining thermoplastic sheet material by ultrasonic vibrations. 3,224,915, 12–21–65, Cl. 156—73.

Baldwin, Douglas, Jr., to Shell Oil Co. Sulfide treatment of reforming catalyst. 3,224,962, 12–21–65, Cl. 208—138.

Ballard, Earcy L. Fly trap. 3,224,145, 12–21–65, Cl. 47—38.1.

Balmer, Clifford E., C. A. Brown, M. D. Hurwitz, and J. E. Masterson, to Rohm & Haas Co. Vinyl chloride resins plasticized with copolymers of ethylene and an acrylate. 3,224,996, 12–21–65, Cl. 260—31.8.

Barassi, Carlo, and G. Cappa, to Pirelli S.p.A. Removable tread tires. 3,224,482, 12–21–65, Cl. 152—176.

Barber, Edward G.: *See*—
Roper, Alec N., and Barber. 3,224,984.

Barkan, Philip, to General Electric Co. Electric switch. 3,225,160, 12–21–65, Cl. 200—87.

Barkis, Edward: *See*—
Quinn, Thomas M., and Barkis. 3,224,896.

Barlow, George E.: *See*—
Edington, Robert A., Barlow, and Checkland. 3,224,068.

Barlow, Joseph S. Combustion control. 3,224,188, 12–21–65, Cl. 60—30.

Barney, Kay H., and L. J. Graber, to Sperry Rand Corp. Automatic noise jamming multi-carrier F.M. system. 3,225,300, 12–21–65, Cl. 325—132.

Barogenics, Inc.: *See*—
Meissner, Milton. 3,224,042.

Barr, Irwin R., to Aircraft Armaments, Inc. Ball bearing. 3,224,821, 12–21–65, Cl. 308—187.2.

Barrett, Maurice L., Jr., to Shell Oil Co. Proving flowmeters. 3,224,247, 12–21–65, Cl. 73—3.

Barth-Wehrenalp, Gerhard, R. A. Bernoff, and D. M. Gardner, to Pennsalt Chemicals Corp. Preparation of alkyl ammonium nitrates. 3,225,050, 12–21–65, Cl. 260—268.

Barwick, Frederick E., III: *See*—
Jeremias, Charles G., and Barwick. 3,225,025.

Basso, Michael J., to United States of America, Army. Fast neutron detection and flux density measurement. 3,225,197. 12–21–65, Cl. 250—83.1.

Bastow, Gordon C. Reels. 3,224,706, 12–21–65, Cl. 242—107.13.

Bath, Cyril, Co., The: *See*—
Doiney, Stanley M. 3,224,241.

Battista, Orlando A., to FMC Corp. Bearing. 3,224,967. 12–21–65, Cl. 252—12.

Baudo, Gaspare C., to Radio Frequency Laboratories, Inc. Protective relaying circuit. 3,225,266, 12–21–65, Cl. 317—138.

Baum, Kurt, to Kaiser Industries Corp. Recovery of combustible gases in ferro-metallurgical processes. 3,224,750, 12–21–65, Cl. 266—35.

Baumann, Dwight M., D. E. Hanson, and R. Shamie, to Metal Bellows Corp. Mechanical quantizer. 3,224,344, 12–21–65, Cl. 92—45.

Baumann, Norbert J., to The Procter & Gamble Co. Method for packaging pressure feed devices. 3,224,158, 12–21–65, Cl. 53—22.

Baur, Fredic J.: *See*—
Motzel, Werner J., and Baur. 3,224,886.

Bayerische Motoren Werke Aktiengesellschaft: *See*—
Boguslawski, Rudolf, and Brandl. 3,224,534.

Bayuk Cigars Inc.: *See*—
De Feo, Richard A. 3,224,568.

Beach, Gerald H., to Dresser Industries, Inc. Apparatus for separating liquid particles from liquid particle laden gas. 3,224,175, 12–21–65, Cl. 55—440.

Bean, Arthur W., to E. M. Melahn. Hydraulic control apparatus. 3,224,341, 12–21–65, Cl. 91—358.

Bear Mfg. Co.: *See*—
MacMillan, Charles W. 3,224,102.

Beaty, Charles A., to RFD Inc. Temperature compensated resonant cavity structure. 3,225,308, 12–21–65, Cl. 331—98.

Becciani, Renato, and L. Valtorta. Pressure indicating device. 3,224,264, 12–21–65, Cl. 73—146.8.

Beck, Ludwig. Heat exhaust suction device for opaque projectors. 3,224,321, 12–21–65, Cl. 88—26.

Beckenstein, Leonard, 50% to M. Lahm. Knitting machine. 3,224,227, 12–21–65, Cl. 66—50.

Becker, Harold E., ¼ to R. S. Backlund. Clothes hanger support. 3,224,596, 12–21–65, Cl. 211—113.

Becker, Harold E., ¼ to R. S. Backlund. Agitator table. 3,224,737, 12–21–65, Cl. 259—1.

Beckert, Henry J.: *See*—
Blose, Thomas L., and Beckert. 3,224,799.

Beckman Instruments, Inc.: *See*—
Hinrichs, Karl, Eastman, and Kolden. 3,225,213.

Beckman, Ronald, and R. Y. Hatanaka, to Herman Miller, Inc. Furniture base. 3,224,719, 12–21–65, Cl. 248—163.

Bederson, Edwin M.: *See*—
Shoher, Robert S., and Bederson. 3,224,544.

Beecher, David W., to Aerojet-General Corp. Article spacing system for conveyors. 3,224,557, 12–21–65, Cl. 198—34.

Behrens, Walter A., and D. F. O'Keefe, to Chemicolloid Laboratories, Inc. Colloid mills. 3,224,689, 12–21–65, Cl. 241—256.

Beiter, Rudolf E., to Honolulu Iron Works Co. Shredder. 3,224,688, 12–21–65, Cl. 241—154.

Bell Aerospace Corp.: *See*—
Buddenhagen, Theodore F. 3,225,346.

Bell Telephone Laboratories, Inc.: *See*—
Gebhardt, Robert C., Shafer, Spencer, Toy, Vigliante, Williams, and Williford. 3,225,144.
Johnson, Leo F., and Nassau. 3,225,806.
Klein, Donald L. 3,224,904.
Kompfner, Rudolf. 3,224,330.
Kompfner, Rudolf. 3,224,331.
Schroeder, Manfred R. 3,225,142.
Wolfe, Raymond. 3,225,208.

Bellis, Gloria: *See*—
Cowan, Frank M., and Bellis. 3,225,074.

Benbow, Burtis W. Clamping device. 3,224,752, 12–21–65, Cl. 269—6.

Bendix Corp., The: *See*—
Cronemeyer, Donald C. 3,225,272.
Horrell, Maurice W. 3,225,183.
Robinson, Arthur S. 3,225,210.
Thompson, Robert R. 3,225,239.

Benham, George K.: *See*—
May, John W., and Benham. 3,224,280.

Benjamin, Frank E., to Wrightway Engineering Co. Swivel mounting for aerating device or the like. 3,224,793, 12–21–65, Cl. 285—8.

Benner, Floyd E., Jr.: *See*—
Allen, Edward M., and Benner. 3,224,836.

Bennett, Milton C., to J. I. Case Co. Regulator. 3,224,196, 12–21–65, Cl. 60—52.

Bennett, Walter, to Utility Trailer Mfg. Co. Perimeter cooled cargo container. 3,224,500, 12–21–65, Cl. 165—53.

Bensimon, Jean-Claude: *See*—
Chatelain, Maurice G., Aasted, and Bensimon. 3,225,351.

Benton, Robert C., and G. Decker, to Chemcut Corp. Method and apparatus for etching. 3,224,914, 12–21–65, Cl. 156—2.

Berg Mfg. & Sales Co.: *See*—
Horowitz, Charles. 3,224,815.

Berkin, George M., to International Business Machines Corp. Sequence checking means with plural gate and latch means. 3,225,205, 12–21–65, Cl. 250—214.

Berman, Marvin A., and A. Mayer, to Capitol Hardware Mfg. Co., Inc. Panel supporting structure. 3,224,153, 12–21–65, Cl. 52—495.

Bernard, Edwin J., to Amsler Morton Co., A Division of Textron Inc. Soaking pit construction for metal ingots. 3,224,747, 12–21–65, Cl. 263—41.

Bernardin, Leo J., to Kimberly-Clark Corp. Method of forming cross-linked cellulosic fibers and product thereof. 3,224,926, 12–21–65, Cl. 162—146.

Bernoff, Robert A.: *See*—
Barth-Wehrenalp, Gerhard, Bernoff, and Gardner. 3,225,050.

Bernstein, Isadore M.: *See*—
Erbstoesser, James A. 3,224,174.

Berry, James S., Jr.: *See*—
Fiser, William D., Van Roo, Berry, Anderson, and Korb. 3,224,681.

Berry Metal Co.: *See*—
Berry, Walter V. 3,224,749.

Berry, Walter V., to Berry Metal Co. Oxygen injection lance. 3,224,749, 12–21–65, Cl. 266—34.

Bertolini, William A., R. A. Klein, and C. W. Selm, to Pullman Inc. Mounting for marker light. 3,225,185, 12–21–65, Cl. 240—8.2.

Bertrand, Paul A. Tractor vehicle. 3,224,407, 12–21–65, Cl. 115—1.

Best, George C., to Hawker Siddeley Canada Ltd. Closed cycle gas turbine. 3,224,190, 12–21–65, Cl. 60—39.

Betzler, Richard F. Typewriter impression control. 3,224,547, 12–21–65, Cl. 197—183.

Beurel, Guy L. M. Sheet metal sectional gate valves. 3,224,729. 12–21–65, Cl. 251—227

Bidwell, Howard, ½ to R. Bidwell. Apparatus for dry defibering of fibrous materials. 3,224,687, 12–21–65, Cl. 241—55.

Bidwell, Rachel: *See*—
Bidwell, Howard. 3,224,687.

Biehl, Arthur T.: *See*—
Ford, Franklin C., and Biehl. 3,224,337.

Biehl, Arthur T., to United States of America, Atomic Energy Commission. Low power nuclear reactors. 3,224,977, 12–21–65, Cl. 252—301.1.

Biehl, Arthur T., to MB Associates. Miniature magnetohydrodynamic generator. 3,225,227, 12–21–65, Cl. 310—11.

Bieri, Hans. Cutter for separating a strand of material. 3,224,310, 12–21–65, Cl. 83—157.

Bi/fresh Dispenser Co.: *See*—
Kirby, Jack A. 3,224,822.

Bigge Drayage Co.: *See*—
Whitmire, William A. 3,224,597.

Bilbro, James E.: *See*—
Burdick, Richard L., Brown, and Bilbro. 3,224,501.

Billigsley, Frank S. Device for irradiating a body cavity. 3,224,432, 12–21–65, Cl. 128—1.2.

Bitha, Panayota: *See*—
McCormick, Jerry R. D., Winterbottom, and Bitha. 3,226,435.

Black and Decker Mfg. Co., The: *See*—
Bloom, Leonard. 3,224,474.
Maffey, George E., Jr. 3,225,230.

Black, Sivalls & Bryson, Inc. (B.S.&B.): *See*—
Conover, William J. 3,224,414.

Black, James J., and F. V. Roy, to Pullman Inc. Method of welding a joint. 3,224,085, 12–21–65, Cl. 29—493.

Black, William A. P., E. T. Dewar, and D. Rutherford, to United States of America, Agriculture. Carbohydrate derived polyamides. 3,225,012, 12–21–65, Cl. 260—78.

Blaha, Jess P., F. R. Cotton, and A. P. Gorbe, to Ford Motor Co. Apparatus for applying adhesive to a surface. 3,224,411, 12–21–65, Cl. 118—408.

Blair, Robert C., Jr. Orthopedic cervical brace. 3,224,439, 12–21–65, Cl. 128—75.

Blaw-Knox Co.: *See*—
Nowak, Leon J., Jr. 3,224,515.

Blazek, Henry, to Sperry Rand Corp. Base motion compensator for rate integral gyro. 3,224,281, 12–21–65, Cl. 74—5.6.

Bleiweiss, Arthur F., G. Colombo, J. B. Dickson, and B. Orlov, to Signal-Stat Corp. 2-vane voltage compensated shunt flasher. 3,225,165, 12–21–65, Cl. 200—122.

Bleiweiss, Arthur F., G. Colombo, J. B. Dickson, and B. Orlov, to Signal-Stat Corp. 2-vane voltage compensated shunt flasher. 3,225,166, 12–21–65, Cl. 200—122.

Blizard, Robert B., to Martin-Marietta Corp. Method and apparatus for docking vehicles. 3,224,709, 12–21–65, Cl. 244—1.

Blomgren, Oscar C., Jr.: *See*—
Blomgren, Oscar C., Sr., Munck, Griffiths, and Blomgren. 3,224,485.

Blomgren, Oscar: *See*—
Blomgren, Oscar C., Sr., Munck, Griffiths, and Blomgren. 3,224,497.

Blomgren, Oscar C., Sr., E. G. Munck, S. R. Griffiths, Jr., and O. C. Blomgren, Jr., to Inter-Probe, Inc. Heat control device and method. 3,224,485, 12–21–65, Cl. 158—1.

Blomgren, Oscar C., Sr., E. G. Munck, S. R. Griffiths, Jr., and O. C. Blomgren, Jr., to Inter-Probe, Inc. Method and apparatus for lowering the temperature of a heated body. 3,224,497, 12–21–65, Cl. 165—2.

Bloom, Leonard, to The Black and Decker Mfg. Co. Automatically-applied friction braking means for a portable electric tool. 3,224,474, 12–21–65, Cl. 143—43.

Blore, James H., and B. J. Ward, to E. I. du Pont de Nemours and Co. Method and apparatus for laying in yarn on dial needles. 3,224,225, 12–21–65, Cl. 66—9.

Blose, Thomas L., and H. J. Beckert, to Armco Steel Corp. Threaded tube joint having a metal-to-metal seal. 3,224,799, 12–21–65, Cl. 285—334.

Blubaugh, Frederick C.: *See*—
Ainsworth, Cameron, Blubaugh, Springman, and Zapapas. 3,224,940.

Bluestein, Bernard R.: *See*—
Phillips, Joseph, and Bluestein. 3,224,956.

Blumstein, Abraham. Cuff links. 3,224,058, 12–21–65, Cl. 24—97.

Boag, James C., and H. R. Dittmar, to Ethyl Corp. Organic material stabilized with substituted hydroxy benzyl amines. 3,224,974, 12–21–65, Cl. 252—51.5.

Boguslawski, Rudolf, and J. Brandl, to Bayerische Motoren Werke Aktiengesellschaft. Synchronising arrangement. 3,224,534, 12–21–65, Cl. 192—53.

Boguss, Walter F. Display boards and magnets useful therewith. 3,224,126, 12–21–65, Cl. 40—63.

Boivin, Rodrigue G.: *See*—
Brandts, Theodorus G., Helleur, and Hopkins. 3,224,925.

Bolkow-Entwicklungen KG.: *See*—
Hermann, Joachim, and Juergensen. 3,224,710.

Bonnierforetagen, AB: *See*—
Carlen, Bo R. Jr. 3,224,558.

Borak, Martin D. Projectile projecting and retrieving toy boat. 3,224,141, 12–21–65, Cl. 46—242.

Bordeau, Robert L.: *See*—
Kruger, James B., and Bordeau. 3,224,090.

Borden Co., The: *See*—
Bosworth, Peter. 3,224,920.

Boren, Adam. Refrigeration system for display cabinets, food storage cabinets, and the like. 3,224,219, 12–21–65, Cl. 62—278.

Borg-Warner Corp.: *See*—
Crouch, Richard O. 3,224,216.
Holdeman, John W., and Jeakle. 3,224,299.
Strong, Stanley J., and Wolfe. 3,225,206.

Borger, Jack W., to Pullman Inc. Cushioned rack assembly for railway cars. 3,224,384, 12–21–65, Cl. 105—368.

Borman, Elmer W., to Inland Steel Co. Door frame for metallurgical furnace. 3,224,420, 12–21–65, Cl. 122—497.

Bosworth, Peter, to The Borden Co. Method of making plied fiber laminates utilizing coacting resins. 3,224,920, 12–21–65, Cl. 156—315.

Boudreau, Howard E.: *See*—
Smith, Harold J., and Boudreau. 3,224,217.

Bowman, Hyman D. Exhaust filter for internal combustion engines. 3,224,171, 12–21–65, Cl. 55—274.

Bowman-Shaw, George N., to Lancers Machinery Ltd. Transport vehicles. 3,224,613, 12–21–65, Cl. 214—396.

Boyce, Clive B. C., and P. N. Manis, to Shell Oil Co. N-trityl-morpholines and process for their production. 3,225,039, 12–21–65, Cl. 260—247.

Boyle, Edward H., and A. F. Geissler, to Efficax Industries Pty. Ltd. Automatically variable choke carburetor. 3,224,746, 12–21–65, Cl. 261—50.

Bosich, Michael J. Conveying system and valve construction therefor. 3,224,812, 12–21–65, Cl. 302—28.

Brack, Henry B.: *See*—
Brack, Leland E., Rein, and H. B. Brack. 3,224,685.

Brack, Leland E., A. Rein, and H. B. Brack, to Micair Exploder Trust. Method and apparatus for comminuting materials. 3,224,685, 12–21–65, Cl. 241—5.

Bramekamp, Karl-Jürgen, and A. Kulling, to Titangesellschaft m.b.H. Process and device for cooling a hot gas mixture containing TiO_2. 3,224,215, 12–21–65, Cl. 62—120.

Brandl, Josef: *See*—
Boguslawski, Rudolf, and Brandl. 3,224,534.

Brandt, James W., to Lovell Mfg. Co. Wringer. 3,224,237, 12–21–65, Cl. 68—257.

Brandts, Theodorus G., D. E. Helleur, R. M. Hopkins, and R. G. Bolvin, to Consolidated Paper (Bahamas) Ltd Fibrous products from barking waste. 3,224,925, 12–21–65, Cl. 162—93.

Brannfors, Sten H., and C. Y. H. Alberts, to Skanska Cementgjuteriet, AB. Method of driving tunnels in rock. 3,224,203, 12–21–65, Cl. 61—45.

Branson Instruments, Inc.: *See*—
Soloff, Robert S., and Linsley. 3,224,916.

Bratton, Clarence R., to Thiokol Chemical Corp. Rocket motor construction. 3,224,191, 12–21–65, Cl. 60—35.6.

Braude, George L., and J. A. Cogliana, to W. R. Grace & Co Process for purifying hydrazinium chlorides. 3,225,101, 12–21–65, Cl. 260—583.

Brault, Andre R., to Optomechanisms, Inc. Means for optical measuring about two axes. 3,224,099, 12–21–65, Cl. 33—69.

Braun, Leonard C.: *See*—
Standley, Wendell E., and Braun. 3,224,555.

Braun, Oskar: *See*—
Dobner, Reinhold, Braun, and Ulmer. 3,224,394.

Braus, Harry, and F. D. Waas, to National Distillers and Chemical Corp. Derivatives of 2,5-diarylpyrrole. 3,225,061, 12–21–65, Cl. 260—313.

Breihan, Roger R. Hot gas engine. 3,224,187, 12–21–65, Cl. 60—24.

Brekoo, Hendrikus P. J., and A. Verhoeff, to North American Philips Co., Inc. High tension direct current generator with circuit elements arranged in concentric tubular array. 3,225,258, 12–21–65, Cl. 317—99.

Brems, John H.: *See*—
Pilla, Frank J., and Brems. 3,224,283.

Bridgeport Machines Inc., The: *See*—
Wahlstrom, Magnus. 3,224,340.

Bridges, Roy G., R. N. Aleson, D. B. Hutchings, R. E. Whited, and M. L. Dyrness, to Tempo Plastic Co., Inc. Expandable bead molding. 3,224,040, 12–21–65, Cl. 18—5.

Bridges, Roy G., R. N. Aleson, D. B. Hutchings, R. E. Whited, and M. L. Dyrness, to Tempo Plastic Co., Inc. Expandable bead molding. 3,225,126, 12–21–65, Cl. 264—51.

Brien, Andre. Watch dial illuminating device. 3,224,184, 12–21–65, Cl. 58—50.

Brikowski, Harold J., to Honeywell Inc. Apparatus for recording. 3,225,354, 12–21–65, Cl. 346—109.

Brinkmann, Harry A. C. Tenpin. 3,224,770, 12–21–65, Cl 273—82.

Bristol Aircraft Ltd.: *See*—
Summers, Leo E. A., and Horwood. 3,224,072.

Bristol-Myers Co.: *See*—
Johnson, David A., and Hardcastle. 3,225,033.
Juby, Peter F. 3,225,058.
Partyka, Richard A. 3,225,047.

British Petroleum Co. Ltd., The: *See*—
Evans, Norman, and Wiles. 3,224,838.

British Telecommunications Research Ltd.: *See*—
Clark, Thomas H. 3,225,342.

British Titan Products Co. Ltd.: *See*—
Wynne, Reginald G. 3,224,993.

Brochier, Pierre, R. Kloos, and J. H. Cocquart, to Compagnie des Machines Bull (Societe Anonyme). Modular package unit for electrical components. 3,225,260, 12–21–65, Cl. 317—101.

Brodeur, Charles H.: *See*—
Schlinger, Warren G., Brodeur and Marion. 3,224,959.

Brodie, Kenneth G., to The Singer Co. Floor polishing and scrubbing machines with liquid dispensers. 3,224,023. 12–21–65, Cl. 15—50.

Brooks, David N.: *See*—
Dayton, David R., and Brooks. 3,224,651.

Broomall, Robert M., to The J. H. Day Co. Vertical mixer construction. 3,224,744, 12–21–65, Cl. 259—102.

Broomell, George L.: *See*—
Gardiner, Paul C., Jewett, and Broomell. 3,225,325.

Brown, Alfred W.: *See*—
Conklin, Llewellyn M., and Brown. 3,225,131.

Brown, Boveri & Cie., Aktiengesellschaft: *See*—
Roth, Heins. 3,225,296.

Brown, Cicero C.: *See*—
Cochran, Chudleigh B. 3,224,508.

Brown, Clarence A.: *See*—
Balmer, Clifford E., Brown, Hurwitz, and Masterson. 3,224,996.

Brown, David J. B., to Chaseside Engineering Co. Ltd. Shovel loaders. 3,224,607, 12–21–65, Cl. 214—140.

Brown Fintube Co.: *See*—
Brown, John W., Jr., Buesing, and Kaiser. 3,224,051.

Brown, John W., Jr., A. C. Buesing, and F. T. Kaiser, to Brown Fintube Co. Method of introducing addition agent into a melt. 3,224,051, 12–21–65, Cl. 22—215.

Brown, Robert G.: *See*—
Dunn, Albert J., and Brown. 3,224,369.

Brown, Robert L., and G. W. Sears, Jr., to E. I. du Pont de Nemours and Co. Forming inorganic fiber material containing cationic starch and colloidal silica. 3,224,927, 12–21–65, Cl. 162—155.

Brown, William E.: *See*—
Burdick, Richard L., Brown, and Bilbro. 3,224,501.

Brownscombe, Philip J., to Eugene Dietzgen Co. Projector viewer. 3,224,326, 12–21–65, Cl. 88—24.

Brudney, Harry, to Jacoby-Bender, Inc. Mounts for movable doll eyes for stuffed toys. 3,224,140, 12–21–65, Cl. 46—169.

Brumm, Carl E.: *See*—
Allman, Orin H., Brumm, and Pither. 3,224,857.

Bruning, William E., to International Paper Co. Temporary door and method. 3,224,496, 12–21–65, Cl. 160—368.

Bruns, Frank J., to Sinclair Research, Inc. Liquid dispenser with outer housing. 3,224,646, 12–21–65, Cl. 222—189.

Brunton, James L., to Speed Shore Corp. Shoring apparatus. 3,224,201, 12–21–65, Cl. 61—41.

Bryant, Austin U., and L. K. Edwards, to Grove Valve and Regulator Co. Valve construction method. 3,224,080, 12–21–65, Cl. 29—157.1.

Buchanan, William V., and R. D. Muir, to Command Mfg. Co., Inc. Phonograph-record carrier. 3,224,655, 12–21–65, Cl. 224—48.

Budd Co., The: *See*—
Furon, Leon D. 3,225,136.
Taylor, John S., and Graves. 3,225,129.

Buddenhagen, Gunter. Regulating device for powder nozzles. 3,224,748, 12–21–65, Cl. 266—23.

Buddenhagen, Theodore F., to Bell Aerospace Corp. Binary input servomechanism. 3,225,346, 12–21–65, Cl. 340—347.

Budesheim, Georg F. B., to J. A. Schmalbach Aktiengesellschaft. Apparatus for the manufacture of blown, hollow articles. 3,224,038, 12–21–65, Cl. 18—5.

Buehler, William J., and R. C. Wiley, to United States of America, Navy. Non-magnetic copper base alloys. 3,224,875, 12–21–65, Cl. 75—153.

Bueler, Richard C., to Wagner Electric Corp. Application valve. 3,224,342, 12–21–65, Cl. 91—434.

Buell Engineering Co., Inc.: *See*—
Elben, Lawrence A. 3,224,172.

Buesing, Arthur C.: *See*—
Brown, John W., Jr., Buesing, and Kaiser. 3,224,051.

Bullard, Robinson D. Measuring device. 3,225,344, 12–21–65, Cl. 340—347.

Burch Franch, Martin. Internal combustion engines. 3,224,426, 12–21–65, Cl. 123—191.

Burdge, Sam W.: *See*—
Coppock, Wesley A., and Burdge. 3,224,324.

Burdick, Richard L., W. E. Brown, and J. E. Bilbro, to Thermon Mfg. Co. Heat transfer cement and panel constructions. 3,224,501, 12–21–65, Cl. 165—81.

Burkitt, Harold H. Wall bushing for pipes and cables. 3,224,796, 12–21–65, Cl. 285—161.

Burley, Billy, to Johnson Service Co. Transistorised R-C network. 3,225,214, 12–21–65, Cl. 307—88.5.

Burley, Billy, and K. Joel, to Johnson Service Co. Wheatstone bridge circuit for the measurement of a physical variable remote from the bridge, with compensating means for interlead capacitance. 3,225,297, 12–21–65, Cl. 324—62.

Burman, Joseph O., Jr., to Progressive Machinery Corp. Device for retaining articles therein. 3,224,480, 12–21–65, Cl. 150—40.

Burndy Corp.: *See*—
Philips, Paul G. 3,224,077.

Burns, Robert L., and G. R. Van Dusee. Oil filter for an internal-combustion engine. 3,224,592, 12–21–65, Cl. 210—493.

Burnside, Gilbert L., and J. W. Mistele, to Ford Motor Co. Atomising apparatus having a liquid accumulation cavity. 3,224,680, 12–21–65, Cl. 239—223.

Burroughs Corp.: *See*—
Fegley, Albert. 3,225,257.
Rosenberg, Harvey, and Steckert. 3,225,330.

Burt, William E., to Ethyl Corp. Fungicidal compositions. 3,224,930, 12–21–65, Cl. 167—22.

Burt, William E., to Ethyl Corp. Fungicidal compositions. 3,224,931, 12–21–65, Cl. 167—22.

Burt, William E., to Ethyl Corp. Fungicidal compositions. 3,224,933, 12–21–65, Cl. 167—30.

Burt, William E., to Ethyl Corp. Fungicidal compositions. 3,224,934, 12–21–65, Cl. 167—30.

Burt, William E., to Ethyl Corp. Fungicidal compositions. 3,224,935, 12–21–65, Cl. 167—30.

Burtoft, James A. and J. H. Portable ice fishing shanty. 3,224,150, 12–21–65, Cl. 52—2.

Burtoft, Joseph H.: *See*—
Burtoft, James A. and J. H. 3,224,150.

Buseth, Richard A., E. R. Steinert, and W. Kissko, to Aeroquip Corp. Self-sealing coupling. 3,224,728, 12–21–65, Cl. 251—149.6.

Butler, Robert W., and G. I. Keim, to Hercules Powder Co. Cationic epichlorohydrin modified polyamide reacted with water-soluble polymers. 3,224,986, 12–21–65, Cl. 260—9.

Butters, William J., and M. F. Girgis. Infant's chair. 3,224,806, 12–21–65, Cl. 297—136.

Buzzanca, Estanislao. Vehicle parking installations. 3,224,605, 12–21–65, Cl. 214—16.1.

Byler, William H.: *See*—
MacHutchin, John G., Cowan, Allan, and Byler. 3,224,978.

Cahn, Lee. Electromagnetic balance. 3,224,517, 12–21–65, Cl. 177—210.

Calhoun, Frederick L., to Industrial Dynamics Co., Ltd. Infrared liquid level inspection system. 3,225,191, 12–21–65, Cl. 250—43.5.

Callery Chemical Co.: *See*—
Pearson, Richard K. 3,224,832.

Cal-Meter Co.: *See*—
Granberg, Albert J. 3,224,273.

Calvin, Charles A. Folding leg table construction. 3,224,890, 12–21–65, Cl. 108—132.

Campbell, Alan M.: *See*—
Alibrandi, Joseph A., Campbell, and Maynard. 3,224,245.

Campbell, Harris S., to Eastern Rororcraft Corp. Automatic loading cargo release. 3,224,804, 12–21–65, Cl. 294—88.

Campbell, Milford A. Vibratory work feeding and orienting unit. 3,224,553, 12–21–65, Cl. 198—33.

Canada, Her Majesty the Queen in right of as represented by the Minister of National Defense: *See*—
Fergusson, Fergus A. A., Mann, and Retallack. 3,224,405.
Geller, Lorant B., and Mitchell. 3,224,486.

Cangialosi, Arthur D.: *See*—
Loprete, Joseph F., and Cangialosi. 3,224,193.

Cann, Harry E., III., to Esco Cabinet Co. Milk transfer system. 3,224,460, 12–21–65, Cl. 137—399.

Cantabene, Anthony: *See*—
Dale, Charles O., and Cantabene. 3,224,727.

Canty, John M.: *See*—
Kordyban, Eugene S., Paivanas, and Canty. 3,224,622.

Capitol Hardware Mfg. Co., Inc.: *See*—
Berman, Marvin A., and Mayer. 3,224,153.

Cappa, Giulio: *See*—
Barassi, Carlo, and Cappa. 3,224,482.

Card, Roy T., to The Singer Co. Pattern attachment for tufting machines. 3,224,395, 12–21–65, Cl. 112—79.

Cardiosonics Medical Instruments Corp.: *See*—
Weber, Russell E. 3,224,526.

Carlen, Bo R. J., to Bonnierforetagen, AB. Reversing belt conveyor apparatus. 3,224,568. 12–21–65, Cl. 198—35.

Carling, Conrad I., to Carling Electric, Inc. Interlocking mechanism for a dual rocker-button actuated electric multi-switch. 3,225,153, 12–21–65, Cl. 200—50.

Carling Electric, Inc.: *See*—
Carling, Conrad I. 3,225,153.
Sahrbacker, Edward V. 3,225,156.
Sorenson, Wesley T. 3,225,148.

Carlson, Albert M. Apparatus for lifting and vertically separating a plurality of heavy vertically stacked objects. 3,224,781, 12–21–65, Cl. 254—181.

Carlson, Arne E., to E I. du Pont de Nemours and Co. Method for increasing sugar content of sugar cane. 3,224,865, 12–21–65. Cl. 71—2.6.

Carr, Merle E.: *See*—
Yeates, Thomas E., Carr, and Mehltretter. 3,224,891.

Carson, Frank J., and H. A. Ledet, Jr., to Libbey-Owens-Ford Glass Co. Apparatus for bending glass sheets with an outrigger support. 3,224,859, 12–21–65, Cl. 65—290.

Carter Controls, Inc.: *See*—
Miller, J. Carter, and Lanman. 3,224,817.

Carter Craft, Inc.: *See*—
Jenniges, Lawrence M., and Hamic. 3,224,810.

Carter, Ronald P., W. A. Cowin, and M. C. Hall, to The English Electric Co., Ltd. Electrical protection systems. 3,225,256, 12–21–65, Cl. 317—28.

Casaleggi, Charles J.: *See*—
Scavuzzo, William J., Walulik, and Casaleggi. 3,224,585.

Case, Bernard: *See*—
Ming, Donald L., and Case. 3,224,250.

Case, J. I., Co.: *See*—
Bennett, Milton C. 3,224,196.

Caufield, Waldo E.: *See*—
Chadwick, Earl L. 3,224,476.

Cavitron Ultrasonics Inc.: *See*—
Balamuth, Lewis. 3,224,086.
Balamuth, Lewis, and Kuris. 3,224,915.

Celanese Corp. of America: *See*—
Mahoney, William R., St. Pierre, and Dunlap. 3,224,463.

Cella, Joseph F., and J. L. Lobik, to Cesco Container Mfg. Corp. Method of and apparatus for transferring caseloads of articles. 3,224,549, 12–21–65, Cl. 198—30.

Cesco Container Mfg. Corp.: *See*—
Cella, Joseph F., and Lobik. 3,224,549.

Chabala, Leonard V., and Q. H. Wherfel, to S & C Electric Co. Means for indicating the position of the contacts of a circuit interrupter. 3,225,170, 12–21–65, Cl. 200—167.

Chadwick, Earl L. Device for kitchen tools and the like. 3,224,018, 12–21–65, Cl. 7—14.25.

Chadwick, Earl L., 3.75% to D. A. Schafer, and 1.25% to W. E. Caufield. Saw chain. 3,224,476, 12–21–65, Cl. 143—135.

Chafee, Glenn R., Jr., to General Electric Co. Ambient-compensated control system for clothes dryers. 3,224,107, 12–21–65, Cl. 34—45.

Challacombe, Carl N., G. G. Ensign, and W. H. Lienert, to Elgin National Watch Co. Electrically actuated time integrating device. 3,224,183, 12–21–65, Cl. 58—28.

Chamberlin, Robert S., and L. V. Larsen, to Chicago Bridge & Iron Co. Environmental apparatus. 3,224,277, 12–21–65, Cl. 73—432.

Chapman, Richard D., to Monsanto Co. Method of improving Young's Modulus of polyamide by condensation in presence of polycarbonate. 3,225,114, 12–21–65, Cl. 260—857.

Chaseside Engineering Co. Ltd.: *See*—
Brown, David J. B. 3,224,607.

Chatelain, Maurice G., and J. Aasted, and J.-C. Bensimon. Vertically polarized microstrip antenna for glide path system. 3,225,351, 12–21–65, Cl. 343—781.

Checkland, Peter B.: *See*—
Edington, Robert A., Barlow, and Checkland. 3,224,068.

Cheek, Guy H.: *See*—
Nickell, Grason T., Glass, and Cheek. 3,224,214.

Chemcut Corp.: *See*—
Benton, Robert C., and Decker. 3,224,914.

Chemetron Corp.: *See*—
Petrinec, Robert G. 3,225,281.

Chemicolloid Laboratories, Inc.: *See*—
Behrens, Walter A., and O'Keefe. 3,224,689.

Chery, Walter V. Automatic transmission. 3,224,800, 12–21–65, Cl. 74—796.

Cheskin, David B. Apparatus for building a hollow core structure. 3,224,065, 12–21–65, Cl. 25—131.

Chestnut, Harold, P. H. Troutman, and W. E. Sollecito, to General Electric Co. Predictive control system. 3,225,179, 12–21–65, Cl. 235—151.

Chevron Research Co.: *See*—
Hotten, Bruce W. 3,224,969.

Chicago Bridge & Iron Co.: *See*—
Chamberlin, Robert S., and Larsen. 3,224,277.
Engdahl, Gerald E. 3,224,212.
Maurin, Joseph J., and Ziering. 3,224,619.
Orr, Clifford M. 3,224,620.

Chicago Pneumatic Tool Co.: *See*—
Waldron, Robert J. 3,224,527.

Chitayat, Anwar K., to Optomechanisms, Inc. Interferometric optical angle measuring device. 3,224,328, 12–21–65, Cl. 88—14.

Christenson, Roger M.: *See*—
Wismer, Marco, and Christenson. 3,225,002.

Chytil, Slavomir, to Meopta narodni podnik. Motion picture projector with a movable film guide. 3,224,828, 12–21–65, Cl. 352—27.

Cifu, John L., Jr.: *See*—
Abeatz, Seymour, and Cifu. 3,225,345.

Cincinnati Milling Machine Co., The: *See*—
Harper, Robert C. 3,225,117.

Cirasunda, Helen E. Pocketed ball game device with tally means. 3,224,777, 12–21–65, Cl. 273—123.

Civelli, Adrien, to Landis-Gendron S.A. Device for radially supporting a rotary shaft in a stationary part. 3,224,296, 12–21–65, Cl. 74—573.

Clair, Verne, Jr., to Kelsey-Hayes Co. Cold pressure welding apparatus. 3,224,658, 12–21–65, Cl. 228—1.

Clark, George L., and J. J. Hickey, to TRW Inc. Protective circuit. 3,225,254, 12–21–65, Cl. 315—163.

Clark, James W., to United Aircraft Corp. Underwater towing cable lift attachment. 3,224,406, 12–21–65, Cl. 114—235.

Clark, Joseph C., to True Temper Corp. Spool oscillating mechanism for spinning reel. 3,224,703, 12–21–65, Cl. 242—84.21.

Clark, Thomas H., to British Telecommunications Research Ltd. Shift register with means for displaying stored information. 3,225,342, 12–21–65, Cl. 340—324.

Cleveland Trust Co.: *See*—
Webb, Ernest C. 3,224,768.
Webb, Ernest C., and Murray. 3,224,767.

Clyatt, Glen W. Truck top carrier. 3,224,805, 12–21–65, Cl. 296—10.

Cochran, Chudleigh B., to C. C. Brown. Hydraulic packer with safety joint release. 3,224,508, 12–21–65, Cl. 166—120.

Cochran, David S., to Hewlett-Packard Co. Impedance to voltage converter including a positive feedback path for supplying impedance testing current. 3,225,298, 12–21–65, Cl. 324—62.

Cochran, Donald J., to Ampex Corp. Servo error detector. 3,225,218, 12–21–65, Cl. 307—88.5.

Cocquart, Jean H.: *See*—
Brochier, Pierre, Kloos, and Cocquart. 3,225,260.

Coffield, Thomas H., to Ethyl Corp. N-methyl-N-phenyl-N-(3,5-di-tertiary-butyl-4-hydroxybenzyl) amine. 3,225,099, 12–21–65, Cl. 260—570.9.

Cogliana, Joseph A.: *See*—
Braude, George L., and Cogliana. 3,225,101.

Colgate-Palmolive Co.: *See*—
Farrar, Richard E., and Schulerud. 3,224,976.

Collin, Fredrik C., to Elektrokemiska A/S. Process of preheating ores for reduction in smelting furnace. 3,224,671, 12–21–65, Cl. 75—34.

Collins Radio Co.: *See*—
Myers, Lester M. 3,225,262.
Rexroad, William D. 3,225,318.
Schuster, Donald H. 3,225,209.

Colombo, George: *See*—
Bleiweiss, Arthur F., Colombo, Dickson, and Orlov. 3,225,165.
Bleiweiss, Arthur F., Colombo, Dickson, and Orlov. 3,225,166.

Columbian Bronze Corp.: *See*—
Thompson, William C. 3,224,509.

Columbian Rope Co.: *See*—
Orser, Keith L. 3,224,055.
Combustion Engineering, Inc.: *See*—
Kochey, Edward L., Jr. 3,225,340.
Lowenstein, Herbert M., and Wolin. 3,224,419.
Comfort, Walton E., to United States of America, Army. Socket for micro-modules. 3,225,324, 12–21–65, Cl. 339—192.
Command Mfg. Co., Inc.: *See*—
Buchanan, William V., and Muir. 3,224,655.
Commerford, John D., B. L. Scallet, and G. T. Van Duzee, to Anheuser-Busch, Inc. Dextrina and method of making same. 3,224,903, 12–21–65, Cl. 127—38.
Commissariat a l'Energie Atomique: *See*—
Gey, Albert, and Jacquesson. 3,225,200.
Gigon, Jean, and Mayer. 3,225,196.
Lecroart, Francois. 3,225,328.
Compagnie Francaise De Raffinage: *See*—
Grosmangin, Jacques, and Aubin. 3,224,949.
Comstock, Alfred E.: *See*—
Scollard, Alvoid V., and Comstock. 3,224,160.
Scollard, Alvoid V., and Comstock. 3,224,162.
Scollard, Alvoid V., and Comstock. 3,224,559.
Scollard, Alvoid V., and Comstock. 3,224,579.
Scollard, Alvoid V., and Comstock. 3,224,580.
Scollard, Alvoid V., and Comstock. 3,224,610.
Conch International Methane Ltd.: *See*—
Feist, Eli M., and Hashemi-Tafreshi. 3,224,207.
French, Michael J. 3,224,624.
Schlumberger, Etienne M., and Hashemi-Tafreshi. 3,224,-208.
Upthegrove, William R. 3,224,621.
Congoleum-Nairn Inc.: *See*—
Palmer, Leon B. 3,224,894.
Conklin, Llewellyn M., and A. W. Brown, to Owens-Corning Fiberglas Corp. Cable wrap. 3,225,131, 12–21–65. Cl. 174—25.
Conley Corp.: *See*—
Conley, Edwin E. 3,224,795.
Conley, Edwin E., to Conley Corp. Flanged fitting with a reinforcing sleeve. 3,224,795, 12–21–65, Cl. 285—114.
Connors, William D., and M. E. Evans, to Hardinge Brothers, Inc. Radiation responsive selectively programmed controller. 3,225,207, 12–21–65, Cl. 250—237.
Conover, Louis S., Jr.: *See*—
Halliden, Frederick C., Conover, Farkas, and Curtis. 3,225,332.
Conover, William J., to Black, Sivalls & Bryson, Inc., (B.S. & B.). Farm animal feeding structure floor. 3,224,-414, 12–21–65, Cl. 119—28.
Consolidated Electrodynamics Corp.: *See*—
Jacobs, John H. 3,224,877.
Neff, Joseph J. 3,224,699.
Consolidated Electronics Industries Corp.: *See*—
Houk, Richard D. 3,224,492.
Houk, Richard D. 3,224,493.
Houk, Richard D. 3,224,494.
Consolidated Paper (Bahamas) Ltd.: *See*—
Brandts, Theodorus G., Helleur, Hopkins, and Bolvin. 3,224,925.
Constantin, Evgheniде: *See*—
Sebastian, Socoi, Constantin, Ioan, and Arion. 3,224,639.
Conti, John D., to FMC Corp. Winding apparatus. 3,224,-698, 12–21–65, Cl. 242—55.
Continental Aviation and Engineering Corp.: *See*—
Wood, Homer J. 3,224,186.
Continental Can Co., Inc.: *See*—
Hansson, Ants. 3,224,239.
Continental Oil Co.: *See*—
Sias, Roy C., and Kemp. 3,225,086.
Control Data Corp.: *See*—
McCann, Robert E. 3,225,301.
Rabinow, Jacob. 3,225,329.
Cook Electric Co.: *See*—
Gombert, Dieter W. 3,225,203.
Cook, James A., Jr., to Westinghouse Air Brake Co. Constant temperature hot bearing detector. 3,225,201, 12–21–65, Cl. 250—83.3.
Cook Paint & Varnish Co.: *See*—
Wright, Howard J., and Dalzell. 3,225,116.
Cook, Richard T., and W. D. Hallermeier, to United States of America, Army. Anti-frost apparatus for optical element. 3,225,173, 12–21–65, Cl. 219—202.
Cook, Warren G., K. E. Mathews, and J. L. Hill, to United States of America, Navy. Replenishment-at-sea receiving apparatus. 3,224,380, 12–21–65, Cl. 104—114.
Cooke, Arthur H., to Hoover Ball and Bearing Co. Bin for bulk materials and apparatus for manipulating bins. 3,224,-653, 12–21–65, Cl. 222—462.
Cooley, Robert L., Sr. Socket wrench with a nut ejector. 3,224,302, 12–21–65, Cl. 81—124.1.
Cooper, Joseph. Slidable and swivel-top table. 3,224,391, 12–21–65, Cl. 108—140.
Coover, Harry W., Jr., to Eastman Kodak Co. Three-component aluminum-titanium tetrahalide catalysts for olefin polymerization. 3,225,020, 12–21–65, Cl. 260—93.7.
Cope, Appleton D., to Radio Corp. of America. Photoemissive pickup tube. 3,225,237, 12–21–65, Cl. 313—65.
Copper Range Co.: *See*—
Hockings, William A., Rose, and Gaudin. 3,224,835.
Coppock, Wesley A., and S. W. Burdge, to Monsanto Co. Method of presentation of compressionable fibrous samples. 3,224,324, 12–21–65, Cl. 88—14.
Cordary, Bruce J., and C. O. Van Note, Jr., to The Servco Co. Expansible subsurface well bore apparatus. 3,224,507, 12–21–65, Cl. 166—55.8.
Corella, Arthur P.: *See*—
Schneider, William S., and Corella. 3,224,640.
Corney, John V. J., to Ferguson Radio Corp. Ltd. Monostable pulse generator with charge storage prevention means. 3,225,217, 12–21–65, Cl. 307—88.5.
Cotten, Joe T.: *See*—
Gordon, Edward, Searcy, and Cotten. 3,226,532.
Cotton, Frederick R.: *See*—
Blaha, Jess P., Cotton, and Gorbe. 3,224,411.
Courtney, John W., to Electro Refractories & Abrasives Corp. Rotational method for making a metal melting crucible. 3,225,130, 12–21–65, Cl. 264—312.
Cowan, Donald B.: *See*—
MacHutchin, John G., Cowan, Allam, and Byler. 3,224,-978.
Cowen, Frank M., and G. Bellis, to American Cyanamid Co. Betaines. 3,225,074, 12–21–65, Cl. 260—404.5.
Cowin, William A.: *See*—
Carter, Ronald P., Cowin, and Hall. 3,225,256.
Creamer, Robert M., and L. Weissbecker, to Philip Morris Inc. Method of making polyethylene coated razor blades. 3,224,-900, 12–21–65, Cl. 117—119.
Crissy, Charles F., to Aeroquip Corp. High pressure hose fitting. 3,224,794, 12–21–65, Cl. 285—40.
Crompton & Knowles Corp.: *See*—
Gagliardo, John P. 3,224,467.
Cronemeyer, Donald C., to The Bendix Corp. Semiconductor triode. 3,225,272, 12–21–65, Cl. 317—235.
Crouch, Richard O., to Borg-Warner Corp. Refrigerator defrost tray. 3,224,216, 12–21–65, Cl. 62—140.
Crowell, Christopher S.: *See*—
Willis, John D., and Crowell. 3,224,660.
Crown Machine & Tool Co.: *See*—
Robbins, Roscoe S., Palmer, and Newell. 3,224,037.
Crumbliss, Robert T., to The Singer Co. Printing attachment for glove turning machines. 3,224,365, 12–21–65, Cl. 101—43.
Cryovac, Inc.: *See*—
Weisend, Charles R. 3,225,174.
Cubert, Jack S., to Sperry Rand Corp. Logic circuit using storage diodes to achieve NRZ operation of a tunnel diode. 3,225 220. 12–21–65, Cl. 307—88.5.
Cummings, Howard B., to Shenango China, Inc. Handled cup. 3,224,629, 12–21–65, Cl. 220—94.
Cunningham, Henry L., to Hardinge Bros., Inc. Automatic machine tool control mechanism. 3,224,070, 12–21–65, Cl. 29—42.
Cunningham, James M., to International Business Machines Corp. Type carrier device. 3,224,366, 12–21–65, Cl. 101—93.
Curran, Robert E. Combination drilling and tapping jig. 3,224,021, 12–21–65, Cl. 10—1.
Curtin, Paul J., to McGraw-Edison Co. Luminaire assembly. 3,225,187, 12–21–65, Cl. 240—25.
Curtis, H.: *See*—
Halliden, Frederick C., Conover, Farkas, and Curtis. 3,225,332.
Curtis, Roman, and E. J. Thirkill, to United States of America, Navy. Retrofit lugs for bombs. 3,224,334, 12–21–65, Cl. 89—1.5.
Curtiss-Wright Corp.: *See*—
De Feo, Angelo, and Sollinger. 3,224,194.
Loprete, Joseph F., and Cangialosi. 3,224,193.
Vogt, Richard. 3,224,370.
Cusic, John W., and H. W. Sause, to G. D. Searle & Co. 4-dipropylamino-2-pyridylalkanamides. 3,225,054, 12–21–65, Cl. 260—295.
Cutler-Hammer, Inc.: *See*—
Halliden, Frederick C., Conover, Farkas, and Curtis. 3,225,332.
Hodge, Donald R., Janicki, and Meidel. 3,224,045.
Cyclops, Inc.: *See*—
Smith, Harold J., and Boudreau. 3,224,217.
Czanderna, Alvin W., to Union Carbide Corp. Ultramicrobalance beam. 3,224,521, 12–21–65, Cl. 177—246.
Czyl, Joseph L.: *See*—
McInerney, Michael J., and Czyl. 3,224,487.
Daiei Presscorder Co. Ltd.: *See*—
Isemura, Shinichi. 3,224,782.
Daimler-Benz Aktiengesellschaft: *See*—
Eckert, Bruno. 3,224,190.
Froitzheim, Hans, and Letzel. 3,224,525.
Hensel, Werner R. E. 3,224,539.
Dale, Charles O., and A. Cantabene. Magnetically actuated control for thermosyphoning refrigerator system. 3,224,-727, 12–21–65, Cl. 251—65.
D'Alelio, Gaetano F. Radiative processing of thermoplastic polymers. 3,224,951, 12–21–65, Cl. 204—158.
D'Alelio, Gaetano F., to Scott Paper Co. Process of foaming a carbonate containing polymer containing an initiator. 3,224,983, 12–21–65, Cl. 260—2.5.
D'Alelio, Gaetano F., to Scott Paper Co. Itaconic esters of 1,2 alkane carbonates, polymers, and copolymers thereof. 3 225,008, 12–21–65, Cl. 260—77.5.
D'Alelio, Gaetano F., to Scott Paper Co. Ethylene dicarboxylic esters of 1,2 alkane carbonates, polymers and copolymers thereof. 3,225,009, 12–21–65, Cl. 260—77.5.
D'Alelio, Gaetano F., to Scott Paper Co. Ethylene dicarboxylic esters of 1,2 alkane ketals. 3,225,014, 12–21–65, Cl. 260—78.4.
D'Alelio, Gaetano F., to Scott Paper Co. Itaconic acid esters of 1,2 alkane ketals. 3,225,015, 12–21–65, Cl. 260—78.4.
D'Alelio, Gaetano F., to W. R. Grace & Co. Polyethylene synthesis. 3,225,024, 12–21–65, Cl. 260—64.9.
D'Alelio, Gaetano F., to Scott Paper Co. Process of forming expanded polymers. 3,225,063, 12–21–65, Cl. 260—340.2.

Dal Molin, Guido A.: *See*—
Quaas, Joseph F., and dal Molin. 3,224,325.
Dalzell, Darwin A.: *See*—
Wright, Howard J., and Dalzell. 3,225,116.
D'Amico, John J.: *See*—
Hamm, Philip C., and D'Amico. 3,224,864.
Zerbe, Richard O., and D'Amico. 3,224,866.
D'Amico, John J., to Monsanto Co. Certain thiazolo[3,2-a] benzimidazoles and their production. 3,225,059, 12–21–65, Cl. 260—306.8.
D'Amico, John J., to Monsanto Co. Controlling undesired vegetation with benzyl hexamethylenimine carbothioates. 3,224,861, 12–21–65, Cl. 71—2.5.
D'Amico, John J., to Monsanto Co. Vegetation control with unsaturated hydrocarbon esters of N,N-disubstituted thionocarbamic acids. 3,224,863, 12–21–65, Cl. 71—2.5.
D'Amico, John J., and C. C. Tung, to Monsanto Co. 6-(1,2,3,4-tetrahydro - 2 - thioxo - 4,4,6 - trimethyl - 1 - pyrimidinyl)-2-benzothiazolylthiocarbamates. 3,225,040, 12–21–65, Cl. 260—247.1.
D'Amico, John J., and C. C. Tung, to Monsanto Co. 6-(1,2,3,4-tetrahydro-2-thioxo-4,4,6-trimethyl-1-pyrimidinyl)-benzothiazolylthio-carbonates. 3,225,049, 12–21–65, Cl. 260—256.5.
Damon, Roger H., Jr., to Fairbanks Morse Inc. Transducer mounting in weighing apparatus. 3,224,520, 12–21–65, Cl. 177—210.
Daniels, Franklin W., to General Electric Co. Electrical capacitor with thermal fuse. 3,225,276, 12–21–65, Cl. 317—256.
Dari-Go-Round, Inc.: *See*—
Kuehn, Jack W., and Atkins. 3,224,740.
Darsa, George J., to National Lead Co. Color-stable vinyl chloride polymers. 3,225,001, 12–21–65, Cl. 260—45.75.
Dassler, Adolf. Sport shoes, especially for runners. 3,224,-117, 12–21–65, Cl. 36—2.5.
Daugherty, Charles C., ¼ each to W. E. Griffin, W. Muirhead, and M. H. Daugherty. Method of recovering metals. 3,224,874, 12–21–65, Cl. 75—108.
Daugherty, Mary H.: *See*—
Daugherty, Charles C. 3,224,874.
Dauser, William C. Color lamp with spectral filter around filament. 3,225,243, 12–21–65, Cl. 313—112.
Dauterman, Walter, and R. D. O'Brien, to American Cyanamid Co. Oxidation of phosphorothionates with dinitrogen tetroxide. 3,225,044, 12–21–65, Cl. 260—250.
Da Vinci, Anthony P.: *See*—
Anderer, Joseph H., Da Vinci, and McHugh. 3,225,125.
Davis Flow Valve, Inc.: *See*—
Davis, Harry S. 3,224,457.
Davis, Harry S. 3,224,458.
Davis, Frank J.: *See*—
Osborn, Carolus M., and Davis. 3,224,479.
Davis, Harry S., to Davis Flow Valve, Inc. Sequencing valve. 3,224,457, 12–21–65, Cl. 137—119.
Davis, Harry S., to Davis Flow Valve, Inc. Sequencing valve. 3,224,458, 12–21–65, Cl. 137—119.
Davis, William J. Dispenser. 3,224,644, 12–21–65, Cl. 222—162.
Davohn Corp.: *See*—
Feldman, Charles. 3,225,238.
Day, J. H., Co., The: *See*—
Broomall, Robert M. 3,224,744.
Dayton, David R., and D. N. Brooks, to Sylvania Electric Products Inc. Mercury dispensing station. 3,224,651, 12–21–65, Cl. 222—361.
Deakin, Stanley T., to Sealectro Corp. Electric sockets and socket contacts therefor. 3 225,323, 12–21–65, Cl. 339—174.
Dearsley, George, to American Machine & Foundry Co. Apparatus for removal of tips from scrap cigarettes. 3,224,-451, 12–21–65, Cl. 131—20.
De Bord, James H.: *See*—
Fox, James S., and De Bord. 3,224,887.
Decker, Gunter: *See*—
Benton, Robert C., and Decker. 3,224,914.
Deere & Co.: *See*—
Forth, Murray W. 3,224,387.
Deering Milliken Research Corp.: *See*—
Harmon, William E. 3,224,469.
De Feo, Angelo, and F. P. Sollinger, to Curtiss-Wright Corp. Gas turbine engine. 3,224,194, 12–21–65, Cl. 60—35.6.
De Feo, Richard A., to Bayuk Cigars Inc. Shipping and display container. 3,224,568, 12–21–65, Cl. 206—44.
Deghenghi, Romano, to American Home Products Corp. Carbalkoxyhydrazones of the androstane series. 3,225,072, 12–21–65, Cl. 260—397.5.
Deibel, Charles, and J. Evanicsko, Jr. Acid-resistant material for use in protecting battery terminals and the like. 3,224,906, 12–21–65, Cl. 136—135.
De Jong, George E. Mooring device. 3,224,404, 12–21–65, Cl. 114—230.
Delafrange, Kenneth M. Electrical connector with a helical bimetal overload. 3,225,162, 12–21–65, Cl. 200—115.5.
De Martelaere David L., and J. Lenk, to Pyles Industries, Inc. Automatic metering system for plural component materials. 3,224,642, 12–21–65, Cl. 222—134.
DeMello, Frank A., to Union Carbide Corp. Polystyrene containing thermoplastic polyhydroxy ether. 3,225,118, 12–21–65, Cl. 260—874.
De Ment, Jack. Noble gas flash lamp and laser light source. 3,224,236, 12–21–65, Cl. 67—31.
De Nicola, Joseph P. to Instron Corp. Specimen grip for tensil testing apparatus. 3,224,259, 12–21–65, Cl. 73—103.
Denning, Rick A., to United States of America, Army. Apparatus for optimizing dredge production. 3,224,121, 12–21–65, Cl. 37—58.
Dennis, Howard L.: *See*—
Hummel, Robert J., Rembert, and Dennis. 3,224,064.
De Pree, David O., to Ethyl Corp. Polyvinyl chloride plasticized with dialkoxyalkyl homoterephthalates. 3,224,995, 12–21–65, Cl. 260—31.4.
De Pue, Palmer. Multiple answer examination grading device. 3,224,116, 12–21–65, Cl. 35—48.
Derenk, Gunther, C. O. Schmid, and H. Sontheimer, to Fuller Co. Apparatus and process for biological purification of waste water containing foam forming substances. 3,224,-964, 12–21–65, Cl. 210—8.
De Rose, John F. Auxiliary throttle-pedal controls. 3,224,-293, 12–21–65, Cl. 74—562.
Dersch, William C., to International Business Machines Corp. Sound analyzing system. 3,225,141, 12–21–65, Cl. 179—1.
Detroit Testing Laboratory, Inc., The: *See*—
Grikscheit, Henry W., and Schott. 3,224,316.
Deutsche Gold- und Silber-Scheideanstalt vormals Rosessler: *See*—
Dietrich, Walter, and Krall. 3,224,428.
Thiele, Kurt. 3,225,095.
Devine, Patrick J., to Potter Electric Signal Co. Signalling apparatus including remote battery recharging system. 3,225,341, 12–21–65, Cl. 340—261.
Dewar, Eric T.: *See*—
Black, William A. P., Dewar, and Rutherford. 3,225,012.
De Young, Edwin L., and R. W. Watson, to Standard Oil Co. Silicon-containing lubricant additives. 3,224,970, 12–21–65, Cl. 252—46.3.
Dickson, John B.: *See*—
Bleiweiss, Arthur F., Colombo, Dickson, and Orlov. 3,225,165.
Bleiweiss, Arthur F., Colombo, Dickson, and Orlov. 3,225,166.
Diebold, Inc.: *See*—
Sturgis, Charles P., Kumpf, and Maddern. 3,224,825.
Diehl, John E. Electric brush and brush holder assembly. 3,225,234, 12–21–65, Cl. 310—246.
Diehl, John M.: *See*—
Fiedler, William S., and Diehl. 3,224,846.
Dielmann, August W., and C. Henze, to Lubecawerke G.m.b.H. Closure for cans and jars. 3,224,627, 12–21–65, Cl. 220—47.
Dietert, Harry W., to Harry W. Dietert Co. Sack opening structure. 3,224,609, 12–21–65, Cl. 214—305.
Dietert, Harry W., R. E. Steinmueller, and R. L. Dietert, to Harry W. Dietert Co. Material flow control apparatus. 3,224,647, 12–21–65, Cl. 222—190.
Dietert, Harry W., Co.: *See*—
Dietert, Harry W. 3,224,609.
Dietert, Harry W., Steinmueller, and R. L. Dietert. 3,224,647.
Dietert, Randolph L.: *See*—
Dietert, Harry W., Steinmueller, and R. L. Dietert. 3,224,647.
Dietrich, Henri, and W. Kung, to Geigy Chemical Corp. Derivatives of dibens [b,f] azepines. 3,225,032, 12–21–65, Cl. 260—239.
Dietrich, Walter, and F. Krall, ¼ each to W. C. Heraeus, G.m.b.H., and Deutsche Gold- und Silber Scheideanstalt vormals Roessler. Viewing device for vacuum apparatus. 3,224,428, 12–21–65, Cl. 126—200.
Dietzgen, Eugene, Co.: *See*—
Brownscombe, Philip J. 3,224,826.
Dietzgen, Joseph E., and Thomiszer. 3,224,354.
Klimkowski, Robert J., Amariti, and Janda. 3,224,878.
Thomiszer, Hubert J. 3,224,355.
Dietzgen, Joseph E., and H. J. Thomiszer, to Eugene Dietzgen Co. Apparatus for making copies on ray sensitive sheets upon exposure to ultra-violet and infrared radiation. 3,224,354, 12–21–65, Cl. 95—77.5.
Dillard, Robert D., and N. R. Easton, to Eli Lilly and Co. Hydroxymorpholines. 3,225,042, 12–21–65, Cl. 260—247.7.
Dille, Roger M., F. E. Guptill, Jr., and J. C. Ahlborn, to Texaco Inc. Preparation of coal slurries. 3,224,849, 12–21–65, Cl. 48—206.
Di Nardo, Albert, deceased (by E. Di Nardo, administratrix). Process for producing a coffee extract. 3,224,879, 12–21–65, Cl. 99—71.
Dittmar, Harry R.: *See*—
Boag, James C., and Dittmar. 3,224,974.
Dix Engineering Co.: *See*—
Dix, Sydney. 3,224,808.
Dix, Sydney, to Dix Engineering Co. Loading machine. 3,224,808, 12–21–65, Cl. 83—133.
Dobbertin, Gunther H. W., and B. O. J. S. Morner. Portable engine-driven chain saws. 3,224,473, 12–21–65, Cl. 143—32.
Dobner, Reinhold, O. Braun, and H. Ulmer, to G. M. Pfaff, Kaiserlautern-Pfals, A.G. Machine for sewing baglike structures and the like. 3,224,394, 12–21–65, Cl. 112—10.
Dodd, Caius V.: *See*—
McClung, Robert W., Dodd, Allen, and Nance. 3,225,294.
Doetsch, Hans P. Diaphragm support. 3,224,845, 12–21–65, Cl. 92—94.
Dollinger, Joseph. Telephone handset support. 3,225,147, 12–21–65, Cl. 179—156.
Dolney, Stanley M., to The Bath Cyril Co. Underreach prestretch fixture and combination thereof with drawing die press. 3,224,241, 12–21–65, Cl. 72—297.
Domingos, John G., ¼ to J. G. and E. C. Domingos, jointly, and ¼ to M. R. and J. M. Domingos. Golf grip cleansing device. 3,224,029, 12–21–65, Cl. 15—513.
D'Ooge, Charles L.: *See*—
Emigh, Willard F., D'Ooge, and Polackowyj. 3,224,628.
Dormfan, Edwin, E. D. Weil, and J. S. Newcomer, to Hooker Chemical Corp. Process for production of sodium 2,3,6-trichlorophenylacetate. 3,225,087, 12–21–65, Cl. 260—515.

Doubt, Ralph A.: *See*—
Greening, John P., and Doubt. 3,225,327.
Dow Chemical Co., The: *See*—
Johnson, Francis. 3,225,041.
Johnston, Howard, and Tomita. 3,224,950.
Downs, George W.: *See*—
Sfredda, Albert P. 3,224,408.
Doyle, James H., to General Data Corp. Analog digital converter. 3,225,347, 12–21–65, Cl. 340—347.
Dracone Developments Ltd.: *See*—
Paddington, Arthur L. 3,224,403.
Dresser Industries, Inc.: *See*—
Beach, Gerald H. 3,224,175.
Silvern, David H. 3,224,274.
Dressler, Hans, to Koppers Co., Inc. Method of preparing poly(gamma-aminopropyl) indene. 3,225,097, 12–21–65, Cl. 260—570.8.
Duch, Eduard, W. Herbst, F. Rochlitz, H. Scherer, and H. Vilcsek, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Method and composition for producing adherent coatings on metal parts. 3,224,908, 12–21–65, Cl. 148—6.15.
Duncan, Edward T., to Product Research Associates Inc. Plug-type switching connector. 3,225,155, 12–21–65, Cl. 200—51.09.
Duncan, Edward T., to Product Research Associates, Inc. Electronic lamps. 3,225,186, 12–21–65, Cl. 240—10.64.
Dunlap, Donald T.: *See*—
Mahoney, William R., St. Pierre, and Dunlap. 3,224,453.
Dunn, Albert J., and R. G. Brown, to Short Bros. & Harland Ltd. Missiles and other aerial bodies. 3,224,369, 12–21–65, Cl. 102—34.1.
Dunnington, William C.: *See*—
Grimes, Kenneth D., and Dunnington. 3,225,168.
Duplicon Co., Inc.: *See*—
Andersen, Johan M. 3,224,787.
Du Pont de Nemours, E. I., and Co.: *See*—
Baker, William P., Jr. 3,225,119.
Baker, William P., Jr. 3,225,120.
Baker, William P., Jr. 3,225,121.
Blore, James H., and Ward. 3,224,225.
Brown, Robert L., and Sears. 3,224,927.
Carlson, Arne E. 3,224,865.
Gladding, Edward K., and Nyce. 3,224,985.
Hyde, Thomas J. 3,225,065.
Macon, Arthur R. 3,225,003.
McLaughlin, Lynn G. 3,224,979.
Nugent, Ralph W. 3,224,892.
Richards, Bert L., Jr. 3,224,932.
Wallace, Curtis C., Jr. 3,224,886.
Wolf, Herbert O. 3,225,094.
Durget, Andre, to Anciens Etablissements Goldenberg & Cie. Anchoring device. 3,224,202, 12–21–65, Cl. 61—45.
Dusik, Josef, I. Martis, V. Oboril, M. Mejsilk, and J. Javorek, to Sdruzeni podniku textilniho shoJirenstvi. Device for pneumatic holding of inactive yarns in a circular knitting machine. 3,224,230, 12–21–65, Cl. 66—145.
Dybvig, Henry G., to R. D. Mayne. Method for manufacture of turbine type blower wheels. 3,224,079, 12–21–65, Cl. 29—156.8.
Dyna Systems Inc.: *See*—
Reynolds, Rollin A. 3,224,338.
Dynamics Corp. of America: *See*—
Massa, Frank. 3,225,326.
Dyrness, Miron L.: *See*—
Bridges, Roy G., Aleson, Hutchings, Whited, and Dyrness. 3,224,040.
Bridges, Roy G., Aleson, Hutchings, Whited, and Dyrness. 3,225,126.
Dzvonik, Michael. Instant flare device. 3,224,232, 12–21–65, Cl. 67—3.
ECP Corp.: *See*—
Weiss, Irving F. 3,225,264.
Eastern Co., The: *See*—
Pelcin, Albert L. 3,224,802.
Eastern Rorocraft Corp.: *See*—
Campbell, Harris S. 3,224,804.
Eastman, du Bois: *See*—
Schlinger, Warren G., and Eastman. 3,224,954.
Eastman Kodak Co.: *See*—
Coover, Harry W., Jr. 3,225,020.
Stimson, Allen G. 3,224,350.
Thompson, Benjamin. 3,225,102.
Eastman, Robert E.: *See*—
Hinrichs, Karl, Eastman, and Kolden. 3,225,213.
Easton, Nelson R.: *See*—
Dillard, Robert D., and Easton. 3,225,042.
Eby, Charles J.: *See*—
Prill, Erbard J., and Eby. 3,224,936.
Eby, Charles J., and E. J. Prill, to Monsanto Co. Succinic acid derivatives. 3,225,085, 12–21–65, Cl. 260—470.
Eckert, Bruno, to Daimler-Benz Aktiengesellschaft. Jet power plant particularly for aircraft. 3,224,190, 12–21–65, Cl. 60—135.54.
Eddins, Timothy O., to United States of America, National Aeronautics and Space Administration. Missile launch release system. 3,224,336, 12–21–65, Cl. 89—1.7.
Edington, Robert A., G. E. Barlow, and P. B. Checkland, to Imperial Chemical Industries Ltd. Process for imparting improved latent crimp to filaments. 3,224,068, 12–21–65, Cl. 28—72.
Edwarde, Leo K.: *See*—
Bryant, Austin U., and Edwarde. 3,224,080.
Edwards, Leonard M., to M & T Chemicals Inc. Process for preparing derivatives of stannogluconic acid. 3,225,076, 12–21–65, Cl. 260—429.7.
Efficax Industries Pty. Ltd.: *See*—
Boyle, Edward H., and Geissler. 3,224,746.
Egbert, William R., to Lundstrom Laboratories, Inc. Method of producing picker sticks. 3,224,478, 12–21–65, Cl. 144—320.
Eggleston, Robert V.: *See*—
Levi, Roberto, and Eggleston. 3,224,071.
Ehlers, Karlheins. Liquid-dispensing nozzle with automatic cutoff. 3,224,472, 12–21–65, Cl. 141—209.
Elben, Lawrence A., to Buell Engineering Co., Inc. Dust collecting apparatus. 3,224,172, 12–21–65, Cl. 55—303.
Eichhorn, Robert M.: *See*—
Hoffman, William D., and Eichhorn. 3,225,112.
Electra Motors, Inc.: *See*—
Palm, Bernhard N. 3,224,289.
Electric Materials Co., The: *See*—
Johnson, James L., Jr., and Krull. 3,224,076.
Electro Refractories & Abrasives Corp.: *See*—
Courtney, John W. 3,225,130.
Roble, Norman P. 3,224,850.
Electrologica, N.V.: *See*—
Oberman, Roelof M. M., Kosten, and Van der Toorn. 3,224,578.
Elektrokemiska A/S: *See*—
Collin, Fredrik C. 3,224,871.
Elgin National Watch Co.: *See*—
Challacombe, Carl N., Ensign, and Lienert. 3,224,183.
Ellinger, Rudolph H.: *See*—
Luck, John V., and Ellinger. 3,224,882.
Elliott, Robert H., to American Biltrite Rubber Co., Inc. Spliced belting. 3,224,566, 12–21–65, Cl. 198—193.
Elmendorf, Armin. High speed veneering process. 3,224,919, 12–21–65, Cl. 156—299.
Elsner, Edwin C., to Aeroquip Corp. Securing device for cargo tie-down means. 3,224,385, 12–21–65, Cl. 105—369.
Elsner, Edwin C., and E. F. White, to Aeroquip Corp. Cargo hook. 3,224,803, 12–21–65, Cl. 294—83.
Ely, Roland S. Lead angle gear gage. 3,224,105, 12–21–65, Cl. 33—179.5.
Emard, Leon J. A. Fishing lure. 3,224,133, 12–21–65, Cl. 43—42.4.
Emigh, Willard F., C. L. D'Ooge, and J. Polackowyj, to Aero-Jet-General Corp. Port closure release assembly. 3,224,628, 12–21–65, Cl. 220—47.
Engdahl, Gerald E., to Chicago Bridge & Iron Co. Process and apparatus for continuously dehydrating gas. 3,224,212, 12–21–65, Cl. 62—40.
English Electric Co., Ltd., The: *See*—
Carter, Ronald P., Cowin, and Hall. 3,225,256.
Engstrom, Gunnar, to Allmanna Svenska Elektriska Aktiebolaget. Exciter set for synchronous generators. 3,225,288, 12–21–65, Cl. 322—73.
Ensign, George G.: *See*—
Challacombe, Carl N., Ensign, and Lienert. 3,224,183.
Ensley, Glover C. Portable cable puller. 3,224,733, 12–21–65, Cl. 254—134.3.
Epprecht, Edward H., to Autoclave Engineers, Inc. Shaft rotation indicator. 3,224,410, 12–21–65, Cl. 116—115.
Equipments Technique Industriels: *See*—
Talon, Marcel G., and Stasse. 3,224,963.
Erbstoesser, James A., ¼ to Stevens, Lebrer & Stevens, and ½ to to I. M. Bernstein. Air-feed device for carburetors. 3,224,174, 12–21–65, Cl. 55—418.
Erchak, Michael, Jr., to Rexall Drug and Chemical Co. Process for polymerising alpha-olefins in the presence of a minor amount of a lower alkane as the sole diluent. 3,225,021, 12–21–65, Cl. 260—93.7.
Erhardt, Nelson G.: *See*—
Adler, Imre, Erhardt, and Frank. 3,224,604.
Erickson, Henry, H. G. Russell, and R. A. Sanford, to Sinclair Research, Inc. Cracking with poison-resistant catalyst. 3,224,961, 12–21–65, Cl. 208—120.
Erickson, Roger D., to Honeywell Inc. Method for recording. 3,225,352, 12–21–65, Cl. 346—1.
Erickson, Roger D., to Honeywell Inc. Apparatus for recording. 3,225,353, 12–21–65, Cl. 346—109.
Erickson, Roger D., to Honeywell Inc. Apparatus for recording. 3,225,355, 12–21–65, Cl. 346—109.
Eriksson, Per O.: *See*—
Ljunstrom, Olle, Gunnarsson, and Eriksson. 3,224,666.
Escher Wyss Aktiengesellschaft: *See*—
Ruegg, Ernst. 3,224,588.
Esco Cabinet Co.: *See*—
Cann, Harry E. 3,224,460.
Esemplare, Pascal E., to Philip Morris Inc. Polyethylene coated blades and process for their production. 3,224,094, 12–21–65, Cl. 30—346.
Espy, Herbert H., to Hercules Powder Co. Process for retarding the growth of tumors. 3,224,943, 12–21–65, Cl. 167—78.
Ethyl Corp.: *See*—
Boag, James C., and Dittmar. 3,224,974.
Burt, William E. 3,224,930.
Burt, William E. 3,224,931.
Burt, William E. 3,224,933.
Burt, William E. 3,224,934.
Burt, William E. 3,224,935.
Coffield, Thomas H. 3,225,099.
De Pree, David O. 3,224,995.
Frey, Frederick W., Jr., and Laran. 3,224,834.
Hinkamp, James B. 3,224,968.
Hinkamp, James B. 3,224,975.
Knapp, Gordon G. 3,224,973.
Orloff, Harold D., and Worrel. 3,224,972.
Robinson, Gene C. 3,224,833.
Stephens, Ruth E. 3,224,831.
Stephens, Ruth E., Hirschler, and Lamb. 3,224,981.
Sturgis, Adah P. 3,225,108.
Whiting, Mark C. 3,225,071.
Zaweski, Edward F. 3,225,092.

Ettinger, Harry: *See*—
Obedin, Nathan. 3,224,756.
Euphonics Corp.: *See*—
Wiggins, Alpha M., and Wood. 3,224,783.
Eutectic Welding Alloys Corp.: *See*—
Quaas, Joseph F., and dal Molin. 3,224,325.
Evanicsko, Joseph, Jr.: *See*—
Deibel, Charles, and Evanicsko. 3,224,906.
Evans, Frederick W.: *See*—
Simpson, Theodore B., and Evans. 3,225,109.
Evans, Marshall E.: *See*—
Connors, William D., and Evans. 3,225,207.
Evans, Norman, and J. R. Wiles, to The British Petroleum Co. Ltd. Gas testing. 3,224,838, 12–21–65, Cl. 23—232.
Evans, Rupert L. Door frame. 3,224,152, 12–21–65, Cl. 52—217.
Eville, William T., and A. A. Finke, to Antenna Specialists Co. Collapsible antenna. 3,224,716, 12–21–65, Cl. 248—43.
FMC Corp.: *See*—
Anderer, Joseph H., Da Vinci, and McHugh. 3,225,125.
Battista, Orlando A. 3,224,967.
Conti, John D. 3,224,698.
Fry, Horace P., Jr. 3,224,922.
Jones, Allen P., Jett, and Zitz. 3,224,702.
Rosser, Charles M., and Glinski. 3,224,907.
Talbot, James E. 3,224,363.
Kwizda, F. Joh., Chem. Fabrik: *See*—
Koch, Heinrich. 3,225,084.
Fabbrica Italiana Magnetti Marelli S.p.A.: *See*—
Alfieri, Giuseppe. 3,224,455.
Fahley, Jerome A., to Honeywell Inc. Control apparatus. 3,224,275, 12–21–65, Cl. 73—304.
Fair, Albert E. H. Homogenizing unit for paper making machine. 3,224,929, 12–21–65, Cl. 162—342.
Fairbanks Morse Inc.: *See*—
Damon, Roger H., Jr. 3,224,520.
Fairchild Camera and Instrument Corp.: *See*—
Wolf, Helmut F. 3,225,261.
Fairchild Engineering Co., The: *See*—
Houser, John E. 3,224,565.
Fairchild, Sherman M., to Front Projection Corp. Photographic equipment monopost. 3,224,718, 12–21–65, Cl. 248—158.
Fan, Hsing Y., to Shell Oil Co. Polycyclic compounds. 3,225,070, 12–21–65, Cl. 260—348.
Fannan, Andrew H., Jr., and J. H. Marchione, to L. W. Menzimer. Door check. 3,224,033, 12–21–65, Cl. 16—82.
Fannan, Andrew H., Jr., and J. H. Marchione, to L. W. Menzimer, trustee. Butt type door hinges with friction type hold-open means. 3,224,034, 12–21–65, Cl. 16—142.
Farbenfabriken Bayer Aktiengesellschaft: *See*—
Glabisch, Dietrich, Wandel, and Witte. 3,225,073.
Merten, Rudolf. 3,225,051.
Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning: *See*—
Asmus, Klaus-Dieter, and Fischer. 3,225,005.
Duch, Eduard, Herbst, Rochlitz, Scherer, and Vilcsek. 3,224,908.
Krohs, Walter, Ther, and Vogel. 3,225,098.
Schulde, Felix, and Schleede. 3,224,889.
Farkas, Julius J.: *See*—
Halliden, Frederick C., Conover, Farkas, and Curtis. 3,225,332.
Farrar, Richard E., and A. L. Schulerud, to Colgate-Palmolive Co. Detergent bar. 3,224,976, 12–21–65, Cl. 252—119.
Fegley, Albert P., to Burroughs Corp. High speed direct current voltage fault sensing, indicating and load protecting apparatus. 3,225,257, 12–21–65, Cl. 317—33.
Febr, Arthur. Stud mill. 3,224,475, 12–21–65, Cl. 148—54.
Feist, Eli M., and H. Hashemi-Tafreshi, to Conch International Methane Ltd. Liquefaction of gases. 3,224,207, 12–21–65, Cl. 62—9.
Feldman, Charles, to Davohn Corp. Cathode ray tube with transparent color screen. 3,225,238, 12–21–65, Cl. 313—92.
Fenger, James R.: *See*—
Fenger, Nicholas and J. R. 3,224,409.
Fenger, Nicholas and J. R., to Fluid Power, Inc. Low pressure alarm assembly. 3,224,409, 12–21–65, Cl. 116—70.
Fenner, Ralph L., K. C. Yarborough, A. E. Williams, and C. H. Jansen. Weather recording station. 3,224,268, 12–21–65, Cl. 73—189.
Fenrick, Michael J. Centrifugal dryer. 3,224,589, 12–21–65, Cl. 210—374.
Fenwal, Inc.: *See*—
Jess Thurman S., Morrisette, and Poitras. 3,224,571.
Ferber, Robert R., W. R. Smith, and D. A. Trimmer, to Tele Cam Inc. Combination motion picture and television camera. 3,225,140, 12–21–65, Cl. 178—7.8.
Ferguson, Harry, Research Ltd.: *See*—
Hill, Claude. 3,224,298.
Ferguson, Milton C.: *See*—
McKay, Robert L. 3,224,253.
Ferguson, Otis B.: *See*—
Mulcahy, George R., Jr., and Ferguson. 3,224,714.
Ferguson Radio Corp, Ltd.: *See*—
Corney, John V. J. 3,225,217.
Fergusson, Fergus A. A., C. R. Mann, and J. G. Retallack, to Her Majesty the Queen in right of Canada, as represented by the Minister of National Defense. Towed body for variable depth sonar. 3,224,405, 12–21–65, Cl. 114—235.
Fernandez, Manuel C., 50% to C. C. Goetz, attorney in fact for said Fernandez. Automatic system for determining point of origin of angular values at respective places of maps used in navigation indicators. 3,225,350, 12–21–65, Cl. 343—112.
Fernseh G.m.b.H.: *See*—
Forster, Gero. 3,224,829.
Ferraro, Joseph V.: *See*—
Nigrelli, Biagio J., Standley, Wittmann, and Ferraro. 3,224,550.
Fevrot, Charles R.: *See*—
Glot, Maurice H., Jobart, Fevrot, and Giros. 3,225,178.
Fiat Societa per Azioni: *See*—
Tamburini, Floraldo. 3,225,287.
Fiedler, William S., and J. M. Diehl, to LOR Corp. Light weight structural material and means for making. 3,224,846, 12–21–65, Cl. 29—183.5.
Fields, John H., C. H. Propster, Jr., and D. W. Masters, to General Electric Co. Data processing system including plural peripheral devices with means for the selection and operation. 3,225,334, 12–21–65, Cl. 340—172.5.
Fields, Mack R., to Roehr Metals & Plastics Co. Closure and method of making same. 3,224,616, 12–21–65, Cl. 215—7.
Filtrona Filter G.m.b.H.: *See*—
Mennicken, Erwin J., Muth, and Strehle. 3,224,424.
Finke, Arthur A.: *See*—
Eville, William T., and Finke. 3,224,716.
Fire Guard Corp., The: *See*—
Hain, Clifford L. 3,224,720.
Fischer, Edgar: *See*—
Asmus, Klaus-Dieter, and Fischer. 3,225,005.
Fischler, Stephan J. Hydraulic jack assembly. 3,224,730, 12–21–65, Cl. 254—10.5.
Fiser, William D., R. P. Van Roo, J. S. Berry, Jr., M. D. Anderson, Jr., and M. W. Korb, to Thiokol Chemical Corp. Alterable thrust nozzle attachment. 3,224,681, 12–21–65, Cl. 239—265.15.
Fisher, Chester D., to Sprout, Waldron & Co., Inc. Conduit for pneumatic conveying systems. 3,224,814, 12–21–65, Cl. 302—64.
Fisher, Robert E., to Up-Right, Inc. Adjustable supporting leg. 3,224,800, 12–21–65, Cl. 287—62.
Flaming, Walter. System and means for automaticaHy air drying vehicles. 3,224,108, 12–21–65, Cl. 34—87.
Fleisher, Marvin B., and P. E. Hixon, to Rolor Corp. Photographic sheet material processing apparatus. 3,224,356, 12–21–65, Cl. 95—94.
Fleming, Donald J., to Olson Trailer & Body Builders Co. Vehicle spring and axle loading control system. 3,224,522, 12–21–65, Cl. 180—22.
Fletcher, Lawrence A., and S. A. Palmer, to Lindars Automation Ltd. Batch weigher. 3,224,519, 12–21–65, Cl. 177—210.
Flick, Kenneth R. Clothes line prop. 3,224,722, 12–21–65, Cl. 248—353.
Floehr, Walter L., to Unitcast Corp. Sliding gate sealing means assemblies. 3,224,382, 12–21–65, Cl. 105—282.
Floor, George N.: *See*—
Strake, John L., and Floor. 3,224 667.
Floyd, Don E., and D. W. Glasser. Polyamides of improved solubility from polyalkylene polyamines, hydroxy monocarboxylic acid, and hydrocarbon polymeric fat acids. 3,224,893, 12–21–65, Cl. 106—316.
Fluder, Chester H., H. L. Myrent, and M. R. Heeney, to Vapor Corp. Relay with coated plunger. 3,225,159, 12–21–65, Cl. 200—87.
Fluid Power, Inc.: *See*—
Fenger, Nicholas and J. R. 3,224,409.
Flynn, Edwin H., to Eli Lilly and Co. Benzyl substituted-pyridinomethyl cephalosporins. 3,225,068, 12–21–65, Cl. 260—243.
Fontaine, Louis. Continuous weaving loom. 3,224,465, 12–21–65, Cl. 139—12.
Ford, Bernard W., and W. J. Switzenberg, Jr. Adjustable fixture for drop testing. 3,224,249, 12–21–65, Cl. 73—12.
Ford, Ernest C., Jr.: *See*—
Le Maistre, John W., and Ford. 3,225,067.
Ford, Franklin C., and A. T. Biehl, to MB Associates. Hypervelocity gun. 3,224,837, 12–21–65, Cl. 89—8.
Ford Motor Co.: *See*—
Blaha, Jess P., Cotton, and Gorbe. 3,224,411.
Burnside, Gilbert L., and Mistele. 3,224,680.
Price-Stephens, Douglas, and Jackson. 3,224,801.
Formsprag Co.: *See*—
Ziotek, Thaddeus F. 3,224,542.
Forster, Gero, to Fernseh G.m.b.H. Moving picture and television camera control apparatus. 3,224,829, 12–21–65, Cl. 352—131.
Forth, Murray W., to Deere & Co. Die structure for wafering or pelleting machines. 3,224,887, 12–21–65, Cl. 107—14.
Fosdick Machine Tool Co., The: *See*—
Knosp, Robert N. 3,224,297.
Fosseco International Ltd.: *See*—
Sealey, Alan G., and Andrew. 3,224,872.
Foster, Edson P. Felting needles. 3,224,067, 12–21–65, Cl. 28—4.
Foster, Robert D., and J. L. Thigpen, to Winco, Inc. Cabinet hardware for lowering and retracting a container. 3,224,827, 12–21–65, Cl. 312—266.
Foster, Robert J. Magnetic core matrix. 3,225,336, 12–21–65, Cl. 340—174.
Foulger, Orson G., to United States of America, Navy. Stepper motor control circuit. 3,225,277, 12–21–65, Cl. 318—138.
Fox, Elton B. Means for protecting the heater in a circulating liquid system. 3,224,675, 12–21–65, Cl. 237—8.
Fox, James S., and J. H. De Bord, to The International Nickel Co., Inc. Slag composition for fluid mold casting. 3,224,887, 12–21–65, Cl. 106—88.27.
Fram Corp.: *See*—
Sawyer, William T. 3,224,591.

Fram, Paul, to Minnesota Mining and Mfg. Co. Curable compositions of an organic acid anhydride and an alkylenimine derivative. 3,225,013, 12–21–65, Cl. 260—78.

Frank, Robert M.: *See*—
Adler, Imre, Erhardt, and Frank. 3,224,604.

Frantz, Lawrence D. Fishing equipment retriever. 3,224,-132, 12–21–65, Cl. 43—17.2.

Frazier, Larry C., to National-Standard Co. Bead placing and sealing apparatus for tire building machine. 3,224,921, 12–21–65, Cl. 156—403.

Fredrick, Russell E., to Minnesota Mining & Mfg. Co. Thermoelectric alloy. 3,224,876, 12–21–65, Cl. 75—166.

Freedman, Lawrence I., J. W. Tone, and H. Werner, to Ronson Corp. Multipurpose domestic appliance. 3,224,743, 12–21–65, Cl. 259—85.

Freeland Gauge Co.: *See*—
Minix, William A. 3,224,251.

French, Clayton V.: *See*—
Greiner, Norman S., and French. 3,224,205.

French, Michael J., to Conch International Methane Ltd. Storage of a liquefied gas. 3,224,624, 12–21–65, Cl. 220—15.

Frey, Frederick W., Jr., and R. J. Laran, to Ethyl Corp. Chemical composition. 3,224,834, 12–21–65, Cl. 23—14.

Friedman, Lester, to Weston Chemical Corp. Urethanes from polyphosphorous hydroxyl terminated phosphonates. 3,225,010, 12–21–65, Cl. 260—77.5.

Froitzheim, Hans, and K. Letzel, to Daimler-Benz Aktiengesellschaft. Step unit for motor vehicles. 3,224,525, 12–21–65, Cl. 180—89.

Front Projection Corp.: *See*—
Fairchild, Sherman M. 3,224,718.

Frost, John W. Plug-in attached valved pressurized fluid-dispensing receptacles. 3,224,645, 12–21–65, Cl. 222—182.

Fry, Horace P., Jr., to FMC Corp. Apparatus for making weftless tape. 3,224,922, 12–21–65, Cl. 156—433.

Fuentes, Gabriel, Jr. Prosthetic poultry spur. 3,224,412, 12–21–65, Cl. 119—1.

Fuji Telecasting Co. Ltd.: *See*—
Osawa, Izumi, and Takeuchi. 3,225,135.

Fukuda, Mitsugu: *See*—
Oizumi, Kiyoshi, Fukuda, and Otani. 3,224,858.

Fuller Co.: *See*—
Derenk, Gunther, Schmid, and Sontheimer. 3,224,964.

Furon, Leon D., to The Budd Co. System for three-dimensional recording. 3,225,136, 12–21–65, Cl. 178—6.6.

Furth, Harold P., to Advanced Kinetics, Inc. Brushless generator for high-powered electrical pulses. 3,225,285, 12–21–65, Cl. 322—51.

Furuhata, Yoshio: *See*—
Takami, Katsumi, Abe, Matsuura, and Furuhata. 3,225,-211.

Furukawa, Kinichiro: *See*—
Mori, Ryutaro, Nishimura, and Furukawa. 3,224,286.

Fuse Indicator Corp.: *See*—
Linton, William C. 3,225,164.

Gagliardo, John P., to Crompton & Knowles Corp. Feeding mechanism for weft in looms. 3,224,467, 12–21–65, Cl. 139—122.

Galli, Guido, and C. A. Germando, to Giannini Controls Corp. Accelerometer. 3,224,279, 12–21–65, Cl. 73—517.

Galloway, George W.: *See*—
Nooker, Eugene L., and Galloway. 3,225,172.

Gandolfo, Peter F., to Lewis Shepard Co. Power safety device for carriage controlled material handling trucks. 3,224,529, 12–21–65, Cl. 182—14.

Gardiner, Paul C., L. E. Jewett, and G. L. Broomell, to United States of America, Navy. Range gating means. 3,225,325, 12–21–65, Cl. 340—3.

Gardner, David M.: *See*—
Barth-Wehrenalp, Bernoff, and Gardner. 3,225,050.

Garey, Robert B.: *See*—
Witherspoon, John F., and Garey. 3,224,335.

Gass, Samuel: *See*—
Tessler, Morty, and Gass. 3,224,789.

Gates Rubber Co., The: *See*—
Gross, Robert H., and McPhee. 3,224,483.

Gaudin, Antoine M.: *See*—
Hockings, William A., Rose, and Gaudin. 3,224,835.

Gauerke, Reinhart C.: *See*—
Grim, Daniel E., Kunz, and Gauerke. 3,224,185.

Gaylord, William M., Jr., to Union Carbide Corp. Adsorption-type dehumidifier. 3,224,169, 12–21–65, Cl. 55—208.

Gebhardt, Robert C., W. L. Shafer, Jr., A. E. Spencer, Jr., W. N. Toy, F. S. Vigliante, R. D. Williams, and O. H. Williford, to Bell Telephone Laboratories, Inc. Telephone switching system. 3,225,144, 12–21–65, Cl. 179—27.

Geckler, Robert P.: *See*—
Tew, Richard W., Sane, and Geckler. 3,224,143.

Geigy Chemical Corp.: *See*—
Dietrich, Henri, and Kung. 3,225,032.

Geigy, J. R., A-G: *See*—
Margot, Alfred. 3,224,938.

Geissler, Albert F.: *See*—
Boyle, Edward H., and Geissler. 3,224,746.

Geleshko, Steve. Rotatable ball dispensing chance device. 3,224,779, 12–21–65, Cl. 273—144.

Geller, Lorant B., and E. R. Mitchell, to Her Majesty The Queen, in right of Canada, as represented by the Minister of Mines and Technical Surveys. Method and apparatus for producing air-fuel flames sonic and supersonic velocities. 3,224,486, 12–21–65, Cl. 158—4.

General Data Corp.: *See*—
Doyle, James H. 3,225,347.

General Electric Co.: *See*—
Andersen, Edward O. 3,224,075.
Barkan, Philip. 3,225,160.
Chafee, Glenn R., Jr. 3,224,107.
Chestnut, Harold, Troutman, and Sollecito. 3,225,179.
Daniels, Franklin W. 3,225,276.
Fields, John H., Propster, and Masters. 3,225,334.
Greenwood, Allan N. 3,225,167.
Hughes, William C., Wolfe, and Glenn. 3,225,335.
Hume, Roger E. 3,225,255.
Hunt, William R. 3,224,819.
Krug, George A., Jr. 3,225,249.
Kudlacik, Henry W. 3,225,231.
Polonsky, Samuel. 3,224,062.
Rydbeck, Vernon A. 3,225,224.
Santeler, Donald J. 3,224,248.
Schrom, Edward C., and Allen. 3,225,252.
Shipley, Eugene E. 3,224,262.
Smith, Malcolm G. 3,224,760.
Staub, Fred W., and Tomlinson. 3,224,504.
Sybeldon, James A. 3,225,240.
Thor, Robert C. 3,225,349.

General Inspection Laboratories, Inc.: *See*—
Loving, Joe H. 3,224,254.

General Mills, Inc.: *See*—
Floyd, Don E., and Glasser. 3,224,893.
Swanson, Ronald R. 3,224,873.

General Telephone and Electronics Laboratories, Inc.: *See*—
Lefever, Robert A. 3,224,840.

General Tire & Rubber Co., The: *See*—
Gruber, Elbert E., and Keplinger. 3,225,007.

Germando, Carl A.: *See*—
Galli, Guido, and Germando. 3,224,279.

Gershon, Sol D.: *See*—
Pader, Morton, and Gershon. 3,224,883.
Pader, Morton, and Gershon. 3,224,884.

Gerthsen, Peter J., to North American Philips Co., Inc. Zone-melting method for metal compounds. 3,224,844, 12–21–65, Cl. 23—301.

Gesche, Werner, H. Steuer, and E. Karig, to Reimers Getriebe K.G. Infinitely variable cone pulley transmission. 3,224,-287, 12–21–65, Cl. 74—230.17.

Gey, Albert, and J. Jacquesson, to Commissariat a l'Energie Atomique. Determination of the number of neutrons emitted simultaneously by a source. 3,225,200, 12–21–65, Cl. 250—83.1.

Gfeller, Rudolf: *See*—
Zimmerman, Kurt. 3,224,648.

Giannini Controls Corp.: *See*—
Galli, Guido, and Germando. 3,224,279.
Lagasse, Eugene F. 3,225,151.
Styner, Jerry H. 3,225,181.

Gibbons, Chester R. Carton opening machine. 3,224,089, 12–21–65, Cl. 30—2.

Gierlach, Robert W., to Standard Car Truck Co. Draft gear rigging for railroad car. 3,224,600, 12–21–65, Cl. 213—67.

Gigon, Jean, and G. Maye, to Commissarit a l'Energie Atomique. Device for measuring doses of thermal neutrons. 3,225,196, 12–21–65, Cl. 250—83.1.

Gilford, Saul R.: *See*—
Wood, Willis A., and Gilford. 3,224,321.

Gilman, Robert J., to Radio Frequency Laboratories, Inc. Transmitter having an oscillator controlled by selectively switched capacitors. 3,225,348, 12–21–65, Cl. 340—351.

Giot, Maurice H. F., B. Jobart, C. R. Fevrot, and J.-L. Giros, to S.A.L.A.M. Societe Anonyme Pour Tous Appareillages Mecaniques and Sud-Aviation, Societe Nationale de Constructions Aeronautiques. Metering and computing apparatus. 3,225,178, 12–21–65, Cl. 235—92.

Girgis, Magdy F.: *See*—
Butters, William J., and Girgis. 3,224,806.

Girling Ltd.: *See*—
Thompson, George E. 3,224,531.

Giros, Jean-Loup: *See*—
Giot, Maurice H., Jobart, Fevrot, and Giros. 3,225,178.

Giroux, Pierre R., 10% to O. Veillette. Pliers with rack and toothed lever means coming into meshing engagement when the jaws contact a workpiece. 3,224,303, 12–21–65, Cl. 81—343.

Giusem, Jerome, to The Palm Beach Co. Coat shoulder pressing device. 3,224,654, 12–21–65, Cl. 223—57.

Glabisch, Dietrich, M. Wandel, and J. Witte, to Farbenfabriken Bayer Aktiengesellschaft. Sulfuric acid semi-ester quaternary ammonium compounds. 3,225,073, 12–21–65, Cl. 260—401.

Gladding, Edward K., and J. L. Nyce, to E. I. du Pont de Nemours and Co. Elastomeric blends of an ethylene/1,4-hexadiene copolymer and a diene rubber. 3,224,985, 12–21–65, Cl. 260—5.

Glass, Samuel W., Jr.: *See*—
Nickell, Grason T., Glass, and Cheek. 3,224,214.

Glasser, David W.: *See*—
Floyd, Don E., and Glaser. 3,224,893.

Glaverbel, S.A.: *See*—
Plumat, Emile. 3,224,855.

Glenn, William E.: *See*—
Hughes, William C., Wolfe, and Glenn. 3,225,335.

Glidden Co., The: *See*—
Luck, John V., and Ellinger. 3,224,882.

Glinski, Richard A.: *See*—
Rosser, Charles M., and Glinski. 3,224,907.

Gloor, Herbert W.: *See*—
Zimmerman, Kurt. 3,224,648.

Goetz, Carlos C.: *See*—
Fernandes, Manuel C. 3,225,350.

Goetz, Lawrence R.: *See*—
Happe, Reynold, and Goetz. 3,225,280.

Goldsholl, Morton, to The Sherwin-Williams Co. Color display device. 3,224,113, 12–21–65, Cl. 35—28.3.

Gombert, Dieter W., to Cook Electric Co. Atomic irradiator. 3,225,203, 12–21–65, Cl. 250—106.

Goodman, Albert M.: *See*—
Wilson, Raymond T., and Goodman. 3,224,816.

Goodwin, Elmer C., Jr., to Spaulding Fibre Co., Inc. Roving can rim. 3,224,659, 12–21–65, Cl. 229—4.5.

Goodyear Aerospace Corp.: *See*—
Grover, Elliot B. 3,224,466.

Gorbe, Anthony P.: *See*—
Blaha, Jess P., Cotton, and Gorbe. 3,224,411.

Gorman, Marvin, to Eli Lilly and Co. Quebrachidine and derivatives. 3,225,053, 12–21–65, Cl. 260—294.3.

Gossett Machine Works, Inc.: *See*—
Johnson, James E. 3,224,181.

Gottfried, Max, to Jobat Institute, Inc. Pneumatic immobilizing device for animals and the like. 3,224,415, 12–21–65, Cl. 119—96.

Gotz, Elmar. Digital curve computer for use in controlling the path of a work tool or work piece. 3,225,182, 12–21–65, Cl. 235—164.

Gould, Bert B., to MB Associates. Method of constructing a miniature solid propellant rocket. 3,224,317, 12–21–65, Cl. 86—1.

Graber, Lewis J.: *See*—
Barney, Kay H., and Graber. 3,225,300.

Grabowski, John H., to Honeywell, Inc. Control apparatus including a switch and both positive and negative feedback. 3,225,216, 12–21–65, Cl. 307—88.5.

Grace, W. R., & Co.: *See*—
Braude, George L., and Cogliana. 3,225,101.
D'Alelio, Gaetano F. 3,225,024.

Graf, Felix, to Reiter, Joh. Jacob, Aktiengesellschaft, & Cie. Device for stopping the drive of spindles of spinning and doubling frames. 3,224,180, 12–21–65, Cl. 57—88.

Graham, George C. Fluid pressure piston seal and valve. 3,224,378, 12–21–65, Cl. 103—178.

Graham, Phillip. Flexible panel form for thin shells. 3,224,-726, 12–21–65, Cl. 249—207.

Graham, Ward A. Framing device. 3,224,754, 12–21–65, Cl. 269—108.

Granberg, Albert J., to Cal-Meter Co. Basic liquid meter and interchangeable compensating means therefor. 3,224,273, 12–21–65, Cl. 73—233.

Graves, William L.: *See*—
Taylor, John S., and Graves. 3,225,129.

Gray, Billy C. Straight-edge optical device. 3,224,329, 12–21–65, Cl. 88—24.

Great Northwest Fibre Co.: *See*—
Leitzel, Ammon M. 3,224,569.

Green, Theron R., to Motor Ads, Inc. Advertising device for taxis and the like. 3,224,129, 12–21–65, Cl. 40—129.

Greene, Kermit: *See*—
Pitt, Edgar W., and Greene. 3,224,159.

Greening, John P., and R. A. Doubt, to Phillips Petroleum Co. Rotational seismometer. 3,225,327, 12–21–65, Cl. 340—17.

Greenwood, Allan N., to General Electric Co. Vacuum circuit breaker with arc rotation contact means. 3,225,167, 12–21–65, Cl. 200—144.

Gregory, Sydney A., to Associated Electrical Industries Ltd. Adsorption apparatus. 3,224,168, 12–21–65, Cl. 55—208.

Greiner, Norman S., and C. V. French, to Johns-Manville Corp. Asbestos-cement structural sheet. 3,224,205, 12–21–65, Cl. 61—59.

Gresham Driving Aids: *See*—
Gresham, Lee M. 3,224,294.

Gresham, Lee M., to Gresham Driving Aids. Left foot accelerator structure. 3,224,294, 12–21–65, Cl. 74—562.5.

Greulich, Robert G., to The Singer Co. Sewing machine driving devices. 3,224,398, 12–21–65, Cl. 112—220.

Grimn, William E.: *See*—
Daugherty, Charles C. 3,224,874.

Griffiths, Spencer R., Jr.: *See*—
Blomgren, Oscar C., Sr., Munck, Griffiths, and Blomgren. 3,224,485.
Blomgren, Oscar C., Sr., Munck, Griffiths, and Blomgren. 3,224,497.

Grikschelt, Henry W., and R. H. Schott, ½% to The Detroit Testing Laboratory, Inc. Stress indicating mechanical fastening device. 3,224,316, 12–21–65, Cl. 85—62.

Grim, Daniel E., F. A. Kunz, and R. C. Gauerke. Link and shackle insert. 3,224,185, 12–21–65, Cl. 59—86.

Grimes, Kenneth D., and W. C. Dunnington, to Metamora Electronics Corp. Miniature electric switch. 3,225,168, 12–21–65, Cl. 200—159.

Grist, Franklin J., to Miller Electric Mfg. Co. Supply voltage compensation. 3,225,290, 12–21–65, Cl. 323—89.

Grosmangin, Jacques, and G. F. Aubin, to Compagnie Francaise De Raffinage. Polymerization of di-olefins. 3,224,-949, 12–21–65, Cl. 204—154.

Gross, Robert H., and C. M. McPhee, to The Gates Rubber Co. Tire tread. 3,224,483, 12–21–65, Cl. 152—187.

Grove Valve and Regulator Co.: *See*—
Bryant, Austin U., and Edwards. 3,224,080.

Grover, Elliot B., to Goodyear Aerospace Corp. Method for weaving contoured thread connected dual wall inflatable fabric. 3,224,466, 12–21–65, Cl. 139—20.

Gruber, Elbert E., and O. C. Keplinger, to The General Tire & Rubber Co. Polyurethane compositions cured with organic peroxides. 3,225,007, 12–21–65, Cl. 260—75.

Gudmundson, Clark. Boat trailer. 3,224,019, 12–21–65, Cl. 9—1.

Guinness, John C. Means to mute wind instruments. 3,224,-315, 12–21–65, Cl. 84—383.

Gulf Research & Development Co.: *See*—
Hultt, Jimmie L., McGlothlin, and Papalla. 3,224,506.
Lebrian, William R., Nelson, and Yeakley. 3,225,111.
McNulty, John G., and Walsh. 3,225,113.
Swift, Harold E. 3,224,980.
Walsh, Bruce R. 3,224,195.

Gulton Industries, Inc.: *See*—
Traite, Max. 3,224,435.

Gunnarsson, Ebbe K. J.: *See*—
Ljungström, Olle, Gunnarsson, and Eriksson. 3,224,666.

Gunto, Robert L., to Addressograph-Multigraph Corp., Charles Bruning Division. Material dispensing apparatus. 3,224,-649, 12–21–65, Cl. 222—199.

Guptill, Frank E., Jr.: *See*—
Dille, Roger M., Guptill ,and Ahlborn. 3,224,849.

Gutridge, Jack E., and K. J. Austgen, to Pullman Inc. Container mounting arrangement. 3,224,383, 12–21–65, Cl. 105—366.

Haas, Vinton B., Jr., to United Aircraft Corp. Three phase inverter system with voltage and phase control. 3,225,282, 12–21–65, Cl. 321—3.

Haberthier, Vincent G. Room divider. 3,224,489, 12–21–65 Cl. 160—135.

Hagedoorn, Hendrik L.: *See*—
Verster, Nico F., and Hagedoorn. 3,225,270.

Haggard, Olen R.: *See*—
Sherley, Roy W. 3,224,595.

Hain, Clifford L., to The Fire Guard Corp. Combined handle lock and bracket for fire extinguishers. 3,224,720, 12–21–65, Cl. 248—313.

Hall, Martin C.: *See*—
Carter, Ronald P., Cowin, and Hall. 3,225,256.

Hall, Raymond L., to Ski-Dek Corp. Dry skiing surface. 3,224,763, 12–21–65, Cl. 272—56.5.

Hallden, Frederick C., L. S. Conover, Jr., J. J. Farkas, and H. Curtis, to Cutler-Hammer, Inc. Data accumulation systems. 3,225,332, 12–21–65, Cl. 340—172.5.

Hallermeier, Warren D.: *See*—
Cook, Richard T., and Hallermeier. 3,225,173.

Hamic, Joe G., Sr.: *See*—
Jenniges, Lawrence M., and Hamic. 3,224,810.

Hamilton, Robert H., to Hewlett-Packard Co. Leak testing. 3,224,252, 12–21–65, Cl. 73—49.2.

Hamilton, Wallace, to PneumoDynamics Corp. Hatch cover system. 3,224,491, 12–21–65, Cl. 160—188.

Hamm, James A., to James Industries, Inc. Bowling device. 3,224,012, 12–21–65, Cl. 2—161.

Hamm, Philip C.: *See*—
Weiss, Anton G., and Hamm. 3,225,078.

Hamm, Philip C., and J. J. D'Amico, to Monsanto Co. Destroying vegetation with haloalkenyl disubstituted thionocarbamates. 3,224,864, 12–21–65, Cl. 71—2.5.

Handing, Theodore E., to Amplifone Corp. Electrical component, tube, and tube-holder-shield combination. 3,225,-259, 12–21–65, Cl. 317—99.

Hanft, Roy F., to International Business Machines Corp. Wear compensating apparatus including bi-directional spring clutch. 3,224,545, 12–21–65, Cl. 197—16.

Hansen, William W. Tuck-lock carton and package. 3,224,-577, 12–21–65, Cl. 206—65.

Hanson, David E.: *See*—
Baumann, Dwight M., Hanson, and Shamie. 3,224,344.

Hanson, John R. Card holder with movable shutters and interchangeable cards for insertion therein and a second card holder with a spinner and interchangeable cards. 3,224,112, 12–21–65, Cl. 35—9.

Hansson, Ants, to Continental Can Co., Inc. Pneumatic reshaping of cans. 3,224,239, 12–21–65, Cl. 72—62.

Happe, Reynold, and L. R. Goetz, to The Singer Co. Load protection circuits. 3,225,280, 12–21–65, Cl. 318—246.

Harbart, Walter C. Apparatus for rotating a tool. 3,224,-784, 12–21–65, Cl. 279—96.

Hardcastle, Glenn A., Jr.: *See*—
Johnson, David A., and Hardcastle. 3,225,033.

Hardgrove, James F. Flexible ear speculum. 3,224,437, 12–21–65, Cl. 128—9.

Hardinge Brothers, Inc.: *See*—
Connors, William D., and Evans. 3,225,207.
Cunningham, Henry L. 3,224,070.

Harding, James, R. F. Sellers, and C. Y. Meyers, to Union Carbide Corp. Hydroxybenzylated sulfones and compositions containing same. 3,225,104, 12–21–65, Cl. 260—607.

Harlan, Don L., and L. M. Hubby, to Texaco Inc. Well completion apparatus. 3,224,267, 12–21–65, Cl. 73—155.

Harmon, William E., to Deering Milliken Research Corp. Bobbin tip support means in filling battery. 3,224,469, 12–21–65, Cl. 139—249.

Harper, Robert C., to The Cincinnati Milling Machine Co. Weather-resistant plastic. 3,225,117, 12–21–65, Cl. 260—872.

Harrell, David, Jr., ¼ to R. T. Walker. Adjustable liquid metering device. 3,224,688, 12–21–65, Cl. 222—64.

Harrington, Eugene M., and M. I. Masterson. Hand sander. 3,224,149, 12–21–65, Cl. 51—386.

Harris, Samuel. Dental flasks. 3,224,044, 12–21–65, Cl. 18—33.

Harris-Intertype Corp.: *See*—
Henkel, Norman K. 3,224,367.

Harrison, James B., and O. L. Magell, to Wallace & Tiernan Inc. 2,5-dimethylhexane-2,5-di(peroxy carbonates). 3,225,079, 12–21–65, Cl. 260—463.

Hartmann & Braun Aktiengesellschaft: *See*—
Moyat, Peter. 3,224,837.

Hashemi-Tafreshi, Hadi: *See*—
Feist, Eli M., and Hashemi-Tafreshi. 3,224,207.
Schlumberger, Etienne M., and Hashemi-Tafreshi. 3,224,208.

Hashizume, Genjiro: *See*—
Takagi, Eiichi, Matsuzawa, Yoshida, Shimomura, and Hashizume. 3,225,088.

Hasinger, Siegfried, H.: *See*—
Wattendorf, Frank L., von Ohain, Lawson, and Hasinger. 3,225,225.

Hastings, Joseph C., to Tinius Olsen Testing Machine Co. System to retain and indicate maximum reading of a train gage type indicator. 3,224,256, 12–21–65, Cl. 73—88.5.

Hatanaka, Rodney Y.: *See*—
Beckman, Ronald, and Hatanaka. 3,224,719.

Hauber, Joseph F., to Honeywell Inc. Modulating and demodulating apparatus. 3,225,503, 12–21–65, Cl. 329—102.

Hauser, Christl: *See*—
Mikusch, Berta. 3,224,332.

Hausmann, Delbert A., to American Pipe and Construction Co. Internal joint band for double bell concrete pipe. 3,224,798, 12–21–65, Cl. 285—288.

Hausmann, Delbert A., and W. Miller, to American Pipe and Construction Co. Internal joint band for double bell concrete pipe. 3,224,797, 12–21–65, Cl. 285—288.

Hawker Siddeley Canada Ltd.: *See*—
Best, George C. 3,224,199.

Hawkinson, Paul E., Co.: *See*—
Olson, Rudolph E. 3,224,612.

Hawley, George F., and J. E. Moulder, to AEL Development and Research Division, Inc. Automatic cutting and collating machine and method. 3,224,306, 12–21–65, Cl. 83—23.

Hayashi, Shigeo: *See*—
Takahashi, Akira, Mita, and Hayashi. 3,225,006.

Hedegaard, Kristen, to G. M. Pfaff, AG. Motor drive and coupling mechanism for sewing and the like machines. 3,224,543, 12–21–65, Cl. 192—145.

Heeney, Matthews R.: *See*—
Fluder, Chester H., Myrent, and Heeney. 3,225,159.

Hefner, William E. Clamping strap and extendable adjustable clamping block combination. 3,224,753, 12–21–65, Cl. 269—91.

Heinle, Lawrence A. Toilet paper core. 3,224,700, 12–21–65, Cl. 242—55.53.

Heinse, Richard. Hinges. 3,224,035. 12–21–65, Cl. 16—163.

Heithaus, William C., to Sperry Rand Corp. Heat transfer member for coaxial waveguide device. 3,225,318, 12–21–65, Cl. 333—24.2.

Helleur, Donald E.: *See*—
Brandt, Theodorus G., Helleur, Hopkins, and Bolvin. 3,224,925.

Hemstock, Glen A., to Minerals & Chemicals Philipp Corp. High surface area aluminum silicate and method of making same. 3,224,892, 12–21–65, Cl. 106—288.

Henderson, Hubert T., to Shell Oil Co. Gasoline composition. 3,224,848, 12–21–65, Cl. 44—56.

Hendricks, John G., and L. M. Kebrich, to National Lead Co. Method of producing basic cadmium salts of aliphatic carboxylic acid. 3,225,075, 12–21–65, Cl. 260—414.

Hendry, Glenn G., Jr. Bobbin. 3,224,696, 12–21–65, Cl. 242—46.3.

Henkel, Norman K., to Harris-Intertype Corp. Marking mechanism for use with sheet material. 3,224,367, 12–21–65. Cl. 101—226.

Henne, Fred M. Electric lighting fixture hanger. 3,225,154, 12–21–65, Cl. 200—51.09.

Henriksen, Erik K., to Aerojet-General Corp. Explosive-forming apparatus. 3,224,238, 12–21–65, Cl. 72—56.

Henry, Henriette J.: *See*—
Henry, James E. 3.224,615.

Henry, James E., deceased, by H. J. Henry, administratrix, to United States of America, Atomic Energy Commission. Crane device with an extensible gripper mechanism. 3,224,615, 12–21–65, Cl. 214—658.

Hensel, Werner R. R., to Daimler-Benz Aktiengesellschaft. Double acting fluid operated clutch. 3,224,539, 12–21–65, Cl. 192—86.

Hentschel, Fritz, to Varta Aktiengesellschaft. Tubes for holding the active material in electrode plates of galvanic elements. 3,224,905, 12–21–65, Cl. 136—55.

Henze, Curt: *See*—
Dielmann, August W., and Henze. 3,224,627.

Herbkersman, Earle C., to The Pipe Machinery Co. Pilot clutch. 3,224,535, 12–21–65, Cl. 192—67.

Herbst, Willy: *See*—
Duch, Eduard, Herbst, Rochlitz, Scherer, and Vilcsek. 3,224,908.

Heraeus, W. C., G.m.b.H.: *See*—
Dietrich, Walter, and Krall. 3,224,428.

Hercules Powder Co.: *See*—
Butler, Robert W., and Keim. 3,224,986.
Espy, Herbert H. 3,224,943.

Hermann, Joachim, and R. Juergensen, to Bolkow-Entwicklungen KG. Timed program apparatus for missile guidance. 3,224,710, 12–21–65, Cl. 244—14.

Herr, John A.: *See*—
Adams, Kenneth D., Herr, and Schwartzberg. 3,224,393.

Herr, John A., and E. W. Taylor, to The Singer Co. Capacitance type foot controller. 3,225,274, 12–21–65, Cl. 317—249.

Herring, Richard W.: *See*—
Anderson, Howard A., and Herring. 3,224,016.

Hershberger, Gerald R. Vehicle lighting, timing, and warning system. 3,225,150, 12–21–65, Cl. 200—33.

Hershberger, Gerald R. Vehicle lighting, timing and warning device. 3,225,250, 12–21–65, Cl. 315—82.

Heslop, Robert N., to Imperial Chemical Industries Ltd. Triazinyl and pyrimidinyl anthraquinone compounds. 3,225,043, 12–21–65, Cl. 260—249.

Hesston Mfg. Co., Inc.: *See*—
Adee, Raymond A. 3,224,177.

Hewett, Colin L., and D. S. Savage, to Organon Inc. 2,3-amino-steroids. 3,225,034, 12–21–65, Cl. 260—239.5.

Hewlett-Packard Co.: *See*—
Cochran, David S. 3,225,298.
Hamilton, Robert H. 3,224,252.
Stewart, Clyde R. 3,224,381.

Hick, Joel C. Training utensil. 3,224,093, 12–21–65, Cl. 30—324.

Hickey, John J.: *See*—
Clark, George L., and Hickey. 3,225,254.

Hicks, John W., Jr., to American Optical Co. Method of forming a fused energy-conducting device. 3,224,851, 12–21–65, Cl. 65—4.

Hicks, William J., to Airtex Products, Division of United Industrial Syndicate, Inc. Reversible pulsator domes for fuel pumps. 3,224,377, 12–21–65, Cl. 103—150.

Hill, Claude, to Harry Ferguson Research Ltd. Variable gearing for motor vehicles. 3,224,298, 12–21–65, Cl. 74—688.

Hill, F. H., Co., Inc.: *See*—
Overland, John S. 3,224,066.

Hill, James D., to Her Majesty's Postmaster General. Pneumatic self-propelled apparatus. 3,224,734, 12–21–65, Cl. 254—134.6.

Hill, James L.: *See*—
Cook, Warren G., Mathews, and Hill. 3,224,380.

Hilpert, Conrad R., to Twin Disc Clutch Co. Fluid operated clutch with operator sensing signal. 3,224,537, 12–21–65, Cl. 192—85.

Hilsenrath, Manfred, to International Business Machines Corp. Tunnel diode gating circuit with self reset. 3,225,212, 12–21–65, Cl. 307—88.5.

Hilton, John L., and R. K. Squire, to Aerojet-General Corp. Scintillation device and system. 3,225,193, 12–21–65, Cl. 250—71.5.

Himes, John M., to E. R. Wagner Mfg. Co. Cabinet hinge. 3,224,036, 12–21–65, Cl. 16—190.

Hindle, Thomas, and E. Race. Paper-machine felt. 3,224,923, 12–21–65, Cl. 161—64.

Hinkamp, James B., to Ethyl Corp. Lubricating oil compositions. 3,224,968, 12–21–65, Cl. 252—33.6.

Hinkamp, James B., to Ethyl Corp. Lubricating oil compositions. 3,224,975, 12–21–65, Cl. 252—51.5.

Hinrichs, Karl, R. E. Eastman, and J. R. Kolden, to Beckman Instruments, Inc. Transition detector. 3,225,213, 12–21–65, Cl. 307—88.5.

Hirano, Chikafusa: *See*—
Miura, Takeo, and Hirano. 3,225,291.

Hirano, Katsuaki: *See*—
Suzumura, Hideo, Hirano, Kawamura, and Nagano. 3,225,128.

Hirschler, Daniel A., Jr.: *See*—
Stephens, Ruth E., Hirschler, and Lamb. 3,224,981.

Hiser, Dean L. Agitator. 3,224,742, 12–21–65, Cl. 259—75.

Hitachi Ltd.: *See*—
Mori, Ryutaro, and Kurabayashi. 3,224,020.

Hixon, Philip E.: *See*—
Fleisher, Marvin B., and Hixon. 3,224,356.

Hochmuth, Frank W. Chain matrix heat exchanger. 3,224,498, 12–21–65, Cl. 165—5.

Hockings, William A., D. H. Rose, and A. M. Gaudin, to Copper Range Co. Treatment of sulfidic material. 3,224,835, 12–21–65, Cl. 23—135.

Hodge, Donald R., E. A. Janicki, and C. F. Meidel, to Cutler-Hammer, Inc. Mold for making a combined electromagnetic armature and contact carrier. 3,224,045, 12–21–65, Cl. 18—36.

Hodina, George C.: *See*—
Malmquist, Robert E. 3,224,721.

Hoehn, Marvin M., and G. W. Probst. Method for treating helminthic infections. 3,224,939, 12–21–65, Cl. 167—53.

Hoff, Marc. Apparatus for establishing plasma boundary surfaces. 3,224,375, 12–21–65, Cl. 102—92.5.

Hoffert, Frankin D.: *See*—
Keith, Percival C., Hoffert, and Stotler. 3,224,869.

Hoffinger, William J.: *See*—
Moulder, Jean E., Hoffinger, and Scherr. 3,224,554.

Hoffman, William D., and R. M. Eichhorn, to Sinclair Research, Inc. Process for producing 2,3-dialkyl-2-alkenes. 3,225,112, 12–21–65, Cl. 260—677.

Hogan, John P., and A. G. Kitchen, to Phillips Petroleum Co. Process for controlling melt index. 3,225,023, 12–21–65, Cl. 260—94.9.

Hohl, John, and J. M. Wheaton, to Owens-Illinois Glass Co. Closure with integrally formed sealing surface. 3,224,617, 12–21–65, Cl. 215—31.

Holbrook, John A.: *See*—
Rich, Charles A., Jr., Klusmier, and Holbrook. 3,225,202.

Holcombe, Brooks H. Protector for fishing hook and the like. 3,224,134, 12–21–65, Cl. 43—57.5.

Holdeman, John W., and W. G. Jeakle, to Borg-Warner Corp. Differential mechanism. 3,224,299, 12–21–65, Cl. 74—711.

Holden, Artemas F. Open water heating system. 3,224,431, 12–21–65, Cl. 126—355.

Hollandse Signaalapparaten, N.V.: *See*—
Steenberg, Johannes. 3,225,263.

Hollingsworth, James W., and M. R. Horton, to Radio Corp. of America. Indirectly heated cathode. 3,225,246, 12–21–65, Cl. 313—270.

Holman, Rudolph G. Machine for winding a ball. 3,224,690, 12–21–65, Cl. 242—3.

Holstein, Raymond F. Movable carts and the like. 3,224,790, 12–21–65, Cl. 280—47.37.

Holtz, Maurice, to Acme Process Equipment Co. Continuous process of cooking meat. 3,224,881, 12–21–65, Cl. 99—107.

Holzer, Johann, to United States of America, Army. Differential code modulator. 3,225,315, 12–21–65, Cl. 332—11.

Honeywell Inc.: *See*—
Allbrandi, Joseph A., Campbell, and Maynard. 3,224,245.
Brikowski, Harold J. 3,225,304.
Erickson, Roger D. 3,225,352.
Erickson, Roger D. 3,225,353.
Erickson, Roger D. 3,225,355.
Fahley, Jerome A. 3,224,275.
Grabowski, John H. 3,225,216.
Hauber, Joseph F. 3,225,303.
House, Alfred M. 3,224,368.
Hroch Von Dalebor, Henry J. 3,224,433.
Ichihara, Tatsuya. 3,224,271.
Leonard, Vurnen J. 3,224,678.
Li, Choh H. 3,224,966.
Petersen, John F. 3,225,222.
Ruhland, Roman C. 3,225,311.
Solomons, Cyril. 3,225,320.

Honolulu Iron Works Co.: *See*—
Belter, Rudolf E. 3,224,688.

Hooker Chemical Corp.: *See*—
Dorfman, Edwin, Weil, and Newcomer. 3,225,087.
Simpson, Theodore B., and Evans. 3,225,109.

Hoover Ball and Bearing Co.: *See*—
Cooke, Arthur H. 3,224,653.

Hopkins, Robert M.: *See*—
Brandts, Theodorus G., Helleur, and Hopkins. 3,224,925.

Horning, Edward J.: *See*—
Warner, Paul F., and Horning. 3,225,105.

Hornstein, Moses, and J. J. Kupka, to KHG Associates. Vibratory pile hammer. 3,224,514, 12–21–65, Cl. 175—55.

Horowitz, Charles, to Berg Mfg. & Sales Co. Brake control valve and system. 3,224,815, 12–21–65, Cl. 303—71.

Horrell, Maurice W., to The Bendix Corp. Data storage system. 3,225,183, 12–21–65, Cl. 235—167.

Horton, Murray R.: *See*—
Hollingsworth, James W., and Horton. 3,225,246.

Horton, Robert C., to The Schlegel Mfg. Co. Weatherstripping. 3,224,047, 12–21–65, Cl. 20—69.

Horvath, William. Bottom discharge vehicle with backward dumping mechanism. 3,224,811, 12–21–65, Cl. 298—10.

Horwood, Roger J.: *See*—
Summers, Leo E. A., and Horwood. 3,224,072.

Hotchkiss, William E. Gas absorption. 3,224,745, 12–21–65, Cl. 261—35.

Hotten, Bruce W., to Chevron Research Co. Non-emulsifying rust inhibitors in lubricants. 3,224,969, 12–21–65, Cl. 252—33.6.

Houdaille Industries, Inc.: *See*—
Hummel, Robert J., Rembert, and Dennis. 3,224,064.

Houilleres du Bassin de Lorraine: *See*—
Sanyas, Maxime. 3,224,601.

Houk, Richard D., to Consolidated Electronics Industries Corp. Garage door and operator. 3,224,492, 12–21–65, Cl. 160—189.

Houk, Richard D., to Consolidated Electronics Industries Corp. Door and control system therefor. 3,224,493, 12–21–65, Cl. 160—189.

Houk, Richard D., to Consolidated Electronics Industries Corp. Door. 3,224,494, 12–21–65, Cl. 160—213.

House, Alfred M., to Honeywell Inc. Dual liner shaped charge. 3,224,368, 12–21–65, Cl. 102—24.

Houser, John E., to The Fairchild Engineering Co. Method and apparatus for conveying objects. 3,224,565, 12–21–65, Cl. 198—190.

Howarth, John: *See*—
Abraham, Harry M. 3,224,052.

Hoyt, Earl E., Jr. Method for making and harvesting ice using ultrasonic vibrators. 3,224,213, 12–21–65, Cl. 62—68.

Hoyt, Earl H., Jr. Archer's finger tab. 3,224,009, 12–21–65, Cl. 2—21.

Hroch Von Dalebor, Henry J., to Honeywell Inc. pH electrodes. 3,224,433. 12–21–65, Cl. 128—2.

Hubbard, John S. Overhead maintenance apparatus. 3,224,528, 12–21–65, Cl. 182—2.

Hubbartt, James E.: *See*—
Silver, Irving, Hubbartt, and Inman. 3,224,805.

Hubby, Laurence M.: *See*—
Harlan, Don L., and Hubby. 3,224,267.

Huber, Anton. Locking device for a motor vehicle accelerator pedal. 3,224,292, 12–21–65, Cl. 74—513.

Huber, J. M., Corp.: *See*—
Iannicelli, Joseph. 3,224,582.

Huebner, Herbert A.: *See*—
Looali, Stanley. 3,224,510.

Huffman, Kenneth R.: *See*—
Schaefer, Frederic C., and Huffman. 3,225,077.

Hughes Aircraft Co.: *See*—
Mayer, James W. 3,225,196.
Moulin, Norbert L. 3,224,062.
Muldoon, William J., and Peterson. 3,225,279.

Hughes, William C., J. E. Wolfe, and W. E. Glenn, to General Electric Co. Thermoplastic film data storage equipment. 3,225,335, 12–21–65, Cl. 340—173.

Huibers, Derk T. A., and L. E. Korczykowski, to Wallace & Tiernan Inc. Method of producing azobisformamides. 3,225,026. 12–21–65, Cl. 260—192.

Huitt, Jimmie L., B. B. McGlothlin, and J. Papaila, to Gulf Research & Development Co. Subsurface formation fracturing method. 3,224,506, 12–21–65, Cl. 166—42.

Hume, Roger E., to General Electric Co. Ballast apparatus. 3,225,255, 12–21–65, Cl. 315—232.

Hummel, Robert J., T. D. Rembert, and H. L. Dennis, to Houdaille Industries, Inc. Apparatus for manufacturing pre-tensioned reinforced concrete slabs. 3,224,064, 12–21–65, Cl. 25—41.

Hunt, Robert G., to Marco Products Co. Feed means for plumbers' tool. 3,224,024, 12–21–65, Cl. 15—104.3.

Hunt, William R., to General Electric Co. Bearing support and lubrication arrangement for use in a dynamoelectric machine. 3,224,819, 12–21–65, Cl. 308—132.

Hunter, Paul H., to Union Carbide Corp. Aluminum-titanium dioxide filled thermoplastic resin compositions. 3,224,997, 12–21–65, Cl. 260—41.

Hurwitz, Melvin D.: *See*—
Balmer, Clifford E., Brown, Hurwitz, and Masterson. 3,224,996.

Husqvarna Vapenfabriks Aktiebolag: *See*—
Ojelid, Göran A. R. 3,225,267.
Ojelid, Göran A. R. 3,224,361.
Ojelid, Göran A. R. 3,225,302.

Huston, Paul O.: *See*—
Rossi, William F., and Huston. 3,224,918.

Hutchings, Douglas B.: *See*—
Bridges, Roy G., Aleson, Hutchings, Whited, and Dyrness. 3,224,040.
Bridges, Roy G., Aleson, Hutchings, Whited, and Dyrness. 3,225,126.

Hutchison, Albert C. Combined golf club and ball retriever. 3,224,751, 12–21–65, Cl. 273—162.

Hutterer, Johann. Movable device display. 3,224,127, 12–21–65, Cl. 40—56.

Hyde, Thomas J., to E. I. du Pont de Nemours and Co. Diester compositions formed by the reaction of pyromellitic dianhydride and polyhydric alcohols. 3,225,065, 12–21–65, Cl. 260—346.3.

Hydrocarbon Research, Inc.: *See*—
Johnson, Clarence A., and Volk. 3,224,870.
Keith, Percival C., Hoffert, and Stotler. 3,224,869.

Hyypolainen, Erkki K., to Scott Paper Co. Case selector. 3,225,175, 12–21–65, Cl. 235—91.7.

Iannicelli, Joseph, to J. M. Huber Corp. Kaolin clay beneficiation. 3,224,582, 12–21–65, Cl. 209—166.

Ichihara, Tatsuya, to Honeywell Inc. Mass flow meter using difference between torques. 3,224,271, 12–21–65, Cl. 73—229.

Idemitsu, Hiroshi: *See*—
Iwanaga, Mitsuji, and Idemitsu. 3,24,170.

Imperial Chemical Industries Ltd.: *See*—
Baker, Ronald, and Rattee. 3,225,027.
Edington, Robert A., Barlow, and Checkland. 3,224,068.
Heslop, Robert N. 3,225,043.

Imperial-Eastman Corp.: *See*—
Price-Stephens, Douglas, and Jackson. 3,224,801.

Imperial Mfg. Co.: *See*—
Vickers, Stanley E. 3,224,301.

Industrial Dynamics Co., Ltd.: *See*—
Calhoun, Frederick L. 3,225,191.

Industrial Filter & Pump Mfg. Co.: *See*—
Schmidt, Henry Jr. 3,224,587.

Inland Steel Co.: *See*—
Borman, Elmer W. 3,224,420.
McNelly, George W. 3,224,088.
Zorena, Peter J., Smith, and Kapitan. 3,225,180.

Inland Steel Products Co.: *See*—
Nystrom, Albert F. 3,224,533.
Nystrom, Albert F. 3,224,151.

Inman, Richard B.: *See*—
Silver, Irving, Hubbartt, and Inman. 3,224,305.

Instron Corp.: *See*—
DeNicola, Joseph P. 3,224,259.

Inter-Probe, Inc.: *See*—
Blomgren, Oscar C., Sr., Munck, Griffiths, and O. C. Blomgren, Jr. 3,224,485.
Blomgren, Oscar C., Sr., Munck, Griffiths, and O. C. Blomgren, Jr. 3,224,497.

International Business Machines Corp.: *See*—
Berkin, George M. 3,225,205.
Cunningham, James M. 3,224,366.
Dersch, William C. 3,225,141.
Hanft, Roy F. 3,224,545.
Hilsenrath, Manfred. 3,225,212.
Johnson, Oliver D., and Maynard. 3,224,671.
Jones, John C. 3,225,176.
Narken, Bernt, and Miller. 3,225,253.
O'Daniel, Jerome B., and Palmer. 3,224,546.
Seigh, Joseph C. 3,224,130.
Sprokel, Gerard J. 3,225,194.
Vinal, Albert W. 3,225,333.

International Latex Corp.: *See*—
Spanel, Abraham N. 3,224,570.

International Nickel Co., Inc., The: *See*—
Fox, James S., and De Bord. 3,224,887.

International Paper Co.: *See*—
Bruning, William E. 3,224,496.

International Telephone and Telegraph Corp.: *See*—
Woods, Leroy R. 3,224,255.

Ioan, Iacob: *See*—
Sebastian, Socol, Constantin, Ioan, and Arion. 3,224,639.

Isaac, Peter. Combination ski-boot holder and torque indicator. 3,224,261, 12–21–65, Cl. 73—133.

Isemura, Shinichi, to Daiei Presscorder Co. Ltd. Apparatus for transducing from a stationary record. 3,224,782, 12–21–65, Cl. 274—14.

Ito, Takao, to Nippon Seiko Kabushiki Kaisha. Spindle insert. 3,224,820, 12–21–65, Cl. 308—155.

Iwanaga, Mitsuji, and H. Idemitsu, to said Iwanaga assor. to said Idemitsu. Gas purification apparatus. 3,224,170, 12–21–65, Cl. 55—256.

Izumi, John Y. Geometric instrument. 3,224,097, 12–21–65, Cl. 33—1.

Jackson, Harold E.: *See*—
Price-Stephens, Douglas, and Jackson. 3,224,801.

Jacobs, John H., to Consolidated Electrodynamics Corp. Rapid latensification of silver hallde photographic materials. 3,224,877, 12–21–65, Cl. 96—27.

Jacoby, Marvin. Positioning mechanism. 3,225,337, 12–21–65, Cl. 340—174.1.

Jacoby-Bender, Inc.: *See*—
Brudney, Harry. 3,224,140.

Jacquesson, Jacques: *See*—
Gey, Albert, and Jacquesson. 3,225,200.

Jagenberg-Werke Akt.-Ges.: *See*—
Meyer-Jagenberg, Gunther. 3,224,761.

James Industries, Inc.: *See*—
Hamm, James A. 3,224,012.

Janda Allan D.: *See*—
Klimkowski, Robert J., Amariti, and Janda. 3,224,878.

Janicki, Edmund A.: *See*—
Hodge, Donald R., Janicki, and Meidel. 3,224,045.

Jansen, Charles H.: *See*—
Fenner, Ralph L., Yarborough, Williams, and Jansen. 3,224,268.

Janssen Pharmaceutica N.V.: *See*—
Janssen, Raul A. J. 3,225,052.

Janssen, Raul A. J., to Janssen Pharmaceutica N.V. Benzimidazolinyl piperidine derivatives. 3,225,052, 12–21–65, Cl. 260—293.4.

Jarvis, John S., to Ransomes Sims & Jefferies Ltd. Combine harvesters. 3,224,560, 12–21–65, Cl. 198—64.

Javorek, Jaroslav: *See*—
Dusik, Josef, Martis, Oboril, Mejzlik, and Javorek. 3,224,230.

Jeddeloh Bros. Sweed Mills, Inc.: *See*—
Larson, Charles L. 3,224,312.

Jeep, Charles W., Jr., and E. W. Niemeyer, to ACF Industries Inc. Fluid pressure operated switch with loose, flexible diaphragm. 3,225,158, 12–21–65, Cl. 200—83.

Jennings, Joseph F.: *See*—
Kirkland, Earl V., and Jennings. 3,225,107.

Jenkins, Roy M., to Lindy Pen Co., Inc. Holding clip for pocket instruments. 3,224,053, 12–21–65, Cl. 24—11.

Jenniges, Lawrence M., and J. G. Hamic, Sr., to Carter Craft, Inc. Furniture and chair bracket construction. 3,224,810, 12–21–65, Cl. 297—451.

Jenny, Rudolf, to Maschinenfabrik Schweiter AG. Control device for a winding machine. 3,224,693, 12–21–65, Cl. 242—35.5.

Jensen, Aage. Spool valve for the concurrept control of a plurality of motors. 3,224,463, 12–21–65, Cl. 137—625.69.

Jensen, Peter W., to Ampex Corp. Tape reproducing system. 3,225,134, 12–21–65, Cl. 178—5.4.

Jepson, Ivar, J. L. Viecell, and S. Walczak, to Sunbeam Corp. Pressing iron. 3,224,122, 12–21–65, Cl. 38—77.

Jeremias, Charles G., and F. E. Barwick, III, to Martin-Marietta Corp. Disazo disulfide dyestuffs. 3,225,025, 12–21–65, Cl. 260—176.

Jess, Thurman S., M. J. Morrisette, and E. J. Poitras, to Fenwal, Inc. Compartment mixing package. 3,224,571, 12–21–65, Cl. 206—47.

Jett, Wade W.: *See*—
Jones, Allen P., Jett, and Zitz. 3,224,702.

Jewett, Lawrence E.: *See*—
Gardiner, Paul C., Jewett, and Broomell. 3,225,325.

Jezo, Martin R. Conveying apparatus. 3,224,813, 12–21–65, Cl. 302—49.

Jobart, Bernard: *See*—
Glot, Maurice H. F., Jobart, Fevrot, and Giros. 3,225,178.

Jobst Institute, Inc.: *See*—
Gottfried, Max. 3,224,415.

Joel, Karlheinz: *See*—
Burley, Billy, and Joel. 3,225,297.

Joffe, Edward J., to Park Plastics Co. Inc. Strap seal. 3,224,056, 12–21–65, Cl. 24—16.

Johns, Robert R., W. E. Standley, R. B. Wittmann, and J. E. Karlovitz, to Johns Nigrelli-Johns, Inc. Cover opener for abutted cases. 3,224,166, 12–21–65, Cl. 53—382.

Johns-Manville Corp.: *See*—
Greiner, Norman S., and French. 3,224,205.

Johns-Nigrelli-Johns, Inc.: *See*—
Johns, Robert R., Standley, Wittmann, and Karlovitz. 3,224,166.
Nigrelli, Biagio J., Standley, Wittmann, and King. 3,224,165.
Nigrelli, Biagio J., Standley, Wittmann, and Ferraro. 3,224,550.
Standley, Wendell E., and Braun. 3,224,555.

Johnson, Charles G. R., to Kimberly-Clark Corp. Method of making a pressure vessel for use in a paper making machine. 3,224,084, 12–21–65, Cl. 29—469.

Johnson, Clarence A., and W. Volk, to Hydrocarbon Research, Inc. Reduction of ilmenite and similar ores. 3,224,870, 12–21–65, Cl. 75—26.

Johnson, David A., and G. A. Hardcastle, Jr., to Bristol-Myers Co. Penicillin derivatives and process. 3,225,033, 12–21–65, Cl. 260—239.1.

Johnson, Donald D.: Time-money computer. 3,224,672, 12–21–65, Cl. 235—61.

Johnson, Francis, to The Dow Chemical Co. Process for producing 2,6-diamino pyridines. 3,225,041, 12–21–65, Cl. 260—247.5.

Johnson, Glenn D.: *See*—
Watkins, Bruce J., Johnson, and Shatto. 3,224,506.

Johnson, Herbert E., to Union Carbide Corp. Bis-hydantoins and a method for the preparation thereof. 3,225,060, 12–21–65, Cl. 260—309.5.

Johnson, James E., to Gossett Machine Works, Inc. Method of producing yarn from textile fiber webs. 3,224,181, 12–21–65, Cl. 57—156.

Johnson, James L., Jr., and L. J. Krull, to The Electric Materials Co. Method of making a commutator. 3,224,076, 12–21–65, Cl. 29—155.54.

Johnson, Leo F., and K. Nassau, to Bell Telephone Laboratories, Inc. Optical maser using trivalent neodymium ions in a calcium tungstate host lattice. 3,225,306, 12–21–65, Cl. 331—94.5.

Johnson, Loyd C.: *See*—
Abraham, Harry M. 3,224,052.

Johnson, Oliver D., and K. B. Maynard, to International Business Machines Corp. Rotary punching device. 3,224,671, 12–21–65, Cl. 234—50.

Johnson, Ralph E.: *See*—
Lightner, Milton C., and Johnson. 3,224,399.

Johnson Service Co.: *See*—
Burley, Billy. 3,225,214.
Burley, Billy, and Joel. 3,225,297.

Johnson, Wayne R., to Winston Research Corp. Cathode-ray display system. 3,225,137, 12–21–65, Cl. 178—6.7.

Johnson, William K.: *See*—
Andersen, Harry M., and Johnson. 3,225,022.

Johnston, Howard, and M. S. Tomita, to The Dow Chemical Co. Chlorination of aminochloropyridine compounds. 3,224,950, 12–21–65, Cl. 204—158.

Jonas, Walter M., to Slibro Products Corp. Garter grips. 3,224,063, 12–21–65, Cl. 24—245.

Jones, Allen P., W. W. Jett, and J. A. Zitz, to FMC Corp. Web winding apparatus. 3,224,702, 12–21–65, Cl. 242—68.4.

Jones, Harold G. Photographic contact printing apparatus. 3,224,353, 12–21–65, Cl. 95—76.

Jones, John C., to International Business Machines Corp. Marginal checking apparatus. 3,225,176, 12–21–65, Cl. 235—61.7.

Jones, Norman S.: *See*—
Schumann, Robert W., and Jones. 3,224,349.

Jones, R. A., & Co., Inc.: *See*—
Whiteford, Carlton L. 3,224,575.
Whiteford, Carlton L. 3,224,576.

Jones, Robert A., to Union Carbide Corp. Modified zeolitic molecular sieves and process for producing same. 3,224,167, 12–21–65, Cl. 55—35.

Jonkoping-Vulcan, Aktiebolaget: *See*—
Sarv, Nils H. 3,224,477.

Juby, Peter F., to Bristol-Myers Co. Substituted N-(4-pyrimidinyl)-6-aminopenicillance acids. 3,225,058, 12–21–65, Cl. 260—306.7.

Juergensen, Ralph: *See*—
Hermann, Joachim, and Juergensen. 3,224,710.

KHG Associates: *See*—
Hornstein, Moses, and Kupka. 3,224,514.

K & M Electronics Co.: *See*—
Krause, Stephen R., and Miller. 3,225,265.

Kaashoek, Johannes, and G. J. Lubben, to North American Phillips Co. Inc. Deflection coil system. 3,225,271, 12–21–65, Cl. 317—200.

Kabushiki Kaisha Hitachi Seisakusho: *See*—
Katagiri, Shinjiro, and Ozasa. 3,225,192.
Kawai, Yoshinori, and Shibata. 3,225,284.
Miura, Takeo, and Hirano. 3,225,291.
Mori, Ryutaro, Nishimura, and Furukawa. 3,224,286.
Takami, Katsumi, Abe, Matsuura, and Furuhata. 3,225,211.
Takami, Katsumi, and Matsuura. 3,224,257.
Takei, Sachio, and Yamamoto. 3,225,245.
Miura, Takeo. 3,225,292.

Kabushiki Kaisha Toko Radio Coil Kenkyusho: *See*—
Kawakami, Masamitsu. 3,225,226.

Kain, Arthur F. Magnetic belt guide. 3,224,567, 12–21–65, Cl. 198—202.

Kaiser, Francis T.: *See*—
Brown, John W., Buessing, and Kaiser. 3,224,051.

Kaiser Industries Corp.: *See*—
Baum, Kurt. 3,224,750.

Kapitan, Josef S.: *See*—
Zorena, Peter J., Smith, and Kapitan. 3,225,180.

Karbosky, Joseph T., to Phillips Petroleum Co. Processing low b.t.u. gas from natural gas. 3,224,211, 12–21–65, Cl. 62—23.

Karig, Erhardt: *See*—
Gesche, Werner, Steuer, and Karig. 3,224,287.

Kariri, Aviv. Pyrophoric lighter. 3,224,233, 12–21–65, Cl. 67—4.1.

Karlovitz, John E.: *See*—
Johns, Robert R., Standley, Wittmann, and Karlovitz. 3,224,166.

Karol, Kenneth N., and I. Weiss, to Radio Corp. of America. Flow gauges. 3,224,270, 12–21–65, Cl. 73—209.

Kasinkas, Edward M.: *See*—
McConnell, Albert L., and Kasinkas. 3,224,574.

Katagiri, Shinjiro, and S. Ozasa, to Kabushiki Kaisha Hitachi Seisakusho. Apparatus for producing electron microscope and diffraction images separately and simultaneously on the image plane. 3,225,192, 12–21–65, Cl. 250—49.5.

Kattau, Richard W.: *See*—
Mills, Jack, and Kattau. 3,225,096.

Kawai, Yoshinori, and T. Shibata, to Kabushiki Kaisha Hitachi Seisakusho. Generator voltage regulating apparatus. 3,225,284, 12–21–65, Cl. 322—28.

Kawakami, Masamitsu, to Kabushiki Kaisha Toko Radio Coil Kenkyusho. Electrical vibrator. 3,225,226, 12–21–65, Cl. 310—8.6.

Kawamura, Saburo: *See*—
Suzumura, Hideo, Hirano, Kawamura, and Nagano. 3,225,128.

Kay, Edward L.: *See*—
Knowles, Edwin C., Wiley, and Kay. 3,224,971.

Kay, James A., to Rose Bros. (Gainsborough) Ltd. Conveying apparatus. 3,224,564, 12–21–65, Cl. 198—163.

Kear, Robert W., and A. H. Lancashire, to Shell Oil Co. Combustion device for hydrocarbon fuel. 3,224,679, 12–21–65, Cl. 239—132.3.

Kebrich, Leonard M.: *See*—
Hendricks, John G., and Kebrich. 3,225,075.

Kedman Co.: *See*—
Osborn, Carolus M., and Davis. 3,224,479.

Kehr, Gunter. Machine for burring and cleaning workpieces. 3,224,022, 12–21–65, Cl. 15—4.

Kelm, Gerald I.: *See*—
Butler, Robert W., and Kelm. 3,224,986.

Keiner, Robert C., R. Pearson, R. K. Lee, and A. H. Shapiro, to Laboratory For Electronics, Inc. Magnetic disc storage device. 3,225,338, 12–21–65, Cl. 340—174.1.

Keith, Percival C., F. D. Hoffert, and H. H. Stotler, to Hydrocarbon Research, Inc. Method of reducing iron oxide. 3,224,869, 12–21–65, Cl. 75—26.

Keller, Alexander: *See*—
Keller, Rudolf and A. 3,224,164.

Keller, Alexander, K.-G., Firma: *See*—
Keller, Rudolf and A. 3,224,164.

Keller, Rudolf and A., to Alexander Keller K.-G., Firma. Apparatus for applying covers to jars and similar containers. 3,224,164, 12–21–65, Cl. 53—331.

Kelroy Corp.: *See*—
Schmidt, Roy A., and Wallace. 3,224,677.

Kelsey-Hayes Co.: *See*—
Clair, Verne, Jr. 3,224,658.

Kemmetmuller, Roland, to Waagner-Biro Aktiengesellschaft. Plant for cooling and cleaning waste-gases in steelworks. 3,224,841, 12–21–65, Cl. 23—277.

Kemnitz, Warren N., to Scovill Mfg. Co. Motor-driven food mixer. 3,224,826, 12–21–65, Cl. 312—223.

Kemp, Paul C.: *See*—
Sias, Roy C., and Kemp. 3,225,086.

Kempton, Marvin L., and E. L. Nooker, to United States of America, Navy. Warhead for missiles. 3,224,371, 12–21–65, Cl. 102—67.

Kennedy, Leo A. Adjustable doffer plate shaft mounting for cotton pickers. 3,224,178, 12–21–65, Cl. 56—41.

Kenny, Richard J., to Martin-Marietta Corp. Liquid rocket propellant feed system. 3,224,189, 12–21–65, Cl. 60—35.3.

Kent, Eugene A., to Nalco Chemical Co. Process of reducing deposition of deposits on heat exchange surfaces in petroleum refinery operations. 3,224,957, 12–21–65, Cl. 208—48.

Kent, Jay H. Foldable stool. 3,224,389, 12–21–65, Cl. 108—119.

Keplinger, Orin C.: *See*—
Gruber, Elbert E., and Keplinger. 3,225,007.

Kessler, Jacob C. F., to American Enka Corp. Transparent products from poly-E-caprolactam and process of making same. 3,224,987, 12–21–65, Cl. 260—18.

Key Machine Tool Corp.: *See*—
Pendell, Larry S. 3,225,189.

Kimberly-Clark Corp.: *See*—
Bernardin, Leo J. 3,224,926.
Johnson, Charles G. R. 3,224,084.
Lee, Charles A., and Lamb. 3,224,928.

King, Donald D.: *See*—
Nigrelli, Biagio J., Standley, Wittmann, and King. 3,224,165.

King, Marvin, W. M. Schmidt, and S. E. Thorwaldsen, to Samsonite Corp. Step stool. 3,224,530, 12–21–65, Cl. 182—33.

Kinkler, Clarence C., to Owens-Illinois Glass Co. Method and apparatus for handling sheet materials. 3,224,307, 12–21–65, Cl. 83—85.

Kiraify, Alexander E. Height gauge. 3,224,103, 12–21–65, Cl. 33—172.

Kirby, Jack A., ½ to Bl/fresh Dispenser Co., and ½ to Northwest Bl/fresh Dispenser Co. Reusable display and dispensing container. 3,224,822, 12–21–65, Cl. 312—71.

Kirilouckas, Albert C., to Winston Research Corp. Capstan drive mechanism. 3,225,233, 12–21–65, Cl. 310—154.

Kirk, James H.: *See*—
Skonecke, Hubert L., Kirk, and Safford. 3,224,488.

Kirkconnell, Robert W., to Nalco Chemical Co. Rubber compositions and forming process. 3,224,998, 12–21–65, Cl. 260—41.5.

Kirkland, Earl V., and J. F. Jennings, to Standard Oil Co. Separation process. 3,225,107, 12–21–65, Cl. 260—652.

Kiszko, Walter: *See*—
Bwseth, Richard A., Steinert, and Kiszko. 3,224,728.

Kitchen, Alonzo G.: *See*—
Hogan, John P., and Kitchen. 3,225,023.

Klein, Donald L., to Bell Telephone Laboratories, Inc. Semiconductor surface cleaning. 3,224,904, 12–21–65, Cl. 134—4.

Klein, Hans-Christof, to Alfred Teves, K.G. Valve for the charging of pressure accumulators. 3,224,456, 12–21–65, Cl. 137—115.

Klein, Raymond A.: *See*—
Bertolini, William A., Klein, and Selm. 3,225,185.

Klimkowski, Robert J., L. Amariti, and A. D. Janda, to Eugen Dietzgen Co. Method of making and method of using thermographic diazotype reproduction material. 3,224,878, 12–21–65, Cl. 96—49.

Klingsberg, Erwin, to American Cyanamid Co. Process for 1,2-dithiole-3-thiones. 3,225,062, 12–21–65, Cl. 260—327.

Klippert, Hans U., to Quarzlampen Gesellschaft m.b.H. Testing apparatus for determining resistance to weather influences. 3,224,266, 12–21–65, Cl. 73—150.

Kloos, Ronald: *See*—
Brocnier, Pierre, Kloos, and Cocquart. 3,225,260.

Klotz, Donald L. Ball and paddle device. 3,224,774, 12–21–65, Cl. 273—97.

Klusmier, Kenneth L.: *See*—
Rich, Charles A., Jr., Klusmier, and Holbrook. 3,225,202.

Kluun, Johan M.: *See*—
Lameris, Koenraad J., Kluun, and Sieben. 3,224,043.

Knapp, Gordon G., to Ethyl Corp. Dialkyl hydroxybenzyl phosphonates as antioxidants. 3,224,973, 12–21–65, Cl. 252—49.8.

Knoop, Robert N., to The Fosdick Machine Tool Co. Differential drive for positioning the shiftable member of a machine tool. 3,224,297, 12–21–65, Cl. 74—675.

Knowles, Edwin C., M. A. Wiley, and E. L. Kay, to Texaco Inc. Borate esters and lubricant compositions containing said esters. 3,224,971, 12–21–65, Cl. 252—46.3.

Knox, Paul M., Jr., and J. L. McGrew, to Martin-Marietta Corp. Liquefied gas container insulation. 3,224,623, 12–21–65, Cl. 220—9.

Knoy, Maurice G., to Rostone Corp. Molded electrical insulator. 3,225,133, 12–21–65, Cl. 174—212.

Knudsen, Erik, to Slagteriernes Forskningsinstitut. Apparatus for determination of the distribution of meat and fat in slaughtered animals or parts thereof. 3,224,320, 12–21–65, Cl. 88—14.

Knutson, Paul H.: *See*—
Yadon, Donald E., and Knutson. 3,224,608.

Kobus, Lawrence C., to Shell Oil Co. Stabilized floating drilling platform. 3,224,401, 12–21–65, Cl. 114—.5.

Kobus, Lawrence C., to Shell Oil Co. Stabilized floating drilling platform. 3,224,402, 12–21–65, Cl. 114—.5.

Koch, Heinrich, to F. Joh. Kwizda-Chem. Fabrik. Process for preparing 1,4-endoalkylene-Δ⁵-cyclohexene-2,3-trans-dicarboxylic esters. 3,225,084, 12–21–65, Cl. 260—468.

Kochey, Edward L., Jr., to Combustion Engineering, Inc. Self-compensating low velocity trip or alarm device. 3,225,340, 12–21–65, Cl. 340—239.

Kohen, Sheldon I.: *See*—
Ruskin, Henry, and Kohen. 3,224,418.

Kokusai Denshin Denwa Kabushiki Kaisha: *See*—
Kurimura, Toshio, and Yamamura. 3,225,283.

Kolden, John R.: *See*—
Hinrichs, Karl, Eastmen, and Kolden. 3,225,213.

Kolk, Anthony J., Jr., and M. Orlovic, to The National Cash Register Co. Magneto-optic device employing reflective layer to provide increased Kerr rotation. 3,224,333, 12–21–65, Cl. 88—61.

Kompfner, Rudolf, to Bell Telephone Laboratories, Inc. Optical reflecting system for redirecting energy. 3,224,330, 12–21–65, Cl. 88—57.

Kompfner, Rudolf, to Bell Telephone Laboratories, Inc. Sinusoidal-shaped lens for light wave communication. 3,224,331, 12–21–65, Cl. 88—57.

Konanz, Albert. Heat exchanger. 3,224,503, 12–21–65, Cl. 165—171.

Koopman, Harmannus, to North American Philips Co., Inc. Method of producing 2,6-dichlorobenzonitrile. 3,225,081, 12–21–65, Cl. 260—465.

Koppel, Harold H., and P. I. Wajs, to Bailey Meter Co. M.C.T. transmitter. 3,225,289, 12–21–65, Cl. 323—51.

Koppers Co., Inc.: *See*—
Dressler, Hans. 3,225,097.

Korb, Monte W.: *See*—
Fiser, William D., Van Boo, Berry, Anderson, and Korb. 3,224,681.

Korczykowski, Leonard E.: *See*—
Hulbers, Derk T. A., and Korczykowski. 3,225,026.

Kordyban, Eugene S., J. A. Paivanas, and J. M. Canty, to Union Carbide Corp. Stabilized insulated containers. 3,224,622, 12–21–65, Cl. 220—9.

Kosco, John C., to Stackpole Carbon Co. Silver-refractory metal electrical contact having refractory metal carbide in the marginal layer of its active contact face. 3,225,169, 12–21–65, Cl. 200—166.

Kosten, Leendert: *See*—
Oberman, Roelof M. M., Kosten, and van der Toorn. 3,224,578.

Kozar, John J. Automatic baster for braziers. 3,224,362, 12–21–65, Cl. 99—346.

Kožela, Bohumil: *See*—
Zeman, Lubomír, Zák, Kožela, and Kubíček. 3,224,563.

Kracht, Gerhard, to Swedish Crucible Steel Co. Expanded plastic molding machine. 3,224,039, 12–21–65, Cl. 18—5.

Krall, Friedrich: *See*—
Dietrich, Walter, and Krall. 3,224,428.

Kralowetz, Bruno. Swaging machine. 3,224,244, 12–21–65, Cl. 72—402.

Kramer, Jack M., to Aerojet-General Corp. Igniter device for solid body of pyrotechnic material. 3,224,878, 12–21–65, Cl. 102—70.

Krapcho, John, to Olin Mathieson Chemical Corp. Haloalkylenethiophenyl amides. 3,225,093, 12–21–65, Cl. 260—558.

Kratochvil, Harry, to Tung-Sol Electric Inc. Sequential flasher. 3,225,343, 12–21–65, Cl. 340—331.

Krause, Stephen R., and H. L. Miller, to K & M Electronics Co. Remote control electrical switch and radio frequency actuating system therefor. 3,225,265, 12–21–65, Cl. 317—138.

Krohs, Walter, L. Ther, and G. Vogel, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. N-substituted phenylarkylamines. 3,225,098, 12–21–65, Cl. 260—570.8.

Kroll, Frederick H.: *See*—
Pawelka, Gustav J., and Kroll. 3,224,142.

Kromark, Inc.: *See*—
Meyerhoefer, Carl E. 3,224,572.

Kroon, Pieter J., to Scott Paper Co. Rotary cylinder dryer. 3,224,110, 12–21–65, Cl. 34—124.

Krug, George A., Jr., to General Electric Co. Magnetron having evacuated discharge sub-assembly united with unevacuated magnetic and resonant cavity structure. 3,225,249, 12–21–65, Cl. 315—39.71.

Kruger, James B., and R. L. Bordeau, to Philip Morris, Inc. Razor with shaving angle adjusting means rotatable on a lateral axis. 3,224,090, 12–21–65, Cl. 30—63.

Krull, Lloyd J.: *See*—
Johnson, James L., Jr., and Krull. 3,224,076.

Kubíček, Stanislav: *See*—
Zeman, Lubomir, Zák, Košela, and Kubíček. 3,224,563.

Kudlacik, Henry W., to General Electric Co. Gas-cooled end winding for dynamoelectric machine rotor. 3,225,231, 12–21–65, Cl. 310—64.

Kudriavetz, Peter, Jr., to Acushnet Process Co. Flexible coupling. 3,224,224, 12–21–65, Cl. 64—11.

Kuehn, Jack W., and H. W. Atkins, to Dari-Go-Round, Inc. Flavor mixing and dispensing device and method. 3,224,740, 12–21–65, Cl. 259—8.

Kuhlman Instrument Co.: *See*—
Kuhlman, Walter F. 3,224,276.

Kuhlman, Walter F., to Kuhlman Instrument Co. Pressure testing apparatus. 3,224,276, 12–21–65, Cl. 73—401.

Kulling, Achim: *See*—
Bramekamp, Karl-Jürgen, and Kulling. 3,224,215.

Kumpf, Henry W., Jr.: *See*—
Sturgis, Charles P., Kumpf, and Maddern. 3,224,825.

Kung, Werner: *See*—
Dietrich, Henri, and Kung. 3,225,032.

Kunz, Floyd A.: *See*—
Grim, Daniel E., Kunz, and Gauerke. 3,224,185.

Kupka, John J.: *See*—
Hornstein, Moses, and Kupka. 3,224,514.

Kurabayashi, Akira: *See*—
Mori, Ryutaro, and Kurabayashi. 3,224,020.

Kurashiki Rayon Co., Ltd.: *See*—
Suzumura, Hideo, Hirano, Kawamura, and Nagano. 3,225,128.

Kurek, Frank L. Propellant charging valve having plastic head construction. 3,224,461, 12–21–65, Cl. 137—509.

Kurimura, Toshio, and K. Yamamura, to Kokusai Denshin Denwa Kabushiki Kaisha. Regulable-output rectifying apparatus. 3,225,283, 12–21–65, Cl. 321—16.

Kurls, Arthur: *See*—
Balamuth, Lewis, and Kurls. 3,224,915.

Kurtz, Abraham N., to Union Carbide Corp. Method for the production of alkali metal acetylides. 3,225,110, 12–21–65, Cl. 260—665.

Laboratory for Electronics, Inc.: *See*—
Altman, Jerome L., and Rubin. 3,225,295.
Keiner, Robert C., Pearson, Lee, and Shapiro. 3,225,338.

Ladwig, Arthur J., and C. J. Ludwig. Metering liquid dispenser. 3,224,652, 12–21–65, Cl. 222—442.

Lagasse, Eugene F., to Giannini Controls Corp. Time delay relay structure. 3,225,151, 12–21–65, Cl. 200—35.

La Grouw, Coenraad M.: *See*—
Baas, Gerardus, and La Grouw. 3,225,132.
Van de Weijer, Martinus H. A., Spiessens, and La Grouw. 3,225,244.

Laher, Frank J. Scooter type vehicle with combination fender and brake therefor. 3,224,524, 12–21–65, Cl. 180—26.

Lahm, Martin: *See*—
Beckenstein, Leonard. 3,224,227.

Laidig, Manfred R., to The Singer Co. Sewing machine spool pins and mountings. 3,224,708, 12–21–65, Cl. 242—129.8.

Lakso Co. Inc., The: *See*—
Lakso, Eino E. 3,224,157.

Lakso, Eino E., to The Lakso Co. Inc. Wadding containers. 3,224,157, 12–21–65, Cl. 53—21.

Lamb, Charles A.: *See*—
Lee, Charles A., and Lamb. 3,224,928.

Lamb, Frances W.: *See*—
Stephens, Ruth E., Hirschler, and Lamb. 3,224,981.

Lameris, Koenraad J., J. M. Kluun, and H. H. Sieben, to Lego Nederland, N.V. Injection moulding machines. 3,224,043, 12–21–65, Cl. 18—30.

Lämmel, Helmut: *See*—
Sixtus, Klaus, and Lämmel. 3,224,909.

Lancashire, Alan H.: *See*—
Kear, Robert W., and Lancashire. 3,224,679.

Lancers Machinery Ltd.: *See*—
Bowman-Shaw, George N. 3,224,613.

Landis-Gendron S.A.: *See*—
Civelli, Adrien. 3,224,296.

Langan Aperture Cards, Inc.: *See*—
Langan, John F. 3,224,917.

Langan, John F., to Langan Aperture Cards, Inc. Method of making an aperture card. 3,224,917, 12–21–65, Cl. 156—108.

Lankford, Ivan J., to Peerless Instrument Co. Compression tester for internal combustion engines. 3,224,260, 12–21–65, Cl. 73—116.

Lanman, Robert W.: *See*—
Miller, J. Carter, and Lanman. 3,224,817.

Laran, Roy J.: *See*—
Frey, Frederick W., Jr., and Laran. 3,224,834.

Larsen, Lyle V.: *See*—
Chamberlin, Robert S., and Larsen. 3,224,277.

Larson, Charles L., to Jeddeloh Bros. Sweed Mills, Inc. Timed stock cutter with multiple edged knives. 3,224,312, 12–21–65, Cl. 83—355.

Laubach, Gerald D., to Chas. Pfizer & Co., Inc. 6-methyl-16-fluorinated steroids. 3,225,036, 12–21–65, Cl. 260—239.55.

Lauck, John A. Hydrostatic transmission. 3,224,197, 12–21–65, Cl. 60—53.

Lauer, Wilbur H., O. P. Roberts, Jr., and E. F. Yendall, to Union Carbide Corp. Process and apparatus for purifying and separating compressed gas mixtures. 3,224,209, 12–21–65, Cl. 62—14.

Lawson, Maurice O.: *See*—
Wattendorf, Frank L., von Ohain, Lawson, and Hasinger. 3,225,225.

Lecroart, Francois, to Commissariat a l'Energie Atomique. Transportable seismograph. 3,225,328, 12–21–65, Cl. 340—17.

Lee, Charles A., and C. A. Lamb, to Kimberly-Clark Corp. Papermaking machine using a moving felt through a pressure forming slice and the same felt throughout the machine. 3,224,928, 12–21–65, Cl. 162—214.

Lee, Roger K.: *See*—
Keiner, Robert, Pearson, Lee, and Shapiro. 3,225,338.

Lee, Royal. Dynamo-electric machine stator structure. 3,225,235, 12–21–65, Cl. 310—268.

Lefever, Robert A., to General Telephone and Electronics Laboratories, Inc. Methods and apparatus for producing crystalline materials. 3,224,840, 12–21–65, Cl. 23—273.

Leflet, Herbert A., Jr.: *See*—
Carson, Frank J., and Leflet. 3,224,859.

Lego Nederland, N.V.: *See*—
Lameris, Koenraad J., Kluun, and Sieben. 3,224,043.

Lehr, Glen J.: *See*—
Badger, Alfred E., Lehr, and Woods. 3,224,854.

Lehrian, William R., E. E. Nelson, and V. J. Yeakley, to Gulf Research & Development Co. Hydrodealkylation process and apparatus. 3,225,111, 12–21–65, Cl. 260—672.

Leistner, Karl, to United States of America, Army. Rectifier for line-scan aerial images. 3,224,328, 12–21–65, Cl. 88—24.

Leitzel, Ammon M., to Great Northwest Fibre Co. Clasp packing tray. 3,224,569, 12–21–65, Cl. 206—45.31.

Le Maistre, John W., and E. C. Ford, Jr., to Atlas Chemical Industries, Inc. Epoxidised diesters of polyoxyethylene isosorbide. 3,225,067, 12–21–65, Cl. 260—347.4.

Le Massena, Robert A., to Minneapolis-Honeywell Regulator Co. Hypodermic apparatus for measuring hydrogen ion concentration of blood within a living body. 3,224,436, 12–21–65, Cl. 128—2.1.

Leonard, Edward C., Jr., to Union Carbide Corp. Elastomeric polymers. 3,225,019, 12–21–65, Cl. 260—88.2.

Leonard, Vurnen J., to Honeywell Inc. Predetermining counter. 3,224,673, 12–21–65, Cl. 235—132.

Leland, Ragnvald G. Fountain paint rollers. 3,224,031, 12–21–65, Cl. 15—562.

Lenk, James: *See*—
De Martelaere, David L., and Lenk. 3,224,642.

Lesavoy, Ely. Collar including garments. 3,224,010, 12–21–65, Cl. 2—116.

Lesavoy, Ely. Collar including garments. 3,224,011, 12–21–65, Cl. 2—116.

Lesher, George Y., to Sterling Drug Inc. 1,5 and 1,6-naphthyridine-3-carboxylic acid-1,4-dihydro 4-oxo and esters thereof. 3,225,055, 12–21–65, Cl. 260—295.5.

Letsel, Karl: *See*—
Froitzheim, Hans, and Letsel. 3,224,525.

Leuenberger, Gottfried, to Maschinenfabrik Ad. Schulthess & Co. A.G. Programme controller for washing machines and the like. 3,224,288, 12–21–65, Cl. 74—405.

Leuenberger, Gottfried, to Maschinenfabrik Ad. Schulthess & Co., AG. Program controller using a punched card disc and an electromagnetic clutch. 3,225,152, 12–21–65, Cl. 200—46.

Le Vantine, Allan D., to TRW, Inc. Beam forming apparatus. 3,225,188, 12–21–65, Cl. 240—41.1.

Levenson, Leonard L.: *See*—
Milleron, Norman, and Levenson. 3,224,665.

Lever Bros. Co.: *See*—
Pader, Morton, and Gershon. 3,224,883.
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Levi, Roberto, and R. V. Eggleston, to North American Philips Co., Inc. Brazing method for porous bodies. 3,224,071, 12–21–65, Cl. 29—155.5.

Lew, Baak W., to Atlas Chemical Industries, Inc. Process for the preparation of tetrahydrofuran-cis, 2,5-dicarboxylic acid and salts thereof. 3,225,066, 12–21–65, Cl. 260—347.3.

Lew, Baak W., to Atlas Chemical Industries, Inc. Process of producing esters of hydroxymethyltetrahydrofuroic acid. 3,225,069, 12–21–65, Cl. 260—347.5.

Li, Choh Hsien, to Honeywell Inc. Low friction material. 3,224,966, 12–21–65, Cl. 252—12.

Libbey-Owens-Ford Glass Co.: *See*—
Badger, Alfred E., Lehr, and Woods. 3,224,854.
Carson, Frank J., and Leflet. 3,224,859.

Licentia Patent-Verwaltungs-G.m.b.H.: *See*—
Sixtus, Klaus, and Lämmel. 3,224,909.

Lienert, Walter H.: *See*—
Challacombe, Carl N., Ensign, and Lienert. 3,224,183.

Lige, Frederick O. Wire ties. 3,224,054, 12–21–65, Cl. 24—16.

Lightner, Milton C., and R. E. Johnson, to The Singer Co. Single thread locking seam. 3,224,399, 12–21–65, Cl. 112—262.

Lilly, Eli, and Co.: *See*—
Ainsworth, Cameron, Blubaugh, Springman, and Zapapas. 3,224,940.
Ainsworth, Cameron, and Ryan. 3,225,091.
Dillard, Robert D., and Easton. 3,225,042.
Flynn, Edwin H. 3,225,038.
Gorman, Marvin. 3,225,053.
Mills, Jack, and Kattau. 3,225,096.
Nash, J. Frank, and Lin. 3,224,941.
Svoboda, Gordon H. 3,225,030.
Traverso, John J., and Whitehead. 3,225,056.

Lilly, Mason M. Snap-closing gas lift valve. 3,224,459, 12–21–65, Cl. 137—155.

Lin, Tsung-Min: *See*—
Nash, J. Frank, and Lin. 3,224,941.

Lindars Automation Ltd.: *See*—
Fletcher, Lawrence A., and Palmer. 3,224,519.

Linde, William O., to Automotive Servicenter, Inc. Winch. 3,224,735, 12–21–65, Cl. 254—167.

Lindstaedt, Horst K.: *See*—
Bailey, Peter J., Baines, and Lindstaedt. 3,224,562.

Lindy Pen Co., Inc.: *See*—
Jenkins, Roy M. 3,224,053.

Linsley, Seymour G.: *See*—
Soloff, Robert S., and Linsley. 3,224,916.

Linton, Ulle C. Indicator fuseholder with current responsive devices. 3,225,163, 12–21–65, Cl. 200—121.

Linton, William C., to Fuse Indicator Corp. Fuseholders for housing knife blade cartridge fuses. 3,225,164, 12–21–65, Cl. 200—121.

Litton Industries, Inc.: *See*—
Adler, Imre, Erhardt, and Frank. 3,224,604.

Ljungström, Olle, E. K. J. Gunnarsson, and P. O. Eriksson, to Svenska Aeroplan Aktiebolaget. Rotary fan arrangement. 3,224,666, 12–21–65, Cl. 230—120.

Lobik, James L.: *See*—
Cella, Joseph F., and Lobik. 3,224,549.

Loosli, Stanley, ½ to H. A. Huebner, and ½ to R. W. Worrel. Harvester. 3,224,510, 12–21–65, Cl. 171—127.

Lopker, Edwin B. Non-metal valve. 3,224,462, 12–21–65, Cl. 137—625.19.

Loprete, Joseph F., and A. D. Cangialosi, to Curtiss-Wright Corp. Anisotropic heat shield construction. 3,224,193, 12–21–65, Cl. 60—35.6.

LOR Corp.: *See*—
Fiedler, William S., and Diehl. 3,224,846.

Lorenzana, Moises B.: *See*—
Wickenberg, Chester H., and Lorenzana. 3,224,360.

Lou, Kwong L. Rolled eraser and holder. 3,224,416, 12–21–65, Cl. 120—36.

Lovelace, Alan M.: *See*—
Reimschuesse, Herbert K., and Lovelace. 3,225,016.

Lovell Mfg. Co.: *See*—
Brandt, James W. 3,224,237.

Loving, Joe H., to General Inspection Laboratories, Inc. Ultrasonic inspection apparatus for elongate members. 3,224,254, 12–21–65, Cl. 73—71.5.

Lowenstein, Herbert M., and R. H. Wolin, to Combustion Engineering, Inc. Vapor generator with tangential firing arrangement. 3,224,419, 12–21–65, Cl. 122—478.

Lubben, Gerrit J.: *See*—
Kaashoek, Johannes, and Lubben. 3,225,271.

Lubecawerke G.m.b.H.: *See*—
Dielmann, August W., and Henze. 3,224,627.

Luchi, Vinicio, to Solia Societa a Responsabilita Limitata. Needle selection device. 3,224,226, 12–21–65, Cl. 66—50.

Luck, John V., and R. T. Ellinger, to The Glidden Co. Aerating composition for fats and shortenings containing same. 3,224,682, 12–21–65, Cl. 99—123.

Ludwig, Carl J.: *See*—
Ladwig, Arthur J., and Ludwig. 3,224,652.

Lugli, Giuseppe, to Pirelli S.p.A. Treat rings for removable-tread tires. 3,224,481, 12–21–65, Cl. 152—176.

Lundberg, Robert D., and F. E. Bailey, Jr., to Union Carbide Corp. Plasticized isotactic copolymers of styrene and chlorostyrene. 3,224,994, 12–21–65, Cl. 260—30.6.

Lundstrom Laboratories, Inc.: *See*—
Egbert, William R. 3,224,478.

Lundvik, Karl W. B., to Stal Refrigeration Aktiebolag. Means for starting compressors in unloaded state. 3,224,663, 12–21–65, Cl. 230—29.

Lupfer, Dale E., to Phillips Petroleum Co. Apparatus for controlling vapor-liquid flow ratios within a fractionation column. 3,224,947, 12–21–65, Cl. 202—160.

MB Associates: *See*—
Biehl, Arthur T. 3,225,227.
Ford, Franklin C. and Biehl. 3,224,337.
Gould, Bert B. 3,224,317.

M & T Chemicals Inc.: *See*—
Edwards, Leonard M. 3,225,076.

Machines Bull (Societe Anonyme), Compagnie des: *See*—
Brochier, Pierre, Kloos, and Cocquart. 3,225,260.

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MacMillan, Charles W., to Bear Mfg. Co. Ratio indicator. 3,224,102, 12–21–65, Cl. 33—169.

Macon, Arthur R., to E. I. du Pont de Nemours and Co. Linear copolyester of hydroquinone with a mixture of hexahydroisophthalic and hexahydroterephthalic acids. 3,225,003, 12–21–65, Cl. 260—47.

Maddern, Edward I.: *See*—
Sturgis, Charles P., Kumpf, and Maddern. 3,224,825.

Maffey, George E., Jr., to The Black and Decker Mfg. Co. Spider bearing insert for insulated tool. 3,225,230, 12–21–65, Cl. 310—50.

Magell, Orville L.: *See*—
Harrison, James B., and Magell. 3,225,079.

Maggiore, Joseph. Door-mounting for a mirror. 3,224,715, 12–21–65, Cl. 248—29.

Maginniss, Hamilton J. Vibrating screed. 3,224,348, 12–21–65, Cl. 94—48.

Mahoney, William R., R. E. St. Pierre, and D. T. Dunlap, to Celanese Corp. of America. Filter cigarettes. 3,224,453, 12–21–65, Cl. 131—208.

Maichen, Karl. Closure for squeezable containers. 3,224,030, 12–21–65, Cl. 15—543.

Maichen, Karl. Infinitely variable friction gearing. 3,224,285, 12–21–65, Cl. 74—192.

Mallard, Paul A.: *See*—
Seegman, Irvin P., Morris, and Mallard. 3,225,017.

Malmquist, Robert E., ½ to G. C. Hodina. Hanger for articles having hooked or looped handles. 3,224,721, 12–21–65, Cl. 248—339.

Manchester Tank & Equipment Co.: *See*—
Reifschneider, Darrel E., and Snapp. 3,224,430.

Manchester Welding & Fabricating Co.: *See*—
Reifschneider, Darrel E., and Snapp. 3,224,430.

Manis, Panayiotis N.: *See*—
Boyce, Clive B. C., and Manis. 3,225,039.

Mann, Cedric R.: *See*—
Fergusson, Fergus A, A., Mann, and Retallack. 3,224,405.

Manske, Wendell J., to Minnesota Mining and Mfg. Co. Waste gas incinerating afterburners. 3,224,842, 12–21–65, Cl. 23—277.

Marcalus, Nicholas. Dispensing carton. 3,224,632, 12–21–65, Cl. 221—48.

Marchand, Jacques. Structure of tubular framework for carrying surfaces working in the cold or hot. 3,224,156, 12–21–65, Cl. 52—660.

Marchione, Joseph H.: *See*—
Fannan, Andrew H., Jr., and Marchione. 3,224,033.
Fannan, Andrew H., Jr., and Marchione. 3,224,034.

Marco Products Co.: *See*—
Hunt, Robert G. 3,224,024.

Margot, Alfred, to J. R. Geigy, A-G. Anthelmintic compositions and method of employing same. 3,224,938, 12–21–65, Cl. 167—53.

Marion, Charles P.: *See*—
Schlinger, Warren G., Brodeur, and Marion. 3,224,959.

Marquardt Corp., The: *See*—
Rosman, Irwin E. 3,224,678.

Martin, Gustav J., to William H. Rorer Inc. Anti-inflammatory, anti-edema and anti-thrombi drug. 3,224,942, 12–21–65, Cl. 167—73.

Martin, John C. Pulse generator. 3,225,223, 12–21–65, Cl. 307—108.

Martin-Marietta Corp.: *See*—
Blizard, Robert B. 3,224,709.
Jeremias, Charles G., and Barwick. 3,225,025.
Kenny, Richard J. 3,224,189.
Knox, Paul M., Jr., and McGrew. 3,224,623.
Van Paassen, Hugo L. L., Allan, and Muly. 3,225,251.
Mueller, Heinz E. 3,224,192.

Martis, Ivan: *See*—
Dusik, Josef, Martis, Oboril, Mejzlik, and Javorek. 3,224,230.

Maschinenfabrik Ad. Schulthess & Co. AG: *See*—
Leuenberger, Gottfried. 3,224,288.
Leuenberger, Gottfried. 3,225,152.

Maschinenfabrik Schweiter AG: *See*—
Jenny, Rudolf. 3,224,693.

Maschinenfabrik Stromag G.m.b.H.: *See*—
Noll, Wilhelm. 3,224,242.

Mason, James A., to Warner Electric Brake & Clutch Co. Magnetic coil clutch. 3,224,536, 12–21–65, Cl. 192—81.

Masonite Corp.: *See*—
Matteson, William J. 3,224,725.

Massa, Frank, to Dynamics Corp. of America. Combination tubular baffle with electroacoustic transducer. 3,225,326, 12–21–65, Cl. 340—8.

Massman, Albert W., to Motorola, Inc. Gated transistor A.G.C. in which gating causes base to collector conduction. 3,225,139, 12–21–65, Cl. 178—7.3.

Masters, David W.: *See*—
Fields, John H., Propster, and Masters. 3,225,334.

Masterson, James E.: *See*—
Balmer, Clifford E., Brown, Hurwitz, and Masterson. 3,224,996.

Masterson, Melvin I., Jr.: *See*—
Harrington, Eugene M., and Masterson. 3,224,149.

Mathews, Kenneth E.: *See*—
Cook, Warren G., Mathews, and Hill. 3,224,380.

Matsuura, Kiyokata: *See*—
Takami, Katsumi, Abe, Matsuura, and Furuhata. 3,225,211.
Takami, Katsumi, and Matsuura. 3,224,257.

Matsuzawa, Katsuto: *See*—
Takagi, Elichi, Matsuzawa, Yoshida, Shimomura, and Hashisume. 3,225,068.

Matteson, William J., to Masonite Corp. Floor pan form. 3,224,725, 12–21–65, Cl. 249—28.

Mattson, Everett L., to Automatic Welding Co. Apparatus for manipulating workpieces. 3,224,602, 12–21–65, Cl. 214—1.

Matz, George C., to Swiss Knitting Co., Inc. Knit garment and fabric therefor. 3,224,281, 12–21–65, Cl. 66—171.

Matz, Roy W.: *See*—
Welch, Phillip C., and Mats. 3,224,807.

Maul, Michael: *See*—
Wolf, Widemar. 3,224,759.

Maurin, Joseph J., and M. B. Ziering, to Chicago Bridge & Iron Co. Hydrogen processing multiple layer pressure vessels. 3,224,619, 12–21–65, Cl. 220—8.

May, John W., and G. K. Benham, to Allis-Chalmers Mfg. Co. Stored energy operating mechanism for circuit breaker. 3,224,280, 12–21–65, Cl. 74—2.

Mayer, Albert: *See*—
Berman, Marvin A., and Mayer. 3,224,153.

Mayer, Guy: *See*—
Gigon, Jean, and Mayer. 3,225,196.

Mayer, James W., to Hughes Aircraft Co. Method of measuring nuclear radiation utilizing a semiconductor crystal having a lithium compensated intrinsic region. 3,225,198, 12–21–65, Cl. 250—83.3.

Maynard, John A.: *See*—
Alibrandi, Joseph A., Campbell, and Maynard. 3,224,245.

Maynard, Kenneth B.: *See*—
Johnson, Oliver D., and Maynard. 3,224,671.

Mayne, Robert A., deceased (by R. D. Mayne, executrix). Method of making a turbine type blower wheel. 3,224,078, 12–21–65, Cl. 29—156.8.

Mayne, Ruth D.: *See*—
Dybvig, Henry G. 3,224,079.
Mayne, Robert A. 3,224,078.

Mayrath, Martin. High clearance axle for center-post augers. 3,224,561, 12–21–65, Cl. 198—120.5.

Mazelsky, Bernard, and H. B. Amey, Jr., to Aerojet-General Corp. Method for determining aerodynamic influence coefficients of a wing. 3,224,265, 12–21–65, Cl. 73—147.

McCann, Robert E., to Control Data Corp. Pulse resynchronizing system for converting asynchronous, random length data signal into data signal synchronous with clock signal. 3,225,301, 12–21–65, Cl. 328—63.

McClung, Robert W., C. V. Dodd, J. W. Allen, Jr., and R. A. Nance, to United States of America, Atomic Energy Commission. Method and apparatus for measuring the space between surfaces or objects. 3,225,294, 12–21–65, Cl. 324—40.

McClure, James D., to Shell Oil Co. 2-carboalkoxy-4-cyano-1-butene production. 3,225,082, 12–21–65, Cl. 260—465.4.

McClure, James D., to Shell Oil Co. Dimerization process of preparing 1,4-dicyano-1-butene from acrylonitrile. 3,225,083, 12–21–65, Cl. 260—465.8.

McConnell, Albert L., and E. M. Kasinkas, to Scott Paper Co. Embossed plastic bag. 3,224,574, 12–21–65, Cl. 206—56.

McElheny, Clinton B., and M. M. Sauers. Transmission. 3,224,284, 12–21–65, Cl. 74—119.

McEwen, Malcolm, to Monsanto Co. Quenching process. 3,224,910, 12–21–65, Cl. 148—143.

McGary, Charles W., Jr., and C. T. Patrick, Jr., to Union Carbide Corp. Curable compositions containing epoxy alcohol, unsaturated polycarboxylic acid and unsaturated monomer. 3,225,115, 12–21–65, Cl. 260—861.

McGlothlin, Bruce B.: *See*—
Huitt, Jimmie L., McGlothlin, and Papalia. 3,224,506.

McGraw-Edison Co.: *See*—
Curtin, Paul J. 3,225,187.
Sadler, Fred S., and Wadeson. 3,224,902.
Stramowski, Edmund J. 3,225,161.
Strike, John L., and Floor. 3,224,667.

McGrew, Jay L.: *See*—
Knox, Paul M., Jr., and McGrew. 3,224,623.

McHugh, Thomas F.: *See*—
Anderer, Joseph H., Da Vinci, and McHugh. 3,225,125.

McInerney, Michael J., and J. L. Cyzl, to Vapor Corp. Combination pilot burner and flame detector. 3,224,487, 12–21–65, Cl. 158—28.

McKay, Robert L., 40% to M. C. Ferguson. Measurement of the dynamic reactance properties of structures. 3,224,253, 12–21–65, Cl. 73—67.

McKnight, Kenneth W., and C. W. Virant, to Reserve Mining Co. Self-cleaning hydraulic classifier control. 3,224,581, 12–21–65, Cl. 209—158.

McLaughlin, Lynn G., to E. I. du Pont de Nemours and Co. Removal of metal contaminants by use of mercapto-compound and cation exchange resin. 3,224,979, 12–21–65, Cl. 252—414.

McLean, Wellington P. Caster. 3,224,032, 12–21–65, Cl. 16—26.

McMaster, Harold A. Glass actuated control for the conveyor mechanism of a glass bending furnace. 3,224,856, 12–21–65, Cl. 65—163.

McNamara, John E.: *See*—
Mott, Raymond A. 3,224,717.

McNeill, Francis A. Fruit feeding mechanism. 3,224,552, 12–21–65, Cl. 198—33.

McNelly, George W., to Inland Steel Co. Process for producing multi-layer metallic material. 3,224,088, 12–21–65, Cl. 29—629.

McNulty, John G., and W. L. Walsh, to Gulf Research & Development Co. Process for purifying a liquid olefinic hydrocarbon of its ether impurity. 3,225,113, 12–21–65, Cl. 260—677.

McPhee, Clyde M.: *See*—
Gross, Robert H., and McPhee. 3,224,483.

Mead Corp., The: *See*—
Smith, John W. 3,224,897.

Mehelich, John J., to Wolverine Toy Co. Enclosed self-contained ball-controlled game apparatus. 3,224,776, 12–21–65, Cl. 273—121.

Mehltretter, Charles L.: *See*—
Yeates, Thomas E., Carr, and Mehltretter. 3,224,891.

Meidel, Carl F.: *See*—
Hodge, Donald R., Janicki, and Meidel. 3,224,045.

Meissner, Milton, to Barogenics, Inc. Hydrostatic pressure device. 3,224,042, 12–21–65, Cl. 18—16.

Mejzlik, Milan: *See*—
Dusik, Josef, Martis, Ovoril, Mejzlik, and Javorek. 3,224,230.

Melahn, Elmer M.: *See*—
Bean, Arthur W. 3,224,341.

Mellen, William F. Soil tillage apparatus. 3,224,392, 12–21–65, Cl. 111—52.

Mennicken, Erwin J., F. Muth, and K. H. Strehle, to Filtrona Filter G.m.b.H. Process for improving combustion in an internal combustion engine. 3,224,424, 12–21–65, Cl. 123—119.

Menzimer, L. W.: *See*—
Fannan, Andrew H., Jr., and Marchione. 3,224,033.
Fannan, Andrew H., Jr., and Marchione. 3,224,034.

Menzl, Kurt, to Osterreichische Sticketoffwerke Aktiengesellschaft. Process for the preparation of 2,6-diketo-8-thiapurines. 3,225,048, 12–21–65, Cl. 260—256.5.

Meopta narodni podnik: *See*—
Chytil, Slavomir. 3,224,828.

Merten, Rudolf, to Farbenfabriken Bayer Aktiengesellschaft. 1,2,3,6-tetrahydropyridines. 3,225,051, 12–21–65, Cl. 260—290.

Metal Bellows Corp.: *See*—
Baumann, Dwight M., Hanson, and Shamie. 3,224,344.

Metamora Electronics Corp.: *See*—
Grimes, Kenneth D., and Dunnington. 3,225,168.

Metz, Paul, to Arbed, Acieries Reunies de Burbach-Eich-Dudelange. Refractory composition and process for making same. 3,224,888, 12–21–65, Cl. 106—56.

Metzadour, Carlos B., to Thermo Electric Co. Protection circuit for control apparatus. 3,225,268, 12–21–65, Cl. 317—148.5.

Meyer, Rudolf X., to TRW, Inc. Propulsion arrangement. 3,225,236, 12–21–65, Cl. 313—63.

Meyerhoefer, Carl E., to Kromark, Inc. Shoe polish kit. 3,224,572, 12–21–65, Cl. 206—47.

Meyer-Jagenberg, Gunther, to Jagenberg-Werke Akt.-Ges. Method and apparatus for depositing sheets ejected by a cross cutter. 3,224,761, 12–21–65, Cl. 271—68.

Meyers, Cal Y.: *See*—
Harding, James, Sellers, and Meyers. 3,225,104.

Meylan, Bernard. Gas lighter. 3,224,235, 12–21–65, Cl. 67—7.1.

Micair Exploder Trust: *See*—
Brack, Leland E., Rein, and Brack. 3,224,685.

Microdot Inc.: *See*—
Russell, John D. 3,224,953.

Middendorf, William H. Electrostatic charge transfer tachometer. 3,225,299, 12–21–65, Cl. 324—70.

Midland-Ross Corp.: *See*—
Schuman, Leslie N. 3,224,179.

Midwest Supply and Mfg. Co.: *See*—
Ross, John. 3,224,147.

Mikusch, Berta, to K. Vockenhuber and C. Hauser. Afocal wide-angle supplementary objective. 3,224,332, 12–21–65, Cl. 88—57.

Miller, Allan S.: *See*—
Narken, Bernt, and Miller. 3,225,253.

Miller, Electric Mfg. Co.: *See*—
Grist, Franklin J. 3,225,290.

Miller, Harvey L.: *See*—
Krause, Stephen R., and Miller. 3,225,265.

Miller, Herman, Inc.: *See*—
Beckman, Ronald, and Hatanaka. 3,224,719.

Miller, J. Carter, and R. W. Lanman, to Carter Controls, Inc. Cylinder and piston arrangement. 3,224,817, 12–21–65, Cl. 308—3.5.

Miller, Marvin O., to United States of America, Navy. Vertically reciprocable receiving apparatus. 3,224,379, 12–21–65, Cl. 104—114.

Miller, William: *See*—
Hausmann, Delbert A., and Miller. 3,224,797.

Milleron, Norman, and L. L. Levenson, to United States of America, Atomic Energy Commission. Diffusion pump. 3,224,665, 12–21–65, Cl. 230—101.

Milloch, Robert L., to American Maize-Products Co. Method of treating and conditioning soil with a heat reaction product of starch granules and an alkali metal phosphate. 3,224,867, 12–21–65, Cl. 71—27.

Mills, Clarence A. Combined radiant and convection cooling system. 3,224,220, 12–21–65, Cl. 62—380.

Mills, Jack, and R. W. Kattau, to Eli Lilly and Co. Cyclopropylamine aralkanone and aralkanol amine derivatives. 3,225,096, 12–21–65, Cl. 260—570.5.

Miner Industries, Inc.: *See*—
Tersuoli, Dominick. 3,224,364.

Minerals & Chemicals Philipp Corp.: *See*—
Hemstock, Glen A. 3,224,892.

Ming, Donald L., and B. Case, to Aerojet-General Corp. Gas liquid detector. 3,224,250, 12–21–65, Cl. 73—19.

Ministerul Industriei Petrolului si Chimiei: *See*—
Sebastian, Socol, Constantin, Ioan, and Arion. 3,224,639.

Minix, William A., to Freeland Gauge Co. Air gauge control. 3,224,251, 12–21–65, Cl. 73—37.5.

Minneapolis-Honeywell Regulator Co.: *See*—
Le Massena, Robert A. 3,224,436.

Minnesota Mining and Mfg. Co.: *See*—
Fram, Paul. 3,225,013.
Fredrick, Russell E. 3,224,876.
Manske, Wendell J. 3,224,842.

Misbcon, Lester, to The Singer Co. Yarn controlling device for knitting machines. 3,224,229, 12–21–65, Cl. 66—132.

Mistele, John W.: *See*—
Burnside, Gilbert L., and Mistele. 3,224,680.

Misuraca, Louis J. Eraser-holding chuck and eraser. 3,224,417, 12–21–65, Cl. 120—36.

Mita, Yukimitsu: *See*—
Takahashi, Akira, Mita, and Hayashi. 3,225,006.

Mitchell, Earland R.: *See*—
Geller, Lorant B., and Mitchell. 3,224,486.

Mitchell, George A. Method and apparatus for producing a reflective rotating shutter. 3,224,148, 12–21–65, Cl. 51—328.

Mitchell, George A. Kinetograph movement driving mechanism. 3,224,656, 12–21–65, Cl. 226—57.

Mitchell, George A. Differential drive for cinematographs. 3,224,830, 12–21–65, Cl. 352—180.

Mitsubishi Chemical Industries, Ltd.: *See*—
Takagi, Eiichi, Matsusawa, Yoshida, Shimomura, and Hashizume. 3,225,088.

Miura, Takeo, to Kabushiki Kaisha Hitachi Seisakusho. Current regulator. 3,225,292, 12–21–65, Cl. 323—89.

Miura, Takeo, and C. Hirano, to Kabushiki Kaisha Hitachi Seisakusho. Operational magnetic amplifier. 3,225,291, 12–21–65, Cl. 323—89.

Mohl, Fred W. Game board for solitaire. 3,224,780, 12–21–65, Cl. 273—148.

Mohr, John, and Sons: *See*—
Philbrick, Herbert S., Jr. 3,224,868.

Mohring, Gustav R. F. Device for trimming webs of cloth or the like. 3,224,813, 12–21–65, Cl. 83—422.

Molomut, Norman, and P. Scheman, to Waldemar Medical Research Foundation, Inc. Cell collector. 3,224,434, 12–21–65, Cl. 128—2.

Monaghan, Richard P. Method of forming a teeth protector. 3,224,441, 12–21–65, Cl. 128—136.

Monaghan, Richard P. Teeth protector and method of forming same. 3,224,443, 12–21–65, Cl. 128—136.

Monsanto Co.: *See*—
Andersen, Harry M., and Johnson. 3,225,022.
Chapman, Richard D. 3,225,114.
Coppock, Wesley A., and Burdge. 3,224,324.
D'Amico, John J. 3,224,861.
D'Amico, John J. 3,224 863.
D'Amico, John J. 3,225,059.
D'Amico, John J., and Tung. 3,225,040.
D'Amico, John J., and Tung. 3,225,049.
Eby, Charles J., and Prill. 3,225,085.
Hamm, Philip C., and D'Amico. 3,224,864.
McEwen, Malcolm. 3,224,910.
Mullins, Darrell D., and Walker. 3,225,100.
Preston, Jack, and Smith. 3,225,011.
Prill, Erhard J., and Eby. 3,224,936.
Teicher, Harry. 3,224,901.
Walker, Lloyd A. 3,224,999.
Walker, Lloyd A. 3 225,045.
Walker, Lloyd A. 3,225,057.
Weiss, Anton G. 3,224,862.
Weiss, Anton G., and Hamm. 3,225,078.
Zerbe, Richard O., and D'Amico. 3,224,866.

Montani, Angelo, to Sperry Rand Corp., Ford Instrument Co. Division. Apparatus for reducing brightness variation using photochromic material. 3,225,138, 12–21–65, Cl. 178—7.2.

Moore, Clement R., to Moulded Products, Inc. Riding toy. 3,224 723, 12–21–65, Cl. 248—370.

Moran, Clifford M.: *See*—
Vail, Sidney L., Moran, and Reid. 3,226,428.

Morgan Construction Co.: *See*—
Rich, Charles A., Jr., Klusmier, and Holbrook. 3,225,202.

Morgan, Donald E.: *See*—
Stratton, Boyd L., and Morgan. 3,225,310.

Morgan, Edward A. Combination ice machine and remote drink dispenser. 3,224,641, 12–21–65, Cl. 222—129.1.

Morgan, Willard L., and L. F. Scheffler, to Owens-Corning Fiberglas Corp. Separation of crystals from a boric anhydride matrix. 3,224,843, 12–21–65, Cl. 23—299.

Mori, Ryutaro, and A. Kurabayashi, to Hitachi Ltd. Differential pressure transducers. 3,224,020, 12–21–65, Cl. 91—165.

Mori, Ryutaro, M. Nishimura, and K. Furukawa, to Kabushiki Kaisha Hitachi Seisakusho. Variable speed-reduction mechanism. 3,224,286, 12–21–65, Cl. 74—199.

Mörner, Bengt O. J. S.: *See*—
Dobbertin, Gunther H. W., and Mörner. 3,224,473.

Morreale, Joseph. Fount serator. 3,224,683, 12–21–65, Cl. 239—456.

Morris, Lester: *See*—
Seegman, Irvin P., Morris, and Mallard. 8,225,017.

Morris, Philip, Inc.: *See*—
Creamer, Robert M., and Weissbecker. 3,224,900.
Esemplare, Pascal E. 3,224,094.
Kruger, James B., and Bordeau. 3,224,090.
Wagner, Edward E. 3,224,311.

Morrisette, Milton J.: *See*—
Jess, Thurman S., Morrisette, and Poitras. 3,224,571.

Moryl, Douglas C., to A. G. Spalding & Bros., Inc. Take-apart toy figure. 3,224,136, 12–21–65, Cl. 46—22.

Motor Ads, Inc.: *See*—
Green, Theron R. 3,224,129.

Motorola, Inc.: *See*—
Massman, Albert W. 3,225,139.
Parker, Norman W. 3,225,148.
Tyzack, Harold. 3,224,282.

Mott, Raymond A., 50% to J. E. McNamara. Garbage can support. 3,224,717, 12–21–65, Cl. 248—147.

Motzel, Werner J., and F. J. Baur, to The Proctor & Gamble Co. Method of preparing flavor improved preserved fruit. 3,224,886, 12–21–65, Cl. 99—204.

Moulded Products, Inc.: *See*—
Moore, Clement R. 3,224,723.

Moulder, Jean E.: *See*—
Hawley, George F., and Moulder. 3,224,306.

Moulder, Jean E., W. J. Hoffinger, and R. E. Scherr, to AEL Food Automation Division, Inc. Automatic orientation, alignment and input feeding machinery for confectionary articles. 3,224,554, 12–21–65, Cl. 198—33.

Moulin, Norbert L., to Hughes Aircraft Co. Tool for unlocking and removing from a connector block an electrical contact having a locking spring. 3,224,082, 12–21–65, Cl. 29—203.

Moyat, Peter, to Hartmann & Braun Aktiengesellschaft. Process and device for the determination of organic substances contained in water. 3,224,837, 12–21–65, Cl. 23—230.

Muelberger, Eric, Jr. Personal identification apparatus and method. 3,224,111, 12–21–65, Cl. 35—3.

Mueller, Heinz E., to Martin-Marietta Corp. Multi-chambered liquid propellant thrust device. 3,224,192, 12–21–65, Cl. 60—35.6.

Muench, John L., Sr. Mixer. 3,224,741, 12–21–65, Cl. 259—30.

Muennich, Lawrence. Floral basket. 3,224,144, 12–21–65, Cl. 47—35.

Muir, Richard D.: *See*—
Buchanan, William V., and Muir. 3,224,655.

Muirhead, William: *See*—
Daugherty, Charles C. 3,224,874.

Mulcahy, George R., Jr., and O. B. Ferguson. Mid-air parachute release device. 3,224,714, 12–21–65, Cl. 244—138.

Muldoon, William J., and R. W. Peterson, to Hughes Aircraft Co. Programmed digital to analog function generator motor control for an X-Y plotter. 3,225,279, 12–21–65, Cl. 318—162.

Müller, Bernhard. Admixing apparatus. 3,224,637, 12–21–65, Cl. 222—57.

Muller, Ernst. Method of extruding. 3,224,240, 12–21–65, Cl. 72—270.

Mullins, Darrell D., and L. A. Walker, to Monsanto Co. Nitrosoanilinonitroalkanes. 3,225,100, 12–21–65, Cl. 260—577.

Muly, Emil Cl, Jr.: *See*—
Van Paassen, Hugo L. L., Allen, and Muly. 3,225,251.

Munck, Ellsworth G.: *See*—
Blomgren, Oscar C., Sr., Munck, Griffiths, and O. C. Blomgren, Jr. 3,224,485.
Blomgren, Oscar C., Sr., Munck, Griffiths, and O. C. Blomgren, Jr. 3,224,497.

Murakami, Tomomi: *See*—
Harwood, Leopold A., and Murakami. 3,226,645.

Murata Kikai Kabushiki Kaisha: *See*—
Oishi, Isao. 3,224,694.

Murray, Thomas H.: *See*—
Webb, Ernest C., and Murray. 3,224,767.

Musgrave, Daniel D. Barbed strip. 3,224,736, 12–21–65, Cl. 256—8.

Muth, Franz: *See*—
Mennicken, Erwin J., Muth, and Strehle. 3,224,424.

Myers, Charles S.: *See*—
Wright, John H., and Myers. 3,224,135.
Wright, John H., and Myers. 3,224,137.

Myers, Lester M., to Collins Radio Co. Dual-transistor holder. 3,225,262, 12–21–65, Cl. 317—101.

Myrent, Harry L.: *See*—
Fluder, Chester H., Myrent, and Heeney. 3,225,159.

NSU Motorenwerke Aktiengesellschaft: *See*—
Autrum, Werner. 3,224,422.

Nagano, Kotchi: *See*—
Susumura, Hideo, Hirano, Kawamura, and Nagano. 3,225,128.

Nagel, Donovan W. Carpet cutting machine. 3,224,092, 12–21–65, Cl. 30—273.

Nagy, Martin: *See*—
Schram, Richard R. 3,224,778.

Nakagawa, Kunio, and T. Tsuji, to Shionogi & Co., Ltd. Process for producing nitriles. 3,225,080, 12–21–65, Cl. 260—465.

Nalco Chemical Co.: *See*—
Kent, Eugene A. 3,224,957.
Kirkconnell, Robert W. 3,224,998.

Nance, Roy A.: *See*—
McClung, Robert W., Dodd, Allen, and Nance. 3,225,294.

Narken, Bernt, and A. S. Miller, to International Business Machines Corp. Electroluminescent photoconductive display device. 3,225,253, 12–21–65, Cl. 315—150.

Nash, J. Frank, and T.-Min. Lin, to Eli Lilly and Co. Resin compositions and method for controlling diarrhea. 3,224,941, 12–21–65, Cl. 167—55.

Nash, Ralph C. Apparatus for use in preparing adhesive coated tapes for use. 3,224,309, 12–21–65, Cl. 83—156.

Nash, Ralph C. Dispenser for plastic strapping. 3,224,705, 12–21–65, Cl. 242—105.

Nassau, Kurt: *See*—
Johnson, Leo F., and Nassau. 3,225,306.

National Aeronautics and Space Administration: *See*—
Webb, James E. 3,224,173.

National Cash Register Co., The: *See*—
Kolk, Anthony J., Jr., and Orlovic. 3,224,333.

National Distillers and Chemical Corp.: *See*—
Braus, Harry, and Waas. 3,225,061.

National Lead Co.: *See*—
Darsa, George J. 3,225,001.
Hendricks, John G., and Kebrich. 3,225,075.

Nationale S.A., La: *See*—
Zellweger, Conrad. 3,224,234.
Zellweger, Conrad. 3,224,626.

National-Standard Co.: *See*—
Frazier, Larry C. 3,224,921.

Nebolaine, Ross. Apparatus for separation of oil from aqueous mixtures. 3,224,593, 12–21–65, Cl. 210—519.

Neff, Joseph J., to Consolidated Electrodynamics Corp. Magnetic tape transport apparatus. 3,224,699, 12–21–65, Cl. 242—55.12.

Neitzert, Carl, to Radio Corp. of America. Monostable pulse generator employing delayed switch means shunting tunnel diode for controlling state thereof. 3,225,219, 12–21–65, Cl. 307—88.5.

Nekalson, Nils C.: *See*—
Nusbaum, Donald W., and Nekalson. 3,224,339.

Nelson, Elwood E.: *See*—
Lehrian, William R., Nelson, and Yeakley. 3,225,111.

Nevin, Charles S., to A. E. Staley Mfg. Co. Vicinal acryloxy hydroxy long chain fatty compounds and polymers thereof. 3,224,989, 12–21–65, Cl. 260—23.

Nevulis, Anthony, to The Ohio Brass Co. Fluid power system and valve mechanism therefor. 3,224,343, 12–21–65, Cl. 91—436.

New, William B. Air cooling and liquid supply systems for automobiles. 3,224,218, 12–21–65, Cl. 62—239.

Newcomer, Jack S.: *See*—
Dorfman, Edwin, Well, and Newcomer. 3,225,087.

Newell, James F.: *See*—
Robbins, Roscoe S., Palmer, and Newell. 3,224,037.

Nickell, Claude H. Hollow bowling pin. 3,224,769, 12–21–65, Cl. 273—82.

Nickell, Grason T., S. W. Glass, Jr., and G. H. Cheek, to Air Conditioning Corp. Heat pump apparatus and method. 3,224,214, 12–21–65, Cl. 62—81.

Nickola, Richard A., and G. T. Spare, to United States Steel Corp. Method of making high-strength aluminum-coated steel wire. 3,224,087, 12–21–65, Cl. 29—527.

Niemeyer, Edgar W.: *See*—
Jeep, Charles W., Jr., and Niemeyer. 3,225,158.

Nigrelli, Biagio J., W. E. Standley, R. B. Wittmann, and D. D. King, to Johns-Nigrelli-Johns, Inc. Four flap opener for cases. 3,224,165, 12–21–65, Cl. 53—382.

Nigrelli, Biagio J., W. E. Standley, R. B. Wittmann, and J. V. Ferraro, to Johns-Nigrelli-Johns, Inc. Combining conveyor for six-packs. 3,224,550, 12–21–65, Cl. 198—32.

Nippon Seiko Kabushiki Kaisha: *See*—
Ito, Takao. 3,224,820.

Nishimura, Masaharu: *See*—
Mori, Ryutaro, Nishimura, and Furukawa. 3,224,286.

Noble, Samuel Roberts, Foundation Inc., The: *See*—
Alexander, Jack P. 3,224,512.

Noll, Wilhelm, to Maschinenfabrik Stromag G.m.b.H. Process for manufacturing casings for laminated disc clutches and laminated disc brakes. 3,224,242, 12–21–65, Cl. 72—340.

Nooker, Eugene L.: *See*—
Kempton, Marvin L., and Nooker. 3,224,371.

Nooker, Eugene L., to United States of America, Navy. Multiprojectile continuous rod warhead. 3,224,372, 12–21–65, Cl. 102—67.

Nooker, Eugene L., and G. W. Galloway, to United States of America, Navy. Resistance welding process. 3,225,172, 12–21–65, Cl. 219—94.

Noordenbos, Pieter K., to American Enka Corp. Apparatus for the winding of roller-driven, cross-wound bobbins. 3,224,695, 12–21–65, Cl. 242—45.

Nord, Eric T., and S. R. Rosen, to Nordson Corp. Paint filter. 3,224,590, 12–21–65, Cl. 210—438.

Nordgren, Robert. Acrolein adducts of polygalactomannans and polyglucomannans and process of preparing same. 3,225,028, 12–21–65, Cl. 260—209.

Nordson Corp.: *See*—
Nord, Eric T., and Rosen. 3,224,590.

North American Philips Co., Inc.: *See*—
Baas, Gerardus, and La Grouw. 3,225,132.
Bakker, Martinus A. M., and Van Vulpen. 3,225,273.
Brekoo, Hendrikus P. J., and Verhoeff. 3,225,258.
Gerthsen, Peter J. 3,224,844.
Kaashoek, Johannes, and Lubben. 3,225,271.
Koopman, Harmannus. 3,225,081.
Levi, Roberto, and Eggleston. 3,224,071.
Peloschek, Hans P. 3,224,073.
Rebel, Johannes W. 3,224,895.
Robinson, Norman W. 3,224,664.
Schagen, Pieter, Taylor, and Woodhead. 3,225,204.
Van de Weijer, Martinus H. A., Spiessens, and La Grouw. 3,225,244.
Verster, Nico F., and Hagedoorn. 3,225,270.

Northrop Corp.: *See*—
Packard, Henry. 3,225,229.

Northwest Bl/fresh Dispenser Co.: *See*—
Kirby, Jack A. 3,224,822.

Nowak, Leon J., Jr., to Blaw-Knox Co. Power discharge for net weigher and method of weighing. 3,224,515, 12–21–65, Cl. 177—1.

Nuclear Chemical Plant Ltd.: *See*—
Bailey, Peter J., Baines, and Lindstaedt. 3,224,562.

Nuclear Data, Inc.: *See*—
Schumann, Robert W., and Jones. 3,224,349.

Nugent, Ralph W., to E. I. du Pont de Nemours and Co. Transfer tail winding apparatus. 3,224,692, 12–21–65, Cl. 242—19.

Nusbaum, Donald W., and N. C. Nekalson. Method and apparatus for cutting topographic models. 3,224,339, 12–21–65, Cl. 90—13.1.

Nyce, Jack L.: *See*—
Gladding, Edward K., and Nyce. 3,224,985.

Nystrom, Albert F., to Inland Steel Products Co. Roof beams and supporting columns. 3,224,151, 12–21–65, Cl. 52—90.

Nystrom, Albert F., to Inland Steel Products Co. Opening frame and clip therefor. 3,224,533, 12–21–65, Cl. 189—35.

Obedin, Alfred: *See*—
Obedin, Nathan. 3,224,756.

Obedin, Nathan, deceased, A. Obedin, and H. Ettinger, executors, to A. Obedin. Turntable cloth-spreading machine. 3,224,756, 12–21–65, Cl. 270—31.

Oberman, Roelof M. M., L. Kosten, and A. J. van der Toorn, to Electrologica, N.V. Sheet combining device. 3,224,578, 12–21–65, Cl. 209—72.

Oboril, Vaclav: *See*—
Dusik, Josef, Martis, and Oboril. 3,224,230.

O'Brien, Richard D.: *See*—
Dauterman, Walter, and O'Brien. 3,225,044.

O'Daniel, Jerome B., and L. E. Palmer, to International Business Machines Corp. Wear compensating apparatus having plural pawls. 3,224,546, 12–21–65, Cl. 197—16.

Officine di Cartigliano S.p.A. Industria Metalmeccanica: *See*—
Turato, Luigi. 3,224,109.

Ofner, Franklin F. Symmetrical transistor amplifier which is self-compensating with respect to changes in temperature. 3,225,305, 12–21–65, Cl. 330—30.

Ogden, Lelia H. Clasp for strung beads. 3,224,060, 12–21–65, Cl. 24—116.

Ohio Brass Co., The: *See*—
Nevulis, Anthony. 3,224,343.

Ohlsson, Olof W., to Svenska Tandsticks Aktiebolaget. Apparatus for the measurement of physical quantities. 3,224,101, 12–21–65, Cl. 33—143.

Otahel, John R., and A. C. Scinta, to Trico Products Corp. Windshield wiper blade. 3,224,027, 12–21–65, Cl. 15—250.41.

Oishi, Isao, to Murata Kikai Kabushiki Kaisha and Toyo Boseki Kabushiki Kaisha. Automatic cop feeder. 3,224,694, 12–21–65, Cl. 242—35.5.

Oisumi, Kiyoshi, M. Fukuda, and G. Otani, to Tokyo Shibaura Electric Co., Ltd. Apparatus for blowing glass bulbs. 3,224,858, 12–21–65, Cl. 65—185.

Öjelid, Göran A. R., to Husqvarna Vapenfabriks Aktiebolag. Automat for heat treatment and delivery of food-stuffs. 3,224,361, 12–21–65, Cl. 99—332.

Öjelid, Göran A. R., to Husqvarna Vapenfabriks Aktiebolag. Timed electric heating apparatus. 3,225,267, 12–21–65, Cl. 317—142.

Öjelid, Göran A. R., to Husqvarna Vapenfabriks Aktiebolag. Magnetrons for dielectric heating. 3,225,302, 12–21–65, Cl. 328—270.

O'Keefe, David F.: *See*—
Behrens, Walter A., and O'Keefe. 3,224,689.

Oldberg, Oscar. Compressor modulating system. 3,224,662, 12–21–65, Cl. 230—22.

Olin Mathieson Chemical Corp.: *See*—
Krapcho, John. 3,225,093.
Reiner, Joseph R., and Schroeder. 3,225,090.
Welsenborn, Frank L. 3,225,064.

Olmsted, Allan M., and V. H. Williams, to Vernco Corp. Blower wheel wedged end blade mounting. 3,224,668, 12–21–65, Cl. 230—134.

Olsen, Thomas O., ½o to G. R. Sebree, ½ to M. L. Morrison, and ½ to K. Morrison. Pole vaulting standard. 3,224,764, 12–21–65, Cl. 272—59.

Olsen, Tinius, Testing Machine Co.: *See*—
Hastings, Joseph C. 3,224,256.

Olson, Rudolph E., to Paul E. Hawkinson Co. Dolly for retreading molds and other wheel-like articles. 3,224,612, 12–21–65, Cl. 214—334.

Olson Trailer & Body Builders Co.: *See*—
Fleming, Donald J. 3,224,522.

Optomechanisms, Inc.: *See*—
Brault, Andre R. 3,224,099.
Chitayat, Anwar K. 3,224,323.

Oram, John A., to Reliance Mfg. Co. (Southwark) Ltd. Method and apparatus for winding spiral resistance elements. 3,224,691, 12–21–65, Cl. 242—9.

Organon Inc.: *See*—
Hewett, Colin L., and Savage. 3,225,034.

Orifici, Frank J. Scalp massaging and hair brushing device. 3,224,438. 12–21–65, Cl. 128—46.

Orloff, Harold D., and C. J. Worrel to Ethyl Corp. Stabilization with a 4,4'-thiobis (2,6-dialkylaniline). 3,224,972, 12–21–65, Cl. 252—47.

Orlov, Boris: *See*—
Bleiweiss, Arthur F., Colombo, Dickson, and Orlov. 3,225,165.
Bleiweiss, Arthur F., Colombo, Dickson, and Orlov. 3,225,166.

Orlovic, Milivoj: *See*—
Kolk, Anthony J., Jr., and Orlovic. 3,224,333.

Orr, Clifford M. to Chicago Bridge & Iron Co. Gas tight seal. 3,224,620, 12–21–65, Cl. 220—5.

Orser, Keith L., to Columbian Rope Co. Package binding device and method and apparatus for forming same. 3,224,055, 12–21–65, Cl. 24—16.

Osawa, Izumi, and S. Takeuchi, to Fuji Telescasting Co. Ltd. Method and apparatus for monitoring a television tape recording operation. 3,225,135, 12–21–65, Cl. 178—6.6.

Osborn Carolus M., and F. J. Davis, to Kedman Co. Expanding bit screw driver. 3,224,479, 12–21–65, Cl. 145—50.

Osborn, Dudley P., Jr.: *See*—
Baker, Eugene H., Osborn, and Steen. 3,224,765.

Ostborg, John L. Valve timing control system for supercharged automotive engine. 3,224,423, 12–21–65, Cl. 123—90.

Osterreichische Sticketoffwerke Aktiengesellschaft: *See*—
Menzl, Kurt. 3,225,048.

Otani Goichi: *See*—
Oizumi, Kiyoshi, Fukuda, Mitsugu, and Otani. 3,224,858.

Quarzlampengesellschaft G.m.b.H.: *See*—
Reiber, Heinz-Joachim. 3,225,184.

Overland, John S., to F. H. Hill Co., Inc. Casket locking device. 3,224,066, 12–21–65, Cl. 27—17.

Owens, Sineon P.: *See*—
Schram, Richard R. 3,224,778.

Owens-Corning Fiberglas Corp.: *See*—
Conklin, Llewellyn M., and Brown. 3,225,131.
Morgan, Willard L., and Scheffler. 3,224,843.
Stalego, Charles J. 3,224,852.

Owens-Illinois Glass Co.: *See*—
Allman, Orin H., Brum, and Pither. 3,224,857.
Hohl, John, and Wheaton. 3,224,617.
Kinkler, Clarence C. 3,224,307.

Owens-Illinois, Inc.: *See*—
Wallace, Robert T. 3,225,124.

Ozasa, Susumu: *See*—
Katagiri, Shinjiro, and Ozasa. 3,225,192.

Pacific Coast Engineering Co.: *See*—
Rundel, Moton S. 3,225,278.

Pacific Resins & Chemicals, Inc.: *See*—
Babcock, Douglas C. 3,224,990.

Packard, Henry, to Northrop Corp. Combined pick-off and torquer. 3,225,229, 12–21–65, Cl. 310—40.

Packer, David H.: *See*—
Simonson, Anthony J., and Packer. 3,224,346.

Pader, Morton, and S. D. Gershon, to Lever Brothers Co. Aerosol topping. 3,224,883, 12–21–65, Cl. 99—139.

Pader, Morton, and S. D. Gershon, to Lever Brothers Co. Topping mix. 3,224,884, 12–21–65, Cl. 99—139.

Paddington, Arthur L., to Dracone Developments Ltd. Flexible barges. 3 224,403, 12–21–65, Cl. 114—74.

Paivanas, John A.: *See*—
Kordyban, Eugene S., Paivanas, and Canty. 3,224,622.

Palermo, James J.: *See*—
Audesse, Emery G., Palermo, and Scoledge. 3,225,247.

Palm Beach Co., The: *See*—
Giuseffi, Jerome. 3,224,654.

Palm, Bernhard N., to Electra Motors, Inc. Motorized head pulley. 3,224,289, 12–21–65, Cl. 74—421.

Palmer, Lawrence F., Sr. Universal joint. 3,224,222, 12–21–65, Cl. 64—9.

Palmer, Leon B., to Congoleum-Nairn Inc. Process for producing decorative surface covering. 3,224,894, 12–21–65, Cl. 117—11.

Palmer, Leon E.: *See*—
O'Daniel, Jerome B., and Palmer. 3,224,546.

Palmer, Sidney A.: *See*—
Fletcher, Lawrence A., and Palmer. 3,224,519.

Palmer, Winston T.: *See*—
Robbins, Roscoe S., Palmer, and Newell. 3,224,037.

Paltier Corp., The: *See*—
Skubic, Leroy F. 3,224,388.

Panser, Siegfried: *See*—
Von Ardenne, Manfred, and Panzer. 3,224,924.

Papalia, John: *See*—
Hultt, Jimmie L., McGlothlin, and Papalia. 3,224,506.

Paris, Jean C. H. Oil burner apparatus. 3,224,682, 12–21–65, Cl. 239—427.3.

Park Plastics Co. Inc.: *See*—
Joffe, Edward J. 3,224,056.

Parke, Franklin E., and H. Ross, to Ropak Mfg. Co. Magnetic sheet transferring apparatus. 3,224,757, 12–21–65, Cl. 271—10.

Parker, Norman W., to Motorola, Inc. Multiplex stereophonic receiving system. 3,225,143, 12–21–65, Cl. 179—15.

Parker-Hannifin Corp.: *See*—
Schmiel, Herbert H. 3,224,464.

Parse, Joel D. Landing nets. 3,224,131, 12–21–65, Cl. 43—12.

Partyka, Richard A., to Bristol-Myers Co. N,N'bis(pyrimidine-5-acetyl)-ethylene diamines. 3,225,047, 12–21–65, Cl. 260—256.4.

Patrick, Charles T., Jr.: *See*—
McGary, Charles W., Jr., and Patrick. 3,225,115.

Patterson, Robert K. Pulsator operated releaser for a pipeline milker. 3,224,413. 12–21–65, Cl. 119—14.07.

Pawelka, Gustav J., and F. H. Kroll. Top holding and spinning device with electric motor drive. 3,224,142, 12–21–65, Cl. 46—243.

Payne, Harry R., to The Seeburg Corp. Dispensing mechanism for articles in front to back staggered stacks. 3,224,631. 12–21–65, Cl. 221—15.

Pearson, Richard K., to Callery Chemical Co. Calcium borohydride production. 3,224,832, 12–21–65, Cl. 23—14.

Pearson, Robert: *See*—
Keiner, Robert C., Pearson, Lee, and Shapiro. 3,225,338.

Peek, Sandford C., Jr.: *See*—
Spencer, Domina E., and Peek. 3,225,241.

Peerless Instrument Co.: *See*—
Lankford, Ivan J. 3,224,260.

Peerman, Dwight E. Thermosetting plastic compositions derived from polyglycidyl ethers of bis(p-hydroxyphenyl) sulfones and certain fatty guanamines and process of preparing same. 3,225,004, 12–21–65, Cl. 260—49.

Pelcin, Albert L., to The Eastern Co. Door control apparatus. 3,224,802, 12–21–65, Cl. 292—246.

Peloschek, Hans P., to North American Philips Co., Inc. Method of making multi-track magnetic heads. 3,224,073, 12–21–65, Cl. 29—155.5.

Pendell, Larry S., to Key Machine Tool Corp. Lamp mount. 3,225,189, 12–21–65, Cl. 240—90.

Penland, Mark R. Program indicator. 3,224,124, 12–21–65, Cl. 40—30.

Pennsalt Chemicals Corp.: *See*—
Barth-Wehrenalp, Gerhard, Bernoff, and Gardner. 3,225,050.

Pentagon Pattern and Engineering Co.: *See*—
Woods, Stanley J., E. W., and H. M. 3,224,049.

Peras, Lucien, to Regie Nationale des Usines Renault. Rotary engines with rotating distributors. 3,224,421, 12–21–65, Cl. 123—8.

Peras, Lucien, and M. Suisse, to The Anderson Co. Windshield wipers. 3,224,028, 12–21–65, Cl. 15—250.42.

Peters, Charles J., to Sylvania Electric Products Inc. Method of making a magnetic recording head structure. 3,224,074, 12–21–65, Cl. 29—155.5.

Peters Machinery Co.: *See*—
Talbot, Richard C., and Bieg. 3,224,551.

Petersen, John F., to Honeywell Inc. Control apparatus. 3,225,222, 12–21–65, Cl. 307—101.

Peterson, Robert W.: *See*—
Muldoon, William J., and Peterson. 3,225,279.

Peterson, William H., to Pullman Inc. Adjustable cushioning arrangement for railroad cars. 3,224,386, 12–21–65, Cl. 105—392.5.

Peterson, William H., to Pullman Inc. Long travel hydraulic cushion device. 3,224,599, 12–21–65, Cl. 213—43.

Petrinec, Robert G., to Chemetron Corp. Automatic positioning apparatus for cutting torches. 3,225,281, 12–21–65, Cl. 318—261.

Pfaff, G. M., A.G.: *See*—
Hedegaard, Kristen. 3,224,543.

Pfaff, G. M., A.G., Kaiserlautern-Pfalz: *See*—
Dobner, Reinhold, Braun, and Ulmer. 3,224,394.

Pfizer, Chas., & Co., Inc.: *See*—
Laubach, Gerald D. 3,225,036.

Phelps, John H., to United States of America, Air Force. Pulse wave generator with independent control of pulse repetition frequency and duty cycle. 3,225,309, 12–21–65, Cl. 331—111.

Philbrick, Herbert S., Jr., to John Mohr and Sons. Method and apparatus for adding heat and charge material to molten metal under vacuum. 3,224,868, 12–21–65, Cl. 75—12.

Phillips, Joseph, and B. R. Bluestein, to Witco Chemical Co., Inc. Separation of wax from oil. 3,224,956, 12–21–65, Cl. 208—33.

Phillips Petroleum Co.: *See*—
Albritton, James W. 3,224,210.
Groening, John P., and Doubt. 3,225,327.
Hogan, John P., and Kitchen. 3,225,023.
Karbosky, Joseph T. 3,224,211.
Lupfer, Dale E. 3,224,947.
Reinecke, Marvin E. 3,224,499.
Scott, John N., Jr. 3,225,127.
Short, James N. 3,225,089.
Stumpe, Nelson A., Jr. 3,225,122.
Warner Paul F., and Horning. 3,225,105.

Philps, Paul G., to Burndy Corp. Method of forming an electrical conductor for storage battery terminals. 3,224,077, 12–21–65, Cl. 29—155.55.

Pierson, Norman A. System for comminuting refuse. 3,224,830, 12–21–65, Cl. 23—259.1.

Pietrzak, Henry S. Bowl gasket sleeve assembly. 3,224,014, 12–21–65, Cl. 4—252.

Pietsch, Tibor. Process for increasing the thermal insulating properties of vitreous materials and their adhesion to coherent substances. 3,224,853, 12–21–65, Cl. 65—18.

Pilia, Frank J., and J. H. Brems, to Union Carbide Corp. Oscillator unit. 3,224,283, 12–21–65, Cl. 74—53.

Pipe Machinery Co., The: *See*—
Herbkersman, Earle C. 3,224,535.

Pirelli S.p.A.: *See*—
Barassi, Carlo, and Cappa. 3,224,482.
Lugli, Giuseppe. 3,224,481.

Pither, Leslie F.: *See*—
Allman, Orin H., Brumm, and Pither. 3,224,857.

Pitt, Edgar W., and K. Greene, to St. Regis Paper Co. Method and apparatus for packaging light bulbs with cohesive corrugated paper. 3,224,159, 12–21–65, Cl. 53—29.

Pittsburgh Plate Glass Co.: *See*—
Allen, Edward M., and Benner. 3,224,836.
Wismer, Marco, and Christenson. 3,225,002.

Plastic Products, Inc.: *See*—
Truesdale, Cavour L. 3,224,495.

Platt, Robert E., II. Dial indicator gauging attachment. 3,224,104, 12–21–65, Cl. 33—172.

Plumat, Emile, to Glaverbel, S.A. Process and furnace for melting and working products such as glass. 3,224,855, 12–21–65, Cl. 65—135.

PneumoDynamics Corp.: *See*—
Hamilton, Wallace. 3,224,491.

Poltras, Edward J.: *See*—
Jess, Thurman S., Morrisette, and Poltras. 3,224,571.

Polackowyj, John: *See*—
Emigh, Willard F., D'Ooge, and Polackowyj. 3,224,628.

Polonsky, Samuel, to General Electric Co. Attachment and spacing means. 3,224,062, 12–21–65, Cl. 24—214.

Polydoris, Nicholas G. Drive mechanism. 3,224,290, 12–21–65, Cl. 74—424.5.

Pope, James C. Landing gear system. 3,224,713, 12–21–65, Cl. 244—102.

Postmaster General, Her Majesty's: *See*—
Hill, Jame D. 3,224,784.

Potter Electric Signal Co.: *See*—
Devine, Patrick J. 3,225,841.

Potter, Jame A. Weighing scale with servo-operated rebalancing system and independent circuit for remote read-out device. 3,224,518, 12–21–65, Cl. 177—210.

Prescott, William A.: *See*—
Webb, James E. 3,224,173.

Preslar, Charles R.: *See*—
Sherley, Roy W. 3,224,595.

Preston, Jack, and R. W. Smith, to Monsanto Co. Process for preparing poly-para-aminobenzoic acid. 3,226,011, 12–21–65, Cl. 260—78.

Preston, Walter G., to Tulareloft, Inc. Testing machine for safety seat belts. 3,224,258, 12–21–65, Cl. 73—95.

Prewitt, David. Leaf curing machinery. 3,224,603, 12–21–65 Cl. 214—5.5.

Price-Stephens, Douglas, and H. E. Jackson; said Price-Stephens assor. to Ford Motor Co. and said Jackson assor. to Imperial-Eastman Corp. Connecting means. 3,224,801, 12–21–65, Cl. 287—90.

Prill, Erhard J.: *See*—
Eby, Charles J., and Prill. 3,225,085.

Prill, Erhard J., and C. J. Eby, to Monsanto Co. Pesticidal maleimides, maleamides and fumaramides. 3,224,936, 12–21–65, Cl. 167—30.

Probst, Gerald W.: *See*—
Hoehn, Marvin M., and Probst. 3,224,939.

Procter & Gamble Co., The: *See*—
Baumann, Norbert J. 3,224,158.
Motzel, Werner J., and Baur. 3,224,886.

Product Research Associates Inc.: *See*—
Duncan, Edward T. 3,225,155.
Duncan, Edward T. 3,225,186.

Products Research Co.: *See*—
Seegman, Irvin P., Morris, and Mallard. 3,225,017.

Produits Azotes, Societe des: *See*—
Vialaron, André. 3,224,952.

Progressive Machinery Corp.: *See*—
Burman, Joseph O., Jr. 3,224,480.

Propster, Charles H., Jr.: *See*—
Fields, John H., Propster, and Masters. 3,225,334.

Pullman Inc.: *See*—
Austgen, Kenneth J. 3,224,598.
Bertolini, William A., Klein, and Selm. 3,225,185.
Black, James J., and Roy. 3,224,085.
Borger, Jack W. 3,224,384.
Gutridge, Jack E., and Austgen. 3,224,383.
Peterson, William H. 3,224,386.
Peterson, William H. 3,224,599.

Purolator Products, Inc.: *See*—
Scavuzzo, William J., Walulik, and Casaleggi. 3,224,585.

Pyles Industries, Inc.: *See*—
De Martelaere, David L., and Lenk. 3,224,642.

Quaas, Joseph F., and G. A. dal Molin, to Eutectic Welding Alloys Corp. Demonstration projection apparatus. 3,224,325, 12–21–65, Cl. 88—24.

Quarzlampen Gesellschaft m.b.H.: *See*—
Klippert, Hans U. 3,224,266.

Quibell, Douglas F.: *See*—
Quibell, Vearl J. 3,224,511.

Quibell, Vearl J., 50% to D. F. Quibell. Row crop weeder and thinner. 3,224,511, 12–21–65, Cl. 172—87.

Quinio, Frank and L. Quinio, Jr. Curling iron having different sized hair winding tubes. 3,224,454, 12–21–65, Cl. 132—33.

Quinio, Louis, Jr.: *See*—
Quinio, Frank and L. Quinio, Jr. 3,224,454.

Quinn, Thomas M., and E. Barkis, to Avisun Corp. Heat-sealable polyolefin packaging film. 3,224,896, 12–21–65, Cl. 117—47.

Quittner, Leonard M. Fireplace ensemble. 3,224,429, 12–21–65, Cl. 126—202.

RFD Inc.: *See*—
Beaty, Charles A. 3,225,308.

Rabinow, Jacob, to Control Data Corp. Optical logic reading machine. 3,225,329, 12–21–65, Cl. 340—146.3.

Rabinowitz, Robert, to American Cyanamid Co. Terminally halogenated olefinic compounds. 3,225,106, 12–21–65, Cl. 260—649.

Race, Edward: *See*—
Hindle, Thomas, and Race. 3,224,923.

Radio Corp. of America: *See*—
Cope, Appleton D. 3,225,237.
Hollingsworth, James W., and Horton. 3,225,246.
Karol, Kenneth N., and Weiss. 3,224,270.
Neitzert, Carl. 3,225,219.
Thorne, Derek. 3,224,069.
Tourtellot, John A. 3,225,146.
Warren, Henry R. 3,225,145.

Radio Frequency Laboratories, Inc.: *See*—
Baudo, Gaspare C. 3,225,266.
Gilman, Robert J. 3,225,348.

Rambo, Sheldon I., to United States of America, Navy. Modulation system for a microwave tube having depressed collector. 3,225,314, 12–21–65, Cl. 332—7.

Ransomes Sims & Jefferies Ltd.: *See*—
Jarvis, John S. 3,224,560.

Raskhodoff, Nicholas M., to United States of America, Navy. Module cooling system. 3,224,221, 12–21–65, Cl. 62—414.

Rattee, Ian D.: *See*—
Baker, Ronald, and Rattee. 3,225,027.

Rauchwerger, George P. Automatic sprinkler control. 3,224,676, 12–21–65, Cl. 239—64.

Ray, Smith G., II, to G. T. Schjeldahl Co. Package sealer. 3,224,163, 12–21–65, Cl. 53—329.

Raymond, Richard L., to Socony Mobil Oil Co. Increasing rate of microbial fermentation with zeolites. 3,224,946, 12–21–65, Cl. 195—116.

Rebel, Johannes W., to North American Philips Co., Inc. Method of manufacturing display screens for cathode-ray tubes. 3,224,895, 12–21–65, Cl. 117—33.5.

Redtenbacher, Kurt. Pre-fabricated dental frame model with a seal facilitating groove. 3,224,050, 12–21–65, Cl. 22—158.

Reel, Bernard J., to Atomic Energy of Canada Ltd. Patching board. 3,225,322, 12–21–65, Cl. 339—18.

Regelson, Ephraim, to United States of America, Navy. Infrared calibration lamp. 3,225,242, 12–21–65, Cl. 313—110.

Regie Nationale des Usines Renault: *See*—
Peras, Lucien. 3,224,421.

Reiber, Heinz-Joachim, to Quarzlampengesellschaft G.m.b.H. Operating room lighting fixture. 3,225,184, 12–21–65, Cl. 240—1.4.

Reichl, Karl: *See*—
Graff, Roderich, Thoma, and Reichl. 3,226,458.

Reid, John D.: *See*—
Vail, Sidney L., Moran, and Reid. 3,226,428.

Reid, Karl N., and A. R. Williams; said Reid assor. to said Williams. Control valve system responsive to differences between independent input signals. 3,224,278, 12–21–65, Cl. 73—510.

Reifschneider, Darrel E., and J. L. Snapp, to Manchester Welding & Fabricating Co., d.b.a. Manchester Tank & Equipment Co. Gas weed burner. 3,224,430, 12–21–65, Cl. 126—271.2.

Reimers Getriebe K.G.: *See*—
Gesche, Werner, Steuer, and Karig. 3,224,287.

Reimschuesse, Herbert K., and A. M. Lovelace, to United States of America, Air Force. Nitrogen-containing polymers and preparation of same. 3,225,016, 12–21–65, Cl. 260—78.4.

Rein, Alex: *See*—
Brack, Leland E., Rein, and Brack. 3,224,685.

Reinecke, Marvin E., to Phillips Petroleum Co. Temperature control system. 3,224,499, 12–21–65, Cl. 165—30.

Reiner, Joseph R., and H. A. Schroeder, to Olin Mathieson Chemical Corp. Bis (aminodiarylphosphine) decarboranes. 3,225,090, 12–21–65, Cl. 260—551.

Reiter, Joh. Jacob, Actiengesellschaft, & Cie: *See*—
Graf, Feilx. 3,224,180.

Reliance Mfg. Co. (Southwark) Ltd.: *See*—
Oram, John A. 3,224,691.

Rembert, Thomas D.: *See*—
Hummel, Robert J., Rembert, and Dennis. 3,224,064.

Remke, Milton E. Card filing devices. 3,224,824, 12–21–65, Cl. 312—183.

Reserve Mining Co.: *See*—
McKnight, Kenneth W., and Virant. 3,224,581.

Retallack, James G.: *See*—
Fergusson, Fergus A. A., Mann, and Retallack. 3,224,405.

Reuge, Guido. Toy imitating breathing and heartbeat. 3,224,139, 12–21–65, Cl. 46—118.

Reuge S.A.: *See*—
Tosalli, Joseph. 3,224,786.

Rexall Drug and Chemical Co.: *See*—
Erchak, Michael, Jr. 3,225,021.

Rexroad, William D., to Collins Radio Co. Pulse triggered VHF crystal controlled oscillator. 3,225,313, 12–21–65, Cl. 331—173.

Reynolds, Lester. Spinning apparatus. 3,224,041, 12–21–65, Cl. 18—8.

Reynolds, Rollin A., to Dyna Systems Inc. Method of and means for controlling the removal of material with a cutting tool. 3,224,338, 12–21–65, Cl. 90—11.

Rheem Mfg. Co.: *See*—
Tipper, Maynard J. G. 3,224,083.

Rich, Charles A., Jr., K. L. Klusmier, and J. A. Holbrook, to Morgan Construction Co. Mounting means for transducers. 3,225,202, 12–21–65, Cl. 250—83.3.

Richards, Bert L., Jr., to E. I. du Pont de Nemours and Co. Bis (diisopropylthiocarbamoyl) sulfide as a fungicide. 3,224,932, 12–21–65, Cl. 167—22.

Richards, William J. Constant output amplifier including light responsive feedback means. 3,225,304, 12–21–65, Cl. 330—28.

Richter, John H., to American Metal Climax, Inc. Method of forming a shelf. 3,224,081, 12–21–65, Cl. 29—160.

Rieg, Fred: *See*—
Talbot, Richard C., and Rieg. 3,224,551.

Rieker & Co.: *See*—
Teufel, Ewald E. 3,224,118.

Ritz, Linus, to Wolverine Toy Co. Enclosure means for ball control game apparatus. 3,224,775, 12–21–65, Cl. 273—121.

Rivera, Aureo. Automatic measuring and dispensing device. 3,224,635, 12–21–65, Cl. 222—36.

Robbins, Roscoe S., W. T. Palmer, and J. F. Newell, Jr., to Crown Machine & Tool Co. Apparatus for molding foamable thermoplastic particulate material. 3,224,037, 12–21–65, Cl. 18—5.

Robert, Andre C., and G. E. R. Trincard, to Sud-Aviation Societe Nationale de Constructions Aeronautiques. Optical telemetry devices. 3,224,319, 12–21–65, Cl. 88—1.

Roberts, Osce P., Jr.: *See*—
Lauer, Wilbur H., Roberts, and Yendall. 3,224,209.

Robie, Norman P., to Electro Refractories & Abrasives Corp. Silicon aluminum boride complex. 3,224,850, 12–21–65, Cl. 51—298.

Robinson, Arthur S., to The Bendix Corp. Transfluxor synchronizer for flight control systems. 3,225,210, 12–21–65, Cl. 307—88.

Robinson, Gene C., to Ethyl Corp. Inorganic perchlorate compositions. 3,224,833, 12–21–65, Cl. 23—14.

Robinson, Norman W., to North American Philips Co., Inc. Ion pump. 3,224,664, 12–21–65, Cl. 230—69.

Robinson, William A., Jr., to Westinghouse Air Brake Co. Information handling system. 3,225,190, 12–21–65, Cl. 246—4.

Rochlitz, Fritz: *See*—
Duch, Eduard, Herbst, Rochlitz, Scherer, and Vilcsek. 3,224,908.

Rodgers, V. Wayne: *See*—
Schneider, William S., and Corella. 3,224,640.

Roed, Kenneth J. Table baseball game board. 3,224,773, 12–21–65, Cl. 273—93.

Roehr Metals & Plastics Co.: *See*—
Fields, Mack R. 3,224,616.

Rogallo, Vernon L., to United States of America, National Aeronautics and Space Administration. Null-type vacuum microbalance. 3,224,263, 12–21–65, Cl. 73—142.

Rohm & Haas Co.: *See*—
Balmer, Clifford E., Brown, Hurwitz, and Masterson. 3,224,990.

Roizentul, Wolf. Accessory attachment for knitting apparatus. 3,224,228, 12–21–65, Cl. 66—125.

Rolls-Royce Ltd.: *See*—
Taylor, Maurice I., and Wilde. 3,224,712.

Rolor Corp.: *See*—
Fleisher, Marvin B., and Hixon. 3,224,356.

Ronan, Ernest A. Crossbow pistol. 3,224,427, 12–21–65, Cl. 124—25.

Ronson Corp.: *See*—
Freedman, Lawrence I., Tone, and Werner. 3,224,743.

Rook, Charles G. Hollow panel with integral key connecting feature. 3,224,155, 12–21–65, Cl. 52—593.

Roosa, Vernon D. Fuel injection nozzle. 3,224,684, 12–21–65, Cl. 239—533.

Ropak Mfg. Co.: *See*—
Parke, Franklin E., and Ross. 3,224,757.

Roper, Alec N., and E. G. Barber, to Shell Oil Co. Process of preparing expanded polystyrene containing a polyolefin. 3,224,984, 12–21–65, Cl. 260—2.5.

Rorer, William H., Inc.: *See*—
Martin, Gustav J. 3,224,942.

Rosaen Filter Co., The: *See*—
Rosaen, Nils O. 3,224,583.
Rosaen, Nils O. 3,224,584.

Rosaen, Nils O., to The Rosaen Filter Co. Dual filter device, 3,224 583, 12–21–65, Cl. 210—90.

Rosaen, Nils O., to The Rosaen Filter Co. Combination filter and unloading valve. 3,224,584, 12–21–65, Cl. 210—91.

Rose, Arthur J. Templates or drawing guides or instruments. 3,224,100, 12–21–65, Cl. 33—95.

Rose Bros. (Gainsborough) Ltd.: *See*—
Kay, James A. 3,224,564.

Rose, Donald H.: *See*—
Hockings, William A., Rose, and Gaudin. 3,224,835.

Rose Patch & Label Co.: *See*—
Templeton, John G. 3,224,128.

Rosen, Samuel R.: *See*—
Nord, Eric T., and Rosen. 3,224,590.

Rosenberg, Harvey, and J. W. Steckert, to Burroughs Corp. Signal reject circuit for monitoring mixed plural signals. 3 225,330, 12–21–65, Cl. 340—147.

Roshala, John L. Linear magnetic drive system. 3,225,228, 12–21–65, Cl. 310—12.

Rosman, Irwin E., to The Marquardt Corp. Modular thrust chamber. 3,224 678, 12–21–65, Cl. 239—127.1.

Ross Craft Manufacturers: *See*—
Ross, Travis J. 3,224,523.

Ross, Hugh: *See*—
Parke, Franklin E., and Ross. 3,224,757.

Ross, John, to Midwest Supply and Mfg. Co. Method of finishing flat stock. 3,224,147, 12–21–65, Cl. 51—281.

Ross, Travis J., to Ross Craft Manufacturers. Three-wheeled motor vehicle. 3,224,523, 12–21–65, Cl. 180—25.

Rosser, Charles M., and R. A. Gilinski, to FMC Corp. Electrochemical generator. 3,224,907, 12–21–65, Cl. 136—146.

Rossi, William F., and P. O. Huston, to Specialties Development Corp. Method of making containers. 3,224,918, 12–21–65, Cl. 156—175.

Rostone Corp.: *See*—
Knoy, Maurice G. 3,225,138.

Roth, Heinz, to Brown, Boveri & Cie., Aktiengesellschaft. Apparatus for electronically analysing particle aggregates by scanning a mosaic capacitor and counting and discriminating pulses responsive to mosaic electrodes. 3,225,296, 12–21–65, Cl. 324—61.

Roy, Francis V.: *See*—
Black, James J., and Roy. 3,224,085.

Rubens, George J. Food smoker attachment for hooded braziers. 3,224,357, 12–21–65, Cl. 99—259.

Rubin, Myron S.: *See*—
Altman, Jerome L., and Rubin. 3,225,295.

Ruegg, Ernst, to Escher Wyss Aktiengesellschaft. Centrifuging device. 3,224,588, 12–21–65, Cl. 210—327.

Ruhland, Roman C., to Honeywell Inc. Preset circuit for a solid state magnetic oscillator. 3,225,311, 12–21–65, Cl. 331—113.

Rundel, Morton S., to Pacific Coast Engineering Co. Generator-fed hoist motor control with load float control. 3,225,278, 12–21–65, Cl. 318—145.

Ruskin, Henry, and S. I. Kohen, to Swingline Inc. Pencil sharpening device. 3,224,418, 12–21–65, Cl. 120—96.

Russell, Howard G.: *See*—
Erickson, Henry, Russell, and Sanford. 3,224,961.

Russell, John D., to Microdot Inc. Electrolytic lathe. 3,224,593, 12–21–65, Cl. 204—212.

Rutherford, David: *See*—
Black, William A. P., Dewar, and Rutherford. 3,225,012.

Ryan, Charles W.: *See*—
Ainsworth, Cameron, and Ryan. 3,225,091.

Rydbeck, Vernon A., to General Electric Co. Distribution transformer lighting assembly. 3,225,224, 12–21–65, Cl. 307—157.

S.A.L.A.M. Societe Anonyme Pour Tous Appareillages Mecaniques and Sub-Aviation, Societe Nationale de Constructions Aeronautiques: *See*—
Glot, Maurice H. F., Jobart, Fevrot, and Giros. 3,225,178.

S & C Electric Co.: *See*—
Chabala, Leonard V., and Wherfel. 3,225,170.

Sadler, Fred S., and J. D. Wadeson, to McGraw-Edison Co. Thermally stabilized cellulose materials. 3,224,902, 12–21–65, Cl. 117—143.

Safeway Stores, Inc.: *See*—
Scollard, Alvoid V., and Comstock. 3,224,160.
Scollard, Alvoid V., and Comstock. 3,224,162.
Scollard, Alvoid V., and Comstock. 3,224,559.
Scollard, Alvoid V., and Comstock. 3,224,579.
Scollard, Alvoid V., and Comstock. 3,224,580.
Scollard, Alvoid V., and Comstock. 3,224,610.

Safford, Donald E.: *See*—
Skonecke, Hubert L., Kirk, and Safford. 3,224,488.

Sahrbacker, Edward V., to Carling Electric, Inc. Dual button switch with automatic detent ball return action. 3,225,156, 12–21–65, Cl. 200—67.

St. Pierre, Richard E.: *See*—
Mahoney, William R., St. Pierre, and Dunlap. 3,224,453.

St. Regis Paper Co.: *See*—
Pitt, Edgar W., and Greene. 3,224,159.

Samsonite Corp.: *See*—
King, Marvin, Schmidt, and Thorwaldsen. 3,224,530.

Sane, James O.: *See*—
Tew, Richard W., Sane, and Geckler. 3,224,143.

Sanford, Robert A.: *See*—
Erickson, Henry, Russell, and Sanford. 3,224,961.

Santeler, Donald J., to General Electric Co. Apparatus for pressure measurement in vacuum systems. 3,224,248, 12–21–65, Cl. 73—4.

Sanyas, Maxime, to Houilleres du Bassin de Lorraine. Mechanism for automatically uncocking and re-cocking automatic couplings for railway vehicles. 3,224,601, 12–21–65, Cl. 213—75.

Saraga, Wolja, to Associated Electrical Industries Ltd. Phase-shift single side-band modulators. 3,225,316, 12–21–65, Cl. 332—45.

Sarv, Nils H., to Jönköping-Vulcan, Aktiebolaget. Knife structures particularly intended for the peeling of veneer. 3,224,477, 12–21–65, Cl. 144—212.

Sauers, Myrl M.: *See*—
McElheny, Clinton B., and Sauers. 3,224,284.

Sause, Henry W.: *See*—
Cusic, John W., and Sause. 3,225,054.

Savage, David S.: *See*—
Hewett, Colin L., and Savage. 3,225,034.

Sawyer, William T., to Fram Corp. Oil filter gasket support. 3,224,591, 12–21–65, Cl. 210—440.

Scallet, Barrett L.: *See*—
Commerford, John D., Scallet, and Van Duzee. 3,224,903.

Scavuzzo, William J., A. Walulik, and C. J. Casaleggi, to Purolator Products, Inc. Throwaway filter arrangement. 3,224,585, 12–21–65, Cl. 210—232.

Schade, Harald. Centrifugal pump for contaminated liquids. 3,224,376, 12–21–65, Cl. 103—103.

Schafer, Donald A.: *See*—
Chadwick, Earl L. 3,224,476.

Schaefer, Frederic C., and K. R. Huffman, to American Cyanamid Co. N-cyanoimidates and processes for preparing same. 3,225,077, 12–21–65, Cl. 260—453.

Schagen, Pieter, D. G. Taylor, and A. W. Woodhead, to North American Philips Co., Inc. Electron-optical image intensifier system. 3,225,204, 12–21–65, Cl. 250—213.

Scheberle, Arthur R. Securing means for a garment ornament. 3,224,059, 12–21–65, Cl. 24—103.

Scheffels, Wilhelm, to United Aircraft Corp. Device for producing a high-intensity beam of charge carriers of small aperture. 3,225,248, 12–21–65, Cl. 315—31.

Scheffler, Lewis F.: *See*—
Morgan, Willard L., and Scheffler. 3,224,843.

Scheman, Paul: *See*—
Molomut, Norman, and Scheman. 3,224,434.

Scherbatskoy, Serge A. Stabilized scintillation type radiation detector. 3,225,195, 12–21–65, Cl. 250—71.5.

Scherer, Hans: *See*—
Duch, Eduard, Herbst, Rochlitz, Scherer, and Vilcsek. 3,224,908.

Schering Corp.: *See*—
Sherlock, Margaret H. 3,225,081.

Scherr, Robert E.: *See*—
Moulder, Jean E., Hoffinger, and Scherr. 3,824,554.

Schimkat, Gerhard F. Hydrostatic machine. 3,224,198, 12–21–65, Cl. 60—53.

Schjeldahl, G. T., Co.: *See*—
Ray, Smith G., II. 3,224,163.

Schleede, Dietrich: *See*—
Schulde, Felix, and Schleede. 3,224,889.

Schlegel Mfg. Co., The: *See*—
Horton, Robert C. 3,224,047.

Schlinger, Warren G., to Texaco Inc. Hydroconversion of light and heavy hydrocarbon fractions in separate reaction zones and contacting of the liquid portion of the heavy fraction hydroconversion product with the light fraction hydroconversion product. 3,224,958, 12–21–65, Cl. 208—78.

Schlinger, Warren G., C. H. Brodeur, and C. P. Marion, to Texaco Inc. Hydroconversion of hydrocarbons with the use of a tubular reactor in the presence of hydrogen and the recycling of a portion of the tar-like viscous residue. 3 224,959, 12–21–65, Cl. 208—107.

Schlinger, Warren G., and du B. Eastman, deceased (by Security First National Bank, executor), to Texaco Inc. Recovery of oil from oil shale and the like. 3,224,954, 12–21–65, Cl. 208—11.

Schloss, Fred, and M. Strasberg, to United States of America, Navy. Low frequency hydrophone calibration. 3,224,246, 12–21–65, Cl. 73—1.

Schlumberger, Etienne M., and H. Hashemi-Tafreshi, to Conch International Methane Ltd. Purification of natural gases. 3,224,208, 12–21–65, Cl. 62—12.

Schmalbach, J. A., Aktiengesellschaft: *See*—
Budesheim, Georg F. R. 3,224,038.

Schmid, Christian O.: *See*—
Derenk, Gunther, Schmid, and Sontheimer. 3,224,964.

Schmidt, Henry, Jr., to Industrial Filter & Pump Mfg. Co. Filtration apparatus utilising unrollable filter medium. 3,224,587, 12–21–65, Cl. 210—330.

Schmidt, Roy A., and G. A. P. Wallace, to Kelroy Corp. Vaporising apparatus. 3,224,677, 12–21–65, Cl. 239—101.

Schmidt, William M.: *See*—
King, Marvin, Schmidt, and Thorwaldsen. 3,224,530.

Schmiel, Herbert H., to Parker-Hannifin Corp. Accumulator end cap. 3,224,464, 12–21–65, Cl. 138—31.

Schnedler, Paul E., to Armco Steel Corp. Protected metal articles. 3,224,847, 12–21–65, Cl. 29—195.

Schneider, Charles. Cabinet bed arrangement. 3,224,015, 12–21–65, Cl. 5—2.

Schneider, William S., and A. P. Corella, 10% to V. W. Rodgers. Reclosable package. 3,224,640, 12–21–65, Cl. 222—107.

Schnyder, Auxilius P. Pressure sealing valve. 3,224,606, 12–21–65, Cl. 214—17.

Schott, Robert H.: *See*—
Griksheit, Henry W., and Schott. 3,224,816.

Schram, Richard R., 10% to M. Nagy, and 10% to S. P. Owens. Three-dimensional game apparatus. 3,224,778, 12–21–65, Cl. 273—130.

Schroeder, Hansjuergen A.: *See*—
Reiner, Joseph R., and Schroeder. 3,225,090.

Schroeder, Manfred R., to Bell Telephone Laboratories, Inc. Privacy system. 3,225,142, 12–21–65, Cl. 179—1.5.

Schrom, Edward C., and M. Allen, to General Electric Co. Electrohydraulic system and working fluids therefor. 3,225,252, 12–21–65, Cl. 315—111.

Schuide, Feilx, and D. Schleede, to Farburke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Antistatic high molecular weight compounds. 3,224,889, 12–21–65, Cl. 106—177.

Schulerud, Albert L.: *See*—
Farrar, Richard E., and Schulerud. 3,224,976.

Schulze, Howard L., to American Fixture, Inc. Knockdown showcases. 3,224,823, 12–21–65, Cl. 312—108.

Schulze, John J., to Addressograph-Multigraph Corp. Apparatus for producing uniform exposure across the width of light sensitive sheets. 3,224,327, 12–21–65, Cl. 88—24.

Schuman, Leslie N., to Midland-Ross Corp. Mower guard. 3,224,179, 12–21–65, Cl. 56—310.

Schumann, Robert W., and N. S. Jones, to Nuclear Data, Inc. Electro-optical printer and controls therefor. 3,224,349, 12–21–65, Cl. 95—4.5.

Schuster, Donald H., to Collins Radio Co. Two-level D.C./A.C. power converter or amplitude modulator. 3,225,209, 12–21–65, Cl. 307—80.

Schuur, Gerrit. Mixing and kneading machine. 3,224,739, 12–21–65, Cl. 259—4.

Schwartsberg, Ira G.: *See*—
Adams, Kenneth D., Herr, and Schwartsberg. 3,224,393.

Schweitzer, Earl O. Jar mounting device. 3,224,594, 12–21–65. Cl. 211—74.

Schweitzer, Walter C. Angularly adjustable vises. 3,224,755, 12–21–65, Cl. 269—245.

Scigliano, Frank V. Stirring spoon with scraping means. 3,224,091, 12–21–65, Cl. 30—142.

Scinta, Anthony C.: *See*—
Oishei, John R., and Scinta. 3,224,027.

Scoledge, Robert F.: *See*—
Andesse, Emery G., Palermo, and Scoledge. 3,225,247.

Scollard, Alvoid V., and A. E. Comstock, to Safeway Stores, Inc. Egg packing apparatus. 3,224,160, 12–21–65, Cl. 53—55.

Scollard, Alvoid V., and A. E. Comstock, to Safeway Stores, Inc. Egg handling and packing apparatus. 3,224,162, 12–21–65, Cl. 53—247.

Scollard, Alvoid V., and A. E. Comstock, to Safeway Stores, Inc. Egg candling and grading apparatus. 3,224,559, 12–21–65, Cl. 198—38.

Scollard, Alvoid V., and A. E. Comstock, to Safeway Stores, Inc. Egg handling, sorting and packing apparatus. 3,224,579, 12–21–65, Cl. 209—74.

Scollard, Alvoid V., and A. E. Comstock, to Safeway Stores, Inc. Egg weighing and sorting apparatus. 3,224,580, 12–21–65, Cl. 209—121.

Scollard, Alvoid V., and A. E. Comstock, to Safeway Stores, Inc. Egg handling and grading apparatus. 3,224,610, 12–21–65, Cl. 214—309.

Scott, John N., Jr., to Phillips Petroleum Co. Blow molding foam bottles. 3,225,127, 12–21–65, Cl. 264—54.

Scott Paper Co.: *See*—
D'Alelio, Gaetano F. 3,224,983.
D'Alelio, Gaetano F. 3 225,008.
D'Alelio, Gaetano F. 3,225,009.
D'Alelio, Gaetano F. 3,225,014.
D'Alelio, Gaetano F. 3,225,015.
D'Alelio, Gaetano F. 3,225,063.
Kroon, Pieter J. 3,224,110.
Hyypolainen, Erkki K. 3,225,175.
McConnell, Albert L., and Kasinkas. 3,224,574.

Scott, Samuel W., Jr., to United States of America, Army. Linear delay circuit. 3,225,221, 12–21–65, Cl. 307—88.5.

Scovill Mfg. Co.: *See*—
Kemnitz, Warren N. 3,224,826.
Sonntag, Karl F. 3,224,057.
Taylor, Donald O. 3,224,061.

Sdruzeni podniku textilniho shojirenstvi: *See*—
Dusik, Josef, Martis, Oboril, Mejsilk, and Javorek. 3,224,230.

Sealectro Corp.: *See*—
Deakin, Stanley T. 3,225,323.

Sealey, Alan G., and A. T. Andrew, to Foseco International Ltd. Bonding method of value in the treatment of metals. 3,224,872, 12–21–65, Cl. 75—61.

Seaman, Harry J. Soil processing machine. 3,224,347, 12–21–65, Cl. 94—40.

Searcy, Durward F.: *See*—
Gordon, Edward, Searcy, and Cotten. 3,226,532.

Searle, G. D. & Co.: *See*—
Cusic, John W., and Sause. 3,225,054.

Sears, George W., Jr.: *See*—
Brown, Robert L., and Sears. 3,224,927.

Sebastian, Socol, E. Constantin, I. Ioan, and I. Arion, to Ministerul Industriei Petrolului si Chimiei. Means for automatically controlled discharging and metering of liquids from oil and gas separators. 3,224,639, 12–21–65, Cl. 222—68.

Sebree, Gerald R.: *See*—
Olsen, Thomas O. 3,224,764.

Security First National Bank: *See*—
Schlinger, Warren G., and Eastman. 3,224,954.

Seeburg Corp., The: *See*—
Payne, Harry R. 3,224,631.

Seegman, Irvin P., L. Morris, and P. A. Mallard, to Products Research Co. Modified polysulfide composition. 3,225,017, 12–21–65, Cl. 260—79.1.

Seigh, Joseph C., to International Business Machines Corp. Record cards. 3,224,130, 12–21–65, Cl. 40—158.

Sellers, Ralph F.: *See*—
Harding, James, Sellers, and Meyers. 3,225,104.

Selm, Clifford W.: *See*—
Bertolini, William A., Klein, and Selm. 3,225,185.

Semsch, Robert D. Pill dispenser. 3,224,634, 12–21–65, Cl. 221—299.

Servco Co., The: *See*—
Cordary, Bruce J., and Van Note. 3,224,507.

Service Ideas, Inc.: *See*—
Sperl, Ferdinan P. 3,224,625.

Sfredda, Albert P., 50% to G. W. Downs. Propulsion device. 3,224,408, 12–21–65, Cl. 115—12.

Shafer, William L., Jr.: *See*—
Gebhardt, Robert C., Shafer, Spencer, Toy, Vigliante, Williams, and Williford. 3,225,144.

Shamie, Raymond: *See*—
Baumann, Dwight M., Hanson, and Shamie. 3,224,344.

Shapiro, Ascher H.: *See*—
Keiner, Robert, Pearson, Lee, and Shapiro. 3,225,338.

Shapiro, William J. Toy glider with double wing means. 3,224,138, 12–21–65, Cl. 46—79.

Shatto, Howard L., Jr.: *See*—
Watkins, Bruce J., Johnson, and Shatto. 3,224,505.

Shavair of America, Inc.: *See*—
Silver, Irving, Hubbartt, and Inman. 3,224,805.

Shell Oil Co.: *See*—
Anderson, Alvin P. 3,224,955.
Baldwin, Douglas, Jr. 3,224 962.
Barrett, Maurice L., Jr. 3,224,247.
Boyce, Clive B. C., and Manis. 3,225,039.
Fan, Hsing Y. 3,225,070.
Henderson, Hubert T. 3,224,848.
Kear, Robert W., and Lancashire. 3,224,679.
Kobus, Lawrence C. 3,224,401.
Kobus, Lawrence C. 3,224,402.
McClure, James D. 3,225,082.
McClure, James D. 3,225,083.
Roper, Alec N., and Barber. 3,224,984.
Siebenhausen, Christian H. 3,224,204.
Thomas, Robert J. 3,224,845.
Watkins, Bruce J., Johnson, and Shatto. 3,224,505.
Wilson, William B. 3,224,960.
Zwahlen, Kenneth D. 3,225,046.

Shenango China, Inc.: *See*—
Cummings, Howard B. 3,224,629.

Shepard, Lewis, Co.: *See*—
Gandolfo, Peter F. 3,224,529.

Sherley, Roy W., ¼ to R. L. Willis, ¼ to C. R. Preslar, and ¼ to O. R. Haggard. Trash can holders. 3,224,595, 12–21–65, Cl. 211—83.

Sherlock, Margaret H., to Schering Corp. Phenyl-benzasepines and methods for their manufacture. 3,225,031, 12–21–65, Cl. 260—239.

Sherwin-Williams Co., The: *See*—
Goldsholl, Morton. 3,224,113.

Shibata, Takanori: *See*—
Kawai, Yoshinori, and Shibata. 3,225,284.

Shimomura, Ryohei: *See*—
Takagi, Eiichi, Matsuzawa, Yoshida, Shimomura, and Hashizume. 3,225,088.

Shiner, Edward A., to Union Carbide Corp. Method of producing cellulosic sausage casings. 3,224,885, 12–21–65, Cl. 99—176.

Shionogi & Co., Ltd.: *See*—
Nakagawa, Kunio, and Tsuji. 3,225,080.

Shipley, Eugene E., to General Electric Co. Torque meter. 3,224,262, 12–21–65, Cl. 73—136.

Shlesinger, Bernard E., Jr. Programming system-cable tape type switch with deflectable spring contact means. 3,225,149, 12–21–65, Cl. 200—16.

Shoher, Robert S., and E. M. Bederson. Article dispensing controlled message producing means. 3,224,544, 12–21–65, Cl. 194—10.

Short Bros. & Harland Ltd.: *See*—
Dunn, Albert J., and Brown. 3,224,369.

Short, James N., to Phillips Petroleum Co. Carbonation of alkali metal-containing polymers. 3,225,089, 12–21–65, Cl. 260—537.

Showa Denko Kabushiki Kaisha: *See*—
Takahashi, Akira, Mita, and Hayashi. 3,225,006.

Sias, Roy C., and P. C. Kemp, to Continental Oil Co. Process for making mahogany sulfonic acids. 3,225,086, 12–21–65, Cl. 260—504.

Sieben, Henricus H.: *See*—
Lameris, Koenraad J., Kluun, and Sieben. 3,224,043.

Siebenhausen, Christian H., to Shell Oil Co. Method of anchoring an offshore structure. 3,224,204, 12–21–65, Cl. 61—46.5.

Siempelkamp, Eugen. Apparatus for separating conveyed sheets. 3,224,758, 12–21–65, Cl. 271—64.

Signal-Stat Corp.: *See*—
Bielweiss, Arthur F., Colombo, Dickson, and Orlov. 3,225,165.
Bielweiss, Arthur F., Colombo, Dickson, and Orlov. 3,225,166.

Silbro Products Corp.: *See*—
Jonas, Walter M. 3,224,063.

Silver, Irving, J. E. Hubbartt, and R. B. Inman, to Shavair of America, Inc. Method of shaving. 3,224,305, 12–21–65, Cl. 83—14.

Silvern, David H., to Dresser Industries, Inc. Gas meter improvement. 3,224,274, 12–21–65, Cl. 73—261.

Simon, George. Calliper-type disk brake. 3,224,532, 12–21–65, Cl. 188—152.

Simonson, Anthony J., and D. H. Packer, to Thiokol Chemical Corp. Terrazzo repair process. 3,224,346, 12–21–65, Cl. 94—22.

Simpson, Theodore B., and F. W. Evans, to Hooker Chemical Corp. Halogen saturation of non-terminal double bond. 3,225,109, 12–21–65, Cl. 260—653.7.

Sinclair Research, Inc.: *See*—
Bruns, Frank J. 3,224,646.
Erickson, Henry, Russell, and Sanford. 3,224,961.
Hoffman, William D., and Eichhorn. 3,225,112.
Skonecke, Hubert L., Kirk, and Safford. 3,224,488.

Singer Co., The: *See*—
Adams, Kenneth D., Herr, and Schwartzberg. 3,224,393.
Brodie, Kenneth G. 3,224,023.
Card, Roy T. 3,224,395.
Crumbliss, Robert T. 3,224,365.
Greulich, Robert G. 3,224,898.
Happe, Reynold, and Goetz. 3,225,280.
Herr, John A., and Taylor. 3,225,274.
Laidig, Manfred R. 3,224,708.
Lightner, Milton C., and Johnson. 3,224,399.
Mishcon, Lester. 3,224,229.
Turley, James F., and Winchester. 3,225,232.
Van Ness, William C. 3,224,397.
Wittler, Bernard H. 3,224,396.

Sipin, Anatole J. Velocity flowmeters. 3,224,272, 12–21–65, Cl. 73—231.

Sixsmith, Herbert, to United States of America, Commerce. Combined electromagnetic and electromechanical power converter. 3,224,818, 12–21–65, Cl. 308—10.

Sixtus, Klaus, and H. Lämmel, to Licentia Patent-Verwaltungs-G.m.b.H. Siliconizing of electrical sheet steel by diffusion. 3,224,909, 12–21–65, Cl. 148—113.

Sizelove, John R., to United States of America, Air Force. Contour design for "cascading by shaping" thermomagnetic devices. 3,224,206, 12–21–65, Cl. 62—3.

Skanska Cementgjuteriet, AB.: *See*—
Brannfors, Sten H., and Alberts. 3,224,203.

Skelton, William E., and C. E. Wilkinson, to Texaco Inc. Fire resistant bituminous emulsion. 3,224,890, 12–21–65, Cl. 106—202.

Ski-Dek Corp.: *See*—
Hall, Raymond L. 3,224,763.

Skonecke, Hubert L., J. H. Kirk, and D. E. Safford, to Sinclair Research, Inc. Oil burner having a combustion aid. 3,224,488, 12–21–65, Cl. 158—73.

Skreckoski, Gerald R., to Allied Chemical Corp. Urethane oil coating composition comprising an organotin viscosity control agent. 3,224,988, 12–21–65, Cl. 260—22.

Skubic, Leroy F., to The Paltier Corp. Portable stacking unit with star frame. 3,224,588, 12–21–65, Cl. 108—53.

Slagteriernes Forskningsinstitut: *See*—
Knudsen, Erik. 3,224,320.

Sloan, Frederick R. W., and J. L. Spencer-Smith, to Whitecraft Industrial Holdings Ltd. Process for production of crossed-linked cellulosic yarns. 3,224,182, 12–21–65, Cl. 57—157.

Smith, Harold J., and H. E. Boudreau, to Cyclops, Inc. Refrigerating system including an accumulator. 3,224,217, 12–21–65, Cl. 62—221.

Smith, Hoyt W., to Le Tourneau-Westinghouse Co. Wheel construction. 3,224,484, 12–21–65, Cl. 152—410.

Smith, Hugh G.: *See*—
Zorena, Peter J., Smith, and Kapitan. 3,225,180.

Smith, John W., to The Mead Corp. Method and apparatus for producing cast coated paper. 3,224,897, 12–21–65, Cl. 117—64.

Smith Kline & French Laboratories: *See*—
Wolff, Manfred E. 3,225,035.

Smith, Malcolm G., to General Electric Co. Document transferring apparatus. 3,224,760, 12–21–65, Cl. 271—68.

Smith, Ralph W.: *See*—
Preston, Jack, and Smith. 3,225,011.

Smith, Warren R.: *See*—
Ferber, Robert R., Smith, and Trimmer. 3,225,140.

Smuck, Joseph I. Tire-buoy. 3,224,611, 12–21–65, Cl. 214—334.

Snapp, John L.: *See*—
Reifschneider, Darrel E., and Snapp. 3,224,480.

Societe Lumiere: *See*—
Valette, Joseph, and Voisin. 3,224,852.

Socony Mobil Oil Co.: *See*—
Raymond, Richard L. 3,224,946.

Sogolan, Nash P. Hanger for vehicle splash guards. 3,224,791, 12–21–65, Cl. 280—154.5.

Solis Societa a Responsabilita Limitata: *See*—
Luchi, Vinicio. 3,224,226.

Sollecito, William E.: *See*—
Chestnut, Harold, Troutman, and Sollecito. 3,225,179.

Sollinger, Ferdinand P.: *See*—
De Feo, Angelo, and Sollinger. 3,224,194.

Soloff, Robert S., and S. G. Linsley, to Branson Instruments, Inc. Sonic method of welding thermoplastic parts. 3,224,916, 12–21–65, Cl. 156—73.

Solomons, Cyril, to Honeywell Inc. Temperature-sensitive elements. 3,225,320, 12–21–65, Cl. 338—22.

Sonntag, Karl F., to Scovill Mfg. Co. Drapery pleater hook. 3,224,057, 12–21–65, Cl. 24—84.

Sontheimer, Heinrich: *See*—
Derenk, Gunther, Schmid, and Sontheimer. 3,224,964.

Sony Corp.: *See*—
Yasuda, Junichi, and Tadama. 3,225,317.

Sorenson, Wesley T., to Carling Electric, Inc. Rotary switch with make-before break contact structure. 3,225,148, 12–21–65, Cl. 200—11.

Spalding, A. G., & Bros., Inc.: *See*—
Moryl, Douglas C. 3,224,136.
Wright, John H., and Myers. 3,224,135.
Wright, John H., and Myers. 3,224,137.

Spanel, Abraham N., to International Latex Corp. Double container. 3,224,570, 12–21–65, Cl. 206—47.

Spare, Gordon T.: *See*—
Nickola, Richard A., and Spare. 3,224,087.

Spaulding Fibre Co., Inc.: *See*—
Goodwin, Elmer C., Jr. 3,224,659.

Specialties Development Corp.: *See*—
Rossi, William F., and Huston. 3,224,918.

Speed Shore Corp.: *See*—
Brunton, James L. 3,224,201.

Speedfast Corp.: *See*—
Zike, Vincent A. 3,224,657.

Spencer, Albert E., Jr.: *See*—
Gebhardt, Robert C., Shafer, Spencer, Toy Vigliante, Williams, and Williford. 3,225,144.

Spencer, Domina E., and S. C. Peek, Jr., to Sylvania Electric Products Inc. Aperture fluorescent lamp. 3,225,241, 12–21–65, Cl. 313—109.

Spencer, Millard C., to S. D. Warren Co. Release-coated carrier webs and method of using same. 3,224,898, 12–21–65, Cl. 117—76.

Spencer-Smith, John L.: *See*—
Sloan, Frederick R. W., and Spencer-Smith. 3,224,182.

Sperl, Ferdinand P., to Service Ideas, Inc. Relish tray or the like. 3,224,625, 12–21–65, Cl. 220—23.83.

Sperry Rand Corp.: *See*—
Barney, Kay H., and Graber. 3,225,300.
Blazek, Henry. 3,224,281.
Heithaus, William C. 3,225 318.

Sperry Rand Corp., Ford Instrument Co. Division: *See*—
Abeatz, Seymour, and Cifu. 3,225,345.

Sperry Rand Corp.: *See*—
Cubert, Jack S. 3,225,220.

Sperry Rand Corp., Ford Instrument Co. Division: *See*—
Montani, Angelo. 3,225,138.

Spery, Joseph C. Wrapper type can carrier. 3,224,680, 12–21–65 Cl. 220—103.

Spielman, James F., to Universal Oil Products Co. Aircraft seat. 3,224,808, 12–21–65, Cl. 297—341.

Spielvogel, Walter, to Weigelwerk G.m.b.H. Apparatus for recovering fermentable liquors. 3,224,358, 12–21–65, Cl. 99—278.

Spielvogel, Walter, to Weigelwerk AG. Apparatus for the continuous recovery of fermentable liquors. 3,224,359, 12–21–65, Cl. 99—278.

Spiessens Raymond F.: *See*—
Van de Weijer, Martinus H. A., Spiessens, and La Grouw. 3,225,244.

Springman Le Roy A.: *See*—
Ainsworth, Cameron, Blubaugh, Springman, and Zapapas. 3,224,940.

Sprokel, Gerard J., to International Business Machines Corp. Scintillation detection apparatus. 3,225,194, 12–21–65, Cl. 250—71.5.

Sprouse, Verner E., and V. H. Williams, to Verneo Corp. Blower wheel blade finger expansion mounting. 3,224,669, 12–21–65. Cl. 230—134.

Sprout, Waldron & Co., Inc.: *See*—
Fisher, Chester D. 3,224,814.

Squire, Robert K.: *See*—
Hilton, John L., and Squire. 3,225,193.

Stackpole Carbon Co.: *See*—
Kosco, John C. 3,225,169.

Stal Refrigeration Aktiebolag: *See*—
Lundvik, Karl W. B. 3,224,663.

Stalego, Charles J., to Owens-Corning Fiberglas Corp. Apparatus for forming fibers. 3,224,852, 12–21–65, Cl. 65—16.

Staley, A. E., Mfg. Co.: *See*—
Nevin, Charles S. 3,224,989.

Standard Car Truck Co.: *See*—
Gierlach, Robert W. 3,224,600.

Standard Oil Co. (Indiana) : *See*—
De Young, Edwin L., and Watson. 3,224,970.
Kirkland, Earl V., and Jennings. 3,225,107.
Stephens, James R. 3,224,992.

Standley, Wendell E., and L. C. Braun, to Johns-Nigrelli-Johns, Inc. Powered conveyor mechanism for turning articles. 3,224,555, 12–21–65, Cl. 198—33.

Standley, Wendell E. : *See*—
Nigrelli, Biagio J., Standley, Wittmann, and King. 3,224,165.
Johns, Robert R., Standley, Wittmann, and Karlovitz. 3,224,166.
Nigrelli, Biagio J., Standley, Wittmann, and Ferraro. 3,224,550.

Stasse, Maurice R. : *See*—
Talon, Marcel G., and Stasse. 3,224,963.

Staub, Fred W., and L. H. Tomlinson, to General Electric Co. Finned heat exchanger. 3,224,504, 12–21–65, Cl. 165—185.

Steckert, John W. : *See*—
Rosenberg, Harvey, and Steckert. 3,225,330.

Steelcase, Inc. : *See*—
Welch, Phillip C., and Matz. 3,224,807.

Steen, Melvin O. : *See*—
Baker, Eugene H., Osborn, and Steen. 3,224,765.

Steenberg, Johannes, to Hollandse Signaalapparaten, N.V. Diode matrix. 3,225,263, 12–21–65, Cl. 317—112.

Steeneck, Robert, to The Western Union Telegraph Co. Diode matrix for decoding pulse signals. 3,225,331, 12–21–65, Cl. 340—166.

Steinert, Elmer R. : *See*—
Buseth, Richard A., Steinert, and Kiszko. 3,224,728.

Steinmueller, Ralph E. : *See*—
Dietert, Harry W., Steinmueller, and Dietert. 3,224,647.

Steinway, Josef H. Locking arrangement for semitrailer coupling. 3,224,788, 12–21–65, Cl. 280—434.

Stelzer, William. Letter weighing scale. 3,224,516, 12–21–65, Cl. 177—172.

Stephens, James R., to Standard Oil Co. Water soluble compositions suitable for baked films. 3,224,992, 12–21–65, Cl. 260—29.6.

Stephens, Ruth E., to Ethyl Corp. Method of treating engine exhaust gas with an oxidation catalyst containing platinum and phosphorous. 3,224,831, 12–21–65, Cl. 23—2.

Stephens, Ruth E., D. A. Hirschler, Jr., and F. W. Lamb, to Ethyl Corp. Supported copper oxide and palladium catalyst composition. 3,224,981, 12–21–65, Cl. 252—460.

Sterling Drug Inc. : *See*—
Lesher, George Y. 3,225,055.
Zenitz, Bernard L., and Albro. 3,225,037.

Steuer, Herbert : *See*—
Gesche, Werner, Steuer, and Karig. 3,224,287.

Stevens, Lehrer & Stevens : *See*—
Erbstoesser, James A. 3,224,174.

Stevenson, Gerald W. Rider stabilized roller skate provided with brake means actuated by tilting of the brake. 3,224,785, 12–21–65, Cl. 280—11.2.

Steward, William A. Work control and scheduling device. 3,224,128, 12–21–65, Cl. 40—96.

Stewart, Clyde R., to Hewlett-Packard Co. Wheel for carrying electronic equipment. 3,224,381, 12–21–65, Cl. 105—150.

Stimson, Allen G., to Eastman Kodak Co. Battery test circuit cameras. 3,224,350, 12–21–65, Cl. 95—10.

Stinnes, Hanns. Glass forming mold. 3,224,860, 12–21–65, Cl. 65—355.

Stites, Francis H., and R. Alexander, to Sylvania Electric Products Inc. Mark sensing. 3,225,177, 12–21–65, Cl. 235—61.11.

Stotler, Harold H. : *See*—
Keith, Percival C., Hoffert, and Stotler. 3,224,869.

Strader, George C. Hobby horse. 3,224,762, 12–21–65, Cl. 272—1.

Stram, George H., to Baker Perkins Inc. Article grouping and conveying methods and apparatus. 3,224,556, 12–21–65, Cl. 198—34.

Stram, George H., to Baker Perkins Inc. Article grouping and conveying methods and apparatus. 3,224,556, 12–21–65, Cl. 198—34.

Stramowski, Edmund J., to McGraw-Edison Co. Repeating circuit interrupter. 3,225,161, 12–21–65, Cl. 200—92.

Strasberg, Murray : *See*—
Schloss, Fred, and Strasberg. 3,224,246.

Strasser, Helmut, to Agfa Aktiengesellschaft. Structure for rendering a zoom lens optionally adjustable by hand or by motor. 3,224,351, 12–21–65, Cl. 95—45.

Stratton, Boyd L., and D. E. Morgan, to Ampex Corp. Avalanche-triggered sawtooth generator. 3,225,310, 12–21–65, Cl. 331—111.

Straub, Hermann, to Zahnradfabrik Friedrichshafen, Aktiengesellschaft. Electromagnetically operated multiple disc clutch or brake. 3,224,540, 12–21–65, Cl. 192—90.

Strehle, Kurt H. : *See*—
Mennicken, Erwin J., Muth, and Strehle. 3,224,424.

Strike, John L., and G. N. Floor, to McGraw-Edison Co. Multi-stage air blower. 3,224,667, 12–21–65, Cl. 230—130.

Strong, Stanley J., and C. M. Wolfe, to Borg-Warner Corp. Photosensitive inspection apparatus for filamentary material. 3,225,206, 12–21–65, Cl. 250—219.

Struble, Arthur D., Jr. Balloon cable reeling device. 3,224,697, 12–21–65, Cl. 242—54.

Stuart, Charles E. Dental articulator. 3,224,096, 12–21–65, Cl. 32—32.

Stubbs, James M. Weight repulsing and cigarette reneging appliance. 3,224,442, 12–21–65, Cl. 128—136.

Studebaker Corp. : *See*—
Warnken, Elmer P. 3,224,374.

Stumpe, Nelson A., Jr., to Phillips Petroleum Co. Prevention of cold flow in cis-polybutadiene by adding hydrogenated diene polymer. 3,225,122, 12–21–65, Cl. 260—894.

Sturgis, Adah P., to Ethyl Corp. Stabilized vinyl chloride monomer. 3,225,108, 12–21–65, Cl. 260—652.5.

Sturgis, Charles P., H. W. Kumpf, Jr., and E. I. Maddern, to Diebold, Inc. Power file counter construction. 3,224,825, 12–21–65, Cl. 312—223.

Styner, Jerry H., to Giannini Controls Corp. Digital computing system for square roots. 3,225,181, 12–21–65, Cl. 235—158.

Sud-Aviation Societe Nationale de Constructions Aeronautiques : *See*—
Robert, Andre C., and Trincard. 3,224,319.

Suisse, Marcel : *See*—
Peras, Lucien, and Suisse. 3,224,028.

Sullivan, Marie C. Removable safety bar for windows, doors and the like. 3,224,048, 12–21–65, Cl. 20—71.

Summers, Leo E. A., and R. J. Horwood, to Bristol Aircraft Ltd. Method of forming an electrical connection to an insulating base. 3,224,072, 12–21–65, Cl. 29—155.5.

Sunbeam Corp. : *See*—
Jepson, Ivar, Viecell, and Walczak. 3,224,122.
Wickenberg, Chester H., and Lorenzana. 3,224,360.

Suzumura, Hideo, K. Hirano, S. Kawamura, and K. Nagana, to Kurashiki Rayon Co., Ltd. Method of forming polyvinyl alcohol film. 3,225,128, 12–21–65, Cl. 264—216.

Svenska Aeroplan Aktiebolaget : *See*—
Ljungstrom, Olle, Gunnarsson, and Eriksson. 3,224,666.

Svenska Tandsticks Aktiebolaget : *See*—
Ohlsson, Olof W. 3,224,101.

Svoboda, Gordon H., to Eli Lilly and Co. Method of preparing leurosine and vincaleukoblastine. 3,225,030, 12–21–65, Cl. 260—236.

Swanson, Joseph L. Arithmetic game. 3,224,114, 12–21–65, Cl. 35—31.

Swanson, Ronald R., to General Mills, Inc. α-Hydroxy oximes. 3,224,873, 12–21–65, Cl. 75—101.

Swedish Crucible Steel Co. : *See*—
Kracht, Gerhard. 3,224,039.

Swift, Harold E., to Gulf Research & Development Co. Catalyst preparation and composition. 3,224,980, 12–21–65, Cl. 252—429.

Swingline Inc. : *See*—
Ruskin, Henry, and Kohen. 3,224,418.

Swiss Knitting Co., Inc. : *See*—
Matz, George C. 3,224,231.

Switzenberg, William J., Jr. : *See*—
Ford, Bernard W., and Switzenberg. 3,224,249.

Sybeldon, James A., deceased, by S. A. Sybeldon, administratrix, to General Electric Co. Image tube having external semiconductive layer on target of wires in glass matrix. 3,225,240, 12–21–65, Cl. 313—65.

Sybeldon, Sylvia A. : *See*—
Sybeldon, James A. 3 225,240.

Sylvania Electric Products Inc. : *See*—
Audesse, Emery G., Palermo, and Scoledge. 3,225,247.
Dayton, David R., and Brooks. 3,224,651.
Peters, Charles J. 3,224,074.
Spencer, Domina E., and Peek. 3,225,241.
Stites, Francis H., and Alexander. 3,225,177.

Synergistic Associates : *See*—
White, Edward B. 3,224,643.

TRW Inc. : *See*—
Clark, George L., and Hickey. 3,225,254.
LeVantine, Allan D. 3,225,188.
Meyer, Rudolf X. 3,225,230.

Tadama, Motomu : *See*—
Yasuda, Junichi, and Tadama. 3,225,317.

Takagi, Elichi, K. Matsuzawa, K. Yoshida, R. Shimomura, and G. Hashizume, to Mitsubishi Chemical Industries, Ltd. Method of producing alkali metal terephthalate. 3,225,088, 12–21–65, Cl. 260—515.

Takahashi, Akira, Y. Mita, and S. Hayashi, to Showa Denko Kabushiki Kaisha. Polymerization of aldehydes using an organic compound or a salt of mercury as catalyst. 3,225,006, 12–21–65, Cl. 260—67.

Takami, Katsumi, Z. Abe, K. Matsuura, and Y. Furuhata, to Kabushiki Kaisha Hitachi Seisakusho. D.C.-A.C. conversion method and apparatus. 3,225,211, 12–21–65, Cl. 307—88.

Takami, Katsumi, and K. Matsuura, to Kabushiki Kaisha Hitachi Seisakusho. Rotating body strain meter. 3,224,257, 12–21–65, Cl. 73—88.5.

Takei, Sachio, and M. Yamamoto, to Kabushiki Kaisha Hitachi Seisakusho. Plasma jet generator. 3,225,245, 12–21–65, Cl. 313—231.

Takeuchi, Saneyuki : *See*—
Osawa, Izumi, and Takeuchi. 3,225,135.

Talbot, James E., to FMC Corp. Method of baling. 3,224,363, 12–21–65, Cl. 100—3.

Talbot, Richard C., and F. Rieg, to Peters Machinery Co. Converger and stacker for cookies. 3,224,551, 12–21–65, Cl. 198—32.

Talon, Marcel G., and M. R. Stasse, to Equipments Techniques Industriels. Dehydration of aqueous sludges. 3,224,963, 12–21–65, Cl. 210—4.

Tamburini, Fioraldo, to Fiat Societa per Azioni. Voltage regulating circuit. 3,225,287, 12–21–65, Cl. 322—68.

Tarukawa, Tomiji. Apparatus for automatically mixing several kinds of stock-materials. 3,224,738, 12–21–65, Cl. 259—2.

Taylor, Alexander P. Power operated gang mower. 3,224,176, 12–21–65, Cl. 56—7.

Taylor, Donald O., to Scovill Mfg. Co. Terminal member for plastic filament zippers. 3,224,061, 12–21–65, Cl. 24—205.11.

Taylor, Donald G. : *See*—
Schagen, Pieter, Taylor, and Woodhead. 3,225,204.

Taylor, Edward W. : *See*—
Herr, John A., and Taylor. 3,225,274.

Taylor, John S., and W. L. Graves, to The Budd Co. Method of making memory re-shaped tubes, especially fluorocarbon cylinder jackets. 3,225,129, 12–21–65, Cl. 264—230.

Taylor, Maurice I., and G. L. Wilde, to Rolls-Royce Ltd. Jet engines and to aircraft provided with same. 3,224,712, 12–21–65, Cl. 244—53.

Teicher, Harry, to Monsanto Co. Slip-resistant thermoplastic resin sheets and process for producing same. 3,224,901, 12–21–65, Cl. 117—138.8.

Tellerman, Jacob, to Tempo Instrument Inc. Magnetostrictive resonator of the "Wiedemann Effect" type. 3,225,312, 12–21–65, Cl. 331—157.

Templeton, John G., to Rose Patch & Label Co. Label for hosiery. 3,224,123, 12–21–65, Cl. 40—2.

Tempo Instrument Inc. : *See*—
Tellerman, Jacob. 3,225,312.

Tempo Plastic Co., Inc. : *See*—
Bridges, Roy G., Aleson, Hutchings, Whited, and Dyrness. 3,224,040.
Bridges, Roy G., Aleson, Hutchings, Whited, and Dyrness. 3,225,126.

Terrell, Joseph D. Ellipse scriber. 3,224,098, 12–21–65, Cl. 33—30.

Terzuoli, Dominick, to Miner Industries, Inc. Balloon marking machine. 3,224,364, 12–21–65, Cl. 101—37.

Tessler, Morty, and S. Gass. Castered transportable container. 3,224,789, 12–21–65, Cl. 280—47.26.

Teufel, Ewald E., to Rieker & Co. Ski boot. 3,224,118, 12–21–65, Cl. 36—50.

Teves, Alfred, K.G. : *See*—
Klein, Hans-Christof. 3,224,456.

Tew, Richard W., J. O. Sane, and R. P. Geckler, to Aerojet-General Corp. Apparatus and method for growing algae to recover oxygen. 3,224,143, 12–21–65, Cl. 47—1.4.

Texaco Inc. : *See*—
Dille, Roger M., Guptill, and Ahlborn. 3,224,849.
Harlan, Don L., and Hubby. 3,224,267.
Knowles, Edwin C., Wiley, and Kay. 3,224,971.
Schlinger, Warren G. 3,224,958.
Schlinger, Warren G., Brodeur, and Marion. 3,224,959.
Schlinger, Warren G., and Eastman. 3,224,954.
Skelton, William E., and Wilkinson. 3,224,890.

Ther, Leopold : *See*—
Krohs, Walter, Ther, and Vogel. 3,225,098.

Thermo Electric Co. : *See*—
Metzadour, Carlos B. 3,225,268.

Thermo Electric Co. Inc. : *See*—
Walter, Fred S. 3,225,321.

Thermon Mfg. Co. : *See*—
Burdick, Richard L., Brown, and Bilbro. 3,224,501.

Thiele, Kurt, to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler. N-aryl-substituted-propan-(1)-ones and -ols of arylaminoalkanols and salts thereof. 3,225,095, 12–21–65, Cl. 260—570.5.

Thigpen, James L. : *See*—
Foster, Robert D., and Thigpen. 3,224,827.

Thiokol Chemical Corp. : *See*—
Bratton, Clarence R. 3,224,191.
Fiser, William D., Van Roo, Berry, Anderson, and Korb. 3,224,681.
Simonson, Anthony J., and Packer. 3,224,346.

Thirkill, Eugene J. : *See*—
Curtis, Roman, and Thirkill. 3,224,334.

Thoma, Ludwig : *See*—
Graff, Roderich, Thoma, and Reichl. 3,226,458.

Thomas, Robert J., to Shell Oil Co. Controlled wetting of non-aqueous fluids. 3,224,845, 12–21–65, Cl. 23—312.

Thomiszer, Hubert J. : *See*—
Dietzgen, Joseph E., and Thomiszer. 3,224,354.

Thomiszer, Hubert J., to Eugene Dietzgen Co. Apparatus for making prints. 3,224,355, 12–21–65, Cl. 95—77.5.

Thompson, Benjamin, to Eastman Kodak Co. Allenic aldehydes. 3,225,102, 12–21–65, Cl. 260—598.

Thompson, Earl A., Mfg. Co. : *See*—
Van Deberg, Walter H. 3,224,243.

Thompson, Elbert O. Dental neck rest. 3,224,809, 12–21–65, Cl. 297—391.

Thompson, George E., to Girling Ltd. Spreading type disc brakes. 3,224,531, 12–21–65, Cl. 188—72.

Thompson, Robert R., to The Bendix Corp. Electron multiplier. 3,225,239, 12–21–65, Cl. 313—103.

Thompson, William C., to Columbian Bronze Corp. Boat propeller. 3,224,509, 12–21–65, Cl. 170—160.5.

Thor, Robert C., to General Electric Co. Moving target indicating radar system. 3,225,349, 12–21–65, Cl. 343—7.7.

Thorne, Derek, to Radio Corp. of America. Method of fabricating semiconductor devices. 3,224,069, 12–21–65, Cl. 29—25.3.

Thorwaldsen, Stanley E. : *See*—
King, Marvin, Schmidt, and Thorwaldsen. 3,224,530.

Tilton, Webster, Jr. Expansible stationery container. 3,224,661, 12–21–65, Cl. 229—72.

Tinnes, Leroy. Automatic pipe welding apparatus. 3,225,171, 12–21–65, Cl. 219—60.

Tipper, Maynard J. G., to Rheem Mfg. Co. Portable apparatus for fastening casings and the like. 3,224,083, 12–21–65, Cl. 29—243.57.

Titangesellschaft m.b.H. : *See*—
Bramekamp, Karl-Jurgen, and Kulling. 3,224,215.

Toko Kabushiki Kaisha : *See*—
Uchida, Shozo. 3,225,275.

Tokyo Shibaura Electric Co., Ltd. : *See*—
Oizumi, Kiyoshi, Fukuda, and Otani. 3,224,858.

Tolmie, Ronald W., to Atomic Energy of Canada Ltd. Radioisotope identifier. 3,225,199, 12–21–65, Cl. 250—83.6.

Tomita, Mary S. : *See*—
Johnston, Howard, and Tomita. 3,224,950.

Tomlinson, Lee H. : *See*—
Staub, Fred W., and Tomlinson. 3,224,504.

Tone, John W. : *See*—
Freedman, Lawrence I., Tone, and Werner. 3,224,743.

Tosalli, Joseph, to Reuge S.A. Safety stop for ski attachment. 3,224,786, 12–21–65, Cl. 280—11.35.

Toti, Andrew J. and C. J. Structural assembly construction. 3,224,154, 12–21–65, Cl. 52—520.

Toti, Andrew J. and C. J. Vertical Venetian blind construction. 3,224,490, 12–21–65, Cl. 160—168.

Toti, Carlo J. : *See*—
Toti, Andrew J. and C. J. 3,224,154.
Toti, Andrew J. and C. J. 3,224,490.

Tourneau-Westinghouse Co., Le : *See*—
Smith, Hoyt W. 3,224,484.

Tourtellot, John A., to Radio Corp. of America. Stereophonic phonograph system. 3,225,146, 12–21–65, Cl. 179—100.4.

Toy, Wing N. : *See*—
Gebhardt, Robert C., Shafer, Spencer, Toy, Vigliante, Williams, and Williford. 3,225,144.

Toyo Boseki Kabushiki Kaisha : *See*—
Oishi, Isao. 3,224,694.

Traite, Max, to Gulton Industries, Inc. Method of measuring blood pressure. 3,224,435, 12–21–65, Cl. 128—2.05.

Traverso, John J., and C. W. Whitehead, to Eli Lilly and Co. Certain substituted benzisothiazoles. 3,225,056, 12–21–65, Cl. 260—301.

Trench, Anthony B. Shunt reactors. 3,225,319, 12–21–65, Cl. 336—180.

Trico Products Corp. : *See*—
Oishei, John R., and Scinta. 3,224,027.

Trimmer, Donald A. : *See*—
Ferber, Robert R., Smith, and Trimmer. 3,225,140.

Trincard, Gilles E. R. : *See*—
Robert, André C., and Trincard. 3,224,319.

Trivinia, Charles : *See*—
Altieri, Frank A. 3,224,771.

Troutman, Paul H. : *See*—
Chestnut, Harold, Troutman, and Sollecito. 3,225,179.

True Temper Corp. : *See*—
Clark, Joseph C. 3,224,703.

Truesdale, Cavour L., to Plastic Products, Inc. Drapery with concealed pockets for weights. 3,224,495, 12–21–65, Cl. 160—349.

Trzebinski, Marian. Windscreen wipers of motor vehicles. 3,224,026, 12–21–65, Cl. 15—250.19.

Tsuji, Teruji : *See*—
Nakagawa, Kunio, and Tsuji. 3,225,080.

Tubbs, Elton H. Siphonic flush commode. 3,224,013, 12–21–65, Cl. 4—69.

Tulareloft, Inc. : *See*—
Preston, Walter G. 3,224,258.

Tung, Ching C. : *See*—
D'Amico, John J., and Tung. 3,225,040.
D'Amico, John J., and Tung. 3,225,049.

Tung-Sol Electric Inc. : *See*—
Kratochvil, Harry. 3,225,343.

Turato, Luigi, to Officine di Cartigliano S.p.A. Industria Metalmeccanica. Apparatus for the vacuum-drying of leather. 3,224,109, 12–21–65, Cl. 34—92.

Turley, Alfred, to Vono Ltd. Spring unit lacing machines. 3,224,470, 12–21–65, Cl. 140—92.3.

Turley, James F., and D. B. Winchester, to The Singer Co. Variable speed portable tool. 3,225,232, 12–21–65, Cl. 310—69.

Turner, Joseph F., deceased (L. E. Turner, administratrix). Dental articulator. 3,224,095, 12–21–65, Cl. 32—32.

Turner, Luella E. : *See*—
Turner, Joseph F. 3,224,095.

Turner, Richard F., and E. O. Winkler, to United States of America, Atomic Energy Commission. Ceramic-matrix-type fuel element with graphite fabric affixed to exterior surface. 3,224,944, 12–21–65, Cl. 176—89.

Twin Disc Clutch Co. : *See*—
Hilpert, Conrad R. 3,224,537.

Tyler, Varro E., Jr. Process for the production of ergot alkaloids. 3,224,945, 12–21–65, Cl. 195—81.

Tyzack, Harold, to Motorola, Inc. Tuner for television receiver. 3,224,282, 12–21–65, Cl. 74—10.15.

Uchida, Shozo, to Toko Kabushiki Kaisha. Ganged variable capacitors. 3,225,275, 12–21–65, Cl. 317—249.

Ulmer, Heins : *See*—
Dobner, Rienhold, Braun, and Ulmer. 3,224,394.

Union Carbide Corp. : *See*—
Czanderna, Alvin W. 3,224,521.
DeMello, Frank A. 3,225,118.
Gaylord, William M., Jr. 3,224,169.
Harding, James, Seliers, and Meyers. 3,225,104.
Hunter, Paul H. 3,224,997.
Johnson, Herbert E. 3 225,060.
Jones, Robert A. 3,224,167.
Kordyban, Eugene S., Paivanas, and Canty. 3,224,622.
Kurtz, Abraham N. 3,225,110.
Lauer, Wilbur H. Roberts, and Yendall. 3,224,209.
Leonard, Edward C., Jr. 3,225,019.
Lundberg, Robert D., and Bailey. 3,224,994.
McGary, Charles W., Jr., and Patrick. 3,225,115.
Pilia, Frank J., and Brems. 3,224,283.
Shiner, Edward A. 3,224,885.
Welch, Frank J. 3,225 000.
Woolery, Robert G. 3,224,965.
Zutty, Nathan L. 3,225,018.
Zutty, Nathan L., and Welch. 3,224,982.

Unitcast Corp.: *See*—
Floehr, Walter L. 3,224,382.
United Aircraft Corp.: *See*—
Clark, James W. 3,224,406.
Haas, Vinton B., Jr. 3,225,282.
Scheffels, Wilhelm. 3,225,248.
Wallace, Rudolf N. 3,224,502.
United States of America
Agriculture: *See*—
Black, William A. P., Dewar, and Rutherford. 3,225,012.
Yeates, Thomas E., Carr, and Mehltreeter. 3,224,891.
Air Force: *See*—
Phelps, John H. 3,225,309.
Reimschuesse, Herbert K., and Lovelace. 3,225,016.
Sizelove, John R. 3,224,206.
Wattendorf, Frank L., von Ohain, Lawson, and Hasinger. 3,225,225.
Army: *See*—
Basso, Michael J. 3,225,197.
Comfort, Walton E. 3,225,324.
Cook, Richard T., and Hallermeier. 3,225,173.
Denning, Rick A. 3,224,121.
Holzer, Johann. 3,225,315.
Leistner, Karl. 3,224,328.
Scott, Samuel W., Jr. 3,225,221.
Warren, Raymond W. 3,224,674.
Atomic Energy Commission: *See*—
Biehl, Arthur T. 3,224,977.
Henry, James E. 3,224,615.
McClung, Robert W., Dodd, Allen, and Nance. 3,225,294.
Millieron, Norman, and Levenson. 3,224,665.
Turner, Richard F., and Winkler. 3,224,944.
Commerce: *See*—
Sixsmith, Herbert. 3,224,818.
National Aeronautics and Space Administration: *See*—
Eddins, Timothy O. 3,224,336.
Rogallo, Vernon L. 3,224,263.
Navy: *See*—
Andrews, Zenas B. 3,224,751.
Buehler, William J., and Wiley. 3,224,875.
Cook, Warren G., Mathews, and Hill. 3,224,380.
Fouiger, Orson G. 3,225,277.
Gardiner, Paul C., Jewett, and Broomell. 3,225,325.
Kempton, Marvin L., and Nooker. 3,224,371.
Miller, Marvin O. 3,224,379.
Nooker, Eugene L. 3,224,372.
Nooker, Eugene L., and Galloway. 3,225,172.
Rambo, Sheldon I. 3,225,314.
Raskhodoff, Nicholas M. 3,224,221.
Regelson, Ephraim. 3,225,242.
Schloss, Fred, and Strasberg. 3,224,246.
United States Radium Corp.: *See*—
MacHutchin, John G., Cowan, Allam, and Byler. 3,224,978.
United States Steel Corp.: *See*—
Nickola, Richard A., and Spare. 3,224,087.
Universal Marion Corp.: *See*—
Yadon, Donald E., and Knutson. 3,224,608.
Universal Oil Products Co.: *See*—
Spielman, James F. 3,224,808.
Up-Right, Inc.: *See*—
Fisher, Robert E. 3,224,800.
Upthegrove, William R., to Conch International Methane Ltd. Cold liquid container and elements for use in same. 3,224,621, 12–21–65, Cl. 220—9.
Utility Trailer Mfg. Co.: *See*—
Bennett, Walter. 3,224,500.
VEB Zentrale Entwicklung und Konstruktion fur den Kraftfahrzeugbau: *See*—
Von Ardenne, Manfred, and Panser. 3,224,924.
Valette, Joseph, and G. Volsin, to Societe Lumiere. Reflex-copying. 3,224,352, 12–21–65, Cl. 95—73.
Valtorta, Luigi: *See*—
Becciani, Renato, and Valtorta. 3,224,264.
Van Deberg, Walter H., to Earl A. Thompson Mfg. Co. Method of thickening the wall of a tube. 3,224,243, 12–21–65, Cl. 72—354.
Van der Toorn, Adrianus J.: *See*—
Oberman, Roelof M. M., Kosten, and van der Toorn. 3,224,578.
Van der Weijer, Martinus H. A., R. F. Spiessens, and C. M. La Grouw, to North American Philips Co., Inc. Sodium-vapour discharge lamp. 3,225,244, 12–21–65, Cl. 313—185.
Van Dusee, Gerald R.: *See*—
Burns, Robert L., and Van Dusee. 3,224,592.
Van Dusee, Grant T.: *See*—
Commerford, John D., Scallet, and Van Dusee. 3,224,903.
Van Ike, Clayton. Process of producing an extract of coffee, tea or the like. 3,224,880, 12–21–65, Cl. 99—71.
Van Ness, William C., to The Singer Co. Lock stitch sewing machines. 3,224,397, 12–21–65, Cl. 112—154.
Van Note, Charles O., Jr.: *See*—
Cordary, Bruce J., and Van Note. 3,224,507.
Van Paassen, Hugo L. L., R. J. Allen III, and E. C. Muly, Jr., to Martin Marietta Corp. Cathode glow display using a single cathode electrode. 3,225,261, 12–21–65, Cl. 315—84.5.
Van Roo, Robert P.: *See*—
Fiser, William D., Van Roo, Berry, Anderson, and Korb. 3,224,681.
Van Vulpen, Aalbert: *See*—
Bakker, Martinus A. M., and Van Vulpen. 3,225,273.
Vapor Corp.: *See*—
Fluder, Chester H., Myrent, and Heeney. 3,225,159.
McInerney, Michael J., and Czyl. 3,224,487.
Varta Aktiengesellschaft: *See*—
Hentschel, Fritz. 3,224,905.
Veillette, Omer: *See*—
Giroux, Pierre R. 3,224,303.
Verhoeff, Adrianus: *See*—
Brekoo, Hendrikus P. J., and Verhoeff. 3,225,258.
Vernco Corp.: *See*—
Olmsted, Allan M., and Williams. 3,224,668.
Sprouse, Verner E., and Williams. 3,224,669.
Vernon, Murray, to S. E. & M. Vernon, Inc. Supporting prop or leg for book or binder. 3,224,792, 12–21–65, Cl. 281—33.
Vernon, S. E., & M., Inc.: *See*—
Vernon, Murray. 3,224,792.
Verster, Nico F., and H. L. Hagedoorn, to North American Philips Co., Inc. Pole shoe assembly for a cyclotron electromagnet. 3,225,270, 12–21–65, Cl. 317—158.
Vialaron, André C., to Societe des Produits Azotes. Method and device for the production of gaseous mixtures containing acetylene and ethylene. 3,224,952, 12–21–65, Cl. 204—171.
Vickers, Stanley E., to Imperial Mfg. Co. Hydraulic drill unit. 3,224,301, 12–21–65, Cl. 77—32.7.
Viecell, Joseph L.: *See*—
Jepson, Ivar, Viecell, and Walczak. 3,224,122.
Vigue, Henry R. Egg package. 3,224,618, 12–21–65, Cl. 217—26.5
Vigliante, Frank S.: *See*—
Gebhardy, Robert C., Shafer, Spencer, Toy, Vigliante, Williams, and Williford. 3,225,144.
Vilcsek, Herbert: *See*—
Duch' Eduard, Herbst, Rochlitz, Scherer, and Vilcsek. 3,224,908.
Vinal, Albert W., to International Business Machines Corp. Differential quantitised storage and compression. 3,225,333, 12–21–65, Cl. 340—172.5.
Vincent, Clarence K. Bowling game apparatus and ball resetting and returning mechanism for the same. 3,224,766, 12–21–65, Cl. 273—41.
Virant, Carl W.: *See*—
McKnight, Kenneth W., and Virant. 3,224,581.
Vockenhuber, Karl: *See*—
Mikusch, Berta. 3,224,332.
Vogel, Gerhard: *See*—
Krohs, Walter, Ther, and Vogel. 3,225,098.
Vogt, Richard, to Curtiss-Wright Corp. Booster rocket. 3,224,370. 12–21–65, Cl. 102—49.
Volsin, Georges: *See*—
Valette, Joseph, and Volsin. 3,224,352.
Volk, William: *See*—
Johnson, Clarence A., and Volk. 3,224,870.
Von Ardenne, Manfred, and S. Panser, to VEB Zentrale Entwicklung und Konstruktion fur den Kraftfahrzeugbau. Protective padding. 3,224,924, 12–21–65, Cl. 161—68.
Vono Ltd.: *See*—
Turley, Alfred. 3,224,470.
Von Ohain, Hans J. P.: *See*—
Wattendorf, Frank L., von Ohain, Lawson, and Hasinger. 3,225,225.
Waagner Biro Aktiengeschaft: *See*—
Kemmetmuller, Roland. 3,224,841.
Waas, Fred D.: *See*—
Braus, Harry, and Waas. 3,225,061.
Wade, Kenneth L. Bag assemblage. 3,224,586, 12–21–65, Cl. 210—282.
Wadeson, James D.: *See*—
Sadler, Fred S., and Wadeson. 3,224,902.
Wagner, E. R., Mfg. Co.: *See*—
Himes, John M. 3,224 036.
Wagner, Edward E., to Philip Morris, Inc. Sheet subdividing apparatus. 3,224 811, 12–21–65, Cl. 83—302.
Wagner Electric Corp.: *See*—
Bueler, Richard C. 3,224,842.
Wahlstrom, Magnus, to The Bridgeport Machines Inc. Leverage proportioned tracing machine. 3,224,340, 12–21–65. Cl. 90—13.7.
Waja, Philip I.: *See*—
Koppel, Harold H., and Waja. 3,225,289.
Walczak, Stanley: *See*—
Jepson, Ivar, Viecell, and Walczak. 3,224,122.
Waldemar Medical Research Foundation, Inc.: *See*—
Molomut, Norman, and Scheman. 3,224,434.
Waldron, Robert J., to Chicago Pneumatic Tool Co. Percussive drill with noise silencer. 3,224,527, 12–21–65, Cl. 181—36.
Walker, Lloyd A.: *See*—
Mullins, Darrell D., and Walker. 3,225,100.
Walker, Lloyd A., to Monsanto Co. Process of promoting low hysteresis of rubber using arylenebismethylimides. 3,224,999, 12–21–65, Cl. 260—41.5.
Walker, Lloyd A. to Monsanto Co. Iminomethylenebis-heterocycles. 3,225,045, 12–21–65, Cl. 260—250.
Walker, Lloyd A., to Monsanto Co. 3.3-[p-phenylenebis-(iminomethylene)bis] (2-thiazolinethiones). 3,225,057, 12–21–65, Cl. 260—306.
Walker Roy T.: *See*—
Harrell, David, Jr. 3,224,638.
Wallace, Curtis C., Jr., to E. I. du Pont de Nemours and Co. Impact pulverization-classification. 3,224,686, 12–21–65, Cl. 241—19.
Wallace, Robert T., to Owens-Illinois, Inc. Method of molding a foamed plastic covering on an article. 3,225,124, 12–21–65, Cl. 264—45.

Wallace, Rudolf N., to United Aircraft Corp. Finned envelope heat exchanger. 3,224,502, 12–21–65, Cl. 165—82.
Wallace & Tiernan Inc.: *See*—
Harrison, James B., and Magell. 3,225,079.
Huibers, Derk T. A., and Korczykowski. 3,225,026.
Walsh, Bruce R., to Gulf Research & Development Co. Gas turbine fired with an aspirating burner nozzle. 3,224,195, 12–21–65, Cl. 60—39.74.
Walsh, William L.: *See*—
McNulty, John G., and Walsh. 3,225,113.
Walter, Fred S., to Thermo Electric Co. Inc. Electrical connection for a resistance heater. 3,225,321, 12–21–65, Cl. 338—274.
Walters, Herbert J. Bathtub enclosure door holder. 3,224,046, 12–21–65, Cl. 20—19.
Walters, William T.: *See*—
Wood, Fenton M., and Walters. 3,225,293.
Walulik, Albert: *See*—
Scavuzzo, William J., Walulik, and Casaleggi. 3,224,585.
Wandel, Martin: *See*—
Glabisch, Dietrich, Wandel, and Witte. 3,225,073.
Wankel G.m.b.H: *See*—
Autrum, Werner. 3,224,422.
Ward, Barry J.: *See*—
Blore, James H., and Ward. 3,224,225.
Ward, William E. Clutch unit for power press. 3,224,538, 12–21–65, Cl. 192—85.
Warner Electric Brake & Clutch Co.: *See*—
Mason, James A. 3,224,536.
Warner, Paul F., and E. J. Horning, to Phillips Petroleum Co. Manufacture of mercaptides. 3,225,105, 12–21–65, Cl. 260—609.
Warnken, Elmer P., to Studebaker Corp. Nose cap for a re-entry body. 3,224,374, 12–21–65, Cl. 102—92.5.
Warren, Henry R. and R. P. Heavier-than-air aircraft. 3,224,711, 12–21–65, Cl. 244—23.
Warren, Henry R., to Radio Corp. of America. Magnetic transducer. 3,225,145, 12–21–65, Cl. 179—100.2.
Warren, Raymond W., to United States of America, Army. High-speed counters and fluid forward-backward counters. 3,224,674, 12–21–65, Cl. 235—201.
Warren, Russell P.: *See*—
Warren, Henry R. and R. P. 3,224,711.
Warren, S. D., Co.: *See*—
Spencer, Millard C. 3,224,898.
Watkins, Bruce J., G. D. Johnson, and H. L. Shatto, Jr., to Shell Oil Co. Fluid diverter assembly. 3,224,505, 12–21–65, Cl. 166—.5.
Watson, Roger W.: *See*—
De Young, Edwin L., and Watson. 3,224,970.
Wattendorf, Frank L., H. J. P. von Ohain, M. O. Lawson, and S. H. Hasinger, to said Von Ohain, Lawson, and Hasinger, assor. to United States of America, Air Force. High voltage electrostatic generator. 3,225,225, 12–21–65, Cl. 310—6.
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Weeden, Frank G., Jr. Apparatus for downhole drilling. 3,224,513, 12–21–65, Cl. 175—26.
Weigelwerk AG.: *See*—
Spielvogel, Walter. 3,224,359.
Weigelwerk G.m.b.H.: *See*—
Spielvogel, Walter. 3,224,358.
Weil, Edward D.: *See*—
Dorfman, Edwin, Weil, and Newcomer. 3,225,087.
Weir, Richard L. Device for indicating wind direction and measuring wind speed. 3,224,269, 12–21–65, Cl. 73—189.
Weisenborn, Frank L., to Olin Mathieson Chemical Corp. Ketals of 16 alpha, 17 alpha-dihydroxy-A-norprogesterones. 3 225,064, 12–21–65, Cl. 260—340.5.
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Weiss, Irving: *See*—
Karol, Kenneth N., and Weiss. 3,224,270.
Weiss, Irving F., to ECP Corp. Wire way for electrical control panel. 3,225,264, 12–21–65, Cl. 317—119.
Weissbecker, Ludwig: *See*—
Creamer, Robert M., and Weissbecker. 3,224 900.
Weissman, Samuel I. Optical maser using a liquid rare-earth chelate. 3,225,307, 12–21–65, Cl. 331—94.5.
Welch, Frank J.: *See*—
Zutty, Nathan L., and Welch. 3,224,982.
Welch, Frank J., to Union Carbide Corp. Stabilization of acrolein polymers with secondary amines. 3,225,000, 12–21–65, Cl. 260—45.8.
Welch, Phillip C., and R. W. Mats, to Steelcase, Inc. Back support adjustment for torsion chair. 3,224,807, 12–21–65, Cl. 297—304.
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Wells, Herbert R. and M. M. Baseball game. 3,224,772, 12–21–65, Cl. 273—93.
Wells, Mary M.: *See*—
Wells, Herbert R. and M. M. 3,224,772.
Welsh, Robert M., Jr. Synchro take-off device. 3,225,339, 12–21–65, Cl. 340—198.
Werner, Frank J. Advertising sign. 3,224,125, 12–21–65, Cl. 40—32.
Werner, Heins: *See*—
Freedman, Lawrence I., Tone, and Werner. 3,224,743.
Westbrook, Michael H., to Associated Engineering Ltd. Optical gauging system. 3,224,822, 12–21–65, Cl. 88—14.
Western Union Telegraph Co., The: *See*—
Steeneck, Robert. 3,225,331,
Westinghouse Air Brake Co.: *See*—
Cook, James A., Jr. 3,225,201.
Robinson, William A., Jr. 3,225,190.
Weston Chemical Corp.: *See*—
Friedman, Lester. 3,225,010.
Wetlesen, Robert B. Litter baskets. 3,224,670, 12–21–65, Cl. 232—43.1.
Wheaton, Jack M.: *See*—
Hohl, John, and Wheaton. 3,224,617.
Wherfel, Quentin H.: *See*—
Chabala, Leonard V., and Wherfel. 3,225,170.
White, Edward B., to Synergistic Associates. Article dispenser with nutating oven. 3,224,643, 12–21–65, Cl. 221—150.
White, Erving F.: *See*—
Elsner, Edwin C., and White. 3,224,803.
Whitecraft Industrial Holdings Ltd.: *See*—
Sloan, Frederick R. W., and Spencer-Smith. 3,224,182.
Whited, Ralph E.: *See*—
Bridges, Roy G., Aleson, Hutchings, Whited, and Dyrness. 3,224,040.
Bridges, Roy G., Aleson, Hutchings, Whited, and Dyrness. 3,225,126.
Whiteford, Carlton L., to R. A. Jones & Co., Inc. Protective covers for cans, protective packages thereof and methods of forming and applying such covers. 3,224,575, 12–21–65, Cl. 206—65.
Whiteford, Carlton L., to R. A. Jones & Co., Inc. Plastic carrier-package. 3,224,576, 12–21–65, Cl. 206—65.
Whitehead, Calvert W.: *See*—
Traverso, John J., and Whitehead. 3,225,056.
Whiting, Mark C., to Ethyl Corp. Arene group VIB metal tricarbonyls and process for preparing same. 3,225,071, 12–21–65, Cl. 260—397.2.
Whitmire, William A., to Bigge Drayage Co. Load distribution system for tractor-trailer vehicles. 3,224,597, 12–21–65, Cl. 212—59.
Wickenberg, Chester H., and M. B. Lorenzana, to Sunbeam Corp. Automatic coffee maker. 3,224,360, 12–21–65, Cl. 99—292.
Wiggins, Alpha M., and J. F. Wood, to Euphonics Corp. Phonograph pickup construction for protecting phonograph records. 3,224,783, 12–21–65, Cl. 274—24.
Wilde, Geoffrey L.: *See*—
Taylor, Maurice L., and Wilde. 3,224,712.
Wildhaber, Ernest. Toothed coupling. 3,224,228, 12–21–65, Cl. 64—9.
Wiles, John R.: *See*—
Evans, Norman, and Wiles. 3,224,838.
Wiley, Morris A.: *See*—
Knowles, Edwin C., Wiley, and Kay. 3,224,971.
Wiley, Raymond C.: *See*—
Buehler, William J., and Wiley. 3,224,875.
Wiley, Paul F. Sydnone-containing insecticidal compositions and methods. 3,224,937, 12–21–65, Cl. 167—33.
Wilfert, Gustav, to American Enka Corp. Finishing process and composition comprising ethylenetriazine-urea-formaldehyde resin, melamine-formaldehyde resin and urea-formaldehyde resin. 3,224,991, 12–21–65, Cl. 260—29.4.
Wilkinson, Clarence E.: *See*—
Skelton, William E., and Wilkinson. 3,224,890.
Williams, Allison R.: *See*—
Reid, Karl N., and Williams. 3,224,278.
Williams, Arthur E.: *See*—
Fenner, Ralph L., Yarborough, Williams, and Jansen. 3,224,268.
Williams, Frank H. Equipment for placing cable in conduits. 3,224,732, 12–21–65, Cl. 254—134.3.
Williams, Robert D.: *See*—
Gebhardt, Robert C., Shafer, Spencer, Toy, Vigliante, Williams, and Williford. 3,225,144.
Williams, Vernon H.: *See*—
Olmsted, Allan M., and Williams. 3,224,668.
Sprouse, Verner E., and Williams. 3,224,669.
Williams, William J. Speed responsive switch mechanism for actuating a pair of sequentially operated switches. 3,225,157, 12–21–65, Cl. 200—80.
Williford, Oscar H.: *See*—
Gebhardt, Robert C., Shafer, Spencer, Toy, Vigliante, Williams, and Williford. 3,225,144.
Willis, John D., and C. S. Crowell; said Willis assor. to said Crowell. Stabilised cartons. 3,224,660, 12–21–65, Cl. 229—8.
Willis, Roy L.: *See*—
Sherley, Roy W. 3,224,595.
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Willits, George W., Jr. Metering valve structure. 3,224,650, 12–21–65, Cl. 222—207.
Wills, William T., Jr., to Amated Industries Inc. Quick change tool holder. 3,224,304, 12–21–65, Cl. 82—36.
Wilmoth, Harry L.: *See*—
Wilmoth, John H. and H. L. 3,224,119.
Wilmoth, John H. and H. L. 3,224,120.
Wilmoth, John H. and H. L. Earth moving scraper. 3,224,-119, 12–21–65, Cl. 37—9.
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Winchester, Don B.: *See*—
Turley, James F., and Winchester. 3,225,232.
Winco, Inc.: *See*—
Foster, Robert D., and Thigpen. 3,224,827.
Winkler, Ernest O.: *See*—
Turner, Richard F., and Winkler. 3,224,944.
Winston Research Corp.: *See*—
Johnson, Wayne R. 3,225,137.
Kirilouckas, Albert C. 3,225,233.
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Witherspoon, John F., and R. B. Garey, to United States of America, Navy. Umbilical retract mechanism. 3,224,335, 12–21–65, Cl. 89—1.7.
Witte, Josef: *See*—
Glavisch, Dietrich, Wandel, and Witte. 3,225,073.
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Wittmann, Richard B.: *See*—
Nigrelli, Biagio J., Standley, Wittmann, and King. 3,224,165.
Johns, Robert R., Standley, Wittmann, and Karlovitz. 3,224,166.
Nigrelli, Biagio J., Standley, Ferraro, and Wittmann. 3,224,550.
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Wolfe, Charles M.: *See*—
Strong, Stanley J., and Wolfe. 3,225,206.
Wolfe, John E.: *See*—
Hughes, William C., Wolfe, and Glenn. 3,225,335.
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Lowenstein, Herbert M., and Wolin. 3,224,419.
Wolnes, George I., to Aerojet-General Corp. Safety shield for cutting and creasing apparatus. 3,224,314, 12–21–65, Cl. 83—522.
Wolverine Toy Co.: *See*—
Mehelich, John J. 3,224,776.
Ritz, Linus. 3,224,775.
Wood, Fenton M., and W. T. Walters. Apparatus for inspecting pipe for defects. 3,225,293, 12–21–65, Cl. 324—37.
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Wiggins, Alpha M., and Wood. 3,224,783.
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Woodhead, Alfred W.: *See*—
Schagen, Pieter, Taylor, and Woodhead. 3,225,204.
Woods, Edmund W.: *See*—
Woods, Stanley J., E. W., and H. M. 3,224,049.
Woods, Harry M.: *See*—
Woods, Stanley J., E. W., and H. M. 3,224,049.
Woods, John A.: *See*—
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Worrel, Calvin J.: *See*—
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Worrel, Richard M.: *See*—
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Benjamin, Frank E. 3,224,793.
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Yamamoto, Yoshizo. Centrifugal and torque responsive clutch. 3,224,541, 12–21–65, Cl. 192—105.
Yamamura, Kazuomi: *See*—
Kurimura, Toshio, and Yamamura. 3,225,283.
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Yarborough, Kenneth C.: *See*—
Fenner, Ralph L., Yarborough, Williams, and Jansen. 3,224,268.
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Yeakley, Vernon J.: *See*—
Lehrian, William R., Nelson, and Yeakley. 3,225,111.
Yeary, Edwin N., to Yeary Transfer Co., Inc. Bracket means for side-loading of vehicles. 3,224,614, 12–21–65, Cl. 214—500.
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Yeary, Edwin N. 3,224,614.
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Yendall, Edward F.: *See*—
Lauer, Wilbur H., Roberts, and Yendall. 3,224,209.
Yoshida, Kiyoshi: *See*—
Takagi, Eiichi, Matsuzawa, Yoshida, Shimomura, and Hashizume. 3,225,038.
Zahnradfabrik Friedrichshafen, Aktiengesellschaft: *See*—
Straub, Hermann. 3,224,540.
Zák, František: *See*—
Zeman, Lubomir, Zák, Košela, and Kubíček. 3,224,563.
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Zapapas, James R.: *See*—
Ainsworth Cameron, Blubaugh, Springman, and Zapapas. 3,224,940.
Zavody přesneho strojirenatvi Gottwaldov, narodni podnik: *See*—
Zeman, Lubomir, Zák, Košela, and Kubicek. 3,224,563.
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Maurin, Joseph J., and Ziering. 3,224,619.
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Zitz, Joseph A.: *See*—
Jones, Allen P., Jett, and Zitz. 3,224,702.
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252 : 3,224,014
5— 2 : 3,224,015
327 : 3,224,016
351 : 3,224,017
7— 14.25: 3,224,018
9— 1 : 3,224,019
10— 1 : 3,224,021
15— 4 : 3,224,022
50 : 3,224,023
104.3 : 3,224,024
119 : 3,224,025
250.19: 3,224,026
250.41: 3,224,027
250.42: 3,224,028
513 : 3,224,029
543 : 3,224,030
562 : 3,224,031
16— 26 : 3,224,032
82 : 3,224,033
142 : 3,224,034
163 : 3,224,035
190 : 3,224,036
18— 5 : 3,224,037
3,224,038
3,224,039
3,224,040
8 : 3,224,041
16 : 3,224,042
30 : 3,224,043
33 : 3,224,044
36 : 3,224,045
20— 19 : 3,224,046
69 : 3,224,047
71 : 3,224,048
22— 90 : 3,224,049
158 : 3,224,050
215 : 3,224,051
23— 2 : 3,224,831
14 : 3,224,832
3,224,833
3,224,834
135 : 3,224,835
202 : 3,224,836
230 : 3,224,837
232 : 3,224,838
259.1 : 3,224,839
273 : 3,224,840
277 : 3,224,841
3,224,842
299 : 3,224,843
301 : 3,224,844
312 : 3,224,845
24— 3 : 3,224,052
11 : 3,224,053
16 : 3,224,054
3,224,055
3,224,056
84 : 3,224,057
97 : 3,224,058
103 : 3,224,059
116 : 3,224,060
205.11: 3,224,061
214 : 3,224,062
245 : 3,224,063
25— 41 : 3,224,064
131 : 3,224,065
27— 17 : 3,224,066
28— 4 : 3,224,067
72 : 3,224,068
29— 25.3 : 3,224,069
42 : 3,224,070
155.5 : 3,224,071
3,224,072
3,224,073
3,224,074
3,224,075
155.54: 3,224,076
155.55: 3,224,077
156.8 : 3,224,078
3,224,079
157.1 : 3,224,080
160 : 3,224,081
183.5 : 3,224,846
195 : 3,224,847
203 : 3,224,082

29—243.57: 3,224,083
469 : 3,224,084
493 : 3,224,085
525 : 3,224,086
527 : 3,224,087
529 : 3,224,088
30— 2 : 3,224,089
63 : 3,224,090
142 : 3,224,091
273 : 3,224,092
324 : 3,224,093
346 : 3,224,094
32— 32 : 3,224,095
3,224,096
33— 1 : 3,224,097
30 : 3,224,098
69 : 3,224,099
95 : 3,224,100
143 : 3,224,101
169 : 3,224,102
172 : 3,224,103
3,224,104
179.5 : 3,224,105
180 : 3,224,106
34— 45 : 3,224,107
87 : 3,224,108
92 : 3,224,109
124 : 3,224,110
35— 3 : 3,224,111
9 : 3,224,112
28.3 : 3,224,113
31 : 3,224,114
35 : 3,224,115
48 : 3,224,116
36— 2.5 : 3,224,117
50 : 3,224,118
37— 9 : 3,224,119
3,224,120
58 : 3,224,121
38— 77 : 3,224,122
40— 2 : 3,224,123
30 : 3,224,124
32 : 3,224,125
63 : 3,224,126
86 : 3,224,127
96 : 3,224,128
129 : 3,224,129
158 : 3,224,130
43— 12 : 3,224,131
17.2 : 3,224,132
42.04: 3,224,133
57.5 : 3,224,134
44— 56 : 3,224,848
46— 17 : 3,224,135
22 : 3,224,136
26 : 3,224,137
79 : 3,224,138
118 : 3,224,139
169 : 3,224,140
242 : 3,224,141
243 : 3,224,142
47— 1.4 : 3,224,143
35 : 3,224,144
38.1 : 3,224,145
48—206 : 3,224,849
51— 90 : 3,224,146
281 : 3,224,147
298 : 3,224,850
328 : 3,224,148
386 : 3,224,149
52— 2 : 3,224,150
90 : 3,224,151
217 : 3,224,152
495 : 3,224,153
520 : 3,224,154
593 : 3,224,155
660 : 3,224,156
53— 21 : 3,224,157
22 : 3,224,158
29 : 3,224,159
55 : 3,224,160
228 : 3,224,161
247 : 3,224,162
329 : 3,224,163
331 : 3,224,164
382 : 3,224,165
3,224,166
55— 35 : 3,224,167
208 : 3,224,168
3,224,169

55—256 : 3,224,170
274 : 3,224,171
303 : 3,224,172
408 : 3,224,173
418 : 3,224,174
440 : 3,224,175
56— 7 : 3,224,176
23 : 3,224,177
41 : 3,224,178
310 : 3,224,179
57— 88 : 3,224,180
156 : 3,224,181
157 : 3,224,182
58— 28 : 3,224,183
50 : 3,224,184
59— 86 : 3,224,185
60— 13 : 3,224,186
24 : 3,224,187
30 : 3,224,188
35.3 : 3,224,189
35.54: 3,224,190
35.6 : 3,224,191
3,224,192
3,224,193
3,224,194
39.74: 3,224,195
52 : 3,224,196
53 : 3,224,197
3,224,198
59 : 3,224,199
61— 13 : 3,224,200
41 : 3,224,201
45 : 3,224,202
3,224,203
46.5 : 3,224,204
59 : 3,224,205
62— 3 : 3,224,206
9 : 3,224,207
12 : 3,224,208
14 : 3,224,209
21 : 3,224,210
23 : 3,224,211
40 : 3,224,212
68 : 3,224,213
81 : 3,224,214
120 : 3,224,215
140 : 3,224,216
221 : 3,224,217
239 : 3,224,218
278 : 3,224,219
380 : 3,224,220
414 : 3,224,221
64— 9 : 3,224,222
3,224,223
11 : 3,224,224
65— 4 : 3,224,851
16 : 3,224,852
18 : 3,224,853
135 : 3,224,854
3,224,855
163 : 3,224,856
178 : 3,224,857
185 : 3,224,858
290 : 3,224,859
355 : 3,224,860
66— 9 : 3,224,225
50 : 3,224,226
3,224,227
125 : 3,224,228
132 : 3,224,229
145 : 3,224,230
171 : 3,224,231
67— 3 : 3,224,232
4.1 : 3,224,233
7.1 : 3,224,234
3,224,235
31 : 3,224,236
68—257 : 3,224,237
71— 2.5 : 3,224,861
3,224,862
3,224,863
3,224,864
2.6 : 3,224,865
2.7 : 3,224,866
27 : 3,224,867
72— 56 : 3,224,238
62 : 3,224,239
270 : 3,224,240
297 : 3,224,241
340 : 3,224,242

72—354 : 3,224,243
402 : 3,224,244
73— 1 : 3,224,245
3,224,246
3 : 3,224,247
4 : 3,224,248
12 : 3,224,249
19 : 3,224,250
37.5 : 3,224,251
49.2 : 3,224,252
67 : 3,224,253
71.5 : 3,224,254
71.6 : 3,224,255
88.5 : 3,224,256
3,224,257
95 : 3,224,258
103 : 3,224,259
116 : 3,224,260
133 : 3,224,261
136 : 3,224,262
142 : 3,224,263
146.8 : 3,224,264
147 : 3,224,265
150 : 3,224,266
155 : 3,224,267
189 : 3,224,268
3,224,269
209 : 3,224,270
229 : 3,224,271
231 : 3,224,272
233 : 3,224,273
261 : 3,224,274
304 : 3,224,275
401 : 3,224,276
432 : 3,224,277
510 : 3,224,278
517 : 3,224,279
74— 2 : 3,224,280
5.6 : 3,224,281
10.15: 3,224,282
53 : 3,224,283
119 : 3,224,284
192 : 3,224,285
199 : 3,224,286
230.17: 3,224,287
405 : 3,224,288
421 : 3,224,289
424.5 : 3,224,290
472 : 3,224,291
513 : 3,224,292
562 : 3,224,293
562.5 : 3,224,294
568 : 3,224,295
573 : 3,224,296
675 : 3,224,297
688 : 3,224,298
711 : 3,224,299
796 : 3,224,300
75— 12 : 3,224,868
26 : 3,224,869
3,224,870
34 : 3,224,871
61 : 3,224,872
101 : 3,224,873
108 : 3,224,874
153 : 3,224,875
166 : 3,224,876
77— 32.7 : 3,224,301
81—124.1 : 3,224,302
343 : 3,224,303
82— 36 : 3,224,304
83— 14 : 3,224,305
23 : 3,224,306
35 : 3,224,307
133 : 3,224,308
156 : 3,224,309
157 : 3,224,310
302 : 3,224,311
355 : 3,224,312
422 : 3,224,313
522 : 3,224,314
84—383 : 3,224,315
85— 62 : 3,224,316
86— 1 : 3,224,317
38 : 3,224,318
88— 1 : 3,224,319
14 : 3,224,320
3,224,322
3,224,323
3,224,324

88— 24 : 3,224,325
3,224,326
3,224,327
3,224,328
3,224,329
26 : 3,224,321
57 : 3,224,330
3,224,331
3,224,332
61 : 3,224,333
89— 1.5 : 3,224,334
1.7 : 3,224,335
3,224,336
8 : 3,224,337
90— 11 : 3,224,338
13.1 : 3,224,339
13.7 : 3,224,340
91—165 : 3,224,020
358 : 3,224,341
434 : 3,224,342
436 : 3,224,343
92— 45 : 3,224,344
94 : 3,224,345
94— 22 : 3,224,346
40 : 3,224,347
48 : 3,224,348
95— 4.5 : 3,224,349
10 : 3,224,350
45 : 3,224,351
73 : 3,224,352
76 : 3,224,353
77.5 : 3,224,354
3,224,355
94 : 3,224,356
96— 27 : 3,224,877
49 : 3,224,878
99— 71 : 3,224,879
3,224,880
107 : 3,224,881
123 : 3,224,882
139 : 3,224,883
3,224,884
176 : 3,224,885
204 : 3,224,886
259 : 3,224,357
278 : 3,224,358
3,224,359
3,224,360
332 : 3,224,361
346 : 3,224,362
100— 3 : 3,224,363
101— 37 : 3,224,364
43 : 3,224,365
93 : 3,224,366
226 : 3,224,367
102— 24 : 3,224,368
34.1 : 3,224,369
49 : 3,224,370
67 : 3,224,371
3,224,372
3,224,373
92.5 : 3,224,374
3,224,375
103—103 : 3,224,376
150 : 3,224,377
178 : 3,224,378
104—114 : 3,224,379
3,224,380
105—150 : 3,224,381
282 : 3,224,382
366 : 3,224,383
368 : 3,224,384
369 : 3,224,385
392.5 : 3,224,386
106— 15 : 3,224,890
38.27: 3,224,887
56 : 3,224,888
177 : 3,224,889
213 : 3,224,891
288 : 3,224,892
316 : 3,224,893
107— 14 : 3,224,387
108— 53 : 3,224,388
119 : 3,224,389
132 : 3,224,390
140 : 3,224,391
111— 52 : 3,224,392
112— 2 : 3,224,393
10 : 3,224,394
79 : 3,224,395

112— 79 : 3,224,396
154 : 3,224,397
220 : 3,224,398
262 : 3,224,399
113—116 : 3,224,400
114— .5 : 3,224,401
3,224,402
74 : 3,224,403
230 : 3,224,404
235 : 3,224,405
3,224,406
115— 1 : 3,224,407
12 : 3,224,408
116— 70 : 3,224,409
115 : 3,224,410
117— 11 : 3,224,894
33.5 : 3,224,895
47 : 3,224,896
64 : 3,224,897
76 : 3,224,898
98 : 3,224,899
119 : 3,224,900
138.8 : 3,224,901
143 : 3,224,902
118—408 : 3,224,411
119— 1 : 3,224,412
14.07: 3,224,413
28 : 3,224,414
96 : 3,224,415
120— 36 : 3,224,416
3,224,417
96 : 3,224,418
122—478 : 3,224,419
497 : 3,224,420
123— 8 : 3,224,421
3,224,422
90 : 3,224,423
119 : 3,224,424
122 : 3,224,425
191 : 3,224,426
124— 25 : 3,224,427
126—200 : 3,224,428
202 : 3,224,429
271.2 : 3,224,430
355 : 3,224,431
127— 38 : 3,224,903
128— 1.2 : 3,224,432
2 : 3,224,433
3,224,434
2.05: 3,224,435
2.1 : 3,224,436
9 : 3,224,437
46 : 3,224,438
75 : 3,224,439
84 : 3,224,440
136 : 3,224,441
3,224,442
3,224,443
142 : 3,224,444
218 : 3,224,445
284 : 3,224,446
421 : 3,224,447
529 : 3,224,448
129— 25 : 3,224,449
3,224,450
131— 20 : 3,224,451
140 : 3,224,452
208 : 3,224,453
132— 33 : 3,224,454
134— 4 : 3,224,904
136— 55 : 3,224,905
135 : 3,224,906
146 : 3,224,907
137—113 : 3,224,455
115 : 3,224,456
119 : 3,224,457
3,224,458
155 : 3,224,459
399 : 3,224,460
509 : 3,224,461
625.19: 3,224,462
625.69: 3,224,463
138— 31 : 3,224,464
139— 12 : 3,224,465
20 : 3,224,466
122 : 3,224,467
127 : 3,224,468
249 : 3,224,469
140— 92.3 : 3,224,470
141— 38 : 3,224,471

141–209 : 3,224,472
143– 32 : 3,224,473
43 : 3,224,474
54 : 3,224,475
135 : 3,224,476
144–212 : 3,224,477
320 : 3,224,478
145– 50 : 3,224,479
148– 6.15: 3,224,908
113 : 3,224,909
143 : 3,224,910
175 : 3,224,911
3,224,912
3,224,913
150– 40 : 3,224,480
152–176 : 3,224,481
3,224,482
187 : 3,224,483
410 : 3,224,484
156– 2 : 3,224,914
73 : 3,224,915
3,224,916
108 : 3,224,917
175 : 3,224,918
299 : 3,224,919
315 : 3,224,920
403 : 3,224,921
433 : 3,224,922
158– 1 : 3,224,485
4 : 3,224,486
28 : 3,224,487
73 : 3,224,488
160–135 : 3,224,489
168 : 3,224,490
188 : 3,224,491
189 : 3,224,492
3,224,493
213 : 3,224,494
349 : 3,224,495
368 : 3,224,496
161– 64 : 3,224,923
68 : 3,224,924
162– 93 : 3,224,925
146 : 3,224,926
155 : 3,224,927
214 : 3,224,928
342 : 3,224,929
165– 2 : 3,224,497
5 : 3,224,498
30 : 3,224,499
53 : 3,224,500
81 : 3,224,501
82 : 3,224,502
171 : 3,224,503
185 : 3,224,504
166– .5 : 3,224,505
42 : 3,224,506
55.8 : 3,224,507
120 : 3,224,508
167– 22 : 3,224,930
3,224,931
3,224,932
30 : 3,224,933
3,224,934
3,224,935
3,224,936
33 : 3,224,937
53 : 3,224,938
3,224,939
55 : 3,224,940
3,224,941
73 : 3,224,942
78 : 3,224,943
170–160.5 : 3,224,509
171–127 : 3,224,510
172– 87 : 3,224,511
173– 19 : 3,224,512
174– 25 : 3,225,131
151 : 3,225,132
212 : 3,225,133
175– 26 : 3,224,513
55 : 3,224,514
176– 69 : 3,224,944
177– 1 : 3,224,515
172 : 3,224,516
210 : 3,224,517
3,224,518
3,224,519
3,224,520
246 : 3,224,521
178– 5.4 : 3,225,134
6.6 : 3,225,135
3,225,136
6.7 : 3,225,137
7.2 : 3,225,138
7.3 : 3,225,139
7.8 : 3,225,140
179– 1 : 3,225,141
1.5 : 3,225,142
15 : 3,225,143
27 : 3,225,144

179–100.2 : 3,225,145
100.4 : 3,225,146
156 : 3,225,147
180– 22 : 3,224,522
25 : 3,224,523
26 : 3,224,524
89 : 3,224,525
181– 24 : 3,224,526
36 : 3,224,527
182– 2 : 3,224,528
14 : 3,224,529
33 : 3,224,530
188– 72 : 3,224,531
152 : 3,224,532
189– 35 : 3,224,533
192– 53 : 3,224,534
67 : 3,224,535
81 : 3,224,536
85 : 3,224,537
3,224,538
86 : 3,224,539
90 : 3,224,540
105 : 3,224,541
113 : 3,224,542
145 : 3,224,543
194– 10 : 3,224,544
195– 81 : 3,224,945
116 : 3,224,946
197– 16 : 3,224,545
3,224,546
183 : 3,224,547
198– 25 : 3,224,548
30 : 3,224,549
32 : 3,224,550
3,224,551
33 : 3,224,552
3,224,553
3,224,554
3,224,555
34 : 3,224,556
3,224,557
35 : 3,224,558
38 : 3,224,559
64 : 3,224,560
120.5 : 3,224,561
131 : 3,224,562
3,224,563
163 : 3,224,564
190 : 3,224,565
193 : 3,224,566
202 : 3,224,567
200– 11 : 3,225,148
16 : 3,225,149
33 : 3,225,150
35 : 3,225,151
46 : 3,225,152
50 : 3,225,153
51.09: 3,225,154
3,225,155
67 : 3,225,156
80 : 3,225,157
83 : 3,225,158
87 : 3,225,159
3,225,160
92 : 3,225,161
115.5 : 3,225,162
121 : 3,225,163
3,225,164
122 : 3,225,165
3,225,166
144 : 3,225,167
159 : 3,225,168
166 : 3,225,169
167 : 3,225,170
202–160 : 3,224,947
192 : 3,224,948
204–154 : 3,224,949
158 : 3,224,950
3,224,951
171 : 3,224,952
212 : 3,224,953
206– 44 : 3,224,568
45.31: 3,224,569
47 : 3,224,570
3,224,571
3,224,572
56 : 3,224,574
62 : 3,224,573
65 : 3,224,575
3,224,576
3,224,577
208– 11 : 3,224,954
28 : 3,224,955
33 : 3,224,956
48 : 3,224,957
78 : 3,224,958
107 : 3,224,959
111 : 3,224,960
120 : 3,224,961
138 : 3,224,962
209– 72 : 3,224,578

209– 74 : 3,224,579
121 : 3,224,580
158 : 3,224,581
166 : 3,224,582
210– 4 : 3,224,963
8 : 3,224,964
24 : 3,224,965
90 : 3,224,583
91 : 3,224,584
232 : 3,224,585
282 : 3,224,586
327 : 3,224,588
330 : 3,224,587
374 : 3,224,589
438 : 3,224,590
440 : 3,224,591
493 : 3,224,592
519 : 3,224,593
211– 74 : 3,224,594
83 : 3,224,595
113 : 3,224,596
212– 59 : 3,224,597
213– 1 : 3,224,598
43 : 3,224,599
67 : 3,224,600
75 : 3,224,601
214– 1 : 3,224,602
5.5 : 3,224,603
10 : 3,224,604
16.1 : 3,224,605
17 : 3,224,606
140 : 3,224,607
141 : 3,224,608
305 : 3,224,609
309 : 3,224,610
334 : 3,224,611
3,224,612
396 : 3,224,613
500 : 3,224,614
658 : 3,224,615
215– 7 : 3,224,616
31 : 3,224,617
217– 26.5 : 3,224,618
219– 60 : 3,225,171
94 : 3,225,172
202 : 3,225,173
381 : 3,225,174
220– 3 : 3,224,619
5 : 3,224,620
9 : 3,224,621
3,224,622
3,224,623
15 : 3,224,624
23.83: 3,224,625
27 : 3,224,626
47 : 3,224,627
3,224,628
94 : 3,224,629
103 : 3,224,630
221– 15 : 3,224,631
48 : 3,224,632
3,224,633
150 : 3,224,643
299 : 3,224,634
222– 36 : 3,224,635
41 : 3,224,636
57 : 3,224,637
64 : 3,224,638
68 : 3,224,639
107 : 3,224,640
129.1 : 3,224,641
134 : 3,224,642
162 : 3,224,644
182 : 3,224,645
189 : 3,224,646
190 : 3,224,647
193 : 3,224,648
199 : 3,224,649
207 : 3,224,650
361 : 3,224,651
442 : 3,224,652
462 : 3,224,653
223– 57 : 3,224,654
224– 48 : 3,224,655
226– 57 : 3,224,656
227– 88 : 3,224,657
228– 1 : 3,224,658
229– 4.5 : 3,224,659
8 : 3,224,660
72 : 3,224,661
230– 22 : 3,224,662
29 : 3,224,663
69 : 3,224,664
101 : 3,224,665
120 : 3,224,666
130 : 3,224,667
134 : 3,224,668
3,224,669
232– 43.1 : 3,224,670
234– 50 : 3,224,671
235– 61 : 3,224,672

235– 61.11: 3,225,177
61.7 : 3,225,175
3,225,176
92 : 3,225,178
132 : 3,224,673
151 : 3,225,179
151.33: 3,225,180
158 : 3,225,181
164 : 3,225,182
167 : 3,225,183
201 : 3,224,674
237– 8 : 3,224,675
239– 64 : 3,224,676
101 : 3,224,677
127.1 : 3,224,678
132.3 : 3,224,679
223 : 3,224,680
265.15: 3,224,681
427.3 : 3,224,682
456 : 3,224,683
533 : 3,224,684
240– 1.4 : 3,225,184
8.2 : 3,225,185
10.64: 3,225,186
25 : 3,225,187
41.1 : 3,225,188
90 : 3,225,189
241– 5 : 3,224,685
19 : 3,224,686
55 : 3,224,687
154 : 3,224,688
256 : 3,224,689
242– 3 : 3,224,690
9 : 3,224,691
19 : 3,224,692
35.5 : 3,224,693
3,224,694
45 : 3,224,695
46.3 : 3,224,696
54 : 3,224,697
55 : 3,224,698
55.12: 3,224,699
55.53: 3,224,700
68.1 : 3,224,701
68.4 : 3,224,702
84.21: 3,224,703
95 : 3,224,704
106 : 3,224,705
107.13: 3,224,706
129 : 3,224,707
129.8 : 3,224,708
244– 1 : 3,224,709
14 : 3,224,710
23 : 3,224,711
53 : 3,224,712
102 : 3,224,713
138 : 3,224,714
246– 4 : 3,225,190
248– 29 : 3,224,715
43 : 3,224,716
147 : 3,224,717
158 : 3,224,718
163 : 3,224,719
313 : 3,224,720
339 : 3,224,721
353 : 3,224,722
370 : 3,224,723
417 : 3,224,724
249– 28 : 3,224,725
207 : 3,224,726
250– 43.5 : 3,225,191
49.5 : 3,225,192
71.5 : 3,225,193
3,225,194
3,225,195
83.1 : 3,225,196
3,225,197
3,225,200
83.3 : 3,225,198
3,225,201
3,225,202
83.6 : 3,225,199
106 : 3,225,203
213 : 3,225,204
214 : 3,225,205
219 : 3,225,206
237 : 3,225,207
251– 65 : 3,224,727
149.6 : 3,224,728
327 : 3,224,729
252– 12 : 3,224,966
3,224,967
33.6 : 3,224,968
3,224,969
46.3 : 3,224,970
3,224,971
47 : 3,224,972
49.8 : 3,224,973
51.5 : 3,224,974
3,224,975
119 : 3,224,976

252–301.1 : 3,224,977
3,224,978
414 : 3,224,979
429 : 3,224,980
460 : 3,224,981
254– 10.5 : 3,224,730
131 : 3,224,731
134.3 : 3,224,732
3,224,733
134.6 : 3,224,734
167 : 3,224,735
256– 8 : 3,224,736
259– 1 : 3,224,737
2 : 3,224,738
4 : 3,224,739
8 : 3,224,740
30 : 3,224,741
75 : 3,224,742
85 : 3,224,743
102 : 3,224,744
260– 2.5 : 3,224,982
3,224,983
3,224,984
5 : 3,224,985
9 : 3,224,986
18 : 3,224,987
22 : 3,224,988
23 : 3,224,989
29.2 : 3,224,990
29.4 : 3,224,991
29.6 : 3,224,992
3,224,993
30.6 : 3,224,994
31.4 : 3,224,995
31.8 : 3,224,996
41 : 3,224,997
41.5 : 3,224,998
3,224,999
45.75: 3,225,001
45.8 : 3,225,000
47 : 3,225,002
3,225,003
49 : 3,225,004
67 : 3,225,005
3,225,006
75 : 3,225,007
77.5 : 3,225,008
3,225,009
3,225,010
78 : 3,225,011
3,225,012
3,225,013
78.4 : 3,225,014
3,225,015
3,225,016
3,225,017
79.1 : 3,225,017
88.1 : 3,225,018
88.2 : 3,225,019
93.7 : 3,225,020
3,225,021
94.9 : 3,225,022
3,225,023
3,225,024
176 : 3,225,025
192 : 3,225,026
194 : 3,225,027
209 : 3,225,028
211.5 : 3,225,029
236 : 3,225,030
239 : 3,225,031
3,225,032
239.1 : 3,225,033
239.5 : 3,225,034
3,225,035
239.55: 3,225,036
243 : 3,225,037
3,225,038
247 : 3,225,039
247.1 : 3,225,040
247.5 : 3,225,041
247.7 : 3,225,042
249 : 3,225,043
250 : 3,225,044
3,225,045
252 : 3,225,046
256.4 : 3,225,047
256.5 : 3,225,048
3,225,049
268 : 3,225,050
290 : 3,225,051
293.4 : 3,225,052
294.3 : 3,225,053
295 : 3,225,054
295.5 : 3,225,055
301 : 3,225,056
306 : 3,225,057
306.7 : 3,225,058
306.8 : 3,225,059
309.5 : 3,225,060
313 : 3,225,061
327 : 3,225,062

260–340.2 : 3,225,063
340.5 : 3,225,064
346.3 : 3,225,065
347.3 : 3,225,066
347.4 : 3,225,067
3,225,068
347.5 : 3,225,069
348 : 3,225,070
397.2 : 3,225,071
397.5 : 3,225,072
401 : 3,225,073
404.5 : 3,225,074
414 : 3,225,075
429.7 : 3,225,076
453 : 3,225,077
455 : 3,225,078
463 : 3,225,079
465 : 3,225,080
3,225,081
465.4 : 3,225,082
465.8 : 3,225,083
468 : 3,225,084
470 : 3,225,085
504 : 3,225,086
515 : 3,225,087
3,225,088
537 : 3,225,089
551 : 3,225,090
558 : 3,225,091
3,225,092
3,225,093
570 : 3,225,094
570.5 : 3,225,095
3,225,096
570.8 : 3,225,097
3,225,098
570.9 : 3,225,099
577 : 3,225,100
583 : 3,225,101
598 : 3,225,102
606.5 : 3,225,103
607 : 3,225,104
609 : 3,225,105
649 : 3,225,106
652 : 3,225,107
652.5 : 3,225,108
653.7 : 3,225,109
665 : 3,225,110
672 : 3,225,111
677 : 3,225,112
3,225,113
857 : 3,225,114
861 : 3,225,115
864 : 3,225,116
872 : 3,225,117
874 : 3,225,118
3,225,119
3,225,120
3,225,121
894 : 3,225,122
261– 35 : 3,224,745
50 : 3,224,746
263– 41 : 3,224,747
264– 1 : 3,225,123
45 : 3,225,124
50 : 3,225,125
51 : 3,225,126
54 : 3,225,127
216 : 3,225,128
230 : 3,225,129
312 : 3,225,130
266– 23 : 3,224,748
34 : 3,224,749
35 : 3,224,750
267– 1 : 3,224,751
269– 6 : 3,224,752
91 : 3,224,753
108 : 3,224,754
245 : 3,224,755
270– 31 : 3,224,756
271– 10 : 3,224,757
64 : 3,224,758
3,224,759
68 : 3,224,760
3,224,761
272– 1 : 3,224,762
56.5 : 3,224,763
59 : 3,224,764
79 : 3,224,765
273– 41 : 3,224,766
54 : 3,224,767
3,224,768
82 : 3,224,769
3,224,770
86 : 3,224,771
93 : 3,224,772
3,224,773
97 : 3,224,774
121 : 3,224,775
3,224,776
123 : 3,224,777

273–130 : 3,224,778
144 : 3,224,779
148 : 3,224,780
162 : 3,224,781
274– 14 : 3,224,782
24 : 3,224,783
279– 96 : 3,224,784
280– 11.2 : 3,224,785
11.35: 3,224,786
33.99: 3,224,787
47.26: 3,224,789
47.37: 3,224,790
154.5 : 3,224,791
434 : 3,224,788
281– 33 : 3,224,792
285– 8 : 3,224,793
40 : 3,224,794
114 : 3,224,795
161 : 3,224,796
288 : 3,224,797
3,224,798
334 : 3,224,799
287– 62 : 3,224,800
90 : 3,224,801
292–246 : 3,224,802
294– 83 : 3,224,803
3,224,804
296– 10 : 3,224,805
297–136 : 3,224,806
304 : 3,224,807
341 : 3,224,808
391 : 3,224,809
451 : 3,224,810
298– 10 : 3,224,811

302– 28 : 3,224,812
49 : 3,224,813
64 : 3,224,814
303– 71 : 3,224,815
84 : 3,224,816
307– 43 : 3,225,208
80 : 3,225,209
88 : 3,225,210
3,225,211
88.5 : 3,225,212
3,225,213
3,225,214
3,225,215
3,225,216
3,225,217
3,225,218
3,225,219
3,225,220
3,225,221
101 : 3,225,222
108 : 3,225,223
157 : 3,225,224
308– 3.5 : 3,224,817
10 : 3,224,818
132 : 3,224,819
155 : 3,224,820
187.2 : 3,224,821
310– 6 : 3,225,225
8.6 : 3,225,226
11 : 3,225,227
12 : 3,225,228
40 : 3,225,229
50 : 3,225,230
64 : 3,225,231

310– 68 : 3,225,232
154 : 3,225,233
246 : 3,225,234
268 : 3,225,235
312– 71 : 3,224,822
108 : 3,224,823
183 : 3,224,824
223 : 3,224,825
3,224,826
266 : 3,224,827
313– 63 : 3,225,236
65 : 3,225,237
3,225,240
92 : 3,225,238
103 : 3,225,239
109 : 3,225,241
110 : 3,225,242
112 : 3,225,243
185 : 3,225,244
231 : 3,225,245
270 : 3,225,246
271 : 3,225,247
315– 31 : 3,225,248
39.71: 3,225,249
82 : 3,225,250
84.5 : 3,225,251
111 : 3,225,252
150 : 3,225,253
163 : 3,225,254
232 : 3,225,255
317– 28 : 3,225,256
33 : 3,225,257
99 : 3,225,258
3,225,259

317–101 : 3,225,260
3,225,261
3,225,262
112 : 3,225,263
119 : 3,225,264
138 : 3,225,265
3,225,266
142 : 3,225,267
148.5 : 3,225,268
158 : 3,225,269
3,225,270
200 : 3,225,271
235 : 3,225,272
237 : 3,225,273
249 : 3,225,274
3,225,275
256 : 3,225,276
318–138 : 3,225,277
145 : 3,225,278
162 : 3,225,279
246 : 3,225,280
261 : 3,225,281
321– 3 : 3,225,282
16 : 3,225,283
322– 28 : 3,225,284
51 : 3,225,285
61 : 3,225,286
68 : 3,225,287
73 : 3,225,288
323– 51 : 3,225,289
89 : 3,225,290
3,225,291
3,225,292

324– 37 : 3,225,293
40 : 3,225,294
58 : 3,225,295
61 : 3,225,296
62 : 3,225,297
30 : 3,225,305
70 : 3,225,299
325–132 : 3,225,300
328– 63 : 3,225,301
270 : 3,225,302
329–102 : 3,225,303
330– 28 : 3,225,304
30 : 3,225,305
331– 94.5 : 3,225,306
3,225,307
98 : 3,225,308
111 : 3,225,309
3,225,310
113 : 3,225,311
157 : 3,225,312
173 : 3,225,313
332– 7 : 3,225,314
11 : 3,225,315
45 : 3,225,316
52 : 3,225,317
333– 24.2 : 3,225,318
336–180 : 3,225,319
338– 22 : 3,225,320
274 : 3,225,321
339– 18 : 3,225,322
174 : 3,225,323
192 : 3,225,324
340– 3 : 3,225,325

340– 8 : 3,225,326
17 : 3,225,327
3,225,328
146.3 : 3,225,329
147 : 3,225,330
166 : 3,225,331
172.5 : 3,225,332
3,225,333
3,225,334
173 : 3,225,335
174 : 3,225,336
174.1 : 3,225,337
3,225,338
198 : 3,225,339
239 : 3,225,340
261 : 3,225,341
324 : 3,225,342
331 : 3,225,343
347 : 3,225,344
3,225,345
3,225,346
3,225,347
351 : 3,225,348
343– 7.7 : 3,225,349
112 : 3,225,350
731 : 3,225,351
346– 1 : 3,225,352
109 : 3,225,353
3,225,354
3,225,355
352– 27 : 3,224,828
131 : 3,224,829
180 : 3,224,830

CLASSIFICATION OF DESIGNS

D 1– 12 : 203,248
203,249
D 3– 4 : 203,250
9 : 203,251
13 : 203,252
D 4– 4 : 203,253
D 9– 2 : 203,254
D14– 3 : 203,255
203,256
203,257
203,258
203,259
30 : 203,260
D15– 1 : 203,261

D15– 1 : 203,262
11 : 203,263
D16– 2 : 203,264
D17– 3 : 203,265
D18– 2 : 203,266
203,267
D22– 3 : 203,268
4 : 203,269
D26– 1 : 203,270
13 : 203,271
14 : 203,272
D31– 4 : 203,273
D33– 3 : 203,274
14 : 203,275

D33– 14 : 203,276
203,277
D34– 4 : 203,278
5 : 203,279
203,280
203,281
203,282
15 : 203,283
203,284
D36– 8 : 203,285
D41– 1 : 203,286
D44– 10 : 203,287
203,288

D44– 22 : 203,289
D48– 2 : 203,290
16 : 203,291
27 : 203,292
31 : 203,293
203,294
D54– 1 : 203,295
13 : 203,296
203,297
203,298
203,299
D55– 1 : 203,300
D56– 1 : 203,301

D56– 4 : 203,302
D57– 1 : 203,303
D58– 9 : 203,304
12.7 : 203,305
203,306
D64– 11 : 203,307
203,308
D65– 1 : 203,309
D70– 1 : 203,310
D83– 1 : 203,311
D85– 2 : 203,312
203,313
D86– 10 : 203,314

D87– 5 : 203,315
D90– 14 : 203,316
20 : 203,317
203,318
203,319
203,320
203,321
D91– 1 : 203,322
3 : 203,323
203,324
D92– 26 : 203,325
203,326
203,327

CLASSIFICATION OF PLANTS

P. – 41 : 2,580

GEOGRAPHICAL INDEX OF RESIDENCE OF INVENTORS

(U.S. States, Territories and Armed Forces, the Commonwealth of Puerto Rico, and the Canal Zone)

Alabama	1	Louisiana	17	Pennsylvania	37
Alaska	53	Maine	18	Puerto Rico	51
Arizona	2	Maryland	19	Rhode Island	38
Arkansas	3	Massachusetts	20	South Carolina	39
California	4	Michigan	21	South Dakota	40
Canal Zone	57	Minnesota	22	Tennessee	41
Colorado	5	Mississippi	23	Texas	42
Connecticut	6	Missouri	24	U.S. Army	55
Delaware	7	Montana	25	U.S. Air Force	54
District of Columbia	8	Nebraska	26	U.S. Navy	56
Florida	9	Nevada	27	U.S. Samoa	59
Georgia	10	New Hampshire	28	Utah	43
Guam	58	New Jersey	29	Vermont	44
Hawaii	50	New Mexico	30	Virgin Islands	52
Idaho	11	New York	31	Virginia	45
Illinois	12	North Carolina	32	Washington	46
Indiana	13	North Dakota	33	West Virginia	47
Iowa	14	Ohio	34	Wisconsin	48
Kansas	15	Oklahoma	35	Wyoming	49
Kentucky	16	Oregon	36		

(First number in listing denotes location according to above key. Refer to patent number in body of the Official Gazette to obtain details as to inventor name, location, etc.)

PATENTS

1 : 3,224,041
3,224,336
3,224,681
3,224,701
2 : 3,224,760
3,224,805
3,224,921
3,225,334
3 : 3,224,112
3,224,129
3,224,216
3,224,732
4 : 3,224,015
3,224,024
3,224,029
3,224,031
3,224,040
3,224,053
3,224,080
3,224,082
3,224,083
3,224,096
3,224,098
3,224,103
3,224,108
3,224,115
3,224,119
3,224,120
3,224,128
3,224,136
3,224,143
3,224,145
3,224,148
3,224,149
3,224,154
3,224,160
3,224,162
3,224,178
3,224,186
3,224,188
3,224,201
3,224,217
3,224,238
3,224,249
3,224,250
3,224,252
3,224,254
3,224,255
3,224,258
3,224,263
3,224,265
3,224,268
3,224,273
3,224,274

4 : 3,224,279
3,224,284
3,224,289
3,224,293
3,224,302
3,224,304
3,224,308
3,224,314
3,224,315
3,224,317
3,224,333
3,224,334
3,224,335
3,224,337
3,224,338
3,224,339
3,224,357
3,224,370
3,224,373
3,224,379
3,224,381
3,224,385
3,224,390
3,224,392
3,224,400
3,224,417
3,224,425
3,224,430
3,224,490
3,224,500
3,224,505
3,224,507
3,224,517
3,224,524
3,224,548
3,224,559
3,224,577
3,224,579
3,224,580
3,224,596
3,224,597
3,224,610
3,224,628
3,224,640
3,224,656
3,224,665
3,224,672
3,224,675
3,224,676
3,224,678
3,224,690
3,224,697
3,224,699
3,224,700

4 : 3,224,704
3,224,707
3,224,727
3,224,731
3,224,737
3,224,751
3,224,752
3,224,755
3,224,762
3,224,772
3,224,773
3,224,778
3,224,784
3,224,785
3,224,797
3,224,798
3,224,800
3,224,803
3,224,806
3,224,816
3,224,822
3,224,830
3,224,840
3,224,845
3,224,848
3,224,849
3,224,870
3,224,877
3,224,880
3,224,919
3,224,944
3,224,950
3,224,953
3,224,954
3,224,958
3,224,959
3,224,960
3,224,969
3,224,977
3,225,017
3,225,035
3,225,046
3,225,070
3,225,082
3,225,083
3,225,123
3,225,126
3,225,134
3,225,136
3,225,137
3,225,141
3,225,171
3,225,181
3,225,183

4 : 3,225,188
3,225,191
3,225,193
3,225,198
3,225,206
3,225,213
3,225,215
3,225,218
3,225,227
3,225,228
3,225,233
3,225,236
3,225,242
3,225,254
3,225,261
3,225,277
3,225,278
3,225,279
3,225,285
3,225,298
3,225,310
3,225,347
3,225,351
5 : 3,224,059
3,224,131
3,224,189
3,224,192
3,224,433
3,224,436
3,224,483
3,224,489
3,224,608
3,224,623
3,224,685
3,224,709
3,224,818
3,224,948
3,225,269
3,225,352
3,225,353
3,225,354
3,225,355
6 : 3,224,057
3,224,061
3,224,169
3,224,332
3,224,340
3,224,406
3,224,419
3,224,498
3,224,502
3,224,518
3,224,554
3,224,575

6 : 3,224,576
3,224,684
3,224,808
3,224,916
3,225,036
3,225,090
3,225,103
3,225,106
3,225,148
3,225,151
3,225,153
3,225,155
3,225,156
3,225,186
3,225,282
3,225,340
7 : 3,224,161
3,224,615
3,224,641
3,224,686
3,224,743
3,224,865
3,224,932
3,224,943
3,224,946
3,224,979
3,224,985
3,224,986
3,225,066
3,225,067
3,225,068
3,225,069
3,225,094
3,225,129
8 : 3,224,173
3,224,253
3,224,661
3,225,163
9 : 3,224,064
3,224,152
3,224,218
3,224,229
3,224,438
3,224,439
3,224,453
3,224,457
3,224,458
3,224,462
3,224,567
3,224,703
3,224,711
3,224,788
3,225,308
3,225,318

10 : 3,224,025
3,224,060
3,224,200
3,224,305
3,224,396
3,224,582
3,224,917
11 : 3,224,510
12 : 3,224,014
3,224,033
3,224,034
3,224,049
3,224,052
3,224,065
3,224,066
3,224,075
3,224,097
3,224,102
3,224,113
3,224,122
3,224,124
3,224,126
3,224,135
3,224,137
3,224,153
3,224,165
3,224,166
3,224,174
3,224,183
3,224,212
3,224,239
3,224,260
3,224,277
3,224,282
3,224,290
3,224,327
3,224,341
3,224,354
3,224,355
3,224,360
3,224,377
3,224,384
3,224,386
3,224,387
3,224,404
3,224,444
3,224,448
3,224,449
3,224,450
3,224,484
3,224,485
3,224,487
3,224,488
3,224,497

12 : 3,224,515
3,224,537
3,224,550
3,224,551
3,224,555
3,224,587
3,224,592
3,224,599
3,224,600
3,224,616
3,224,620
3,224,625
3,224,646
3,224,649
3,224,650
3,224,683
3,224,713
3,224,720
3,224,721
3,224,725
3,224,742
3,224,793
3,224,815
3,224,823
3,224,824
3,224,868
3,224,878
3,224,882
3,224,885
3,224,891
3,224,957
3,224,961
3,224,989
3,224,998
3,225,054
3,225,112
3,225,139
3,225,143
3,225,157
3,225,159
3,225,168
3,225,170
3,225,203
3,225,255
3,225,259
3,225,281
3,225,305
13 : 3,224,088
3,224,247
3,224,299
3,224,383
3,224,388
3,224,420
3,224,528
3,224,598
3,224,668
3,224,669
3,224,770
3,224,817
3,224,819
3,224,937
3,224,939
3,224,940
3,224,941
3,224,951
3,224,983
3,224,992
3,225,008
3,225,009
3,225,014
3,225,015
3,225,024
3,225,030
3,225,038
3,225,042
3,225,053
3,225,056
3,225,063
3,225,091
3,225,096
3,225,133
3,225,180
3,225,189
3,225,286
14 : 3,224,032
3,224,132
3,224,414
3,225,209
3,225,262
3,225,313
15 : 3,224,177
3,224,745
3,224,764
16 : 3,224,081
3,224,107
3,224,158
3,224,297
3,224,545
3,224,546
3,224,603
3,224,614

16 : 3,224,744
3,225,299
17 : 3,224,833
3,224,834
3,224,995
18 : 3,224,618
3,224,898
19 : 3,224,141
3,224,221
3,224,372
3,224,474
3,224,557
3,224,611
3,224,735
3,224,736
3,224,821
3,224,875
3,225,101
3,225,164
3,225,172
3,225,230
3,225,251
3,225,265
3,225,314
3,225,329
20 : 3,224,048
3,224,062
3,224,074
3,224,091
3,224,106
3,224,157
3,224,159
3,224,224
3,224,225
3,224,245
3,224,259
3,224,262
3,224,278
3,224,280
3,224,344
3,224,413
3,224,467
3,224,480
3,224,526
3,224,529
3,224,566
3,224,571
3,224,573
3,224,651
3,224,687
3,224,787
3,224,851
3,224,879
3,224,929
3,225,041
3,225,177
3,225,202
3,225,229
3,225,241
3,225,247
3,225,295
3,225,326
3,225,338
21 : 3,224,039
3,224,054
3,224,114
3,224,123
3,224,147
3,224,197
3,224,243
3,224,251
3,224,294
3,224,316
3,224,411
3,224,431
3,224,516
3,224,530
3,224,532
3,224,536
3,224,542
3,224,553
3,224,583
3,224,584
3,224,636
3,224,642
3,224,680
3,224,728
3,224,769
3,224,791
3,224,794
3,224,807
3,224,811
3,224,831
3,224,835
3,224,930
3,224,931
3,224,933
3,224,934
3,224,935
3,224,968

21 : 3,224,972
3,224,973
3,224,974
3,224,975
3,224,981
3,225,092
3,225,099
3,225,130
3,225,150
3,225,239
3,225,243
3,225,250
3,225,272
22 : 3,224,163
3,224,275
3,224,368
3,224,427
3,224,511
3,224,581
3,224,612
3,224,634
3,224,652
3,224,673
3,224,723
3,224,740
3,224,780
3,224,842
3,224,873
3,224,876
3,224,893
3,224,966
3,225,004
3,225,013
3,225,028
3,225,216
3,225,222
3,225,301
3,225,303
3,225,311
3,225,320
23 : 3,224,389
24 : 3,224,009
3,224,125
3,224,342
3,224,526
3,224,733
3,224,754
3,224,864
3,224,901
3,224,903
3,224,910
3,224,911
3,224,912
3,224,913
3,224,936
3,225,116
3,225,158
3,225,161
3,225,307
3,225,341
26 : 3,224,496
3,224,765
28 : 3,224,309
3,224,705
29 : 3,224,056
3,224,069
3,224,094
3,224,111
3,224,193
3,224,194
3,224,205
3,224,213
3,224,219
3,224,270
3,224,283
3,224,306
3,224,326
3,224,328
3,224,330
3,224,331
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DESIGN PATENTS

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PLANT PATENTS

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U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

December 21, 1965 Volume 821 Number 3

TRADEMARKS

NOTICES

Notice of Tentative Recordation of a Trade Name

[T.D. 56491]

Tentative recordation of trade name under section 42, Trademark Act of 1946, and section 11.16, Customs Regulations

TREASURY DEPARTMENT,
OFFICE OF THE COMMISSIONER OF CUSTOMS,
Washington, D.C., Sept. 27, 1965.

To Collectors of Customs and Others Concerned:

An application has been filed in the Treasury Department for the recordation of the following-described trade name under the provisions of section 42, Trademark Act of 1946, and section 11.16, Customs Regulations:

"DUETEENO ORIGINALS," a trade name used by Swissknit Manufacturing, Inc., a corporation organized under and by virtue of the laws of the State of New York, located and doing business at 112 West 34th Street, New York, New York. The trade name is associated with imported children's wearing apparel manufactured in various Far-Eastern areas.

Any person who on or before November 15, 1965, notifies the Commissioner of Customs, Washington, D.C., 20226, of his opposition to the recordation of the trade name described above will be furnished with a copy of the application for recordation, the documents filed in support of the application, and instructions as to the procedure to be followed to file a formal notice of such opposition. The customs officers concerned will be advised of the filing of any opposition proceeding.

Until December 1, 1965, or until final determination has been made in any case in which notice has been received of the filing of an opposition proceeding, any article of foreign manufacture which bears a name or mark copying or simulating the trade name described above shall be detained, without seizure. Thereafter, the articles so detained shall be treated in accordance with the provisions of section 11.17 of the Customs Regulations.

LESTER D. JOHNSON,
Commissioner of Customs.

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 337,404(a) (POLAROID), Sheet Polarizer Company, Inc., Composite material comprising suspensions of

CONDITION OF TRADEMARK APPLICATIONS AS OF OCTOBER 31, 1965

Total number of applications awaiting action [excluding renewals and Sec. 12 (c)]	17,985
Date of oldest new application	Mar. 17, 1965
Date of oldest amended application	Mar. 1, 1965

C. M. WENDT, Director, Trademark Examining Operation

TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application: New	Oldest Application: Amended
(I) L. J. BETTENDORF (Acting), Classes 2, 4, 5, 8, 11, 12, 13, 14, 15, 16, 17, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 39, 41, 42, 43, 44	3-17-65	3-1-65
(II) H. E. KASCHUB, Classes 1, 3, 6, 7, 9, 10, 18, 22, 27, 38, 40, 45, 46, 47, 48, 49, 50, 51, 52; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, 107; Collective Membership Marks, Class 200; Certification Marks, Classes A and B	4-12-65	4-2-65
Renewals (All Classes)	10-5-65	.....
Sec. 12 (c) Publications (All Classes)	10-13-65	.....

Applications filed during the month of October 1965—2,989

Registrations Issued ..... 295—No. 800,532 to No. 800,826
Renewals Issued 60

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, $12.00 per annum, foreign mailing $4.00 additional; single copies, 25 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 20 cents each. Address orders to the Commissioner of Patents, Washington, D.C., 20231.

crystalline particles in a light-transmitting medium adapted to be used in connection with optical devices such as microscope eye pieces, glare eliminators, variable density diaphragms, gem testers and the like; Reg. No. 388,047, same, Polaroid Corporation, Small cases adapted to contain filters, eye glasses and similar articles; Reg. No. 388,251(a), same, Glass sheets and laminations of glass sheets; Reg. No. 388,721, same, Stereoscopic viewers and the like; Reg. No. 388,722(a), same, Electric lamps; Reg. No. 391,449, same, Hand tools in the nature of pliers; Reg. No. 394,030(a), same, Transparent organic plastic material in the form of sheets or blocks; Reg. No. 396,917, same, Printing inks; Reg. No. 399,122, same, Lacquers and lacquer thinners; Reg. No. 399,329(a), same, Viewing devices—namely, filters, lenses, eyeglasses, and goggles; Reg. No. 404,054, same, Optical bench elements; Reg. No. 422,100, same, Photographic processing tanks, squeegees, and printing rolls for photographic use; Reg. No. 423,776, same, Sodium chloride photographic fixing baths and fixing bath replenishers, photographic wash-off baths, photographic developers, and printing solutions; Reg. No. 426,802, same, Publications relating to the polarization of light and instruction manuals relating to the various fields of application thereof, said publications and manuals being issued from time to time; Reg. No. 540,179(a), same, Light-polarizing organic plastic in sheet form for further manufacture, photographic cameras, photographic camera shutters, photographic exposure meters, etc.; Reg. No. 579,966(a), same, Intermittent photographic instruction manuals and publications, and photographic prints and enlargements; Reg. No. 588,350, same, X-ray film cassettes and X-ray film processing apparatus; Reg. No. 604,529, same, Interocular calculators, i.e., printed charts with movable parts for calculating interocular distances in connection with the projection of stereoscopic film; Reg. No. 605,134, same, Three-dimensional projection accessories—namely, projection filters, focusing filters, brightness match filters, etc.; Reg. No. 607,263, same, Camera cases, exposure meter cases, master compartment cases, etc.; Reg. No. 608,397, same, Electronic flash adapter cords; Reg. No. 621,256, same, Photographic lens shades; Reg. No. 670,504, same, Sheets of optically anisotropic plastics, resins or gums, and more specifically fractional wave retardation sheets of the said materials; Reg. No. 689,966(a), same, Photographic apparatus, accessories and supplies, and more specifically, adhesively coated backings for photographic prints, bounce flash adapters, etc.; Reg. No. 730,072(a), same, Photographic apparatus, products, accessories, and supplies and more specifically, apparatus for providing a light pulse (wink-lights), batteries, etc.; Reg. No. 737,706, same, Photographic reagents—namely, dyes and developing agents, fixing agents, development accelerating agents, etc.; Reg. No. 738,699, same, Safety helmets; Reg. No. 741,953, same, Timepieces and more particularly, clocks, filed Mar. 23, 1965, D.C., N.D. Ill. (Chicago), Doc. 65c437, *Polaroid Corporation* v. *Polaris Engineering Co.* Consent judgment; trademarks held valid and infringed; defendant enjoined Oct. 25, 1965.

Reg. No. 337,404(b); Reg. No. 388,251(b); Reg. No. 388,722(b); Reg. No. 394,030(b); Reg. No. 399,329(b); Reg. No. 619,487 (POLAPAN), Polaroid Corporation, Sensitized photographic film and sensitized photographic papers; Reg. No. 689,966 (POLA-LINE), same; Reg. No. 704,615 (POLAPAK), same, Sensitized photographic film, sensitized photographic papers, and photographic film packs; Reg. No. 707,490 (POLACHROME), same, Sensitized photographic film and sensitized photographic papers adapted to be used in a photographic camera employing a diffusion transfer process; Reg. No. 732,138 (POLACOLOR), same, Photographic products and more specifically, sensitized photographic film and sensitized photographic papers; Reg. No. 739,042, same, Photographic prints; Reg. No. 762,287 (POLASCOPE), same, Sensitized photographic film and sensitized photographic papers, filed Nov. 16, 1965, D.C. Del. (Wilmington), Doc. 3113, *Polaroid Corporation* v. *Ferrodynamics Corporation.*

Reg. No. 388,047. (See Reg. No. 337,404(a).)

Reg. No. 388,251 (a and b). (See Reg. No. 337,404 (a and b).)

Reg. No. 388,721. (See Reg. No. 337,404(a).)

Reg. No. 388,722 (a and b). (See Reg. No. 337,404 (a and b).)

Reg. No. 391,449. (See Reg. No. 337,404(a).)

Reg. No. 394,030 (a and b). (See Reg. No. 337,404 (a and b).)

Reg. No. 396,917. (See Reg. No. 337,404(a).)

Reg. No. 399,122. (See Reg. No. 337,404(a).)

Reg. No. 399,329 (a and b). (See Reg. No. 337,404 (a and b).)

Reg. No. 404,054. (See Reg. No. 337,404(a).)

Reg. No. 422,100. (See Reg. No. 337,404(a).)

Reg. No. 423,776. (See Reg. No. 337,404(a).)

Reg. No. 426,802. (See Reg. No. 337,404(a).)

Reg. No. 540,179(a). (See Reg. No. 337,404(a).)

Reg. No. 540,179(b); Reg. No. 579,966(b); Reg. No. 689,966(b); Reg. No. 730,072(b), filed Nov. 12, 1965, D.C., E.D. Mich. (Detroit), Doc. 27724, *Polaroid Corporation* v. *Neil Douglas.*

Reg. No. 579,966(a). (See Reg. No. 337,404(a).)

Reg. No. 579,966(b). (See Reg. No. 540,179(b).)

Reg. No. 588,350. (See Reg. No. 337,404(a).)

Reg. No. 604,529. (See Reg. No. 337,404(a).)

Reg. No. 605,134. (See Reg. No. 337,404(a).)

Reg. No. 607,263. (See Reg. No. 337,404(a).)

Reg. No. 608,397. (See Reg. No. 337,404(a).)

Reg. No. 619,487. (See Reg. No. 337,404(b).)

Reg. No. 621,256. (See Reg. No. 337,404(a).)

Reg. No. 670,504. (See Reg. No. 337,404(a).)

Reg. No. 689,966(a). (See Reg. No. 337,404(a).)

Reg. No. 689,966(b). (See Reg. No. 540,179(b).)

Reg. No. 699,263. (See Reg. No. 337,404(b).)

Reg. No. 704,615. (See Reg. No. 337,404(b).)

Reg. No. 707,490. (See Reg. No. 337,404(b).)

Reg. No. 730,072(a). (See Reg. No. 337,404(a).)

Reg. No. 730,072(b). (See Reg. No. 540,179(b).)

Reg. No. 732,138. (See Reg. No. 337,404(b).)

Reg. No. 737,706. (See Reg. No. 337,404(a).)

Reg. No. 738,699. (See Reg. No. 337,404(a).)

Reg. No. 739,042. (See Reg. No. 337,404(b).)

Reg. No. 741,953. (See Reg. No. 337,404(a).)

Reg. No. 762,287. (See Reg. No. 337,404(b).)

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 175,720. Canvas Specialty Mfg. Co., Los Angeles, Calif. Filed Aug. 26, 1963.

CS BRAND

Applicant disclaims the word "Brand" apart from the mark as shown.

Class 22—Games, Toys, and Sporting Goods

For Tents, Sleeping Bags, Life Jackets, Boat Cushions, Ski Belts, Sleeping Bag Liners, Air Mattresses, and Water Bags.

Class 50—Merchandise Not Otherwise Classified

For Canvas Products—Namely, Tarpaulins and Auto Covers.

First use Jan. 25, 1960.

SN 175,721. Canvas Specialty Mfg. Co., Los Angeles, Calif. Filed Aug. 26, 1963.

C. S. BRAND

Applicant disclaims the word "Brand" apart from the mark as shown.

Class 22—Games, Toys, and Sporting Goods

For Tents, Sleeping Bags, Life Jackets, Boat Cushions, Ski Belts, Sleeping Bag Liners, Air Mattresses, and Water Bags.

Class 50—Merchandise Not Otherwise Classified

For Canvas Products—Namely, Tarpaulins and Auto Covers.

First use Jan. 31, 1958.

SN 183,614. Montblanc-Simplo G.m.b.H., Hamburg, Germany. Filed Dec. 24, 1966.

MONTBLANC

Class 11—Inks and Inking Materials

For Ball Point Paste and Fountain Pen Ink.
First use 1955; in commerce 1963.

Class 37—Paper and Stationery

For Fountain Pens, Cases for Fountain Pens, Mechanical Pencils, Lead for Mechanical Pencils, Ball Point Pens, and Ball Point Cartridges.
First use 1913; in commerce 1913.

SN 192,819. Green Lawn Laboratories, Inc., Skokie, Ill. Filed May 6, 1964.

LAWN DOCTOR

Applicant disclaims exclusive use of the word "Lawn" apart from the mark as shown.

Class 100—Miscellaneous

For Consultant and Advisory Services in the Field of Lawn Care.

Class 103—Construction and Repair

For Lawn Maintenance Services.

First use on or about Mar. 18, 1959.

SN 194,632. The May Department Stores Company, St. Louis, Mo. Filed June 1, 1964.

DURACREST

Owner of Reg. Nos. 716,061, 761,169, and others.

Class 21—Electrical Apparatus, Machines, and Supplies

For Toasters, Electric Blankets, Portable Food Mixers, Electric Ranges, Food Waste Disposers, Electric Can Openers, and Heating Pads for Non-Therapeutic Purposes.
First use April 1960.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Electric Trimmer Edgers.
First use March 1962.

Class 44—Dental, Medical, and Surgical Appliances

For Portable Hair Dryers and Heating Pads.
First use September 1961.

SN 198,146. Educational Developmental Laboratories, Inc., Huntington, N.Y. Filed July 20, 1964.

LISTEN AND READ

Class 36—Musical Instruments and Supplies

For Tape Recordings.

Class 38—Prints and Publications

For Educational Printed Material—Namely, Books and Teachers' Guides.

First use on or about Oct. 20, 1961.

SN 198,924. Alamo Manufacturing Co., Inc., New York, N.Y. Filed July 31, 1964.

SILESTRA

Class 39—Clothing

For Dresses.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Piece Goods for Making Dresses, Shirts and Blouses, and the Like.

First use June 17, 1964.

SN 206,020. E. D. Etnyre & Co., Oregon, Ill. Filed Nov. 12, 1964.

ETNYRE

Class 19—Vehicles

For Tank-Type Truck Trailers.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Bituminous Handling Machinery—Namely, Distributors, Maintenance Units, Handspray Units; Curb Pavers, Street Flushing Machinery and Pressure Sprinkling Machinery; Aggregate-Spreading Machines and Snow Plows.

First use 1908.

SN 206,590. Jetronic Industries, Inc., Philadelphia, Pa. Filed Nov. 20, 1964.

RAY JEFF

The name "Ray Jeff" is fanciful.

Class 21—Electrical Apparatus, Machines, and Supplies

For Radio Telephones.
First use May 1963.

Class 26—Measuring and Scientific Appliances

For Marine Depthmeters.
First use August 1962.

SN 206,685. Autotron Inc., Danville, Ill. Filed Nov. 23, 1964.



Class 21—Electrical Apparatus, Machines, and Supplies

For Photoelectric Control, Photoelectric Timing Control, Electronic Control Apparatus Including a Transformer Which Is Responsive to Current Changes in an Associated Load Circuit, Light Source for an Optical System Associated With an Electronic Circuit, Photoelectric Control With and Without a Plate Circuit Relay for Controlling Electro-Mechanical Devices, Electronic Controls Responsive to Current Changes in an Associated Electric Circuit That Is Subjected to Intermittent Load Increases, and Electronic Control Apparatus Including Supersonic, Infrared, Liquid Level, Lucite Rod Bin Level, Proximity, and Proximity Switch Controls.

Class 26—Measuring and Scientific Appliances

For Electronic Inspection Machine in Which Variations in the Size or Shape of Objects Are Detected and Checked by Successively Positioning the Objects in an Optical System That Is Associated With an Electronic Circuit, and Electronic Counter in Which the Objects To Be Counted Are Passed Through the Focal Point of an Optical System That Is Associated With an Electronic Circuit.

First use Sept. 18, 1964.

SN 212,626. Lyk-Nu Company, Inc., New York, N.Y. Filed Feb. 23, 1965.

LYK-NU

Owner of Reg. Nos. 430,442, 425,450, and 425,451.

Class 4—Abrasives and Polishing Materials

For Furniture Polish; Wax Polish and Automobile Surface Polishes and Rubbing Compounds.
First use 1932 on a rubbing compound.

Class 6—Chemicals and Chemical Compositions

For Antifog Fluid; Rust Inhibitor and Automotive Cooling System Conditioner.
First use 1941 on a rust inhibitor and automotive cooling system.

Class 15—Oils and Greases

For Penetrating Oil To Loosen and Lubricate Rusted, Corroded and Threaded Parts; Preparation for Cleaning and Dressing Rubber, Lubricate Rubber Parts and Aid in Mounting and Demounting Tires and Sealer and Conditioner for Automotive Transmissions.
First use 1943 on preparation for cleaning and dressing rubber.

Class 16—Protective and Decorative Coatings

For Tire Dressing and Automobile Undercoating and Sound Deadener.
First use 1930 on tire dressing.

Class 52—Detergents and Soaps

For Car Wash Solution; Leather, Plastic, Fabric, and Upholstery Cleaners; Carburetor Cleaner; Degreasing Solvent for Automotive, Marine, and Industrial Equipment; Window Cleaning Fluid; Tire Cleaners; Cleaning Solution for Convertible Automobile Tops, and White Wall Tire Cleaner.
First use 1935 on window cleaning fluid.

SN 212,931. Pioneer Trading Company, Inc., New York, N.Y., assignee of Helen Neushaefer, Inc., College Point, N.Y. Filed Mar. 1, 1965.

WONDER-PAT

Class 2—Receptacles

For Compacts Sold Empty.

Class 51—Cosmetics and Toilet Preparations

For Pressed Cosmetic Powders and Foundation Creams.

First use Mar. 4, 1963.

SN 212,962. Braincon Corporation, Marion, Mass. Filed Mar. 1, 1965.

BRAINCON

Class 19—Vehicles

For Towed Underwater Vehicles and Deep Water Buoys Without Associated Instrumentation.

Class 26—Measuring and Scientific Appliances

For Towed Underwater Vehicles and Deep Water Buoys With Associated Instrumentation.

First use July 1961.

SN 213,153. Motive Parts Warehouse, Inc., Fort Smith, Ark. Filed Mar. 2, 1965.



Owner of Reg. No. 678,839.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Automotive Remanufactured Parts—Namely, Gasoline Nozzles and Injection Nozzles.

Class 19—Vehicles

For Shock Absorbers, Wiper Motors, and Power Brakes.

Class 21—Electrical Apparatus, Machines, and Supplies

For Solenoids, Generators, Starters, Alternators, Voltage Regulators, and Armatures.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Water Pumps, Clutches, Clutch Plates, Carburetors, Fuel Pumps, Starter Drives, Engines, Oil Pumps, Compressors, Camshafts, Rocker Arm Assemblies, Cylinder Heads, Power Steering Pumps and Cylinders.

First use Jan. 1, 1960.

SN 214,594. Fred Meyer, Inc., Portland, Oreg. Filed Mar. 22, 1965.

WORTHY

Class 16—Protective and Decorative Coatings

For Paint.
First use 1956.

Class 18—Medicines and Pharmaceutical Preparations

For Saccharin Tablets, Aspirin, Rubbing Alcohol, Antiseptic Mouthwash, Mineral Oil, Vitamin Tablets and Capsules.
First use 1947.

Class 44—Dental, Medical, and Surgical Appliances

For Sanitary Napkins.
First use 1956.

SN 220,928. Ernst Water Column & Gage Co., Livingston, N.J. Filed June 11, 1965.

ERNST

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Try Cocks.
First use in or about 1940.

Class 26—Measuring and Scientific Appliances

For Flow Indicators, Gages, Sight Glasses, Liquid Level Gages, Gage Glass Protectors, Gage Glasses, and Safety Water Columns.
First use in or about 1925 on gages.

Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires

For Rubber Gaskets.
First use in or about 1940.

SN 225,091. Columbia Records Distribution Corp., New York, N.Y. Filed Aug. 6, 1965.

FENDER

Class 21—Electrical Apparatus, Machines, and Supplies

For Electrical Apparatus for Use With Guitars and for Other Purposes—Namely, Amplifiers, Loudspeakers, Echo Chambers, and Reverberation Units; and Components and Accessories for Such Electrical Apparatus—Namely, Amplifier Cords, Amplifier Carriers, Amplifier Covers, Foot Pedal Controls, Switches, Amplifier Handles, Amplifier Knobs, Amplifier Corners, Amplifier Volume and Tone Controls, Speaker Cabinets, Amplifier Tube Shields, Amplifier Thumbscrews, Amplifier Legs, and Tape Cartridges.

Class 36—Musical Instruments and Supplies

For Musical Instruments—Namely, Electric Spanish Guitars, Electric Mandolins, Electric Basses, Acoustic Guitars, Pedal Steel Guitars, and Steel Guitars; and Components and Accessories for Guitars and the Like—Namely, Legs, Cases, Bags, Strings, Polish, Waist Belts, Stands, Picks, Steels, Necks, Heads, Pickups, Pickup Covers, Pickguards, Bridge Covers, Tremolo Handles, Control Knobs, and Straps.

First use in or about 1945.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 197,798. Vaughan's Seed Company, Downers Grove, Ill. Filed July 13, 1964.

INSTANT GLAMOUR

Applicant disclaims the word "Instant" apart from the mark as shown.

For Roses Sold in Instant Planters.
First use on or about Mar. 1, 1964.

SN 208,938. Kawel Shale Products Co., Fort Dodge, Iowa. Filed Dec. 28, 1964.

KALITE

For Crushed Clay-Brick Material.
First use July 19, 1963.

SN 208,998. Commercial Solvents Corporation, New York, N.Y. Filed Dec. 29, 1964.

REZIMAC

For Synthetic Resin Solutions.
First use June 24, 1958.

SN 208,999. Commercial Solvents Corporation, New York, N.Y. Filed Dec. 29, 1964.

CARBAMAC

For Synthetic Resin Solutions.
First use Oct. 23, 1961.

SN 209,001. Commercial Solvents Corporation, New York, N.Y. Filed Dec. 29, 1964.

DURAMAC

For Synthetic Resin Solutions.
First use June 27, 1958.

SN 210,309. A. H. Hoffman Seeds, Inc., Landisville, Pa. Filed Jan. 21, 1965.

Hoffman

For Farm Field Seeds—Namely, Wheat, Barley, Oats, Corn, and Other Cereal Grains, Alfalfa, Clovers, Timothy, and Various Other Hay and Pasture Grasses.
First use 1942.

SN 210,736. Dilectrix Corporation, Farmingdale, N.Y. Filed Jan. 27, 1965.

FLUOROFILM

For Tetrafluoroethylene Film and Tape.
First use Mar. 15, 1954.

SN 218,198. International Latex Corporation, Dover, Del. Filed May 6, 1965.

RIB-BAK

For Synthetic Latex for Use in Textile and Rug Backing, Coating, and Impregnating Compositions.
First use Jan. 14, 1965.

SN 227,028. Great Lakes Carbon Corporation, New York, N.Y. Filed Sept. 2, 1965.

TOP-GLO

For Barbecue Briquets.
First use Apr. 23, 1965.

SN 228,170. Marathon Oil Company, Findlay, Ohio. Filed Sept. 20, 1965.

CAST-RITE

For Carbon Sand Used in Conjunction With Various Additives as a Molding Medium in Formulating Molds Into Which Metal May Be Cast.
First use June 30, 1965.

Class 2 — Receptacles

SN 200,145. The W. E. Bassett Company, Derby, Conn. Filed Aug. 19, 1964.

PURSE-PAK

Owner of Reg. No. 643,052.
For Small Case Holding Manicuring Implements, Said Case Being Sold Filled With Said Implements.
First use June 12, 1959.

SN 200,977. Rogers Bros. Ltd., St. John, New Brunswick, Canada. Filed Aug. 31, 1964.

INSULUNCH

Owner of Canadian Reg. No. 135,527, dated Apr. 24, 1964.
For Plastic Kit Comprising an Insulated Compartmentized Tray-Like Container With Three Plastic Tumblers With Screw-Top Caps for Carrying Drink and Foods.

SN 201,683. Gerda Enterprises, Inc., Pompton Lakes, N.J. Filed Sept. 11, 1964.

GERDA

For Plastic Dispensers for Mustard.
First use June 15, 1964.

SN 201,792. Andywill Products, Chapel Hill, N.C. Filed Sept. 14, 1964.

ANDYWILL

For Sheet Tissue Paper Dispensers.
First use Apr. 1, 1964.

SN 209,011. Henry Boucher Fils & Cie, Rambervillers, Vosges, France. Filed Dec. 29, 1964.

POLYFERTIL

Priority claimed under Sec. 44(d) on French Reg. No. 1,257, dated Oct. 9, 1964 (Epinal); Natl. Inst. No. 233,412.
For Plant Pots of All Kinds.

SN 210,691. Menges Sanitary Waste Disposal Co., El Paso, Tex. Filed Jan. 26, 1965.

MENGES WASTE MASTER

For Box-Type Container for Waste and Garbage.
First use Sept. 10, 1964.

SN 212,135. National Cup Company, Dover, Del. Filed Feb. 16, 1965.



For Paper Drinking Cups and Plastic-Coated Paper Drinking Cups.
First use 1960.

SN 212,438. National Cup Company, Dover, Del. Filed Feb. 19, 1965.

MONARCH

For Paper Drinking Cups and Plastic-Coated Paper Drinking Cups.
First use 1960.

SN 215,208. Fibreboard Paper Products Corporation, San Francisco, Calif. Filed Mar. 29, 1965.

FIBREMASTER

For Paperboard Boxes.
First use January 1963.

SN 215,251. Murray Bag & Paper Corp., Vernon, Calif. Filed Mar. 29, 1965.

DUBL-PAK

For Grocery Paper Bags.
First use on or about Sept. 29, 1964.

Class 4 — Abrasives and Polishing Materials

SN 206,558. Kleer-Site Corporation, Newark, N.J. Filed Nov. 19, 1964.

MIRACLE DOT

For Carriers for Lens Polishing Applications.
First use Sept. 15, 1959.

SN 210,547. F & H Laboratories, Inc., Cedartown, Ga. Filed Jan. 25, 1965.



The term "Nufinish" is disclaimed apart from the mark as shown.
For Furniture Polishing Composition.
First use January 1964.

SN 217,806. The Cincinnati Milling Machine Co., Cincinnati, Ohio. Filed Apr. 26, 1965.

CIMFORM

For Abrasive Wheels.
First use Apr. 12, 1965.

SN 217,845. S. C. Johnson & Son, Inc., Racine, Wis. Filed Apr. 26, 1965.

supertred

For Floor Polish.
First use on or about July 29, 1964.

SN 221,997. Churchill Chemical Company, Galesburg, Ill. Filed June 25, 1965.



Owner of Reg. Nos. 756,291, 764,884, and others.
For Floor Waxes.
First use on or about Apr. 23, 1964; in or about 1922 as to "Churchill"; in or about 1956 as to "Churchill" in a different form.

Class 5 — Adhesives

SN 217,162. Mo och Domsjö Aktiebolag, Örnsköldsvik, Sweden. Filed Apr. 5, 1965.

MODOFIX

Owner of Swiss Reg. No. 58,457, dated June 9, 1944; and U.S. Reg. Nos. 576,218, 781,167, and others.
For Carbohydrates, Such as Cellulose, Resins, and Polymerisation and Condensation Products, Useful as Adhesives for Industrial Purposes, Such as for Wallpaper and for Stationery.

Class 6 — Chemicals and Chemical Compositions

SN 169,220. Conchemco Incorporated, Kansas City, Mo. Filed May 20, 1963.



For Chemical Formulations Used as Primers and Finishes, Adhesives and Sealants, for Products and Surfaces of Metal, Wood, Paper, Plastic, and Other Materials and Ingredients for Such Formulations.
First use Apr. 10, 1963.

SN 201,380. Clack Corporation, Madison, Wis. Filed Sept. 8, 1964.

BIRM

For Chemical for Removal of Iron and Manganese From Water.
First use Apr. 2, 1935.

SN 204,329. Van Gay, Inc., Benton, Ill. Filed Oct. 19, 1964.

Starch Okene

For Chemical Starch Substitute for Textiles Which Makes Ironing Easier and Leaves a Luxurious Soft Surface.
First use Sept. 30, 1964.

SN 204,437. American Can Company, New York, N.Y. Filed Oct. 21, 1964.

GYP-SPERSE

For Lignin Sulfonate Compounds for Use as Dispersant—Namely, for Plasterboard Components.
First use May 8, 1964.

SN 205,285. Green Mill Gardens, Inc., Addison, Ill. Filed Nov. 2, 1964.

GREEN MILL

Owner of Reg. Nos. 777,169, 796,234, and others.
For Plant Polishes.
First use Oct. 2, 1926.

SN 208,994. Commercial Solvents Corporation, New York, N.Y. Filed Dec. 29, 1964.

MACOPOL

For Organic Solvents Containing Dissolved Synthetic Polymers.
First use July 18, 1960.

SN 210,087. Chemische Fabrik Pfersee, G.m.b.H., Augsburg, Germany. Filed Jan. 18, 1965.



Owner of German Reg. No. 686,536, dated Aug. 17, 1951.
For Insecticides and Herbicides, Auxiliary Agents, and Water Softening Chemicals for the Textile, Paper, and Leather Industries; Mordants, Leather Dressing Preparations, Tanning Preparations, Bleach, Starch, and Wood Preservatives.

SN 211,938. Stauffer Chemical Company, New York, N.Y. Filed 2-12-65.

B. P. PYRO

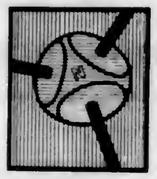
For Sodium Acid Pyrophosphate.
First use at least as early as Sept. 25, 1957.

SN 213,775. Itek Corporation, Lexington, Mass. Filed Mar. 10, 1965.

Itek

Owner of Reg. Nos. 741,406 and 751,978.
For Photographic Developing and Fixture Chemicals.
First use in or about November 1964.

SN 213,917. Virginia Chemicals & Smelting Company, West Norfolk, Va. Filed Mar. 11, 1965.



The drawing is lined for the colors red and blue. The mark consists in the representation of the letter "N" within a fragmentary, stylized representation of an amine chemical formulation. Applicant disclaims right to use of the colors red and blue, apart from the mark as shown. Owner of Reg. Nos. 526,525, 617,332, and others.
For Amines—Namely, Ethylamine (Anhydrous), Ethylamine (70% in Water), Diethylamine, Triethylamine, Isopropylamine, Diisopropylamine, n-Butylamine, Di-n-Butylamine, Tri-n-Butylamine, and Cyclohexylamine.
First use Jan. 4, 1965.

SN 214,269. Hy-Test 303 Corp., Rutherford, N.J. Filed Mar. 16, 1965.

AQUA GARD

Applicant disclaims the words "Aqua Gard."
For Boiler Water Compound With Rust and Corrosion Inhibitors.
First use Jan. 22, 1965.

SN 220,848. Gulf Oil Corporation, Pittsburgh, Pa. Filed June 10, 1965.

GULFGAS

For Liquefied Petroleum Gas.
First use at least as early as May 22, 1965.

SN 220,981. Warner-Lambert Pharmaceutical Company, Morris Plains, N.J. Filed June 11, 1965.

BUN-O-GRAPH

For Urea Nitrogen Chromatography Papers for Laboratory Use by Veterinarians.
First use April 1964.

SN 221,998. Churchill Chemical Company, Galesburg, Ill. Filed June 25, 1965.

CHURCHILL

Owner of Reg. Nos. 756,291, 764,884, and others.
For Insecticides and Germicides.
First use on or about May 13, 1964; in or about 1922 as to "Churchill"; in or about 1956 as to "Churchill" in a different form.

Class 8 — Smokers' Articles, Not Including Tobacco Products

SN 202,436. S. M. Frank & Co., Inc., New York, N.Y. Filed Sept. 23, 1964.

HI-BOWL

For Smokers' Pipes.
First use December 1960.

SN 202,442. S. M. Frank & Co., Inc., New York, N.Y. Filed Sept. 23, 1964.

STANDARD

For Smokers' Pipes.
First use 1931.

SN 202,446. S. M. Frank & Co., Inc., New York, N.Y. Filed Sept. 23, 1964.

RELIEF GRAIN

Owner of Reg. No. 353,607.
For Smokers' Pipes.
First use 1927.

SN 202,571. S. M. Frank & Co., Inc., New York, N.Y. Filed Sept. 24, 1964.

PIPE MATE

The word "Pipe" is disclaimed apart from the mark as shown.
For Pipe Scrapers and Tampers.
First use September 1961.

SN 202,578. S. M. Frank & Co., Inc., New York, N.Y. Filed Sept. 24, 1964.

Aristocrat BY YELLO-BOLE

Owner of Reg. Nos. 431,070 and 520,810.
For Smokers' Pipes.
First use 1924.

SN 202,582. S. M. Frank & Co., Inc., New York, N.Y. Filed Sept. 24, 1964.

DUO-LINED

For Smokers' Pipes.
First use May 1958.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

SN 219,207. Hercules Powder Company, Wilmington, Del. Filed May 19, 1965.

HERCOSPLIT

For High Explosives.
First use Mar. 31, 1965.

Class 12 — Construction Materials

SN 192,730. Locke Manufacturing Company, Lodi, Ohio. Filed May 5, 1964.

QUALITY IS REMEMBERED LME LONG AFTER PRICE IS FORGOTTEN

Owner of Reg. Nos. 627,228 and 639,224.
For Wrought Iron Products—Namely, Railings, Columns, Valances, Ornamental Lanterns and Posts, Flower Pot Holders, Mailbox Posts, Brackets, Gates, and Gratings.
First use Feb. 1, 1964; Jan. 2, 1956, as to the slogan.

SN 204,947. American Acrylic Corporation, Farmingdale, N.Y. Filed Oct. 28, 1964.

LUMASITE

For Cast Flat, Light-Permeable Structural Sheets or Panels Formed of Acrylic or Other Synthetic Resins With or Without Glass Fibers.
First use Sept. 9, 1964.

SN 205,947. L. E. Johnson Products, Inc., Elkhart, Ind. Filed Nov. 10, 1964.

jp

For Door Frames.
First use Aug. 17, 1959.

SN 206,050. The Malta Manufacturing Co., Gahanna, Ohio. Filed Nov. 12, 1964.

Malta

Owner of Reg. Nos. 585,992, 688,167, and others.
For Window Units.
First use July 15, 1964.

SN 211,471. Simplex Ceiling Corp., New York, N.Y. Filed Feb. 5, 1965.

SHADOWBEAM

For Suspended Acoustical Ceilings, Systems, Comprising Suspension Hangers, Molding, Concealed Snap-In Bars, Snap-In Beam, and Snap-In Acoustical Panels.
First use Jan. 19, 1965.

SN 211,499. California Metal Enameling Company, Los Angeles, Calif. Filed Feb. 8, 1965.

CERAMEX

For Porcelain Enameled Building Panels.
First use Nov. 23, 1964.

SN 214,587. Vertex, Inc., Reedsville, Pa. Filed Mar. 19, 1965.

Vertex

No claim is made to the representation of the goods apart from the other features of the mark as shown.
For Vertically Foldable Garage Doors and Parts Thereof.
First use July 20, 1964.

SN 214,975. M. C. Gill Corporation, El Monte, Calif. Filed Mar. 26, 1965.

GILLPATCH

Owner of Reg. Nos. 667,984, 743,647, and others.
For Multi-Ply Fiberglass Cloth Polyester Laminated Surfacing Material, Pressure Sensitive Backed, Used as a Patching Material for Repairing Surfaces or Structures.
First use June 23, 1964.

SN 215,233. Liskey Aluminum, Inc., Glen Burnie, Md. Filed Mar. 29, 1965.

LA

For Elevated Sectional Flooring, Tread Grating, Partitions, Hand-Rails (and Parts Thereof).
First use on or about Apr. 25, 1958.

SN 216,148. Delta Roofing Mills Incorporated, Slidell, La. Filed Apr. 9, 1965.

The Seal

For Self-Sealing Asphalt Strip Shingles.
First use Mar. 31, 1965.

SN 216,483. Cidair Structures Company, Chicago, Ill. Filed Apr. 14, 1965.

CIDAIR

For Air Supported Building Structures and Attendant Accessories.
First use Sept. 1, 1963.

SN 216,484. Cidair Structures Company, Chicago, Ill. Filed Apr. 14, 1965.

CIDAIR

For Air Supported Building Structures and Attendant Accessories.
First use Sept. 1, 1963.

SN 216,616. Potlatch Forests, Inc., Lewiston, Idaho. Filed Apr. 15, 1965.

EMSR

For Lumber.
First use on or about Dec. 1, 1963.

SN 216,694. Hexcel Products Inc., Berkeley, Calif. Filed Apr. 16, 1965.

HMH

For Plastic Honeycomb for Structural Applications.
First use Feb. 3, 1964.

SN 217,609. Continental Steel Corporation, Kokomo, Ind. Filed Apr. 29, 1965.

REWAL

For Metal Truss-Like Reinforcement Members for Masonry Mortar Joints.
First use Apr. 6, 1965.

SN 218,603. The Alumiline Corporation, Pawtucket, R.I. Filed May 12, 1965.

SATIN LITE

For Architectural Products Made of Metal—Namely, Store Front Moldings, Doors and Door Frames, Curtain Walls, Sliding Doors, and Entrance Construction.
First use on or about Apr. 7, 1964.

SN 222,716. Koppers Company, Inc., Pittsburgh, Pa. Filed July 6, 1965.

DI-PLY

For Die Model Lumber.
First use May 1, 1964.

SN 222,735. National Gypsum Company, Buffalo, N.Y. Filed July 6, 1965.

ACOUSTIFIBRE

For Acoustical Panels of Fibrous Material.
First use Mar. 31, 1944.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

SN 198,994. Advance Theatrical Co., Chicago, Ill. Filed Aug. 3, 1964.

Leo's Stereo

For Taps for Heels on Dancing Shoes.
First use Apr. 10, 1962.

SN 208,698. Research Products Manufacturing Co., Irving, Tex. Filed Dec. 22, 1964.

INCINOLET

For Incinerator Type Toilets and Urinals.
First use July 14, 1958.

SN 213,364. Republic Steel Corporation, Cleveland, Ohio. Filed Mar. 4, 1965.

INCH-MARKED

Owner of Reg. No. 417,567.
For Electrically Welded Pipe, Conduit and Tubing Composed of Iron, Steel, or Ferrous Alloys.
First use May 1940.

SN 216,322. The Murray Corporation of America, New York, N.Y. Filed Apr. 12, 1965.

TOUCH FLUSH

The word "Flush" is disclaimed apart from the mark as shown.
For Toilet Tank Flush Valves.
First use Feb. 1, 1965.

SN 219,928. Torkon Fastener Corporation, Whittier, Calif. Filed May 27, 1965.

TORKON

For Self-Locking Bolts.
First use May 5, 1965.

SN 221,033. Fit-All Trim Co., Los Angeles, Calif. Filed June 14, 1965.

BATHROOMS with "The Distinctive Touch"

Applicant hereby disclaims the descriptive term "Bathrooms" apart from the mark as shown.
For Ornamental Bathroom and Household Plumbing Accessories and Hardware.
First use Apr. 15, 1965.

SN 221,468. Conso Products, Inc., New York, N.Y. Filed June 18, 1965.

KNO-SOIL

For Covered Metal Weights for Curtains and Draperies.
First use December 1961.

SN 224,119. Rheem Manufacturing Company, New York, N.Y. Filed July 23, 1965.

TIPPER

Owner of Reg. Nos. 665,973 and 667,999.
For Fasteners for Sealing Casings and Enclosures for the Packaging of Meat and Other Products.
First use Apr. 1, 1953.

SN 226,059. Kirsch Company, Sturgis, Mich. Filed Aug. 19, 1965.

PANELTRAC

Owner of Reg. No. 724,115.
For Traverse Tracks for Supporting Movable Panels, Such as and Including Relatively Stiff Draperies.
First use May 25, 1965.

Class 14—Metals and Metal Castings and Forgings

SN 222,186. National Distillers and Chemical Corporation, New York, N.Y. Filed June 28, 1965.

BRONEL

For Sheets, Rods, Wire, and Tubes Composed Basically of 70% Nickel, 30% Copper, and Alloying Elements.
First use Mar. 5, 1965.

SN 224,535. Kennecott Copper Corporation, New York, N.Y. Filed July 29, 1965.

KCM

For Copper Metal, and Particularly for Shapes, Such as Ingot Bars and Ingots.
First use at least as early as April 1939.

SN 224,536. Kennecott Copper Corporation, New York, N.Y. Filed July 29, 1965.

KE

For Copper Metal and Particularly for Shapes, Such as Ingot Bars and Ingots.
First use at least as early as November 1959.

SN 224,588. Consolidated Metco, Incorporated, Portland, Oreg. Filed July 30, 1965.

CON-METCO

For Metal Casting.
First use Jan. 20, 1965.

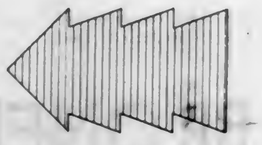
SN 225,360. Scovill Manufacturing Company, Waterbury, Conn. Filed Aug. 9, 1965.



The drawing is lined for the colors yellow, red, and silver.
Owner of Reg. Nos. 284,266, 588,939, and 672,709.
For Aluminum, Brass, Bronze, Copper, and Nickel-Silver Mill Products, Such as Sheet and Strip Stock, Either Flat or Coiled, Tubing, Rod, Wire, and Special-Shaped Drawn Products.
First use Aug. 17, 1964; November 1929 as to "Scovill."

Class 15 — Oils and Greases

SN 158,906. William S. Fiedler, for himself and as administrator of the estate of Stuart O. Fiedler, deceased, John W. Frost, John M. Diehl, and Merton R. Barry (joint owners), d.b.a. Go Jet Products, Madison, Wis. Filed Dec. 11, 1962.



The drawing is lined for red.
For Pressurized Cans Containing Combustible Fluid To Be Introduced Into Vehicle Engines.
First use July 23, 1960.

SN 216,998. Bendix-Balzers Vacuum, Inc., Rochester, N.Y. Filed Apr. 21, 1965.

Byvoil

For Diffusion Pump Fluids.
First use Mar. 1, 1965.

SN 217,834. Bardahl Manufacturing Corporation, Seattle, Wash. Filed May 3, 1965.



The mark is lined for the color green.
For Motor Oil Additive.
First use Mar. 31, 1965.

SN 219,081. Texaco Inc., New York, N.Y. Filed May 17, 1965.

INDIAN

Owner of Reg. No. 201,432.
For Gasoline.
First use about Oct. 20, 1924.

SN 220,563. W. S. Shamban & Co., Culver City, Calif. Filed June 7, 1965.

TUF-E-COAT

For Dry Lubricant.
First use Feb. 24, 1965.

SN 221,161. Economics Laboratory, Inc., St. Paul, Minn. Filed June 15, 1965.

DRI-DRAW

Owner of Reg. No. 423,099.
For Lubricant in the Nature of an Anhydrous Granulated or Powdered Soap, for Use in Wire Drawing Operations.
First use Mar. 15, 1943.

SN 221,432. Unidyne Industries, Incorporated, Denver, Colo. Filed June 17, 1965.

TRANS ACTION

For Transmission Conditioner for Automatic Transmissions.
First use on or about May 17, 1965.

SN 221,646. Signal Oil and Gas Company, Los Angeles, Calif. Filed June 21, 1965.

NORWALK

For Gasoline, Lubricating Oils, and Greases.
First use Oct. 25, 1932.

SN 222,288. Nu Research and Development Company, Philadelphia, Pa. Filed June 29, 1965.

SNAP

For Automatic Transmission Sealer, Power Steering System Sealer, and Crankcase Additive Motor Sealer.
First use June 11, 1965.

Class 16 — Protective and Decorative Coatings

SN 139,007. Amchem Products, Inc., Ambler, Pa. Filed Mar. 5, 1962.

ALOLAC

For Concentrated Liquid Coating Chemicals in the Nature of a Lacquer To Be Diluted With Water as a Final Rinse on Aluminum To Make It Resistant to Corrosion, Abrasion, and Fingerprints, and Which Can Be Used To Prevent or Minimize Copper and Silver Tarnish and Rust on Phosphated and Galvanized Steel.
First use May 1960.

SN 181,098. Acorn Chemical Company, Cleveland, Ohio. Filed Nov. 14, 1963.

CHARBO

For Aluminum Mobile House Trailer Protective Coatings, With and Without Colored Pigments.
First use Dec. 31, 1959.

SN 181,099. Acorn Chemical Company, Cleveland, Ohio. Filed Nov. 14, 1963.

WASCO

For Aluminum Mobile House Trailer Protective Coatings, With and Without Color Pigments.
First use May 12, 1961.

SN 201,095. Mary Carter Paint Co., d.b.a. Victor Paint Company, Tampa, Fla. Filed Sept. 2, 1964.

KRIL-TEX

For Household Paints for Interior and Exterior Uses.
First use 1959.

SN 203,390. Fleet-Wing Corporation, Cleveland, Ohio. Filed Oct. 6, 1964.

WM. PENN

The trademark does not identify a particular living individual. Owner of Reg. No. 251,668.
For Asphalt Driveway Sealant.
First use Feb. 7, 1964.

SN 210,723. Acme Quality Paints, Inc., Detroit, Mich. Filed Jan. 27, 1965.

FLEET-KRIL

Owner of Reg. Nos. 758,267 and 758,325.
For Enamels, Primers and Primer Sealers, Sealers, Reducers, Retarders, and Driers for Automotive and Truck Finishes.
First use Jan. 10, 1965.

SN 212,679. Ideal Aerosols, Inc., North Hollywood, Calif. Filed Feb. 24, 1965.

WORLD OF COLOR

For Interior and Exterior Decorator Rust Inhibiting Aerosol Spray Paint for General Use.
First use Sept. 5, 1961.

SN 214,032. Sperex Corporation, Los Angeles, Calif. Filed Mar. 12, 1965.



For Paint Enamels Used as a Marine Coating To Guard Against Electrolysis and Marine Growth on Propellers, Shafts, Struts, Rudders, and Underwater Fittings.
First use Feb. 18, 1965.

SN 218,682. Milprint, Inc., Milwaukee, Wis. Filed May 12, 1965.

MIL-STRIP

Owner of Reg. Nos. 442,593, 647,492, and others.
For Wax Coating Forming a Component Part of Packaging Material for Candy and the Like.
First use Apr. 27, 1965.

SN 223,113. W. P. Fuller Paint Company, d.b.a. Nason Paint Co., South San Francisco, Calif. Filed July 12, 1965.

ASTRON

For Automotive Enamel Finishes.
First use Feb. 4, 1965.

Class 17 — Tobacco Products

SN 202,717. Tabacos, S.A. de C.V., Tegucigalpa, Honduras. Filed Sept. 25, 1964.

BENITEZ



The picture of the Indian head is merely fanciful.
For Cigars.
First use Sept. 4, 1964; in commerce Sept. 4, 1964.

SN 209,772. John Cotton Limited, Edinburgh, Scotland. Filed Jan. 12, 1965.



Owner of Reg. No. 784,298.
For Cigarettes.
First use Apr. 24, 1964; in commerce Apr. 24, 1964.

Class 18—Medicines and Pharmaceutical Preparations

SN 169,010. California Texas Oil Corporation, New York, N.Y. Filed May 16, 1963.

CALTEX

Owner of Reg. No. 389,373.
For Mineral Oil for Pharmaceutical and Medicinal Purposes.
First use at least as early as 1947.

SN 169,014. California Texas Oil Corporation, New York, N.Y. Filed May 16, 1963.



The drawing is lined for red, but color is not claimed as a feature of the mark. Owner of Reg. No. 389,373.
For Mineral Oil for Pharmaceutical and Medicinal Purposes.
First use at least as early as 1947.

SN 177,049. Infant's Accessories, Inc., Brooklyn, N.Y. Filed Sept. 16, 1963.

GUM BAHM

Owner of Reg. No. 715,579.
For Antiseptic Anesthetic Liquid.
First use Mar. 3, 1953.

SN 183,726. B. F. Ascher & Company, Inc., Kansas City, Mo. Filed Dec. 30, 1963.

KWELCOF

For Cough Syrup.
First use Aug. 22, 1963.

SN 188,958. Chesebrough-Pond's Inc., New York, N.Y. Filed Mar. 18, 1964.

COMPLEX-D

For Dextromethorphan Hydrobromide, an Ingredient in Household Proprietary Medicine for the Treatment of Common Colds, Simple Headaches, and Muscular Pains.
First use Oct. 4, 1960.

SN 203,996. Warren-Teed Pharmaceuticals Inc., East Detroit, Mich. Filed Oct. 14, 1964.

MULTI-VEES

For Medicines and Pharmaceuticals—Namely, a Multiple Vitamin Preparation With or Without Minerals.
First use on or about Dec. 1, 1947.

SN 204,023. C. Turney Stevens, d.b.a. Athena Products Company, Nashville, Tenn. Filed Oct. 14, 1964.



The drawing is lined for yellow, but no claim is made to color. No claim is made to the words "6 Hour" apart from the mark as shown.
For Cold Capsules.
First use Sept. 15, 1964.

SN 205,373. J. S. Tyree, Chemist, Inc., Washington, D.C. Filed Nov. 2, 1964.

TYREE'S

For Antiseptic Powder.
First use prior to 1891.

SN 208,934. The Interstate Drug Exchange, Inc., Plainview, N.Y. Filed Dec. 28, 1964.

IDE

For Antibiotics, Medicines, Pharmaceuticals, Drugs, and Vitamins, All in Various Forms Such as Liquid, Powder, Pill, Tablet, Capsule, Vial, Ampoule, Ointments, and Suppositories.
First use November 1932.

SN 218,699. Richardson-Merrell Inc., New York, N.Y. Filed May 12, 1965.

IRON-Gro!

For Veterinary Preparation for the Prevention of Anemia.
First use Sept. 11, 1964.

SN 220,455. J. P. Brown, Jr., d.b.a. Dixi Chem Company, Chattanooga, Tenn. Filed June 7, 1965.



Applicant disclaims the use of the word "Pet" separate and apart from the mark as shown.
For Worm Preparation in Capsule Form for Cats and Dogs.
First use July 1, 1963.

SN 221,770. Warren-Teed Pharmaceuticals Inc., Columbus, Ohio. Filed June 22, 1965.

MAGAN

For Medicines and Pharmaceuticals—Namely, an Analgesic, Antipyretic Compound.
First use on or about June 1, 1965.

Class 19—Vehicles

SN 204,348. L. S. Brown Company, d.b.a. Dixie Trading Company, Atlanta, Ga. Filed Oct. 20, 1964.

DITRACO

Owner of Reg. No. 785,295.
For Boat Cushions for Use as Life Savers.
First use on or about Sept. 9, 1963.

SN 210,159. The Firestone Tire & Rubber Company, Akron, Ohio, assignee of Seiberling Rubber Company, Barberton, Ohio. Filed Jan. 18, 1965.



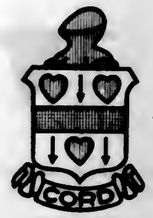
Owner of Reg. No. 188,590.
For Vinyl Car Mats.
First use Sept. 1, 1964.

SN 210,406. Automotive Conversion Company, Birmingham, Mich. Filed Jan. 22, 1965.



The drawing is lined for green.
For Automotive Vehicles Converted and Outfitted for Emergency Call Service.
First use during the year 1963.

SN 211,241. Auburn-Cord-Duesenberg Co., Broken Arrow, Okla. Filed Feb. 3, 1965.



The drawing is lined for red and gold.
For Automobiles.
First use August 1964.

SN 214,745. Albertson & Guest, Long Point, Ill. Filed Mar. 23, 1965.



For House Trailers and Camper Units for Use on Pick-Up Trucks.
First use Oct. 21, 1963.

SN 215,008. Robin-Nodwell Mfg., Ltd., Calgary, Alberta, Canada. Filed Mar. 25, 1965.

SNOSCOOT

Priority claimed under Sec. 44(d) on Canadian application filed Sept. 29, 1964; Reg. No. 140,559, dated May 28, 1965.
For Motorized Vehicles for Travelling Over Snow.

SN 216,858. Molded Fiber Glass Body Company, Union City, Pa. Filed Apr. 19, 1965.



For Small Boats for Cruising and Sailing.
First use in or about August 1963.

SN 216,860. Molded Fiber Glass Body Company, Union City, Pa. Filed Apr. 19, 1965.



For Small Boats for Cruising and Sailing.
First use in or about June 1959.

SN 216,862. Molded Fiber Glass Body Company, Union City, Pa. Filed Apr. 19, 1965.



For Small Boats for Cruising and Sailing.
First use in or about September 1961.

Class 20 — Linoleum and Oiled Cloth

SN 192,386. General Electric Company, Schenectady, N.Y. Filed Apr. 30, 1964.

PERMA-KLEEN

For Laminated Plastic Flooring, Sold in Individual Tile or Panel Form.
First use Sept. 9, 1963.

SN 212,012. Kentile Floors Inc., Brooklyn, N.Y. Filed Feb. 15, 1965.

SHARDELLE

For Vinyl Floor and Wall Tile.
First use Jan. 19, 1965.

SN 213,877. Kentile Floors Inc., Brooklyn, N.Y. Filed Mar. 11, 1965.

RIPPLE CHIP

For Vinyl Floor and Wall Tile.
First use Dec. 21, 1964.

SN 215,941. Canadian Wallpaper Manufacturers Limited, New Toronto, Toronto, Ontario, Canada. Filed Apr. 7, 1965.



The words "Vinyls Styled by" are disclaimed apart from the mark as shown. Owner of U.S. Reg. Nos. 734,938 and 761,647.
For Vinyl Wall Coverings.
First use Mar. 4, 1965; in commerce Mar. 8, 1965.

SN 217,190. The Goodyear Tire & Rubber Company, Akron, Ohio. Filed Apr. 23, 1965.

MINARET

For Resilient Hard Surface Vinyl Flooring in the Form of Tile and Sheets.
First use Feb. 1, 1965.

SN 217,191. The Goodyear Tire & Rubber Company, Akron, Ohio. Filed Apr. 23, 1965.

ARROYO

For Resilient Hard Surface Vinyl Flooring in the Form of Tile and Sheets.
First use Feb. 1, 1965.

SN 222,669. Congoleum-Nairn Inc., Kearny, N.J. Filed July 6, 1965.

COMFORTFLOR

For Plastic Coverings of the Smooth Surface, Resilient Type for Surfaces Such as Floors, Walls, Countertops, and the Like, in the Form of Rolls, Rugs, and Tiles.
First use June 22, 1965.

Class 21 — Electrical Apparatus, Machines, and Supplies

SN 196,142. General Electric Company, Schenectady, N.Y. Filed June 22, 1964.

MINA GEAR

The word "Gear" is disclaimed apart from the mark as shown.
For Electric Motors, Including Speed Reduction Gearing.
First use May 12, 1964; Aug. 15, 1963, in a different form.

SN 200,205. Reeve Electronics, Inc., Chicago, Ill. Filed Aug. 19, 1964.



For Heaters—Namely, Induction, Dielectric, and Microwave Heaters, and Parts Thereof.
First use in or about October 1945.

SN 201,997. Aldens, Inc., Chicago, Ill., by assignment and change of name from Aldens, Inc., Chicago, Ill. Filed Sept. 16, 1964.



Owner of Reg. No. 743,446.
For Storage Batteries for Automobiles.
First use July 1, 1964.

SN 202,218. Baird-Atomic, Inc., Cambridge, Mass. Filed Sept. 21, 1964.

DEKATUBE

For Indicating Components—Namely, Character Indicating Electronic Tubes.
First use Sept. 3, 1964.

SN 202,598. Intra Continental Semiconductors Inc., New York, N.Y. Filed Sept. 24, 1964.



For Radios; Semiconductors, Transistors, Rectifiers, and Diodes.
First use 1952.

SN 203,629. Thomas Industries, Inc., Louisville, Ky. Filed Oct. 8, 1964.

AUDIBELL

For Electrically Actuated General Signaling Bells, Which May Be Used for Fire Alarms, Burglar Alarms, Paging, etc.
First use mid-December 1963.

SN 204,791. Max L. Hunt, d.b.a. Hunt Mfg. Co., St. Charles, Ill. Filed Oct. 26, 1964.

SNOOZY

For Replica of a Dog Whose Paw by an Electric Motor Mounted Within, May Reciprocate and Move a Bassinet or Cradle.
First use July 1, 1961.

SN 205,314. Microflect Co., Inc., Salem, Oreg. Filed Nov. 2, 1964.

MICROFLECTOR

For Microwave Communication Equipment—Namely, Passive Repeater Structures and Panels and Communications Towers.
First use Aug. 1, 1964.

SN 207,064. Francis 6. Lempart, Chicago, Ill. Filed Nov. 27, 1964.

"LITTLE NUT HUT"

For Nutmeat Dispensing Apparatus Equipped With a Continuously Operating Electric Heater.
First use September 1954.

SN 209,735. Sel-Rex Corporation, Nutley, N.J. Filed Jan. 11, 1965.

PERMANODE

For Electrodes for Use in Electrolytic Baths.
First use Dec. 4, 1964.

SN 210,175. United Aircraft Corporation, East Hartford, Conn. Filed Jan. 18, 1965.



For Electron Beam Machines, Components Thereof, and Spare Parts and Sales Kits Therefor.
First use 1964.

SN 210,242. The Walkirt Company, Los Angeles, Calif. Filed Jan. 19, 1965.

FEB-PAK

For Electronic Circuit Modules, Particularly Combinations of Integrated Circuit Components Into Functional Units Including, but Not Limited to, Counters, Registers, and Logical Gating Circuits.
First use in or before April 1964.

SN 210,710. United Asia Trading Co., Inc., Los Angeles, Calif. Filed Jan. 26, 1965.

UNATCO

For Minature Electrical Light Bulbs.
First use Dec. 19, 1963.

SN 211,104. Schick Electric Inc., Lancaster, Pa. Filed Feb. 1, 1965.

SCHICK

Owner of Reg. Nos. 729,387, 744,955, and 761,310.
For Electric Shoe Polishers and Electric Furniture Polishers.
First use in or about July 1962 on electric shoe polishers.

SN 212,057. Rouge Electronics Company, Oklahoma City, Okla. Filed Feb. 15, 1965.



The drawing is lined for the color red which is an integral part of the mark.
For Solid State Transmitters, Receivers, and Automatic Telephone Equipment.
First use Oct. 1, 1961.

SN 212,317. Haveg Industries, Inc., Wilmington, Del. Filed Feb. 18, 1965.

PYRAD

For Insulated Wire for Conducting Electricity.
First use at least as early as Aug. 8, 1963.

SN 212,595. Sealine Manufacturing Corp., Chicago, Ill. Filed Feb. 23, 1965.

KARMA

For Non-Coin Operated Resturant Counter Appliances Which Contain Electric Heating Elements of Resistance Wire, Wound Elements, and Which Contain a Line Cord To Be Plugged Into Standard 115 Volt A.C. Current Outlets.
First use Jan. 4, 1961.

SN 213,321. Ithaco, Inc., Ithaca, N.Y. Filed Mar. 4, 1965.

ITHACO

The representation of the State of New York is disclaimed apart from the mark as shown.

For Electronic Preamplifiers and Amplifiers, Including Charge Amplifiers, Signal Generators, Memory Apparatus, Data Processing Apparatus, and Electrical Components and Accessories Therefor.
First use Sept. 10, 1962.

SN 213,344. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed Mar. 4, 1965.

SCOTCH

Owner of Reg. No. 575,236 and others.
For Electrical Shielding Tape.
First use at least as early as Nov. 5, 1964.

SN 213,345. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed Mar. 4, 1965.

SCOTCHCAST

Owner of Reg. Nos. 573,559, 629,012, and others.
For Restricting Tape for Use in the Splicing of Electrical Cable.
First use at least as early as Nov. 5, 1964.

SN 215,377. Arnold Magnetics Corporation, Los Angeles, Calif. Filed Mar. 31, 1965.

THIN-VERTER

For Power Supplies (Electrical and Electronic).
First use Mar. 26, 1965.

SN 215,470. World Art Company, Fort Lauderdale, Fla. Filed Mar. 31, 1965.

WORLD ART

Owner of Reg. No. 676,914.
For Electric Lamps.
First use Apr. 1, 1944.

SN 215,870. Heinemann Electric Company, Trenton, N.J. Filed Apr. 6, 1965.

HEINEMANN

Owner of Reg. Nos. 642,569 and 692,755.
For Electric Circuit Breakers and Electric Relays.
First use Mar. 9, 1965.

SN 215,955. Dynamic Instrument Corporation, Plainview, N.Y. Filed Apr. 7, 1965.

CHARGATRON

For Battery Charger.
First use Mar. 22, 1965.

SN 219,521. Borneo Sumatra Trading Co., Inc., East Rutherford, N.J. Filed May 24, 1965.

POWERTONE

For Radio Receiving Sets.
First use May 18, 1965.

SN 220,380. Jefferson Electric Company, Bellwood, Ill. Filed June 4, 1965.

AUTO-MERC

For Ballasts and Transformers for Mercury Vapor Lamps.
First use Mar. 15, 1965.

SN 220,482. Electrix Corporation, Smithfield, R.I. Filed June 7, 1965.

Owner of Reg. No. 681,080.
For Electric Terminals and Contacts.
First use in or about August 1945.

SN 220,822. Anaconda Wire and Cable Company, New York, N.Y. Filed June 10, 1965.

SKY-LINE

For Electric Cables and Electric Power Distribution Systems.
First use May 25, 1965.

Class 22 — Games, Toys, and Sporting Goods

SN 181,525. Society of Brothers, Incorporated, d.b.a. Community Playthings, Rifton, N.Y. Filed Nov. 20, 1963.

community

Owner of Reg. No. 722,808.
For Educational Play Equipment and Toys.
First use Sept. 29, 1963.

SN 201,536. Look, Nevers, Nievre, France. Filed Sept. 9, 1964.

NEVICA

Owner of French Reg. No. 627, dated May 30, 1963 (Nevers); Natl. Inst. No. 207,000.
For Ski Bindings and Parts Therefor.

SN 204,087. Ben Pearson, Inc., Pine Bluff, Ark. Filed Oct. 15, 1964.

LORD MERCURY

For Custom Quality Archery Bow.
First use Nov. 1, 1963.

SN 204,472. James Heddon's Sons, Dowagiac, Mich. Filed Oct. 21, 1964.

Heddon

The drawing is lined for red, but colors are not claimed as a feature of the subject mark. Owner of Reg. Nos. 607,613, 531,483, and 531,996.

For Fishing Tackle, Such as Artificial Casting Baits, Artificial Lures, Fishing Rods, Fishing Reels, Fishing Lines, Bait Boxes, Fish Hooks, and Fishing Line Floats.
First use 1958; 1925 in combination with a leaping fish and a patch of water.

SN 207,201. E & L Distributors, Inc., Bridgeport, Conn. Filed Dec. 1, 1964.

STAR SPORTS

Applicant claims no exclusive rights in "Sports" as the name of the goods identified herein.
For Basketballs, Footballs, Barbell Sets, and Baseball Gloves.
First use Oct. 1, 1964.

SN 207,540. Wells Fargo & Company, New York, N.Y. Filed Dec. 4, 1964.

WELLS FARGO

Owner of Reg. No. 708,531.
For Toy Pistols and Holsters.
First use Dec. 14, 1963.

SN 215,257. Pezon & Michel, Amboise, Indre-et-Loire, France. Filed Mar. 29, 1965.

LUXOR

Owner of French Reg. No. 3,206, dated Dec. 26, 1958 (Tours); Natl. Inst. No. 119,517.
For Fishing-Tackle (Excluding Fish Nets).

SN 215,800. U-Knead-It Bait Company, Sherman Oaks, Calif. Filed Apr. 5, 1965.

U-KNEAD-IT

For Processed Fish Bait.
First use on or about Oct. 1, 1954.

SN 216,044. Werner H. Bonell, Miami, Fla. Filed Apr. 8, 1965.

FINESSA

Owner of Reg. No. 427,023.
For Fishing Reels.
First use Jan. 28, 1957.

SN 218,733. Bancroft Racket Company, Pawtucket, R.I. Filed May 13, 1965.

BIG INCH

For Tennis Racquets.
First use February 1965.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

SN 183,187. Voelker & Company, Inc., Chicago, Ill. Filed Dec. 16, 1963.

COOLCUTTER

For Meat Choppers.
First use Jan. 1, 1959.

SN 193,545. Gould-National Batteries, Inc., St. Paul, Minn. Filed May 15, 1964.

SUPERIOR ARROWHEAD

For Block Repair Bushings; Piston Pin Bushings; Cylinder Sleeve Assemblies Consisting of Sleeve, Piston, Piston Pin, Piston Pin Locks, Piston Rings, and Sleeve Sealing Ring; Cylinder Sleeve Repair Liners; Cylinder Sleeves; Pistons; Piston Pins; Rebore Kits Consisting of Piston Pin, Piston Pin Locks, and Piston Rings; Valves for Engine Cylinders; and Valve Guides, Valve Springs, Valve Keepers, and Valve Seats for Valves for Engine Cylinders.
First use 1943.

SN 207,085. The Sanderson Cyclone Drill Company, Orrville, Ohio. Filed Nov. 27, 1964.

CYCLONE

For Well Drilling Machinery.
First use Nov. 30, 1895.

SN 207,486. Giesserei & Maschinenfabrik Osterwalder AG, Lyss, Switzerland. Filed Dec. 4, 1964.

OSTERWALDER

Priority claimed under Sec. 44(d) on Swiss Reg. No. 204,648, dated June 26, 1964.
For Presses With Controlled Toggle-Lever, Fine Blanking Presses, Friction Spindle Presses and Presses With Pedal.
First use 1890; in commerce Oct. 26, 1956.

SN 207,884. Gustaf Carlström, d.b.a. Hofors Plat- & Smidesverkstad, Hofors, Sweden. Filed Dec. 10, 1964.

SNABB

The Swedish word "Snabb" means "swift."
For Ice Augers and Parts Thereof.
First use on or about Nov. 10, 1922; in commerce on or about Oct. 1, 1945.

SN 208,134. Sperry Rand Corporation, New York, N.Y. Filed Dec. 14, 1964.

CHEKVEYER

For Mechanized Filing Units.
First use Apr. 30, 1964.

SN 208,162. AMP Incorporated, Harrisburg, Pa. Filed Dec. 15, 1964.

AMPLIVERSAL

Owner of Reg. Nos. 405,714, 747,195, and Others.
For Hand Tools To Apply Electrical Connectors.
First use Dec. 7, 1964.

SN 208,371. Mesta Machine Company, Pittsburgh, Pa. Filed Dec. 17, 1964.

MESTA

For Rolling Mills, Coilers, Shears, Welders, Runout Tables, Roll Grinders, Gear Drives, Uncoilers, Tension Reels, Mill Tables and Transfers, Rolls, Mill Pinions, Presses, Straightening Machines, Leveling Machines, Metal Processing Lines, and Allied Metal Working Equipment.
First use Nov. 25, 1964; 1898 as to "Mesta."

SN 208,526. Henry C. Barnack, West Springfield, Mass. Filed Dec. 21, 1964.

NACK

For Hand-Operated Sheet Metal Brakes.
First use Dec. 9, 1964.

SN 209,104. Micro American, Inc., Chicago, Ill. Filed Dec. 30, 1964.

MICRO-AMERICAN

For Machine Chucks.
First use Feb. 26, 1963.

SN 214,453. Nash Marine Supplies, Inc., Washington, D.C. Filed Mar. 18, 1965.

NAMAR KIT

The word "Kit" is disclaimed apart from the mark as shown.
For Kits for Connecting Gas Tanks for Outboard Motors.
First use Jan. 18, 1965.

SN 214,888. May-Fran Manufacturing Co., Cleveland, Ohio. Filed Mar. 24, 1965.

PART-TOTE

Owner of Reg. No. 591,096.
For Power Driven Endless Conveyors and Associated Parts Thereof.
First use Feb. 17, 1965.

SN 214,943. AMSTED Industries Incorporated, Chicago, Ill., assignee of American Steel Foundries Incorporated, Chicago, Ill. Filed Mar. 25, 1965.

WEARPACT

Owner of Reg. No. 626,777.
For Excavating Teeth.
First use on or about Apr. 22, 1954.

SN 215,073. Hamac-Hansella Maschinen GmbH, Dusseldorf, Germany. Filed Mar. 26, 1965.

TRANSVAC

Owner of German Reg. No. 794,748, dated July 3, 1964.
For Packaging Machines; Machines for the Confectionery Industry, viz, Candy Cooking Machines and Evaporators.

SN 215,075. Hamac-Hansella Maschinen GmbH, Dusseldorf, Germany. Filed Mar. 26, 1965.

VACUMAT

Owner of German Reg. No. 794,627, dated July 4, 1964.
For Packaging Machines; Machines for the Confectionery Industry, viz, Candy Cooking Machines and Evaporators.

SN 217,158. H. W. Ward & Company Limited, Selly Oak, Birmingham, England. Filed Apr. 22, 1965.

Auto Ward

Owner of British Reg. No. 853,763, dated Sept. 6, 1963.
For Automatically Operated Lathes.

SN 218,334. Sperry Rand Corporation, New Holland, Pa. Filed May 7, 1965.

STACKLINER

For Farm Machinery—Namely, Automatic Bale Loading and Stacking Wagons.
First use Nov. 6, 1964.

SN 218,368. American Marking Company, d.b.a. Cozzone Marking Company, Hillside, N.J. Filed May 10, 1965.

MICROCODER

For Automatic Marking Machines for Making an Impression on the Surface of Articles.
First use since 1955.

SN 218,369. American Marking Company, Hillside, N.J. Filed May 10, 1965.

MICROPRINTER

For Automatic Marking Machines for Making an Impression on the Surface of Articles.
First use since 1956.

SN 218,574. Phillips Drill Company, Michigan City, Ind. Filed May 11, 1965.

RED HEAD
PHILLIPS ANCHORS

The drawing is lined for red. Applicant disclaims the word "Anchors" apart from the mark as shown. Owner of Reg. Nos. 592,972, 661,008, and others.
For Manually and Power Operated Spring Hammers, Chucks, Expansion Shells and Shell Holders Therefor, and Manual Installation Devices, All for Concrete and Masonry.
First use Apr. 2, 1965.

SN 220,279. Dayco Corporation, Dayton, Ohio. Filed June 3, 1965.

DAYROCK

For Industrial Rolls.
First use May 19, 1965.

SN 220,299. Imperial Knife Associated Companies, Inc., Providence, R.I. Filed June 3, 1965.

BUNKER HILL

For Stainless Steel Knives, Forks, and Spoons.
First use Jan. 19, 1965.

SN 220,339. Walker Manufacturing Company, Racine, Wis. Filed June 3, 1965.

AJAX

For Parts and Accessories for Use on or in Connection With Road Vehicles and Internal Combustion Engines Consisting of Jacks, Lifting Devices for Lifting Motor Vehicles or Parts Thereof, Wheel Dollies, Axle Stands, Axle Supports, and Parts Thereof.
First use Mar. 1, 1921.

SN 220,473. Data-Link Corporation, Los Altos, Calif. Filed June 7, 1965.

DL

For Punched Tape Processing Equipment, Including Tape Splicer, Gauge, Punch Winder, and Unwinder; and Mail Handling Equipment, Including Sealer, Opener, and Stamp Affixer.
First use Mar. 17, 1965.

SN 220,474. Data-Link Corporation, Los Altos, Calif. Filed June 7, 1965.

SECRETARIAT

For Mail Handling Equipment, Including Sealer, Opener, and Stamp Affixer.
First use Mar. 17, 1965.

SN 220,992. Air Placement Equipment Company, Grandview, Mo. Filed June 14, 1965.

MARK V

For Plastering Machines.
First use Jan. 13, 1965.

SN 221,324. Kleer-Vu Industries, Inc., New York, N.Y. Filed June 16, 1965.

SONIPRINTER

For Card to Card Reproducing Machine for Making Duplicate Aperture Copy Cards.
First use Jan. 15, 1965.

SN 221,419. Standard Steel Works, Inc., North Kansas City, Mo. Filed June 17, 1965.

VIBRA CONE

For Pneumatic Vibrator for Bulk Material Hoppers To Assure Free Flow.
First use May 4, 1965.

SN 221,649. Spreads-All, Inc., Marshalltown, Iowa. Filed June 21, 1965.

SPREADS-ALL

For Grain Handling Equipment for Storage Bins.
First use June 1, 1960.

SN 221,681. Bucyrus-Erie Company, South Milwaukee, Wis. Filed June 21, 1965.

BUCYRUS

Owner of Reg. No. 202,769.
For Drills and Attachments and Parts Therefor.
First use Feb. 29, 1960.

SN 221,746. Oneida Ltd., Oneida, N.Y. Filed June 22, 1965.

WM. A. ROGERS

The name "Wm. A. Rogers" does not identify a particular living individual. Owner of Reg. Nos. 73,579 and 77,597.
For Stainless Steel Flatware.
First use July 1, 1953.

SN 221,850. Rawl Engineering & Mfg. Co., Inc., Providence, R.I. Filed June 23, 1965.

MORGANMADE

For Mechanical Ball-and-Socket Joints.
First use 1928.

SN 222,526. Wain-Roy Corporation, Fitchburg, Mass. Filed July 1, 1965.

ANDERSON

For Mowers.
First use Feb. 8, 1952.

SN 222,634. Vogel Tool & Die Corporation, Stone Park, Ill. Filed July 2, 1965.

PERF-ARC

For Apparatus for Piercing Openings in Metal.
First use Dec. 28, 1960.

SN 223,980. Durable International, Inc., New York, N.Y. Filed July 22, 1965.

di Durable INTERNATIONAL, INC.

For Press Machines, Cutting and Pressing Machines, and General Machinery and Equipment for the Manufacture of Wearing Apparel, and Parts for Said Machinery.
First use August 1964.

SN 223,981. Durable International, Inc., New York, N.Y. Filed July 22, 1965.



For Press Machines, Cutting and Pressing Machines, and General Machinery and Equipment for the Manufacture of Wearing Apparel, and Parts for Said Machinery.
First use August 1964.

SN 224,166. City Products Corporation, Des Plaines, Ill. Filed July 26, 1965.

MAJESTY

For Scissors.
First use May 15, 1965.

SN 224,186. General American Transportation Corporation, Chicago, Ill. Filed July 26, 1965.

PIERCE-KWICK

For Tapping Screws.
First use June 15, 1965.

SN 224,228. National Automotive Parts Association, Chicago, Ill. Filed July 26, 1965.

SPARTA

Owner of Reg. No. 788,712.
For Hand Tools—Namely, Wrenches, Sockets, Wrench and Socket Drive and Extension Tools, Screwdrivers, and Pliers.
First use Dec. 26, 1963.

SN 224,667. Washington Forge, Incorporated, Englishtown, N.J. Filed July 30, 1965.

GOLDEN HARVEST

For Kitchen Tools—Namely, Ladles, Mashers, Turners, Spatulas, Basting Spoons, Kitchen Knives, Steak Knives, Table Knives, Forks, and Spoons.
First use Nov. 10, 1964.

SN 224,670. Wheel Horse Products, Inc., South Bend, Ind. Filed July 30, 1965.

LAWN SKIFF

For Power Lawn Mowers.
First use about August 1964.

SN 224,672. Wheel Horse Products, Inc., South Bend, Ind. Filed July 30, 1965.

WHEEL-A-MATIC

For Lawn and Garden Tractors.
First use August 1964.

SN 224,789. Qualheim Incorporated, Racine, Wis. Filed Aug. 2, 1965.

Q

Owner of Reg. No. 684,401.
For Can and Bottle Disposal Units.
First use on or about July 1, 1962.

SN 224,954. Markit, Inc., Cleveland, Ohio. Filed Aug. 4, 1965.



For Label Applicators.
First use July 2, 1965.

SN 225,498. Oneida Ltd., Oneida, N.Y. Filed Aug. 11, 1965.

LAKEWOOD

For Stainless Steel Flat Tableware.
First use July 1, 1965.

SN 225,775. Paul H. Kuhl, d.b.a. Kuhl Poultry Equipment, Flemington, N.J. Filed Aug. 16, 1965.

KUHL CONTINENTAL

For Egg Washing and Processing Machinery, and Parts Thereof.
First use July 23, 1965.

SN 226,018. Worthington Corporation, Harrison, N.J. Filed Aug. 18, 1965.

MULTI-PITCH

For Adjustable Pitch Sheaves.
First use Feb. 11, 1959.

SN 226,071. Musser, Inc., Jackson Center, Ohio. Filed Aug. 19, 1965.

CONCENTRO

For Self-Contained Sealed Gear Reduction Drive Unit.
First use August 1964.

Class 25—Locks and Safes

SN 212,180. Avis Industrial Corporation, Greeneville, Tenn. Filed Feb. 17, 1965.

HURD

Owner of Reg. No. 688,256.
For Locks and Keys.
First use January 1928.

SN 222,207. Schlage Lock Company, San Francisco, Calif. Filed June 28, 1965.

LOTUS

For Locks and Lock Hardware.
First use Mar. 12, 1963.

Class 26—Measuring and Scientific Appliances

SN 168,868. States Smelting & Refining Corp., Lima, Ohio. Filed May 14, 1963.

TAMCO

For Silver Collectors for Hypo and Fixing Tanks in the Development of Films.
First use June 1965.

SN 199,213. Metronics Associates, Inc., Palo Alto, Calif. Filed Aug. 4, 1964.

ROTOROD

For Gas Sampling Devices for Collection of Aerosols.
First use July 14, 1960.

SN 205,363. Simplicity Pattern Co. Inc., New York, N.Y. Filed Nov. 2, 1964.

JIFFY

For Garment Paper Patterns.
First use October 1953.

SN 211,169. Hers Specialty Products, Inc., Long Island City, N.Y. Filed Feb. 2, 1965.

ADJUST A FRAME

The word "Frame" is disclaimed separate and apart from the mark as shown.
For Sunglasses With Adjustable Lenses.
First use Jan. 7, 1965.

SN 217,675. Twin City Testing Corporation, Tonawanda, N.Y. Filed Apr. 29, 1965.

Z SCOPE

The word "Scope" is disclaimed apart from the mark as shown.
For Impedance Measuring Devices.
First use Apr. 6, 1965.

SN 220,295. Walter Hacking, Toronto, Ontario, Canada. Filed June 3, 1965.

PLAYTIME

For Cameras and Toy Cameras.
First use Nov. 17, 1963; in commerce Mar. 11, 1964.

SN 225,307. Gulton Industries, Inc., Metuchen, N.J. Filed Aug. 9, 1965.

ALUMICOUPLE

For Thermometer Used in Molten Aluminum.
First use May 15, 1965.

SN 226,956. Treville Inc., Clifton, N.J. Filed Sept. 1, 1965.

COUNTRY CLUB

For Sunglasses.
First use Jan. 1, 1964.

SN 227,058. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed Sept. 2, 1965.

ELECTROCOLOR

For Photographic Color Print Film.
First use Apr. 24, 1963.

SN 227,087. United Data Processing, Inc., Portland, Oreg. Filed Sept. 2, 1965.

CHALLENGER I

For Data Processing Key Punch Training Apparatus.
First use June 1, 1965.

SN 227,997. N. P. Benson Optical Company, Minneapolis, Minn. Filed Sept. 17, 1965.

MASTERCURVE

For Prepared and Processed Optical Lenses of Various Types, for Eyeglass and Spectacle Frames.
First use May 13, 1965.

SN 228,312. American Cyanamid Company, Wayne, N.J. Filed Sept. 22, 1965.

CYAVIEW

Owner of Reg. Nos. 587,090, 761,543, and others.
For Windows or Lense for Use in Helmets, Goggles, Welding Shields, etc.
First use Sept. 1, 1965.

SN 228,433. Aetna Optix, Inc., New York, N.Y. Filed Sept. 23, 1965.

ROKUNAR

For Photographic Lenses.
First use September 1960.

SN 228,556. Morrison Laboratories, Inc., Harrisburg, Pa. Filed Sept. 24, 1965.

HYDROPHILIC

For Contact Lenses.
First use June 15, 1965.

SN 228,557. Morrison Laboratories, Inc., Harrisburg, Pa. Filed Sept. 24, 1965.

GEL

For Contact Lenses.
First use June 15, 1965.

SN 228,588. Carl Zeiss-Stiftung, d.b.a. Carl Zeiss, Heidenham (Brenz), Wurttemberg, Germany. Filed Sept. 24, 1965.

Distagon

For Photographic Objectives.
First use March 1954; in commerce March 1954.

SN 228,638. Cole-Parmer Instrument & Equipment Co., Chicago, Ill. Filed Sept. 27, 1965.

MONO-MOLD

For Magnet for Use in Association With Magnetic Stirrers.
First use June 7, 1958.

SN 228,746. Parametrics, Inc., Waltham, Mass. Filed Sept. 27, 1965.

PANAMETRICS

For Instrumentation for the Measurement of Water Vapor and Humidity and Circuitry for Use Therewith.
First use on or about Aug. 9, 1964.

SN 228,827. Kollsman Instrument Corporation, Elmhurst, N.Y. Filed Sept. 28, 1965.

dataKrome

Owner of Reg. No. 760,322.
For Multi-Color Data Projector.
First use July 1965.

Class 27 — Horological Instruments

SN 208,750. S. Kocher, d.b.a. S. Kocher & Cie, Granges, Soleure, Switzerland. Filed Dec. 23, 1964.

ROYCE

Owner of Swiss Reg. No. 133,552, dated May 1950.
For Watches and Parts of Watches.
First use September 1931; in commerce September 1931.

SN 213,661. Ebauches S.A., Neuchatel, Switzerland. Filed Mar. 9, 1965.

dynolux

Priority claimed under Sec. 44(d) on Swiss Reg. No. 205,932, dated Sept. 9, 1964.
For Electronic Watches and Parts Thereof.

SN 221,729. Longines-Wittnauer Watch Co., Inc., New York, N.Y. Filed June 22, 1965.

DIAMOND JUBILEE

Applicant disclaims the term "Diamond" apart from the mark as shown.
For Watches.
First use Dec. 12, 1963.

Class 28 — Jewelry and Precious-Metal Ware

SN 212,130. Mercury Ring Corporation, New York, N.Y. Filed Feb. 16, 1965.

EAR-RESISTIBLES

Owner of Reg. No. 745,824.
For Jewelry Consisting of Rings, Pendants, Brooches, Earrings, Tie Tacs, Festoons, Lovers' Knots, and Mountings.
First use Apr. 1, 1943.

SN 221,747. Oneida Ltd., Oneida, N.Y. Filed June 22, 1965.

WM. A. ROGERS

The name "Wm. A. Rogers" does not identify a particular living individual. Owner of Reg. Nos. 73,579 and 77,597.
For Silverplated Flatware and Holloware.
First use 1894.

SN 221,748. Oneida Ltd., Oneida, N.Y. Filed June 22, 1965.

WM. A. ROGERS ®

The name "Wm. A. Rogers" does not identify a particular living individual. Owner of Reg. Nos. 73,579 and 77,597.
For Silverplated Flatware.
First use Oct. 1, 1895.

SN 224,175. Coro, Inc., New York, N.Y. Filed July 26, 1965.

CORO-KLAD

Owner of Reg. Nos. 167,160, 642,929, and others.
For Jewelry.
First use on or about June 15, 1965.

Class 29 — Brooms, Brushes, and Dusters

SN 211,103. Schick Electric Inc., Lancaster, Pa. Filed Feb. 1, 1965.

SCHICK

Owner of Reg. Nos. 729,387, 744,955, and 761,310.
For Electric Toothbrushes.
First use in or about July 1963.

SN 211,440. John Lelicoff, Anaheim, Calif. Filed Feb. 5, 1965.

BRUSH TWEEN

Applicant disclaims the word "Brush" and the representation of its goods apart from the mark as shown.
For Disposable Toothbrush.
First use Jan. 5, 1965.

SN 224,596. William Dixon, Incorporated, Newark, N.J. Filed July 30, 1965.

AMERICAN MAID

For Watchmakers' Brushes.
First use Feb. 13, 1947.

Class 30 — Crockery, Earthenware, and Porcelain

SN 202,614. National Silver Company, New York, N.Y. Filed Sept. 24, 1964.

ROYAL EATON

For China Dinnerware.
First use July 31, 1964.

Class 31 — Filters and Refrigerators

SN 184,977. Sheridan Park Mfg. Co., Inc., Chicago, Ill. Filed Jan. 20, 1964.

MAG-NETIC FUEL MASTER

Applicant disclaims the word "Fuel."
For Fuel Filters.
First use June 29, 1956.

SN 207,918. Thermice Corporation, Philadelphia, Pa. Filed Dec. 10, 1964.

THERMLFREEZ

For Machine for Quick Freezing of Food and Other Products, and Parts Therefor.
First use Oct. 28, 1964.

SN 213,641. ACS Industries, Inc., Woonsocket, R.I. Filed Mar. 9, 1965.

MISTERMESH

For Entrainment Separators.
First use Feb. 5, 1965.

Class 32 — Furniture and Upholstery

SN 201,485. Sure-Fit Products Company, Bethlehem, Pa. Filed Sept. 8, 1964.

Magni-Fit

For Furniture Slip Covers.
First use on or about Mar. 17, 1964.

SN 202,051. Super Sturdy Storage Products, Inc., New York, N.Y. Filed Sept. 16, 1964.

HANDI-SHELF

For Prefabricated Shelving Assemblies Shelving.
First use July 6, 1964.

SN 202,763. Clark Equipment Company, Buchanan, Mich. Filed Sept. 28, 1964.

TYLER

Owner of Reg. Nos. 510,184, 740,623, and others.
For Non-Refrigerated Store Fixtures.
First use on or about May 29, 1962.

SN 206,981. Treflerie et Cablerie Julien Wurth et Cie, Chatou, Seine-et-Oise, France. Filed Nov. 25, 1964.

TRECA

Priority claimed under Sec. 44(d) on French Reg. No. 8,132, dated June 22, 1964 (Seine-et-Oise); Natl. Inst. No. 232,425.
For Beds, Mattresses, Pads, Cushions; and Bed Accessories—Namely, Side Guards, Props, and Bed Tables.

SN 207,548. Altoona Mattress Manufacturing Co., Inc., Altoona, Pa. Filed Dec. 7, 1964.

VIBRO-PEDIC

For Mattresses.
First use May 29, 1963.

SN 208,427. American Metal Products Company, Detroit, Mich. Filed Dec. 18, 1964.

GLIDA-BED

For Folding Beds and the Like.
First use Nov. 2, 1964.

SN 212,412. C. B. Hunt Mattress Company, Houston, Tex. Filed Feb. 19, 1965.

SLUMBER GUARD

For Mattresses.
First use Dec. 28, 1964.

SN 212,444. Oxford Filing Supply Co., Inc., Garden City, N.Y. Filed Feb. 19, 1965.

LEVERLOCK

For Support Frames for Hanging File Folders.
First use Oct. 13, 1964.

SN 212,475. Acme Visible Records, Inc., Crozet, Va. Filed Feb. 23, 1965.

SECTORMATIC

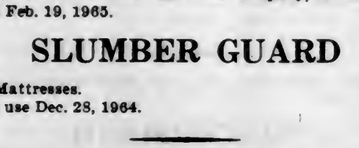
For Rotary Record File Comprising One or More Superposed Circular Record Files Mounted for Motorized Rotation in a Horizontal Plane About a Vertical Axis and the Combination Therewith of One or More Radially Extending Auxiliary Desks, Including Selective Position Control.
First use Oct. 6, 1964.

SN 213,327. Kenlin Enterprises, Inc., d.b.a. Kenlin Manufacturing Company, Highland Park, Ill. Filed Mar. 4, 1965.

ADJUST-A-MATIC

For Bed Canopy Frame.
First use Feb. 19, 1965.

SN 215,368. Eclipse Sleep Products, Inc., Brooklyn, N.Y. Filed Mar. 25, 1965.



No claim is made to the word "Mattress" apart from the mark as shown. Owner of Reg. Nos. 534,160, 600,167, and 609,592.
For Mattresses.
First use on or about May 6, 1953; July 27, 1949, as to "Springwall"; Mar. 4, 1952, as to the six-sided border; May 6, 1953, as to the anatomical figure.

SN 218,195. Hoover Ball and Bearing Company, Saline, Mich. Filed May 6, 1965.

Uni-form

For Wire Springs for Seat Structures.
First use Apr. 5, 1965.

SN 218,439. Jamison Bedding, Inc., Nashville, Tenn. Filed May 10, 1965.

VITA PEDIC

For Mattresses and Box Springs.
First use about Jan. 12, 1964.

Class 33 — Glassware

SN 214,065. Anchor Hocking Glass, Lancaster, Ohio. Filed Mar. 15, 1965.

BIMBO

For Glassware—Namely, Tumblers.
First use on or about Feb. 10, 1965.

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 194,080. Thermo-Dynamics Corporation, Schuylkill Haven, Pa. Filed May 22, 1964.

UNITRON

For Combined Unit for Supplying Hot Water and Heated and/or Cooled Air for Dwellings.
First use Apr. 15, 1964.

SN 202,431. Food Facilities Development Corp., Brooklyn, N.Y. Filed Sept. 28, 1964.



For Cooking Utensils—Namely, Deep Fat Fryers, Including Electric, Gas, or Other Heating Means.
First use Feb. 5, 1964.

SN 205,076. Miller Electric Mfg. Co., Appleton, Wis. Filed Oct. 29, 1964.



The drawing is lined for the color gold.
For Electric Arc Welders.
First use August 1957.

SN 205,079. Miller Electric Mfg. Co., Appleton, Wis. Filed Oct. 29, 1964.

MARK VIII

For Multiple Electric Arc Welding Systems.
First use June 1963.

SN 205,080. Miller Electric Mfg. Co., Appleton, Wis. Filed Oct. 29, 1964.

AIRCRAFTER

For Electric Arc Welders.
First use Dec. 31, 1953.

SN 212,232. National Electric Welding Machines Co., Bay City, Mich. Filed Feb. 17, 1965.

NEWPAK

For Power Supply Units for Resistance Welding Machines.
First use Dec. 29, 1964.

SN 217,673. Thulman Eastern Corporation, Ellicott City, Md. Filed Apr. 29, 1965.

GLO-LITE

For Fireplaces, Stoves, Barbecue Grilles, and Parts Thereof.
First use Sept. 15, 1964.

SN 218,284. Eutectic Welding Alloys Corporation, Flushing, N.Y. Filed May 7, 1965.

ULTRAMAX

For Wear Facing Alloys, Overlay Alloys, Welding Rods, Welding Electrodes, and Welding Tubular Rods.
First use Apr. 12, 1965.

SN 218,285. Eutectic Welding Alloys Corporation, Flushing, N.Y. Filed May 7, 1965.

CHROMCARB

For Wear Facing Alloys, Overlay Alloys, Welding Rods, Welding Electrodes, and Welding Tubular Rods.
First use Apr. 12, 1965.

SN 218,286. Eutectic Welding Alloys Corporation, Flushing, N.Y. Filed May 7, 1965.

FERROTRODE

For Wear Facing Alloys, Overlay Alloys, Welding Rods, Welding Electrodes, and Welding Tubular Rods.
First use Apr. 12, 1965.

SN 218,632. Fernsten Industries Co., Oakland, Calif. Filed May 12, 1965.

FICO

For Heating and Air Conditioning Equipment—Namely, Gas-Fired Furnaces Therefor, Including Furnace Enclosures, Bake Ovens, and Dryers.
First use December 1958.

SN 218,692. Radiant Oven Corp., Fort Lee, N.J. Filed May 12, 1965.

RADIANTWAVE

For Ovens.
First use Dec. 18, 1964.

SN 218,710. Whirlpool Corporation, Benton Harbor, Mich. Filed May 12, 1965.

SERVEL

Owner of Reg. Nos. 223,166, 215,806, and others.
For Heating and Cooking Apparatus—Namely, Ovens, Ranges, and Parts Thereof.
First use Apr. 12, 1965.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 207,343. Southern Oil Stores, Inc., Jacksonville, Fla. Filed Dec. 2, 1964.

SONIC MUD & SNOW

The words "Mud & Snow" are disclaimed apart from the mark as shown.
For Tires.
First use Sept. 21, 1964; 1958 as to "Sonic."

SN 217,186. The General Tire & Rubber Company, Akron, Ohio. Filed Apr. 23, 1965.

SAFETY JET

For Pneumatic Tires.
First use Jan. 26, 1965.

SN 217,188. The Goodyear Tire & Rubber Company, Akron, Ohio. Filed Apr. 23, 1965.

VYCAN

For Conveyor Belting.
First use Oct. 19, 1964.

SN 217,308. The Dayton Tire & Rubber Company, Dayton, Ohio. Filed Apr. 26, 1965.

TITLEIST

For Resilient Vehicle Tires.
First use Apr. 8, 1965.

SN 217,520. Atlas Supply Company, Springfield, N.J. Filed Apr. 28, 1965.

VELCRON

Owner of Reg. Nos. 598,203, 747,633, and others.
For Rubber Tires.
First use Apr. 13, 1965.

SN 217,657. Raybestos-Manhattan, Inc., Manheim, Pa. Filed Apr. 29, 1965.

FluoroCord

Owner of Reg. Nos. 707,562, 776,391, and 776,614.
For Packing and Gasket Material.
First use Apr. 9, 1965.

Class 37 — Paper and Stationery

SN 172,650. Lloyd L. Felker Co., Marshfield, Wis. Filed July 9, 1963.

BING GO BOWL

For Score Sheets for Bowling Game.
First use on or about May 28, 1963.

SN 188,691. Westab Inc., Dayton, Ohio. Filed Mar. 13, 1964.

MADEIRA

For Packaged Writing Paper and Correspondence Envelopes.
First use at least as early as 1945.

SN 204,842. Riverside Paper Corporation, Appleton, Wis. Filed Oct. 26, 1964.

HYCREST

For Printing Papers.
First use Oct. 13, 1964.

SN 210,738. Bright Star Industries, Inc., Clifton, N.J. Filed Jan. 27, 1965.

OZ

For Note Cards, Note Paper, and Writing Paper.
First use January 1951.

SN 211,451. Millen Industries, Inc., New York, N.Y. Filed Feb. 8, 1965.

MIVALCO PAPERS

For Paper, Including Printing Papers.
First use September 1962.

SN 212,692. National Service Industries, Inc., Atlanta, Ga. Filed Feb. 24, 1965.

AECO ATLANTA

The representation of the envelope and the word "Atlanta" are disclaimed apart from the mark as a whole.
For Envelopes and Stationery.
First use Feb. 16, 1965.

SN 215,712. Emery Dwight Dill, Manila, Philippines. Filed Apr. 5, 1965.

STATELEDGE

For Partially Printed Business Forms.
First use Apr. 2, 1965.

SN 215,982. Markal Company, Chicago, Ill. Filed Apr. 7, 1965.

DURA-INK

For Felt Tip Marker.
First use Mar. 10, 1965.

SN 216,161. Graphic Controls Corporation, Buffalo, N.Y. Filed Apr. 9, 1965.

thermaGRAPHIC

For Paper Charts for Recording Instruments.
First use Nov. 17, 1964.

SN 216,196. Printing Service Company, Dayton, Ohio. Filed Apr. 9, 1965.

RAPCO

For Bank Checks and Other Banking Forms.
First use on or about May 30, 1959.

SN 216,585. Friden, Inc., San Leandro, Calif. Filed Apr. 15, 1965.

FRIDEN

Owner of Reg. Nos. 353,891, 782,410, and others.
For Cards and Tape Used With Machines Which Produce and/or Respond to Control Signals.
First use July 14, 1958.

SN 220,398. National Starch and Chemical Corporation, New York, N.Y. Filed June 4, 1965.

REMTEX

For Pressure Sensitive Label Stock.
First use Sept. 30, 1964.

SN 229,075. The Joseph Dixon Crucible Company, Jersey City, N.J. Filed Oct. 1, 1965.

EAZYMARK

For Crayons.
First use Dec. 31, 1917.

SN 229,078. The Joseph Dixon Crucible Company, Jersey City, N.J. Filed Oct. 1, 1965.

VELVATEX

For Dustless Chalk.
First use June 3, 1924.

Class 38 — Prints and Publications

SN 204,716. Springer Publishing Company, Inc., New York, N.Y. Filed Oct. 23, 1964.

SPRINGER

For Books.
First use in or about November 1951.

SN 210,235. Sernoll, Inc., Iowa City, Iowa. Filed Jan. 19, 1965.

ESCORT

For Textbooks.
First use Oct. 12, 1964.

SN 210,737. Bright Star Industries, Inc., Clifton, N.J. Filed Jan. 27, 1965.

OZ

For Greeting Cards.
First use June 9, 1950.

SN 213,876. Louis Kabran, d.b.a. Guide Book of Factory & Plant Tours in United States, Hyattsville, Md. Filed Mar. 11, 1965.

LOUIS KABRAN'S

For Guide Book of Factory Tours in the United States.
First use Dec. 1, 1964.

SN 214,944. American Tract Society, Oradell, N.J. Filed Mar. 25, 1965.

ATS COLLEGIATE CONVERSATIONALS

For Publications (Leaflets and Booklets).
First use Mar. 10, 1964.

SN 217,033. The Institute of Electrical and Electronics Engineers, Incorporated, New York, N.Y. Filed Apr. 21, 1965.

IEEE STUDENT JOURNAL

The words "Student Journal" are disclaimed apart from the mark as shown.
For Magazine Issued From Time to Time Containing Technical and Professional Information for Electrical Engineering College Students.
First use March 1963.

SN 217,201. New England Nuclear Corp., Boston, Mass. Filed Apr. 23, 1965.

ATOMLIGHT

For Bulletin Issued Periodically.
First use November 1957.

SN 220,608. United States Rubber Company, New York, N.Y. Filed June 7, 1965.

FINDINGS

For Monthly Newsletter for the Rubber Trade.
First use May 25, 1965.

Class 39 — Clothing

SN 139,371. Almar Rainwear Corporation, Washington, Ga. Filed Mar. 8, 1962.

DOLPHIN

For Men's, Women's, and Children's Raincoats.
First use Apr. 15, 1959.
Subj. to Intf. with SN 159,475 and SN 198,130.

SN 159,475. Dolfin Sportswear Company, Shillington, Pa. Filed Dec. 20, 1962.



The word "Suits" is disclaimed apart from the mark as shown.
For Athletic Swim Suits for Competitive Swimming, as Distinguished From Ordinary Fashion Styled Swim Suits.
First use on about Dec. 11, 1959.
Subj. to Intf. with SN 139,371 and SN 198,130.

SN 163,875. Robbins Brothers, d.b.a. The L & L Men's Shop, Gainesville, Fla. Filed Mar. 4, 1963.

Stag 'n Drag

For Suits, Slacks, Sport Coats, Shoes, Dress Shirts, Sport Shirts, Jackets, Socks, Underwear, Neckties, Belts, Pajamas, Rainwear, Walking Shorts, Dresses, Skirts, Blouses, Sweaters and Shorts.
First use Aug. 12, 1960.

SN 186,274. Piedmont Shirt Company, Greenville, S.C. Filed Feb. 7, 1964.

TRICOTEER

For Men's and Boys' Shirts, Pajamas, Jackets, Coats and Trousers.
First use Jan. 21, 1964.

SN 193,130. Coordinated Sales, Inc., Chicago, Ill. Filed May 11, 1964.

GOLDEN DOLPHIN

For Bathrobes and Slippers.
First use Nov. 30, 1962, on bathrobes.
Subj. to Intf. with SN 139,371 and SN 159,475.

SN 195,521. Perfect Knit Togs, Inc., New York, N.Y. Filed June 10, 1964.

SNUG-ALLS

For Diaper Sets, Creepers, and Infants' Suits.
First use June 17, 1963.

SN 196,852. Endicott Johnson Corporation, Endicott, N.Y. Filed July 1, 1964.

HI-SOCIETY

For Women's Shoes.
First use May 22, 1964.

SN 198,533. Robert Busse & Co., Inc., Great Neck, N.Y. Filed July 27, 1964.

SUPER SCUFF

Applicant hereby disclaims the word "Scuff" apart from the mark as shown.
For Disposable Slippers.
First use June 1962.

SN 201,651. Sea & Ski Corporation, Millbrae, Calif., assignee of Botany Industries, Inc., d.b.a. Renauld Company, Reno, Nev. Filed Sept. 11, 1964.

RENAULD

Owner of Reg. Nos. 767,972; 792,190, and others.
For Beach Hats.
First use Aug. 4, 1964.

SN 203,748. Creepy Creations, Plymouth Meeting, Pa. Filed Oct. 12, 1964.

MonsterMocs

Applicant disclaims the word "Mocs" apart from the mark as shown.
For Shoes.
First use on or about Oct. 5, 1964.

SN 204,022. Stedman Manufacturing Company, Asheboro, N.C. Filed Oct. 14, 1964.

BLACK LANCE

For Men's and Boys' Underwear, Shirts, Jackets, Athletic Shirts, and Athletic Pants.
First use Sept. 22, 1964.
Subj. to Intf. with SN 206,668.

SN 204,458. Dino Boutiques, Inc., Hollywood, Fla. Filed Oct. 21, 1964.

STEMS·BUDS
by Mr. Dino

Owner of Reg. No. 742,694.
For Women's Blouses and Slacks.
First use Aug. 24, 1964.

SN 205,564. Joseph Antell, Boston, Mass. Filed Nov. 5, 1964.

MICRO FIT

For Footwear for Men, Women, and Children—Namely, Shoes, Sneakers, Inner Soles, and Removable Inner Sole Pads.
First use July 31, 1964.

SN 206,668. Topco Associates, Inc., Skokie, Ill. Filed Nov. 20, 1964.

LANCE

For Socks for Men, Women, Boys and Girls, Men's and Boys' Underwear, Boys' Pants, Children's Tights.
First use Jan. 30, 1961.
Subj. to Intf. with SN 204,022.

SN 207,137. Mar Tee Original Inc., St. Louis, Mo. Filed Nov. 30, 1964.

...it's a Virtue!

For Ladies' Dresses and Jacket and Skirt Combinations.
First use April 1964.

SN 208,215. Wembley, Inc., New Orleans, La. Filed Dec. 16, 1964.

MING
SHANTUNG

The word "Shantung" is disclaimed apart from the mark as shown.
For Neckwear.
First use Oct. 1, 1964.

SN 209,526. Melville Shoe Corporation, New York, N.Y. Filed Jan. 7, 1965.

FASCINATORS

For Women's, Misses', and Children's Shoes.
First use Jan. 5, 1965.

SN 210,158. The Firestone Tire & Rubber Company, Akron, Ohio, assignee of Seiberling Rubber Company, Barberton, Ohio. Filed Jan. 18, 1965.

Owner of Reg. No. 173,619.
For Heels and Soles.
First use Nov. 17, 1964.

SN 211,698. Bill the Hatter, Inc., Chicago, Ill. Filed Feb. 10, 1965.

BILL THE HATTER

The representation of the hat is disclaimed apart from the mark as shown.
For Men's and Boys' Furnishings—Namely, Hats and Caps, Shoes, Shirts, and Vests.
First use April 1958.

SN 211,771. Vanity Fair Mills, Inc., Wyomissing, Reading, Pa. Filed Feb. 10, 1965.

FILIBUSTER

For Foundation Garments—Namely, Brassieres.
First use Jan. 18, 1965.

SN 211,777. Vanity Fair Mills, Inc., Wyomissing, Reading, Pa. Filed Feb. 10, 1965.

SWAN DIVE

For Foundation Garments—Namely, Brassieres.
First use Jan. 18, 1965.

SN 211,852. Les Tricots Dubonnet Ltee., Montreal, Quebec, Canada. Filed Dec. 31, 1964.

DUBONNET

Owner of Canadian Reg. No. 133,419, dated Nov. 8, 1963.
For Ladies', Misses', Juniors', and Girls' Knitted and Woven Dresses, Shorts, Sweaters, Cardigans, Coats, Suits, Skirts, Slacks and Pajamas, and Men's and Boys' Knitted and Woven Sweaters, Jackets, Cardigans, and Shirts.

SN 212,331. Lord Jeff Knitting Company, Incorporated, Maspeth, N.Y. Filed Feb. 18, 1965.

Chevre'

For Sweaters, Basque Shirts, Dickies, and Mufflers.
First use January 1964.

SN 213,553. Genesco Inc., Nashville, Tenn. Filed Mar. 8, 1965.

DEMOISELLE

The French word "Demoiselle" when translated means "young lady."
For Brassieres and Girdles.
First use June 25, 1964.

SN 214,267. Her Majesty Underwear Company, Mauldin, S.C. Filed Mar. 16, 1965.

TWIN-SEAT

For Panties.
First use June 27, 1951.

SN 215,360. Union Carbide Corporation, New York, N.Y. Filed Mar. 30, 1965.

ULOK

For Heels for Footwear.
First use on or about Jan. 22, 1965.

SN 216,636. U.S. Industries, Inc., New York, N.Y. Filed Apr. 15, 1965.

Solitaire

Owner of Reg. Nos. 379,447, 686,828, and others.
For Ladies' Hosiery.
First use Mar. 2, 1964.

SN 217,598. Anne Brusewitz, d.b.a. Anne Bruse, Boras, Sweden. Filed Apr. 29, 1965.

Anne Bruse

For Women's Swimwear, Beachwear, After-Ski Wear, and Hats.
First use Dec. 15, 1964; in commerce Jan. 25, 1965.

SN 218,588. U.S. Industries, Inc., New York, N.Y. Filed May 11, 1965.



Owner of Reg. Nos. 364,739, 676,374, and 679,045.
For Ladies' Hosiery.
First use June 20, 1963.

SN 221,263. Genung's Inc., Mount Vernon, N.Y. Filed June 16, 1965.

GENSHIELD

For Men's Shirts and Robes.
First use January 1962.

SN 221,680. Belk Stores Services, Inc., Charlotte, N.C. Filed June 21, 1965.

Archdale
PERFORM

Owner of Reg. Nos. 379,734, 778,365, and others.
For Men's Shorts, Pajamas, and Dress Shirts.
First use May 3, 1965.

SN 223,488. American Hospital Supply Corporation, Evanston, Ill. Filed July 16, 1965.

HOSPITEX

For Pajamas, Nightshirts, Robes, Slippers for Children and Adults, Shirts, Kimonos, Gowns, Tie Binders, Diapers and Tie Binders for Infants.
First use on or before July 1, 1963.

Class 40 — Fancy Goods, Furnishings, and Notions

SN 215,113. The Patent Button Company, Waterbury, Conn. Filed Mar. 26, 1965.

PATWIN

Owner of Reg. Nos. 570,319 and 571,411.
For Plastic Buttons.
First use on or before April 1955.

SN 218,340. Think Specialties, Inc., Nashville, Ind. Filed May 7, 1965.

CLIP-TIES

For Shoestring Knot Retainer.
First use May 1, 1965.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 199,546. Domestic Lace Manufacturing, Inc., Englewood, N.J. Filed Aug. 10, 1964.

WICK A 'WAY

For Knitted, Netted, and Textile Fabrics Used in Making Underwear, Diapers, Sweatshirts and the Like.
First use May 25, 1964.

SN 200,918. Drapery Promotions, Inc., New York, N.Y. Filed Aug. 31, 1964.

Dream House

For Piece Goods of Cotton, Rayon, Satin, Linen and Synthetic Fibers, and Combinations Thereof, for Draperies and Slip-Covers; Draperies and Slip-Covers.
First use Aug. 22, 1956.

SN 217,332. Golding Bros. Company, Inc., New York, N.Y. Filed Apr. 26, 1965.

GOLD-SET

For Drapery Fabrics in the Piece.
First use Nov. 13, 1964.

SN 218,741. Cranston Print Works Company, Cranston, R.I. Filed May 13, 1965.

CRAN-PREST

For Textile Fabrics in the Piece of Cotton, Rayon, Synthetic Fibres and Mixtures Thereof.
First use Apr. 1, 1965.

SN 222,578. Henry Glass & Co., New York, N.Y. Filed July 2, 1965.

FRESHAIRE

For Piece Goods, Including Cotton, Synthetics and Combinations of Cotton and Synthetics.
First use May 28, 1965.

SN 223,188. United States Rubber Company, New York, N.Y. Filed July 12, 1965.

US

For Rug Underlay.
First use 1953 or earlier.

SN 223,601. United States Rubber Company, New York, N.Y. Filed July 16, 1965.

METRO

For Rug Underlay.
First use January 1963 or earlier.

SN 223,602. United States Rubber Company, New York, N.Y. Filed July 16, 1965.

MARVELAIRE STAR

Owner of Reg. No. 682,959.
For Rug Underlay.
First use January 1963 or earlier.

SN 223,785. Graniteville Company, Graniteville, S.C. Filed July 20, 1965.

CHANCES R

For 65/35 Blend of Cotton and Polyester Fabric, Used for Wearing Apparel Such as Ladies' Sportswear.
First use June 24, 1965.

SN 223,886. The Harodite Finishing Company, Inc., North Dighton, Mass. Filed July 21, 1965.

HARO SHAPE

Owner of Reg. No. 682,832 and others.
For Interfacing Fabrics for Garments.
First use on or about Apr. 1, 1965.

Class 43 — Thread and Yarn

SN 197,817. Brunswick Worsted Mills, Inc., Moosup, Conn. Filed July 14, 1964.

PIN-UP

For Knitting Yarn.
First use about Apr. 1, 1962.

SN 213,828. A/S Dale Fabrikker, Bergen, Norway. Filed Mar. 11, 1965.

HEILO

In the Norwegian language, the word "Heilo" is the name of a bird. In English, this bird is referred to as the "golden plover."
For Handknitting Yarn.
First use May 1949; in commerce August 1961.

SN 213,829. A/S Dale Fabrikker, Bergen, Norway. Filed Mar. 11, 1965.

FASAN

In the Norwegian language, "Fasan" is the name of a bird. In English, this bird is referred to as a "pheasant."
For Handknitting Yarn.
First use May 1949; in commerce August 1961.

SN 223,586. David Saunders, d.b.a. David Saunders Company, Belmont, N.C. Filed July 16, 1965.

AVALON

For Industrial Sewing Threads Made From High Modulus Regenerated Cellulose Rayon Spun on the Cotton System.
First use Feb. 1, 1965.

Class 44 — Dental, Medical, and Surgical Appliances

SN 191,151. Etablissement Dentaire Ivoclar, Schaan, Liechtenstein. Filed Apr. 15, 1964.

Biogenic

Priority claimed under Sec. 44(d) on Liechtenstein Reg. No. 1,690, dated Feb. 27, 1964.
For Artificial Teeth According to Biogen Pattern and Articulators.

SN 192,490. Loma Linda University, Loma Linda, Calif. Filed May 1, 1964.

LOMA LINDA

For Materials for Fabricating Molds for Producing Dental Castings by the Lost Wax Process; Instruments for Aligning Pin Holes in Teeth To Support Pins Utilized for the Ultimate Retention of Tooth Cavity Fillings; Silver Alloy Dental Amalgams; Investment Materials for Making Molds for Porcelain Inlays; and Powdered Gold Intended for Dental Cavity Filling Purposes.
First use July 24, 1957.

SN 195,493. Air Reduction Company, Incorporated, New York, N.Y. Filed June 12, 1964.

OHIO

Owner of Reg. Nos. 502,740, 708,457, and others.
For Baby Incubators.
First use in or about June 1950.

SN 196,137. Foot Levelers, Inc., Dubuque, Iowa. Filed June 22, 1964.

FOOT LEVELERS

For Arch Support.
First use Sept. 2, 1956.

SN 197,753. Ormco Corporation, Glendora, Calif. Filed July 13, 1964.

ORMCO

For Dental and Orthodontic Appliances, Tools, and Equipment for Correcting, Restoring and Treating Defects of the Oral Cavity; Tools and Equipment To Prepare Such Appliances; and Tools and Equipment Employed in the General Dental, Orthodontic, Pediadontic, and Oral Surgeon's Office.
First use Jan. 2, 1961.

SN 208,433. Baxter Laboratories, Inc., Morton Grove, Ill. Filed Dec. 18, 1964.

COLOR-COURSE

For 4-Way Stopcock.
First use Dec. 2, 1964.

SN 208,894. Dedham Cabinet Shop, Inc., Dedham, Mass. Filed Dec. 28, 1964.

RON-AL

For Prefabricated Sauna Baths—Namely, Wall and Ceiling Sections for Constructing Sauna Bath Enclosures, and Benches for Installation in the Enclosure.
First use Oct. 21, 1964.

SN 210,874. Instrumentation Associates Inc., New York, N.Y. Filed Jan. 28, 1965.

KATAPHEROMETER

For Helium and Carbon Dioxide Gas Analyser for the Determination of Impairment in Lung Ventilation.
First use 1961.

SN 210,879. Instrumentation Associates Inc., New York, N.Y. Filed Jan. 28, 1965.

EXPIROGRAPH

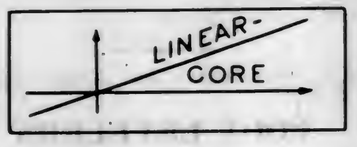
For Movably Mounted Apparatus for Indicating and Measuring Lung Characteristics, Such as, Vital Capacity, Tidal Volume, Respiratory Rate, Minute Oxygen Uptake, and Maximum Breathing Capacity.
First use 1961.

SN 211,043. E & M Instrument Company, Inc., Houston, Tex. Filed Feb. 1, 1965.

LINEAR-CORE

For Electrosphygmographs or Indirect Blood Pressure Transducers, Blood Pressure Transducers, Air and Fluid Pressure Transducers as Used in Dental, Medical, and Surgical Appliances.
First use Apr. 10, 1964.

SN 211,044. E & M Instrument Company, Inc., Houston, Tex. Filed Feb. 1, 1965.



For Electrolsphygmographs or Indirect Blood Pressure Transducers, Blood Pressure Transducers, Air and Fluid Pressure Transducers as Used in Dental, Medical, and Surgical Appliances.
First use Apr. 10, 1964.

SN 217,572. Stern Dental Co., Inc., Mount Vernon, N.Y. Filed Apr. 28, 1965.

GOLD=BOND PORCELAIN

Applicant disclaims the word "Porcelain" apart from the mark as a whole.
For Dental Porcelain.
First use Feb. 19, 1965.

Class 45—Soft Drinks and Carbonated Waters

SN 195,147. Polar Chilled Products Co., Inc., d.b.a. Polar Chilled Products Co., Brea, Calif. Filed June 8, 1964.

POLAR

Owner of Reg. No. 787,882.
For Orangeade, Lemonade, Grape Drink, and Fruit Punch.
First use on or about Feb. 1, 1959.

SN 218,843. The Coca-Cola Company, Atlanta, Ga. Filed May 14, 1965.

Chime

Owner of Reg. No. 757,442.
For Non-Alcoholic, Maltless Soft Drink Beverage, and Syrup, and Concentrate for Making Same.
First use Jan. 15, 1965.

Class 46—Foods and Ingredients of Foods

SN 191,291. Indianland Enterprises, Inc., Madison, Wis. Filed Apr. 16, 1964.

CHIEF-DAWG

For Buns.
First use Jan. 31, 1964.

SN 191,292. Indianland Enterprises, Inc., Madison, Wis. Filed Apr. 16, 1964.

CHIEFBURGER

For Buns.
First use Jan. 31, 1964.

SN 199,046. Fremantle Fishermen's Co-Operative Society Limited, Fremantle, Western Australia. Filed Aug. 3, 1964.

BREEZIE

For Fresh, Frozen Rock Lobster Tails, Fresh, Frozen Whole Cooked Lobsters, and Fresh, Frozen Whole Cooked Shrimps.
First use Dec. 3, 1961; in commerce Mar. 3, 1962.

SN 199,047. Fremantle Fishermen's Co-Operative Society Limited, Fremantle, Western Australia. Filed Aug. 3, 1964.

Ozzie

For Fresh, Frozen Rock Lobster Tails, Fresh, Frozen Whole Cooked Lobsters, and Fresh, Frozen Whole Cooked Shrimps.
First use Dec. 3, 1960; in commerce Mar. 3, 1961.

SN 201,228. Cecil J. Mobley, Miami Beach, Fla. Filed Sept. 3, 1964.

SHRINEFUN

For Candy.
First use on or about Apr. 1, 1963.

SN 202,397. Vigo Importing Co., Tampa, Fla. Filed Sept. 22, 1964.

VIGO

For Edible Olive Oil; Powdered Flavoring and Coloring Used for Arroz Con Pollo (Yellow Rice and Chicken) and Other Spanish-Type Foods; Saffron; Canned Guava Shells; and Sweetened Condensed Milk.
First use Dec. 12, 1961.

SN 203,420. National Dairy Products Corporation, Chicago, Ill. Filed Oct. 6, 1964.

COFFEE SWIRL

For Cream Substitute.
First use Sept. 21, 1964.

SN 205,450. Osceola Fruit Distributors, Kissimmee, Fla. Filed Nov. 8, 1964.

KISSIMMEE RIVER

For Fresh Citrus Fruits, and Canned Citrus Juices.
First use 1934.

SN 207,118. Early California Foods, Inc., Los Angeles, Calif. Filed Nov. 30, 1964.

EARLY CALIFORNIA FOODS INC.

The corporate name "Early California Foods Inc." is disclaimed except in the association shown, without any waiver of applicant's common law rights therein.
Owner of Reg. No. 396,011.
For Canned and Bottled Olives.
First use Nov. 3, 1964; Sept. 8, 1941, as to "Early California."

SN 208,040. Country Style, Inc., Kalamazoo, Mich. Filed Dec. 14, 1964.



Applicant disclaims the expression "God Bless Our Home."
Owner of Reg. No. 653,233.
For Bread, Buns, and Rolls.
First use Nov. 19, 1965.

SN 208,951. Mr. Twister's Bretsel Co., Inc., North White Plains, N.Y. Filed Dec. 28, 1964.

CHEESE BARRELS

The word "Cheese" is disclaimed apart from the mark as shown. Owner of Reg. No. 771,224.
For Cheese-Flavored Pretzels.
First use Oct. 30, 1963.

SN 212,835. Koninklijke Fabrieken C. J. van Houten & Zoon N.V., Weesp, Netherlands, by change of name from C. J. van Houten & Zoon N.V., Weesp, Netherlands. Filed Feb. 25, 1965.

VAN HOUTEN ROYAL WEESP

Applicant disclaims the word "Weesp" apart from the mark as shown. Owner of Reg. Nos. 50,864, 727,300, and others.
For Eating Chocolate.
First use Jan. 15, 1965; in commerce Jan. 15, 1965.

SN 212,908. Simmons Milk Products, Inc., Chicago, Ill. Filed Feb. 26, 1965.

SIMMONS

For Whey Products—Namely, Whey Concentrate, Used for Livestock and Poultry Feed.
First use Apr. 1, 1926.

SN 213,696. National Biscuit Company, New York, N.Y. Filed Mar. 9, 1965.

FROLICS

Owner of Reg. No. 346,281.
For Biscuits.
First use Feb. 12, 1965.

SN 213,697. National Biscuit Company, New York, N.Y. Filed Mar. 9, 1965.

HY-TIME

Owner of Reg. No. 846,282.
For Cookies and Shelled Peanuts.
First use Feb. 10, 1965.

SN 215,846. S. Martinelli & Company, Watsonville, Calif. Filed Mar. 30, 1965.

DRINK YOUR APPLE A DAY

For Bottled Apple Cider and Apple Juice.
First use September 1929 on apple cider.

SN 216,208. Salerno-Megowen Biscuit Company, Chicago, Ill. Filed Apr. 9, 1965.

CARMELITAS

For Cookies.
First use Mar. 16, 1965.

SN 216,288. Fox-Cross Candy Company, Everett, Mass. Filed Apr. 12, 1965.

TWIST O' LEMON

For Candy.
First use Mar. 15, 1965.

SN 216,301. The Grand Union Company, East Patterson, N.J. Filed Apr. 12, 1965.



Owner of Reg. Nos. 46,832, 765,629, and others.

For Canned, Frozen, and Fresh Vegetables, Canned, Frozen, Fresh, and Dried Fruits, Canned Meats, Fresh Meats, Canned Fish, Frozen Meat, Fish, and Fowl Dinners, Fruit Preserves, Jellies, Applesauce, Cranberry Sauce, Maraschino Cherries, Sauerkraut in Cans or Plastic Containers, Fruit Juices in Cans, Bottles, or Cartons, Fruit Juice Drinks in Cans, Bottles, or Cartons, Cheeses, Bakery Products—Namely, Bread, Rolls, Cakes, Pies, and Doughnuts, Cake and Pie Crust Mixes, Vegetable Shortening, Frozen Waffles, Egg Noodles, Vermicelli, Spaghetti, Macaroni, Mayonnaise, Salad Dressing, Chef's Oil, Corn Oil, Olive Oil, Olives, Tomato Sauce, Tomato Juice, Catsup, Chili Sauce, Peanut Butter, Honey, Gherkins, Pickles, Food Flavoring Extract, Evaporated Milk, Prepared Mustard, Salt, Vinegar, Soups, Pancake Syrup, Coffee, Instant Coffee, Tea, Nuts, Dried Dates, Potato Chips, Instant Mashed Potato, Fresh Eggs, Ice Cream, and Dog Food.

First use about July 1963, on canned vegetables.

SN 222,673. Ray Costa, d.b.a. Costa Sales Company, Salinas, Calif. Filed July 6, 1965.

WONDER KING

For Fresh Vegetables.
First use May 28, 1965.

SN 223,083. Cel-A-Pak, Salinas, Calif. Filed July 12, 1965.

Sable

For Fresh Cauliflower.
First use May 5, 1962.

SN 223,198. Cel-A-Pak, Salinas, Calif. Filed July 12, 1965.

Sassy

For Fresh Cauliflower.
First use Apr. 27, 1958.

Class 49 — Distilled Alcoholic Liquors

SN 206,818. Sidney H. Cohen, d.b.a. Highlander & Lord Company, Baltimore, Md. Filed Nov. 24, 1964.

OLD GUARD

For Scotch Whisky.
First use Sept. 9, 1964.

SN 206,819. Sidney H. Cohen, d.b.a. Highlander & Lord Company, Baltimore, Md. Filed Nov. 24, 1964.

ARCH ROYAL

For Scotch Whisky.
First use Sept. 9, 1964.

SN 206,820. Sidney H. Cohen, d.b.a. Highlander & Lord Company, Baltimore, Md. Filed Nov. 24, 1964.

HONOUR GUARD

For Scotch Whisky.
First use Sept. 9, 1964.

Class 50 — Merchandise Not Otherwise Classified

SN 207,131. Cornelia P. Jones, Altadena, Calif. Filed Nov. 30, 1964.

LOVIN' THOUGHTS

For Original Flower Arrangements of Artificial Flowers.
First use Nov. 14, 1964.

SN 220,240. The Singer Company, New York, N.Y. Filed June 2, 1965.

FAITHFULLY YOURS

For Dress Forms and Dress Form Covers.
First use Jan. 15, 1965.

SN 226,098. Harry Sugerman, Inc., San Antonio, Tex. Filed Aug. 19, 1965.

SUSCO

For Military Insignia.
First use 1950.

Class 51 — Cosmetics and Toilet Preparations

SN 188,313. The Wella Corporation, Englewood, N.J. Filed Mar. 9, 1964.

WELLA
Color Caress

No claim is made to the word "Color" apart from the mark as shown.

For Hair Coloring Dye, Tint, and Rinse.
First use Feb. 25, 1964.

SN 200,725. Hudson National, Inc., d.b.a. Hudson Toiletries, New York, N.Y., by change of name from Hudson Vitamin Products, Inc., New York, N.Y. Filed Aug. 27, 1964.

HUDSON
H*H
TOILETRIES

No registration rights are claimed in the words "Hudson" or "Toiletries" apart from the mark as shown.

For Toiletries—Namely, Suntan Lotion and Personal Deodorant.

First use June 9, 1964.

SN 204,204. Studio Girl-Hollywood, Inc., Glendale, Calif. Filed Oct. 16, 1964.

QUE SERA

The words "Que Sera" may be translated from Spanish as "what will be."

For Toilet Water and Cologne.
First use on or about Aug. 12, 1964.

SN 208,622. Phillip E. Ray, d.b.a. Phil E. Ray Enterprises, Inc., Las Vegas, Nev. Filed Dec. 21, 1964.

Moisture Balance

Applicant disclaims exclusive right to the word "Moisture" apart from the mark as shown.

For Concentrated Moisturising Creme, Concentrated Cleansing Creme, Skin Freshener, Liquid Make-Up, and Concentrated Eye and Throat Creme.

First use Dec. 15, 1964.

SN 209,023. Dave Miller, d.b.a. Lee Miller, Dallas, Tex. Filed Dec. 29, 1964.

Zortel

For Perfume, Perfume Oil, Cologne, and Bath Powder.
First use Dec. 9, 1964.

SN 211,098. Revive Products, Inc., New York, N.Y. Filed Feb. 1, 1965.

ABSOLUTE

Hair Lotion.
First use on or about Nov. 23, 1964.

SN 213,986. Ellen Kaye Laboratories, Inc., St. Paul, Minn. Filed Mar. 12, 1965.

BLOSSOM OUT

For Ready-To-Use Temporary Hair Color, Conditioner, and Setting Lotion.
First use Feb. 23, 1965.

SN 214,025. Science Laboratories, Inc., Skokie, Ill. Filed Mar. 12, 1965.

VALIANT

For Toothpaste and Shaving Cream.
First use Nov. 22, 1963.

SN 214,346. King Research, Inc., Brooklyn, N.Y. Filed Mar. 17, 1965.

Love & Kisses

For Hand Cream.
First use Mar. 11, 1965.

SN 216,075. The Gillette Company, d.b.a. The Toni Company, Chicago, Ill. Filed Apr. 8, 1965.

CASUAL

Owner of Reg. Nos. 441,329 and 662,726.
For Hair Color.
First use July 1962.

SN 216,197. The Procter & Gamble Company, Cincinnati, Ohio. Filed Apr. 9, 1965.

LIVELY TOUCH

For Hair Coloring Composition.
First use Dec. 18, 1964.

SN 216,198. The Procter & Gamble Company, Cincinnati, Ohio. Filed Apr. 9, 1965.

RESISTIN

For Dentifrice.
First use Feb. 5, 1965.

Class 52 — Detergents and Soaps

SN 193,513. Wave-A-Wand Car Wash of America, Inc., Shawnee Mission, Kans. Filed May 14, 1964.

WAVE-A-WAND

For Car Washing Compound.
First use Oct. 5, 1963.

SN 203,351. Today Sales Company, Osceola, Ind. Filed Oct. 5, 1964.

TODAY

For Laundry Concentrate With Bio-Degradable Cleaning Compounds.
First use Sept. 21, 1964.

SN 205,110. Scientific Advances, Inc., Columbus, Ohio. Filed Oct. 29, 1964.

SE-LIN

For Cleaning Solution for Cleaning the Platen, Type, and Other Mechanical Parts of Typewriters, Labeling Devices and Other Typing, Labeling, and Printing Apparatus.
First use May 28, 1964.

SN 222,410. Pennsalt Chemicals Corporation, Philadelphia, Pa. Filed June 30, 1965.

TYME

Owner of Reg. No. 679,392.
For Cleaners and Detergents for Metals, Particularly Automobile Parts.
First use Nov. 1, 1952.

SN 222,514. Safe'n Kleen, Inc., New York, N.Y. Filed July 1, 1965.



Owner of Reg. No. 690,351.
For Chemical Compound of Solids To Be Dissolved in a Solvent, the Resulting Solution Being for the Washing of Vegetables and Fruits in Order To Remove Dirt and Treating Chemicals Therefrom.
First use on or about Aug. 17, 1960.

SERVICE MARKS

Class 100 — Miscellaneous

SN 185,579. Collier Carbon and Chemical Corporation, Los Angeles, Calif. Filed Jan. 29, 1964.



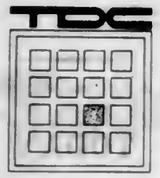
The drawing is lined for green, but no claim is made to color.
For Testing, Statistical, and Advisory Services Rendered to Growers for the Purpose of Improving Crop Growth and Harvest Yield.
First use February 1962.

SN 205,964. Alexandre-Louis Raimon, Paris, France. Filed Nov. 10, 1964.

ALEXANDRE

For Hair Styling and Dressing Services.
First use Nov. 1, 1957; in commerce Oct. 10, 1962.

SN 210,058. The Toy Development Center, Inc., Beverly Hills, Calif. Filed Jan. 15, 1965.



For Research and Development of Toys and Games.
First use May 28, 1964.

SN 219,876. Mardee's Food Systems, Inc., Rocky Mount, N.C. Filed May 27, 1965.

HARDEE'S LI'L CHEF

Owner of Reg. Nos. 741,740 and 741,048.
For Restaurant Services.
First use Apr. 7, 1963.

Class 101 — Advertising and Business

SN 162,049. Boats Unlimited Corp., Larchmont, N.Y. Filed Feb. 4, 1963.



The lining on the drawing is intended for shading purposes only.
For Consulting, Counseling and Holding of Clinics on Boats and Dealers' Problems With Respect Thereto; and Providing Used Boat Directories, Including the Periodic Mailing of Insert Sheets Containing Up-To-The-Minute Information in This Field.
First use September 1962.

SN 162,694. Big Bear Stores Company, Columbus, Ohio. Filed Feb. 14, 1963.

BUCKEYE BIG TEN

Owner of Reg. No. 676,120.
For Promoting the Sale of the Goods and Services of Others by Means of Trading Stamps Redeemable in Premiums.
First use Mar. 12, 1962.

SN 162,695. Big Bear Stores Company, Columbus, Ohio. Filed Feb. 14, 1963.



The number "10" and the word "Stamp" is disclaimed apart from the mark as shown. The drawing is lined for shading only, and is not used to indicate color. Owner of Reg. No. 676,120.
For Promoting the Sale of the Goods and Services of Others by means of Trading Stamps Redeemable in Premiums.
First use Mar. 12, 1962.

SN 201,493. The Tresler Oil Company, Cincinnati, Ohio. Filed Sept. 8, 1964.



For Advertising Promotion and Sale of Petroleum Products, and Services to Motorists.
First use Jan. 2, 1963.

SN 209,499. Diamond National Corporation, New York, N.Y. Filed Jan. 7, 1965.

FORBES

For Design, Reproduction and Custom Manufacture of Products of the Graphic Art Utilized for Commercial, Non-Commercial, and Artistic Uses and Produced by Letterpress or Relief Process, Lithography or Planographic Processes, Gravure or Intaglio Processes.
First use December 1959.

SN 216,410. Armiger Louis Jagoe, d.b.a. Corporate Insurance Management, Washington, D.C. Filed Apr. 13, 1965.

CIM

For Insurance Management Services in the Areas of Public Liability and Workmen's Compensation, Physical Damage, Bonds, Life Insurance, Pension Planning, Group Insurance, Safety Engineering, and Insurance Auditing.
First use Jan. 1, 1965.

Class 102 — Insurance and Financial

SN 198,316. William Bass & Associates, Inc., Chicago, Ill. Filed July 22, 1964.

HOST PLAN

Applicant disclaims all rights to the word "Plan" apart from the mark as shown.
For Insurance Agency Services.
First use May 19, 1964.

SN 204,138. Combined American Insurance Company, Dallas, Tex. Filed Oct. 16, 1964.

COMBINED AMERICAN INSURANCE COMPANY

For Underwriting of All Forms of Accident and Health Insurance, and Life Insurance.
First use Feb. 8, 1944.

SN 211,591. Southeastern Financial Corporation, Charlotte, N.C., by change of name from Southeastern Factors Corporation, Charlotte, N.C. Filed Feb. 8, 1965.



MONEY IN MOTION

For Financing Manufacturers and Distributors by Purchasing Accounts Receivable Without Recourse, and Making Loans Against Accounts Receivable, Inventories, and Personal and Real Property.
First use Dec. 26, 1962.

SN 211,592. Southeastern Financial Corporation, Charlotte, N.C., by change of name from Southeastern Factors Corporation, Charlotte, N.C. Filed Feb. 8, 1965.



For Financing Manufacturers and Distributors by Purchasing Accounts Receivable Without Recourse, and Making Loans Against Accounts Receivable, Inventories, and Personal and Real Property.
First use Dec. 26, 1962.

SN 212,840. State Farm Mutual Automobile Insurance Company, Bloomington, Ill. Filed Feb. 24, 1965.

MEDi-ca$H

For Underwriting Insurance—Namely, Health Benefits and Hospitalization.
First use Feb. 21, 1965.

SN 214,256. Financial Management Institute, Inc., Dayton, Ohio. Filed Mar. 16, 1965.



The words "Research," "Education," and "Counsel" are disclaimed apart from the mark as shown.
For Operating Financial Management Programs.
First use Aug. 16, 1964.

Class 103 — Construction and Repair

SN 166,068. Continental Motors Corporation, Muskegon, Mich. Filed Apr. 4, 1963.



The drawing is lined for the color red. Owner of Reg. Nos. 118,628, 539,240, and others.
For Service, Rework, Maintenance, Overhaul, Repair, Design, Testing, Research and Field Engineering of Internal Combustion Engines and Their Controls, Parts, and Accessories for Aircraft Power Applications of Commercial and Military Customers and Users.
First use July 1929.

SN 166,071. Continental Motors Corporation, Muskegon, Mich. Filed Apr. 4, 1963.

CONTINENTAL MOTORS

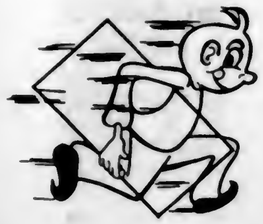
Applicant disclaims any exclusive rights in the word "Motors" apart from the mark as shown. Owner of Reg. Nos. 118,628, 539,240, and others.
For Service, Rework, Maintenance, Overhaul, Repair, Design, Testing, Research, and Field Engineering of Internal Combustion Engines, Transmissions and Their Controls, Parts, and Accessories for Industrial, Marine, Transportation and Aircraft Power Application of Commercial and Military Customers and Users.
First use January 1917.

SN 193,514. Wave-A-Wand Car Wash of America, Inc., Shawnee Mission, Kans. Filed May 14, 1964.

WAVE-A-WAND

For Operation of Facilities for Self Service Car Washing.
First use Sept. 26, 1963.

SN 195,696. National Auto Glass Co., Inc., Los Angeles, Calif. Filed June 15, 1964.



Applicant disclaims the representation of a piece of glass apart from the mark as shown.
For Installation of Glass in Automobiles.
First use June 1954.

Class 106 — Material Treatment

SN 178,929. Mark S. Larwood, d.b.a. Mark Larwood Company, Redwood City, Calif. Filed Oct. 14, 1963.

Larwood SYSTEM

Applicant disclaims exclusive rights to the term "System." The drawing is lined for the color brown.
For Microfilming and Microphotographic Reproduction Services.
First use May 15, 1951.

Class 107 — Education and Entertainment

SN 152,902. MacFadden-Bartell Corporation, d.b.a. Miss Latin America, Wado, New York, N.Y. Filed Sept. 11, 1962.



For Entertainment Services in the Form of a Beauty Contest for Contestants of Spanish or Latin American Descent.
First use Sept. 1, 1962.

SN 168,843. Norwood Arena, Inc., Norwood, Mass. Filed May 14, 1963.

YANKEE

For Entertainment Services in the Form of an Annual Auto Stock Car Race.
First use June 17, 1961.

SN 188,926. The Sunrise Quartet, Portsmouth, Ohio. Filed Mar. 17, 1964.

THE SUNRISE QUARTET

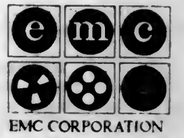
The word "Quartet" is disclaimed as a part of the mark.
For Entertainment Services—Namely, Providing Choral Music.
First use Sept. 1, 1956.

SN 216,391. Dallas Sales Executives Club, Dallas, Tex. Filed Apr. 13, 1965.

SELL-A-RAMA

For Services of Education Comprising Arranging for and Conducting Seminars and Disseminating Information Pertaining to Salesmanship.
First use February 1960.

SN 218,408. EMC Corporation, St. Paul, Minn. Filed May 10, 1965.



EMC CORPORATION

Applicant hereby disclaims the descriptive reel and disc design apart from the mark as shown.
For Production of Educational, Industrial and Commercial Recordings (Tape and Disc), Filmstrips and Motion Pictures (Live and Animated), Scripts, Manuals, Texts, and Translations for Clients in the Fields of Education and Industry.
First use Nov. 20, 1963.

COLLECTIVE MEMBERSHIP MARKS

Class 200

SN 211,130. Western Concrete Reinforcing Steel Institute, Burlingame, Calif. Filed Feb. 1, 1965.



The drawing is lined for the color red.
For Indicating Membership in Applicant.
First use Oct. 15, 1964.

CERTIFICATION MARKS

Class A — Goods

SN 184,902. Eksport-Svineslagteriernes Slagsforening, Axelborg, Copenhagen, Denmark. Filed Jan. 20, 1964.



The mark certifies origin of the products in Denmark, manufactured by Danish producers. Priority claimed under Sec. 44(d) on Danish application filed July 22, 1963; Reg. No. 17, dated Oct. 2, 1965.
For Canned Meat.

SN 187,210. Pasadena Art Museum, Pasadena, Calif. Filed Feb. 21, 1964.



The mark certifies that the goods have met the design approval of judging committees established by the applicant, and that the goods are either designed or manufactured or are designed and manufactured in the State of California. The drawing is lined for the color red.
For Furniture, Decorative Objects and Accessories for Household Use Which Have Been Designed and/or Produced in California.
First use Jan. 31, 1955.

SN 219,945. Air Comfort Standards Association, Los Angeles, Calif. Filed May 28, 1965.



The mark certifies that a particular building has met certain standards and has been properly prepared for air conditioning.

For Buildings.

First use Nov. 6, 1964.

TRADEMARK REGISTRATIONS ISSUED

PRINCIPAL REGISTER

Class 1 — Raw or Partly Prepared Materials

800,532. PARALINE RD. The Barber-Webb Company Incorporated. SN 152,195. Pub. 10–5–65. Filed 8–30–62.

800,533. PARALINE AR. The Barber-Webb Company Incorporated. SN 153,245. Pub. 10–5–65. Filed 9–17–62.

Class 2 — Receptacles

800,534. SHOPPER'S FAIR. Mangel Stores Corporation. SN 151,939. Pub. 10–5–65. Filed 8–27–62.

800,535. EVENFLO. Dunhill International, Inc. MULTIPLE CLASS (Classes 2 and 44). SN 181,970. Pub. 10–26–65. Filed 11–27–63.

800,536. M·B·G. Janitorial Supplies Corporation. MULTIPLE CLASS (Classes 2, 29, 37, and 52). SN 171,356. Pub. 10–5–65. Filed 6–19–63.

800,537. CATERETTE. SI Lite, Inc. SN 197,185. Pub. 10–5–65. Filed 7–6–64.

800,538. SIGMA. Union Carbide Corporation. SN 197,350. Pub. 10–5–65. Filed 7–7–64.

800,539. FIBRE-KOR. Weyerhaeuser Company. SN 198,448. Pub. 10–5–65. Filed 7–23–64.

800,540. COMPOLY AND DESIGN. Continental Can Company, Inc. SN 198,999. Pub. 10–5–65. Filed 7–31–64.

800,541. LA RONDE. G. H. Wood and Company Limited. MULTIPLE CLASS (Classes 2 and 6). SN 200,308. Pub. 10–5–65. Filed 8–20–64.

800,542. WABCO W AND DESIGN. Westinghouse Air Brake Company. CONSOLIDATED CERTIFICATE. SN 203,218, pub. 10–5–65, filed 10–2–64, Cl. 2; SN 203,219, pub. 10–5–65, filed 10–2–64, Cl. 13; SN 203,220, pub. 10–5–65, filed 10–2–64, Cl. 19; SN 203,221, pub. 10–5–65, filed 10–2–64, Cl. 21; SN 203,222, pub. 10–5–65, filed 10–2–64, Cl. 23; SN 203,223, pub. 10–5–65, filed 10–2–64, Cl. 26; SN 203,224, pub. 10–5–65, filed 10–2–64, Cl. 31; SN 203,225, pub. 10–5–65, filed 10–2–64, Cl. 35.

800,543. MISCELLANEOUS DESIGN. Consolidated Packaging Corporation, d.b.a. Lansit Corrugated Box Co. SN 205,776. Pub. 10–5–65. Filed 11–9–64.

800,544. CANI-STOR. Flambeau Plastics Corporation. SN 206,251. Pub. 10–5–65. Filed 11–16–64.

800,545. THERMITT. United States Mineral Products Company. SN 209,319. Pub. 10–5–65. Filed 1–4–65.

800,546. CARLCO. Carlisle Manufacturing Co., Inc. SN 209,488. Pub. 10–5–65. Filed 1–7–65.

800,547. ROYALON. Royalon, Inc. SN 210,701. Pub. 10–5–65. Filed 1–26–65.

800,548. STORMI-WETHER. Hollywood Shoe Polish Inc. SN 207,886. Pub. 7–6–65. Filed 12–10–64.

Class 4 — Abrasives and Polishing Materials

800,549. MISSILE. B & D Sales. SN 208,778. Pub. 10–5–65. Filed 12–23–64.

800,550. SECUR. Tyrolit-Schleifmittelwerke Swarovski K.G. SN 210,621. Pub. 10–5–65. Filed 1–25–65.

800,551. FAVOR. S. C. Johnson & Son, Inc. SN 212,782. Pub. 10–5–65. Filed 2–25–65.

Class 5 — Adhesives

800,552. EASTOBOND. Eastman Kodak Company. SN 182,411. Pub. 10–5–65. Filed 12–5–63.

800,553. RUSCOE AND DESIGN. W. J. Ruscoe Company. SN 196,720. Pub. 10–5–65. Filed 6–29–64.

Class 6 — Chemicals and Chemical Compositions

800,541. (See Class 2 for this trademark.)

800,554. SHOPPER'S FAIR. Mangel Stores Corporation. SN 151,943. Pub. 10–5–65. Filed 8–27–62.

800,555. MACUPLEX. MacDermid Incorporated. SN 190,525. Pub. 10–5–65. Filed 4–7–64.

800,556. CULTURSTAT. B-D Laboratories, Inc. SN 198,313. Pub. 10–5–65. Filed 7–22–64.

800,557. SHURFIX. General Aniline & Film Corporation. SN 214,860. Pub. 10–5–65. Filed 3–24–65.

800,558. LUBRILITH. Martin-Marietta Corporation. SN 215,423. Pub. 10–5–65. Filed 3–31–65.

Class 8 — Smokers' Artides, Not Including Tobacco Products

800,559. ROWENTA-ELECTRONIC. Rowenta Metallwarenfabrik G.m.b.H. SN 201,150. Pub. 10–5–65. Filed 9–2–64.

800,560. "KEY-MAN." Gene Magidson, d.b.a. Bradberry Briar Pipe Company. SN 213,997. Pub. 10–5–65. Filed 3–12–65.

Class 12 — Construction Materials

800,561. SEAMLESIDE. Armorgard Corporation. SN 184,129. Pub. 10–5–65. Filed 1–7–64.

800,562. DV. Dura-Vent Corporation. MULTIPLE CLASS (Classes 12 and 34). SN 190,350. Pub. 10–5–65. Filed 4–6–64.

800,563. "BUTL-FULL." Miracle Adhesives Corporation. SN 196,287. Pub. 10–5–65. Filed 6–23–64.

800,564. WOODFLEX. The Flintkote Company. SN 197,381. Pub. 10–5–65. Filed 7–8–64.

800,565. RODUN. Roger Dunn & Company. SN 198,466. Pub. 10–5–65. Filed 7–23–64.

800,566. SOUN CHEK AND DESIGN. Acoustical Products Corporation. SN 198,695. Pub. 10–5–65. Filed 7–29–64.

800,567. SCHALK'S TILE GROUT AND DESIGN. Schalk Chemicals, Inc. SN 198,902. Pub. 10–5–65. Filed 7–30–64.

800,568. LYFALUM ZINC COATED STEEL SIDING ETC. AND DESIGN. Lyf-Alum, Inc. SN 204,801. Pub. 10–5–65. Filed 10–26–64.

800,569. RX 65. Johns-Manville Corporation. SN 207,059, Pub. 10–5–65. Filed 11–27–64.

800,570. FALL-OUT. William J. Maguire, d.b.a. Laboratory for New Products. SN 209,869. Pub. 10–5–65. Filed 1–13–65.

800,571. SPEEDSPACE AND DESIGN. Speedspace Corporation. SN 210,162. Pub. 10–5–65. Filed 1–18–65.

800,572. TOUCH 'N PATCH. Bunlap Corporation. SN 210,644. Pub. 10–5–65. Filed 1–26–65.

800,573. ATOMEDIC HOSPITAL AND DESIGN. Hugh C. MacGuire. SN 210,686. Pub. 10–5–65. Filed 1–26–65.

800,574. BAYCOTE. Richard J. Footit, d.b.a. Bay Oil & Chemical Co. SN 215,482. Pub. 10–5–65. Filed 4–1–65.

800,575. UNI-FRAME. Letarte Co., Inc. SN 215,514. Pub. 10–5–65. Filed 4–1–65.

800,576. COMARK. United Merchants and Manufacturers, Inc. SN 215,668. Pub. 10–5–65. Filed 4–2–65.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

800,542. CONSOLIDATED CERTIFICATE. See Class 2.

800,577. LIFETIME CHROME. Hoover Ball and Bearing Company. SN 201,202. Pub. 10–5–65. Filed 9–3–64.

800,578. PLUGARAMA. Plugaroo, Inc. SN 205,719. Pub. 10–5–65. Filed 11–6–64.

800,579. SOCIETY AND DESIGN. Dynamic Distributors, Inc. SN 214,253. Pub. 10–5–65. Filed 3–16–65.

800,580. DOG'S HEAD ETC. (DESIGN). John S. Drybread, Sr., and Berniece L. Drybread, d.b.a. Retriever Toggle Bolt Co. SN 215,713. Pub. 10–5–65. Filed 4–5–65.

800,581. BOWDRIVE. Associated Spring Corporation. SN 215,935. Pub. 10–5–65. Filed 4–7–65.

800,582. FLUOROJET. Allegheny Plastics, Inc. SN 217,241. Pub. 10–5–65. Filed 4–26–65.

Class 14—Metals and Metal Castings and Forgings

800,583. FROSTONE. Rigidized Metals Corporation. SN 215,271. Pub. 10–5–65. Filed 3–29–65.

800,584. ABEX. American Brake Shoe Company. SN 217,169. Pub. 10–5–65. Filed 4–23–65.

800,585. PX 100 PLUS. Phoenix Steel Corporation (Pa.). SN 218,575. Pub. 10–5–65. Filed 5–11–65.

Class 15—Oils and Greases

800,586. P.C.V. Stewart-Warner Corporation. SN 205,367. Pub. 5–11–65. Filed 11–2–64.

800,587. FREE-ALL. Crane Packing Company. SN 216,272. Pub. 10–5–65. Filed 4–12–65.

800,588. TENSILUBE AND DESIGN. Tensilube Products, Inc. SN 216,633. Pub. 10–5–65. Filed 4–15–65.

Class 16—Protective and Decorative Coatings

800,589. K 3. Caridon Hall Finishes, Inc. SN 162,142. Pub. 10–5–65. Filed 2–6–63.

800,590. STYRACON. Pittsburgh Plate Glass Company. SN 174,231. Filed 10–5–65. Filed 8–1–63.

800,591. FOILTONE. Bee Chemical Company. SN 187,238. Pub. 10–5–65. Filed 2–24–64.

800,592. PENTROX. Hofford Varnish Co., Inc. SN 187,584. Pub. 3–23–65. Filed 2–27–64.

800,593. COVERS OVER BLACK AND DESIGN. Paris Paint & Varnish Company, Inc. SN 188,386. Pub. 10–5–65. Filed 3–10–64.

800,594. MASONALL. Old Colony Paint & Chemical Co. SN 205,718. Pub. 10–5–65. Filed 11–6–64.

800,595. SEAL-GLO. Container Corporation of America. SN 209,498. Pub. 10–5–65. Filed 1–7–65.

800,596. SANITOL SELECT. Sanitol Products Corporation. SN 209,543. Pub. 10–5–65. Filed 1–7–65.

Class 17—Tobacco Products

800,597. WREATH WITH SHIELD (DESIGN). The American Tobacco Company. SN 208,985. Pub. 10–5–65. Filed 12–29–64.

800,598. THE HOUSE OF MORGAN. General Cigar Co., Inc., d.b.a. Gradiaz, Annis Division. SN 211,271. Pub. 10–5–65. Filed 2–3–65.

Class 19—Vehicles

800,542. CONSOLIDATED CERTIFICATE. See Class 2.

800,599. KWIK-VENT. The Dole Valve Company. SN 192,477. Pub. 10–5–65. Filed 5–1–64.

800,600. PEUGEOT. Societe Anonyme des Automobiles Peugeot. SN 195,820. Pub. 10–5–65. Filed 6–16–64.

800,601. JEWELITE. Monarch Tool & Machinery Co. SN 198,973. Pub. 10–5–65. Filed 7–31–64.

800,602. CLARK. Clark Equipment Company. SN 201,816. Pub. 10–5–65. Filed 9–14–64.

800,603. PALLAS. Societe Anonyme Andre Citroen. SN 208,284. Pub. 10–5–65. Filed 12–16–64.

800,604. FASCO FLEXIBLE AIR SEAT AND DESIGN. Flexible Air Seat Corporation. SN 209,252. Pub. 10–5–65. Filed 1–4–65.

800,605. KIT COMPANION AND DESIGN. Kit Manufacturing Company. SN 209,275. Pub. 10–5–65. Filed 1–4–65.

800,606. THERMO KING. Thermo King Corporation. SN 209,966. Pub. 10–5–65. Filed 1–14–65.

800,607. DRAKE. Mallard Coach Corporation. SN 210,212. Pub. 10–5–65. Filed 1–19–65.

800,608. DUCKLING. Mallard Coach Corporation. SN 210,213. Pub. 10–5–65. Filed 1–19–65.

800,609. DRIFT WING. Mallard Coach Corporation. SN 210,215. Pub. 10–5–65. Filed 1–19–65.

800,610. FLIGHT LEADER. Mallard Coach Corporation. SN 210,216. Pub. 10–5–65. Filed 1–19–65.

800,611. BOSTON WHALER. The Fisher-Pierce Co., Inc. SN 212,105. Pub. 10–5–65. Filed 2–16–65.

800,612. CAPITAL. Capital Industries, Inc. SN 212,497. Pub. 10–5–65. Filed 2–23–65.

800,613. COUGAR. Ford Motor Company. SN 212,665. Pub. 10–5–65. Filed 2–24–65.

800,614. DRIFTWOOD. Driftwood Homes Corporation. SN 212,987. Pub. 10–5–65. Filed 3–1–65.

800,615. CYCLONE. Shore-Calnevar, Inc. SN 213,056. Pub. 10–5–65. Filed 3–1–65.

800,616. GALAXIE. The Huffman Manufacturing Company. SN 213,563. Pub. 10–5–65. Filed 3–8–65.

800,617. SILVER JET. The Huffman Manufacturing Company. SN 213,569. Pub. 10–5–65. Filed 3–8–65.

800,618. F–85. The Huffman Manufacturing Company. SN 213,570. Pub. 10–5–65. Filed 3–8–65.

Class 20—Linoleum and Oiled Cloth

800,619. DURAVINYL. New London Mills, Inc. SN 214,900. Pub. 10–5–65. Filed 3–24–65.

800,620. PERMAVINYL. New London Mills, Inc. SN 214,901. Pub. 10–5–65. Filed 3–24–65.

800,621. SURENA. Congoleum-Nairn Inc. SN 215,331. Pub. 10–5–65. Filed 3–30–65.

800,622. CALCUTTA. Congoleum-Nairn Inc. SN 215,332. Pub. 10–5–65. Filed 3–30–65.

800,623. SUNWORTHY. Canadian Wallpaper Manufacturers Limited. SN 215,940. Pub. 10–5–65. Filed 4–7–65.

800,624. PORTA-FLOOR. Porta-Floor Company. SN 216,339. Pub. 10–5–65. Filed 4–12–65.

Class 21—Electrical Apparatus, Machines, and Supplies

800,542. CONSOLIDATED CERTIFICATE. See Class 2.

800,625. CAMEO AND DESIGN. Arvin Industries, Inc. SN 110,196. Pub. 7–24–62. Filed 12–14–60.

800,626. TWIN-GRIP. Preformed Line Products Company. SN 195,150. Pub. 10–5–65. Filed 6–8–64.

800,627. POOL SITTER. Sonus Corporation. SN 197,189. Pub. 10–5–65. Filed 7–6–64.

800,628. AMERICAN BEAUTY. American Electrical Heater Company. MULTIPLE CLASS (Classes 21, 24 and 34). SN 198,117. Pub. 10–5–65. Filed 7–20–64.

800,629. EHV AND DESIGN. Bethea Company, Inc. SN 198,927. Pub. 10–5–65. Filed 7–31–64.

800,630. BPC AND DESIGN. Basic Products Corporation. SN 200,815. Pub. 10–5–65. Filed 8–28–64.

800,631. HI MARK AND DESIGN. Photo-Chemical Products, Inc. SN 201,964. Pub. 10–5–65. Filed 9–15–64.

800,632. ADD-A-RECORDER AND DESIGN. V-M Corporation. SN 202,113. Pub. 10–5–65. Filed 9–17–64.

800,633. DOLPHIN AND DESIGN. Servel, Inc. SN 204,714. Pub. 10–5–65. Filed 10–23–64.

800,634. TELE-AMP. JFD Electronics Corporation. SN 207,304. Pub. 10–5–65. Filed 12–2–64.

800,635. SWITCHMASTER. Eugene G. Danner Manufacturing, Inc. SN 208,449. Pub. 10–5–65. Filed 12–18–64.

800,636. SOLID-FIL. Advance Transformer Co. SN 208,875. Pub. 10–5–65. Filed 12–28–64.

800,637. STAR. Electrostar G.m.b.H. SN 208,900. Pub. 10–5–65. Filed 12–28–64.

800,638. HI-BLU. Illinois Tool Works Inc. SN 211,278. Pub. 10–5–65. Filed 2–3–65.

800,639. BOST-GRIP. The Murray Company of Texas, Inc., d.b.a. Boston Gear Works. SN 211,664. Pub. 10–5–65. Filed 2–9–65.

Class 22—Games, Toys, and Sporting Goods

800,640. CARICATURE OF A FARMER (DESIGN). Fun Farms, Inc. SN 206,440. Pub. 10–5–65. Filed 11–18–64.

800,641. HAWAIIAN WIGGLER. Fred Arbogast Company, Inc. SN 212,635. Pub. 10–5–65. Filed 2–24–65.

800,642. SKEETER. William J. Parrish, d.b.a. Parrish Bass Lures. SN 213,700. Pub. 10–5–65. Filed 3–9–65.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

800,542. CONSOLIDATED CERTIFICATE. See Class 2.

800,643. BURFORD TWIST TIE. The Burford Company. SN 188,420. Pub. 10–5–65. Filed 3–11–64.

800,644. TD AND DESIGN. American Metal Products Company. SN 203,461. Pub. 10–5–65. Filed 10–7–64.

800,645. BAMFORDS. Bamfords Limited. SN 205,239. Pub. 10–5–65. Filed 11–2–64.

800,646. HYDRABENCH. Lombard Corporation. SN 207,813. Pub. 10–5–65. Filed 12–9–64.

800,647. POLLY DIES. R. J. Spiegel Company, Inc. SN 210,705. Pub. 10–5–65. Filed 1–26–65.

800,648. ROTO-CHANGE. Universal Engineering Company. SN 211,121. Pub. 10–5–65. Filed 2–1–65.

800,649. PRECISION. Precision Universal Joint Corporation. SN 211,308. Pub. 10–5–65. Filed 2–3–65.

800,650. AMES SINCE 1774 AND DESIGN. McDonough Co., d.b.a. O. Ames Co. SN 211,548. Pub. 10–5–65. Filed 2–8–65.

800,651. SPIN-LESS. The Boye Needle Company. SN 211,863. Pub. 10–5–65. Filed 2–12–65.

800,652. BROTHER. Brother Industries, Ltd. SN 213,653. Pub. 10–5–65. Filed 3–9–65.

800,653. YANMAR. Yanmar Diesel Engine Co., Ltd. SN 215,471. Pub. 10–5–65. Filed 3–31–65.

800,654. 95. Swingline, Inc. SN 216,111. Pub. 10–5–65. Filed 4–8–65.

800,655. SWINGLINE 95. Swingline, Inc. SN 216,112. Pub. 10–5–65. Filed 4–8–65.

800,656. LONG JOHN. McDonough Co., d.b.a. O. Ames Co. SN 216,179. Pub. 10–5–65. Filed 4–9–65.

800,657. BURRELL AND DESIGN. Burrell Flange Lubricator Company. SN 216,261. Pub. 10–5–65. Filed 4–12–65.

800,658. PIGGY PACKER. F W D Wagner, Inc., assignee of Nelson Equipment Company. SN 217,378. Pub. 10–5–65. Filed 4–26–65.

Class 24—Laundry Appliances and Machines

800,628. (See Class 21 for this trademark.)

Class 26—Measuring and Scientific Appliances

800,542. CONSOLIDATED CERTIFICATE. See Class 2.

800,659. KEM METAL. Kewaunee Manufacturing Company. SN 178,458. Pub. 6–15–65. Filed 10–7–63.

800,660. MARK 280. Clevite Corporation. SN 189,656. Pub. 10–5–65. Filed 3–26–64.

800,661. RADLOG. United Aircraft Corporation. SN 206,579. Pub. 10–5–65. Filed 11–19–64.

Class 28—Jewelry and Precious-Metal Ware

800,662. LADY COVENTRY. Sarah Coventry, Inc. SN 215,707. Pub. 10–5–65. Filed 4–5–65.

800,663. LORD COVENTRY. Sarah Coventry, Inc. SN 215,708. Pub. 10–5–65. Filed 4–5–65.

Class 29—Brooms, Brushes, and Dusters

800,536. (See Class 2 for this trademark.)

Class 31—Filters and Refrigerators

800,542. CONSOLIDATED CERTIFICATE. See Class 2.

800,664. ARUNDALE PROCESS ETC. AND DESIGN. Arundale Manufacturers, Inc. SN 189,530. Pub. 10–5–65. Filed 3–25–64.

800,665. MISCELLANEOUS DESIGN. Red Jacket Manufacturing Company. SN 197,777. Pub. 10–5–65. Filed 7–13–64.

800,666. DURALON. Millipore Filter Corporation. SN 198,488. Pub. 10–5–65. Filed 7–24–64.

800,667. POLYDISK. E. D. Jones Corporation. SN 200,262. Pub. 10–5–65. Filed 8–20–64.

800,668. ZESTY. American Dispenser Corporation. SN 201,780. Pub. 10–5–65. Filed 9–14–64.

800,669. MOTOR GUARD OIL CLEANER ETC. AND DESIGN. Motor Guard Corporation. SN 202,125. Pub. 10–5–65. Filed 9–16–64.

800,670. THRIFTY CLEAN. Aluminum Filter Company. SN 203,368. Pub. 10–5–65. Filed 10–6–64.

800,671. AIR-GAP. Can-Tex Industries, Inc., d.b.a. Tex-Vit Manufacturing Division. SN 203,568. Pub. 10–5–65. Filed 10–8–64.

800,672. TOPCO. Topco Associates, Inc. SN 203,842. Pub. 10–5–65. Filed 10–12–64.

800,673. CENTRIFAIR. Vortox Company. SN 210,496. Pub. 10–5–65. Filed 1–22–65.

Class 32 — Furniture and Upholstery

800,674. TAN-O-FILL. New York Feather Co., Inc. SN 204,998. Pub. 5–11–65. Filed 10–28–64.

800,675. PENDAFLEXER. Oxford Filing Supply Co., Inc. SN 208,956. Pub. 10–5–65. Filed 12–28–64.

800,676. STRESS-ROCK. Knudson Industries Incorporated. SN 210,136. Pub. 10–5–65. Filed 1–18–65.

800,677. SLEEP-SOFA. Eclipse Sleep Products, Inc. SN 212,296. Pub. 10–5–65. Filed 2–18–65.

800,678. MONATUFT. Monarch Furniture Company, Inc. SN 214,277. Pub. 10–5–65. Filed 3–16–65.

800,679. PERMA-STEEL. Universal Bleacher Company. SN 214,730. Pub. 10–5–65. Filed 3–22–65.

800,680. X-PRESS-O. Murray J. Rymland. SN 215,274. Pub. 10–5–65. Filed 3–29–65.

800,681. CHIRO-FOAM. Amco Atlas Mattress, Inc. SN 215,373. Pub. 10–5–65. Filed 3–31–65.

800,682. FASHION MANOR. J. C. Penney Company. SN 216,332. Pub. 10–5–65. Filed 4–12–65.

Class 33 — Glassware

800,683. REFLECTOVUE. The New York Air Brake Company. SN 205,326. Pub. 10–5–65. Filed 11–2–64.

Class 34 — Heating, Lighting, and Ventilating Apparatus

800,562. (See Class 12 for this trademark.)

800,628. (See Class 21 for this trademark.)

800,684. "BUNNIE" INCINERATOR AND DESIGN. Pemberton and Sturgess (Great Britain) Limited. SN 158,930. Pub. 10–5–65. Filed 10–29–63.

800,685. AP AND DESIGN. The Air Preheater Company, Inc., assignee of Combustion Engineering, Inc. SN 180,854. Pub. 10–5–65. Filed 11–12–63.

800,686. MISCELLANEOUS DESIGN. The Air Preheater Company, Inc., assignee of Combustion Engineering, Inc. SN 180,855. Pub. 10–5–65. Filed 11–12–63.

800,687. E-Z-PAK. Embassy Industries, Inc. SN 191,848. Pub. 10–5–65. Filed 4–23–64.

800,688. ACOUSTI-K27. United Sheet Metal Company, Inc. SN 197,619. Pub. 10–5–65. Filed 7–10–64.

800,689. EUREKA ALLOY ELECTRODES FIND THE SPOT AND DESIGN. Welding Equipment & Supply Co. SN 198,010. Pub. 10–5–65. Filed 7–16–64.

800,690. EUREKA TOOL STEEL ELECTRODES FIND THE SPOT AND DESIGN. Welding Equipment & Supply Co. SN 198,011. Pub. 10–5–65. Filed 7–16–64.

800,691. BPC AND DESIGN. Basic Products Corporation. SN 200,816. Pub. 10–5–65. Filed 8–28–64.

800,692. QUIETLINE. Carrier Corporation. SN 201,658. Pub. 10–5–65. Filed 9–11–64.

800,693. AGRI-QUIP. Consolidated Marketing Co., d.b.a. Consolidated Manufacturing Co. SN 204,727. Pub. 10–5–65. Filed 10–12–64.

800,694. PRIMEWIRE. All-State Welding Alloys Co., Inc. SN 205,227. Pub. 10–5–65. Filed 11–2–64.

800,695. CERAMALITE. Malcolm S. Bru, d.b.a. Aldermaston Sales. SN 208,886. Pub. 10–5–65. Filed 12–28–64.

800,696. HUMAN (DESIGN). Hamilton Watch Company. SN 210,439. Pub. 10–5–65. Filed 1–22–65.

800,697. GULF BREEZE. Gulf Marine Supply Corp. SN 211,525. Pub. 10–5–65. Filed 2–8–65.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

800,542. CONSOLIDATED CERTIFICATE. See Class 2.

800,698. SONIC SPECIAL. Southern Oil Stores, Inc., assignee of The Goodyear Tire & Rubber Company. SN 192,034. Pub. 10–27–64. Filed 4–27–64.

800,699. RADIPLY. The Firestone Tire & Rubber Company. SN 213,214. Pub. 10–5–65. Filed 3–3–65.

800,700. DUO-SEAL. Mission Manufacturing Company. SN 213,454. Pub. 10–5–65. Filed 3–5–65.

800,701. ALUMA-GRIP. Aluma-Grip Company of America, Inc. SN 213,511. Pub. 10–5–65. Filed 3–8–65.

800,702. CAMSEAL. W. S. Shamban & Co. SN 214,380. Pub. 10–5–65. Filed 3–17–65.

Class 36 — Musical Instruments and Supplies

800,703. BAND BOX. Electronic Organ Arts. SN 188,219. Pub. 10–5–65. Filed 3–9–64.

800,704. JERDEN. Jerden Music, Inc. SN 197,304. Pub. 10–5–65. Filed 7–7–64.

800,705. TOWN HOUSE RECORD CO. AND DESIGN. Graham Record Company, Inc. SN 199,468. Pub. 10–5–65. Filed 8–7–64.

800,706. HIGH PERFORMANCE AND DESIGN. High Performance Recordings, Inc. SN 206,723. Pub. 10–5–65. Filed 11–23–64.

800,707. REC-O-DANCE. The Seeburg Corporation. SN 210,367. Pub. 10–5–65. Filed 1–21–65.

800,708. CLIQ-STIX. Scandinavian Importing & Manufacturing Co. SN 210,602. Pub. 10–5–65. Filed 1–25–65.

Class 37 — Paper and Stationery

800,536. (See Class 2 for this trademark.)

800,709. PINEAPPLE (DESIGN). The Preservation Society of Newport County. SN 181,683. Pub. 10–5–65. Filed 11–21–63.

800,710. KEEPSAKE ALBUMS. Hallmark Cards, Incorporated. SN 182,617. Pub. 10–5–65. Filed 12–9–63.

800,711. MADEIRA. Marcal Paper Mills, Inc. SN 183,080. Pub. 1–5–65. Filed 12–16–63.

800,712. NOVOSCRIPT. Firma Dr. Adolf Holken. SN 194,716. Pub. 10–5–65. Filed 6–2–64.

800,713. EF AND DESIGN. Eberhard Faber Inc. SN 201,114. Pub. 10–5–65. Filed 9–2–64.

800,714. FAB-U-RAP. Fred R. Raach and Ruth A. Raach (joint owners), d.b.a. The Spinning Jenny. SN 204,922. Pub. 10–5–65. Filed 10–27–64.

Class 38 — Prints and Publications

800,715. SCOTTY'S SHOPPER AND MENU PLANNER. Malcolm C. Brown, d.b.a. Alpha 2 Company. SN 168,577. Pub. 10–5–65. Filed 5–9–63.

800,716. PNS AND DESIGN. Product News Publishing Corp. SN 193,294. Pub. 10–5–65. Filed 5–12–64.

800,717. FAVORITE RECIPES. Favorite Recipe Press, Inc. (Delaware corporation), assignee of Favorite Recipe Press, Inc. (Alabama corporation). SN 194,871. Pub. 10–5–65. Filed 6–4–64.

800,718. BIOPHYSICAL JOURNAL. The Rockefeller Institute. SN 198,517. Pub. 10–5–65. Filed 7–24–64.

800,719. MARKET SHOWCASE. Market/Show Publications, Inc. SN 199,082. Pub. 10–5–65. Filed 8–3–64.

800,720. SELECT-A-SPEC AND DESIGN. J. Dale Thompson. SN 199,136. Pub. 10–5–65. Filed 8–3–64.

800,721. JOURNAL OF LIPID RESEARCH. The Rockefeller Institute. SN 199,710. Pub. 10–5–65. Filed 7–21–64.

800,722. PCMI. The National Cash Register Company. SN 213,346. Pub. 10–5–65. Filed 3–4–65.

Class 39 — Clothing

800,723. LADY HERITAGE. I. C. Herman & Company, Inc. SN 121,194. Pub. 12–17–63. Filed 6–1–61.

800,724. PLANTATION. 10-X Manufacturing Company. SN 145,891. Pub. 10–15–63. Filed 5–31–62.

800,725. NAPOLI. Craddock-Terry Shoe Corporation. SN 179,776. Pub. 10–5–65. Filed 10–25–63.

800,726. PARKA-MATE. Fred R. Aramony, d.b.a. Sportsguide Mfg. Co. SN 182,918. Pub. 10–5–65. Filed 12–13–63.

800,727. PS PRINTWEAR AND DESIGN. Printed Sportswear, Inc. SN 183,455. Pub. 10–5–65. Filed 12–23–63.

800,728. PRINTWEAR. Printed Sportswear, Inc. SN 195,934. Pub. 10–5–65. Filed 2–3–64.

800,729. COUNTRY CLOTHES BY PENDLETON. Pendleton Woolen Mills. SN 189,611. Pub. 10–5–65. Filed 3–25–64.

800,730. SADDLE MASTER. Bowen Manufacturing Company, Inc. SN 190,683. Pub. 10–5–65. Filed 4–8–64.

800,731. H AND DESIGN. Herbert Mills Co., Inc. SN 194,386. Pub. 10–5–65. Filed 5–27–64.

800,732. GALAGLEN. Bernat Klein Ltd. SN 194,549. Pub. 10–5–65. Filed 5–29–64.

800,733. GOLF-PRO. M. Rubin & Sons, Inc. SN 198,436. Pub. 10–5–65. Filed 7–23–64.

800,734. DOME AND DESIGN. Dome Shoes of N.C., Inc. SN 199,802. Pub. 10–5–65. Filed 8–18–64.

800,735. UCB AND DESIGN. UCB (Union Chimique-Chemische Bedrijven) Societe Anonyme. SN 200,608. Pub. 10–5–65. Filed 8–25–64.

800,736. "INDIANA" AND DESIGN. Rubberfabriek "Indiana" N.V. SN 201,052. Pub. 10–5–65. Filed 9–1–64.

800,737. PRO-STANCE. International Shoe Company, d.b.a. The Florsheim Shoe Company. SN 201,532. Pub. 10–5–65. Filed 9–9–64.

800,738. SIR TEE AND DESIGN. Stahl-Urban Company. SN 201,889. Pub. 10–5–65. Filed 9–14–64.

800,739. PETTY LARCENY. Maidenform, Inc. SN 203,670. Pub. 10–5–65. Filed 10–9–64.

800,740. LITTLE DONNIE AND DESIGN. National Association of Supermarket Apparel Distributors. SN 203,790. Pub. 10–5–65. Filed 10–12–64.

800,741. YOU'RE MORE OF A MAN IN MALE CASUALS. HK Corporation. SN 205,943. Pub. 10–5–65. Filed 11–10–64.

800,742. LESTER PAUL. Lorch-Westway Corp., d.b.a. Lester Paul. SN 208,468. Pub. 10–5–65. Filed 12–18–64.

800,743. FANNY HILL. Weldon, Inc., by change of name from Weldon Pajamas, Inc. SN 209,563. Pub. 10–5–65. Filed 1–7–65.

800,744. BUSTER BROWN AND DESIGN. Buster Brown Textiles, Inc. SN 210,266. Pub. 10–5–65. Filed 1–21–65.

800,745. LAISSEZ FAIRE. I. B. Kleinert Rubber Company. SN 210,881. Pub. 10–5–65. Filed 1–28–65.

800,746. LADY ORIS AND DESIGN. Lady Oris Hosiery Shops. SN 213,269. Pub. 10–5–65. Filed 3–4–65.

800,747. KONSTANT KREASE. Washington Manufacturing Company. SN 214,393. Pub. 10–5–65. Filed 3–17–65.

800,748. SERVUS. The Servus Rubber Company. SN 214,546. Pub. 10–5–65. Filed 3–19–65.

800,749. DURA-SHAPE. Chips 'N Twigs, Inc. SN 215,329. Pub. 10–5–65. Filed 3–30–65.

800,750. IMPERMEABILI SAN GIORGIO. Impermeabili San Giorgio, Societa per Azioni. SN 215,339. Pub. 10–5–65. Filed 3–30–65.

800,751. UNION CARBIDE AND DESIGN. Union Carbide Corporation. SN 215,861. Pub. 10–5–65. Filed 3–30–65.

800,752. SAVAGE. Cole of California, Inc. SN 215,486. Pub. 10–5–65. Filed 4–1–65.

800,753. MIRABLEND. The Manhattan Shirt Company. SN 216,174. Pub. 10–5–65. Filed 4–9–65.

800,754. CAPAT. Welsh Manufacturing Company. SN 216,223. Pub. 10–5–65. Filed 4–9–65.

800,755. DOUBTLESS. Exquisite Form Industries, Inc. SN 216,399. Pub. 10–5–65. Filed 4–13–65.

800,756. FOOT-HAMMOCK. Hanes Corporation. SN 216,504. Pub. 10–5–65. Filed 4–14–65.

800,757. FEATURE WITH A FUTURE. Adams-Millis Corporation. SN 216,991. Pub. 10–5–65. Filed 4–21–65.

Class 40 — Fancy Goods, Furnishings, and Notions

800,758. PERMA-PATCH. Staflex Corporation, assignee of Stacy Fabrics Corp. SN 210,877. Pub. 10–5–65. Filed 1–21–65.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

800,759. FANFARE. Chatham Manufacturing Company. SN 192,567. Pub. 10–5–65. Filed 5–4–64.

800,760. 2–A–T. Graniteville Company. SN 194,011. Pub. 10–5–65. Filed 5–21–64.

800,761. DEAUVILLE. Henry Glass & Co. SN 197,562. Pub. 10–5–65. Filed 7–10–64.

800,762. SHIRT TAIL AND DESIGN. Masters and Masters. SN 207,820. Pub. 10–5–65. Filed 12–9–64.

800,763. POLYTUF. L. J. Schott Company. SN 208,966. Pub. 10–5–65. Filed 12–28–64.

800,764. SATARA. Bigelow-Sanford, Inc. SN 209,393. Pub. 10–5–65. Filed 1–6–65.

800,765. BACARA. Bigelow-Sanford, Inc. SN 209,394. Pub. 10–5–65. Filed 1–6–65.

800,766. DOVERTON. Bigelow-Sanford, Inc. SN 209,396. Pub. 10–5–65. Filed 1–6–65.

800,767. BEAU GRANDE. Bigelow-Sanford, Inc. SN 209,400. Pub. 10–5–65. Filed 1–6–65.

800,768. PACEMAKER. Bigelow-Sanford, Inc. SN 209,402. Pub. 10–5–65. Filed 1–6–65.

800,769. RICHLEIGH. Bigelow-Sanford, Inc. SN 209,405. Pub. 10–5–65. Filed 1–6–65.

800,770. RICHMEAD. Bigelow-Sanford, Inc. SN 209,406. Pub. 10–5–65. Filed 1–6–65.

800,771. VENDOME. Bigelow-Sanford, Inc. SN 209,407. Pub. 10–5–65. Filed 1–6–65.

800,772. SOVEREIGN. Bigelow-Sanford, Inc. SN 209,409. Pub. 10–5–65. Filed 1–6–65.

800,773. MARGATE. Bigelow-Sanford, Inc. SN 209,411. Pub. 10–5–65. Filed 1–6–65.

800,774. C CHEMBACK CHEMSTRAND. Monsanto Company. SN 215,768. Pub. 10–5–65. Filed 4–5–65.

800,775. CREPETRIQUE. Webco Mills, Inc. SN 216,031. Pub. 10–5–65. Filed 4–7–65.

800,776. MEDI-WEAVE. Deering Milliken, Inc. SN 216,146. Pub. 10–5–65. Filed 4–9–65.

800,777. FASHION MANOR. J. C. Penney Company. SN 216,333. Pub. 10–5–65. Filed 4–12–65.

Class 43 — Thread and Yarn

800,778. UCB AND DESIGN. UCB (Union Chimique-Chemische Bedrijven) Societe Anonyme. SN 200,607. Pub. 10–5–65. Filed 8–25–64.

800,779. FIRST FROST. J. P. Stevens & Co., Inc. SN 216,109. Pub. 10–5–65. Filed 4–8–65.

800,780. GLEAM-SPUN. Emile Bernat & Sons Co. SN 216,254. Pub. 10–5–65. Filed 4–12–65.

Class 44 — Dental, Medical, and Surgical Appliances

800,535. (See Class 2 for this trademark.)

800,781. ESTRON. The William Gets Corporation. SN 187,746. Pub. 9–15–64. Filed 3–2–64.

800,782. ENFAMIL. Mead Johnson & Company. SN 196,691. Pub. 10–5–65. Filed 6–29–64.

800,783. NEURAIRTOME. Zimmer Manufacturing Company. SN 207,851. Pub. 10–5–65. Filed 12–9–64.

800,784. SURGAIRTOME. Zimmer Manufacturing Company. SN 207,852. Pub. 10–5–65. Filed 12–9–64.

800,785. SMYLON. The Smylon Co. SN 214,189. Pub. 10–5–65. Filed 3–15–65.

800,786. TAPE 'N TELL. Henry Sheldon, d.b.a. Arrow Dental Products. SN 214,291. Pub. 10–5–65. Filed 3–16–65.

800,787. DEWZIE. Cornelius Van Linge. SN 214,732. Pub. 10–5–65. Filed 3–22–65.

Class 45 — Soft Drinks and Carbonated Waters

800,788. TRIK 'R TREAT AND DESIGN. Trick or Treat Bottling Company. SN 191,459. Pub. 10–5–65. Filed 4–17–64.

Class 46 — Foods and Ingredients of Foods

800,789. KITTY-GLO. Carnation Company. SN 163,528. Pub. 10–5–65. Filed 2–27–63.

800,790. ROYAL GOURMET FOODS AND DESIGN. Harold Sparling Co. SN 173,519. Pub. 10–5–65. Filed 7–22–63.

800,791. QUIKIE COOK AND DESIGN. Rueckert Meat Co., Inc., d.b.a. Rueckert's. SN 177,448. Pub. 8–31–65. Filed 9–20–63.

800,792. PAPPY PARKER'S. Marriott-Hot Shoppes, Inc., by change of name from Hot Shoppes, Inc. SN 178,548. Pub. 10–5–65. Filed 10–8–63.

800,793. PATSY ANN. United States Baking Company, Inc., by change of name from Miller-Parrott Baking Company, Inc. SN 190,818. Pub. 10–5–65. Filed 4–10–64.

800,794. COLONIAL PIT STYLE. Obee Wholesale Grocers Company. SN 190,956. Pub. 10–5–65. Filed 4–13–64.

800,795. CALORIES LIMITED AND DESIGN. Calories Limited, Inc. SN 196,945. Pub. 10–5–65. Filed 7–2–64.

800,796. MERIT AWARD. Milani Foods, Inc. SN 217,648. Pub. 10–5–65. Filed 4–29–65.

Class 47 — Wines

800,797. LADY LUCK. Schenley Distillers, Inc., d.b.a. Weston Winery. SN 212,249. Pub. 10–5–65. Filed 2–17–65.

Class 50 — Merchandise Not Otherwise Classified

800,798. THE WILLIAMSBURG LINE. Sheldow Bronze Corporation, assignee of Russell Sheldow, d.b.a. Sheldow Bronze Company. SN 154,927. Pub. 10–5–65. Filed 10–10–62.

800,799. PRESSLABS. Holland-Suco Color Company, by change of name from Holland Color and Chemical Company. SN 196,669. Pub. 10–5–65. Filed 6–29–64.

Class 51 — Cosmetics and Toilet Preparations

800,800. Z-ANN. Annabel B. Zilles, d.b.a. Z-Ann Cosmetics Company. SN 123,452. Pub. 3–27–62. Filed 7–5–61.

800,801. BEAUTY TREAT. Helene Curtis Industries, Inc., d.b.a. Sue Cory. SN 164,817. Pub. 10–5–65. Filed 3–18–63

800,802. TRIM. Lever Brothers Company. SN 165,930. Pub. 10–29–63. Filed 4–2–63.

800,803. TIZ-HIGH-FASHION COLOR. Maradel Products, Inc. SN 190,399. Pub. 10–5–65. Filed 4–6–64.

800,804. SPRITZ. Herbert F. Turetzky, d.b.a. H. Farrell Co. SN 193,236. Pub. 10–5–65. Filed 5–11–64.

800,805. DEMI-TASSE. Revlon, Inc. SN 195,153. Pub. 10–5–65. Filed 6–8–64.

Class 52 — Detergents and Soaps

800,536. (See Class 2 for this trademark.)

Service Marks

Class 101 — Advertising and Business

800,806. TICKMASTER ETC. AND DESIGN. Roland Ballen. SN 202,128. Pub. 10–5–65. Filed 9–18–64.

Class 107 — Education and Entertainment

800,807. OL' McDONALDS LITTLE FARM. Fun Farms, Inc. SN 206,439. Pub. 10–5–65. Filed 11–18–64.

800,808. CARICATURE OF A FARMER (DESIGN). Fun Farms, Inc. SN 206,443. Pub. 10–5–65. Filed 11–18–64.

Collective Membership Mark

Class 200

800,809. REPRESENTATION OF A RING. The Corporation of the Seven Wardens. SN 168,794. Pub. 10–5–65. Filed 5–10–63.

Certification Mark

Class A — Goods

800,810. LUR. Landbrugsministeriet. SN 147,472. Pub. 10–5–65. Filed 6–22–62.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

Class 2 — Receptacles

800,811. Arkell Safety Bag Company, New York, N.Y. SN 163,517. Filed 2–27–63.

STA-WHITE

For Outer Ply of Paper Bags Sold in the Form of Finished Bags.
First use June 17, 1961.

800,812. Allied Chemical Corporation, New York, N.Y., assignee of Stetson Corporation, Lincoln, Ill. SN 184,849. Filed P.R. 1–17–64; Am. S.R. 10–18–65.

SPIL-PROOF

For Baby Bowl Sets Consisting of Bowls Formed of Melamine Plastic Material and a Support for Said Bowls Formed of Rubberlike Material.
First use Mar. 20, 1963.

Class 8 — Smokers' Articles, Not Including Tobacco Products

800,813. S. M. Frank & Co., Inc., New York, N.Y. SN 202,994. Filed P.R. 9–30–64; Am. S.R. 7–9–65.

BRISTOL

For Smoker's Pipes.
First use 1954.

Class 12 — Construction Materials

800,814. Ply-Gem Corporation, Jamaica, N.Y. SN 207,419. Filed P.R. 12–3–64; Am. S.R. 10–4–65.

JAVA

For Prefinished Hardwood Panels.
First use Aug. 1, 1964.

Class 16 — Protective and Decorative Coatings

800,815. Permanent Pigments, Inc., Cincinnati, Ohio. SN 158,934. Filed P.R. 12–11–62; Am. S.R. 1–29–65.

permanent pigments

For Artists' Supplies—Namely, Colors, Varnishes, Mediums Used To Extend Artists' Paints, viz, Copal Painting Medium, Gel Medium, Polymer Medium, Matte Medium, Linseed Oil and Turpentine, Painting Sets and Outfits, Comprising Wood, Paper or Metal Cases Containing Artists' Colors, Brushes, Artists' Varnishes, and/or Mediums and Miscellaneous Painting Accessories.
First use at least as early as Dec. 31, 1933.

Class 19 — Vehicles

800,816. Valley Tow-Rite, Inc., Lodi, Calif. SN 175,140. Filed P.R. 8–15–63; Am. S.R. 10–4–65.

TOW-RITE

For Hitches and Couplers for Trailers, Boats, and the Like, Parts and Accessories for the Hitches and Couplers—Namely, Balls, Ball Covers, Brackets, Hitch and Coupler Adapters, Bumper Clamps, Grab Bars, Towing Devices, Third Wheel Attachments, and Boat Transom Tie Downs.
First use 1954.

800,817. Valley Tow-Rite, Inc., Lodi, Calif. SN 176,142. Filed P.R. 8–15–63; Am. S.R. 10–4–65.

TOW-WELL

For Hitches and Couplers for Trailers, Boats, and the Like, Parts and Accessories for the Hitches and Couplers—Namely, Balls, Ball Covers, Brackets, Hitch and Coupler Adapters, Bumper Clamps, Grab Bars, Towing Devices, Third Wheel Attachments, and Boat Transom Tie Downs.
First use December 1961.

800,818. M-H Equipment Co., Inc., Duncanville, Tex. SN 176,816. Filed P.R. 9–12–63; Am. S.R. 10–18–65.

kargO-Kage

For Materials Handling Equipment—Namely, Wheeled Carts, Wheeled Containers, Wheeled Cages, and Parts Therefor.
First use on or about May 1, 1961.

Class 30—Crockery, Earthenware, and Porcelain

800,819. Fortunoff's Shopping Center, Inc., Westbury, N.Y. SN 215,067. Filed P.R. 3–26–65; Am. S.R. 10–21–65.

MEISSMEN

For China Dinnerware.
First use 1961.

Class 34—Heating, Lighting, and Ventilating Apparatus

800,820. Gaylord Industries, Portland, Oreg. SN 188,744. Filed P.R. 3–16–64; Am. S.R. 2–15–65.

GAYLORD

For Kitchen Ventilators.
First use May 1963.

Class 39—Clothing

800,821. Blue Bell, Inc., Greensboro, N.C. SN 186,688. Filed P.R. 2–14–64; Am. S.R. 10–18–65.

TAPER FITS

For Men's and Boys' Trousers.
First use Jan. 7, 1964.

800,822. Peter Pan Foundations, Inc., New York, N.Y. SN 186,758. Filed P.R. 2–14–64; Am. S.R. 10–21–65.

INTIMATE COUTURE

For Brassieres and Corsets.
First use Jan. 15, 1964.

800,823. Austen & Cie., Paris, France. SN 191,827. Filed P.R. 4–23–64; Am. S.R. 4–5–65.

AUSTEN

Priority claimed under Sec. 44(d) on French Reg. No. 520,138, dated Mar. 4, 1964 (Seine); Natl. Inst. No. 221,115.
For Clothing—Namely, Tailored Suits for Men and Women, Dresses, Skirts, Blouses, and Jackets.

800,824. Chadbourn Gotham, Inc., Charlotte, N.C. SN 211,153. Filed P.R. 2–2–65; Am. S.R. 10–15–65.

TALL

For Men's and Ladies' Pajamas and Night Robes.
First use June 30, 1943.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

800,825. Deering Milliken, Inc., New York, N.Y. SN 205,781. Filed P.R. 11–9–64; Am. S.R. 10–1–65.

SUEDE-TONE

For Textile Fabrics Made of Wool, Cotton, and Synthetic Fibers and Combinations Thereof.
First use June 22, 1943.

800,826. Mimi Pearce, Miami Beach, Fla. SN 217,768. Filed P.R. 4–30–65; Am. S.R. 9–29–65.

TRES CHIC

For Woven Edge Ribbon for Hand Knitting and Crocheting.
First use Sept. 20, 1963.

TRADEMARK REGISTRATIONS RENEWED

47,093. W. Cl. 9. 10–24–05.
47,470. ELGIN. Cl. 27. 11–7–05.
47,509. AUTOLINE. Cl. 15. 11–7–05.
47,783. MENTHOLATUM. Cl. 18. 11–21–05.
47,947. ARM & HAMMER AND DESIGN. Cl. 6. 11–28–05.
49,382. K & F AND DESIGN. Cl. 23. 2–6–06.
49,411. AMERICAN AND DESIGN. Cl. 23. 2–6–06.
49,460. ARCADE AND DESIGN. Cl. 23. 2–6–06.
49,666. THE J. BARTON SMITH CO. AND DESIGN. Cl. 23. 2–13–06.
49,930. INTERWOVEN. Cl. 39. 2–20–06.
50,135. GT. WESTERN. Cl. 23. 3–6–06.
50,137. NICHOLSON. Cl. 23. 3–6–06.
50,668. DR. PEPPER. Cl. 45. 3–27–06.
50,882. NICHOLSON U.S.A. AND DESIGN. Cl. 23. 4–3–06.
50,962. GORILLA. Cl. 39. 4–3–06.
51,026. FAULTLESS STARCH AND DESIGN. Cl. 6. 4–3–06.
199,391. ASBESGRAPHITE. Cl. 35. 6–9–25.
204,524. WAITEX. Cl. 42. 10–20–25.
204,589. NEEDLEPOINT. Cl. 42. 10–30–25.
204,590. NEEDLEPOINT WEAVE. Cl. 42. 10–20–25.
204,591. NEEDLEPOINT CLOTH. Cl. 42. 10–20–25.
204,967. FERROCRETE AND DESIGN. Cl. 12. 10–27–25.
205,100. PERFORMANCE COUNTS. Cl. 19. 11–3–25.
205,320. DORRCO. Cl. 23. 11–3–25.
205,658. EMULSO AND DESIGN. Cl. 6. 11–10–25.
205,821. GRACEEN. Cl. 42. 11–17–25.
205,896. REPRESENTATION OF THE SIGNS OF THE ZODIAC. Cl. 37. 11–17–25.
206,656. RED SEA. Cl. 18. 12–8–25.
206,963. GAYLORD BOXES. Cl. 2. 12–15–25.
207,049. MILLFORD. Cl. 42. 12–15–25.
207,356. NATTALEEN. Cl. 42. 12–29–25.
207,357. NETTEEN. Cl. 42. 12–29–25.
207,359. FORSTEEN. Cl. 42. 12–29–25.
207,360. FORSTINETTE. Cl. 42. 12–29–25.
207,393. NATTEEN. Cl. 42. 12–29–25.
207,400. MANDALEEN. Cl. 42. 12–29–25.
207,517. TOPSY. Cl. 45. 1–5–26.
207,685. MARVEL. Cl. 23. 1–5–26.
209,428. G AND DESIGN. Cl. 4. 2–23–26.
210,736. CAMELOT. Cl. 39. 3–23–26.

211,523. RIGO'S KILL-KO AND DESIGN. Cl. 6. 4–13–26.
415,979. PORPOISE. Cl. 27. 8–21–45.
416,877. N-Z-AMINE. Cl. 18. 10–2–45.
417,106. CLINIC. Cl. 27. 10–16–45.
417,240. LOROPHYN. Cl. 18. 10–16–45.
417,345. HIT MAKER. Cl. 39. 10–23–45.
418,366. WILCO. Cl. 52. 12–18–45.
418,554. CORPORATE. Cl. 37. 1–1–46.
418,555. EXPEDITE. Cl. 37. 1–1–46.
418,569. MARIMBA AND DESIGN. Cl. 6. 1–1–46.
418,705. QUALITAG. Cl. 39. 1–8–46.
418,752. TOP KNOT AND DESIGN. Cl. 39. 1–8–46.
418,753. RADI. Cl. 18. 1–8–46.
418,963. SECULE. Cl. 18. 1–15–46.
419,389. PRETONE. Cl. 46. 2–12–46.
420,081. SILVRAY. Cl. 21. 3–26–46.
420,233. DRYSEQ. Cl. 52. 4–2–46.
420,255. VISICLAR. Cl. 26. 4–2–46.
420,413. HARVESTER. Cl. 17. 4–9–46.
420,414. LA PALINA. Cl. 17. 4–9–46.

TRADEMARK REGISTRATIONS CANCELED

Section 8

125,099. TOP-LINE. Cl. 39. 4–8–19.
330,220. ROSSOTTI DUBL-VU AND DESIGN. Cl. 2. 11–26–35.
373,598. AQUASOL. Cl. 41. 12–12–39.
389,906. HI-JINKS. Cl. 28. 8–26–41.
666,129. CHOCO PUFF. Cl. 46. 8–19–58.
666,560. FORUMMY. Cl. 22. 9–2–58.
667,553. ROCHELLE LONG TENDER GREEN ASPARAGUS SPEARS AND DESIGN. Cl. 46. 9–23–58.
667,634. SI-LAK. Cl. 18. 9–30–58.
667,794. WELLONS AND DESIGN. Cl. 46. 9–30–58.
667,813. PRIDE OF KENT. Cl. 46. 9–30–58.
667,864. BOTTLE-DEK. Cl. 50. 9–30–58.
668,157. VEILING. Cl. 42. 10–7–58.
668,369. JEAN MARTIN. Cl. 36. 10–14–58.
669,111. RENSSELAER AND DESIGN. Cl. 13. 10–28–58.

The following registrations issued Nov. 3, 1959

687,426. CENTAN. Cl. 1.
687,427. TESLAR. Cl. 1.
687,432. BAB-O. Cl. 4.
687,437. FORMULA 55. Cl. 6.
687,471. SPORODYNE. Cl. 18.
687,474. MAXAFORM. Cl. 18.
687,476. FULVIMED. Cl. 18.
687,480. ZEARIM. Cl. 18.
687,484. VITABLEN. Cl. 18.
687,489. LW. Cl. 19.
687,496. NEOPHONIC AND DESIGN. Cl. 21.
687,497. SANOSCOPE. Cl. 21.
687,511. M.M.P. MATTEL MACHINE PISTOL. Cl. 22.
687,517. SHURLURE. Cl. 22.
687,518. ORA-GA-ME. Cl. 22.
687,519. GROTESQUE DESIGN OF GOLFER IN RAIN. Cl. 22.
687,520. ROYAL NORSEMAN. Cl. 22.
687,521. BOTTOM DOLLAR. Cl. 22.
687,523. SPIN-TWINS. Cl. 22.
687,524. BEL-AQUA. Cl. 22.
687,525. MOON SHOOTER. Cl. 22.
687,526. LITTLE ONE. Cl. 22.
687,527. RAMROD. Cl. 22.
687,528. CELESTE THE PEST AND DESIGN. Cl. 22.
687,529. AUTO-BOBBER. Cl. 22.
687,530. COLOR RECORDS. Cl. 22.
687,533. MONARCH. Cl. 23.
687,536. AMERICAN ETHAN ALLEN. Cl. 23.
687,537. AMERICAN RIXFORD. Cl. 23.
687,539. AIR-O-ETCH. Cl. 23.
687,546. DIAMOND ADD-NERSARY. Cl. 28.
687,549. ARKWOOD. Cl. 32.
687,551. POLY-AIRE. Cl. 32.
687,552. BASQUE PROVINCIAL. Cl. 32.
687,553. SAMARA GROUP. Cl. 32.
687,554. PARKEE. Cl. 32.
687,555. SCHOOL-VENT. Cl. 34.
687,558. ALTO FONIC. Cl. 36.
687,559. STEREOVOX. Cl. 36.
687,563. BEAUTY BOX. Cl. 37.
687,564. SMART SET. Cl. 37.
687,568. STIKVELOPES. Cl. 37.
687,569. BONITA. Cl. 37.
687,571. TANGENTIAL CIRCLE DESIGN. Cl. 37.
687,583. CROW WING AND DESIGN. Cl. 39.
687,585. LILLIVETTE. Cl. 39.
687,589. DONNA MARIE. Cl. 39.
687,590. BOGGINS. Cl. 39.
687,593. MILTON'S CLOTHING CUPBOARD AND DESIGN. Cl. 39.
687,594. TRU-HALF. Cl. 39.
687,600. CHIP-O-GRANITE. Cl. 39.
687,602. WIN-TOGS AND DESIGN. Cl. 39.
687,613. REST-EASE. Cl. 39.
687,617. SKORT. Cl. 39.
687,619. JOAN STARR. Cl. 39.
687,620. SNO-SHAG. Cl. 39.
687,623. GOLDEN MIST. Cl. 42.
687,624. THE GREETINGTIE. Cl. 42.
687,625. SAY IT WITH A TIE. Cl. 42.
687,626. NORDIC HILLS. Cl. 42.
687,628. SEA-FAB. Cl. 42.
687,636. NEPTUNE AND DESIGN. Cl. 45.
687,637. CORINNIS. Cl. 45.
687,641. LUXOR. Cl. 46.
687,642. SWEETHEART. Cl. 46.
687,645. APREA. Cl. 46.
687,648. MERION. Cl. 46.
687,655. LAZY-TOMATO. Cl. 46.
687,656. LAZY ORANGE. Cl. 46.
687,660. DIRECTORS AND DESIGN. Cl. 46.
687,669. CARMELLO'S AND DESIGN. Cl. 46.
687,670. SKY FRESH. Cl. 46.
687,674. HEIDELBERG. Cl. 46.
687,677. RASCALS. Cl. 46.
687,684. WALLY'S. Cl. 46.
687,687. DON JUAN. Cl. 49.
687,688. MOON-DRIFT. Cl. 50.
687,697. STRATAGRAPH. Cl. 100.
698,698. TV-TEAR-SHEETS. Cl. 101.
687,704. SWIFTY SERVICE B & D ETC. AND DESIGN. Cl. 103.
687,705. NATIONAL WAREHOUSE RECEIPT SYSTEM AND DESIGN. Cl. 105.
687,707. HANDLE WITH LOVE. Cl. 105.
687,716. CACTUS CLUB THEATRE. Cl. 107.
687,721. MOTOCART. Cl. 19.
687,726. SANI SEPTIC SYSTEM ETC. AND DESIGN. Cl. 103.

Section 18

425,907. THE LITTLE-ONE'S OWN CHOICE. Cl. 39. 12–3–46.
444,043. VIRILITONE. Cl. 51. 6–20–50.
509,733. GAY MANHATTAN. Cl. 6. 5–10–49.
764,075. VIGOR. Cl. 52. 1–28–64.

TRADEMARK REGISTRATIONS AMENDED, DISCLAIMED, CORRECTED, ETC.

418,101. GROTESQUE REPRESENTATION OF A MAN. Cl. 13. 12–4–45. The National Screw & Manufacturing Company, Cleveland, Ohio. Amended: In the statement, column 1, lines 8 through 21, the description of goods is deleted and *Bolts, nuts, rivets, screws, tacks, cotter pins, flat spring keys used in slotted bolts, nails, screw machine products, metal sleeves, special threaded bolts, special nuts, studs, pipe plugs, rods threaded on one or both ends* is inserted.

444,671. WHITE OX. Cl. 39. 3–18–52. North Star Manufacturing Co., Tacoma, Wash. Corrected: In the statement, column 1, line 6, after "America" *and Hannah Wekell, a citizen of Sweden* should be inserted.

680,484. ESCORPION. Cl. 39. 6–16–59. Viuda de Jose Biosca Riera, S.A., Barcelona, Spain. Amended to appear:

ESCORPION

680,509. ESCORPION. Cl. 42. 6–16–59. Viuda de Jose Biosca Riera, S.A., Barcelona, Spain. Amended to appear:

ESCORPION

698,698. SANSON. Cl. 46. 5–31–60. Russell-Miller Milling Co., doing business as Stanard-Tilton Milling Co. Peavey Company, Minneapolis, Minn. Corrected: In the statement, column 1, line 2, "Standard" should be deleted and *Stanard* should be inserted.

702,162. CEROPHYL. Cl. 18. 8–2–60. Cerophyl Laboratories, Inc., Kansas City, Mo. Corrected: In the statement, column 1, line 1, "Maryland" should be deleted and *Missouri* should be inserted.

734,272. ANDES CANDIES ETC. AND DESIGN. Cl. 46. 7–10–62. Andes Candies Inc., Chicago, Ill. Corrected: In the statement, column 2, line 8, "271,009" should be deleted and *271,099* should be inserted.

734,649. SALAD KING. Cl. 46. 7–17–62. Sol Marks, doing business as Salad King Company. Salad King Company, Inc., Baltimore, Md. Corrected: In the statement, column 2, line 4, "etc." should be deleted and *chili sauce, hot dog relish, prepared mustard and mustard bran, pure mustard and horseradish mustard* should be inserted.

763,668. QUAKER STATE Q VCC AND DESIGN. Cl. 52. 1–21–64. Quaker State Oil Refining Corporation, Oil City, Pa. Corrected: In the statement, column 1, line 1, "Pennsylvania" should be deleted and *Delaware* should be inserted.

764,701. PAMPERS. Cl. 37. 2–11–64. The Procter & Gamble Company, Cincinnati, Ohio. Amended: In the statement, column 2, line 2, "facial and" is deleted.

769,044. QUAKER STATE Q ATA. Cl. 15. 5–5–64. Quaker State Oil Refining Corporation, Oil City, Pa. Corrected: In the statement, column 1, line 1, "Pennsylvania" should be deleted and *Delaware* should be inserted.

791,863. WRITE AND SEE. Cl. 37. 6–29–65. Meredith Publishing Company, Des Moines, Iowa. Corrected: In the statement, column 1, line 3, "Ohio" should be deleted and *Iowa* should be inserted.

795,877. PLASGUN. Cl. 12. 9–14–65. Southwestern Portland Cement Company, Los Angeles, Calif. Corrected: In the statement, column 1, line 1, "Virginia" should be deleted and *West Virginia* should be inserted.

795,878. PLASMOR. Cl. 12. 9–14–65. Southwestern Portland Cement Company, Los Angeles, Calif. Corrected: In the statement, column 1, line 1, "Virginia" should be deleted and *West Virginia* should be inserted.

795,908. CELESTAMYD. Cl. 18. 9–14–65. Schering Corporation, Bloomfield, N.J. Corrected: In the statement, column 2, line 1, "ophtalmic" should be deleted and *ophthalmic* should be inserted.

796,005. HOMETIMERS. Cl. 39. Puritan Fashions Corporation, assignee of Reliance Manufacturing Company, New York, N.Y. Corrected: In the statement, column 1, before line 1, *Puritan Fashions Corporation (New York corporation), 1400 Broadway, New York, N.Y., assignee of* should be inserted.

796,088. PARK & TILFORD. Cl. 49. 9–14–65. Schenley Distillers, Inc., New York, N.Y. Corrected: In the statement, column 1, line 1, "Distilleries" should be deleted and *Distillers* should be inserted.

796,870. IDENTA-KIT. Cl. 50. 9–28–65. Gabriel Tauber, doing business as G. G. Tauber Company, Washington, D.C. Amended to appear:

IDENTA-KIT

797,235. MALCO. Cl. 37. 10–5–65. Malco Plastics Incorporated, Baltimore, Md. Corrected: In the statement, column 1, line 1, "Malo" should be deleted and *Malco* should be inserted.

797,801. IMPERIAL. Cl. 34. 10–19–65. Rheem Manufacturing Company, Richmond, Calif. Corrected: In the statement, column 2, lines 2 and 3, "1957" should be deleted and *1947* should be inserted.

798,018. SPANGWELD. Cl. 13. 10–26–65. Armco Steel Corporation, Middletown, Ohio. Corrected: In the statement, column 1, line 1, after "Armco" *Steel* should be inserted.

INDEX OF REGISTRANTS

DECEMBER 21, 1965

(Registered; Renewed; Canceled; Amended, Disclaimed, Corrected, etc.; New Certificates; 12c Publications.)

Acoustical Products Corp., Ardmore, Pa. 800,566, pub. 10–5–65. Cl. 12.
Adams-Millis Corp., High Point, N.C. 800,757, pub. 10–5–65. Cl. 39.
Advance Transformer Co., Chicago, Ill. 800,636, pub. 10–5–65. Cl. 21.
Air Preheater Co., Inc., The, from Combustion Engineering, Inc., Wellsville, N.Y. 800,685–6, pub. 10–5–65. Cl. 34.
Aisner, Benjamin, d.b.a. Specialty Case Mfg. Co., Philadelphia, Pa. 687,559, canc. Cl. 36.
Allegheny Plastics, Inc., Corapolis, Pa. 800,582, pub. 10–5–65. Cl. 13.
Allied Chemical Corp., New York, N.Y., from Stetson Corp., Lincoln, Ill. 800,812. Cl. 2.
All-State Welding Alloys Co., Inc., White Plains, N.Y. 800,694, pub. 10–5–65. Cl. 34.
Alpha 2 Co.: *See*—
Brown, Malcolm C.
Alsermaston Sales: *See*—
Bru, Malcolm S.
Alto Fonic Music Systems, Inc., Palo Alto, Calif. 687,558, canc. Cl. 36.
Aluma-Grip Co. of America, Inc., Akron, Ohio. 800,701, pub. 10–5–65. Cl. 35.
Aluminum Filter Co., Carpinteria, Calif. 800,670, pub. 10–5–65. Cl. 31.
Amco Atlas Mattress, Inc., Springfield, Ill. 800,681, pub. 10–5–65. Cl. 32.
American Brake Shoe Co., New York, N.Y. 800,584, pub. 10–5–65. Cl. 14.
American Dispenser Corp., Atlanta, Ga. 800,668, pub. 10–5–65. Cl. 31.
American Electrical Heater Co., Detroit, Mich. 800,628, pub. 10–5–65. Multiple Class (Classes 21, 24, and 34).
American Home Products Corp.: *See*—
Ayerst, McKenna & Harrison Ltd.
American Metal Products Co., Detroit, Mich. 800,644, pub. 10–5–65. Cl. 23.
American Tobacco Co., The, New York, N.Y. 800,597, pub. 10–5–65. Cl. 17.
Ames, O., Co.: *See*—
McDonough Co.
Andes Candies Inc., Chicago, Ill. 734,272, cor. Cl. 46.
Angel Soft Tissue Mills, Inc., from Thomson Paper Mills, Inc., New York, N.Y. 687,564, canc. Cl. 37.
Aramony, Fred R., d.b.a. Sportsguide Mfg. Co., Worcester, Mass. 800,726, pub. 10–5–65. Cl. 39.
Arbogast, Fred, Co., Inc., Akron, Ohio. 800,641, pub. 10–5–65. Cl. 22.
Arcade File Works, Anderson, Ind., to Nicholson File Co., Providence, R.I. 49,460, ren. 12–21–65. Cl. 23.
Arkell Safety Bag Co., New York, N.Y. 800,811. Cl. 2.
Armco Steel Corp., Middletown, Ohio. 798,018, cor. Cl. 13.
Armorgard Corp., Pittsburgh, Pa. 800,561, pub. 10–5–65. Cl. 12.
Armstrong-Blum Mfg. Co., Chicago, Ill. 207,685, ren. 12–21–65. Cl. 23.
Aronsohn, S. J., Inc., New York, N.Y. 687,624–5, canc. Cl. 42.
Arundale Manufacturers, Inc., St. Louis, Mo. 800,664, pub. 10–5–65. Cl. 31.
Arvin Industries, Inc., Columbus, Ind. 800,625, pub. 7–24–62. Cl. 21.
Associated Portland Cement Manufacturers, Ltd., The, London, England. 204,967, ren. 12–21–65. Cl. 12.
Associated Spring Corp., Bristol, Conn. 800,581, pub. 10–5–65. Cl. 13.
Austen & Cie., Paris, France. 800,823. Cl. 39.
Ayerst, McKenna & Harrison Ltd., to American Home Products Corp., New York, N.Y. 418,963, ren. 12–21–65. Cl. 18.
Auto-Electronics, Inc., Elwood, Ind. 687,496, canc. Cl. 21.
B-D Laboratories, Inc., East Rubberford, N.J. 800,556, pub. 10–5–65. Cl. 6.
B & D Sales, Midland, Pa. 800,549, pub. 10–5–65. Cl. 4.
Babbitt, B. T., Inc., New York, N.Y. 687,432, canc. Cl. 4.
Ballen, Roland, Riverside, Calif. 800,806, pub. 10–5–65. Cl. 101.
Bamfords Ltd., Uttoxeter, Stafford, England. 800,645, pub. 10–5–65. Cl. 28.
Barber-Webb Co. Inc., The, Los Angeles, Calif. 800,582–3, pub. 10–5–65. Cl. 1.
Barry, R. G., Corp., Columbus, Ohio. 687,554, canc. Cl. 32.
Basic Products Corp., Milwaukee, Wis. 800,630, pub. 10–5–65. Cl. 21.
Basic Products Corp., Milwaukee, Wis. 800,691, pub. 10–5–65. Cl. 34.
Bay Oil & Chemical Co.: *See*—
Footit, Richard J.
Beck, A. S., Shoe Corp., New York, N.Y. 687,613, canc. Cl. 39.
Bee Chemical Co., Lansing, Ill. 800,591, pub. 10–5–65. Cl. 16.
Bernat, Emile, & Sons Co., Uxbridge, Mass. 800,780, pub. 10–5–65. Cl. 43.
Bethea Co., Inc., Bessemer, Ala. 800,629, pub. 10–5–65. Cl. 21.
Bigelow-Sanford, Inc., New York, N.Y. 800,765–72, pub. 10–5–65. Cl. 42.
Bigelow-Sanford, Inc., New York, N.Y. 800,773, pub. 10–5–65. Cl. 42.
Black and Decker Mfg. Co., The, Towson, Md. 687,704, canc. Cl. 103.
Blue Bell, Inc., to Blue Bell, Inc., Greensboro, N.C. 418,705, ren. 12–21–65. Cl. 39.
Blue Bell, Inc., Greensboro, N.C. 800,821. Cl. 39.
Boreva Sportswear Co., Chicago, Ill. 687,617, canc. Cl. 39.
Boston Gear Works: *See*—
Murray Co. of Texas, Inc., The.
Bowen Mfg. Co., Inc., Pasadena, Calif. 800,730, pub. 10–5–65. Cl. 39.
Boye Needle Co., The, Chicago, Ill. 800,651, pub. 10–5–65. Cl. 23.
Bradberry Briar Pipe Co.: *See*—
Magidson, Gene.
Bradford Machine Tool Co., from Sani Septic Systems, Inc., Lansing, Mich. 687,726, canc. Cl. 103.
Bradson Mfg. Corp., Saline, Mich. 687,529, canc. Cl. 22.
Broderick & Bascom Rope Co., St. Louis, Mo. 687,536–7, canc. Cl. 23.
Brother Industries, Ltd., Misuho-ku, Nagoya, Japan. 800,652, pub. 10–5–65. Cl. 23.
Brown, H. H., & Co., Boston, Mass., to H. H. Brown Shoe Co., Inc., Worcester, Mass. 50,962, ren. 12–21–65. Cl. 39.
Brown, H. H., Shoe Co., Inc.: *See*—
Brown, H. H., & Co.
Brown, Malcolm C., d.b.a. Alpha 2 Co., Palo Alto, Calif. 800,715, pub. 10–5–65. Cl. 38.
Bru, Malcolm S., d.b.a. Aldermaston Sales, Glen Cove, N.Y. 800,695, pub. 10–5–65. Cl. 34.
Bunlap Corp., New York, N.Y. 800,572, pub. 10–5–65. Cl. 12.
Burford Co., The, Maysville, Okla. 800,643, pub. 10–5–65. Cl. 23.
Burrell Flange Lubricator Co., Seattle, Wash. 800,657, pub. 10–5–65. Cl. 23.
Buster Brown Textiles, Inc., Wilmington, Del. 800,744, pub. 10–5–65. Cl. 39.
CSI Sales Co., Solon, Ohio. 687,519, canc. Cl. 22.
Calories Ltd., Inc., Redlands, Calif. 800,795, pub. 10–5–65. Cl. 46.
Canadian Wallpaper Manufacturers Ltd., New Toronto, Toronto, Ontario, Canada. 800,623, pub. 10–5–65. Cl. 20.
Can-Tex Industries, Inc., d.b.a. Tex-Vit Mfg. Division, Mineral Wells, Tex. 800,671, pub. 10–5–65. Cl. 31.
Capital Industries, Inc., Avis, Pa. 800,612, pub. 10–5–65. Cl. 19.
Caridon Hall Finishes, Inc., Branford, Conn. 800,589, pub. 10–5–65. Cl. 16.
Carlisle Mfg. Co., Inc., Newark, N.J. 800,546, pub. 10–5–65. Cl. 2.
Carmello's, Lubbock, Tex. 687,669, canc. Cl. 46.
Carnation Co., Los Angeles, Calif. 800,789, pub. 10–5–65. Cl. 46.
Carrier Corp., Syracuse, N.Y. 800,692, pub. 10–5–65. Cl. 34.
Chadbourn Gotham, Inc., Charlotte, N.C. 800,824. Cl. 39.
Chatnam Mfg. Co., Elkin, N.C. 800,759, pub. 10–5–65. Cl. 42.
Chemische Werke Albert, Wiesbaden-Biebrich, Germany. 796,600, cor. Cl. 6.
Chips 'N Twigs, Inc., Philadelphia, Pa. 800,749, pub. 10–5–65. Cl. 39.
Church & Dwight Co., to Church & Dwight Co., Inc., New York, N.Y. 47,947, ren. 12–21–65. Cl. 6.
Church & Dwight Co., Inc.: *See*—
Church & Dwight Co.
Cerophyl Laboratories, Inc., Kansas City, Mo. 702,162, cor. Cl. 18.
Ciba Ltd., Basle, Switzerland. 687,474, canc. Cl. 18.
Clark Equipment Co., Buchanan, Mich. 800,602, pub. 10–5–65. Cl. 19.
Clevite Corp., Cleveland, Ohio. 800,660, pub. 10–5–65. Cl. 26.
Cohn & Rosenberger, Inc., New York, N.Y. 389,906, canc. Cl. 28.
Cole of California, Inc., Los Angeles, Calif. 800,752, pub. 10–5–65. Cl. 39.
Colgate-Palmolive Co., New York, N.Y. 764,075, canc. Cl. 52.
Combustion Engineering, Inc.: *See*—
Air Preheater Co., Inc., The.
Community Science, Inc., New York, N.Y. 687,480, canc. Cl. 18.
Congoleum-Nairn Inc., Kearny, N.J. 800,621–2, pub. 10–5–65. Cl. 20.

Consolidated Cigar Corp., New York, N.Y. 420,413–14, ren. 12–21–65. Cl. 17.
Consolidated Mfg. Co.: *See*—
Consolidated Marketing Co.
Consolidated Marketing Co., d.b.a. Consolidated Mfg. Co., Englewood, Colo. 800,693, pub. 10–5–65. Cl. 34.
Consolidated Packaging Corp., d.b.a. Lanzit Corrugated Box Co., Chicago, Ill. 800,543, pub. 10–5–65. Cl. 2.
Container Corp. of America, Chicago, Ill. 800,595, pub. 10–5–65. Cl. 16.
Continental Can Co., Inc., New York, N.Y. 800,540, pub. 10–5–65. Cl. 2.
Cook, S. A., & Co., Medina, N.Y. 687,551, canc. Cl. 32.
Copel-Exportadora de Conservas de Peixe, Limitada, Lisbon, Portugal. 687,641, canc. Cl. 46.
Cornelius Van Linge, Los Angeles, Calif. 800,787, pub. 10–5–65. Cl. 44.
Corporation of the Seven Wardens, The, Montreal, Quebec, Canada. 800,809, pub. 10–5–65. Cl. 200.
Conventry, Sarah, Inc., Newark, N.Y. 800,662–3, pub. 10–5–65. Cl. 28.
Cowles Chemical Co.: *See*—
Cowles Detergent Co., The.
Cowles Detergent Co., The, to Cowles Chemical Co., Cleveland, Ohio. 420,233, ren. 12–21–65. Cl. 52.
Craddock-Terry Shoe Corp., Lynchburg, Va. 800,725, pub. 10–5–65. Cl. 39.
Crane Packing Co., Morton Grove, Ill. 800,587, pub. 10–5–65. Cl. 15.
Croton Watch Co. Inc.: *See*—
Horowitz & Son, Inc.
Crow Wing Garments: *See*—
Hickerson, Perry J.
Crown Zellerbach Corp.: *See*—
Gaylord, Robert, Inc.
Crown Zellerbach Corp., San Francisco, Calif. 687,563, canc. Cl. 37.
Crystal, David, Inc., New York, N.Y. 417,345, ren. 12–21–65. Cl. 39.
Curtis, Helene, Industries, Inc., d.b.a. Sue Cory, Ill., Chicago, Ill. 800,801, pub. 10–5–65. Cl. 51.
Daggett & Ramsdell, Inc. (from Daggett and Ramsdell), New York, N.Y. 509,733, canc. Cl. 6.
Daggett & Ramsdell, Inc. (from Skin Research Laboratories), New York, N.Y. 444,043, canc. Cl. 51.
Danner, Eugene G., Mfg., Inc., Brooklyn, N.Y. 800,635, pub. 10–5–65. Cl. 21.
Deering Milliken, Inc., New York, N.Y. 800,776, pub. 10–5–65. Cl. 42.
Deering Milliken, Inc., New York, N.Y. 800,825. Cl. 42.
DeLoux, Jacques, Inc., Sellersville, Pa. 687,589, canc. Cl. 39.
Destileria Serralles, Inc., Ponce, Puerto Rico. 687,687, canc. Cl. 49.
Dillingham Mfg. Co., Sheboygan, Wis. 687,553, canc. Cl. 32.
Director's Inc., Washington, D.C. 687,660, canc. Cl. 46.
Diversified Industries, Inc., Trention, S.C. 687,688, canc. Cl. 50.
Dr. Pepper Co.: *See*—
Dr. Pepper Co., The.
Dr. Pepper Co., The, to Dr. Pepper Co., Dallas, Tex. 50,668, ren. 12–21–65. Cl. 45.
Dog Agency: *See*—
Lothar Arends.
Dole Valve Co., The, Morton Grove, Ill. 800,599, pub. 10–5–65. Cl. 19.
Dolls of Hollywood, Santa Monica, Calif. 687,530, canc. Cl. 22.
Dome Shoes of N.C., Inc., Baltimore, Md. 800,734, pub. 10–5–65. Cl. 39.
Dorr Co., The, New York, N.Y., to Dorr-Oliver Inc., Stamford, Conn. 205,320, ren. 12–21–65. Cl. 23.
Dorr-Oliver Inc.: *See*—
Dorr Co., The.
Drexel Furniture Co., Drexel, N.C. 687,552, canc. Cl. 32.
Driftwood Homes Corp., Elkhart, Ind. 800,614, pub. 10–5–65. Cl. 19.
Drybread, John S., Sr., and Berniece L. Drybread, d.b.a. Retriever Toggle Bolt Co., Winamac, Ind. 800,580, pub. 10–5–65. Cl. 13.
Dubitsky, Carlton: *See*—
Red Sea Balsam Co.
Dubitsky, Max: *See*—
Red Sea Balsam Co.
Dunbill International, Inc., Ravenna, Ohio. 800,535, pub. 10–26–65. Multiple Class (Classes 2 and 44).
Dunn, Roger, & Co., Chicago, Ill. 800,565, pub. 10–5–65. Cl. 12.
Du Pont de Nemours, E. I., and Co., Wilmington, Del. 687,427, canc. Cl. 1.
Dura-Vent Corp., Redwood City, Calif. 800,562, pub. 10–5–65. Multiple Class (Classes 12 and 34).
Dynamic Distributors, Inc., Muncie, Ind. 800,579, pub. 10–5–65. Cl. 13.
Eastman Kodak Co., Rochester, N.Y. 800,552, pub. 10–5–65. Cl. 5.
Eclipse Sleep Products, Inc., Brooklyn, N.Y. 800,677, pub. 10–5–65. Cl. 32.
Electronic Organ Arts, Altadena, Calif. 800,703, pub. 10–5–65. Cl. 36.
Electrostar G.m.b.H., Wurttemberg, Germany. 800,637, pub. 10–5–65. Cl. 21.
Elgin National Watch Co., Elgin, Ill. 47,470, ren. 12–21–65. Cl. 27.
Elio Goroni, Allen Park, Mich. 687,517, canc. Cl. 22.
Embassy Industries, Inc., Brooklyn, N.Y. 800,687, pub. 10–5–65. Cl. 34.
Excello Paper Products Co., Cincinnati, Ohio. 667,864, canc. Cl. 50.
Exquisite Form Industries, Inc., New York, N.Y. 800,755, pub. 10–5–65. Cl. 39.
FMC Corp.: *See*—
Peninsular Chemical Co.
F W D Wagner, Inc., from Nelson Equipment Co., Portland, Oreg. 800,658, pub. 10–5–65. Cl. 23.
Faber, Eberhard, Inc., Crestwood, Wilkes-Barre, Pa. 800,713, pub. 10–5–65. Cl. 37.
Farrell, H., Co.: *See*—
Turetzky, Herbert F.
Faultless Starch Co., Kansas City, Mo. 51,025, ren. 12–21–65. Cl. 6.
Favorite Recipe Press, Inc., from Favorite Recipe Press, Inc., Montgomery, Ala. 800,717, pub. 10–5–65. Cl. 38.
Firestone Tire & Rubber Co., The, Akron, Ohio. 800,699, pub. 10–5–65. Cl. 35.
Firma Dr. Adolf Holken, Duren, Rhineland, Germany. 800,712, pub. 10–5–65. Cl. 37.
Fisher-Pierce Co., Inc., The, Rockland, Mass. . 800,611, pub. 10–5–65. Cl. 19.
Fisher, William B., East Detroit, Mich. 666,560, canc. Cl. 22.
Flambeau Plastics Corp., Baraboo, Wis. 800,544, pub. 10–5–65. Cl. 2.
Flexible Air Seat Corp., Los Angeles, Calif. 800,604, pub. 10–5–65. Cl. 19.
Flintkote Co., The, New York, N.Y. 800,564, pub. 10–5–65. Cl. 12.
Florsheim Shoe Co., The: *See*—
International Shoe Co.
Footit, Richard J., d.b.a. Bay Oil & Chemical Co., Springfield, Mass. 800,574, pub. 10–5–65. Cl. 12.
Ford Motor Co., Dearborn, Mich. 800,613, pub. 10–5–65. Cl. 19.
Fort Mill Mfg. Co., Fort Mill, S.C., to The Springs Cotton Mills, Lancaster, S.C. 207,049, ren. 12–21–65. Cl. 42.
Forstmann & Huffmann Co., Passaic, N.J., to J. P. Stevens & Co., Inc., New York, N.Y. 204,589–91, ren. 12–21–65. Cl. 42.
Forstmann & Huffmann Co., Passaic, N.J., to J. P. Stevens & Co., Inc., New York, N.Y. 205,821, ren. 12–21–65. Cl. 42.
Forstmann & Huffmann Co., Passaic, N.J., to J. P. Stevens & Co., Inc., New York, N.Y. 207,356–400, ren. 12–21–65. Cl. 42.
Fortunoff's Shopping Center, Inc., Westbury, N.Y. 800,819. Cl. 30.
Frank, S. M., & Co., Inc., New York, N.Y. 800,813. Cl. 8.
Fun Farms, Inc., Milwaukee, Wis. 800,640, pub. 10–5–65. Cl. 22.
Fun Farms, Inc., Milwaukee, Wis. 800,807–8, pub. 10–5–65. Cl. 107.
Gatke Corp.: *See*—
Gatke, Thomas L.
Gatke, Thomas L., to Gatke Corp., Chicago, Ill. 199,391, ren. 12–21–65. Cl. 35.
Gaylord Industries, Portland, Oreg. 800,820. Cl. 34.
Gaylord, Robert, Inc., St. Louis, Mo., to Crown Zellerbach Corp., San Francisco, Calif. 206,963, ren. 12–21–65. Cl. 2.
General Aniline & Film Corp., New York, N.Y. 800,557, pub. 10–5–65. Cl. 6.
General Cigar Co., Inc., d.b.a. Gradiaz, Annis Division, New York, N.Y. 800,598, pub. 10–5–65. Cl. 17.
Getz, William, Corp., The, Chicago, Ill. 800,781, pub. 9–15–65. Cl. 44.
Goldenthal, Allan B., d.b.a. Video-Rad, New York, N.Y. 698,698, canc. Cl. 101.
Goodyear Tire & Rubber Co., The: *See*—
Southern Oil Stores, Inc.
Gorham Corp.: *See*—
Gorham Mfg. Co.
Gorham Mfg. Co., to Gorham Corp., Providence, R.I. 209,428, ren. 12–21–65. Cl. 4.
Gradiaz, Annis Division: *See*—
General Cigar Co., Inc.
Graham Record Co., Inc., Houston, Tex. 800,705, pub. 10–5–65. Cl. 36.
Graniteville Co., Graniteville, S.C. 800,760, pub. 10–5–65. Cl. 42.
Greenberg, Sid, Inc., New York, N.Y. 687,619, canc. Cl. 39.
Gulf Marine Supply Corp., Houston, Tex. 800,697, pub. 10–5–65. Cl. 34.
HK Corp., Atlanta, Ga. 800,741, pub. 10–5–65. Cl. 39.
Haller, Karl, d.b.a. Karl Haller & Son, Los Angeles, Calif. 666,129, canc. Cl. 46.
Haller, Karl, & Son: *See*—
Haller, Karl.
Hallmark Cards, Inc., Kansas City, Mo. 800,710, pub. 10–5–65. Cl. 37.
Hamilton Watch Co., Lancaster, Pa. 800,696, pub. 10–5–65. Cl. 34.
Hanes Corp., Winston-Salem, N.C. 800,756, pub. 10–5–65. Cl. 39.
Harte & Co., Inc., New York, N.Y. 687,623, canc. Cl. 42.
Henry Glass & Co., New York, N.Y. 800,761, pub. 10–5–65. Cl. 42.
Herbert Mills Co., Inc., New York, N.Y. 800,731, pub. 10–5–65. Cl. 39.
Herman, I. C., & Co., Inc., New York, N.Y. 800,723, pub. 10–17–63. Cl. 39.
Hickerson & Co., Inc.: *See*—
Hickerson, Perry J.

Hickerson, Perry J., d.b.a. Crow Wing Garments, from Hickerson & Co., Inc., Brainerd, Minn. 687,583, canc. Cl. 39.
High Performance Recordings, Inc., Willow Grove, Pa. 800,706, pub. 10–5–65. Cl. 36.
Hildebrandt, John J., Corp., Logansport, Ind. 687,521, canc. Cl. 22.
Hinckley & Schmitt, Inc., Chicago, Ill. 687,636–7, canc. Cl. 45.
Hofford Varnish Co., Inc., Carlstadt, N.J. 800,592, pub. 3–23–65. Cl. 16.
Holland, Inez, House: *See*—
Holland, Inez.
Holland, Inez, d.b.a. Inez Holland House, New York, N.Y. 687,526, canc. Cl. 22.
Holland Suco Color Co., from Holland Color and Chemical Co., Holland, Mich. 800,799, pub. 10–5–65. Cl. 50.
Hollywood Shoe Polish Inc., Richmond Hill, N.Y. 800,548, pub. 7–6–65. Cl. 4.
Hoover Ball and Bearing Co., Saline, Mich. 800,577, pub. 10–5–65. Cl. 13.
Hoppy Taw Corp., Salt Lake City, Utah. 687,525, canc. Cl. 22.
Horowitz & Son, Inc., New York, N.Y., to Croton Watch Co. Inc., Croton-on-Hudson, N.Y. 415,979, ren. 12–21–65. Cl. 27.
Horowitz & Son, Inc., New York, N.Y., to Croton Watch Co. Inc., Croton-on-Hudson, N.Y. 417,106, ren. 12–21–65. Cl. 27.
Huffman Mfg. Co., The, Miamisburg, Ohio. 800,616–18, pub. 10–5–65. Cl. 19.
Hyde, Marshall, Port Huron, Mich. 687,437, canc. Cl. 6.
Illinois Tool Works Inc., Chicago, Ill. 800,638, pub. 10–5–65. Cl. 21.
Impermeabili San Giorgio, Societa per Azioni, Genoa, Italy. 800,750, pub. 10–5–65. Cl. 39.
International Motor Co., New York, N.Y., to Mack Trucks, Inc., Allentown, Pa. 205,100, ren. 12–21–65. Cl. 19.
International Shoe Co., d.b.a. The Florsheim Shoe Co., Chicago, Ill. 800,737, pub. 10–5–65. Cl. 39.
JFD Electronics Corp., Brooklyn, N.Y. 800,634, pub. 10–5–65. Cl. 21.
Janitorial Supplies Corp., Albany, N.Y. 800,536, pub. 10–5–65. Multiple Class (Classes 2, 29, 37, and 52).
Jerden Music, Inc., Seattle, Wash. 800,704, pub. 10–5–65. Cl. 36.
Jergens, Andrew, Co., The, Cincinnati, Ohio. 418,569, ren. 12–21–65. Cl. 6.
Johns-Manville Corp., New York, N.Y. 800,569, pub. 10–5–65. Cl. 12.
Johnson, S. C., & Son, Inc., Racine, Wis. 800,551, pub. 10–5–65. Cl. 4.
Jones, E. D., Corp., Dalton, Mass. 800,667, pub. 10–5–65. Cl. 31.
Julian, Milton, d.b.a. Milton's Clothing Cupboard, Chapel Hill, N.C. 687,593, canc. Cl. 39.
Kallson, Mack, from Mayflower Dress Co., Inc., New York, N.Y. 687,594, canc. Cl. 39.
Karten, Morton, Inc., New York, N.Y. 687,590, canc. Cl. 39.
Kearney & Foot Co., Paterson, N.J., to Nicholson File Co., Providence, R.I. 49,382, ren. 12–21–65. Cl. 23.
Kent Foods, Inc., Kennedyville, Md. 667,813, canc. Cl. 46.
Kewaunee Mfg. Co., Adrian, Mich. 800,659, pub. 6–15–65. Cl. 26.
Kilgore, Inc., Westerville, Ohio. 687,523, canc. Cl. 22.
Kinslow Egg Co., Russellville, Ark. 687,670, canc. Cl. 46.
Kit Mfg. Co., Long Beach, Calif. 800,605, pub. 10–5–65. Cl. 19.
Klein, Bernat, Ltd., Galashiels, Scotland. 800,732, pub. 10–5–65. Cl. 39.
Kleinert, I. B., Rubber Co., New York, N.Y. 800,745, pub. 10–5–65. Cl. 39.
Knudson Industries Inc., Tucson, Ariz. 800,676, pub. 10–5–65. Cl. 32.
Kress, S. H., and Co., New York, N.Y. 687,569, canc. Cl. 37.
Laboratory for New Products: *See*—
McGuire, William J.
Lady Orlis Hosiery Shops, New York, N.Y. 800,746, pub. 10–5–65. Cl. 39.
Landbrugsministeriet, Copenhagen, Denmark. 800,810, pub. 10–5–65. Cl. A.
Lanzit Corrugated Box Co.: *See*—
Consolidated Packaging Corp.
Larsen Confection Co.: *See*—
Larsen, Knud W.
Larsen, Knud W., d.b.a. Larsen Confection Co., Gary, Ind. 687,642, canc. Cl. 46.
Lee Broadcasting, Inc., Quincy, Ill. 687,716, canc. Cl. 107.
LeTarte Co., Inc., Smith Creek, Mich. 800,575, pub. 10–5–65. Cl. 12.
Letourneau-Westinghouse Co., Peoria, Ill. 687,489, canc. Cl. 19.
Lever Brothers Co., New York, N.Y. 800,802, pub. 10–29–63. Cl. 51.
Lillivette Knitters, Inc., Yauco, Puerto Rico. 687,585, canc. Cl. 39.
Linden Equipment Corp., Los Angeles, Calif. 687,721, canc. Cl. 19.
Lipscomb, John W., Baton Rouge, La. 687,697, canc. Cl. 100.
Lloyd, Warren, Inc., Paterson, N.J. 687,549, canc. Cl. 32.
Lombard Corp., Youngstown, Ohio. 800,646, pub. 10–5–65. Cl. 23.
Lothar Arends, d.b.a. Dog Agency, Heidelberg, Germany. 687,707, canc. Cl. 105.
Lorch-Westway Corp., d.b.a. Lester Paul, Dallas, Tex. 800,742, pub. 10–5–65. Cl. 39.
Ludlow Valve Mfg. Co., Inc., Troy, N.Y. 669,111, canc. Cl. 13.
Lyf-Alum, Inc., Oconomowoc, Wis. 800,568, pub. 10–5–65. Cl. 12.
M-H Equipment Co., Inc., Duncanville, Tex. 800,818. Cl. 19.
Mack Trucks, Inc.: *See*—
International Motor Co.
MacDermid Inc., Waterbury, Conn. 800,555, pub. 10–5–65. Cl. 6.
MacGuire, Hugh C., Montgomery, Ala. 800,573, pub. 10–5–65. Cl. 12.
Maguire, William J., d.b.a. Laboratory for New Products, South Boston, Mass. 800,570, pub. 10–5–65. Cl. 12.
Magidson, Gene, d.b.a. Bradberry Briar Pipe Co., New York, N.Y. 800,560, pub. 10–5–65. Cl. 8.
Maidenform, Inc., New York, N.Y. 800,739. Cl. 39.
Maico Plastics Inc., Baltimore, Md. 797,235, cor. Cl. 37.
Mallard Coach Corp., West Bend, Wis. 800,607–10, pub. 10–5–65. Cl. 19.
Mangel Stores Corp., New York, N.Y. 800,534, pub. 10–5–65. Cl. 2.
Mangel Stores Corp., New York, N.Y. 800,554, pub. 10–5–65. Cl. 6.
Manhattan Shirt Co., The, New York, N.Y. 800,753, pub. 10–5–65. Cl. 39.
Maradel Products, Inc., New York, N.Y. 800,803, pub. 10–5–65. Cl. 51.
Marcal Paper Mills, Inc., East Paterson, N.J. 800,711, pub. 1–5–65. Cl. 37.
Market/Show Publications, Inc., Atlanta, Ga. 800,719, pub. 10–5–65. Cl. 38.
Marriott-Hot Shoppes, Inc., from Hot Shoppes, Inc., Washington, D.C. 800,792, pub. 10–5–65. Cl. 46.
Martin-Marietta Corp., New York, N.Y. 800,558, pub. 10–5–65. Cl. 6.
Masters and Masters, Oklahoma City, Okla. 800,762, pub. 10–5–65. Cl. 42.
Mattel, Inc., Los Angeles, Calif. 687,511, canc. Cl. 22.
Mayflower Dress Co., Inc.: *See*—
Kallson, Mack.
McDonough Co., d.b.a. O. Ames Co., Parkersburg, W. Va. 800,650, pub. 10–5–65. Cl. 23.
McDonough Co., d.b.a. O. Ames Co., Parkersburg, W. Va. 800,656, pub. 10–5–65. Cl. 23.
Mead Johnson & Co., Evansville, Ind. 800,782, pub. 10–5–65. Cl. 44.
Mentholatum Co., The: *See*—
Yucca Co., The.
Meredith Publishing Co., Des Moines, Iowa. 791,863, cor. Cl. 37.
Mettler, John W., to Powerhouse Inc., New Brunswich, N.J. 49,830, ren. 12–21–65. Cl. 39.
Milani Foods, Inc., Los Angeles, Calif. 800,796, pub. 10–5–65. Cl. 46.
Milton's Clothing Cupboard: *See*—
Julian, Milton.
Millipore Filter Corp., Bedford, Mass. 800,666, pub. 10–5–65. Cl. 31.
Miracle Adhesives Corp., Bellmore, N.Y. 800,563, pub. 10–5–65. Cl. 12.
Mission Mfg. Co., Houston, Tex. 800,700, pub. 10–5–65. Cl. 35.
Modine Mfg. Co., Racine, Wis. 687,555, canc. Cl. 34.
Monarch Rug Mills, Inc., Dalton, Ga. 687,626, canc. Cl. 42.
Monarch Tool & Machinery Co., Chicago, Ill. 800,601, pub. 10–5–65. Cl. 19.
Monarch Furniture Co., Inc., High Point, N.C. 800,678, pub. 10–5–65. Cl. 32.
Monsanto Co., St. Louis, Mo. 800,774, pub. 10–5–65. Cl. 42.
Motor Guard Corp., San Jose, Calif. 800,669, pub. 10–5–65. Cl. 31.
Murray Co. of Texas, Inc., The, d.b.a. Boston Gear Works, North Quincy, Mass. 800,639, pub. 10–5–65. Cl. 21.
National Association of Supermarket Apparel Distributors, New York, N.Y. 800,740, pub. 10–5–65. Cl. 39.
National Cash Register Co., The, Dayton, Ohio. 800,722, pub. 10–5–65. Cl. 38.
National Dairy Products Corp.: *See*—
Sheffield Farms Co., Inc.
National Screw & Mfg. Co., The, Cleveland, Ohio. 418,101. Am. 7(d). Cl. 13.
National Warehouse Receipt System, Kansas City, Mo. 687,705, canc. Cl. 105.
Nelson Equipment Co.: *See*—
F W D Wagner, Inc.
New London Mills, Inc., New London, Conn. 800,619–20, pub. 10–5–65. Cl. 20.
New York Air Brake Co., The, New York, N.Y. 800,683, pub. 10–5–65. Cl. 33.
Nicholson File Co., Providence, R.I. 50,135, ren. 12–21–65. Cl. 23.
Nicholson File Co., Providence, R.I. 60,137, ren. 12–21–65. Cl. 23.
Nicholson File Co., Providence, R.I. 49,666, ren. 12–21–65. Cl. 23.
Nicholson File Co., Providence, R.I. 49,411, ren. 12–21–65. Cl. 23.
Nicholson File Co., Providence, R.I. 50,882, ren. 12–21–65. Cl. 23.
Nicholson File Co.: *See*—
Arcade File Works.
Kearney & Foot Co.
North Star Mfg. Co., Tacoma, Wash. 444,671, cor. Cl. 39.

Norwich Pharmacal Co., The, Norwich, N.Y. 417,240, ren. 12–21–65. Cl. 18.
Obee Wholesale Grocers Co., Chicago, Ill. 800,794, pub. 10–5–65. Cl. 46.
Ogus, Rabinovich & Ogus, Inc., New York, N.Y. 418,752, ren. 12–21–65. Cl. 39.
Old Colony Paint & Chemical Co., Los Angeles, Calif. 800,594, pub. 10–5–65. Cl. 16.
Olin Mathieson Chemical Corp.: *See*— Winchester Repeating Arms Co.
Origami Creations, Inc., New York, N.Y. 687,518, canc. Cl. 22.
Oxford Filing Supply Co., Inc., Garden City, N.Y. 800,675, pub. 10–5–65. Cl. 32.
Paris Paint & Varnish Co., Inc., Brooklyn, N.Y. 800,593, pub. 10–5–65. Cl. 16.
Parrish Bass Lures: *See*— Parrish, William J.
Parrish, William J., d.b.a. Parrish Bass Lures, Yadkinville, N.C. 800,642, pub. 10–5–65. Cl. 22.
Paul, Lester: *See*— Lorch-Westway Corp.
Pearce, Mimi, Miami Beach, Fla. 800,826. Cl. 42.
Peavey Co.: *See*— Russell-Miller Milling Co. Stanard-Tilton Milling Co.
Pemberton and Sturgess (Great Britain) Ltd., London, England. 800,684, pub. 10–5–65. Cl. 34.
Pendleton Woolen Mills, Portland, Oreg. 800,729, pub. 10–5–65. Cl. 39.
Peninsular Chemical Co., Orlando, Fla., to FMC Corp., New York, N.Y. 205,658, ren. 12–21–65. Cl. 6.
Penney, J. C., Co., New York, N.Y. 800,682, pub. 10–5–65. Cl. 32.
Penney, J. C., Co., New York, N.Y. 800,777, pub. 10–5–65. Cl. 42.
Permanent Pigments, Inc., Cincinnati, Ohio. 800,815. Cl. 16.
Peter Pan Foundations, Inc., New York, N.Y. 800,822. Cl. 39.
Peter Pan Mfg. Co., Boston, Mass. 425,907, canc. Cl. 39.
Phoenix Steel Corp., Phoenixville, Pa. 800,585, pub. 10–5–65. Cl. 14.
Photo Chemical Products, Inc., Garden City, N.Y. 800,631, pub. 10–5–65. Cl. 21.
Pittsburgh Plate Glass Co., Pittsburgh, Pa. 800,590, pub. 10–5–65. Cl. 16.
Plane Parts, Inc., New Haven, Conn. 687,539, canc. Cl. 23.
Plugaroo, Inc., Tulsa, Okla. 800,578, pub. 10–5–65. Cl. 13.
Ply-Gem Corp., Jamaica, N.Y. 800,814. Cl. 12.
Poccia, Nicholas, d.b.a. Poccia Products Co., Utica, N.Y. 687,645, canc. Cl. 46.
Poccia Products Co.: *See*— Poccia, Nicholas.
Polan, Katz and Co., Baltimore, Md. 373,598, canc. Cl. 41.
Porta-Floor Co., St. Louis, Mo. 800,624, pub. 10–5–65. Cl. 20.
Powerhouse Inc.: *See*— Mettler, John W.
Preformed Line Products Co., Cleveland, Ohio. 800,626, pub. 10–5–65. Cl. 21.
Precision Universal Joint Corp., Chicago, Ill. 800,649, pub. 10–5–65. Cl. 23.
Preservation Society of Newport County, The, Newport, R.I. 800,709, pub. 10–5–65. Cl. 37.
Printed Sportswear, Inc., Chicago, Ill. 800,728, pub. 10–5–65. Cl. 39.
Product News Publishing Corp., New York, N.Y. 800,716, pub. 10–5–65. Cl. 38.
Printed Sportswear, Inc., Chicago, Ill. 800,727, pub. 10–5–65. Cl. 39.
Procter & Gamble Co., The, Cincinnati, Ohio. 764,701. Am. 7(d). Cl. 37.
Puritan Fashions Corp., from Reliance Mfg. Co., New York, N.Y. 796,005, cor. Cl. 39.
Quaker State Oil Refining Corp., Oil City, Pa. 763,668, cor. Cl. 52.
Quaker State Oil Refining Corp., Oil City, Pa. 769,044, cor. Cl. 15.
Raach, Fred R., and Ruth A. Raach, d.b.a. The Spinning Jenny, Paoli, Pa. 800,714, pub. 10–5–65. Cl. 37.
Radiol Chemicals Ltd.: *See*— Stevens, William S.
Ramrod Products, Inc., San Francisco, Calif. 687,527, canc. Cl. 22.
Red Jacket Mfg. Co., Davenport, Iowa. 800,665, pub. 10–5–65. Cl. 31.
Red Sea Balsam Co., New Bedford, Mass., to Max Dubitsky and Carlton Dubitsky, Fall River, Mass. 206,656, ren. 12–21–65. Cl. 18.
Reliance Mfg. Co.: *See*— Puritan Fashions Corp.
Retriever Toggle Bolt Co.: *See*— Drybread, John S., Sr., and Berniece L. Drybread.
Revlon, Inc., New York, N.Y. 800,805, pub. 10–5–65. Cl. 51.
Rheem Mfg. Co., Richmond, Calif. 797,801, cor. Cl. 34.
Rigidised Metals Corp., Buffalo, N.Y. 800,583, pub. 10–5–65. Cl. 14.
Rigo Mfg. Co., Nashville, Tenn. 211,523, ren. 12–21–65. Cl. 6.
Robinson, Wm. C., & Son Co., Baltimore, Md. 47,509, ren. 12–21–65. Cl. 15.
Rocco Products, Inc., Minneapolis, Minn. 687,520, canc. Cl. 22.
Rochelle Asparagus Co., Rochelle, Ill. 667,553, canc. Cl. 46.
Rockwell-Barnes Co., Elk Groove Village, Ill. 418,554, ren. 12–21–65. Cl. 37.
Rockefeller Institute, The, New York, N.Y. 800,718, pub. 10–5–65. Cl. 38.
Rockefeller Institute, The, New York, N.Y. 800,721, pub. 10–5–65. Cl. 38.
Rod's Food Products, Inc., d.b.a. Wally's Distributing Co., Los Angeles, Calif. 687,684, canc. Cl. 46.
Rossotti Lithographing Co., Inc., New York, N.Y. 330,220, canc. Cl. 2.
Rowenta Metallwarenfabrik G.m.b.H., Offenbach am Main, Germany. 800,559, pub. 10–5–65. Cl. 8.
Royalon, Inc., Sebring, Ohio. 800,547, pub. 10–5–65. Cl. 2.
Rubberfabriek "Indiana" N.V., Roosendaal, Netherlands. 800,736, pub. 10–5–65. Cl. 39.
Rubin, M., & Sons, Inc., New York, N.Y. 800,733, pub. 10–5–65. Cl. 39.
Rueckert: *See*— Rueckert Meat Co., Inc.
Rueckert Meat Co., Inc., d.b.a. Rueckert, St. Louis, Mo. 800,791, pub. 8–31–65. Cl. 46.
Russell-Miller Milling Co., d.b.a. Stanard-Tilton Milling Co., Peavey Co., Minneapolis, Minn. 698,698, cor. Cl. 46.
Rymland, Murray J., Baltimore, Md. 800,680, pub. 10–5–65. Cl. 32.
Sicule Lombarde Industrie Associate, Societa per Azioni (S.L.I.A.), Codogno, Milan, Italy. 687,655–6, canc. Cl. 46.
Saks & Co., New York, N.Y. 687,528, canc. Cl. 22.
Sani Septic Systems, Inc.: *See*— Brandord Machine Tool Co.
St. Louis Laboratories, Richmond Heights, Mo., to St. Louis Laboratories, St. Louis, Mo. 419,389, ren. 12–21–65. Cl. 46.
Salad King Co.: *See*— Sol Marks.
Salad King Co., Inc.: *See*— Sol Marks.
Sanitol Products Corp., Great Neck, N.Y. 800,596, pub. 10–5–65. Cl. 16.
Scandinavian Importing & Mfg. Co., Attleboro, Mass. 800,708, pub. 10–5–65. Cl. 36.
Scanoptic, Inc., New York, N.Y. 687,497, canc. Cl. 21.
Schalk Chemicals, Inc., Union, N.J. 800,567, pub. 10–5–65. Cl. 12.
Schenley Distillers, Inc., New York, N.Y. 796,088, cor. Cl. 49.
Schenley Distillers, Inc., New York, N.Y. 800,797, pub. 10–5–65. Cl. 47.
Schering Corp., Bloomfield, N.J. 687,476, canc. Cl. 18.
Schering Corp., Bloomfield, N.J. 795,908, cor. Cl. 18.
Schott, L. J., Co., Akron, Ohio. 800,763, pub. 10–5–65. Cl. 42.
Scott Paper Co., Chester, Pa. 687,571, canc. Cl. 37.
Seeburg Corp., The, Chicago, Ill. 800,707, pub. 10–5–65. Cl. 36.
Sears, Roebuck and Co., Chicago, Ill. 125,099, canc. Cl. 39.
Servel, Inc., Freeport, Ill. 800,633, pub. 10–5–65. Cl. 21.
Servus Rubber Co., The, Rock Island, Ill. 800,748, pub. 10–5–65. Cl. 39.
Si-Lak Co., The, Hospers, Iowa. 667,634, canc. Cl. 18.
Si Lite, Inc., Chicago, Ill. 800,537, pub. 10–5–65. Cl. 2.
Silvray-Litecraft Corp.: *See*— Silvray Lighting, Inc.
Silvray Lighting, Inc., New York, N.Y., to Silvray-Litecraft Corp., Passaic, N.J. 420,081, ren. 12–21–65. Cl. 21.
Shain and Co., Division of General American Industries, Inc., Boston, Mass. 668,157, canc. Cl. 42.
Shamban, W. S., & Co., Culver City, Calif. 800,702, pub. 10–5–65. Cl. 35.
Sheffield Farms Co., Inc., to National Dairy Products Corp., New York, N.Y. 416,877, ren. 12–21–65. Cl. 18.
Sheldow Bronze Corp., from Russell Sheldow, d.b.a. Sheldow Bronze Co., Farmingdale, N.Y. 800,798, pub. 10–5–65. Cl. 50.
Sheldon, Henry, d.b.a. Arrow Dental Products, Detroit, Mich. 800,786, pub. 10–5–65. Cl. 44.
Shore-Calnevar, Inc., Paramount, Calif. 800,615, pub. 10–5–65. Cl. 19.
Smylon Co., The, Hollywood, Calif. 800,785, pub. 10–5–65. Cl. 44.
Societe Anonyme Andre Citroen, Paris, France. 800,603, pub. 10–5–65. Cl. 19.
Societe Anonyme des Automobiles Peugeot, Paris, France. 800,600, pub. 10–5–65. Cl. 19.
Societe Anonyme des Anciens Etablissements Martin Freres, Paris, France. 668,369, canc. Cl. 36.
Sol Marks, d.b.a. Salad King Co., Salad King Co., Inc., Baltimore, Md. 734,649, cor. Cl. 46.
Sonus Corp., Cambridge, Mass. 800,627, pub. 10–5–65. Cl. 21.
Southern Oil Stores, Inc., Jacksonville, Fla., from The Goodyear Tire & Rubber Co., Akron, Ohio. 800,698, pub. 10–27–64. Cl. 35.
Southwestern Portland Cement Co., Los Angeles, Calif. 795,877–8, cor. Cl. 12.
Sparling, Harold, Co., Glendale, Calif. 800,790, pub. 10–5–65. Cl. 46.
Specialty Case Mfg. Co.: *See*— Aisner, Benjamin.
Speedspace Corp., Santa Rosa, Calif. 800,571, pub. 10–5–65. Cl. 12.
Speidel Corp., Providence, R.I. 687,546, canc. Cl. 28.
Spiegel, R. J., Co., Inc., Rahway, N.J. 800,647, pub. 10–5–65. Cl. 23.
Sporodyne Co., The, Dayton, Ohio. 687,471, canc. Cl. 18.
Sportsguide Mfg. Co.: *See*— Aramony, Fred R.

Spinning Jenny: *See*— Raach, Fred R., and Ruth A. Raach.
Springs Cotton Mills, The: *See*— Fort Mill Mfg. Co.
Stanard-Tilton Milling Co.: *See*— Russell-Miller Milling Co.
Standard Diary Co., The, Cambridge, Mass., to Wilson Jones Co., Chicago, Ill. 205,896, ren. 12–21–65. Cl. 37.
Stahl-Urban Co., Brookhaven, Miss. 800,738, pub. 10–5–65. Cl. 39.
Stafex Corp., from Stacy Fabrics Corp., New York, N.Y. 800,758, pub. 10–5–65. Cl. 40.
Stevens, J. P., & Co., Inc.: *See*— Forstmann & Huffmann Co.
Stevens, J. P., & Co., Inc., New York, N.Y. 800,779, pub. 10–5–65. Cl. 43.
Stevens, W., & Co.: *See*— Stevens, William S.
Stevens, William S., d.b.a. W. Stevens & Co., to Radiol Chemicals Ltd., London, England. 418,753, ren. 12–21–65. Cl. 18.
Stewart-Warner Corp., Chicago, Ill. 800,586, pub. 5–11–65. Cl. 15.
Stikvelope Co., The: *See*— Warnow, Morton C.
Swimaster: *See*— West Coast Chemicals and Solvents Corp.
Swingline, Inc., Long Island City, N.Y. 800,654–5, pub. 10–5–65. Cl. 23.
Tauber, G. G., Co.: *See*— Tauber, Gabriel.
Tauber, Gabriel, d.b.a. G. G. Tauber Co., Washington, D.C. 796,870. Am. 7(d). Cl. 50.
10-X Mfg. Co., Des Moines, Iowa. 800,724, pub. 10–15–63. Cl. 39.
Tenslube Products, Inc., Stamford, Conn. 800,588, pub. 10–5–65. Cl. 15.
Tex-Vit Mfg. Division: *See*— Can-Tex Industries, Inc.
Theonett & Co., Chicago, Ill. 207,517, ren. 12–21–65. Cl. 45.
Thermo King Corp., Minneapolis, Minn. 800,606, pub. 10–5–65. Cl. 19.
Thompson, J. Dale, Seattle, Wash. 800,720, pub. 10–5–65. Cl. 38.
Thomson Paper Mills, Inc.: *See*— Angel Soft Tissue Mills, Inc.
Topco Associates, Inc., Skokie, Ill. 800,672, pub. 10–5–65. Cl. 31.
Trick or Treat Bottling Co., Elgin, Ill. 800,788, pub. 10–5–65. Cl. 45.
Trostel, Albert, & Sons Co., Milwaukee, Wis. 687,426, canc. Cl. 1.
Turetsky, Herbert F., d.b.a. H. Farrell Co., Los Angeles, Calif. 800,804, pub. 10–5–65. Cl. 51.
Tyrolit-Schleifmittelwerke Swarovski K.G., Schwaz, Tyrol, Austria. 800,550, pub. 10–5–65. Cl. 4.
UCB (Union Chimique-Chemische Bedrijven) Societe Anonyme, Chaussee De Charlerol, Belgium. 800,735, pub. 10–5–65. Cl. 39.
UCB (Union Chimique-Chemische Bedrijven) Societe Anonyme, Brussels, Belgium. 800,778, pub. 10–5–65. Cl. 43.
Uhlemann Optical Co. of Illinois, Chicago, Ill. 420,255, ren. 12–21–65. Cl. 26.
Union Carbide Corp., New York, N.Y. 800,538, pub. 10–5–65. Cl. 2.
Union Carbide Corp., New York, N.Y. 800,751, pub. 10–5–65. Cl. 39.
United Aircraft Corp., East Hartford, Conn. 800,661, pub. 10–5–65. Cl. 26.
United Merchants and Manufacturers, Inc., New York, N.Y. 800,576, pub. 10–5–65. Cl. 12.
United Sheet Metal Co., Inc., Westerville, Ohio. 800,688, pub. 10–5–65. Cl. 34.
United States Baking Co., Inc., from Miller-Parrott Baking Co., Inc., Terre Haute, Ind. 800,793, pub. 10–5–65. Cl. 46.
United States Mineral Products Co., Stanhope, N.J. 800,545, pub. 10–5–65. Cl. 2.
Universal Bleacher Co., Champaign, Ill. 800,679, pub. 10–5–65. Cl. 32.
Universal Engineering Co., Frankenmuth, Mich. 800,648, pub. 10–5–65. Cl. 23.
University Shop of Washington, Inc.: *See*— University Shop.
University Shop, to University Shop of Washington, Inc., Washington, D.C. 210,736, ren. 12–21–65. Cl. 39.
V-M Corp., Benton Harbor, Mich. 800,632, pub. 10–5–65. Cl. 21.
Vail Mfg. Co., Chicago, Ill. 687,533, canc. Cl. 23.
Valley Tow-Rite, Inc., Lodi, Calif. 800,816–17. Cl. 19.
Video-Rad: *See*— Goldenthal, Allan B.
Vitablen Corp., The, New York, N.Y. 687,484, canc. Cl. 18.
Viuda De Jose Biosca Riera, S.A., Barcelona, Spain. 680,484. Am. 7(d). Cl. 39.
Viuda De Jose Biosca Riera, S.A., Barcelona, Spain. 680,509. Am. 7(d). Cl. 42.
Vortox Co., Claremont, Calif. 800,673, pub. 10–5–65. Cl. 31.
Waite Carpet Co., Oshkosh, Wis. 204,524, ren. 12–21–65. Cl. 42.
Wally's Distributing Co.: *See*— Rod's Food Products, Inc.
Walters, Ben, Inc., New York, N.Y. 687,628, canc. Cl. 42.
Warnow, Morton C., d.b.a. The Stikvelope Co., New York, N.Y. 687,568, canc. Cl. 37.
Washington Mfg. Co., Nashville, Tenn. 800,747, pub. 10–5–65. Cl. 39.
Webco Mills, Inc., Burlington, N.C. 800,775, pub. 10–5–65. Cl. 42.
Welch, James O., Co., Cambridge, Mass. 687,677, canc. Cl. 46.
Welding Equipment & Supply Co., Detroit, Mich. 800,689, pub. 10–5–65. Cl. 34.
Weldon, Inc., from Weldon Pajamas, Inc., New York, N.Y. 800,743, pub. 10–5–65. Cl. 39.
Weldon Pajamas, Inc.: *See*— Weldon, Inc.
Wellons Candy Co.: *See*— Wellons, John H.
Wellons, John H., d.b.a. Wellons Candy Co., Dunn, N.C. 667,794, canc. Cl. 46.
Welsh Mfg. Co., Providence, R.I. 800,754, pub. 10–5–65. Cl. 39.
West Coast Chemicals and Solvents Corp., d.b.a. Swimaster, Los Angeles, Calif. 687,524, canc. Cl. 22.
Westinghouse Air Brake Co., Wilmerding, Pa. 800,542, pub. 10–5–65. Multiple Class (Classes 2, 13, 19, 21, 23, 26, 31, and 35).
Weyerhaeuser Co., Tacoma, Wash. 800,639, pub. 10–5–65. Cl. 2.
White Packing Co., Inc., Brooklyn, N.Y. 687,674, canc. Cl. 46.
Whitman, E. G., & Co., Inc., Philadelphia, Pa. 687,648, canc. Cl. 46.
Wilco Co., to Wilco Co., Los Angeles, Calif. 418,366, ren. 12–21–65. Cl. 52.
Wilson Jones Co.: *See*— Standard Diary Co., The.
Winchester Repeating Arms Co., New Haven, Conn., to Olin Mathieson Chemical Corp., New York, N.Y. 47,096, ren. 12–21–65. Cl. 9.
Winwood Sportswear, Inc., Manchester, N.H. 687,600, canc. Cl. 39.
Winwood Sportswear, Inc., Manchester, N.H. 687,602, canc. Cl. 39.
Wood, G. H., and Co. Ltd., Toronto, Ontario, Canada. 800,541, pub. 10–5–65. Multiple Class (Classes 2 and 6).
Yanmar Diesel Engine Co., Ltd., Kita-ku, Osaka, Japan. 800,653, pub. 10–5–65. Cl. 23.
Yucca Co., The, Wichita, Kans., to The Mentholatum Co., Buffalo, N.Y. 47,783, ren. 12–21–65. Cl. 18.
Zilles, Annabel B., d.b.a. Z-Ann Cosmetics Co., Toledo, Ohio. 800,800, pub. 3–17–62. Cl. 51.
Zimmer Mfg. Co., Warsaw, Ind. 800,783–4, pub. 10–5–65. Cl. 44.
Zwicker Knitting Mills, Appleton, Wis. 687,620, canc. Cl. 39.

U.S. GOVERNMENT PRINTING OFFICE : 0 — 1965

U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
December 28, 1965 Volume 821 Number 4

PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of November 1965

Examiner affirmed	225
Examiner affirmed in part	46
Examiner reversed	86
Total	357

Amendment to U.S. Court of Customs and Patent Appeals Rules

Rule 5 of the rules of this court is amended in accordance with the following order entered November 1, 1965.

Effective December 1, 1965, the fee to be charged an applicant for admission to the bar of this court with a certificate under seal shall be $10.00. A duplicate certificate of admission to the bar under seal shall be $5.00.

Notice of Tentative Recordation of a Trade Name

[T.D. 56491]

Tentative recordation of trade name under section 42, Trademark Act of 1946, and section 11.16, Customs Regulations

TREASURY DEPARTMENT,
OFFICE OF THE COMMISSIONER OF CUSTOMS,
Washington, D.C., Sept. 27, 1965.

To Collectors of Customs and Others Concerned:

An application has been filed in the Treasury Department for the recordation of the following-described trade name under the provisions of section 42, Trademark Act of 1946, and section 11.16, Customs Regulations:

"DUETEENO ORIGINALS," a trade name used by Swiss-knit Manufacturing, Inc., a corporation organized under and by virtue of the laws of the State of New York, located and doing business at 112 West 34th Street, New York, New York. The trade name is associated with imported children's wearing apparel manufactured in various Far-Eastern areas.

Any person who on or before November 15, 1965, notifies the Commissioner of Customs, Washington, D.C., 20226, of his opposition to the recordation of the trade name described above will be furnished with a copy of the application for recordation, the documents filed in support of the application, and instructions as to the procedure to be followed to file a formal notice of such opposition. The customs officers concerned will be advised of the filing of any opposition proceeding.

Until December 1, 1965, or until final determination has been made in any case in which notice has been received of the filing of an opposition proceeding, any article of foreign manufacture which bears a name or mark copying or simulating the trade name described above shall be detained, without seizure. Thereafter, the articles so detained shall be treated in accordance with the provisions of section 11.17 of the Customs Regulations.

LESTER D. JOHNSON,
Commissioner of Customs.

Filing of Priority Papers

In view of the shortened periods for prosecution leading to allowances, it is recommended that priority papers be filed as early as possible. Although Rule 55 permits the filing of priority papers up to and including the date for payment of the final fee, it is advisable that such papers be filed promptly after filing the application. Frequently priority papers are found to be deficient in material respects such as, for example, the failure to include the correct certified copy and there is not sufficient time to remedy the deficiency. Occasionally a new oath may be necessary where the original oath omits the reference to the foreign filing date for which the benefit is claimed. The early filing of priority papers would thus be advantageous to applicants in that it would afford time to explain any inconsistencies that exist or to supply any additional documents that may be necessary.

It is also suggested that a pencil notation of the serial number of the corresponding U.S. application be placed on the priority papers.

RICHARD A. WAHL,
Dec. 1, 1965. *Assistant Commissioner.*

Disclaimer

3,129,851.—*Shaun A. Seymour*, New Holland, *William Hobbs, Jr.*, Lancaster, and *Daniel C. Heitshu*, Shippensburg, Pa. FEEDER FOR STOCK ANIMALS. Patent dated Apr. 21, 1964. Disclaimer filed Sept. 2, 1965, by the assignee, *Sperry Rand Corporation.*

Hereby enters this disclaimer to claims 1, 2, 3 and 4 of said patent.

Erratum

In the OFFICIAL GAZETTE, October 19, 1965, vol. 819, p. 926, line 48, before "James B. VanderKelen" insert *William H. Davis, Joseph D. Lazar, and.*

New Applications Received During October 1965

Patents	13,820
Designs	708
Plant Patents	21
Reissues	34
Total	14,583

Issue—December 28, 1965

Patents	1373	No. 3,225,356 to No.	3,226,728, incl.
Designs	51	No. 203,328 to No.	203,378, incl.
Plant Patents	4	No. 2,581 to No.	2,584, incl.
Total	1428		

U.S. DEPARTMENT OF COMMERCE

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[T.D. 56491]

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Until December 1, 1965, or until final determination has been made in any case in which notice has been received of the filing of an opposition proceeding, any article of foreign manufacture which bears a name or mark copying or simulating the trade name described above shall be detained, without seizure. Thereafter, the articles so detained shall be treated in accordance with the provisions of section 11.17 of the Customs Regulations.

LESTER D. JOHNSON,
Commissioner of Customs.

Filing of Priority Papers

In view of the shortened periods for prosecution leading to allowances, it is recommended that priority papers be filed as early as possible. Although Rule 55 permits the filing of priority papers up to and including the date for payment of the final fee, it is advisable that such papers be filed promptly after filing the application. Frequently priority papers are found to be deficient in material respects such as, for example, the failure to include the correct certified copy and there is not sufficient time to remedy the deficiency. Occasionally a new oath may be necessary where the original oath omits the reference to the foreign filing date for which the benefit is claimed. The early filing of priority papers would thus be advantageous to applicants in that it would afford time to explain any inconsistencies that exist or to supply any additional documents that may be necessary.

It is also suggested that a pencil notation of the serial number of the corresponding U.S. application be placed on the priority papers.

RICHARD A. WAHL,
Dec. 1, 1965. *Assistant Commissioner.*

Disclaimer

3,129,851.—*Shaun A. Seymour*, New Holland, *William Hobbs, Jr.*, Lancaster, and *Daniel C. Heitshu*, Shippensburg, Pa.

Patent Advisory Committee Named

Secretary of Commerce John T. Connor today announced creation of a Patent Advisory Committee to the U.S. Patent Office and named a group of eight experts to serve one year terms on the committee.

The committee will advise the Patent Office on measures which can increase the efficiency and effectiveness of its operations. It will also provide liaison between the business, scientific, and legal communities and the Patent Office to identify patent problems and needs. The committee will be concerned primarily with the current and future short range operations of the Patent Office and changes in the operations which can be accomplished by administrative action.

Members of the newly created Patent Advisory Committee follow:

Vice-Admiral (ret.) Oswald S. Colclough of Washington, D.C., Dean of Faculties Emeritus and Director Emeritus of the Patent Trademark and Copyright Research Institute of George Washington University;

Frederic O. Hess of Philadelphia, Pa., President of Selas Corporation of America and Chairman of the Patents Committee of the National Association of Manufacturers;

Dr. William Alfred La Lande, Jr. of Wyndmoor, Pa., Vice President, Research of the Pennsalt Chemical Company;

Dr. Samuel Lenher of Wilmington, Del., Vice President, E. I. du Pont de Nemours & Company;

Jacob Rabinow of Takoma Park, Md., President, Rabinow Engineering Co., Inc.;

William Earl Schuyler, Jr. of Sumner, Md., partner in the firm of Browne, Schuyler, and Beveridge and former Chairman of the Patent, Trademark and Copyright Section of the American Bar Association;

John R. Shipman of Scarsdale, N.Y., Director, International Patent Operations, International Business Machines Corporation; and

R. Frank Smith of Rochester, N.Y., General Patent Counsel, Eastman Kodak Company.

Oct. 31, 1965.

Acknowledgment of Notice of Appeal to CCPA

Effective January 1, 1966, notices of appeal to the Court of Customs and Patent Appeals will be merely acknowledged by the Patent Office. The practice of suggesting the papers to be certified to the Court to constitute the record before the Court will be discontinued. (See Notice of the Clerk of the Court of May 2, 1961, published in 766 O.G. 2.)

Nov. 15, 1965.

PATENT EXAMINING CORPS

R. A. WAHL, Superintendent

CONDITION OF PATENT APPLICATIONS AS OF NOVEMBER 1, 1965

PATENT EXAMINING OPERATIONS AND GROUPS	Actual Filing Date of Oldest Case Awaiting Action: New	Amended
CHEMICAL EXAMINING OPERATION—I. MARCUS, Acting Director.		
GENERAL CHEMISTRY, GROUP 110—W. B. KNIGHT, Acting Manager. Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries.	7-11-62	2-18-59
GENERAL ORGANIC CHEMISTRY, GROUP 120—G. D. MITCHELL, Acting Manager. Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids.	12- 7-62	8-12-60
PETROLEUM CHEMISTRY, GROUP 130—J. R. LIBERMAN, Manager. Hydrocarbons; Halogenated Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices; Organic Chemistry (Part) e.g.: Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	2- 5-63	7-14-61
HIGH POLYMER CHEMISTRY, GROUP 140—L. H. GASTON, Acting Manager. Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins: Reclaiming; Pore-Forming.	1- 2-63	3- 2-60
COMPOSITIONS AND MOLDING, GROUP 150—L. H. GASTON, Manager. Compositions (Part) e.g.: Coating; Molding; Adhesive Compositions; Abrading; Liquid Purification or Separation; Gas Separation; Special Utility; Molding Processes.	9-11-62	2-26-60
COATING AND LAMINATING, GROUP 160—J. REBOLD, Manager. Coating: Processes, Apparatus and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Ornamentation; Adhesive Bonding; Special Manufactures	7-25-62	9-22-60
SPECIALIZED CHEMICAL ARTS AND INDUSTRIES, GROUP 170—W. B. KNIGHT, Manager. Bleaching and Dyeing; Fertilizers; Foods; Fermentation; Photography; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Metallurgical Apparatus; Gas, Heating and Illuminating; Cleaning Processes; Liquid Purification; Thermolytic Distillation; Preserving.	10- 1-62	11-25-60
CHEMICAL ENGINEERING, GROUP 180—G. D. MITCHELL, Manager. Gas, Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Distillation; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	12-18-62	10-30-61
ELECTRICAL EXAMINING OPERATION—N. H. EVANS, Director.		
POWER, GROUP 210—M. L. LEVY, Manager. Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art.	11-26-62	11-22-60
SECURITY, GROUP 220—S. BOYD, Manager. Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedos, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	1- 3-63	10-21-60
INFORMATION TRANSMISSION, GROUP 230—S. W. CAPELLI, Manager. Communications; Multiplexing Techniques; Facsimile and Related Art.	10-22-62	2-26-60
INFORMATION STORAGE AND RETRIEVAL, GROUP 240—W. W. BURNS, Manager. Data Processing, Computation and Conversion; Storage Devices and Related Art.	7- 5-62	4-26-61
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—B. G. MILLER, Manager. Semi-Conducter and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks.	10- 4-62	8- 1-60
RADIATION AND INSTRUMENTS, GROUP 260—F. M. STRADER, Manager. Optics; Radiant Energy; Measuring.	9-27-62	8-26-60
ELEMENTS, GROUP 270—E. J. SAX, Manager. Conductors; Switches; Miscellaneous.	2-21-63	12-20-61

Total number of pending applications (excluding Designs)	197,288
Total number of Design applications pending	4,847
Total number of applications awaiting action (excluding Designs)	151,692
Total number of Design applications awaiting action	2,448
Date of oldest new application awaiting action	July 5, 1962
Date of oldest amended application awaiting action	Feb. 18, 1959

EXPIRATION OF PATENTS

The patents within the range of numbers indicated below expire during December 1965, except those which may have been extended under the provisions of the Veterans Patent Extension Act (64 Stat. 316 as amended by 66 Stat. 321) and those which may have expired earlier due to shortened terms under the provisions of Public Law 690. A list of Veterans' patents which have been extended appears in the *Annual Index of Patents—1965*.

Patents..... Numbers 2,455,847, to 2,457,796 inclusive

Plant Patents..... Numbers 813 to 817, inclusive

PATENT EXAMINING OPERATIONS AND GROUPS (Continued)	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
MECHANICAL ENGINEERING EXAMINING OPERATION—F. H. BRONAUGH, Director.		
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MANUFACTURING; METAL AND PLASTICS WORKING, GROUP 320—N. BERGER, Manager Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus.	11- 2-62	2-14-61
MACHINE TOOLS, MECHANISMS AND ELEMENTS, GROUP 340—A. M. HORTON, Manager Machine Tools for Shaping or Dividing Involving Cutting or Breaking; Machine Elements Including Power Transmission Components, Work and Tool Holders.	4-26-63	1-16-61
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CIVIL ENGINEERING, GROUP 420—B. BENDETT, Manager Building Structures; Bridges, Closures; Closure Operators; Safes; Earth Engineering; Drilling; Mining.	3-22-63	4-19-61
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DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

IN RE JOHN D. SUTHERLAND, JR.

No. 7299. Decided July 22, 1965

[52 CCPA —; 347 F.2d 1009; 146 USPQ 485]

1. PATENTABILITY—DOUBLE PATENTING—COMMON ASSIGNEE.

"It is quite true that Carpenter's claims are so drafted that one using his *blending* process would infringe them *regardless of* the temperatures used in freezing. It is also quite true that appellant's claims are so drafted that one using his *supercooling* invention would infringe them *whether or not* using Carpenter's latex blending process. But this does not mean that Carpenter's claims grant any *monopoly* of 'freezing' broadly; they grant monopoly only on a process which incorporates his *blending invention* and thus do they protect *that* invention, regardless of the temperature used to freeze. Vice versa, Sutherland's claims monopolize *only* a process wherein his temperature range is used, regardless of the kind of latex employed. Carpenter's patent claims give him no patent monopoly (right to exclude others from using, 35 U.S.C. 154) of the process described in his claims, or of any feature thereof such as the 'freezing' step, unless his blending invention is employed. If blending be omitted from a process, none of his claims would be infringed."

2. SAME—SAME—SAME—JEPSON FORM OF CLAIM.

"There is nothing obscure about the claims involved. They are admirably drafted to comply with 35 U.S.C. 112 in that they clearly point out and distinctly claim what Sutherland and Carpenter each invented. The Jepson form of claim is such as clearly to point out the old milieu, namely the process for 'agglomerating' synthetic rubber latex by the steps of freezing and thawing. This was no part of what either applicant invented—it may be assumed to be in the public domain. When we look to the subject matter *claimed* by Carpenter, following the words 'the improvement,' we see clearly that it is the improvement on the old freeze-thaw process residing in the use of blends. Looking to what Sutherland says in his claims is his own invention, we see clearly that he has improved on the old process in the use of freezing temperatures from —10° F. down to —40° F."

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"Since we see no identic monopoly, no domination by one inventor's claims of the other's invention, no attempt to monopolize an obvious improvement on what has already been patented to the same assignee, we see no 'double patenting.'"

4. APPEAL TO U.S. COURT OF CUSTOMS AND PATENT APPEALS—MATTER BEFORE COURT.

"In the words of the Examiner's rejection, his conclusion was that Carpenter's claims 'call for a process *substantially identical* to the instant claims • • •.' • • • The Board made no different or new rejection and since we do not have in the case a rejection based on a contention of obviousness, we must regard the Solicitor's contentions that the appealed claims are directed to an obvious invention as misplaced. The Patent Office cannot raise new grounds of rejection in this court."

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do not 'patentably differentiate.' We think this is neither a proper analysis of the situation nor a proper statement of the issue which is, rather, whether the Carpenter claims and appellant's claims are directed to different inventions. We find that Carpenter claims the blending of latices in the freeze-thaw process whereas appellant claims an entirely unrelated discovery of unexpected advantages in using very low temperatures in the freezing step of the same old process. Though the two inventions relate to the same basic process and even though they are capable of conjoint use, they are independent and distinct inventions. Either can be used without the other."

APPEAL from the Patent Office. Serial No. 679,849.

REVERSED.

James J. Shanley, L. S. Van Landingham, Jr., for appellant.

Clarence W. Moore (*J. E. Armore* of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, JR., *Associate Judges*

RICH, *J.*, delivered the opinion of the court.

This appeal is from the decision of the Patent Office Board of Appeals affirming the Examiner's rejection of claims 57–70 of application Serial No. 679,849, filed August 23, 1957, for "Treatment of Synthetic Rubber Latex." Only claims 57–60 have been appealed.

There were two grounds of rejection of record, the first of which was double patenting over the claims of an application by Carpenter, now Patent No. 2,993,020, assigned to the same assignee as the present application, Copolymer Rubber & Chemical Corporation, of Baton Rouge, Louisiana. This is the only rejection sustained by the Board, the other rejection that the claims are misdescriptive having been reversed.

The instant application and the Carpenter application were filed on the same day. They were prepared by the same attorneys for the same corporation and contain much common subject matter in their specifications. The drawings, a process flow-sheet, appear to be identical. Both applications relate to the process of "agglomerating" synthetic rubber latex, which we are admonished is not to be confused with "coagulation" of latex. The latter produces solid rubber from the liquid latex whereas the former has for its purpose an increase in the size of the minute particles of rubbery material suspended in liquid latex to give the latex more desirable properties. More specifically, in the making of foam rubber articles, for example, it is desirable to have a latex with a high total solids content but low viscosity. Whereas increasing solids content normally increases viscosity, this can be avoided by agglomerating the latex. Another matter of concern is the creation of "prefloc" during processing and storage, defined as being an irreversible coagulation which gums up the machinery and requires cleaning of it. Mechanical stability of the latex is also desired.

At the time both Sutherland and Carpenter, who apparently worked together, made their respective inventions, it appears that there was already known an agglomeration process which involved the steps of freezing and thawing. The following paragraph from appellant's specification describes it and an almost identical paragraph appears in Carpenter's patent:

One of the more satisfactory low temperature processes for the agglomeration of low solids synthetic rubber latex is one in which a specific low solids GR–S latex is agglomerated by reducing the pH with carbon dioxide and then subjecting the latex to a freezing action for a short period of time at a temperature

only moderately below the apparent freezing point of the latex [+28° F.], such as at about 10° F. The agglomerated GR–S latex thus produced may be concentrated to produce a high solids latex of reasonable viscosity. If it is desired to further agglomerate the latex and to further improve the viscosity characteristics, the once frozen and thawed concentration latex is refrozen and reconcentrated.

In both the application and the patent there then follows another paragraph pointing out certain shortcomings in the known freeze-thaw process such as undesirably high viscosity, instability resulting in undesirable amounts of prefloc, and inability to uniformly control the viscosity.

From this background, again with much common disclosure, the application and the patent proceed to the description of two different inventions, each having as its ultimate objective improvement in the agglomeration process. Carpenter's invention has to do with the *blending* of different latices in the agglomeration process and is thus explained succinctly in appellant's brief:

Carpenter Patent No. 2,993,020 discloses an improved process for enlarging the average particle size of synthetic rubber latex blends by steps including freezing and thawing. Carpenter's inventive concept is entirely different from that of the appellant's. Carpenter made the surprising discovery that a latex *blend* prepared from frozen and thawed agglomerated synthetic rubber latex having a relatively large average particle size and synthetic rubber latex having a relatively small average particle size exhibited enhanced mechanical stability characteristics. He also further discovered that when such a latex *blend* is frozen and thawed in the freeze-thaw agglomeration process, prefloc formation may be reduced very markedly. [Emphasis ours.]

With this statement in mind, now would be a good time to read claim 1 of Carpenter's patent to see what invention is there being claimed, and how. Patent claims 1–4 are relied on to support the sole rejection on the ground of double patenting and it will suffice to consider claim 1, which reads:

1. *In a process* for enlarging the average particle size of synthetic rubber latex *wherein* the latex is agglomerated by steps including freezing and thawing in which prefloc is formed, *the improvement which comprises* reducing prefloc formation *by* freezing and thawing a synthetic rubber latex *blend* comprising frozen and thawed agglomerated synthetic rubber latex and synthetic rubber latex having a smaller average particle size than the frozen and thawed agglomerated latex, each 100 parts of the latex *blend* containing 5–85 parts of the frozen and thawed agglomerated latex and 95–15 parts of the latex having a smaller average particle size when calculated by weight on a dry solids basis, the synthetic rubber latex being selected from latices of the group consisting of latices of rubbery homopolymers of conjugated diolefins and latices of rubbery copolymers of conjugated diolefins and monoethylenically unsaturated monomers. [Emphasis ours.]

Sutherland's invention was based on a discovery with respect to the *temperature* used in freezing the latex in the old freeze-thaw agglomeration process. Apparently the art had taught that in such a process, to quote the application, "in order to prevent irreversible coagulation, the latex must be subcooled to a temperature only moderately below its freezing point, i.e., to a temperature only moderately below 28° F. It was further taught that temperatures as high as −6° F. always caused irreversible coagulation of the latex and thus were to be avoided." The freezing in this known process, as well as in practicing either appellant's or Carpenter's inventions, takes place on a rotating drum through which coolant is circulated and which dips into a tank

of latex, the frozen film being stripped after about half a revolution out of the bath by a doctor blade. The specification continues:

In accordance with these teachings, the freezer drum 65 was operated in such a manner that the collected latex film 70 was subcooled at the time of removal by scraper 71 to a temperature only moderately below the freezing point of the latex, such as about 10° F. Under these conditions it was extremely difficult to operate the freezer drum 65 and associated apparatus. For example, the collected latex film 70 was found to cling so tenaciously to the freezer drum surface 68 that excessive power requirements were necessary to drive the freezer drum 65. Also, the freezer drum 65 rotated with an uneven, jerking motion which caused the scraper 71 to gouge into the drum surface 68, as well as causing metal fatigue and eventual failure.

Appellant's invention, in a nutshell, was the discovery that he could solve the foregoing problems, in defiance of the teaching of the art about temperatures, by subcooling to temperatures of −10° F. or down as low as −40° F. This had the effect of embrittling the film on the drum and facilitating its removal and, surprisingly, did not result in coagulation. The specification says:

Usually superior results will be obtained when a major portion of the collected latex film 70 is subcooled to a temperature between about −10° F. and −27° F. Extremely good results can generally be obtained with the outside surface of the film at a temperature of about −17° F.

This being Sutherland's invention, let us now consider how he claims it. The shortest claim is claim 58, reading:

58. *In a process* for agglomerating latex of a rubbery copolymer of styrene and butadiene *wherein* the average particle size is enlarged in the resultant agglomerated latex by steps including freezing and thawing, *the improvement comprising* subcooling the frozen latex to a temperature between about −10° F. and −40° F. [Emphasis ours.]

The other three claims are in the same "Jepson" form, all name the same temperature range, and vary from one another in how they describe the latex and in other ways immaterial to this discussion.

The situation, therefore, is that applications for two distinct improvements on an old agglomeration process, invented by different inventors, assigned to the same assignee, and filed on the same day were before the same Examiner. The record shows that at one point he had rejected each application on the claims of the other, a "cross rejection of the claims of the present application and those of application Serial No. 679,933," now the Carpenter patent. This was withdrawn, and the claims of the Carpenter application allowed, whereupon, in a second final rejection, the Examiner made the rejection now before us. Taking into account the stated views of the Examiner, the two opinions of the Board, and the brief of the Solicitor, the only one who has attempted to rationalize a holding of "double patenting" in this case on policy grounds is the Examiner, who said in his answer before the Board (bracketed comments being ours):

The common assignee has exclusive rights to the invention called for in the allowed claims of the copending application for seventeen years from its issue date as a patent. It is an axiomatic principle of patent law that after this period the public should be allowed to practice this invention. [Thus far we can agree, assuming that what the Examiner means is that the public should be free of a monopoly on *Carpenter's* invention when his patent expires.] The public should be allowed to increase the particle size of a synthetic rubber latex by freezing such latex at *any* temperature below its freezing point. [We see no reason why this should be so, the Examiner states none, and we wholly disagree with this statement.] However, if the common assignee were to receive a patent to the invention instantly claimed, the public would be precluded from practicing the invention of the allowed application [Carpenter patent] at the specific freezing temperature range of between −10° F. to −40° F. for the life of the second issued patent. Clearly, this would be an improper extension of the common assignee's monopoly.

In our view, clearly it would not.

One of the factors in this case which appears to have confused the issues and obscured the principles involved is that the Sutherland and Carpenter applications were prepared simultaneously and, since each inventor's contribution is an improvement on the same old process, they have the same base invention in common; but not only that, Sutherland's invention is an improvement which can be used *in conjunction with* Carpenter's blending technique and Carpenter's invention can also be used *in conjunction with* the old process as modified by Sutherland's temperature discovery, but neither invention is *necessarily* so used. However, it appears to be the case that the "best mode" of practicing each of these two improvement inventions is in conjunction with the other and the inventions are more or less so described in the respective specifications, in compliance with 35 U.S.C. 112. Consequently, when one reads Carpenter's *specification*—which is not a "reference" or "prior art" in this case—one there finds recommended the use of freezing temperatures right in the middle of Sutherland's claimed range. For an interesting old case holding both patents valid in a somewhat similar situation, see *McMillan v. Rees*, 1 Fed. 722 (C.C.W.D. Pa., 1880).

The Examiner seems to have been led astray by these considerations. He looked at the claims of the patent and of the application and said there are *only two differences* between them. The first, he said, is that the Carpenter claims call for a latex *blend* whereas applicant's call for latex broadly; latex is an apt description of a latex blend. He appeared to consider that, notwithstanding this difference, the claims are "substantially identical" because "latex" is a term commonly used to include both a single latex as well as blends.

Next, the Examiner noted the fact that Carpenter's claims call broadly for "freezing" the latex whereas Sutherland specifies the low temperature range, which is the gist of *his* invention. "Freezing," said the Examiner, "*reads on* the specific range of temperatures of the instant claim and, thus, with no remaining differences between the claims, claim 57 must be unpatentable over claim 65 [patent claim 1] of the commonly assigned application." [Our emphasis.] The Board agreed. This we regard as a total non sequitur.

[1] We consider this to be wholly wrong reasoning as applied to these claims. It fails to see the distinction between what claims *define as the invention* and what they may *broadly* describe as its background or the milieu in which it operates. It is quite true that Carpenter's claims are so drafted that one using his *blending* process would infringe them *regardless of* the temperatures used in freezing. It is also quite true that appellant's claims are so drafted that one using his *supercooling* invention would infringe them *whether or not* using Carpenter's latex blending process. But this does not mean that Carpenter's claims grant any *monopoly* of "freezing" broadly; they grant monopoly only on a process which incorporates his *blending invention* and thus do they protect *that* invention, regardless of the temperature used to freeze. Vice versa, Sutherland's claims monoplize *only* a process wherein his temperature range is used, regardless of the kind of latex employed. Carpenter's patent claims give him no patent monopoly (right to exclude others from using, 35

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In our view, clearly it would not.

One of the factors in this case which appears to have confused the issues and obscured the principles involved is that the Sutherland and Carpenter applications were prepared simultaneously and, since each inventor's contribution is an improvement on the same old process, they have the same base invention in common; but not only that, Sutherland's invention is an improvement which can be used *in conjunction with* Carpenter's blending technique and Carpenter's invention can also be used *in conjunction with* the old process as modified by Sutherland's temperature discovery, but neither invention is *necessarily* so used. However, it appears to be the case that the "best mode" of practicing each of these two improvement inventions is in conjunction with the other and the inventions are more or less so described in the respective specifications, in compliance with 35 U.S.C. 112. Consequently, when one reads Carpenter's *specification*—which is not a "reference" or "prior art" in this case—one there finds recommended the use of freezing temperatures right in the middle of Sutherland's claimed range. For an interesting old case holding both patents valid in a somewhat similar situation, see *McMillan* v. *Rees*, 1 Fed. 722 (C.C.W.D. Pa., 1880).

The Examiner seems to have been led astray by these considerations. He looked at the claims of the patent and of the application and said there are *only two differences* between them. The first, he said, is that the Carpenter claims call for a latex *blend* whereas applicant's call for latex broadly; latex is an apt description of a latex blend. He appeared to consider that, notwithstanding this difference, the claims are "substantially identical" because "latex" is a term commonly used to include both a single latex as well as blends.

Next, the Examiner noted the fact that Carpenter's claims call broadly for "freezing" the latex whereas Sutherland specifies the low temperature range, which is the gist of *his* invention. "Freezing," said the Examiner, "*reads on* the specific range of temperatures of the instant claim and, thus, with no remaining differences between the claims, claim 57 must be unpatentable over claim 65 [patent claim

U.S.C. 154) of the process described in his claims, or of any feature thereof such as the "freezing" step, unless his blending invention is employed. If blending be omitted from a process, none of his claims would be infringed.

[2] There is nothing obscure about the claims involved. They are admirably drafted to comply with 35 U.S.C. 112 in that they clearly point out and distinctly claim what Sutherland and Carpenter each invented. The Jepson form of claim is such as clearly to point out the old milieu, namely the process for "agglomerating" synthetic rubber latex by the steps of freezing and thawing. This was no part of what either applicant invented—it may be assumed to be in the public domain. When we look to the subject matter *claimed* by Carpenter, following the words "the improvement," we see clearly that it is the improvement on the old freeze-thaw process residing in the use of blends. Looking to what Sutherland says in his claims is his own invention, we see clearly that he has improved on the old process in the use of freezing temperatures from −10° F. down to −40° F.

[3] Since we see no identic monopoly,[1] no domination by one inventor's claims of the other's invention,[2] no attempt to monopolize an obvious improvement[3] on what has already been patented to the same assignee, we see no "double patenting." The Examiner was clearly wrong in imagining "an improper extension" of the patent monopoly on Carpenter's invention by reason of Sutherland's claims.

We should say something further about the matter of *obvious improvement*. What is claimed in the Carpenter patent is an improvement on the old freeze-thaw process, found to be patentable by the Patent Office in granting the Carpenter patent. Appellant's claimed invention can be regarded as what it is, realistically, either as an improvement on the same *old* process or an improvement on that old process *as improved* by Carpenter, depending on whether Carpenter made his invention before Sutherland made his. We do not know who invented first and we consider it irrelevant to the double patenting issue.

The Examiner, so far as the record shows, never contended that the invention of the appealed claims is an *obvious* improvement, either of the prior art process or of that process as Carpenter improved it and as already patented to the common assignee. We have quoted his reasoning above and it seemed to be his only idea that the public should be free to use Sutherland's invention when Carpenter's patent expired because Carpenter's claim term "freezing" *reads on* freezing at any temperature, but he never contended Sutherland had made an obvious invention. On the basis of his reasoning, supra, he held the patent and application claims "substantially identical." The Board said nothing whatever about obviousness but in its first opinion did make the following remark:

> The temperature range recited in the claims is *not critical*, as is apparent from page 17 of the specification, lines 9 to 13. It is noted that the temperature range encompasses a large part of that *used* [*disclosed*] *in the patent* which indicates in Example II a temperature as low as −22° F. No good reason is seen why the *temperature range* patentably distinguishes from the cooling step of Carpenter. [Emphasis ours.]

[1] Stringham, "Double Patenting" (1933), ch. II.
[2] That a single *process* can be envisaged which would infringe both Carpenter's and Sutherland's claims because it employs *both inventions* is no indication that the patent and application claims read on the same invention in the sense, for example, that specific and generic claims may do so.
[3] See discussion of obviousness, infra.

Challenged by petition for rehearing with using Carpenter's specification, which is not prior art, in affirming the rejection, the Board responded, saying:

> Appellant argues the freezing temperature [range] of −10 to −40° F. is critical. While the claims of Carpenter do not specify the temperature of freezing, the *disclosure of Carpenter shows such temperatures within the range appellant states as critical.* It is considered proper to look to the patent specification to determine the *scope of the term "freezing"* in the patent claims, *In re Greenlee*, 42 CCPA 926, 1955 C.D. 238, 697 O.G. 556, 22 F.2d 739, 106 USPQ 104. [Emphasis ours.]

We think that here the Board has overstepped the bounds in the manner in which it used matters *disclosed* in the specification to support the "double patenting" rejection. We have already made clear that the Carpenter specification incorporates much of appellant's invention, including use of temperatures constituting the essence thereof. The "scope" of the term "freezing" in Carpenter's claims is not what we are concerned with but rather, *what invention* his claims *define*. The *Greenlee* case, cited, was one in which the court found the difference between patent and application claims directed to heat-hardening, catalyst-containing synthetic resins to be a *difference only of scope*, and sustained a double patenting rejection on the ground that the *same* invention was being claimed. The difference in scope was with respect only to the catalysts claimed and the court further held that "two inventive concepts are not involved in the present case." The inapplicability of that decision to a case involving the distinct concepts of blending and of low temperature is apparent. The claims in the two Greenlee patents relied on called for "boron trifluoride catalysts" and the application claim called for a catalyst which was "an addition product of boron trifluoride and an amine." The court found the latter to be "an unpatentable species of the catalyst recited in the patent claims" and that nothing other than a difference in scope was involved. For further observations on the *Greenlee* case and on the illegality of using disclosure from the copending case in support of the double patenting rejection, see our recent opinion in *In re Baird*, 52 CCPA —, — F.2d —, — USPQ —.

We are not clear as to what the Board meant by its observation that the claimed temperatures of appellant's claims are not "critical." Appellant justifiably disputed that contention. Apparently the Board, judging from the cited reference to Sutherland's specification, had in mind that it makes no critical difference whether a temperature is used *within* the range −10° to −40° F. The Board seems to us to have been struggling with the idea of some "critical" difference between the "freezing" mentioned in Carpenter's claims and Sutherland's claimed temperature range in a quest for a *patentable* distinction and failed to see it because it read into Carpenter's "freezing" step Carpenter's *disclosure* of Sutherland's invention. This it cannot do.[4]

[4] It occurs to us that much of the difficulty in this case in its progress through the Patent Office might have been avoided if the Solicitors had taken more pains to point out in the two specifications, as well as in the claims, who invented what—if Carpenter had expressly stated what parts of his disclosure constituted the invention of Sutherland and if Sutherland's specification had pointed out that in part he was disclosing contemporaneous inventions of Carpenter. Neither application seems to make any reference to the other, yet, as we have indicated, the two applications contain descriptions of the same flow sheet as embodying the invention of both applicants. Each uses the other's invention as part of his "best mode" of carrying out his invention. At the same time, the Patent Office could have improved matters by enforcing its Rule 71(b) requiring that "The *specification* must set forth the precise invention for which a patent is solicited, *in such manner as to distinguish it from other inventions* and from what is old." [Emphasis ours.] Both of these applications were in the hands of the same Examiners.

Following this lead, the Solicitor's brief argues at length about "criticality" and the lack of it in appellant's invention as claimed, which argument we reject as not germane to any issue properly before us. The brief goes further, however, and forthrightly argues that Sutherland's claimed invention "was a wholly and clearly obvious expedient for one skilled in the art to employ * * *." We recognize that this type of double patenting situation often comes here on an issue of the *obviousness* of what is claimed in an application with respect to an invention already claimed in a patent. We had such a situation in *In re Simmons*, 50 CCPA 990, 312 F.2d 821, 136 USPQ 450. The double patenting rejection there, which we affirmed, was based on the obviousness of an improvement on an already patented Simmons paint spray apparatus in view of other cited *prior* art which made the improvement obvious. Simmons' patent was copending with his application and was not itself "prior art." We do not have such a case here by reason of the nature of the rejections *as made* below. We find no indication in the rejections before us that appellant's invention was considered to be obvious. No prior art whatever is relied on. [4] In the words of the Examiner's rejection, his conclusion was that Carpenter's claims "call for a process *substantially identical* to the instant claims * * *." [Our emphasis.] The Examiner's erroneous reasoning was:

> Since the term "freezing" [in Carpenter's claims] reads on the specific freezing range of temperatures cited here, the instant claims are held to be unpatentable over the claims of the noted commonly assigned application [now patent].

The Board made no different or new rejection and since we do not have in the case a rejection based on a contention of obviousness, we must regard the Solicitor's contentions that the appealed claims are directed to an obvious invention as misplaced. The Patent Office cannot raise new grounds of rejection in this court.

[5] Perhaps the Examiner *should* have based his double patenting rejection on the obviousness of using the Sutherland low temperatures in the *claimed* process of Carpenter, but he did not and, if the Board meant to do so, it certainly failed so to express itself. We therefore will not go into the obviousness question. By not doing so we do not mean to imply that unobviousness is not a statutory prerequisite (35 U.S.C. 103) to the patentability of Sutherland's invention. But we can consider that question only if it has been raised in such manner in the Patent Office as clearly to apprise the applicant of the rejection he must meet. 35 U.S.C. 132. Nor is obviousness invariably involved in "double patenting" rejections. Claims relied on in such rejections often disclose or name the *very thing* being claimed. Furthermore, the words of such claims cannot be treated as "prior art," *In re Sarett*, 51 CCPA 1180, 327 F.2d 1005, 140 USPQ 474, but are looked to solely for the purpose of determining *what has already been patented*. They are not treated as prior art for the simple reason they are no more "prior art" under the statute than the specification. The issues raised here are whether the claims are "substantially identical" and whether there will be "an improper extension of the common assignee's monopoly." It is beyond our jurisdiction as a court of *review* to consider an issue not raised below and obviousness is such an issue.

[6] To summarize the principal contention of the Patent Office and our reasons for disagreeing with it, the argument is that there are

two principal differences between Carpenter's and appellant's claims: (1) latex vs. latex blend and (2) freezing broadly vs. freezing at −10° to −40° F.; that notwithstanding these differences, the claims are "substantially identical" and they do not "patentably differentiate." We think this is neither a proper analysis of the situation nor a proper statement of the issue which is, rather, whether the Carpenter claims and appellant's claims are directed to different inventions. We find that Carpenter claims the blending of latices in the freeze-thaw process whereas appellant claims an entirely unrelated discovery of unexpected advantages in using very low temperatures in the freezing step of the same old process. Though the two inventions relate to the same basic process and even though they are capable of conjoint use, they are independent and distinct inventions. Either can be used without the other. They are even less related than the inventions involved in *In re Sarett*, supra, a case very much like the present in many aspects, in which we reversed a double patenting rejection, and which we feel supports our holding herein. That too was a common assignee case involving separate inventorship and inventions used together.

The decision of the Board is reversed.

REVERSED.

WORLEY, *Chief Judge*, dissenting.

I find no error whatever in the unanimous conclusion of the Examiner and Board, presumably better versed in this field than are we, that there is no *patentable* distinction between the respective claims of Sutherland and Carpenter. I respectfully suggest that to hold otherwise would constitute an unlawful extension of monopoly, a result Congress has historically sought to prevent.

In The United States Patent Office
Before the Board of Appeals

EX PARTE FREDERIC CHARLES SCHAEFER

Appeal No. 261–23. Decided September 17, 1964

1. PATENTABILITY—COMPOUND—ANTICIPATION—OBVIOUSNESS.

   "Appellant has urged that the primary references fail to teach that R_1 and R_2 substituents in the * * * formula may be ethyl specifically. However, it is disclosed they may be alkyl or alkoxy groups and since in the case of the alkoxy they are specifically illustrated by methoxy or ethoxy, we fail to see how a skilled chemist can escape the conclusion that the alkyl would also mean lower alkyl groups such as methyl and ethyl. * * * this is tantamount to an actual naming of the compound of claim 5. As for claim 11, we are satisfied that the secondary references fully establish the equivalence of the methylthio and methoxy groups as substituents in these triazines."

2. SAME—SAME.

   "A further argument has been advanced to the effect that the references do not suggest how to prepare the unsymmetrically trisubstituted s-triazines claimed. While this is of little or no relevance to the patentability of the compounds of claims 5 and 11, the Examiner has, nevertheless, delved into this matter and shown how a chemist of ordinary skill could, by several known methods, produce the claimed triazine derivatives * * *. The Hentrich et al., Ostrogovich and Smolin et al. references were used by the Examiner in support of a portion of this treatise but we do not find it necessary to discuss these references in this decision. Suffice it to say we find no flaw in the Examiner's reasoning or his conclusions as to the availability of procedures to prepare the claimed compounds."

3. SAME—PARTICULAR SUBJECT MATTER—"METHOD FOR THE PREPARATION OF SUBSTITUTED s-TRIAZINE COMPOUNDS.

The rejection of two claims, to compounds, in an application entitled "Method for the Preparation of Substituted s-Triazine Compounds," as unpatentable over the prior art, is affirmed.

APPEAL from the Examiner (Walter A. Modance) Group 120. Serial No. 12,930.

AFFIRMED.

Patrick C. Baker for appellant.

Before ASP and MAGIL, *Examiners-in-Chief*, and VERTIZ, *Acting Examiner-in-Chief*

ASP, *Examiner-in-Chief*.

This is an appeal from the final rejection of claims 5, 9, 11, 13 and 16. Subsequent to the final rejection claims 9 and 13 were cancelled and claim 16 allowed. Accordingly the appeal as to these claims is dismissed. Claims 4, 6, 10, 12, 14 and 15, the other claims remaining in the case, stand allowed.

Claims 5 and 11 read as follows:

5. 2,4-diethyl-6-methoxy-s-triazine.
11. 2,4-diethyl-6-methylthio-s-triazine.

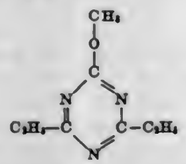
The references relied upon are:

Schaefer et al., 2,845,422, July 29, 1958.
Schwarze, 2,996,505, August 15, 1961.
French Patent, 1,085,761, February 7, 1955.
Austrian Patent, 199,193, August 25, 1958.

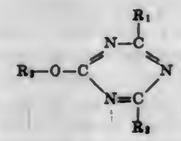
References of record which have been relied upon in refutal of appellant's arguments:

Hentrich et al., 1,911,689, May 30, 1933.
Ostrogovich, Chemiker Zeitung, vol. 36, No. 78, pages 738–9 (1912).
Smolin et al., "s-Triazines and Derivatives," pages 219 to 221, Interscience Publishers Inc., New York (February 1959).

The appealed claims are for triazine derivatives sufficiently indicated by the nomenclature employed. The structural formula for the compound of claim 5 is as follows:



Claims 5 and 11 stand rejected as unpatentable over French Patent 1,085,761 or Austrian Patent 199,193 alone and also in view of Schaefer et al. and Schwarze. These references are sufficiently described in the Examiner's answer. The French and Austrian patents are substantially identical and disclose compounds of the following formula:



In this formula R_3 is a lower alkyl such as methyl or ethyl while R_1 and R_2 may be hydrogen, alkyl or alkoxy. This substituted triazine is employed as an intermediate in the preparation of 2-sulfonamido-s-triazines, which is the same use disclosed by appellant for his claimed intermediates. The Examiner held that this disclosure squarely teaches the compound of claim 5 (*In re Petering et al.*, 780 O.G. 710) and considered claim 11 unpatentable over the French or Austrian patent on the ground of the obvious equivalency of methoxy and methylthio groups as substituents on triazines.

We find ourselves in complete agreement with the Examiner's position which has been fully elaborated in his answer and we will, therefore, affirm his rejection of claims 5 and 11.

[1] Appellant has urged that the primary references fail to teach that R_1 and R_2 substituents in the foregoing formula may be ethyl specifically. However, it is disclosed they may be alkyl or alkoxy groups and since in the case of the alkoxy they are specifically illustrated by methoxy or ethoxy, we fail to see how a skilled chemist can escape the conclusion that the alkyl would also mean lower alkyl groups such as methyl and ethyl. As was the case in the *Petering* decision, this is tantamount to an actual naming of the compound of claim 5. As for claim 11, we are satisfied that the secondary references fully establish the equivalence of the methylthio and methoxy groups as substituents in these triazines.

[2] A further argument has been advanced to the effect that the references do not suggest how to prepare the unsymmetrically trisubstituted s-triazines claimed. While this is of little or no relevance to the patentability of the compounds of claims 5 and 11, the Examiner has, nevertheless, delved into this matter and shown how a chemist of ordinary skill could, by several known methods, produce the claimed triazine derivatives (pages 9 through 12 of the Examiner's answer). The Hentrich et al., Ostrogovich and Smolin et al. references were used by the Examiner in support of a portion of this treatise but we do not find it necessary to discuss these references in this decision. Suffice it to say we find no flaw in the Examiner's reasoning or his conclusions as to the availability of procedures to prepare the claimed compounds.

[3] The decision of the Examiner is affirmed.

AFFIRMED.

U.S. Court of Customs and Patent Appeals

IN RE DAVID TAUB, NORMAN L. WENDLER, AND HARRY L. SLATES

No. 7356. Decided July 19, 1965

[52 CCPA —; 348 F.2d 556; 146 USPQ 384]

1. PATENTABILITY—LOSS OF INTERFERENCE—STATUTORY BASIS FOR REJECTION—SECTIONS 102(g) AND 102(a).

In interpreting the rejection below as one in which the generic interference count lost by appellants was considered "as 'prior art' to be applied against the * * * claims in a section 102(a) 'anticipation' rejection," *Held* that such a rejection "* * * is not correct, since 'prior art' in the sense of section 102(g) cannot here be the basis of a section 102(a) rejection, the invention not being *publicly* 'known or used.'"

2. SAME—SAME—COMPOUNDS.

"We * * * do not agree with the rejection as based on the concept that domination by the count precludes the showing of a patentable distinction thereover. The Examiner and the Board treated *every* compound within the

scope of count 2 as 'prior art,' in the sense of section 102(g) as an 'invention * * * made in this country by another,' 'before the applicant's invention.' We cannot agree with the assumption that in the factual situation * * * presented *every* compound within the count (in the sense that it would infringe the count) is 'prior art.' "

3. SAME—SAME—SAME.

"Here Rausser et al. was awarded priority on the basis of the disclosure of the hydrogen species in their parent application, being entitled to its filing date, July 22, 1957, as the date of conception and constructive reduction to practice. Since it has been adjudicated that Taub et al. did not meet their burden of proof showing they were the first inventors of the 9-hydrogen species, they cannot be said to be the first inventors thereof. However, no such determination as to the 9α-fluoro species was made. Since both parties in effect rest on their filing dates as to the 9α-fluoro species, the record indicates that Taub et al. are prior as to that species, their parent case being earlier than the Rausser et al. continuation case. Thus, *within the fact pattern here*, logic dictates that *count 2 cannot be the prior invention of another applicable against Taub et al. insofar as the 9α-floro species is concerned*, under section 102(g). Thus the rejection must fall, and it becomes necessary to remand the case for a full consideration of the issue on which appellants *attempted to join* the Patent Office, the determination of whether the 9α-fluoro species is obvious over the 9-hydrogen species of the count in view of appellants' affidavits."

APPEAL from the Patent Office. Serial No. 831,688.

REVERSED AND REMANDED.

Frank M. Nolan (*Albert W. Rinehart*, *I. Louis Wolk*, of counsel) for appellants.

Clarence W. Moore (*J. E. Armore* of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, JR., *Associate Judges*

MARTIN, *J.*, delivered the opinion of the court.

Appellants lost in interference a generic count that includes species of pharmaceutically active steroids which they now claim in an application Serial No. 831,688, filed August 5, 1959 for "Steroid Production."

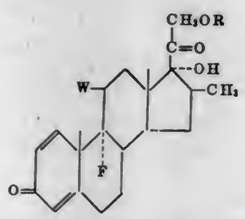
The steroids of the present invention:

* * * possess extremely high anti-inflammatory activity, * * * and are especially effective for the treatment of arthritis and related diseases since they can be administered for their cortisone-like action in extremely low dosage thereby minimizing undesired side effects. * * *

The steroids claimed are distinguished by the presence of a fluorine atom at the 9-position (in the α configuration) and also by a 16β-methyl group. It is the former which will be our primary concern.

The claims on appeal are the only claims in the application and read as follows:

1. A compound of the formula:



where W is selected from the group consisting of keto and β-hydroxy; and R is selected from the group consisting of hydrogen and lower alkanoyl.

2. 16β - methyl - 9α - fluoro-11β,17a,21-trihydroxy-1,4-pregnadiene-3,20-dione 21-lower alkanoate.

3. 9α-fluoro-11β,17α,21-trihydroxy-16β-methyl-1,4-pregnadiene-3,20-dione.

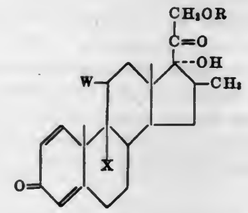
4. 9α - fluoro - 11β,17α,21 - trihydroxy-16β-methyl-1,4-pregnadiene-3,20-dione 21-acetate.

As can be seen, claim 1 is generic to a series of 9α-fluoro-16β-methyl, 17-keto or hydroxy steroids in either the 21-ester or 21-alcohol form. Claim 2 is "sub-generic," specifying the 17-hydroxy form, thus a pregnadiene, but also broadly including "lower" alkyl esters in the 21-position. Claim 3 is specific to a 21-alcohol compound and claim 4 likewise is specific to a 21-acetate (ester) compound.

There is no controvery over the fact that appellants have adequately disclosed the claimed compounds in a parent application, of which the appealed application is a division. That parent application, Serial No. 722,390, for "Steroid Production," was filed March 19, 1958, and was involved in interference No. 89,880, instituted November 26, 1958. The other party to the interference, Rausser et al., was involved on the basis of their application Serial No. 733,843, filed May 8, 1958.[1, 2] Only count 2 of the interference is pertinent here:

Count 2

A compound of the formula:



wherein X is selected from the group consisting of hydrogen and halo; W is selected from the group consisting of keto and β-hydroxy; and R is selected from the group consisting of hydrogen and lower alkanoyl.

Count 1 related to Δ^4 compounds as compared to the $\Delta^{1,4}$ diene compounds of the claims and has no bearing here. As can be seen from a comparison of count 2 and the appealed claims, the latter are encompassed by the count when X is halogen (halo).

During the motion period of the interference, Rausser et al. brought a motion to shift the burden of proof based on their parent application Serial No. 673,141 filed July 22, 1957. The party Taub et al. opposed that Rausser et al. motion on the ground that the compounds defined by the counts were not disclosed in the Rausser et al. parent application, Serial No. 673,141. In particular, appellants pointed to the fact that the Rausser et al. parent application discloses the 9-hydrogen but not the 9α-fluoro species. The Examiner, in granting the motion to shift stated:

* * * Since it is well established that a disclosure of a single species of a generic count is sufficient to determine the issue of priority in an interference proceeding,

[1] A third party, Agnello et al., abandoned their two involved applications and the interference was dissolved as to them.

[2] The Rausser et al. application has issued as U.S. Patent No. 3,164,618 on January 5, 1965.

a finding that Rausser parent application does in fact contain an adequate disclosure of any species within the scope of the present counts would dictate the granting of the motion to shift. *Lawson et al.* v. *Bruce et al.*, 1955 C.D. 205; *McBurney* v. *Jones*, 104 USPQ 115; *Adamson* v. *Sperber et al.*, 106 USPQ 429.

* * * * * * *

It is the judgment of the Examiner that the prior Rausser application Serial No. 673,141 supports species within the scope of the counts in issue. The 9-hydrogen species, together with an adequate statement of utility and method of preparation, are fully disclosed in said prior application. This constitutes a constructive reduction to practice of such species as of July 22, 1957, the filing date of Serial No. 673,141. Consequently, the reduction to practice of a single species under the generic count entitles the party Rausser to the benefit of his earlier filed application for contesting priority on the present generic counts, in accordance with the established practice as outlined for example, in *Lawson et al.* v. *Bruce et al.*, supra.

The benefit of the date of the parent application accorded Rausser et al. made them senior party. Priority subsequently was awarded Rausser et al. on the basis of that date, *Taub* v. *Rausser*, 145 USPQ 497 (Bd. Pat. Intf. 1964).

The party Taub et al. moved to declare a new interference on counts A, B and C *which exactly correspond to claims 1–3 here on appeal.* Rausser et al. opposed, arguing, in the words of the Examiner, that the 9α-fluoro compounds are "embraced by count 2 * * *" and that "what differences there are between the fluoro and non-fluoro compounds amount to differences only in degree, since both types of compounds are anti-inflammatory compounds." The Examiner accepted the views of Rausser et al. in his Decision on Motions stating:

It is the decision of the Examiner that the views of the party Rausser must prevail. There can be no quarrel with the position that proposed counts A, B and C read directly on count 2 of the interference and thus it is not seen how a patentable difference can be urged merely on the basis of alleged "outstanding and valuable activities" in the compounds of the proposed counts. Here again the 9α-fluoro compounds of proposed counts A, B and C would not sustain separate patents.

Both the decision to grant the motion to shift and the decision to deny the motion to institute another interference on the 9α-fluoro species alone were adhered to by the Examiner in a decision on a Taub et al. Petition for Reconsideration (there being no appeal under Rule 244(d)). The Examiner stated that it was "immaterial" that Rausser et al. discloses only the 9-hydrogen species in their parent application, and noted again that "the 9-fluoro species is within the scope of the generic count." [3]

The pertinent dates and support in the applications may be summarized thus:

Filing Date	Serial No.	Applicants	Disclosure
July 22, 1957	673,141	Rausser et al. parent	9-hydrogen species *only*.
Mar. 19, 1958	722,390	Taub et al. parent	9-hydrogen species *and* 9-halo species including 9α-fluoro.
May 8, 1958	733,843	Rausser et al.	Do.
Aug. 5, 1959	831,688	Taub et al. division (on appeal).	Do.

Claims 1–4 of the Taub et al. application on appeal were finally rejected:

* * * as being unpatentable over the issue of Interference No. 89,880, involving

[3] The initial Decision on Motions is dated June 30, 1961 and the Decision on Petition for Reconsideration is dated September 5, 1961.

applicants' [appellants'] parent application Serial No. 722,390. It is again pointed out that the claims *read directly* on count 2 of the interference. [Emphasis ours.]

However, it appears from the record that *previous* rejections had stated that the claims were unpatentable over count 2. That, as we have noted for the past several years, is an ambiguous rejection, a source of much confusion, and may or may not, within the context of the particular case, satisfy 35 U.S.C. 132. In attempting to overcome that rejection appellants stated:

* * * The specific 16β-methyl-9α-fluoro steroids defined in claims 1–4 possess outstanding activities above that possessed by the generic claim of 16β-methyl compounds defined in count 2 of said interference. It is planned to submit an affidavit very shortly setting forth the results of experimental studies demonstrating these outstanding and valuable activities. Upon the submission of this affidavit demonstrating patentable distinction between claims 1–4 and said count 2 of Interference 89,880 it is planned to prosecute the subject matter of the instant claims in the present application.[4]

In response to that allegation of "outstanding and valuable activities," the Examiner in the final rejection noted first that the affidavit had not been submitted, and then stated:

* * * the significance of such an affidavit is not seen since *regardless* of any showing of outstanding activity in the 9α-fluoro compounds, the claims herein are not patentable over the aforesaid interference count which *equally embraces* the 9α-fluoro compounds. See M.P.E.P. 709.01. * * * [Emphasis ours.]

As we interpret those comments, the Examiner was stating that since the count dominates the fluoro species any affidavits as to properties would be irrelevant.

Appellants filed notice of appeal and in a subsequent amendment submitted an affidavit of Sanford L. Steelman, which is said to show that the 9α-fluoro species has a "relative systemic cortisone activity * * *" of 3.4 times that of the 9-hydrogen species.

The Examiner's answer again stated the claims were rejected as "unpatentable over the issue of Interference No. 89,880 * * *" since the 9α-fluoro species defined in the appealed claims "are within the scope of count 2 * * * [and] therefore, a patentable distinction is not in evidence." The Examiner *noted* the affidavit, but considered that the issue in furtherance of which it was presented, i.e. the unpatentability over the count, to have been answered by the inter partes Decision on Motions in the interference. The Examiner's answer reproduced a portion of the Decision which stated, inter alia:

* * * the record herein does not establish patentable distinctness between the 9α-fluoro species of the appealed claims and the generic count. In this regard the *Steelman* affidavit, supra, is deemed *irrelevant* since the invention resides in the introduction of the 16-beta-methyl group and not in the 9-alpha-fluoro group. * * * [Emphasis ours.]

* * * * * * *

In the instant case the *generic* count was first filed while 9-fluoro species is within the scope of the generic count. Accordingly, the 9α-fluoro species of claims 1–4 and the existing genus will not sustain separate patents.

However, as well as noting that the differences between the 9-fluoro and 9-hydrogen species "appear to amount to differences in degree

[4] Those comments are from an amendment dated April 11, 1960. From the record it appears that the motions in the interference had already been filed, a letter from the Patent Interference Examiner, dated April 8, 1959, having set the expiration of the motion period as May 25, 1959. Thus it would appear that appellants, learning from the interference that Rausser et al. planned to rely on their parent case filed July 22, 1959, and that the Rausser et al. parent case supported only the hydrogen species, did two things. First, in the interference they opposed the motion of Rausser et al. to shift the burden of proof based on the Rausser et al. earlier parent case, and moved to declare a new interference on the 9α-fluoro species alone. Second, appellants filed on August 5, 1959, the instant application dividing out the 9α-fluoro species.

only * * *" the Examiner seemed to require further tests since he quoted that portion of the Decision on Motions which stated:

* * * It should further be noted that the *Steelman* affidavit fails to compare the 9α-fluoro species of claims 1–4 with the 9α-*halo* species within the scope of count 2. * * *

Appellants responded by filing two additional affidavits of Steelman, the first of which apparently shows that the 9α-fluoro-16-methyl compound is 3 times more active than the desmethyl compound, 9α-fluoro-16-hydrogen steroid. The second affidavit compared the 9α-fluoro compound with the corresponding *bromo* compound, and found the fluoro compound to be 255 times more active. On remand, the Examiner admitted the affidavits "under the provisions of Rule 195," but reaffirmed the rejection:

The newly presented affidavits purportedly "establish a non-obvious and patentable distinction between the 9α-fluoro species of appealed claims 1–4 and both the prior art 16-desmethyl steroid and other 9-halo species within the scope of count 2." Appellants therefore urge that under the doctrine of *In re Ruff et al.*, 118 USPQ 340, they should be entitled to the 9α-fluoro species of the appealed claims in view of the Dr. Steelman affidavits and the fact that there was no "art-recognized equivalence" between the previously known 9α-fluoro steroids and their 9-hydrogen counterparts.

The Examiner fails to appreciate the significance of the newly presented affidavits since the primary issue in this appeal is not concerned with equivalency or non-equivalency of members of a Markush group but is rather directed to the fundamental proposition that a *reference* to a claimed species precludes a separate patent to *that* species. The *In re Ruff* decision is not seen to be in point since the present count of Int. No. 89,880 still *includes* the 9α-fluoro species defined in the appealed claims. Thus, there is no reason for a departure from the position taken in the Examiner's answer that the generic count and the 9α-fluoro species within the scope of said count will not sustain separate patents.

To us the foregoing establishes that (1) appellants were faced with a rejection of the claims as "unpatentable over" count 2 of the interference. (2) Appellants argued the "unpatentable over" rejection and submitted affidavits in an attempt to establish a "patentable distinction" based on non-obviousness of the fluoro species over the hydrogen species, but (3) it became clear that the Examiner *assumed* all species *within* the count to be "prior art" by virtue of the priority award. Although the Examiner entered the affidavits, he considered them "irrelevant" and failed, in his own words, to "appreciate the[ir] significance * * *." *The Board*, in its initial decision and upon reconsideration, although discussing the affidavits[5] *did not, as we see it, make any new ground of rejection*, either express or implied.

[5] The Board, after affirming the "unpatentable over" rejection of the Examiner, stated that the "count of interference covers the 9-halo compounds, i.e., the 9α-fluoro * * * which *include* the claimed compounds." The Board *then* discussed the "higher potency" shown by the affidavits. The Board stated that there was no basis for appellants' election of the bromo derivative as representative of the halo species, since "chlorine most nearly approaches the fluorine in molecular weight and activity * * *." Without apparent support the Board stated:

> * * * the relative activities are not unexpected in view of the relative molecular weights of the bromo and fluoro substituents and the expectation of the art with respect to the relative activities of the various 9α halogen derivatives. * * *

In response, appellants filed a request for reconsideration and an affidavit which showed that the 9α-fluoro is 8 times more active than the 9α-chloro derivatives. Although the criticism of the bromo affidavit was first made by the Board, the appellants' responding chloro affidavit was deemed by the Board on reconsideration to be "belatedly presented, as Rule 197(b) demonstrates," and was not accepted. The Board's response to the petition was:

> Appellants' petition does not challenge our conclusion that the differences in activity between the various 9α-halo compounds represented in the affidavits referred to our decision was not unexpected in view of the relative molecular weights of the 9α-halo substituents and the expectation of the art that the anti-inflammatory activities of these compounds would vary with their molecular weights in the manner shown. Appellants, instead, reiterate their contention, previously advanced, that we should go behind the count of the interference on which the appealed claims are rejected and consider the evidence of priority as to each of the specific compounds included in the interference count. We have discovered no precedent for such a piece-meal determination of priority on an *ex parte* basis or for the consideration of arguments which appear to be related to the issue of priority over which we have no jurisdiction.

Appellants subsequently challenged the Board's statements in full.

[1] It is not clear whether the Examiner and the Board considered that count as "prior art" to be applied against the instant claims in a section 102(a) "anticipation" rejection, since the Examiner stated that "the claims read directly on count 2,"[6] or whether, since the claimed species is included within the count, they considered *domination* by the count to be the equivalent of specific claiming by the prior inventor. Insofar as the former interpretation of the rejection may have been meant, it is not correct, since "prior art" in the sense of section 102(g) cannot here be the basis of a section 102(a) rejection, the invention not being *publicly* "known or used."

[2] We also do not agree with the rejection as based on the concept that domination by the count precludes the showing of a patentable distinction thereover. The Examiner and the Board treated *every* compound within the scope of count 2 as "prior art," in the sense of section 102(g) as an "invention * * * made in this country by another," "before the applicant's invention." We cannot agree with the assumption that in the factual situation above presented *every* compound within the count (in the sense that it would infringe the count) is "prior art." The winning of priority on a broad count was based on evidence of priority with respect to only one species, wherein X was hydrogen, not halo or fluoro.

Both applications initially involved in the interference, the Rausser et al. continuation and the Taub et al. parent application, show adequate support for a generic count inclusive of both halogen and hydrogen at the 9-position. The problem arises from the fact that one may establish priority for a generic claim on the basis of a showing that he was prior as to a single species. See *In re Kyrides*, 34 CCPA 920, 159 F.2d 1019, 73 USPQ 61.

[3] Here Rausser et al. was awarded priority on the basis of the disclosure of the hydrogen species in their parent application, being entitled to its filing date, July 22, 1957, as the date of conception and constructive reduction to practice. Since it has been adjudicated that Taub et al. did not meet their burden of proof showing they were the first inventors of the 9-hydrogen species, they cannot be said to be the first inventors thereof. However, no such determination as to the 9α-fluoro species was made. Since both parties in effect rest on their filing dates as to the 9α-fluoro species, the record indicates that Taub et al. are prior as to that species, their parent case being earlier than the Rausser et al. continuation case. Thus, *within the fact pattern here*, logic dictates that *count 2 cannot be the prior invention of another applicable against Taub et al. insofar as the 9α-fluoro species is concerned*, under section 102(g). Thus the rejection must fall, and it becomes necessary to remand the case for a full consideration of the issue on which appellants *attempted to join* the Patent Office, the determination of whether the 9α-fluoro species is obvious over the 9-hydrogen species of the count in view of appellants' affidavits.

We do not read *In re Fenn*, 50 CCPA 1163, 315 F.2d 949, 137 USPQ 367; *In re Boileau*, 35 CCPA 727, 163 F.2d 562, 75 USPQ 88; *In re Cole*, 23 CCPA 1057, 82 F.2d 405, 29 USPQ 137, or *In re Sola*, 22 CCPA 1313, 77 F.2d 627, 25 USPQ 433 to the contrary. Similarly, since the holding in *In re Gregg*, 44 CCPA 904, 907, 244 F.2d 316, 113 USPQ 526, was founded on the fact that "there is no evidence to

[6] Since claims "read on" things, not other claims, we construe the Examiner's statement as saying the broad *count "reads on"* the claimed *species*.

show completion of the invention covered by the appealed claims by appellant at any time prior to Coakwell's filing date," that is, "the Coakwell patent is a reference under section 102(e) * * *" we do not find that case to indicate a contrary result.

For the foregoing reasons the rejection of the claims on the interference count is reversed and the application is remanded for further proceedings not inconsistent herewith.

REVERSED AND REMANDED.

SMITH, *J.*, concurs in the result.

U.S. Court of Customs and Patent Appeals

IN RE J. R. KILSHEIMER AND H. L. HAYNES

No. 7361. Decided July 22, 1965

[52 CCPA —; 349 F.2d 441; 146 USPQ 491]

1. PATENTABILITY—COMPOUND—OBVIOUSNESS.

"The Kolbezen et al. reference discloses a generic class of N-methylcarbamates of substituted phenols, the number and kind of substituents being perhaps even an infinite number. We rely neither on that nor on the broad disclosure of 'substituted phenols,' in holding appellants' compound to be rendered obvious by Kolbezen et al. Rather, it is the total circumstances, including the specific compounds tested, the limited class of substituents, the showing of position isomers of the specific substituent claimed, the teaching that the specific position (the meta position) is the most toxic, the showing of the adjacent higher homolog in all three possible positions of which the meta is the most active, which lead us to conclude that one of skill in this art would, on reading Kolbezen et al., at once envisage the isopropyl position isomer now claimed by appellants."

2. SAME—EVIDENCE—OBVIOUSNESS.

"Appellants, in arguing non-obviousness, have submitted five affidavits, a literature reference, and have referred to their specification as showing the superiority of the meta-isopropyl compound over the higher homolog, meta-tert-butylphenyl N-methylcarbamate, the ortho and para isopropyl position isomers, and the lower homolog, meta-methylphenyl N-methyl-carbamate. Since appellants' affidavits show the claimed meta compound has the same kind of property, toxicity, as the isomers and homologs of Kolbezen et al., they cannot be said to show an *unexpected* property. Rather, what appellants rely on is that the *degree* of effectiveness of the claimed compound is unexpected. In view of the Kolbezen et al. teaching that the meta position is most effective, we cannot agree that unexpectedness in the degree of effectiveness has been shown."

3. SAME—PARTICULAR SUBJECT MATTER—"3-ISOPROPYLPHENYL N-METHYLCARBAMATE AND INSECTICIDAL COMPOSITIONS CONTAINING THE SAME."

The refusal of all claims in an application entitled "3-Isopropylphenyl N-Methylcarbamate and Insecticidal Compositions Containing the Same," as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 676,368.

AFFIRMED.

Louis C. Smith, *Paul A. Rose* for appellants.

Clarence W. Moore (*J. F. Nakamura* of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, Jr., *Associate Judges*

MARTIN, *J.*, delivered the opinion of the court:

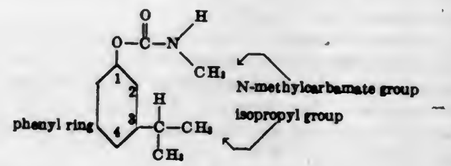
John R. Kilsheimer and Harry L. Haynes appeal the decision of the Board, adhered to on reconsideration, affirming the Examiner's rejection of claims 1 and 5, the only claims remaining in their application Serial No. 676,368, filed August 5, 1957, for "3-Isopropylphenyl N-Methylcarbamate and Insecticidal Compositions Containing the Same."

The invention, a chemical compound which appellants have discovered is an effective insecticide, is claimed as follows:

1. 3-isopropylphenyl N-methylcarbamate.

5. The method of killing insects which comprises applying 3-isopropylphenyl N-methylcarbamate to said insects.

The compound of the claims, 3-isopropylphenyl N-methylcarbamate, has the following structure:



The 3-position on the phenyl ring is also known as the meta position, that is, a substituent on the 3-position is meta, or m-, to the N-methylcarbamate group. Accordingly, appellants' compound could be called meta- (or m-) isopropylphenyl N-methylcarbamate. Similarly a substituent on the 2-position may be termed an ortho, or o-, substituent, and one on the 4-position may be termed a para, or p-, substituent. We will be concerned with the several positions of a substituent, primarily the isopropyl group, on the ring.

Two major classes of insecticides, phosphorus- and chlorine-containing insecticides, suffer from a number of disadvantages, primarily cost, mammalian toxicity, and the growing resistance of insects to those classes of insecticides. Because of such disadvantages, research has been conducted to discover and develop other classes of insecticides. The carbamates, of which the present invention is a member, have proven of value.

The dosage of an insecticide which is required to kill 50 percent of insects, such as houseflies, is known as the LD_{50}. An increase in the LD_{50} dosage required against succeeding generations of flies bred from the survivors of a treatment shows a tolerance for, or an accommodation or resistance to the insecticide. As well as finding that the 3-isopropylphenyl N-methylcarbamate is lethal to "a wide variety of insects, arachnids and other agricultural and household pests, including aphids, mites, army worm larvae, beetles, flies, roaches and mosquitoes," the compound "is a particularly valuable insecticide since insect strains controlled by it have not developed immunity to it." Appellants disclose that:

* * * It was found in a series of tests that the LD_{50} (dosage to kill 50 percent of the flies tested) for the twentieth generation was approximately the same as the LD_{50} for the starting generation.

Appellants disclose a series of tests which indicate that the claimed 3-isopropylphenyl N-methylcarbamate, abbreviated IPMC, is superior to several typical commercial insecticides, compounds X [1,1,1-trichloro-2,2-bis-(p-chlorophenyl) ethane], Y [a chlorinated camphene], and Z [3-tertiary-butylphenyl N-methylcarbamate (which it

will be seen below is one of the reference compounds)]. The application states:

TABLE I

Conc. of chemical in mg./100 ml. of water required to kill 95 percent (LD_{95})

Compound	Spider mite adults	Southern army worm larvae	House fly (poison bait)	Aphid
IPMC	78	40	15	17
Compound X	>250	82	28	20
Compound Y	>250	14	20	32

It can be seen that in Table I IPMC is, with one exception, superior in every way to commercial compounds X and Y.

IPMC has also been compared with a closely related carbamate, 3-tertiarybutylphenyl N-methylcarbamate (compound Z) by the above tests, as well as by the Roach Immersion Test, the Mosquito Larvae Test and the House Fly Topical Application Test. The results of these tests are reported in Table II. A cholinesterase determination was also made on these two materials and the results reported in Table III. • • •

• • • • • • •

TABLE II

Compound	Roach	Mosquito larvae	Spider mite adults	Southern army worm larvae	House fly (poison bait)	Aphid	House fly Topical Application
IPMC	250	1.4	78	40	15	17	2
Compound Z	400	4.6	130	80	[1] >120	80	40

[1] NOTE: With an acceptable formulation, it is possible to get 30 mg./100 ml. of H_2O in solution. This provides 30 percent kill. Above 30 mg. and including a 120 mg. dosage, a suspension is obtained. These suspensions do not increase kill above 30 percent.

TABLE III

Compound	Cholinesterase Inhibition, I_{50}.
IPMC	1.5×10^{-7}.
Compound Z	2.2×10^{-7}.

It can be seen from Tables II and III that 3-isopropylphenyl N-methylcarbamate is an outstanding insecticide, which is superior in every respect to compound Z.

The single reference on which the compound and method of use claims are rejected is:

> Kolbezen, et al., Insecticide Structure and Activity. Insecticidal Activity of Carbamate Cholinesterase Inhibitors. Agricultural and Food Chemistry, vol. 2, No. 17, August 18, 1954, pp. 864–70.

Kolbezen et al. disclose the preparation and toxic evaluation of some 30 N-methylcarbamate esters of substituted phenols. The Kolbezen et al. paper opens with a short discussion of the reasoning which led them to their compounds. It stands as an example of the predictive approach of which modern chemistry is capable (footnotes omitted):

> Most of the organic insecticides in common use today were discovered during the routine screening of many miscellaneous chemicals or by the planned synthesis of derivatives of compounds already known to be effective. Few if any have been developed from the biochemical viewpoint of devising an antimetabolite or enzyme antagonist that would possess the proper prerequisites for contact toxicity, although the present status of knowledge in this field seems adequate for such an undertaking.
>
> With this general concept in mind, the authors selected the cholinesterase (ChE) enzyme system of insects as a starting point because of its vital function in the neutral behavior of the organism and the considerable information available concerning its properties and functions. • • •
>
> The carbamic acid esters have long been known to be highly effective inhibitors of cholinesterases, and as such they have pharmacological applications. These compounds have structural configurations that closely resemble the choline esters, and their inhibitory activity occurs from the resulting strong attraction to the active center of the enzyme and their much greater stability to hydrolysis. • • • Therefore, this group of compounds was chosen as the starting point of an investigation of the requirements for converting potent enzyme inhibitors into contact insecticides.

Kolbezen et al. continue the background discussion, indicating that their investigation of carbamate esters of phenols was based on the knowledge that:

> Insect nerves are known to be surrounded by lipoid sheaths, and it is probable that ready penetration of cholinesterase inhibitors into the nervous system is facilitated by nonpolar lipoid-soluble molecules rather than by the highly polar quaternary ammonium compounds. Therefore, attention was turned toward the synthesis of a representative series of N-substituted carbamates of substituted phenols. • • •

The Kolbezen et al. prediction was correct:

> Since this investigation was begun, the validity of the assumption that nonpolar lipoid-soluble carbamate derivatives should be contact toxicants has been amply confirmed by extensive investigations of a large series of N-alkyl carbamates of pseudoaromatic and cyclic alcohols. Certain of these materials, particularly 1-phenyl-3-methylpyrazolyl-(5)-dimethylcarbamate (pyrolan) and 1-isopropyl-3-methylpyrazolyl-(5)-dimethylcarbamate (isolan), showed outstanding toxicity to aphids, thrips, flies, and other insects, both by contact and *per os*. • • •

Kolbezen et al. then disclose their N-methylcarbamates to be prepared from the reaction of methyl isocyanate with the desired substituted phenol. Both cholinesterase inhibition and toxicity tests were run, and the following results are taken from their Table 1:

TABLE 1.—*Properties and Biological Activity of N-Methylcarbamates of Various Phenols*

N-Methylcarbamate	I_{50} [1]	Housefly	
		LD_{50}, γ/g.	MLC [2] thrips
• • •			
VI. o-Isopropylphenyl	6×10^{-6}	100	0.00018
VII. p-Isopropylphenyl	7×10^{-5}	>500	0.023
VIII. o-tert-Butylphenyl	6×10^{-6}	75	0.00015
IX. m-tert-Butylphenyl	4×10^{-7}	50	0.00008
X. p-tert-Butylphenyl	1.5×10^{-6}	>500	>0.1
• • •			
XXI. 2-Methyl-5-isopropylphenyl	2×10^{-6}	>500	0.00025
• • •			

[1] Molar concentration for 50% inhibition of fly-brain cholinesterase.
[2] Median lethal concentration, percent.

Kolbezen et al. state the following concerning the tests:

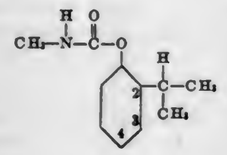
> Discussion of Results
>
> *Relation of structure to toxicity*
>
> The results presented in Tables I and II [1] indicate the identity of the carbamates synthesized, their toxicity as contact insecticides to the female housefly, *Musca domestica* L., and to the greenhouse thrips, *Heliothrips haemorrhoidalis* (Bouche), and the molar concentration required in vitro for 50% inhibition of

[1] Table II related to corresponding tests using N-ethyl, N-benzyl, and N-phenylcarbamates of various phenols, and does not concern us here.

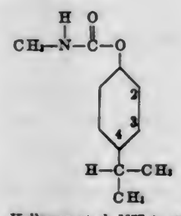
fly-brain cholinesterase. The more toxic compounds were also evaluated as contact toxicants to the green citrus aphid, *Aphis spiraecola* Patch, and to the citrus red mite, *Paratetranychus citri* (McG.). They exhibited approximately the same degree of toxicity to the aphid as to the thrips, but the most effective compound (IX) produced only 73% mortality of the citrus red mite adult at 0.1% concentration. * * *

The compound considered by Kolbezen et al. to be the most active compound of those insecticides tested, compound IX, *meta*-tert-butylphenyl N-methylcarbamate, is the next higher homolog of appellants' claimed compound. The tert-butyl substituent is also disclosed at the ortho and para positions.

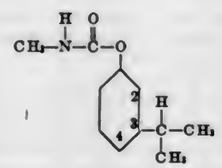
It is also evident that the Kolbezen et al. compounds VI and VII are respectively the ortho and para position isomers of appellants' compounds, thus:



Kolbezen et al. VI 2-, or ortho-isopropylphenyl N-methylcarbamate



Kolbezen et al. VII 4-, or para-isopropylphenyl N-methylcarbamate



Appellants' 3-, or meta-isopropylphenyl N-methylcarbamate

Kolbezen et al. further discuss the relation of structure to toxicity as follows, noting first the relationship between the *type of phenyl ring substituent* and the *cholinesterase inhibition* (I_{50} in Kolbezen et al. Table I above):

The nature and extent of substitution of phenyl rings of the N-methylcarbamates exert a remarkable influence on toxicity. The order of effectiveness of single ring substituents upon cholinesterase inhibition was

$$NO_2 < Cl < CH_3 < C_2H_5 < iso\text{-}C_3H_7 < (CH_3)_2N < tert\text{-}C_4H_9 < (CH_3)_3N^+I$$

* * *. [Emphasis ours.]

Insofar as we are concerned here, that disclosure of Kolbezen et al. indicates the isopropyl group to be a *less* effective cholinesterase inhibitor than the tert-butyl group as a substituent on the phenyl ring. With regard to *contact toxicity*, Kolbezen et al. indicate the order of effectiveness of the various substituents quoted just above to be only "roughly in the same order * * *," with an exception which does not concern us here.

In discussing the *placement* of the substituents on the phenyl ring as related to cholinesterase inhibition and toxicity, Kolbezen et al. teach that the *meta position is the most effective* and para is least: * * * *The order of effectiveness of ring position was p<o<m, both for cholinesterase inhibition and for toxicity.* This, too, is in agreement with previous work involving $(CH_3)_3N^+$-substituted phenylcarbamates, and seems to be a definite indication of maximum fit or orientation at the enzyme surface, as reflected in similarity of configuration to the normal substrate, probably acetylcholine. * * * [Emphasis ours.]

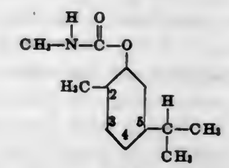
The Examiner's position, sustained by the Board, was:

In view of this clear teaching that the meta isomer is more effective, both for cholinesterase inhibition and for toxicity in instances where the isomers differ only in relationship to their position on the phenyl ring, *it is the Examiner's position that the claimed derivative would be glaringly obvious* and particularly so when the prior art specifically discloses other meta derivatives to be old. * * * [Emphasis ours.]

We agree, since it is our view that the meta or 3-isopropylphenyl N-methylcarbamate and the method of killing insects therewith are rendered entirely obvious to one of ordinary skill in the art by the Kolbezen et al. reference. 35 U.S.C. 103.

[1] The Kolbezen et al. reference discloses a generic class of N-methylcarbamates of substituted phenols, the number and kind of substituents being perhaps even an infinite number. We rely neither on that nor on the broad disclosure of "substituted phenols," in holding appellants' compound to be rendered obvious by Kolbezen et al. Rather, it is the total circumstances, including the specific compounds tested, the limited class of substituents, the showing of position isomers of the specific substituent claimed, the teaching that the specific position (the meta position) is the most toxic, the showing of the adjacent higher homolog in all three possible positions of which the meta is the most active, which lead us to conclude that one of skill in this art would, on reading Kolbezen et al., at once envisage the isopropyl position isomer now claimed by appellants. Although Kolbezen et al. disclose the data only for a "representative series of N-substituted carbamates of substituted phenols," the totality of the disclosure is such as to render the 3-isopropylphenyl N-methylcarbamate of claim 1 entirely obvious. The same is true for "the method of killing insects which comprises applying * * * [the compound] to said insects," in claim 5, since Kolbezen et al. disclose topical "application of 1-microliter drops * * *" of their insecticides to houseflies.

It is important to note the Kolbezen et al. compound XXI, 2-methyl-5-isopropylphenyl N-methylcarbamate. The structure of that compound is as follows:



The 5-isopropyl group in compound XXI is *meta* to the N-methylcarbamate substituent. Kolbezen et al. discuss such multiple substituent carbamates as follows:

Where multiple substituents in the ring are concerned, reinforcement of the toxicity of meta- alkylates results from *additional* alkylation in the ortho- or meta- positions, as in * * * 2-methyl-5-isopropylphenyl [N-methylcarbamate] (XXI), * * *. [Emphasis ours.]

While the dialkylated compound XXI is not appellants' claimed compound, it causes one of ordinary skill in the art to envisage the concept of the isopropyl group specifically in the meta position. Further, since, as quoted just above, Kolbezen et al. disclose the "additional" alkylation in, for example, the 2-(ortho) position, of *already meta alkylated compounds*, and then names the tested compound XXI (ortho-methyl-*meta*-isopropylphenyl N-methylcarbamate), we think it unquestionable that the carbamate having the isopropyl group on the meta position alone is entirely obvious.

The claimed compound here has the same kind of properties as those disclosed for the Kolbezen et al. position isomers and next higher homolog, albeit the claimed compound is somewhat more effective.

[2] Appellants, in arguing non-obviousness, have submitted five affidavits, a literature reference, and have referred to their specification as showing the superiority of the meta-isopropyl compound over the higher homolog, meta-tert-butylphenyl N-methylcarbamate, the ortho and para isopropyl position isomers, and the lower homolog, meta-methylphenyl N-methyl-carbamate.[2] Since appellants' affidavits show the claimed meta compound has the same kind of property, toxicity, as the isomers and homologs of Kolbezen et al., they cannot be said to show an *unexpected* property. Rather, what appellants rely on is that the *degree* of effectiveness of the claimed compound is unexpected. In view of the Kolbezen et al. teaching that the meta position is most effective, we cannot agree that unexpectedness in the degree of effectiveness has been shown. *In re Lohr*, 50 CCPA 1274, 1279, 317 F.2d 388, 137 USPQ 548.

Appellants further point to their specification, the second affidavit, and the literature reference, all as showing that the meta-isopropyl compound is *superior* to the meta-tert-butyl higher homolog. Appellants urge that Kolbezen et al. teach precisely the *opposite* by stating:

• • • The order of effectiveness of single ring substituents upon *cholinesterase inhibition* was

$$NO_2 < Cl < CH_3 < C_2H_5 < \text{iso-}C_3H_7 < (CH_3)_2\text{—}N < \textit{tert-}C_4H_9 < (CH_3)_3N^+I$$

and the *contact toxicity* was *roughly* in the same order • • •. [Emphasis ours.]

That order of effectiveness indicates the isopropyl is *less* effective than the tert-butyl with respect to *cholinesterase inhibition*. On the other hand, the affidavit is directed to a topical application *toxicity* test on houseflies. Concerning such tests Kolbezen et al. state *only* that "contact toxicity was *roughly* in the same order." [Emphasis ours.] We do not think appellants' showings establish a direct contradiction of the teachings of the order of substituent effectiveness in contact toxicity, or negative all the other teachings of Kolbezen et al., particularly that concerning the position isomers (which the other affidavits in fact confirm), such that it can be said that the claimed compound and method of using it are not obvious.

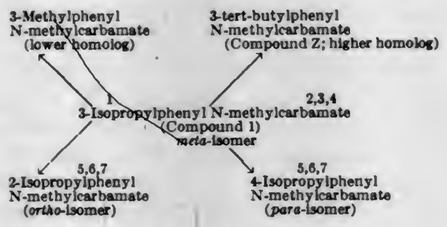
While the specification shows that even for cholinesterase inhibition the meta-isopropyl was slightly better than the meta-tert-butyl compound, in a ratio of about 2 to 3, the order of magnitude of concentrations are the same, and thus do not detract from the totality of the evidence showing the obviousness of both appellants' compound and the method of killing insects by application. *In re Lohr*, supra.

[3] The decision of the Board is affirmed.

AFFIRMED.

[2] Appellants summarize the showings as follows in their brief (omitting references to the record):

The *comparative* showings in the record demonstrating the superiority in activity of the present compound over old compound disclosed in the reference can be summarized as follows:



1. Moorefield affidavit filed March 31, 1959.
2. Applicants' specification, page 15.
3. Moorefield affidavit filed March 30, 1962.
4. Jour. Econ. Ent. article by S. Mulla.
5. Moorefield miticide affidavit filed May 10, 1962.
6. Moorefield plum curculio field test affidavit filed May 10, 1962.
7. Haubein affidavit filed May 10, 1962.

U.S. Court of Customs and Patent Appeals

IN RE DAVID BANDEL

No. 7402. Decided July 19, 1965

[52 CCPA —; 348 F.2d 563; 146 USPQ 389]

1. CLAIM—CONSTRUCTION OF CLAIMS—COMPOSITIONS—"COMPRISING" AND "CONSISTING."

"The composition claims here define a composition or mixture made up of a plurality of component materials. Neither they nor the counts of the interference define the subject matter as involving a chemical reaction between the component materials. Thus the difference that results from the use of the term 'comprising' in the appealed composition claims and the terms 'consisting' and 'essentially' in the counts is merely a matter of scope in a mechanical mixture and not a matter of chemical genus and species relationship."

2. PATENTABILITY—ESTOPPEL—LOSS OF INTERFERENCE—PATENT AND APPLICATION.

"• • • we think the patentees Samfield et al., who won the interference, were not called upon to introduce the broader subject matter by reissue to protect the rights they might have therein. Although the present proceeding is what is termed 'ex parte' with Samfield et al. having no right to be heard, obviously it is actually the direct outgrowth of the interferences and the outcome as to the claims to broader subject matter affects the position of Samfield et al. Allowance of those claims would render the lengthy interference proceedings ineffective to determine the basic rights of the parties. • • • we hold appellant is barred from obtaining claims 24, 25, 30 and 32 through 36 by his failure to take the opportunity available to him to prove priority as to them in the interferences."

3. SAME—AFFIDAVIT UNDER RULE 131—LOSS OF INTERFERENCE—APPLICATION AND PATENT.

"• • • a party losing an interference to a patentee cannot properly be denied a chance to overcome the disclosure of the patentee as to subject matter which does not correspond to the issue of the interference or as to which he is not subject to an estoppel arising from the interference. The Examiner and the Board, in holding the Rule 131 affidavit inapplicable here, have refused to consider whether the affidavit does in fact overcome the Samfield et al. disclosures as to subject matter which the interferences did not preclude appellant from claiming. That was clearly error. We are therefore obliged to reverse the rejection of claims 26 through 29, 31 and 38 through 40 and remand the case for consideration of the effect of the affidavit under Rule 131 in conformity with our views as expressed herein."

APPEAL from the Patent Office. Serial No. 521,984.

MODIFIED AND REMANDED.

John T. Kelton (*William H. Vogt III*, *William A. Drucker* of counsel) for appellant.

Clarence W. Moore (*George C. Roeming* of counsel) for the Commissioner of Patents.

Before RICH, *Acting Chief Judge*, and MARTIN, SMITH, and ALMOND, JR., *Associate Judges*

MARTIN, *J.*, delivered the opinion of the court.

David Bandel appeals from the action of the Board of Appeals affirming the Examiner's rejection of claims 24 to 36 and 38 to 40,

all the remaining claims, of his application Serial No. 521,984, filed July 14, 1955, for Tobacco Sheet Material and Method of Forming, a continuation-in-part of Serial No. 468,270, filed Nov. 12, 1954.

The application relates to the conversion of tobacco particles into compositions in a form, such as sheets, suitable for use in manufacturing cigarettes, cigars, pipe tobacco, chewing tobacco and the like. It states that film-forming agents in such compositions should not introduce any offensive odor, taste or color into the tobacco or tobacco smoke or alter substantially the natural properties of the tobacco as a smoking product. Suitable compositions are described as comprising a mixture of particles of finely-divided, dry-ground tobacco, adhered together by a plant gum adhesive such as the galactomannan plant gum, locust bean gum, and teaches that other substances may be added. Thus, it is said that glycerin may serve as a humectant or plasticizer, while glyoxal seems to improve water resistance and paper-pulp mechanically reinforces the film forming agent.

Claims 24, 29, 30, 33 and 38 are representative:

24. A composition of matter comprising in combination a major proportion by weight of said composition of finely divided dry ground tobacco which will pass through a 20 mesh screen and be mostly retained by a 325 mesh screen, moisture between 8% and 24% by weight of said composition, and a minor proportion of galactomannan plant gum, between 0.5% and 33% by weight of said composition, said gum serving as an adhesive to hold together said tobacco.

29. A composition according to claim 24 which includes glyoxal.

30. A composition of matter comprising in combination particles of finely divided dry ground tobacco adhered together by a galactomannan plant gum adhesive.

33. A smoking article made at least in part from a composition of matter which comprises dry ground tobacco particles held together by galactomannan adhesive.

38. The method of making a tobacco product which comprises mixing together galactomannan plant gum adhesive and finely divided dry ground tobacco in the presence of moisture to form a viscous mass and shaping said viscous mass into a tobacco product by extrusion.

The present application has been involved in two interferences, both of which terminated adversely to appellant. The first, No. 87,744, involved two counts copied from Samfield et al. Patent No. 2,708,175, issued May 10, 1955, on an application filed May 28, 1954. Count 1 reads:

1. A composition of matter suitable for smoking consisting by weight of a minor proportion, about 1% to 20%, of a plant gum consisting essentially of galactomannan, approximtaely 9% to 13% of moisture, and the balance essentially all dry-ground tobacco with the individual finely-divided fragments thereof cohered together so as to have, when formed in sheets of about the thickness of natural leaf tobacco, a tensile strength approximately equal to the tensile strength of such leaf tobacco.

Count 2 differs in reciting the specific gum "locust bean gum" instead of "a plant gum consisting essentially of galactomannan."

The other interference, No. 89,623, was on three counts copied verbatim from a reissue of the above patent, Reissue No. 24,424, issued February 4, 1958. Those counts differ from the counts of the previous interference principally in the inclusion of a humectant. Count 1 of Interference No. 89,623 is representative:

A composition of matter suitable for smoking consisting by weight of a minor proportion, about 1% to 20%, of a plant gum consisting essentially of galactomannan, approximately 9% to 13% of water, a humectant in an amount not exceeding about 12%, and the balance essentially all dry-ground tobacco with the individual finely-divided fragments thereof cohered together so as to have, when formed in sheets of about the thickness of natural leaf tobacco, a tensile strength approximately equal to the tensile strength of such leaf tobacco.

The Examiner relied on the Samfield et al. patents in rejecting the claims and also on the following:

Frankenburg et al., 2,592,553, April 15, 1952.
Wells et al., 2,433,877, January 6, 1948.
E. Anderson, Endosperm Mucilages of Legumes, Journal of Industrial and Engineering Chemistry, December 1949, volume 41, No. 12, pages 2887–2890.
Jurgensen, 2,734,509, February 14, 1956 (filed December 20, 1951).
Condensed Chemical Dictionary, Reinhold Pub. Corp. (1950), p. 323.

The Samfield et al. patents disclose a reconstituted smoking tobacco composition which consists essentially of a major proportion of fragmented tobacco and a minor proportion of galactomannan plant gum [1] plus added moisture in the form of water alone or water and a suitable humectant such as glycerine. That composition is disclosed as in sheet form and of a thickness and strength approximating that of natural tobacco leaf and as suitable for blending with leaf tobacco in the manufacture of cigarettes, cigars and other forms of smoking tobacco.

Frankenburg et al. discloses a reconstituted tobacco comprising dry ground tobacco and a binder therefor.

Wells et al. discloses reconstituted tobacco compositions and methods of making them. As one of the steps of the method, it discloses extrusion of filaments of the composition through nozzles. Also described is the use of fibers to reinforce sheet material made from finely ground tobacco particles held together in a matrix.

The Anderson reference discloses that locust bean gum and Kentucky coffee gum both contain galactomannan gums.

The Jurgensen patent describes reconstituted tobacco sheet material comprising ground tobacco, carboxymethyl cellulose, glyoxal and glassine pulp.

The Examiner stated in his answer that claims 24, 25, 30, 32 through 36 and 39 were rejected on either Samfield et al. patent alone. Also he stated that claims 24 through 29, 31, 32, 38 and 40 were rejected on Samfield et al. taken with certain of the other references, pointing out features that the latter references were regarded as suggesting. An affidavit under Rule 131 filed by appellant was acknowledged by the Examiner but was deemed not to overcome the Samfield et al. patents. The Examiner did not discuss the substance of the affidavit but based his conclusion concerning it on his view of the effect of the two interferences with Samfield et al. which terminated adversely to appellant. In that connection he cited *In re Derleth*, 28 CCPA 973, 118 F.2d 566, 49 USPQ 84, stating:

In *In re Derleth*, supra, it was held that when, in the case where an applicant was in interference with a patentee and the applicant was notified that claims not forming the counts of the interference would be held subject to rejection as unpatentable over the issue in the event of an award of priority adverse to the applicant and the applicant has not been shown to object to such disposal of the said claims not forming the counts of the interference, the patentee had a right to rely upon this disposition of the matter and was not called upon, in order to protect his rights to copy said non-involved claims of the applicant.

[1] The patents name "guar gum" and "locust bean gum" as suitable gums consisting principally of galactomannan.

The Examiner pointed out that it was stated in the letter notifying appellant of the first interference with Samfield et al. that claims 2, 4, 5, 6, 7, 8, 9, 13 and 17 of the application would be held subject to rejection as unpatentable over the issue in the event of an award of priority adverse to appellant. He also quoted from *Derleth* as follows (28 CCPA at 977):

> It seems to us that here is a clear case of estoppel *in pais* against appellant. Upon the record before us we must assume that he did not object to the holding that claims such as here involved would be held subject to the outcome of the interference. The patentee Askenasy therefore had a right to rely upon this disposition of the matter and was not called upon, in order to protect his rights, to copy the rejected claims of appellant's application. The patentee may well have been satisfied with the claims in his patent, for he was assured that if he won the interference appellant could not secure broader claims dominating the claims of his patent.

The answer further states that "it is the position of the Examiner that in the case at bar the facts warrant a holding of estoppel, just as was done in the Derleth case." In support of that conclusion, the Examiner stated that appellant had ample opportunity to voice objections to the statement regarding the other claims in the application, either directly, in the motion period or in the period when the reissue application was open to him as a result of notice given him by the Commissioner upon the filing of that reissue application. It was also the view of the Examiner that appellant could, through the provisions of section 1101.02B [2] of the Manual of Patent Examining Procedure (M.P.E.P.), have taken action to substitute in the interference counts which were broader than the Samfield et al. patent claims and thereby obtain the benefit of any priority evidence he might have relating to such broader subject matter.

The Board regarded the Examiner as having rejected the claims for two separate reasons. It stated:

> As we view the Examiner's answer, he has considered the appealed claims as unpatentable for two reasons: first, the affidavit under Rule 131 is insufficient to overcome the Samfield et al. patents, and these patents therefore stand as proper references, and the claims on appeal are not patentable over the references relied on as set forth • • • [in] his answer; second, the Examiner has taken the position that appellant is estopped from now urging the allowability to him of claims that are broader than those involved in the above noted interferences, by his failure to present such broader claims during the pendency of those interferences • • •.

With reference to the first of those reasons, the Board noted that Rule 131 is limited to overcoming a patent "which substantially shows and describes but does not claim" the rejected invention. It then stated:

> Comparing claim 24 of this application with claim 1 of Samfield et al. • • • [2,708,175] we find that claim 24 differs therefrom by omitting the statement that the composition is "suitable for smoking," it recites a composition "comprising" certain materials instead of "consisting of" those materials, the ranges of moisture content and galactomannan are wider in claim 24, and the range of sizes of the tobacco is recited, whereas the patent claim omits any size limitation. The same materials are recited in both present claim 24 and the patent claim, and while the word "comprising" indicates that the composition *may* have other ingredients therein, the same materials are spelled out in both claims. The use of the word "comprising" instead of "consisting of" and the variation in the ranges and sizes of the materials used, as recited in these claims, merely constitute differences in scope between the claim of this application and the claim 1 of the patent and hence the patent and the application are claiming the same invention. Since the patent and the application are claiming the same invention, although the claims differ in scope, we agree with the Examiner that Rule 131, Rules of Practice, is not the proper remedy to overcome the Samfield et al. patents, and the Samfield et al. patents are proper references for everything disclosed therein, since these patents were the winning parties in the above noted interferences with appellant. The question of patentability between parties claiming the same subject matter can be determined only by interferences.
>
> We have carefully considered the rejection of claims 24 through 36, and 38 through 40 on the references as set forth • • • [in] the answer and we agree with the Examiner's rejections as there set forth, and for the reasons there stated. • • •

[2] 1101.02B of M.P.E.P., 2nd ed., reads in part:

> B. In some cases, the disclosure in the application, although for the same invention in fact as the patent claim, is somewhat broader than the claim of the patent. Under such circumstances, in initially declaring the interference the applicant should be required to make the exact patent claim and the interference should be declared on that claim. However, if the applicant presents and prosecutes a motion to substitute a broader count and, in connection with such a motion, makes a satisfactory showing, as by demonstrating that his best evidence lies outside the exact limit of the patent claim, the applicant may be permitted to substitute a count wherein language based upon his slightly broader disclosure replaces the corresponding limitation in the patent claim. In redeclaring the interference, the application claim should be used as the count of the interference and it should be indicated that the claim in the patent corresponds substantially to the interference count.

Specifically with respect to the question of "estoppel" arising out of the interference, the Board stated that admittedly there are some situations in which a losing party to an interference may be entitled to broader claims than the winning party but held the present case not to constitute such a situation. It pointed to section 1101.02B, M.P.E.P. as available where the applicant in interference can make a satisfactory showing as by demonstrating that his best evidence lies outside the exact limit of the patent claim. It considered the decision of the District Court in the first interference, *American Machine & Foundry Company* v. *Liggett & Myers Tobacco Co.*, 172 F. Supp. 12, 121 USPQ 133 (D.C.N.J. 1959), *aff'd.* 272 F.2d 451, 123 USPQ 396 (3rd Cir. 1959), and stated):

> • • • In that decision, the court held that in all runs or procedures except the one designated as "the ferrotype run," all adhesive mixtures contained non-tobacco additives not disclosed in the canceled claims of the present application which were then before the court as counts of Interference No. 87,744. See page 138, column 1 of 121 USPQ • • •. The counts being considered by the court defined a composition "consisting of" certain materials, but since all of the runs except the ferrotype run included other materials which, according to the testimony, materially affected the locus bean gum, an element of the claimed composition, the court held that those other runs were not within the counts which were limited to the specific materials named. It is therefore apparent that appellant had proof available to support claims such as those now on appeal which are not limited to the specific materials of the counts of the previous interferences, since the claims on appeal recite a composition, or method of making a composition "comprising" the named materials and hence not specifically limited to those materials. Therefore the broader claims now on appeal appear to be susceptible of proof by evidence outside the limit of the patent claims involved in the interference, and therefore appellant should have availed himself of the procedure as set forth in the section of the manual above referred to, whereby the question of who was entitled to the broader claims such as now presented could have been determined during the previous interferences.

The Board agreed with the Examiner's application of the *Derleth* case here and affirmed the rejection of claims 24, 25, 30 and 32 to 36 on the ground of estoppel stating:

> We consider claims 24, 25, 30 and 32 through 36 as being drawn to the same invention as were the counts in Interferences 87,744 and 89,623, were fully supported by the disclosures in the Samfield et al. applications, and differ from the counts by being broader in scope only, and the patentability to appellant of the broader claims should have been determined in the previous interference.

The Board did not affirm the rejection of claims 26 to 29, 31 and 38 to 40 on that basis, however. It held that claims 26 to 29 and 31 include specific materials not disclosed in Samfield et al. It further noted that claims 38, 39 and 40 are drawn to a method and stated that they "could not have been included in the previous interferences because Samfield et al. did not include any claims to the method of making the product, and hence the method did not find support in Samfield et al."

Appellant argues in his brief that "there is no rejection in this case on the ground of estoppel," apparently basing that argument on the contention that estoppel was discussed in the final rejection only in considering the case of the Samfield et al. patents as proper references. However, he states that the Board's decision "rests on two principal grounds," describing the second as being "that appellant is estopped from urging allowability to him of the rejected claims by reason of his failure to present such claims during the pendency of the two interferences." Also, appellant specifically acknowledges a rejection on estoppel in the reasons of appeal numbered 12 and 13, the former charging that the Board "erred in affirming the decision of the Examiner that applicant is estopped from urging the allowability to him of claims that are broader than the counts of the interferences in which this application was involved."

We think it clear from the detailed discussion above of the Examiner's answer and the Board's decision that both relied on an "estoppel" corresponding to that found by this court in the *Derleth* case. Appellant could not have been unaware of such position and apparently felt he had ample opportunity to respond to it since the record does not show that he took action to file a reply brief or obtain reconsideration by the Board. Before us, appellant has fully briefed the rejection on that ground.

Determination of the merits of that rejection requires consideration of the differences between claims 24, 25, 30, and 32 through 36, involved herein, and the interference counts, particularly those of No. 87,744, the interference with the original Samfield et al. patent. Count 1 of that interference set out hereinabove, calls for a composition "consisting" of a plant gum consisting essentially of galactomannan, moisture, and "the balance essentially all" dry-ground tobacco. Count 2 defines the composition as "consisting" of locust bean gum, moisture and "the balance essentially all" dry-ground tobacco. The District Court held that, because of the expressions using "consisting" and "essentially" as quoted, were not open to the inclusion of other additives which materially affect the characteristics of the composition. The court found that glyoxal and glassine paper fiber, included in certain runs relied on by appellant for reduction to practice prior to the Samfield et al. filing date did affect the characteristics of the product so as to exclude those runs from the counts.

Appealed claims 24, 30 and 32 through 36 call for a composition "comprising" ground tobacco and galactomannan plant gum or a smoking article made from such a composition. Claim 25 calls for a composition according to claim 24 in which the plant gum comprises locust bean gum, a particular gum named in the Samfield et al. patents as well as in the present application. Appellant, as well as the Examiner and Board, have treated those claims as generic, dominating the interference counts awarded to Samfield et al. as well as

other appealed claims which include additional ingredients that the District Court found to affect the characteristics of the composition.

The situation here is closely analogous to that in the *Derleth* case. As in *Derleth*, appellant here was informed in the letter declaring Interference No. 87,744 that certain claims in his application, including an article claim which is clearly *broader* than the counts in the use of the term "comprising" [3] would be held subject to rejection as unpatentable over the issue in the event of an award of priority adverse to him. Also appellant took no action during the pendency of the interference to make known any disagreement with that holding. In particular, appellant did not take action under the procedure of M.P.E.P., section 1101.02B, to place a claim to broader subject matter in issue by demonstrating that his best evidence lies outside the terms of the Samfield et al. patent claims constituting the counts.

[1] Appellant urges that procedure was not available because the difference between the broader claims he now seeks and the interference issue is not merely a difference in scope but was held by the District Court to be a patentable distinction. That latter contention is clearly erroneous. The District Court merely ruled that compositions of appellant which included an additive excluded from the interference counts through their use of "consisting" and "essentially" did not fall within the terms of those counts. The court made no ruling that a patentable difference is involved. The composition claims here define a composition or mixture made up of a plurality of component materials.[4] Neither they nor the counts of the interference define the subject matter as involving a chemical reaction between the component materials. Thus the difference that results from the use of the term "comprising" in the appealed composition claims and the terms "consisting" and "essentially" in the counts is merely a matter of scope in a mechanical mixture and not a matter of chemical genus and species relationship.

[2] For the same reasons as in the *Derleth* case, we think the patentees Samfield et al., who won the interference, were not called upon to introduce the broader subject matter by reissue to protect the rights they might have therein. Although the present proceeding is what is termed "ex parte" with Samfield et al. having no right to be heard, obviously it is actually the direct outgrowth of the interferences and the outcome as to the claims to broader subject matter affects the position of Samfield et al. Allowance of those claims would render the lengthy interference proceedings ineffective to determine the basic rights of the parties. Consistent with our decision in the *Derleth* case, we hold appellant is barred from obtaining claims 24, 25, 30 and 32 through 36 by his failure to take the opportunity available to him to prove priority as to them in the interferences.

The decisions relied on by appellant are clearly distinguishable from the present case on the facts. Thus, *Ex parte Des Rosiers*, 17 USPQ 272 (Bd. App. 1933) was clearly distinguished in *Derleth* where this court pointed out that it did not appear in the former

[3] The claim in question reads:

8. A self supporting continuous tobacco sheet material comprising a substantially water insoluble locust bean gum film, forming a matrix for finely divided tobacco particles mingled therewith.

[4] Appellant states in his brief:

A further issue is whether an applicant who has proved prior reduction to practice of a number of species of a *mechanical mixture* is entitled to claims to those species and to the genus, despite his having lost an interference with a patent involving a different patentably distinct species. • • • [Emphasis ours.]

case that there was a holding during the interference that claims dominating the counts would be held subject to the outcome of the interference.

In the case of *In re Long*, 23 CCPA 1078, 83 F.2d 458, 29 USPQ 359, dominating claims were allowed to the losing party in an interference on the basis of a situation entirely different from that here. There the record showed that Long's claims to the broad subject matter involved in the appeal stood allowed to him from the first action in the appealed application and that all parties to the three party interference recognized that both of Long's opponents had, either expressly or by their conduct, "disclaimed inventorship and waived any right to any claim of inventorship in said broad subject matter."

Another decision cited by appellant is *In re Henderson*, 50 App. D.C. 191, 269 Fed. 707 (D.C. Cir. 1921) which he attempts to distinguish. There an applicant who lost an interference with a patentee sought claims dominating the interference counts. The court noted that Henderson did not present the broader claims until after the time within which his opponent could have sought broader claims by reissue and held as a result that he was barred from obtaining them in subsequent ex parte proceedings. Appellant urges that the present case differs from the *Henderson* situation because the Samfield et al. disclosure would not have supported the present claims and because Samfield et al. knew from inspection of appellant's case that appellant disclosed and claimed a broader invention. As to the first contention, we have already concluded that Samfield et al. has support for the subject matter of claims 24, 25, 30 and 32 through 36. With respect to the second contention, the Solicitor points out in the brief for the Commissioner:

> Of the original claims, only claims 1 through 13 and 20 are product claims. Of these only claims 1, 4 through 7, and 20 are drawn generically to "galactomannan" gum rather than to species such as "locust bean gum." All of these "galactomannan" claims recite the term "consisting" and/or "consisting essentially of." Original claims 3 and 8 through 13 are drawn to the species "locust bean gum." None of these original product claims (including claims 1 and 3 corresponding to the counts of the first interference) is as broad as the appealed "galactomannan" and "comprising" claims 24, 30, and 32 through 36 presented for the first time after the first interference was terminated in the Patent Office and after it was too late for the patentees to obtain broadened reissue claims. • • •

Thus appellant at the time of the interference, was not seeking any product claims as broad as claims 24, 25, 30 and 32–36 as to both the terms "comprising" and "galactomannan." Therefore, the *Henderson* case gives additional support to the rejection of those claims.

For the foregoing reasons, we are satisfied that the Board correctly held claims 24, 25, 30 and 32 through 36 to be unpatentable to appellant on the basis of his failure to present them for adjudication in the interference.

In view of our conclusion that the rejection of claims 24, 25, 30 and 32 through 36 must be affirmed on the basis of the estoppel rejection, the other rejection as unpatentable over one or both Samfield et al. patents, either alone or in view of second references will be considered only with respect to remaining claims 26 through 29, 31 and 38 through 40. Both the Examiner and the Board considered to be inapplicable an affidavit under Rule 131 filed by appellant in an effort to antedate the Samfield et al. patents, the Board stating

that the "patent and the application are claiming the same invention, although the claims differ in scope." The Board further stated:

> • • • The Samfield et al. patents *are proper references for everything disclosed therein*, since these patents were the winning parties in the above noted interferences with appellant. • • • [Emphasis ours.]

It was also stated by the Board:

> • • • Appellant has not pointed out wherein the appealed claims are not readable on the subject matter described by the Samfield et al. patents by themselves or taken with the secondary references, substantially his whole argument in his brief and reply brief being directed to the question as to whether broad claims should have been included in the previous interferences.

The rejection utilizing Samfield et al. as references thus is not based on reliance on the claims as counts which formed the issue of the interference or on such disclosure as corresponds to the counts. Instead, it clearly is a rejection on prior art with those patents relied on as proper references (prior art) for "everything disclosed therein."

There are decisions, of which *In re Boileau*, 35 CCPA 727, 163 F.2d 562, 75 USPQ 88, and *In re Gregg*, 44 CCPA 904, 244 F.2d 316, 113 USPQ 526, are exemplary, which in effect treat the disclosure of a winning party involved in interference as an applicant as constituting prior art against the losing party, subject to combination with other prior art to reject claims in the losing party's application. We also note that M.P.E.P. 1109.02 states:

> Except as noted in the next paragraph (judgment based solely on ancillary matters), any remaining claims in each defeated party's case should be reviewed in connection with the winning party's disclosure. Any claim in a losing party's case not patentable over the winning party's disclosure, either by itself or in conjunction with art, should be rejected. • • • However, a losing applicant may avoid a rejection based on *unclaimed* disclosure of a winning *patentee*. • • •

Samfield et al. having been involved in the interferences as patentees, it is the last sentence quoted above that is pertinent here. As the Board recognized in reversing what it termed the estoppel rejection of the claims now under consideration, claims 26 through 29 and 31 include specific materials not disclosed by Samfield et al. and claims 38 through 40 are drawn to a process whereas the Samfield et al. patents do not include any process claims. The Board further recognized that those claims could not have been included in the interference. Thus appellant has not had the opportunity to prove priority as to everything disclosed in the patents but only to such subject matter as is claimed therein or might have been substituted under the procedure of M.P.E.P. section 1101.02B, discussed hereinabove.

[3] The situation here thus differs from that where, as in the *Boileau* and *Gregg* cases, supra, the interference was between applications and both parties had the opportunity to put any common patentable subject matter in issue. Certainly a party losing an interference to a patentee cannot properly be denied a chance to overcome the disclosure of the patentee as to subject matter which does not correspond to the issue of the interference or as to which he is not subject to an estoppel arising from the interference. The Examiner and the Board, in holding the Rule 131 affidavit inapplicable here, have refused to consider whether the affidavit does in fact overcome the Samfield et al. disclosures as to subject matter which the interferences did not preclude appellant from claiming. That was clearly error. We are therefore obliged to reverse the rejection of claims 26 through 29, 31 and 38 through 40 and remand the case for considera-

tion of the effect of the affidavit under Rule 131 in conformity with our views as expressed herein.

The decision of the Board of Appeals is affirmed as to claims 24, 25, 30 and 32 through 36 and is reversed and the case remanded as to claims 26 through 29, 31 and 38 through 40.

MODIFIED AND REMANDED.

ALMOND, *J.*, concurs in the result.

SMITH, *J.*, dissenting in part.

The majority holds that estoppel exists against appellant as to claims 24, 25, 30 and 32 through 36. I cannot agree, for a number of reasons.

First, it is not at all clear from the majority opinion precisely *what it is* that appellant is thought to be estopped from doing with respect to those claims. The majority opinion implies, and the Board specifically states, that "appellant is estopped from *now urging allowability* to him of claims that are broader than those involved in the above noted interferences." [Emphasis added.] This, of course, is simply not so. There is nothing in Title 35 of the United States Code which could be interpreted to deny an applicant the right to *present* and *argue for the allowability of* any claims he might desire. Thus, the only possible *fact* which appellant could be estopped from asserting (if an estoppel in fact exists) is that the date on which he made his invention is prior to the effective date of the Samfield references. In other words, he might be estopped to deny that the Samfield patents are *prior art* as against his claimed invention.

Second, and more importantly, I am unable in this case to find the elements of an estoppel in pais. Ballentine's Law Dictionary (2d ed. 1948) says this of estoppel in pais:

> A term properly applicable only to a class of legal estoppels which are not strictly estoppels of record or by deed. Such estoppels were rare and enforced some technical rule of law against the truth, and also against the justice and equity of the particular case. The terms estoppel in pais and equitable estoppel are now generally used interchangeably as applicable to all estoppels which are not those by record or by deed. 19 Am Jur 633.

The same work defines "equitable estoppel" as

> An estoppel whereby a person is held to a representation made or a position assumed, where otherwise inequitable consequences would result to another who, having the right to do so under all the circumstances of the case, has, in good faith, relied thereon. 19 Am Jur 634.

Along the same lines, Black's Law Dictionary (3d ed. 1933) says:

> • • • An "estoppel in pais" arises whenever one, by his conduct, affirmative or negative, intentionally or through culpable negligence induces another to believe and have confidence in certain material facts, and the latter, having the right to do so relies and acts thereon, and is, as a reasonable and inevitable consequence, misled to his injury. • • • The term "estoppel in pais" includes estoppel by conduct, laches, negligence, and all other estoppels not arising from record, deed, or written contract; which forms of estoppel are also generally called "equitable estoppel," not because they are recognized as peculiar to equitable tribunals, but because arising upon facts rendering their application in the protection of rights equitable and just, which doctrine is recognized in courts of common law as well as in courts of equity. • • •

And, under "equitable estoppel":

> • • • "Equitable estoppel" is the effect of the voluntary conduct of a party whereby he is absolutely precluded, both at law and in equity, from asserting rights which might perhaps have otherwise existed either of property, of contract, or of remedy, as against another person who has in good faith relied upon such conduct and has been led thereby to change his position for the worse, and who on his part acquires some corresponding right, either of property, contract, or remedy. • • •

When viewed dispassionately, in the cold light of established legal doctrine, it is at once apparent that the facts of the instant case do not make out an estoppel in pais. The element most conspicuously absent is detrimental reliance on the part of the party to whom the representation was made or toward whom the conduct was directed. The opposing "party" in *this* case is, of course, the Patent Office, and it is difficult to see how that agency has been induced by any representations or conduct of appellant to assume a detrimental position in reliance thereon. Indeed, it is doubtful that any of the acts of appellant could be said to have been a "representation," although it is *arguable* that his failure to move to have the broader claims made an issue of the interference could be considered as evidence of an intent to abandon his hope of securing patent protection for them. But even this is sheer speculation.

The only party who could *possibly* be said to have a right to assert an estoppel against appellant is Samfield, as opposing party in the previous interferences. Thus, if the instant case were an inter partes matter, involving a priority contest between appellant and Samfield, perhaps Samfield might have some tenable basis for asserting an estoppel. But this begins to sound like an estoppel in the res judicata sense, wherein the parties are precluded from relitigating matters that *were* or *could have* been decided in an earlier contest between them. And indeed, the case from which much of the so-called doctrine of *estoppel in pais* seems to spring, *Blackford* v. *Wilder*, 28 App. D.C. 535 (1907), rests its decision squarely on the basis of *res judicata*. As the court there stated:

> To sum up: The parties are the same. The applications are the same, and disclose the invention of each issue. The constructions relied on, respectively, as evidencing conception and reduction to practice of the invention of both issues are the same. The fundamental facts of both cases are the same. Applying the well-settled principle of *estoppel by judgment*, before stated, it follows inevitably that the final decision in the first interference is conclusive, unless it can be made to appear that the question upon which the determination of the second case rests is one that *neither was nor could have been presented and determined in the first case*. [Emphasis added.]

Here, the parties are not the same, and it has not been determined that "the question upon which the determination of" the present case rests could have been presented in the previous interferences between appellant and Samfield.

Unfortunately, the long line of cases in this court which have expounded the doctrine of estoppel in pais have all too frequently placed heavy reliance on *Blackford* v. *Wilder* without seeming to recognize the limitations of that decision. Thus, in *In re Rhodes*, 23 CCPA 816, 80 F.2d 525, 28 USPQ 75, we find the court relying upon *Blackford* v. *Wilder* in a situation where, as in the instant case, the parties (appellant and Patent Office) were *not* the same as those involved in the previous interference proceeding. The decisions of this court seem to have subtly shifted from the true rule of res judicata annunciated in *Blackford* v. *Wilder*, to a sort of hybrid "estoppel" which meets neither the requisites of res judicata nor estoppel in pais. In *In re Sommer*, 19 CCPA 1030, 56 F.2d 893, 12 USPQ 452, one of the first cases to rely upon *Blackford* v. *Wilder*, the court indicated

tract, or of remedy, as against another person who has in good faith relied upon such conduct and has been led thereby to change his position for the worse, and who on his part acquires some corresponding right, either of property, contract, or remedy. * * *

When viewed dispassionately, in the cold light of established legal doctrine, it is at once apparent that the facts of the instant case do not make out an estoppel in pais. The element most conspicuously absent is detrimental reliance on the part of the party to whom the representation was made or toward whom the conduct was directed. The opposing "party" in *this* case is, of course, the Patent Office, and it is difficult to see how that agency has been induced by any representations or conduct of appellant to assume a detrimental position in reliance thereon. Indeed, it is doubtful that any of the acts of appellant could be said to have been a "representation," although it is *arguable* that his failure to move to have the broader claims made an issue of the interference could be considered as evidence of an intent to abandon his hope of securing patent protection for them. But even this is sheer speculation.

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approval of the doctrine of *res judicata*, without mentioning, however, that the elements of res judicata were not fully met due to the fact that the same parties were not involved. However, in an even earlier case, *In re Austin*, 17 CCPA 1202, 40 F.2d 756, 5 USPQ 285, the court was already talking in terms of "estoppel" with little regard to whether the *elements* of an estoppel had actually been made out. Thus:

> • • • if a party to an interference fails to comply with the rules of the Patent Office relative to the presentation of • • • claims [counts], it is thereafter estopped from presenting them as a basis for another interference between the same parties. • • •

One could hardly deny that there is a long line of cases which have consistently used the term "estoppel" in connection with an applicant's right to present, in an ex parte context, claims which were not put in issue in a previous interference between the applicant and another. I have endeavored to show that in such situations there exists no basis for a true estoppel in pais, nor is there ground for application of the doctrine of res judicata. What, then, do these cases really hold? As far as I have been able to determine, they annunciate a sound judicial policy: Where claims *clearly* could have been put in issue in a previously adjudicated interference proceeding, an applicant should not normally be allowed such claims in a subsequent ex parte proceeding. The reported decisions can be rationalized on no other basis. There is no estoppel in pais, no res judicata. There is simply the judicial determination that it is in the best interests of fairness to the opposing party in the interference, of conservation of judicial and administrative time and energy, and of protection of the public from the obvious evils of interfering patent claims, that the applicant, as to such claims, should not have a second day in court. As Judge Bland said in his concurring opinion in the *Rhodes* case, supra:

> I concur in the decision of the majority on account of the use of the word "clearly" in the phrase "and presumably knew that the involved invention was clearly disclosed therein."
>
> • • • • • • •
>
> The so-called doctrine of estoppel is a harsh one and not favored by the courts. Nevertheless, the Patent Office and the courts have found it a wholesome one to apply where the party to which the estoppel is applied neglected or refused to contest priority on a part of the inventive subject matter in his adversary's application.
>
> • • • • • • •
>
> One should not be held to be in an inequitable position who has failed to present a claim of priority in that which would ordinarily be overlooked by a diligent, capable patent interference litigant.

So the ultimate question in this case, as I see it, is *could* the issue of priority with respect to appellant's present claims 24, 25, 30 and 32–36 *clearly* have been determined in the previous interferences? It is my view that it is not at all clear that such issue could have been decided in the interference proceedings.

The decision of the majority appears to rest on the ground that appealed claims 24, 25, 30 and 32–36 are directed to the *same invention* as the counts of the Samfield interferences, the differences being merely of scope. I most emphatically disagree. For one thing, if the claims and the counts are directed to the *same invention*, then why were not appellant's proofs regarding compositions which included additional additives accepted as showing reduction to practice of the

counts, in the district court in the first interference? Consider what the district court said in this regard (121 USPQ at 138):

> • • • if any of the undisclosed additives materially affect the basic and novel characteristics of the MTS made from all runs except the ferrotype, Dr. Bandel's composition is not within the teaching of the counts, at least as to those runs.
>
> Tests established that glassine increased the tensile strength of the MTS fourfold. Glyoxal increased the water resistancy of the sheet. Cigarette paper fiber which also increased tensile strength was used as an economic filler.
>
> More crucial is Dr. Bandel's own testimony on cross-examination that glyoxal "cross-links the adhesive chains, the molecules in the adhesive chains," a process which he analogized to the vulcanization of rubber. • • •
>
> It is clear from this testimony that the locust bean gum was materially affected by these substances • • •.

In view of the foregoing, I have great difficulty in understanding how it can be said that claims 24, 25, 30 and 32–36 are claiming the *same* invention as the interference counts. Claims cannot be read in a vacuum; and when those claims are read in light of appellant's specification, it is apparent that the word "comprising" contemplates the addition to the composition of at least two specific components, glyoxal and paper pulp, the very materials which the district court held "materially affected" the resultant composition.

While, in the traditional sense, those claims can properly be said to be "broader" than the interference counts, in a very real sense they are much narrower, for the specification makes it quite clear that the word "comprising" is in the claims for the sole purpose of permitting inclusion of glyoxal and paper pulp. Moreover, I cannot believe that the words "somewhat broader" and "slightly broader," as used in section 1101.02B of MPEP, are meant to cover differences of the magnitude that exists between those claims and the interference counts.

In short, I feel that there was very probably a patentable distinction between the interference counts and claims 24, 25, 30 and 32–36. At any rate, it certainly was not *clear* that there was *not* such a distinction. I wish to point out that strict application of the so-called doctrine of "estoppel" tends to put a tremendous burden on an applicant who wishes to protect his priority rights to all subject matter to which he is lawfully entitled. First, he must be able to tell, once and for all, *precisely* what subject matter is *adequately supported* by the disclosures of *both* parties to the interference. Second, he must be able to tell whether any of that subject matter is *patentably distinct* from existing interference counts. And he *must* be correct, upon pain of losing any rights he might have to subject matter concerning which he is in error. This seems to me a very unrealistic set of requirements to impose upon an applicant who becomes involved in an interference, since the questions of patentable distinction and support are among the most difficult in patent law. I repeat again, it is only where the issue *clearly* could have been decided in the interference that an applicant should be precluded from having a determination of priority made in a subsequent ex parte case.

In considering the record, I have not found any indication that the Board ever seriously considered the question of patentable distinction between claims 24, 25, 30 and 32–36 and the interference counts. The Board merely said that since they "differ from each other only in scope, we fail to see wherein the broader claims before us are patentably distinct from the more narrow claims which formed

the counts of the interferences." No reasoning was set forth and no basis given for such a view. Since I am of the opinion that the Board must find that the claims and the counts were *clearly not* patentably distinct, I would remand for a determination of that issue.

I am in full agreement with the majority's handling of the remaining claims and I therefore concur in that portion of the decision.

U.S. Court of Customs and Patent Appeals

IN RE WILLIAM G. BAIRD, JR., CARL A. LINDSTROM, JR., ARTHUR L. BESSE, JR., AND DONALD J. D'ENTREMONT

No. 7445. Decided July 1, 1965, and August 20, 1965

[52 CCPA —; 348 F.2d 556; 146 USPQ 579]

1. APPEAL TO U.S. COURT OF CUSTOMS AND PATENT APPEALS—MATTER BEFORE COURT—COURT WILL NOT CONSIDER NEW GROUND OF REJECTION.

"He [the Solicitor] * * * refers to two prior art patents on the basis of which he argues that 'it would be obvious to omit the irradiation step of the patent claims.' We are disregarding this obviousness argument *based on prior art* since careful study of the two Board opinions and the relevant Examiner's answer reveals no argument that the omission would be obvious *on the basis of prior art*, in support of the double patenting rejection. This would be a new ground of rejection which the Solicitor will not be heard to make in this court."

2. PATENTABILITY—DOUBLE PATENTING—PROCESS—DIFFERENT INVENTIONS.

"In our view, the patent and the application do not claim the *same* invention. They claim two different inventions. The patent claims a method comprising, in claim 6, six steps, step (c) being irradiation. The other patent claims are similar and need not be separately analyzed. They all include irradiation. The application claims omit the irradiation step, whatever other similarities may exist, and hence the claimed method is *different*. It cannot be said that the method of steps ABCD is the *same* method or invention as one consisting only of steps ACD or ABD."

3. SAME—SAME—PATENT DISCLOSURE CAN BE CONSIDERED ONLY TO DETERMINE WHAT CLAIMED TERMS MEAN.

"The next question we must consider is whether the difference, due to the inclusion or omission of irradiation, is a difference adequate to warrant the issue of a second patent or, as it may otherwise be stated, whether the application claims are patentable over the *claims* of the patent. This problem may also be stated to be whether it would have been obvious to one of ordinary skill to modify the process of the patent claims by eliminating the irradiation step. In considering this question it must be carefully remembered that by reason of the copendency of the application at bar and the application for the patent, the patent disclosure is not 'prior art' and cannot be looked to for what it teaches. Under the *Greenlee* case [42 CCPA 926] it may be looked to to find out what the terms of the claims mean but that is all."

4. SAME—SAME—SAME.

"It appears to us that the Examiner and the Board came to the conclusion that the omission of irradiation in the stretch-orienting of polypropylene is a difference of no patentable significance, or an obvious omission, or a difference which did not make the application claims 'patentable over' the patent claims only on the basis of disclosure in, or knowledge gained from reading, the patent specification. * * * But it is not permissible to rest the legal conclusion on this issue on knowledge thus gained from what is not 'prior art.' The situation is indeed analogous to that in *In re Ruff*, 45 CCPA 1037, 256 F.2d 590, 118 USPQ 340 * * * in which case we held that equivalence *taught by an applicant* but not known to the art could not be used to reject his claims on the ground of equivalency with prior art. Here, in effect, the Patent Office position is that there is an equivalency in the method of processing irradiated and unirradiated polypropylene *because appellants discovered it and disclosed it in their patent specification.*"

5. SAME—SAME.

"* * * we note that the methods described and claimed in the appealed claims obtain no protection from any of the patent claims because, by well-established principles of patent law, omission of the irradiation step from the processes claimed in the patent would avoid infringement. It is equally true that the practice of any of the methods of the patent claims would not infringe any of the appealed claims because they are all so limited by the words 'consisting of' that inclusion of irradiation in the method would avoid infringement, according to the same principles."

6. APPEAL TO U.S. COURT OF CUSTOMS AND PATENT APPEALS—RECORD—ADDITIONS.

"We wish to make it clear that we will not knowingly deal with imaginary issues such as the patentability of canceled claims nor with rejections which the Patent Office has withdrawn, and that when the Solicitor is on notice of such situations we consider it to be his duty to move to make such additions to the record, in accordance with our rules, as may be necessary to show us what the facts are. This duty is not affected by the fact that the rules require appellants in the first instance to produce the record. Appellants are no more blest with perfection than is the Patent Office and so procedures are provided for adding to deficient records. We are not here to play games and we expect those procedures to be utilized to the end that we may make just decisions."

APPEAL from the Patent Office. Serial No. 817,246.

MODIFIED.

Alvin Guttag (*C. Edward Parker* of counsel) for appellants.

Clarence W. Moore (*Fred W. Sherling* of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, JR., *Associate Judges*

RICH, *J.*, delivered the opinion of the court.

This appeal is from the decision of the Board of Appeals of the Patent Office in application Serial No. 817,246, filed June 1, 1959, by Baird, Jr., Lindstrom, Jr., Besse, Jr., and D'Entremont for "Method of Treating Polypropylene."

The application at bar is stated to be a continuation-in-part of application Serial No. 713,848, filed February 7, 1958, by the same four inventors for "Method of Producing Film Having Improved Shrink Energy," now Patent No. 3,022,543, herein "Baird et al.," issued to W. R. Grace & Co., assignee, on February 27, 1962.

The Issues

This appeal presents three distinct issues: (1) double patenting in view of certain claims of Baird et al.; (2) the patentability of two claims over the following references:

Gerber, 2,862,234, December 2, 1958.

Diedrich et al., 2,961,711, November 29, 1960;

and (3) sufficiency of appellants' disclosure to support a group of claims copied, or substantially copied (under the practice authorized by *Ex parte Card and Card*, 1904 C.D. 383 (Com'r.); see MPEP 1101.02), from

Munt, 3,059,991, October 23, 1962.

Involved in the double patenting issue are claims 2, 3, 6–11, 13, 14, and 15. On the second issue only claims 32 and 33 are involved. On the third issue the abbreviated record and the briefs leave the situation in some confusion. Apparently, guessing from what the record shows, appellants inserted a group of copied or substantially copied claims numbered 16–33. The Examiner's final rejection rejects

claims "16–23" as "lacking basis in the disclosure." It also refers specifically, in the discussion, to claims 17, 18, 19, 25, and 27 and then to claims 23–33. It would appear that the Examiner intended to reject claims 16–33 as in his answer, following appeal to the Board, he said the appeal involved the right to make claims "16–33." The Board, in its opinion, made it clear beyond question that it was dealing with and affirming a rejection of claims 16–33 on the ground of lack of support.

The situation involves the further complication that the Board made a new ground of rejection under Rule 196(b), ground (1) supra, the applicants then went back to the Examiner under that rule, and took a second appeal to the Board from his action. The Board rendered a second decision but, before it did so, an appeal on claims 16–21 and 24 and raising only the sufficiency of disclosure issue had been taken to this court on December 30, 1963. After the second decision of the Board on other claims a second appeal was taken to this court on February 26, 1964. The latter appeal was stated in the notice of appeal to be an appeal on claims 2, 3, 6–11, 13–15, 32 and 33. At that time claims 32 and 33, as part of the claim group 16–33, were under rejection on all of the grounds (1), (2), and (3) above enumerated. The first appeal to this court makes no mention whatever of claims 32 and 33. The second appeal, while taken on these claims, along with eleven others, is very specific in pointing out the alleged errors of the Board and includes, in the seven reasons of appeal (numbered 11 through 16 in supplementation of reasons 1 through 9 of the first appeal), only matters relating to the prior art rejection, (2) above, and the double patenting rejection, (1) above. There is no reason of appeal which, by the most liberal construction, indicates in any way, even generally, that the Board erred in affirming the rejection of claims 32 and 33 for lack of support in appellants' specification, (3) above. It is therefore clear that appellants have not brought that ground of rejection before us by *any* reason of appeal. In addition, appellants have not argued *this* rejection in their brief insofar as claims 32 and 33 are concerned. That this is so is very clear from the facts that in reciting the "questions presented" those two claims are not included among those rejected for lack of support and in the "summary" they are not included among the claims as to which we are asked to reverse the lack of support rejection. Appellants argue the other two rejections of claims 32 and 33 but appear to have overlooked the fact they were rejected on the ground of lack of support.

When an Examiner's ground of rejection, affirmed by the Board, is not argued by the appellant, even if raised by an adequate reason of appeal, this court has uniformly pursued the policy of treating the issue as abandoned. *In re Krasnow*, 35 CCPA 939, 166 F.2d 196, 76 USPQ 567. See also *In re Gruschwitz*, 50 CCPA 1498, 320 F.2d 401, 138 USPQ 451, and cases cited in the appendix thereto. For this reason the rejection of claims 32 and 33 would have to be affirmed, one uncontested ground of rejection being sufficient to support such a holding. Anticlimactically, we will add that at the oral argument appellants' counsel advised that he was withdrawing claim 32 from the appeal.

We also add that the Patent Office brief argues throughout for affirmance of the rejection of claims "16–33" notwithstanding that, aside from the above facts respecting claims 32 and 33, appellants

never gave notice of appeal from the rejection of claims 22, 23, 25, 26, 27, 28, 29, 30, or 31 nor mentioned any of them in their brief which was served on the Patent Office. Lack of attention on the part of both parties to these annoying mechanical details of legal procedure has made much work for the court which should not have been necessary and should have been done by counsel long ago.

The foregoing disposition of claims 32 and 33 makes it unnecessary to consider issue (2), supra, or the two prior art patents involved in it. Left for consideration are the double patenting and lack of support issues which require an understanding of the invention.

The Invention

All claims are directed to a method or process of stretch orienting *polypropylene*. Material so made has various uses such as films for the wrapping of foods and other materials, shrinking bags, bottle caps, and boiling water-resistant containers, such as baby bottles. The stretch-oriented articles of the invention are said to have high shrink energy at temperatures above 145° C. with a percent shrink of from 20 to 60% but to have a low shrink percentage at 100° C. An illustrative use given in the parent patent is a bag made from tubing, placed around a turkey and shrunk around it by heating to form a packaged product. A general outline of the process as described in the parent patent is that *polyethylene* is heated and extruded into tubular form following which these four steps take place: (1) cooling to a low enough temperature to permit handling, which may be about room temperature, (2) *irradiating* at a dosage of at least 2×10^6 REP, (3) reheating the irradiated material enough so it will stretch without breaking and bilaterally stretching it by inflating it into a bubble, and (4) cooling in the stretched condition to a form-retaining temperature. Such material, when sufficiently reheated, shrinks as above indicated. The parent case, after describing the processing of polyethylene, says, "there can also be used in the process of the invention solid polypropylene" and certain other named polymeric materials not important here. The parent specification also states that the process can be applied to polyethylene with omission of the irradiation step and gives a specific example of such a process. There follows the statement that "With polypropylene it has surprisingly been found that high shrink energy can be imparted without the use of irradiation and with only racking [the inflating step after reheating the extruded article] although both hot blowing [upon extrusion] and racking can be employed if desired." There is then given "Example C" which is identical with "Example 1" of the application at bar and describes the processing of polypropylene by extruding a tube with simultaneous longitudinal stretch, cooling, reheating in a hot bath from which the tubing emerges in the form of an enlarged bubble which produces bilateral stretching by reason of inflation, and cooling the stretched product.

The application at bar, as a continuation-in-part, appears to have been filed voluntarily about 16 months after the parent application, with which it was copending for about two years and eight months. It incorporates that part of the parent specification relating only to polypropylene and its bilateral or biaxial orientation *without* irradiation. An additional example has been added and perhaps other

data on details, not pointed out to us, which are not to be found in the patent.

While the Examiner pointed out in an argument that the application for the patent at one time contained a claim (not of record) directed to the orientation of polypropylene without irradiation, no such claim appears in the issued patent. Appellants' counsel asserts it to be his belief that it would have been improper to include claims to the processing of unirradiated polypropylene in the application with the processing of irradiated materials. In any event, he divided the claims between the two copending applications on the basis of including or excluding the irradiation step and prosecuted them simultaneously.

The Examiner made no double patenting rejection. A year and eight months after the patent issued, when the application at bar was on appeal to the Board on other rejections, the Board made it sua sponte. We turn now to its consideration.

The Double Patenting Rejection

This rejection stands against claims 2, 3, 6–11, 13–15, 32 and 33. It originated with the Board under Rule 196(b) in an opinion of October 31, 1963, and was based on claims 1, 6, and 7 of Baird et al. patent in view of claim 8 thereof. Under said rule, appellants appear to have elected reconsideration by the Examiner and then amended their claims to define the method as "consisting of" rather than "comprising" in order to meet one of the Board's arguments. Their purpose was to so word the claims as to exclude from the claimed method even the possibility of using irradiation. The Examiner rejected the thus amended claims on the ground of double patenting and they came back to the Board on a second appeal. In an opinion of February 19, 1964, the Board expressed complete agreement with the Examiner's double patenting rejection.

As outlined above, the Baird et al. patent specification describes the bilateral stretch orientation of polyethylene both with and without the step of irradiation. It would appear that with polyethylene irradiation is necessary to obtain good results. The patent also describes the same method applied to polypropylene, with or without irradiation, but with this material irradiation appears not to be important and, "surprisingly," good results are obtained without it.

The method *including* irradiation, as applied specifically to polypropylene, is claimed in patent claims 1, 6, and 7. In claim 1, polypropylene is one of a Markush group of polymeric materials to which the method can be applied. Claim 6 is specific to polypropylene and claim 7 depends therefrom. Claim 6 of the patent reads:

6. A method of producing polypropylene film having improved shrink energy comprising (*a*) continuously extruding a tube of the fused polypropylene, stretching the polypropylene while above room temperature in at least one direction, (*b*) cooling the tube, (*c*) irradiating the tube with electrons at a dosage of at least 2×10^6 REP, (*d*) heating the irradiated tube to a temperature of at least 65° C. while the tube is in a heating zone comprising a bath of an inert liquid, (*e*) introducing and maintaining gas pressure in said heated tube between constricting means and a pair of opposed pressure means in sufficient amount to fill the tube and establish internal pressure to distend the tube at least 100% in a lateral direction in the section of the tube immediately adjacent to the heating zone, and (*f*) acting on the tube by said opposed pressure means at a differential rate to stretch in tube at least 100% in a longitudinal direction, from 50 to 95% of the expansion of the tube taking place in the liquid, and cooling prior to release of stretching tension.

Attention is directed to step "(*c*)," irradiation, which is a limitation in each of the patent claims, including those directed to the treatment of polypropylene. It is the key factor in the double patenting issue. For comparison, claim 2 of the application follows and it will be seen that there is no irradiation step in it:

2. A method of producing biaxially oriented polypropylene consisting of heating polypropylene which has been stretched 50 to 500% longitudinally to a temperature of not lower than 25° C. below the crystalline melting point thereof and then simultaneously bilaterally stretch orienting the hot polypropyene and cooling prior to release of stretching tension, said bilateral stretch orienting being to an extent of 100 to 900% in each direction.

To summarize the views of the Board as stated in its two opinions, they are that the principal difference between the application and patent claims is the inclusion or omission of the irradiation step; that the *patent specification* teaches that step to be not essential to the method when polypropylene, as distinguished from polyethylene, is treated; that the *patent specification* contains specific examples directed to polypropylene which do not include irradiation; that it is proper to look to the specification to determine the significance of the irradiation step under *In re Greenlee*, 42 CCPA 926, 222 F.2d 739, 106 USPQ 104; and that omission of irradiation in the application claims does not render them claims to an invention separate from or patentably different from the patent claims, citing *Smith* v. *Kingsland*, 178 F.2d 26 (D.C. Cir. 1949), 82 USPQ 353.

[1] The Solicitor's brief goes further and asserts that "Since the irradiation step is unnecessary with polypropylene, the appealed claims are drawn to the same invention as the patent claims." He also refers to two prior art patents on the basis of which he argues that "it would be obvious to omit the irradiation step of the patent claims." We are disregarding this obviousness argument *based on prior art* since careful study of the two Board opinions and the relevant Examiner's answer reveals no argument that the omission would be obvious *on the basis of prior art*, in support of the double patenting rejection. This would be a new ground of rejection which the Solicitor will not be heard to make in this court.

[2] In our view, the patent and the application do not claim the *same* invention. They claim two different inventions. The patent claims a method comprising, in claim 6, six steps, step (*c*) being irradiation. The other patent claims are similar and need not be separately analyzed. They all include irradiation. The application claims omit the irradiation step, whatever other similarities may exist, and hence the claimed method is *different*. It cannot be said that the method of steps ABCD is the *same* method or invention as one consisting only of steps ACD or ABD. So much for the Solicitor's argument that the inventions claimed are the same. See *In re Zickendraht*, 50 CCPA 1529, 319 F.2d 225, 138 USPQ 22, attention being directed to the writer's concurring opinion which contains much of relevance to the instant case.

[3] The next question we must consider is whether the difference, due to the inclusion or omission of irradiation, is a difference adequate to warrant the issue of a second patent or, as it may otherwise be stated, whether the application claims are patentable over the *claims* of the patent. This problem may also be stated to be whether it would have been obvious to one of ordinary skill to modify the process of the patent claims by eliminating the irradiation step. In

considering this question it must be carefully remembered that by reason of the copendency of the application at bar and the application for the patent, the patent disclosure is not "prior art" and cannot be looked to for what it teaches. Under the *Greenlee* case it may be looked to to find out what the terms of the claims *mean* [1] but that is all.

[4] It appears to us that the Examiner and the Board came to the conclusion that the omission of irradiation in the stretch-orienting of polypropylene is a difference of no patentable significance, or an obvious omission, or a difference which did not make the application claims "patentable over" the patent claims only on the basis of disclosure in, or knowledge gained from reading, the patent specification. They thus came into possession not only of the knowledge on which the patent claims are based but of the knowledge on which the appealed claims are based. On this basis they became aware of the fact, not known to the art so far as the record shows, that irradiation is not essential to the method when applied to polypropylene, that analogous results are obtained with that material whether or not it is irradiated, and of the specific examples which are used to illustrate the method of the claims on appeal, which do not include irradiation. It is only on the basis of these facts that the conclusion was reached that omitting irradiation does not make a "patentable" difference. But it is not permissible to rest the legal conclusion on this issue on knowledge thus gained from what is not "prior art." The situation is indeed analogous to that in *In re Ruff*, 45 CCPA 1037, 256 F.2d 590, 118 USPQ 340, as alleged by appellants, in which case we held that equivalence *taught by an applicant* but not known to the art could not be used to reject his claims on the ground of equivalency with prior art. Here, in effect, the Patent Office position is that there is an equivalency in the method of processing irradiated and unirradiated polypropylene *because appellants discovered it and disclosed it in their patent specification.*

Once the *meaning* of the claims has become clear, if the disclosure of the patent specification is removed from consideration entirely, as it must be, no support remains for the arguments for double patenting and that rejection falls.

The Board twice relied on the case of *Smith* v. *Kingsland*, supra. While the opinion in that case seems to deal with "double patenting," a little study will show that it was not really a double patenting case at all, at least not of the type we have here where rejection is based on patented *claims* and the applications were *copending* so as not to be available as prior art references. We see no value in it as a precedent. The reference there was a patent previously issued to the applicant Smith on a tobacco barn heater very like what he was claiming, but his patent issued in 1936 and his appealed application was filed six years afterward in 1942. Patentability depended on the obviousness of omitting a screen from his patented structure and the patent specification, which had long been "prior art" in the public domain at the time he filed, expressly taught that use of the screen was optional. It is difficult to see why the court found it necessary to devote such a lengthy discussion to the problem of patentability or to discuss so many extraneous issues. It could have rested solely

[1] In that case the specification was considered to see what was meant by the expression in the claims "boron trifluoride catalyst(s)" and to determine whether it would include an addition product of boron trifluoride and an amine, in other words to find the *scope* of the patent claims, not the obviousness or essentiality of elements in claims of the application.

on its express finding early in the opinion that the claims "were anticipated in the specification of the patent granted in 1936." Of course, in that situation the entire specification of Smith's patent was open to consideration, but that is not the case here. The only "double" patenting aspect of the case is that the prior art reference was Smith's own patent, but it was true "prior art."

The Solicitor's brief makes the final argument that

> * * * the double patenting rejection is sound because appellants should not be allowed claims in a second patent which add nothing to the sum of useful knowledge. The process claimed by appellants is the same as that claimed by the Baird et al. patent, or at most an obvious modification thereof, and the appealed claims add nothing to the sum of useful knowledge.

It is not the function of *claims* to add to knowledge but rather to define the scope of patent monopolies. If we assume the Solicitor's intent was to use the term "claims" to mean *inventions*, then we have already pointed out that the premises underlying the conclusion lack factual foundation; the process claimed is not the *same* as that claimed in Baird et al. and it is not an *obvious* modification thereof. What has been added to the sum of useful knowledge here is the novel subject matter disclosed in the patent application which the Solicitor seems erroneously to assume we can regard as prior art against the application at bar notwithstanding the copendency. One reading only the patent *claims* will have a hard time finding out that one can omit the irradiation step from any or all of the methods claimed and still get a satisfactory product.

[5] Finally, we note that the methods described and claimed in the appealed claims obtain no protection from any of the patent claims because, by well-established principles of patent law, omission of the irradiation step from the processes claimed in the patent would avoid infringement. It is equally true that the practice of any of the methods of the patent claims would not infringe any of the appealed claims because they are all so limited by the words "consisting of" that inclusion of irradiation in the method would avoid infringement, according to the same principles.

The double patenting rejection is reversed.

The Insufficient Disclosure Rejection

The remaining claims against which the rejection based on lack of support stands are 16–21 and 24. They are copies or modified copies of claims of the Munt Patent No. 3,059,991. Appellants seek an interference. It is well to bear in mind the conditions to be met in copying claims for the purpose of invoking an interference as set forth in Patent Office Rule 205 (our emphasis):

> 205. *Interference with a patent; copying claims from patent.* (a) Before an interference will be declared with a patent, the applicant must present in his application, copies of all the claims of the patent *which also define his invention* and such claims *must be patentable in the application.* If claims cannot be properly presented in his application owing to the inclusion of an *immaterial* limitation or variation, an interference may be declared after copying the claims excluding such *immaterial* limitation or variation.

The position of the Patent Office is that there are material limitations in Munt's claims which do not find support in appellants' application. In some respects the situation varies from claim to claim and there are some limitations common to claims 16–21 and 24.

Munt discloses primarily a process of making brush bristles from isotactic polypropylene which is melt-extruded in the form of a

"filament," immediately quenched in a cooling bath, gradually reheated in an oven as the filament passes back and forth over rolls, stretched only longitudinally to several times the original length, again quenched and then stored on a reel. From the monofilament thus produced bristle lengths may be cut. One illustrated variant is the production of a ribbon or tape instead of a filament.

Claim 16 is a copy of Munt claim 1 and reads:

16. A method of making an oriented filamentary article of isotactic polypropylene which comprises melt extruding a filament of said polymer, immediately immersing and quenching said extruded filament in a bath of a nonsolvent liquid for said polymer at a temperature of from about 40° F. to at least as low as about 60° F., then heating said quenched filament to a temperature within its softening range and longitudinally stretching said heat-softened filament.

The Patent Office says appellants do not have support for the claim limitation to "filament" and we agree. Appellants have a somewhat tortuous and we believe fallacious argument to meet this objection, while practically admitting they do not disclose "filaments." They say some filaments are hollow, that there is an unofficial subclass, 18–54H, directed to them in the Patent Office search files, and they have extracted from that subclass 18 U.S. patents which they have included in the record. We will concede they show hollow filaments or threads for the textile art, but appellants disclose no such hollow filaments. They admit their application discloses tubing and the fact is that it is tubing of substantial diameter, from half an inch minimum when extruded to several feet when inflated for stretching. To practice their bilateral stretch process they must have a tube which they can inflate. No showing has been made of inflation of a filament or that it can be inflated. The argument is that though Munt concededly shows only solid filament, or ribbon, a filament can be hollow and thus be a tube and therefore appellants' disclosure of tubes is a disclosure of filament. The fallacy is clear; the false syllogism is that because *some* filaments are tubes therefore all tubes can be called "filaments." We reject the argument and hold that appellants' application lacks support for "filament" or "filamentary article." For like reasons we agree there is no support for "ribbon shaped" and "ribbon" in claims 19 and 21.

Claim 16, supra, and all others of this group, call for "immediately" quenching the melt-extruded article. If we construe this according to Munt's disclosure, it is clear that this step is performed in advance of the stretching step which he employs. Appellants' disclosure is that the melt-extruded tubing is substantially *stretched* immediately upon issuing from the extruder, notwithstanding it goes into a cooling bath. It is drawn down into the bath by driven rolls at a speed of withdrawal "usually 100 to 600% greater than the speed of the polymer at the [extrusion] die face * * *." In our opinion, appellants and Munt teach in opposite directions as to this initial phase of the process and appellants lack reasonable support for the "immediate" quenching step of the copied claims.

All claims under this rejection specify a first quench bath temperature range of "from about 40° F. to at least as low as about 60° F." or the equivalent. Munt has a specific reason for the 60° F. maximum. Above that quench temperature his *finished* bristle filaments curl. His 40° lower temperature range limit is a "practical" limit determined by the brittleness of the polypropylene at this stage. He has seen fit to limit his claims to this range. Appellants have not shown a basis for claiming this *range*. Appellants' brief states the alleged support to be in disclosure of quenching to a temperature between 0° and 80° C. (32° and 176° F.). This is clearly no support for the specific range taught and claimed by Munt and included in all copied claims. Neither is there support by reason of appellants' disclosure, in a specific example, of a specific temperature of 7° C. (44.6° F.). *In re Rodman*, 42 CCPA 951, 223 F.2d 281, 106 USPQ 142, *In re Draeger*, 32 CCPA 1217, 150 F.2d 572, 66 USPQ 247.

Upon review of the record, we are disposed to agree with the general statement of the Board, expressing agreement with the view of the Examiner, that the copied claims "are drawn to an invention different from that disclosed in the specification." The lack of support rejection of claims 16–21 and 24 will therefore be affirmed.

Conclusion

The appeal on claim 32, having been withdrawn, is *dismissed*.

The rejection of claim 33 on the ground of lack of support, not having been properly raised or argued, is *affirmed* for that reason.

The rejection of claims 16–21 and 24 on the ground of lack of support is *affirmed* on the merits.

The rejection of claims 2, 3, 6–11, and 13–15 on the ground of double patenting is *reversed*.

MODIFIED.

Supplemental Opinion on Appellants' Motion Relating to Claim 33

RICH, *J*.

After the handing down of our opinion in this appeal on July 1, 1965, appellants moved to have us clarify and, if necessary, reconsider our opinion and pass on the merits of the rejection of claim 33 on Gerber or Diedrich et al. With the motion there were filed certified copies of amendments of November 4, 8, and 13, 1963, and an office action of December 5, 1963, in response thereto, not previously of record.

The aforesaid office action is the Examiner's final rejection following the first decision of the Board of Appeals of October 31, 1963, wherein the new rejection was made and after which appellants elected to return to the Examiner under Rule 196(b). The amendments were part of that proceeding.

These papers from the file's history now belatedly establish to our satisfaction that the rejection of claim 33 on the ground of insufficient support, which we believed to be outstanding, was withdrawn by the Examiner in view of amendments to claim 33. This explains why appellants took no appeal from such rejection. It also necessitates withdrawal of our affirmance of such supposed rejection, since it did not exist when the appeal to this court was taken.

While we reiterate that it was the duty of counsel for *both* sides to have made these facts clear to us and to have made sure that a record sufficient to show the essential facts was before us prior to hearing, we are nevertheless unwilling to rest any part of our decision on a supposed fact situation shown not to exist. This belated supplementation of the record has made even more work for the court and

is not adequately excused by the statement that the omissions from the record were "inadvertent."

The Patent Office likewise was at fault in arguing, as we pointed out in our opinion, for affirmance of the rejection of claims 22, 23, and 25–31, though appellants took no appeal thereon, it now appearing from the added amendment that those claims had all been canceled prior to the first notice of appeal. The Solicitor should have taken appropriate steps to add to the record to show this fact instead of arguing non-existent issues. The prima facie discrepancies which we observe were sufficient to put him on notice. He had possession of the full record. We did not have.

In a memorandum on this motion, the Solicitor seeks to disclaim any responsibility for bringing before us the necessary parts of the record and suggests our adherence to an opinion predicated in part on what he now knows to be an erroneous view of the facts.

[6] We wish to make it clear that we will not knowingly deal with imaginary issues such as the patentability of canceled claims nor with rejections which the Patent Office has withdrawn, and that when the Solicitor is on notice of such situations we consider it to be his duty to move to make such additions to the record, in accordance with our rules, as may be necessary to show us what the facts are. This duty is not affected by the fact that the rules require appellants in the first instance to produce the record. Appellants are no more blest with perfection than is the Patent Office and so procedures are provided for adding to deficient records. We are not here to play games and we expect those procedures to be utilized to the end that we may make just decisions.

We now make the following disposition of claim 33:

1. Our affirmance of its non-existent rejection on the ground of lack of support is withdrawn.

2. We reaffirm the inclusion of claim 33 with those claims under rejection on ground (1), double patenting, and now expressly include it with the claims whose rejection on that ground is reversed.

3. Being now obliged to consider the rejection of claim 33 on Gerber or Diedrich et al., issue (2), we hold that those two prior art patents fail, singly or collectively, to render obvious, within the meaning of 35 U.S.C. 103, the process defined by claim 33.

4. In place of the affirmance of the rejection of claim 33 we substitute a reversal of its rejection. In all other respects our opinion and decision of July 1, 1965, are adhered to.

Chief Judge WORLEY took no part in the consideration or decision of this Supplemental opinion.

United States Court of Appeals
District of Columbia Circuit

WEMBLEY, INC. *v.* COMMISSIONER OF PATENTS OF THE UNITED STATES OF AMERICA

No. 19,201. Decided October 7, 1965

[— U.S.App.D.C. —; — F.2d —; —USPQ —]

1. MANDAMUS—POLICING OF INTERLOCUTORY RULING.

The conclusion of the Patent Office that Rule 13(a) of the Federal Rules of Civil Procedure did not apply to the pending cancellation proceeding involving appellant's trademark registration *Held* "interlocutory and not ripe for challenge in the courts."

2. SAME—SAME—ADMINISTRATIVE PROCEDURE ACT—5 U.S.C. § 1009(c).

"The Administrative Procedure Act * * * provides that preliminary, procedural or intermediate agency action or ruling, not directly reviewable, shall be subject to review upon review of the final agency action. 5 U.S.C. § 1009(c). While this does not state that the ruling here is preliminary, procedural or intermediate, it clearly appears to us to be so. For the court to move in by mandamus or like remedy to police such procedural rulings of an agency in the course of its proceeding would be quite contrary to the established norms of judicial review of agency action. We find no statutory or other basis for excepting this case from the established norms."

APPEAL from the United States District Court for the District of Columbia.

AFFIRMED.

Francis C. Browne, with whom *Richard G. Kline* was on the brief, for appellant.

Clarence W. Moore (*George C. Roeming* of counsel) for the Commissioner of Patents.

Before FAHY, WASHINGTON and LEVENTHAL, *Circuit Judges*

FAHY, *Circuit Judge*.

In the District Court appellant, Wembley, sued the Commissioner of Patents praying that the Commissioner, in a proceeding in the Patent Office, be compelled to comply with Rule 13(a), Fed. R. Civ. P.,[1] by reason of Rule 2.117(a)[2] of the Trademark Rules of Practice. The proceeding in the Patent Office is one in which the Diplomat Tie Company seeks cancellation of a trademark of Wembley. On motion of the Commissioner the District Court dismissed the complaint. [1] We affirm, deeming the ruling of the Patent Office interlocutory and not ripe for challenge in the courts.

The position of Wembley is that in the United States District Court for the District of Maryland, Diplomat previously had successfully defended an action by Wembley for trademark infringement and unfair competition. In defending the action, however, Diplomat had not counterclaimed for cancellation of Wembley's trademark and the District Court had not ordered cancellation of Wembley's registrations. When thereafter Diplomat filed proceedings against Wembley in the Patent Office seeking such cancellation Wembley claimed that Diplomat was foreclosed because it had failed to assert a counterclaim for cancellation in the earlier court action. Wembley contended that the counterclaim was compulsory under Rule 13(a), Fed. R. Civ. P., and since Diplomat failed to assert it or take other steps to compel the court to cancel the registrations the Commissioner was required, under Rule 2.117(a) of the Trademark Rules, to apply Rule 13(a), Fed. R. Civ. P., which it says would have resulted in dismissal of the proceedings.

The Trademark Trial and Appeal Board held that Rule 13(a) did not apply to such *inter partes* cancellation proceedings. Claiming that this was a refusal to rule on the merits of its motion, Wembley characterizes it as agency action reviewable in the District Court notwithstanding no final decision of the Commissioner had been reached in the cancellation proceedings.[3]

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[1] Rule 13(a) in part: *Compulsory Counterclaims.* A pleading shall state as a counterclaim any claim which at the time of serving the pleading the pleader has against any opposing party. . . .

[2] Rule 2.117(a) of Trademark Rules of Practice of the Patent Office, in part: Except as otherwise provided, procedure and practice in inter partes proceedings shall be governed by the Federal Rules of Civil Procedure wherever considered applicable and appropriate. . . .

[3] We think the ruling was on the merits of the question whether Rule 2.117(a) required Rule 13(a) to be applied.

[2] We are unable to accept Wembley's position. The Administrative Procedure Act, upon which Wembley relies, provides that preliminary, procedural or intermediate agency action or ruling, not directly reviewable, shall be subject to review upon review of the final agency action. 5 U.S.C. § 1009(c). While this does not state that the ruling here is preliminary, procedural or intermediate, it clearly appears to us to be so. For the court to move in by mandamus or like remedy to police such procedural rulings of an agency in the course of its proceeding would be quite contrary to the established norms of judicial review of agency action. We find no statutory or other basis for excepting this case from the established norms. *Union Oil Company of California* v. *Udall*, 110 U.S. App. D.C. 124, 289 F.2d 790, relying upon *Myers* v. *Bethlehem Shipbuilding Corp.*, 303 U.S. 41; and see *Chicago Automobile Trade Association, et al.* v. *Madden, et al.*, 328 F.2d 766; *Master, Wardens, Searchers, etc.* v. *Sheffield Steel Corp.*, 215 F.2d 285.

AFFIRMED.

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

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3,160,452, H. R. Rothman, HOT AND COLD FOOD SERVICE CART; **3,205,033**, B. E. Stents, TRAY SUPPORT AND THERMAL WALL FOR A HOT AND COLD FOOD SERVICE CART, filed Oct. 15, 1965, D.C. Del. (Wilmington), Doc. 3099, *S. Blickman, Inc.* v. *United Service Equipment Co., Inc.*

3,162,976, Beebe and Suchowski, DOLL, TOY FIGURE AND THE LIKE WITH AN ADJUSTABLE LOCK OF HAIR, filed Dec. 31, 1964, D.C., E.D.N.Y. (Brooklyn), Doc. 64C–1252, *American Character, Inc.* v. *Sunshine Doll, Inc.* Order of discontinuance Oct. 25, 1965.

3,199,196, Lieb and Turchi, DENTAL HANDPIECE, filed Oct. 14, 1965, D.C., E.D.N.Y. (Brooklyn), Doc. 65C–1060, *Star Dental Mfg. Co., Inc.* v. *Union Broach Co., Inc.*

3,200,945, J. D. Cota, BEAN SEPARATOR, filed Sept. 29, 1965, D.C., W.D. Wis. (Madison), Doc. C–65–117, *Hughes Company, Inc.* v. *Chisholm-Ryder Company, Inc.*

3,202,284, C. E. Wade, FILTER APPARATUS AND METHOD, filed Nov. 3, 1965, D.C., S.D. Calif. (Los Angeles), Doc. 65–1596–JWC, *CHD Pool Equipment, Inc.* v. *Swimrite, Inc.*

3,202,574, J. F. T. Berliner, GUAR SEED- BORIC ACID OR BORAX EMBALMING COMPOSITION AND METHOD, filed Oct. 21, 1965, D.C., N.D. Ill. (Chicago), Doc. 65c1751, *Moser Paper Company* v. *Frigid Fluid Company et al.*

3,205,663. (See 3,160,452.)

3,206,111, A. Grossman, CLOSURE WITH LONGITUDINALLY MOVABLE SASH, filed Sept. 28, 1965, D.C., S.D. Calif. (Los Angeles), Doc. 65–1423–HW, *Aluminum Extrusion Co.* v. *Soule Steel Co.*

3,213,581, A. J. Macchi, CONCRETE FLOOR AND CEILING SLAB CONSTRUCTION, filed Oct. 26, 1965, D.C. Conn. (New Haven), Doc. 11151, *Sonoco Products Company* v. *Anselmo J. Macchi et al.*

PLANT PATENTS

GRANTED DECEMBER 28, 1965

Illustrations for plant patents are usually in color and therefore it is not practicable to reproduce the drawing.

2,581
MAPLE TREE
John W. Ploetz, Monsey, N.Y., assignor to Mary Flagler Cary, New York, N.Y.
Filed Feb. 7, 1964, Ser. No. 343,427
1 Claim. (Cl. Plt.—51)

A new and distinct variety of maple tree, substantially as herein shown and described, characterized particularly as to novelty by the unique combination of extremely compact, dwarfish and slow habits of growth, a dense branching habit and perfect shape which requires little or no trimming or pruning, small leaves, a deep rooting habit, and good resistance to insects and common diseases to which regular sugar maple varieties are normally subject.

2,582
ROSE PLANT
Herbert Robinson, Burbage, Hinckley, England, assignor to Jackson & Perkins Company, Newark, N.Y., a corporation of New York
Filed Oct. 6, 1964, Ser. No. 402,043
1 Claim. (Cl. Plt.—18)

A new and distinct variety of rose plant of the hybrid tea class, substantially as herein shown and described, characterized particularly as to novelty by the unique combination of an upright habit of plant growth, a free blooming habit, with consequent greater abundance of flowers than the variety "Peace," a flower form similar to that of the variety "Peace," and a distincitive and attractive general color tonality of the flowers corresponding to Deep Rose Pink, lightly overcast with Rose Pink.

2,583
CATTLEYA ORCHID PLANT
Esmond B. Martin, Westbury, Long Island, N.Y.
Filed Oct. 6, 1964, Ser. No. 402,044
1 Claim. (Cl. Plt.—68)

A new and distinct variety of Cattleya orchid plant, substantially as herein shown and described, characterized particularly as to novelty by the unique combination of a large flower size, superior flower texture, excellent cut flower form similar to that of "White Empress," a flower substance and keeping qualities comparable to those of "Louise Georgiana," and a distinctive and attractive almost pure White flower color, with only a slight tint of Pale Yellow color in the throat of the flower which diminishes and substantially disappears as the flower ages.

2,584
SUGAR CANE PLANT
Leslie M. Weetman and Benjamin A. Bourne, Clewiston, Fla., assignors to United States Sugar Corporation, Clewiston, Fla., a corporation of Delaware
Filed Sept. 16, 1964, Ser. No. 397,044
1 Claim. (Cl. Plt.—89)

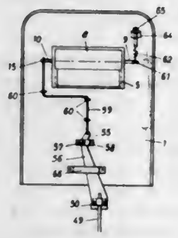
The new and distinct variety of sugar cane herein shown and described, identified by the combination of the characteristics enumerated above.

PATENTS

GRANTED DECEMBER 28, 1965

GENERAL AND MECHANICAL

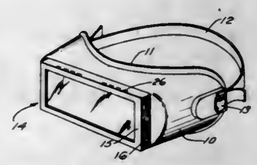
3,225,356
WELDER'S HELMET
Hans Burmeister, 2 Scharoldstrasse, Wurzburg, Germany
Filed Feb. 13, 1963, Ser. No. 258,326
Claims priority, application Germany, Feb. 19, 1962, B 66,011
4 Claims. (Cl. 2—8)



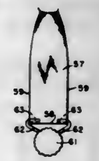
1. In a welder's helmet, in combination:
(a) a face shield formed with a sight opening, said shield having a terminal top portion and a terminal bottom portion;
(b) fastening means on said shield for fastening said top portion to the head of a wearer in a face protecting position in which the line of vision of the wearer passes through said sight opening;
(c) a cover mounted on said shield for movement toward and away from an operative position in which said cover extends transversely of said line of vision over at least a major portion of said opening, and an inoperative position;
(d) a two-armed lever member pivoted on said shield for angular movement about an axis extending substantially in the direction of said line of vision;
(e) motion transmitting means connecting one arm of said lever member to said cover for moving said cover between said positions thereof when said lever member pivots about said axis;
(f) a control member mounted on the other arm of said lever member for angular movement therewith about said axis and extending beyond said bottom portion a distance sufficient for engagement with the chest of the wearer when the latter lowers his head; and
(g) stop means engageable with said other arm for limiting said angular movement of said lever member,
(1) said stop means including detent means for releasably locking said other arm in a position in which said cover is in one of said positions thereof, and
(2) said other arm being movable in the direction of said axis for release from said detent means,
(3) whereby said cover may be moved from said one position to the other position thereof by the wearer lowering his head until the control member engages his chest, thereafter moving the head relative to the chest until the other arm of said lever member is released from said detent means, and then turning his head.

3,225,357
COVER PLATE FOR EYE PROTECTING DEVICE
Thomas Johnson, Providence, R.I., assignor to Welsh Manufacturing Company, a corporation of Rhode Island
Filed Mar. 22, 1963, Ser. No. 267,191
3 Claims. (Cl. 2—14)

1. A generally rectangular face shield of a width to cover both eyes of a wearer comprising a frame for retaining eye protecting means, a filter lens and a transparent cover plate therefor, both in a flat plane in said frame, said cover plate having integral projections of the same piece of material along its marginal edge extending toward the filter lens to space it from said filter lens, said projections having flat surfaces and being of substantial width presenting broad surfaces to the filter lens.



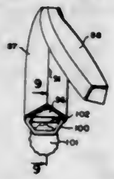
3,225,358
ARTICLE OF NECKWEAR WITH SUSPENDED ORNAMENT
Louis L. Less, Clinton, Iowa, assignor to One-in-Hand Tie Company, Clinton, Iowa, a partnership of Iowa
Original application Oct. 4, 1962, Ser. No. 228,378, now Patent No. 3,167,784, dated Feb. 2, 1965. Divided and this application May 20, 1964, Ser. No. 379,773
2 Claims. (Cl. 2—150)



1. An article of neckwear comprising, in combination
a necktie including a knot and a portion depending from said knot,
said depending portion terminating in a lower end which, when the tie is worn with said knot at the wearer's collar, is located at a point substantially less than half the distance from the top of the collar to the beltline of the average wearer,
said depending portion comprising at least two thicknesses of material defining an interior and an exterior and being provided with a plurality of apertures extending from said exterior into said interior adjacent said lower end; and
an ornament suspended from said lower end of said depending portion of said necktie, said ornament comprising
a medallion, and

attaching means secured to said medallion and ining means engaged in said apertures, whereby said medallion is suspended from said depending portion of said necktie.

3,225,359
NECKTIE WITH SUSPENDED ORNAMENT
Louis L. Less, Clinton, Iowa, assignor to One-in-Hand Tie Company, Clinton, Iowa, a partnership of Iowa
Original application Oct. 4, 1962, Ser. No. 228,378, now Patent No. 3,167,784, dated Feb. 2, 1965. Divided and this application May 20, 1964, Ser. No. 379,774
3 Claims. (Cl. 2—150)



1. In an article of neckwear, the combination of
a necktie comprising a body portion of necktie material which depends from the wearer's collar when the necktie is worn,
said body portion having a lower end including a tip portion which is substantially stiffer than the rest of said body portion;
retaining means carried by said body portion at the back thereof in a location immediately above said tip portion,
said retaining means defining two mutually adjacent tip-portion-retaining surfaces,
said tip portion being folded rearwardly and upwardly and engaged between said retaining surfaces;
an ornament; and
attaching means secured to said ornament and extending from said ornament into engagement in the fold between said tip portion and the adjacent material of said body portion.

3,225,360
SEAMLESS ARTICLE
John J. Keilen, Jr., Charleston, and George G. Browder, Jr., Charleston Heights, S.C., assignors to Charleston Rubber Company, Charleston, S.C., a corporation of Ohio
Filed Jan. 26, 1962, Ser. No. 168,951
8 Claims. (Cl. 2—167)



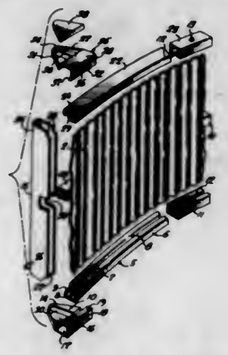
1. A seamless irregularly shaped article, such as a glove, composed of at least two layers each comprising a plurality of closely adhering superimposed films of an elastomer dispersion, said layers including like portions, and means confined between said portions of the layers and providing a lubricant to facilitate slippage of said portions of the layers relative to one another.

3,225,361
STRETCHABLE STRAW HAT
Meyer Meltzer, 135—33 223rd St., Laurelton, N.Y.; Charles Potash, 22 Oak Wood Terrace, Spring Valley, N.Y.; and Selig Potash, 3042 Clovermere Road, Wantagh, N.Y.
Filed June 22, 1964, Ser. No. 376,762
2 Claims. (Cl. 2—193)



2. In a method of producing a stretchable straw hat having a woven body comprising a crown and a brim and a binding, the steps of: trimming said brim and stitching said brim with a stitching needle, drawing said brim towards said stitching needle while said brim is being stitched, whereby the outer woven straws are compressed enabling the bias to be pushed back towards the middle of said body, binding said brim with a sewing needle, drawing said brim towards said sewing needle while said brim is being bound, dampening and blocking the said body before trimming, and moistening said brim and adjacent portion of said crown with water and then blocking said body, after binding.

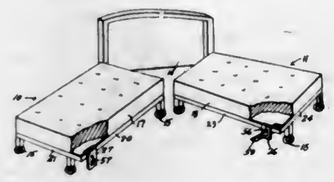
3,225,362
SECTIONAL ABOVE GROUND SWIMMING POOL CONSTRUCTION
Salvatore E. Barrera, Mountaintop, Pa., assignor to Muskin Manufacturing Co., Inc., Wilkes-Barre, Pa., a corporation of Pennsylvania
Filed Aug. 13, 1963, Ser. No. 301,790
9 Claims. (Cl. 4—172)



1. An above ground pool structure comprising, a peripheral base rail having a wall-receiving seat therealong, an endless wall having a bottom edge seatable in the base rail seat, a pool liner having an upper edge formed to fit over the top of the wall, a top rail seatable over the liner upper edge and the top of the wall, and means to interconnect the base and top rails including base rail slide connectors having a rail-engaging clip portion and an upright-seating box, the box having a socket therein, uprights seatable in the box sockets and having portions engageable with the box sockets to prevent movement of the uprights vertically when seated in the sockets, and top rail snap connectors having upright cap portions and top rail clip portions, the upright cap portions having openings to embrace the upper ends of the uprights with interengageable means on the upright cap portions and the uprights to hold the top snap connectors against vertical movement when seated on the uprights, and the top rail clip portions having means to snap over and lockingly engage the top rail.

3,225,363
FOOT-ACTUATED LATCH
Benjamin Kirsch, 418 3rd St., Elmont, N.Y.
Continuation of application Ser. No. 837,518, Sept. 1, 1959. This application Mar. 31, 1964, Ser. No. 356,177
5 Claims. (Cl. 5—55)

1. A latch for use with a pair of beds pivoted for relative movement about a vertical axis, said beds having a normally closed position wherein a horizontally elongated straight structural member of each bed extends paraller to and in spaced relationship with respect to a corresponding structural member of the other bed, said structural members being positioned at a predetermined fixed height above a floor, each of said structural members comprising an upwardly extending portion which terminates in a free edge, said beds being pivotable about said axis to an open position wherein said structural members diverge outwardly away from said axis, said latch comprising: a first plate member; first detachable fastening means for securing said first plate member to said structural member of one of said beds at a location spaced from said axis; a second plate member; second detachable fastening means for securing said second plate member to said structural member of the other bed, said plate members confronting each other within the space between said structural members with said beds in said closed position when said latch is operatively positioned on said beds, each of said plate members being



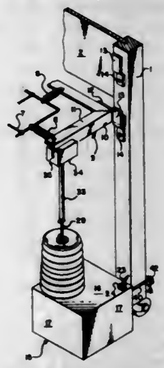
shaped to form a hook at its upper end portion, said hook being engageable with said free edge of the structural member to which it is fastened to hold said plate member simultaneously against downward displacement and against lateral displacement of said upper end portion with respect to its associated structural member when said latch is operatively positioned on said beds; a spring pressed latch member carried by said first plate member, said second plate member having an aperture formed therein for receiving said latch member to lock said plate members together with said beds in said closed position; and an actuator extending downwardly to provide a free end portion at a location spaced above the floor by a distance which is sufficiently small when said latch is operatively positioned on said beds to permit engagement of said free end portion by the foot of an operator by lateral displacement of the foot while the foot remains effectively in engagement with the floor, said actuator being carried by said first plate member and connected to release said latch member in response to said engagement with said foot for moving said beds to said open position.

3,225,364
TRANSFORMABLE MULTIPLE UTILITY COT
Jaime Ramonet Miret, Calle Mont-Ros 6, Barcelona, Spain
Original application Jan. 24, 1962, Ser. No. 168,476. Divided and this application July 9, 1963, Ser. No. 293,699
2 Claims. (Cl. 5—93)



1. A foldable and transformable piece of furniture comprising a pair of similar inverted rigid U-shaped members, a rectangular tubular frame consisting of two pairs of straight members with the members of each pair being of equal length and four symetrically curved tubular members with each end of each tubular member being telescopically inserted in one end of one of said straight members, one pair of said pairs of said straight members having each straight member thereof fixedly mounted on the base of one of said U-shaped members and pivotal about the curved members inserted therein, rods pivotally connected to the legs of said U-shaped members and each detachably connected to one of the other of said pairs of straight members and a rigid base detachably mounted on said straight members.

3,225,365
CRIB ROCKING DEVICE
Oscar Earle Miller and Jolyon E. Miller, Bellevue, Wash., assignors to Rock-A-Bye Company, a corporation of Washington
Filed Jan. 30, 1964, Ser. No. 341,248
8 Claims. (Cl. 5—109)

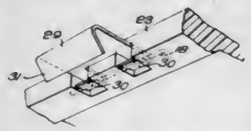


1. In combination with a crib structure including four upright post members, a mattress supporting frame freely movable in a vertical direction and bracket means carried by said posts for supporting said frame at the corners thereof, a rocking attachment comprising, a base housing member, means to clamp said housing to one of said posts beneath said frame, an electrical drive motor mounted in said housing, a connecting rod located within said housing and extending upwardly therefrom, means to drivingly connect said rod to said motor for vertical reciprocation,

a compression spring surrounding a portion of said rod and bearing at one end against said housing, a bearing plate located on top of said spring and slidably surrounding said rod, screw adjustment means carried by the upper portion of said rod for applying pressure against said bearing plate to compress said spring relative to said connecting rod, whereby said spring urges said rod in an upward direction and said spring is compressed upon downward movement of said rod, and an adjustable extension on the end of said rod for connecting said rod to a point on said frame adjacent the post to which said housing is clamped.

3,225,366
CUSHION SUPPORTING MEMBERS
Norman Grimshaw, Ashton-under-Lyne, Lancashire, England, assignor to Vitafoam Limited, a company of Great Britain, Northern Ireland and the Isle of Man
Filed Jan. 16, 1963, Ser. No. 251,922
Claims priority, application Great Britain, Jan. 16, 1962, 1,584/62
5 Claims. (Cl. 5—236)

1. A resilient sheet-like cushion support moulded from a material which will flow when subjected to heat and pressure and will become resilient when cold, at least one rod-like non-resilient member located in said support in a position in which it can receive an attachment member



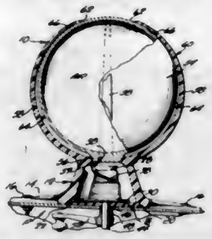
which serves to attach said cushion support to a framework, said rod-like member being located in said material during moulding.

3,225,367
COASTER-CRAFT
Andrew L. Gavlek, 900 N. Buchanan, Green Bay, Wis.
Filed May 8, 1964, Ser. No. 366,073
1 Claim. (Cl. 9—1)



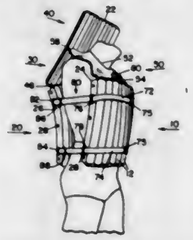
A coaster-craft, comprising: a generally concavo-convex disc-like body having a smooth bottom and having continuous upturned sidewalls including a transom, said sidewalls terminating in an inturned rim extending from one side of said transom to the other side of said transom, and said transom extending above said rim; a deck disposed centrally of and spaced above the bottom of said body; expanded polystyrene in the space between said deck and said bottom for supporting said deck; steering means including a rudder and a tiller pivotally mounted on said transom for directionally controlling said body, said rudder having a knife edge along the bottom edge thereof.

3,225,368
AUTOMATIC SUNKEN WATERCRAFT MARKER BUOY
Billie W. Allen, 415 N. Mesa Verde, Aztec, N. Mex.
Filed June 30, 1964, Ser. No. 379,306
4 Claims. (Cl. 9—9)



1. A device of the character described comprising a mounting flange, a hollow housing fixed on and extending laterally from said flange, said housing having an open outer end and an opposite open inner end, a cage fixed on said outer end, said cage comprising circumferentially spaced resilient and flexible fingers, said fingers being angled toward each other, a float releasably engaged between fingers of the cage, a line secured at one end to the float and at its other end to the housing, means closing the inner end of the housing, a reel enclosed within the housing, said reel comprising a spool journaled through said means, the line being wound on and secured to the spool, and an operating handle operatively connected to said spool at the side of said means remote from the housing.

3,225,369
COMBINATION CUSHION AND LIFE JACKET
Lewis Henry Berwick, 17 Hampden St., Springfield, Mass.
Filed Dec. 18, 1963, Ser. No. 331,556
7 Claims. (Cl. 9—333)

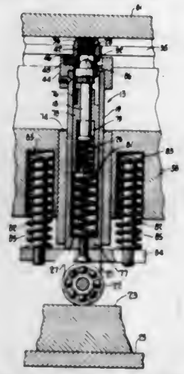


2. In a buoyant cushion convertible to a life jacket, a plurality of interconnected panels normally forming a cushion, said panels being movable to form a body-engirdling life jacket comprising a chest panel, a back panel, a neck panel, a head support panel, and a head receiving panel, strap means on certain of said panels for securing the life jacket to the body of a wearer, and means on said head-receiving panel for effectuating the movement of said head-support panel into and out of head supporting position.

3,225,370
NUT AND INSERT ASSEMBLY MACHINE
George R. Pipes, South Euclid, Ohio, assignor to Eaton Manufacturing Company, Cleveland, Ohio, a corporation of Ohio
Filed Dec. 26, 1962, Ser. No. 246,935
10 Claims. (Cl. 10—155)

1. Apparatus for assembling nuts and inserts comprising in combination a supporting frame, a rotatable table having an inclined axis of rotation, an insert loading station at the edge of the rotatable table, an insert

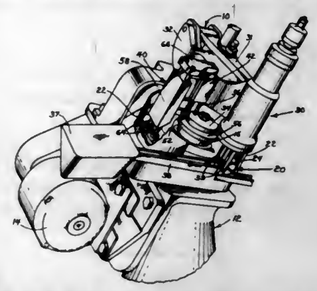
chute terminating at the insert loading station, a nut loading station at the edge of the rotatable table, a nut chute terminating at the nut loading station, the nut station being higher than the insert station, and being further advanced angularly with respect to the direction of rotation of the table, the rotatable table having an insert pickup unit axially movable parallel to the axis of rotation of the table, a lifting cam mounted on said supporting frame engageable by the lower end of said insert pickup unit as the rotatable table rotates, to produce axial movement of said insert pickup unit, said insert pickup unit having a tooling button at the upper end thereof, spring means for resiliently biassing the tooling button upwards, a cam for depressing the tooling button as the rotatable table is rotated, said latter cam terminating at the insert loading station, whereby the tooling button rides off said cam and is inserted into an insert at the insert loading station, a nut supporting plate secured to the supporting frame at a higher level with respect to the axis of rotation of the rotating table than the insert



loading station and on a lower level than the nut feeding station, whereby rotation of the rotatable table causes the insert to travel under the nut supporting plate, a nut holding blank rotatable with the rotatable table having a peripheral notch therein aligned with the insert pickup unit for carrying a nut from the nut loading station in alignment with an insert, said nut supporting plate terminating at a point beyond the nut loading station, thereby causing a nut carried by the nut holding blank to drop on to an insert supported by the tooling button, the insert lifting cam having a rise at an angular position beyond the termination of the nut supporting plate for pressing the insert into the nut, a top limit plate mounted on said rotatable table extending radially beyond the insert pickup unit for limiting upward motion of the nut during movement of the insert into the nut, finger members mounted around the upper end of the insert pickup unit and means for driving the finger members against side surfaces of the nut to indent the same while the insert is pressed into the nut for clinching the insert in the nut.

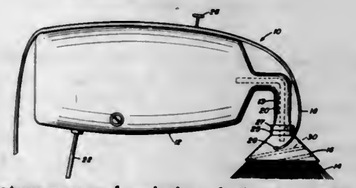
3,225,371
WASHER DETECTOR FOR SCREW AND WASHER ASSEMBLY MACHINE
Paul Autio, Elgin, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Filed Nov. 4, 1963, Ser. No. 321,128
21 Claims. (Cl. 10—155)

1. In a machine for assembling fastener and washer elements, washer feeding means for retaining a plurality of washer elements and for feeding said washer elements to a predetermined point, means for feeding fastener elements into telescoping relationship with said washer elements at said predetermined point, and means for attracting and removing excess washer elements from said washer feeding means in a direction substantially normal to the plane in which said disc is carrying said washers



being fed to said predetermined point whereby to insure the assembly of a single washer element to each fastener element.

3,225,372
PAINT DISTRIBUTOR ATTACHMENTS FOR ROTARY-POWERED PAINT BRUSHES
James W. Carpenter, 1333 Winhurst Drive, Akron, Ohio
Filed May 15, 1964, Ser. No. 367,729
6 Claims. (Cl. 15—29)

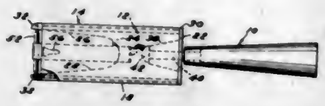


1. A rotary-powered painting device comprising:
a motorized handle having a drive shaft;
a cup brush having a hub and bristles of predetermined length extending from said hub, said brush being operatively connected to said drive shaft for rotation thereby;
and a paint distributor device comprising:
a cap non-rotatively connected to said motorized handle and extending in encircling manner over said hub and part way of the length of said bristles in closely spaced relation to the outside periphery of said brush, said cap having an integrally formed spiral longitudinally extending embossing of predetermined width in close contact with the outside periphery of said brush and starting adjacent said hub and terminating adjacent the end edge of said cap;
and conduit means connected to said cap and having an outlet opening within said cap adjacent the bristle sidewall of said brush periphery and adapted to conduct paint from a remote source under pressure therethrough to said outlet opening;
whereby the rotary motion of the brush, and the spaced relation of the cap coupled with the close contact of said spiral embossing cooperate to conduct paint flowing under pressure from said outlet opening evenly around and along the outside periphery of said brush to the bristle ends for application of the paint to a work surface.

3,225,373
LINT REMOVER
Frederick N. Kisbany, Port Huron, Mich., assignor to Diorama, Inc., Cincinnati, Ohio, a corporation of Ohio
Filed Nov. 12, 1963, Ser. No. 322,686
9 Claims. (Cl. 15—104)

1. A lint removing device comprising a support and roller assembly, said roller being elongated and mounted on said support for axial rotation, said roller having a length of tacky material wound thereon, and means for severing portions of said length of tacky material com-

prising an elongated flexible strip having a longitudinal severing edge, one end of said strip being connected to said roller, said roller being hollow to accommodate said



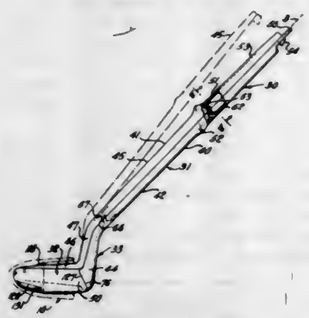
strip when not in use, said strip being adapted to be withdrawn from said roller and to be laid along the exterior of said roller to facilitate severing a portion of said length of tacky material.

3,225,374
BEATER-BRUSH ROLLER FOR VACUUM CLEANER
Horace S. Daley, Clifton, and Ronald R. Thompson, Pluckemin, N.J., assignors to The Singer Company, Elizabeth, N.J., a corporation of New Jersey
Filed Aug. 26, 1963, Ser. No. 304,532
3 Claims. (Cl. 15—183)



1. A beater-brush roller for use in the mouth of a vacuum cleaner, said roller comprising a unitary cylindrical member having a pair of spaced-apart longitudinally extending identical undercut helical slots each having outwardly convergent sidewalls, said slots being formed directly in said unitary cylindrical member and extending for a major portion of the length thereof; a balancing strip freely insertable endwise into one of said slots and held in the inner portion of said slot by said outwardly convergent sidewalls; a beater insert installed in the other of said slots; and a brush insert installed in the slot with said balancing strip.

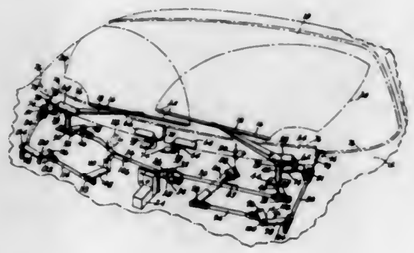
3,225,375
CLEANING DEVICE
Ralph L. Atkinson, Westfield, and Patrick A. Florio, Short Hills, N.J., assignors to Johnson & Johnson, a corporation of New Jersey
Filed Aug. 21, 1963, Ser. No. 303,532
12 Claims. (Cl. 15—210)



1. A cleaning device holder comprising a handle of rigid material split along its length into two complemental sections and a head adapted to receive a cleaning swab in the form of a cover and comprising an upper section of rigid material, a lower section of rigid material, said sections being connected to the ends of said handle sections respectively and being hinged together at their forward toe ends, and a boot fitted over the bottom and sides of the lower head section to form a sole for said head and made of resilient material to permit the swab on the head to be pressed into conformance with the surfaces to be cleaned upon application of cleaning pressure applied to said head through the rigid handle.

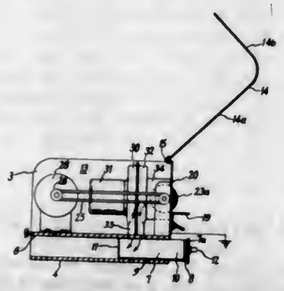
3,225,376
CONCEALED WINDSHIELD WIPER MECHANISM
Paul S. Heller, Fairport, N.Y., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed May 4, 1964, Ser. No. 364,456
13 Claims. (Cl. 15—250.19

1. Windshield cleaning mechanism for a vehicle having a windshield, a cowl with a transversely extending well therein having an access opening and a hinged cover for closing the access opening, including, an oscillatable cleaner assembly, drive means operable to impart oscillation to said cleaner assembly across the outer surface of said windshield between predetermined inboard and outboard stroke end limits and to a parked position whereat said



cleaner assembly is disposed within said well, and cover operating linkage means automatically actuated by said drive means during movement of said cleaner assembly to and from its parked positon for effecting coordinated movement of said cover between closed and open positions.

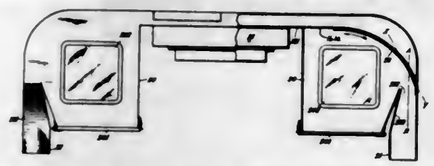
3,225,377
BRUSH AND COMB CLEANING DEVICE
Stanley Winter, 241 Clark Road, Cincinnati 15, Ohio, and Hubert Alder, 8007 Woodbine Ave., Cincinnati 16, Ohio
Filed Oct. 19, 1962, Ser. No. 231,748
4 Claims. (Cl. 15—311)



4. A brush and comb cleaning device comprising a casing having a perforation therein, a rotary brush mounted within said casing, a portion of said rotary brush extending through said perforation, means within said casing for rotating said brush comprising an electric motor, a removable drawer slidably mounted within said casing, vacuum means in association with said rotary brush whereby hair and foreign material are removed therefrom, said vacuum means comprising an electric

vacuum fan, said fan having an intake adjacent said rotary brush and an outlet communicating with said drawer, said drawer having a bottom, side walls, a front wall and a rear wall, said rear wall being foraminous to allow air from said outlet to escape and to retain said hair and foreign material within said drawer, said casing having an opening therein for passage of said escaping air into the surrounding atmosphere.

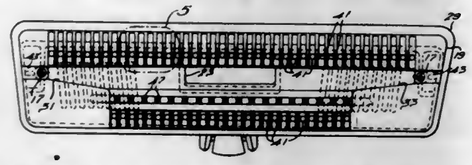
3,225,378
TRAVELLING APPARATUS FOR CLEANING MACHINE AND FLOOR SURFACES IN MANUFACTURING PLANTS
Roy Bottomley, 135 Manchester Road, Greenfield, near Oldham, England; Robert Greenwood, 83 Broadway, Helmshore, Rossendale, England; James Aubrey Wild, 36 Mountain Ash, Rochdale, England; and Raymond Kelly, 13 Rhyl St., Bolton, England
Filed Sept. 18, 1963, Ser. No. 309,621
Claims priority, application Great Britain, Sept. 21, 1962, 36,050/62
4 Claims. (Cl. 15—312)



1. In a traveling suction cleaning apparatus including an overhead track-mounted suction fan adapted to travel over textile machines, said fan having a suction inlet, and a suction tube extending downwardly from said fan for sucking lint and other light material from floor surfaces; the combination therewith of an input conduit communicating with said inlet, a separator chamber communicating with said input conduit, an inlet duct communicatively connecting said suction tube to said chamber at a location above the bottom of the chamber, said input conduit having a lower wall portion extending partially over and forming a portion of the top wall of said chamber and terminating in spaced relation from said inlet duct, a filter within and extending across the upper portion of said chamber in the path of communication of the flow of air through the chamber from said suction tube into said input conduit, said filter serving as an extension of said lower wall portion of said input conduit and extending generally toward said inlet duct and being positioned relative to said inlet duct to receive the flow of air therefrom at such an angle that the air moves across the lower face of the filter in a sweeping-like manner so that lint and other light material will gravitate into said chamber and thus aid in preventing the filter from becoming clogged with the lint and interfering with the flow of air into and through said suction tube.

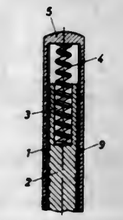
3,225,379
RUG TOOL
Charles R. Cummins, Syracuse, N.Y., assignor to Rexair, Incorporated, Detroit, Mich., a corporation of Michigan
Filed Jan. 22, 1964, Ser. No. 339,848
4 Claims. (Cl. 15—367)

1. A rug cleaning nozzle comprising an elongated shoe having a top surface and a bottom surface adapted for movement over a rug to be cleaned, a vacuum opening in said shoe adapted to have a vacuum applied thereto, an elongated groove extending longitudinally along the bottom surface of said shoe, means defining a plurality of first substantially parallel transverse grooves in said shoe bottom surface extending from one side edge thereof and communicating with said longitudinal groove, said means presenting sharp edges along one side of said groove, a longitudinal recess in said body bottom surface adjacent the other side edge of said longitudinal groove, means defining a plurality of second substantially parallel transverse grooves in said shoe bottom surface extending from the other side edge thereof and communicating with said



longitudinal groove through said recess, a plurality of openings in said shoe extending therethrough from the top surface thereof, one each communicating with a respective one of said transverse grooves, a brush carried by said shoe within said recess and having a plurality of spaced bristle groups to permit the free passage of air from said second transverse grooves to said longitudinal opening.

3,225,380
DEVICE FOR STABILIZING LEGGED FURNITURE
Karl Faul, 109 Gumpendorferstrasse, Vienna VI, Austria
Filed June 26, 1964, Ser. No. 378,339
Claims priority, application Austria, July 4, 1963, A 5,333/63
4 Claims. (Cl. 16—32)

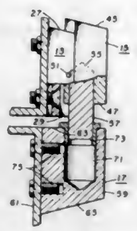


1. A device for stabilizing furniture of a type suitable for positioning on a floor having irregularities and normally occupied or used without movement, comprising a tubular housing insertable in the axial direction into a furniture leg from the underside, at least one axially displaceable, downwardly protruding, telescoping part closely fitting in and slideably disposed in said cylindrical housing to form an aligned extension of the furniture leg and to rest on a floor, a pressure element disposed between said housing and said telescoping part to exert axial pressure therebetween for pushing said telescoping part partly out of the housing, and a thin layer of a soft, nonhardenable, adhesive, friction material disposed between the surfaces of said telescoping part and said housing which are in sliding engagement for braking the relative sliding movements of the telescoping part with respect to the tubular housing.

3,225,381
DOOR HINGE SYSTEM
James L. Fountain, 8911 Westglen Drive, Dallas, Tex.
Filed Aug. 1, 1962, Ser. No. 214,042
3 Claims. (Cl. 16—132)

1. A top hinge for a door and frame which comprises:
(a) structure mounted on the face of said door and at the top thereof having a vertical cylindrical bearing,
(b) support structure including a shaft mating with said cylindrical bearing,

(c) a mounting plate secured to said frame including a slide-way structure in which said support structure is mounted to permit adjustment of the position of



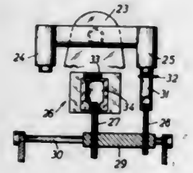
said pin in said cylindrical bearing, and

(d) a set screw extending into said slide-way to lock said support structure therein.

3,225,382

APPARATUS FOR MAKING HOLLOW PLASTIC ARTICLES

Reinold Hagen, Hangelar uber Siegburg, Rhineland, Germany
Filed Sept. 10, 1964, Ser. No. 395,410
Claims priority, application Germany, May 18, 1960, K 40,752
11 Claims. (Cl. 18—5)



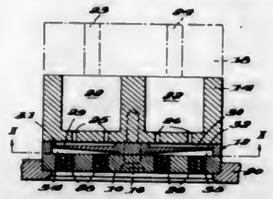
1. Apparatus for the manufacture of hollow articles from plastics, comprising at least a single mold including opposing sections to be closed and opened, the closed mold defining at least a single cavity conforming in shape to the article to be formed and being adapted to enclose an inflatable embryo article to be blown into molding contact with said cavity, at least two cores, each of said cores being adapted to cooperate with said mold separately and alternately, and a support having said cores spacedly mounted thereon to extend vertically, said support being movable so as to move said cores parallel to themselves and thus in vertical condition, said support and cores being arranged so that on moving the support one of said cores will enter between said mold sections when open, while the other of said cores will leave the open mold, said one core being adapted to extend from outside the closed mold into said mold-enclosed embryo article, said other core being adapted to support a blown article in an incompletely solidified but self-supporting state so as to solidify to completion outside the mold.

3,225,383

SPINNERET DISTRIBUTION PLATE

James Stanley Cobb, Jr., Martinsville, Va., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed July 24, 1963, Ser. No. 297,328
4 Claims. (Cl. 18—8)

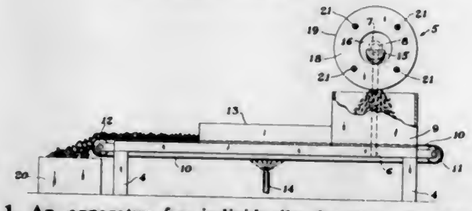
1. A spinneret assembly comprising sandwiched filter block, distribution plate and spinneret plate elements, said filter block and spinneret plate elements having spaced flow holes, said distribution plate being provided with a pair of opposed slots adjacent its periphery, channels in the upper face and a pair of tapered cavities in the lower face thereof, each cavity tapering downwardly from a maximum depth at its slot, said channels, slots and cavities defining separate flow paths between the filter block and spinneret plate holes.



3,225,384

APPARATUS FOR FOAMING ELONGATED SEGMENTS OF STRANDS OF FOAMABLE STYRENE POLYMER COMPOSITIONS

Max R. Oswald, Midland, and Roy L. Kinsey, Saginaw, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed May 5, 1964, Ser. No. 364,999
2 Claims. (Cl. 18—12)



1. An apparatus for individually foaming elongated segments of strands of a normally solid expansible styrene polymer composition containing a volatile organic fluid foaming agent boiling below the heat distortion temperature of the styrene polymer, which apparatus comprises in combination, a frame, a rotatable feeder comprising a face plate having a central feed inlet, a back plate in fixed attachment to one end of a centrally positioned shaft pivotally mounted in a bearing attached to said frame, said face plate and back plate being held in fixed spaced apart relationship by fixed peripheral attachment to a screen to allow passage of individual elongated segments of said expansible styrene polymer therethrough when said feeder is rotated and to contain said elongated segments thereon when said feeder is stationary, means for rotating said feeder, a hopper mounted on said frame beneath the screen of said feeder, a continuous screen belt mounted on said frame and positioned beneath said hopper for receiving the elongated segments passing through the mesh of the screen of said feeder, and for transporting them into and through a heating zone, said heating zone comprising a housing mounted on said frame surrounding a top portion of said screen belt, means for contacting said segments on said screen belt while within said housing with a heated non-solvent fluid, means for moving said belt through said housing and means for removing the expanded polymer segments from said belt.

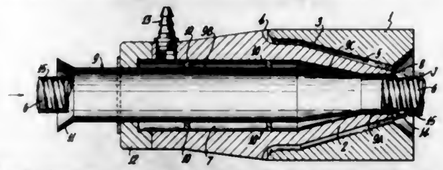
3,225,385

APPARATUS FOR MAKING JACKETED TUBULAR MEMBERS

Friedrich Kleine, Hannover, Germany, assignor to Hackethal- Draht- und Kabel-Werke Aktiengesellschaft, Hannover, Germany
Filed Jan. 2, 1963, Ser. No. 248,990
Claims priority, application Germany, Jan. 3, 1962, H 44,526
7 Claims. (Cl. 18—13)

1. In a device for providing a plastic jacket over an elongated element bearing a viscous corrosion resistant

composition comprising a matrix member and a mandrel member arranged to provide therebetween an extrusion channel for forming said plastic jacket, said mandrel having a longitudinal bore, the improvement comprising a gauge tube disposed concentrically within the bore of said mandrel, said gauge tube having an extended portion of enlarged diameter compared to the diameter of the elon-

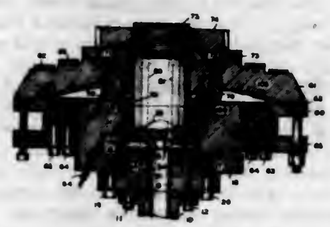


gated element passing therethrough for compacting the viscous composition uniformly about the exterior of the elongated element and a short exit portion of reduced diameter slightly greater than the outside diameter of said elongated element for gauging the viscous composition on said elongated element to provide a coating of uniform thickness on said elongated element immediately before the application of said plastic jacket.

3,225,386

EXTRUSION APPARATUS

James B. Newman, Jr., Shortsville, N.Y., assignor to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia
Filed Sept. 12, 1963, Ser. No. 308,578
8 Claims. (Cl. 18—14)



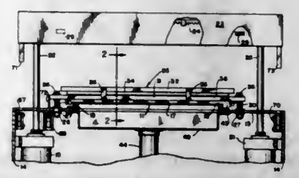
7. The combination of a center post having an axial channel therein for conducting a mass of molten resin, a first, inner, ring and a second, outer, ring, each concentric with respect to said center post, and a die body surrounding said first and second rings; second and third channels, perpendicular to the axis of said center post and angularly disposed with respect to each other, and communicating with said axial channel and with said first and second rings, respectively; said first and second rings each having opposed tapered-cuts therein, said rings being oriented with respect to each other such that the bottoms of said opposed tapered-cuts in said first ring communicate with, and are disposed under, only the respective ends of said second channel, and the bottoms of said opposed tapered-cuts in said second ring communicate with, and are disposed under, only the respective ends of said third channel; a third ring disposed between said first and second rings and communicating separately at respective sides thereof with said second and third channels.

3,225,387

APPARATUS FOR MAKING A PLASTIC PAINTING SHIELD

Joseph Angilello, Brewster, Dino Magaletto, Croton Falls, and Arthur Pinori, Golden's Bridge, N.Y., assignors to Pam Plastics Inc., Croton Falls, N.Y., a corporation of New York
Filed Feb. 21, 1963, Ser. No. 260,121
5 Claims. (Cl. 18—19)

1. In a device for forming three-dimensional plastic shields for automobile ornaments from a sheet of plastic material, in combination, a table, means mounting a plurality of ornaments used as molds on said table, a frame for holding a sheet of plastic material, means mounting said frame for vertical reciprocatory movement toward and away from said table and the ornaments thereon, means normally urging said frame to an upper position, a hood mounted for vertical reciprocatory movement above said frame, an electrical heating element mounted in said hood, a pair of air cylinders, each having a piston and piston rod, means connecting the piston rods of said air cylinders to opposite ends of said hood, means to apply pressure against said air cylinder pistons to lower said hood to thereby cause a plastic sheet mounted in said

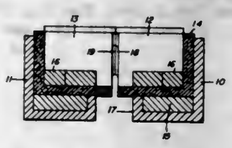


frame to be heated, means on said hood engaging said frame to force said frame into its lower position with the plastic sheet therein in contact with said table and the ornaments thereon, means comprising a sealing gasket of generally rectangular form fixed to said table and cooperating with the plastic frame to form an air tight enclosure, means to apply a vacuum through said table to the space beneath said sheet, and means to apply pressure to the opposite side of said air cylinder pistons after a predetermined time interval to cause said hood and heater to restore to initial position.

3,225,388

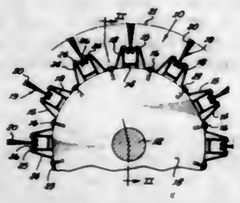
MOLD FOR THE PRODUCTION OF SHOES

Nikolaus Hansjosten, Pluwig, Kreis Trier, Germany
Filed June 13, 1963, Ser. No. 287,706
4 Claims. (Cl. 18—34)



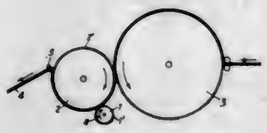
1. A mold, particularly a vulcanizing mold, for the production of a shoe having an outer sole punched from prevulcanized rubber or similar sheet material of uniform thickness and having a tread surface, an intermediate sole of moldable material and an upper and insole joined to the intermediate sole, comprising two half boxes, a mold section located in each box for providing a unitary mold component, said box halves having inner surfaces terminating in spaced relationship, means defining at least one vertical joint between such sections located substantially equidistant from the two lateral edges of the sole along the length of the joint, said mold sections jointly forming a molding cavity having longitudinal and transverse curvatures and an open end, each section having a base surface and a substantially vertical perimetric surface cooperable with the base surface to provide the outer edge of the entire sole with said base surfaces adapted to receive the outer sole, the molding cavity being adapted to receive a moldable material for forming the intermediate sole, and a last carrying the united upper and insole adapted to close the open end of the molding cavity and said outer sole serving for sealing the vertical joint between the sections.

3,225,389
COTTON GIN ROTARY BRUSH MEANS AND BRUSH STRIP HOLDER THEREFOR
Lloyd E. Jones, Pasadena, Calif., assignor to Industrial Brush Company, Arcadia, Calif., a corporation of California
Filed Jan. 29, 1963, Ser. No. 254,693
8 Claims. (Cl. 19—60)



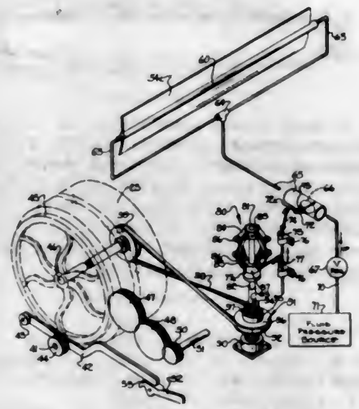
1. A brush strip holder construction for a cotton gin brush means comprising an integral extruded member of generally H-section, said H-section including spaced parallel side walls interconnected by a transverse wall having a bottom surface in spaced relation to bottom edges of said walls, each of said walls being provided with a longitudinally extending groove above said transverse wall forming a hinge section for said wall; each of said walls being provided with an inturned depending brush strip supporting and grasping portion, said grasping portions having inturned opposed lips in spaced relation, said lips being adapted to provide a seat for a brush strip, each of said walls having a top external projection extending beyond the exterior surface of said well; said grasping portions being adapted to resiliently and frictionally receive therebetween a brush strip.

3,225,390
METHOD OF PRODUCING FILTER PLUGS
Werner Kistler, Glasern, Rapperswil (Sankt Gallen), Switzerland, assignor to Paul Adolf Muller, Triesenberg, Liechtenstein
Filed Oct. 3, 1960, Ser. No. 60,224
1 Claim. (Cl. 19—66)



The method of making a tobacco smoke filter which comprises cleaning and boiling a fibrous material; bleaching said material by treating the same with chlorine at a temperature not exceeding 24° C.; briefly rinsing the thus treated material in a peroxide bath at about 85° C.; thereafter passing said material through an acid bath; rinsing, washing and drying the thus bleached material; opening the fibers of the thus treated fibrous material; forming a thin fibrous web of the thus opened fibers; and simultaneously with forming said web exerting a force on at least a portion of said opened fibers in a direction substantially perpendicular to the direction of movement of said web during formation thereof in such a manner as to increase the proportion of opened fibers in said fibrous web which extends in a direction substantially perpendicular to said direction of movement to at least about 50% of the number of fibers extending approximately in said direction of movement.

3,225,391
FIBER TRANSFER CONTROLLING APPARATUS AND METHOD FOR MAIN CYLINDER OF A CARD
Joe R. Whitehurst, Bessemer City, N.C., assignor to Ideal Industries, Inc., Bessemer City, N.C., a corporation of North Carolina
Filed July 20, 1962, Ser. No. 211,241
13 Claims. (Cl. 19—98)

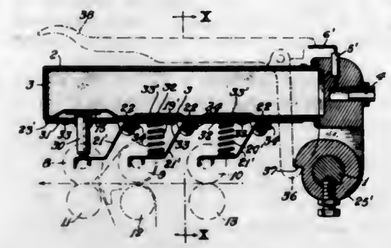


1. In a machine for carding textile fibers, said carding machine having a rotatable main cylinder, a rotatable differ cylinder disposed in close proximity to said main cylinder and defining therewith a point of tangency, said main cylinder having clothing thereon, drive means for rotating said main and doffer cylinders, and control means operable to interrupt the drive to said doffer cylinder without interrupting the drive to said main cylinder to stop the rotation of said doffer cylinder while the rotation of said main cylinder is continued; the combination of force exerting means operatively associated with said main cylinder forwardly of the point of tangency of said main and doffer cylinders relative to the direction of rotation thereof for exerting a force on the textile fibers carried by said main cylinder in a direction to retain these fibers on the main cylinder, and means operatively associated with said doffer cylinder and responsive to the absence of rotation thereof upon interruption of the drive thereto for actuating said force exerting means to prevent the transfer of fibers from the main cylinder onto the doffer cylinder when the doffer cylinder is not rotating.

3,225,392
DRAWING MECHANISM FOR A SPINNING MACHINE
Karl Heinz Broltenbach and Friedrich Kübler, both of Stuttgart-Bad Cannstatt, Germany, assignors to Skf Kugellagerfabriken Gesellschaft mit beschrankter Haftung, Stuttgart-Bad Cannstatt, Germany, a company of Germany
Filed May 22, 1962, Ser. No. 197,560
9 Claims. (Cl. 19—267)

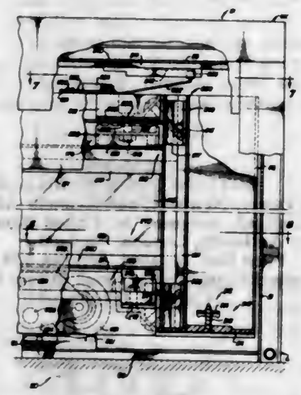
1. In a drawing mechanism for a spinning machine and the like,
(a) a stationary support,
(b) a carrier arm pivotable on said support toward and away from an operative position spacedly adjacent a drawing area,
(c) a plurality of top rollers movably mounted on said arm for cooperation with corresponding bottom roller means in said drawing area when said arm is in said operative position,

(d) membrane pressure means disposed on said arm for urging one of said top rollers to move away from said arm in a direction toward said drawing area when said arm is in said operative position,
(e) a source of pressure fluid operatively connected with said membrane pressure means,
(f) solid mechanical pressure means operatively interposed between said arm and another top roller for independently urging said other top roller to move



away from said arm in a direction toward said drawing area, said membrane pressure means and said solid mechanical pressure means forming together with the respective top roller interchangeable units,
(g) rail means on said arm for slidably receiving said units for said cooperation of top rollers with corresponding bottom rollers, and
(h) means for releasably and interchangeably securing each of said units along said rail means.

3,225,393
PANEL STRUCTURE
John Harold Coller, Covina, Calif., assignor to Fuller-Trimview, a Division of Texas Aluminum Company, Inc., Covina, Calif., a corporation of California
Filed Apr. 10, 1963, Ser. No. 271,941
5 Claims. (Cl. 20—19)



1. An easily assembled panel structure, including a movable frame having top and bottom rails and stiles and a bottom roller assembly mounted in said bottom rail and adapted to be adjusted anywhere along the length of said bottom rail, said frame comprising:
(a) a bottom rail having a lower margin and a downward facing longitudinal channel therein with the side walls of said channel having opposed longitudinal ribs; and
(b) spaced bottom roller assemblies mounted in said bottom rail channel, each said roller assembly comprising
(I) a housing mounted in said channel having longitudinal flanges adjoining the surfaces of said ribs adjacent the channel opening,
(II) a housing grip block mounted in said channel on the opposite side of said channel ribs from said housing flanges,
(III) means for clamping said housing flange and housing grip block together,
(IV) a bottom roller bracket means pivotally mounted in said housing and having a bottom roller mounted thereon, and
(V) adjusting means connected to said bracket means for swinging said bracket means beyond said lower margin of said bottom rail.

ERRATUM

For Class 20—69 see:
Patent No. 3,226,367

3,225,394
CEILING SUSPENSION CLIP
Paul W. Tillisch and George E. Meyer, Antioch, Calif., assignors to Kaiser Gypsum Company, Inc., Oakland, Calif., a corporation of Washington
Filed May 8, 1963, Ser. No. 278,925
3 Claims. (Cl. 20—92)

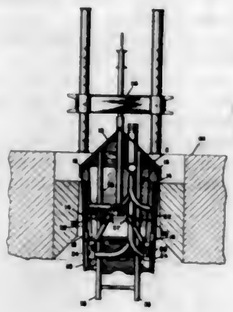


1. A ceiling suspension clip adapted to support a furring strip upon installation in a building structure and to maintain said strip in resilient, spaced relationship with a ceiling joist in said structure, said clip comprising (a) a horizontal bottom member, said member having reinforcing ribs extending substantially the whole length of said member, (b) rebent portions attached to each end of said bottom member and extending upwardly from said bottom member; and (c) an upper side arm attached to the upper end of each rebent portion to form a pair of side arms, each arm extending upwardly in a direction generally perpendicular to the bottom member, said pair of side arms comprising upper portions spaced apart a distance substantially equal to the distance between the side surfaces of the joist and adapted to abut said side surfaces upon installation, lower portions spaced apart a distance greater than the width of said joist and said furring strip, and (d) a downwardly and outwardly extending shoulder joining said upper and lower portions of each said side arm.

3,225,395
EXPANSIBLE TEMPLATE WITH HINGED SKIRTS
Joseph D. Karmerze, West Chester, and Morris S. Malin, Exton, Pa., assignors to Lukens Steel Company, Coatesville, Pa., a corporation of Pennsylvania
Filed Mar. 4, 1963, Ser. No. 262,415
2 Claims. (Cl. 22—9)

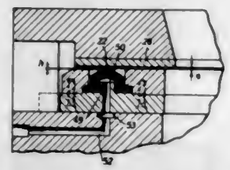
1. An apparatus for manufacturing hot tops for casting molds comprising a form, said form having a plurality of collapsible sides, hinged skirts depending from said sides, manifolds in said sides and skirts having inner and outside walls, a substantially horizontal manifold pipe disposed at the upper portion of the form, flexible

pipe means for connecting a source of hardening fluid for a hot top mass from said manifold pipe to said manifolds, and a plurality of spaced outlets from said mani-



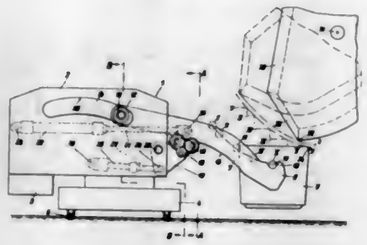
folds located in said ouside walls for releasing said fluid from said manifolds at spaced points along the said outside walls.

3,225,396
SEAL FOR CONTROL SLIDE OF CORE AND MOLD MAKING MACHINE
Fritz Hansberg, Via Archirola 15, Modena, Italy
Filed Mar. 21, 1963, Ser. No. 266,850
3 Claims. (Cl. 22—10)



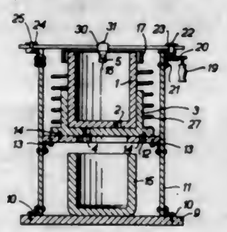
1. A machine for investing mold and core boxes with a molding material, said machine comprising a supply container for the molding material having a filling opening at the top, pressure-operated means for discharging the material from said container and into boxes to be invested, a feed-control slide slidable parallel to a wall portion of the container having said opening separated from said wall portion by a gap, the slide being slidable into and out of a position closing said filling opening, a hollow elastic sealing means positioned in said gap, said sealing means having a generally U-shaped cross-section facing downwardly and being deformable by application of a pressure fluid from a non-sealing configuration leaving said gap open to a sealing configuration closing said gap, thereby sealing the container against the slide in the closing position of the latter, mounting means securing said sealing means in said position in the gap, said mounting means including a mounting ring disposed at the top of the container and encompassing the filling opening therein and ring-shaped pressure means placed upon said ring for compressing said sealing means against said mounting ring in airtight sealing engagement therewith, said sealing means having elastic lateral flanges and said ring-shaped pressure means including two concentric rings, each of said rings being secured to said mounting ring and pressing against one of said flanges, a feed conduit for feeding pressure fluid into the interior of the sealing means, and a ring-shaped protrusion extending into the interior of the sealing means to prevent deformation thereof beyond a predetermined limit by the pressure of the mounting means.

3,225,397
LADLE CARRIAGE, PARTICULARLY FOR CONVERTERS IN STEEL MILLS
Waldemar Grunewald, Cologne-Niehl, and Rudolf Schöps, Hoffnungsthal, near Cologne, Germany, assignors to Pintsch Bamag Aktiengesellschaft Zweigniederlassung Cologne-Bayenthal, Cologne-Bayenthal, Germany
Filed Mar. 21, 1962, Ser. No. 181,343
Claims priority, application Germany, Apr. 1, 1961, P 26,877
1 Claim. (Cl. 22—82)



A ladle carriage for converters in steel plants and similar purposes, comprising a wheeled truck and a frame structure thereon, said frame structure having fixed guide means forming a guide contour extending in a given direction, roller means engaging with said guide means and guidingly displaceable along said contour, a rigid boom forming a double-armed lever extending generally in the given direction of said contour, said lever having an arm fulcrummed on said roller means in guided relation with said contour and being displaceable with said roller means relative to said frame structure in the given direction of said contour, said lever also having a bifurcated frontal arm protruding beyond said frame structure and having two legs for straddling a ladle and adapted at the respective leg ends to hold the ladle, two supporting rollers engaging each of said respective legs from below and being arranged behind each other longitudinally of said lever, a teeter member on which said two rollers are journalled, an arm member pivotally joined with said teeter member and pivotally mounted on said frame structure for raising and lowering said rollers, and balancing means interconnecting the teeter members associated with each leg for conjoint load-sharing operation of said legs.

3,225,398
BOTTOM POUR FURNACE
Norman Davey, Newbury, and Kenneth Aldersley, Reading, England, assignors to United Kingdom Atomic Energy Authority, London, England
Filed Dec. 14, 1961, Ser. No. 159,412
Claims priority, application Great Britain Dec. 19, 1960
7 Claims. (Cl. 22—84)



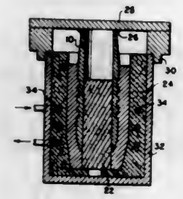
1. A bottom pouring furnace, comprising a charge container with a pouring opening in its base, a support pad for the charge container, said pad having a pouring opening, the charge container and the support pad being mov-

able relative to each other so as to bring their pouring openings into and out of alignment, said charge container having a smooth-surfaced lower base, said support pad having a corresponding smooth surface, whereby the weight of material in said charge container forces said two surfaces into sealing engagement.

3,225,399
CASTING PROCESS USING BORAX-SILICA SLAG
George W. Belcher, Norwalk, Conn., assignor to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Nov. 15, 1961, Ser. No. 152,610
5 Claims. (Cl. 22—200)

1. A process for casting a material selected from the group consisting of copper and copper-containing alloys comprising preparing a borax-silica casting slag consisting of between about 20 and about 30 percent by weight silica and between about 80 and about 70 percent by weight borax, and up to an insubstantial amount of impurities which are inert to the material to be cast and which do not substantially increase the freezing point of the borax-silica slag, said slag having a freezing point below the freezing point of the material to be cast; forming a molten pool of said casting slag on the bottom of a casting form; forming a shell of said casting slag on the inner walls of said casting form; and pouring a molten mass of the material to be cast into said casting form and through said pool of casting slag at a rate such that only the inner surface of said shell is melted.

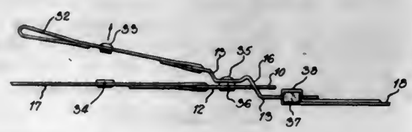
3,225,400
METHOD FOR CASTING TRANSITION COUPLINGS
Herman F. Buschow, Hillsdale, N.J., assignor to Hydrocarbon Research, Inc., New York, N.Y., a corporation of New Jersey
Original application Sept. 6, 1960, Ser. No. 54,286. Divided and this application July 3, 1962, Ser. No. 213,077
1 Claim. (Cl. 22—204)



A method of forming a thick walled sleeve of light metal chosen from the class consisting of aluminum and alloys of aluminum around a stainless steel high density metal body which comprises:

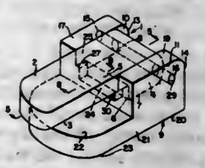
(a) cleaning that portion of the high density body adapted to be covered by the light metal to remove scale, dirt and oil;
(b) dipping the cleaned surface of the high density body in molten flux which is primarily a fluoride composition to remove oxides from said surface;
(c) maintaining the flux temperature at approximately 1000° F.;
(d) holding the high density body in the molten flux until it reaches a preheat temperature of substantially the temperature of the flux;
(e) maintaining the molten light metal in a mold at a temperature about 200° F. above its melting point;
(f) taking the preheated high density flux coated body directly from the said flux bath and placing it into the molten light metal with no further intervening treatment, thereby causing the molten light metal to flow evenly against the high density body and drive off the flux; and
(g) cooling said light metal sufficiently rapidly to minimize migration of molecules of one metal into the other and to solidify the light metal about the high density metal.

3,225,401
ADJUSTABLE BELT BUCKLE WITH SAFETY CATCH
Frank Louis Davis, 30 Mariners Lane, Northport, Long Island, N.Y.
Filed June 23, 1964, Ser. No. 377,288
3 Claims. (Cl. 24—75)



1. Adjustable belt buckle with safety catch comprising, companion head and keeper plates,
the keeper plate having a slot for passage of the head of the head plate and an abutment wall for engagement by said head positioned for connection of the plates in overlapping relation and arranged to prevent longitudinal separation of the plates in said overlapping relation,
said plates having transverse snubbing ridges impressed in the shape of an inverted V in opposite edge portions of the same,
the inclined side walls of said snubbing ridges having slots therein,
said buckle being adapted to receive loops of belt webbing extending through said slots and about the crests of said snubbing ridges for adjustably securing said plates to said webbing, and
companion snap fastener elements on opposed parts of said overlapping portions of the plates,
the overlapping portion of the keeper plate having an extended handle projecting over the snubbing ridge on said head plate in position for effecting lifting movement of said keeper plate to release the snap fastener elements and permit said head and keeper plates to be then separated.

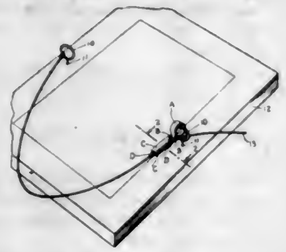
3,225,402
SHOE LACE CLASP
Stanley Altman, 1022 Rose St., and Sol Sobel, both of Plainfield, N.J.; said Sobel assignor to said Altman, Plainfield, N.J.
Filed Mar. 25, 1964, Ser. No. 354,636
5 Claims. (Cl. 24—120)



1. A shoe lace clasp comprising a U-shaped base defined by a pair of laterally spaced legs and a bridge member connecting the pair of legs at one end thereof, the bridge member and legs having inner surfaces, the bridge member being cut-away adjacent the connected ends forming a U-shaped passage communicating be-

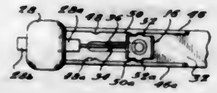
tween the legs and terminating in a seat on the bridge between the legs, abutment means substantially adjacent the leg inner surfaces and spaced from the seat, a grasp arm extending outwardly from the bridge member axially of the passage from a location spaced from the seat, a bore formed through each of said legs near the free ends thereof and in axial alignment with each other, an elongated lever arm having a head at one end portion thereof, the head having a face directed toward the other end of the lever arm with the face terminating in an edge means spaced from a longitudinal surface of the lever arm, a bore formed transversely through the head, the lever being rotatably mounted on the base between the legs, a pivot pin passing through the leg and head bores, the free end of the lever arm extending outwardly of the base in the direction of the grasp arm with a surface of the lever arm forwardly of head abutable against the abutment means in spaced relationship from the bridge seat, the head face edge means being variably spaceable from the bridge inner surface on rotation of the lever arm along an arc generated by a radius extending from the pivot pin axis and the face edge.

3,225,403
CLAMP FOR USE IN HANGING PICTURES
Sterling L. Smith, Altamont Road, Paris Mountain, Greenville, S.C.
Filed Apr. 20, 1964, Ser. No. 361,158
1 Claim. (Cl. 24—129)



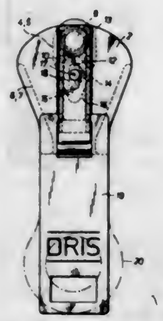
A clamp for use in hanging pictures having wire adapted to be attached to permanent fastening eyelets and the like carried by the picture frame and formed entirely of integral material including, a loop constructed of resilient material adapted to loop around a fastening eyelet carried by the picture frame, a reduced and overlapping portion carried by each free end of the loop, an elongated clamping member carried by each free end extending in opposed relation with each other, the width of each clamping member being greater than the overlapping portion and said clamping members being urged into resilient clamping engagement with the wire by said loop, said clamping members having a longitudinal concave inner surface finished to enhance its gripping qualities through a saw-tooth knurled construction, said saw-tooth knurled construction comprising a first and a second group of parallel rows of elongated projections saw-tooth in cross-section including longer faces and shorter faces, all of the rows being at an acute angle to the side edges of the clamping members, the second group of rows being superposed on the first group of rows so that the second rows cross the first rows at an angle thereby forming a plurality of pyramidal teeth, all the shorter faces being directed toward said loop so that the teeth thereof positively grip the wire when a pulling force tending to dislodge the wire from the clamp is exerted, whereby a pressure applied to opposite outside portions of the loop releases the resilient force applied to the clamping members and urges them apart, and whereby the clamping engagement may be released until the picture is level and the clamping force then applied until the wire is attached.

3,225,404
FASTENER FOR CLOTH MATERIAL
Ralph R. Gunderson, % Vari Products Co., 330 N. Harding, Chicago, Ill.
Filed Sept. 12, 1963, Ser. No. 308,599
4 Claims. (Cl. 24—162)



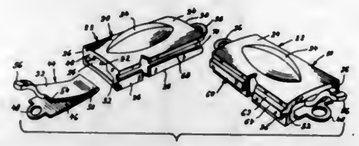
1. A fastener device for cloth material, comprising: a housing having a cloth-receiving opening; a guide on the housing; a slidable carrier provided with a locking pin, the carrier being mounted on the guide for slidable movement to carry the locking pin between a retracted position and a forward locking position in which the pin is disposed across the cloth-receiving opening; latching nodes on the carrier and on the housing positioned for contact during slidable movement of the carrier, one of the nodes being resiliently deformable and positioned in relation to the other of the nodes so that the nodes can be yieldably forced past each other in moving the carrier to a position of latching engagement to releasably latch the carrier against slidable movement and to hold the locking pin in locking position; and a stop member positioned at the forward end of the guide to arrest forward movement of the carrier, the nodes being positioned relative to the stop so that the node on the carrier lies intermediate the stop member and the node on the housing when the locking pin is in locking position.

3,225,405
SLIDER FOR SLIDE FASTENERS
Friedrich Moser, Mendrisio, Tessin, Switzerland, assignor to Glumen Anstalt, Vaduz, Liechtenstein
Filed July 10, 1964, Ser. No. 381,751
Claims priority, application Switzerland, July 11, 1963, 8,666/63
4 Claims. (Cl. 24—205.14)



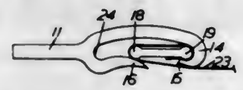
1. A slider for slide fasteners comprising a slider body including distinct lower and upper wings rivetted to each other, said wings being separated according to a median longitudinal plane and defining a guide channel for fastener stringers, a slider locking spring movably mounted between said wings in the plane of separation of the wings, said spring having a free end penetrating into said guide channel, a lug member mounted for limited longitudinal movement on said slider body, means on said lug member for cooperation with said locking spring upon movement of said lug member in either direction, and a pull tab engaged on the lug member for moving the lug member to retract said spring end from said guide channel.

3,225,406
JEWELRY CLASP
Joseph M. Levy, 1306 Carlton House, Pittsburgh, Pa.
Filed May 8, 1964, Ser. No. 366,097
1 Claim. (Cl. 24—230)



A clasp assembly comprising a pair of twin clasp units in side-by-side relationship, each unit having a rectangular-shaped hollow body with side and front and rear end walls, eyes on the rear walls for attaching one end of a pair of necklaces, the front end walls having slots, detachable resilient elements in the slots of the front walls, means on said elements for attaching the other end of the necklaces, one unit having an elongated slot extending the entire length of one side wall thereof and entirely through said one side wall, the other unit having an elongated extension on one side wall thereof coacting with the slot in the said one unit, said extension including a flange protruding outwardly and perpendicularly of the side wall extending the length of said side wall and another flange protruding perpendicularly of said first-named flange from the edge thereof, said first-named flange being slidably received in said elongated slot, said second named flange interlocking with the inside surface of the side wall of said one unit, said front end walls having downwardly extending flanges intersecting the slots in said front end walls, said detachable resilient elements each having a base portion and an inclined resilient tongue extending therefrom for insertion into one of said slots, said tongue having a shouldered end edge seating against one of said flanges when in raised position, and a finger piece integral with said tongue for depressing the same toward said base portion to unseat the tongue from the flange.

3,225,407
CLIP FOR FLEXIBLE SHEET
Humphrey Barrymore Daniels, Surbiton, Surrey, England, assignor of one-half to Transatlantic Plastics Limited, Surbiton, Surrey, England, a British company
Filed Mar. 31, 1964, Ser. No. 356,225
7 Claims. (Cl. 24—243)



1. A clip for sheet material comprising a shell composed of a rear flange and first and second members arranged to extend forwardly of said rear flange, said first member being of the same width as said flange and extending forwardly therefrom on one side of the plane of said flange, said first member having a front portion thereof curved inwardly through an angle exceeding 180° towards and through the said plane of said flange, the extreme end of said curved front portion being formed with a lip so that, when viewed from the side, said first member is similar to the top of a shepherd's crook, said second member being of the same width as said first member and extending forwardly from said flange on the other side of the said plane, said second member having a forward end portion thereof curved away from said first member and said plane, and a core composed of a strip of material adapted to have sheet material wrapped around it and to be inserted edgewise into said shell through a slot-like gap defined by said lip of said first member and said forward end of said second member, said core being unattached to said shell and being of a width greater than the width of said slot-like gap whereby the rear portion of said core is seated on said forward end portion of said second member, said sheet extending out of said clip from between said forward end portion of said second member and said core portion seated thereon so that, when tension is applied to said sheet, the front edge of said core and said sheet wrapped thereabout are pulled into said curved front portion of said first member and said sheet is firmly gripped.

3,225,408
REMOVABLE ANCHOR ATTACHMENT DEVICE FOR SHEET COVERS
William J. Durham, Chicago, Ill., assignor to Charles Schwartz & Company, Chicago, Ill., a corporation of Illinois
Filed May 22, 1964, Ser. No. 369,411
3 Claims. (Cl. 24—265)

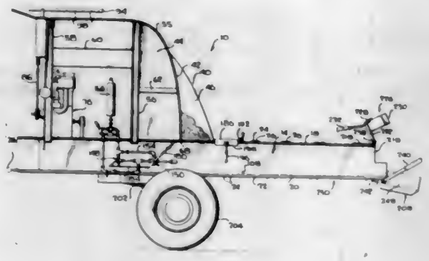


1. A removable attachment device for use with flexible sheet covers comprising at least one relatively wide, elongate length of water-proof, flexible material, said material having a pair of ply portions of equal length and width forming a pair of matching free ends defining a bifurcated end portion and an opposite end portion having a loop formation, said bifurcated end portion having a coating of pressure sensitive adhesive formed upon inner working surfaces of said ply portions to allow removable securement of the marginal edge of a sheet cover between said inner facing working surfaces in a sandwich with the loop formation spaced outwardly from said edge, wherein the area of purchase of the ply portions upon the sheet cover is greater than the area of that portion of the device which extends outwardly from the marginal edge of the sheet cover, and said inner facing surfaces are normally separated by a covering strip which has end portions adapted to be peeled away therefrom to expose the said coating there underlying for securement thereof to the said marginal edge, the invention which comprises reinforcing means for said loop formation, said reinforcing means comprising a substantially rigid sleeve secured within said loop for the major portion of the coaxial length of said loop.

3,225,409
ADOBE MAKING MACHINE
Vearn J. Huffaker, Santa Fe, N. Mex., assignor of one-half to Albert P. Branch, Santa Fe, N. Mex.
Filed Dec. 11, 1963, Ser. No. 329,643
5 Claims. (Cl. 25—41)

1. A mobile apparatus for molding blocks from a plastic moldable mixture, having thereon a mixing chamber for mixing the plastic mixture and discharging the mixture into an elongate trough having longitudinal sides and a bottom and having a forward end and a rear end, means forming a mold chamber at said forward end including, with said longitudinal sides of said trough, a pres-

sure plate of a polygonal contour conforming to the interior cross sectional contour of the trough and slidable in and longitudinally of the trough and spanning the trough, the mold chamber further including movable means in the trough rearwardly of and coacting with said pressure plate for closing one end of the mold chamber, means connected with said pressure plate for applying power thereto to move the pressure plate relative to said movable means and beyond said one end of the mold chamber when the movable means is moved from said one end, the said trough having a length to accommodate a multiplicity of blocks molded in said mold chamber by the pressure plate and moved rearwardly in a row by the pressure applying power means, a gate plate pivotally



mounted on the rear end of the trough to swing rearwardly and downwardly on a transverse axis to an open position, means limiting the downward swinging of the gate plate to a position slightly below horizontal providing a receiving surface for a block ejected from the trough, means for securing the gate plate in raised trough closing position comprising a heavy body, means supporting said body for rearward and downward swinging on an axis extending across the top of the trough to position the body against the rear side of the raised gate plate, and a handle connected to said body supporting means and extending upwardly therefrom, in the gate securing position thereof, for facilitating swinging of the gate securing means into and out of its operative positions.

3,225,410

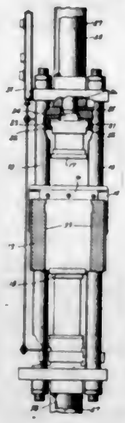
HAMMER PRESS

Neil E. Boyer, Mexico, Mo., assignor, by mesne assignments, to Wehr Corporation, Milwaukee, Wis., a corporation of Wisconsin

Filed Dec. 9, 1959, Ser. No. 858,394

4 Claims. (Cl. 25—84)

1. A hammer press for compacting fire brick or other material to substantially uniform density comprising the combination of an open ended mold box, platens guided for movement toward and away from the open ends of said mold box, a pair of pressure applying power cylinders mounted in spaced parallel stationary relation in respect to and at the outer side of each platen, pistons operating in said spaced pressure applying cylinders and connected with said platens, a hammer cylinder mounted on the outer side of each platen between the power cylinders and pistons connected with that platen, rams operating in said hammer cylinders, said platens having openings in line with said rams, anvils at the inner sides of said platens in line with said ram openings in position for engagement by said rams, means confining said anvils to said platens with limited free movement of said anvils toward and away from said platens and dies for closing the open ends of the mold box, connected with said anvils to receive the impact force of the rams and to transmit the effect of hammer



blows to material confined in the mold box independently of mold closing pressure applied by the power cylinders.

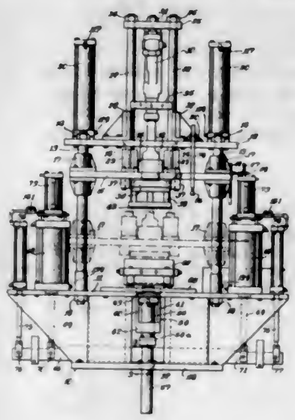
3,225,411

APPARATUS FOR COMPRESSING MATERIAL

Norman Rybicki, Chicago, Ill., assignor, by mesne assignments, to Wehr Corporation, Milwaukee, Wis., a corporation of Wisconsin

Filed Mar. 2, 1961, Ser. No. 92,977

8 Claims. (Cl. 25—91)



1. A pressing apparatus of the character described, comprising: a main frame, a bed on said frame having a mold for containing finely divided raw material, a crosshead slidably mounted on said frame above said bed, a floating force transmitting element carried by said crosshead and supporting a die receivable in the mold cavity, a top hammer mounted on said crosshead operably associated with the force transmitting element, a bottom hammer mounted on said frame below the bed, means for moving the crosshead toward said bed to bring the die in pressing contact with the top surface of material in the mold cavity, means for moving said top hammer to repeatedly strike said floating force transmitting element, whereby the hammer striking force is transferred through said element to the die and uniformly distributed to the top surface of material in the mold cavity, means for moving the bottom hammer to apply a repeated striking force to the bottom surface of the material, releasable latch means for maintaining said crosshead in an upper, material noncompacting position, and means responsive to the release of said latch means for energizing said crosshead moving means to move said crosshead to bring said die into said pressing contact and for energizing said top and bottom hammers to apply said repeating striking forces to the top and bottom surfaces respectively of the material.

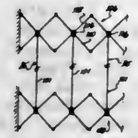
3,225,412

PLASTIC MASS-FORMING APPARATUS

Eric H. Widell, 621 N. Bright Ave., Whittier, Calif., and Grady L. West, 600 Linda Vista Ave., Pasadena, Calif.

Filed Sept. 6, 1963, Ser. No. 307,239

1 Claim. (Cl. 25—108)



Wire cutter apparatus comprising:

a plurality of wires adjustably spaced in parallel relationship for passing through and cutting a body of gas concrete in a semiplastic state into a plurality of gas concrete planks;

a first lazy-scissors apparatus to receive and support the top ends of said wires;

a second lazy-scissors apparatus to receive and support the bottom ends of said wires;

said wires being adjustably spaced by movement of said lazy-scissors apparatus;

brackets mounted on each of said lazy-scissors apparatus; and

wire-retaining guides pivotally mounted on said brackets;

said wires being movable into alignment without further movement of said lazy-scissors apparatus whereby one of said wires is positioned behind another of said wires to travel the same grooved path through the concrete as the concrete body is pushed therethrough.

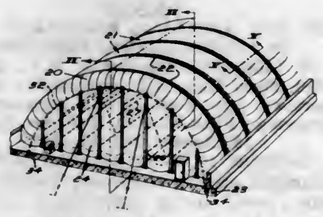
3,225,413

INFLATABLE FORM FOR A CONCRETE BUILDING

Walter W. Bird, 355 N. Forest Road, Williamsville, N.Y.; Peter A. Strobel, 735 The Parkway, Mamaroneck, N.Y.; Paul I. Rongved, 250 E. 39th St., New York, N.Y.; and David P. Zamore, 181 Union St., Montclair, N.J.

Original application July 22, 1960, Ser. No. 44,645, now Patent No. 3,139,464, dated June 30, 1964. Divided and this application June 25, 1964, Ser. No. 392,059

11 Claims. (Cl. 25—128)



5. A concrete building form comprising, in combination,

an inflated envelope of transversely corrugated form,

a series of external truss members disposed in the valleys of said corrugations and including connector means projecting through said envelope and into the interior thereof,

and flexible connector tension means connecting the connector means of adjacent truss members to maintain spacing therebetween in accord with the spacing between adjacent valleys of said corrugations.

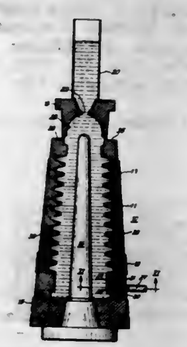
3,225,414

APPARATUS FOR SLIP CASTING CERAMIC ELECTRICAL WARE

John Dean, Kenova, W. Va., assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware

Filed Nov. 1, 1962, Ser. No. 234,823

3 Claims. (Cl. 25—129)



1. A mold for slip casting ceramic objects comprising: a lower object forming porous mold portion defining a vertically extending cavity, having a casting well communicating with said cavity through an upper wall of said object forming portion; a reservoir disposed above said object forming mold portion in fluid communication with said cavity through said casting well; a lower passage extending through said object forming mold portion in fluid communication with said cavity adjacent to the lowermost portion thereof, and selectively operable closure means movable transversely of said lower passageway to interrupt fluid communication through said lower passage.

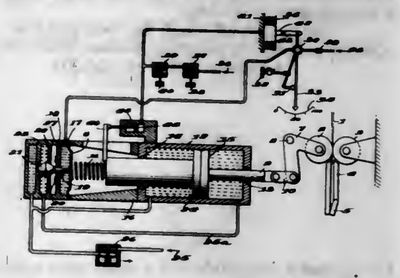
3,225,415

DEFECT RESPONSIVE APPARATUS

Robert Ernest Stoveken, Camden, and Graham Merriett Talbott, Lugoff, S.C., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Aug. 28, 1964, Ser. No. 392,800

3 Claims. (Cl. 28—1)



1. A defect responsive device for use with a continuously traveling shaped structure comprising contact means adapted to bear against at least one face of the said struc-

ture, the said contact means being recoilably mounted; first pressure means to retract the said contact means upon recoil; a flexible diaphragm responsive to recoil of the said contact means; a second pressure means to vary the flexibility of the said diaphragm; first valve means, responsive to the flex of the said flexible diaphragm, to apply the first pressure means to retract the said contact means upon recoil; a second valve means, responsive to the recoil motion of the said contact means, to vary the second pressure means whereby flexibility of the said diaphragm is increased on recoil of the said contact means.

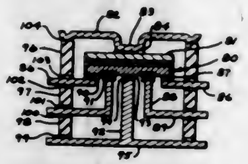
3,225,416

METHOD OF MAKING A TRANSISTOR CONTAINING A MULTIPLICITY OF DEPRESSIONS

Edward J. Diebold, Palos Verdes Estates, Calif., assignor to International Rectifier Corporation, El Segundo, Calif., a corporation of California

Original application Nov. 20, 1958, Ser. No. 775,313. Divided and this application Mar. 9, 1962, Ser. No. 178,764

1 Claim. (Cl. 29—25.3)



The method of making a semiconductive device having junctions therein which comprises forming a plurality of depressions in the surface of a wafer of semiconductive material having a predetermined conductivity type, doping said surface of semiconductive material to form a surface layer of conductivity type opposite that of said predetermined conductivity type to form a P–N junction at said surface, and removing at least portions of the surface material of said wafer surrounding said depressions to expose regions of said predetermined conductivity type at said surface within said depressions, said regions being separated from one another and thereafter applying a first conductive electrode to the surface of said exposed regions, and applying a second conductive electrode separated from said first conductive electrode to the surface regions in said depressions.

3,225,417

METHOD OF PRODUCING AN OXIDE FILM CAPACITOR

Bengt Åke Lagercrantz, Stocksund, Sweden, assignor to Telefonaktiebolaget L M Ericsson, Stockholm, Sweden, a corporation of Sweden

Filed Oct. 25, 1962, Ser. No. 232,976

Claims priority, application Sweden Nov. 10, 1961

3 Claims. (Cl. 29—25.31)



1. A process for producing a solid state capacitor having an electrolytic valve-forming electrode, said process comprising the steps of providing an electrode in the form of a porous metal body electrolytically anodizing said electrode by means of an anodizing voltage to form thereon a dielectric oxide layer, then coating said electrode with a semiconducting oxide by applying to the electrode successive layers of a solution of a salt convertible by pyrolysis to said semiconducting oxide, then transforming each of said layers of salt to a semiconducting state by subjecting the respective layer to pyrolytic action for a period of time while simultaneously applying an auxiliary anodizing voltage between the electrode and the respective layer for at least part of the period of pyrolytic action by means of an auxiliary electrode in contact with the respective layer of salt for continuously and immediately sealing pinholes forming in the dielectric layer by the pyrolytic action, then coating the electrode additionally with a layer of graphite, and finally covering said graphite layer with an outer metal coating.

3,225,418

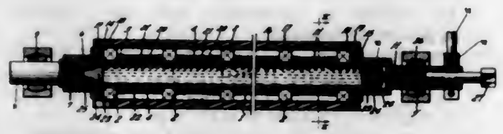
VARIABLE-CAMBER CYLINDER

Pierre Jacques Fara, Villemomble, France, assignor to D.C.M. Nanterre, Seine, France, a company of France

Filed Apr. 1, 1964, Ser. No. 356,440

Claims priority, application France, Apr. 8, 1963, 930,763, Patent 1,365,334

6 Claims. (Cl. 29—113)



1. A variable-camber cylinder, comprising:
an elongated shaft;
bearings mounted on said shaft at axially spaced points therealong;
an outer cylinder mounted on said bearings surrounding and spaced radially outwardly from said shaft;
a plurality of relatively radially movable bearing elements mounted on said shaft between adjacent bearings, the adjacent axial end faces of a pair of adjacent relatively radially movable bearing elements being of cooperating partially spherical shape, one of said pair of bearing elements being mounted for radial movement with respect to said shaft and the other bearing element of said pair being fixed with respect to the adjacent bearing against radial movement with respect to said shaft; and
means for moving said radially movable bearing elements radially with respect to said shaft for imparting to said shaft a curvature which is transmitted to said cylinder by said bearings.

3,225,419

ROLLER FOR APPLYING FOUNTAIN SOLUTION IN LITHOGRAPHIC PRINTING

Walter H. Milton, Far Rockaway, N.Y., and Paul W. Greubel, Short Hills, N.J., assignors to Interchemical Corporation, New York, N.Y., a corporation of Ohio

No Drawing. Filed Nov. 12, 1963, Ser. No. 323,103

18 Claims. (Cl. 29—132)

1. A dampener roller for applying fountain solution in planographic printing comprising a rubber roller covered with a cured coating comprising a crosslinking silicone resin and a silane of the formula

$$(RO)_3Si(CH_2)_3NHCH_2CH_2NH_2$$

in which each R is an alkyl radical of less than four carbon atoms.

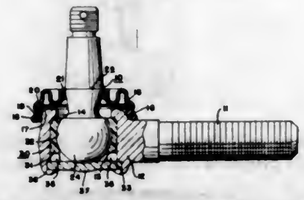
3,225,420

METHOD OF PRELOADING A BALL JOINT SEAT ASSEMBLY

Leo S. Sullivan, Jr., Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Original application Oct. 22, 1962, Ser. No. 232,165. Divided and this application Dec. 30, 1964, Ser. No. 422,380

3 Claims. (Cl. 29—149.5)



1. A method of preloading a ball joint seat retainer assembly to increase bearing capacity thereof and simultaneously providing wear compensation by steps of outward tapering of an outer periphery of one end of a ball seat of acetal resin with fluorine-containing fibers mixed therein having an external cylindrical shape with tapered enlargement and a curved inner periphery at an opposite end thereof, radially slitting the ball seat longitudinally along said outward tapering location, heating the ball seat of acetal resin with fluorine containing fibers mixed therein to a predetermined temperature to increase ductility thereof, snapping the ball axially into place complementary to the curved inner periphery with a stud carried by the ball in a location remote from said outward tapering, pressing the ball and seat into a socket-like recess having a diameter less than that of the outer periphery due to said outward tapering while simultaneously urging radially inwardly the outer tapering peripheral end of the ball seat into bearing engagement with the ball for preloaded increased bearing capacity and wear compensating condition and finally covering the socket-like recess at a location remote from the stud projecting therefrom.

3,225,421

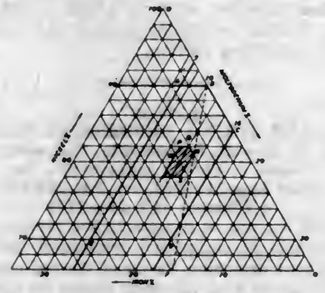
METHOD OF MAKING A MAGNETIC CORE FOR A MAGNETIC SWITCH

Arnold Charles Lynch, 8 Heath Drive, Potters Bar, England, and Kenneth Reginald Wilderspin, 10 Byron Road, Wembley, England

Filed Apr. 15, 1964, Ser. No. 357,514

Claims priority, application Great Britain, Jan. 4, 1957, 477/57

4 Claims. (Cl. 29—155.5)



1. A method of using an alloy to make a high-speed magnetic core switching element, said alloy consisting of between 70 and 90% nickel, between 6 and 16% molybdenum and the remainder, if any, iron, said element being produced by
(1) forming a mass of such alloy,
(2) reducing the thickness of the mass to form a strip substantially free from notches or similar irregularities and having a thickness less than 0.001 inch,
(3) forming the strip into a core,
(4) heat treating the strip at a temperature in excess of 750° C., and
(5) placing a winding about the core in a position for magnetically linking it with the core.

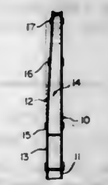
3,225,422

METHOD OF FABRICATING CENTRIFUGAL FAN IMPELLERS

Albert L. Sebok, Tallmadge, Ohio, assignor to Ametek, Inc., New York, N.Y., a corporation of Delaware

Filed Mar. 9, 1962, Ser. No. 178,745

5 Claims. (Cl. 29—156.8)



1. A method of manufacturing a centrifugal impeller for a fan, pump or the like comprised of two sheet metal end disks and formed sheet metal blades secured therebetween, said method including the steps of: blanking out a set of like impeller blades from sheet metal having a body portion tapering in width from a broader inner end to a narrower outer end and having longitudinally spaced ears on each longitudinal edge of the body, the total width of the blank between the ends of the ears on one edge to a line through the ends of the ears on the other edge being at least as great as such width at the innermost ears as is required to provide a heading projection of each innermost ear beyond a corresponding said disk; blanking out a first flat sheet metal disk having a small central shaft receiving aperture and a second flat sheet metal disk having a larger aperture than the first to serve as a central air inlet, said disks having a series of spaced sets of blade ear receiving slots; assembling a corresponding set of blades between said flat disks in undeflected condition with larger ends adjacent the center region of the disk and with said ears extending through corresponding slots; and heading said ears into rivet-like engagement with said disks progressively from the innermost to the outermost ears and thereby bringing the disks into conforming engagement with the blade edges.

3,225,423

JUNCTION PIECES FOR TUBE ELEMENTS

André Huet, 48 Ave. du President Wilson, Paris, France

Filed Jan. 5, 1962, Ser. No. 164,578

Claims priority, application France, Jan. 19, 1961, 850,090

3 Claims. (Cl. 29—157)



1. A method of forging a breeches member for joining a tube to a plurality of parallel tubes comprising, providing a steel cylinder having one end open and a bottom

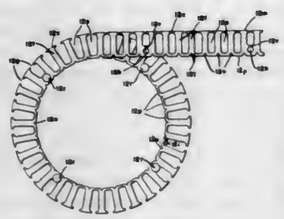
thicker than the side walls thereof, said bottom having a plurality of spaced holes, said side walls defining a conduit, heating said steel cylinder to a forging temperature, holding said cylinder in a heated condition in a die confining said side walls circumferentially and axially and having a bottom provided with bottom apertures of greater diameter than said holes and in registry with said holes in said cylinder, forging a plurality of tubular extensions on said cylinder bottom by inserting axially into said cylinder a piercing die to compact and to shape said side walls on said dies and having parallel multiple punches axially inserted into said cylinder holes thereby to forge a plurality of spaced, parallel, tubular extensions on said cylinder bottom for connecting a plurality of parallel tubes thereto, the side walls of said cylinder defining said conduit as a single coupling conduit end portion having walls of substantially equal thickness and of compacted, grain-oriented material and disposed opposite to said tubular extensions and in communication therewith, and removing the formed breeches member from the dies.

3,225,424

METHOD OF MAKING AN EDGE WOUND CORE

John B. Wiley, London, Ontario, Canada, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed July 29, 1964, Ser. No. 385,940
4 Claims. (Cl. 29—155.57)



1. A procedure for making a wound laminated structure for use as a dynamoelectric machine stator and rotor magnetic core assembly, comprising, notching a teeth-containing flat longitudinal metal strip along the edging opposite to that of said teeth and in alignment with the longitudinal axis of each of said teeth to thereby define winding slots on said strip, said notching occurring at evenly spaced intervals along the said opposite edging; and edge winding the notched strip on an annular splined keying arbor with said notches cooperating with said splined and keying arbor to hinge the strip at the said notches and simultaneously form metal segments between the notches to conform substantially to the annular arbor surface.

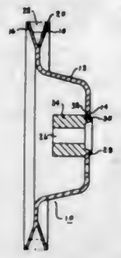
3,225,425

METHOD OF FABRICATING A METAL ARTICLE

William J. Skinner and Earl D. Scott, Walkerton, Ind., assignors, by mesne assignments, to Small Business Administration, Indianapolis, Ind., an agency of the United States

Filed Jan. 10, 1963, Ser. No. 250,629
9 Claims. (Cl. 29—159)

9. In a method of forming sheaves, pulleys and similar grooved articles: the steps comprising forming a metal disc-shaped blank, rotating said blank, initially slitting said blank at its peripheral edge to form a peripheral groove and two angularly extending flanges, progressively pressing said flanges laterally, and expanding said groove while progressively slitting the blank.

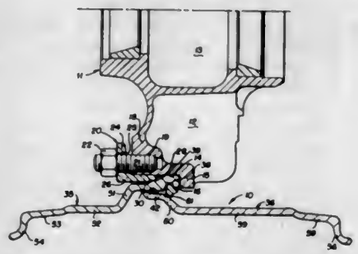


3,225,426

METHOD OF MAKING A TWO PIECE WIDE BASE RIM

Daniel A. Walther, Dayton, Ohio, assignor to The Dayton Steel Foundry Company, Dayton, Ohio, a corporation of Ohio

Filed May 9, 1962, Ser. No. 193,535
4 Claims. (Cl. 29—159.1)



1. A method for the manufacture of a rim for mounting wide base tires comprising the steps of rolling and profiling mill stock to provide a gutter flange on one edge and a hooked interfitting portion on the other edge, cutting said mill stock into lengths, joining the ends of said cut lengths to form a base member, rolling and profiling a second mill stock to provide a gutter flange on one edge and an engaging shouldered interfitting portion on the outer edge, cutting said second mill stock into lengths, joining the ends of the cut lengths of said second mill stock to form a ring member, telescoping the interfitting portion of said ring member over the interfitting portion of said base member, inserting a split locking ring between said hooked interfitting portion and said engaging shouldered interfitting portion.

3,225,427

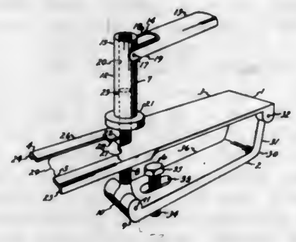
VALVE SPRING DEPRESSING TOOL

Walter R. Hewett, Jacksonville, Fla., assignor to Valene J. Carter, Jacksonville, Fla.

Filed June 21, 1962, Ser. No. 205,823
6 Claims. (Cl. 29—217)

1. A tool for use in depressing the spring of a valve spring assembly of an internal combustion valve-in-head engine without detaching the head thereof comprising a rigid plate, engine head attaching means for rigidly securing said plate on the upper face of an engine head, an arm pivotally connected to the plate rearwardly of the head attaching means, said arm having means extending forwardly of the head attaching means for engaging the spring retainer of a valve spring assembly, and means

connected to the plate and cooperatively engageable with the arm for drawing said arm pivotally downwardly toward said plate, said plate including means disposed rearwardly of the head attaching means for bearingly engaging the face of the engine head upon securing said plate thereon.

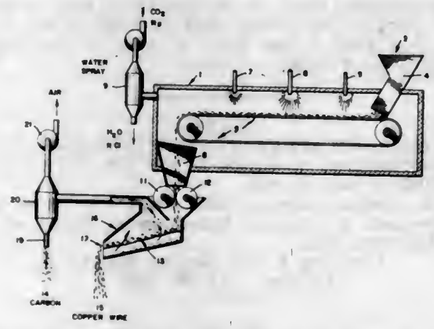


3,225,428

METHOD OF RECLAIMING COPPER FROM INSULATED COPPER WIRE

Louis S. Deitz, Jr., 551 Bradford Ave., Westfield, N.J.

Filed Sept. 11, 1964, Ser. No. 395,848
11 Claims. (Cl. 29—403)



1. A process for the recovery of wire from vinyl plastic insulation for said wire which comprises heating said insulated wire in the presence of a limited amount of air at a temperature sufficient to decompose the insulation and not in excess of about 350° C., thereby recovering unoxidized wire.

3,225,429

METHOD OF MAKING AND APPLYING STOCK CHAIN FOR SLIDE FASTENERS

Jean André Fady, Brunoy, France, assignor to Societe Francaise de Fermetures de Luxe, Choisy-le-Roi (Seine), France, a corporation of France

Original application Dec. 2, 1960, Ser. No. 73,311, now Patent No. 3,149,927, dated Sept. 22, 1964. Divided and this application June 22, 1964, Ser. No. 376,692
Claims priority, application France, Dec. 11, 1959, 812,752
1 Claim. (Cl. 29—408)

A method of manufacturing a chain of relatively great length to constitute stock material adapted to be coiled and from which a plurality of slide fasteners of any desired lengths may be cut off, which chain comprises two coplanar parallel supporting tapes carrying two series of fastener members interlockable with each other and extending continuously along such tapes for a distance at least equal to the combined lengths of the plurality of slide fasteners to be formed therefrom, and a plurality of sliders coupling said tapes together into said stock chain, said method comprising the steps of providing on said tapes throughout their lengths the two continuous series of fastener members in interlocked relation, making definite folds in the chain at those positions where openings are to be formed for the mounting of sliders, exerting a lateral tractive force at each of such folds by pulling laterally and in opposite directions on the chain so as to separate the fastener members from each other and form an opening in the chain, and then mounting a slider on the chain at each of said openings by positioning one half of the slider on each side of the chain at the associated opening bringing such halves together into operative relation with the narrower ends thereof registered with the fastener members, and securing said slider halves together in operative relation, so that each of such sliders is positioned in unconfined relation on said chain so as to be freely movable on said series in one direction or the other through distances substantially greater than the length of the cut slide fastener with which it will be associated, whereby said sliders in the uncoiled condition of said chain are adjustable on said chain to enable the latter to be cut into slide fasteners of varying lengths, each length having one slider between the cut ends and adapted to be completed by end stops assembled and secured thereto.

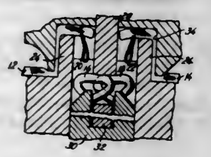


3,225,430

GAP PRODUCTION IN SLIDE FASTENER CHAIN

Patrick Fasciano, Jersey City, N.J., assignor, by mesne assignments, to Scovill Manufacturing Company, Waterbury, Conn., a corporation of Connecticut

Filed July 29, 1964, Ser. No. 385,934
12 Claims. (Cl. 29—408)

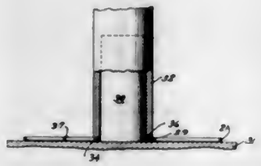


1. The method of producing a gap in slide fastener chain having tapes carrying along their adjacent longitudinal edges continuous coils attached to the tapes, said coils having coupling parts which are interengaged, which method includes pulling the tapes apart at the desired location of a gap without separating the interengaged coils in order to expose the interengaged parts of the coils, and cutting the coils between the spread-apart adjacent edges of the tapes without cutting the tapes for a distance corresponding to the desired length of gap.

5. Apparatus for producing a gap in slide fastener chain having tapes carrying along their adjacent longitudinal edges continuous coils attached to the tapes, said coils having coupling parts which are interengaged, said apparatus comprising means to pull the tapes apart at the desired location of a gap without separating the inter-

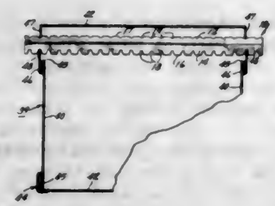
engaged coils in order to expose the interengaged parts of the coils between the spread-apart adjacent edges of the tapes, and means to cut the coils without cutting the tapes for a distance corresponding to the desired length of gap.

3,225,431
METHOD OF MANUFACTURING WOVEN METAL ARTICLES OF FURNITURE
Joseph H. Woodard, Owosso, Mich., assignor to Woodard Manufacturing Company, Owosso, Mich., a corporation of Michigan
Filed July 22, 1964, Ser. No. 384,483
14 Claims. (Cl. 29—419)



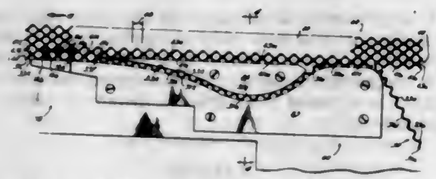
1. A method of manufacturing woven articles from a tubular braid having woven strands comprising,
attaching together at one end of the tubular braid overlapping end junctions of the tubular braid woven strands,
increasing the tubular braid at one end to a predetermined increased diameter,
forming a plurality of apertures of various sizes between said woven strands,
attaching a ring to the tubular braid increased diameter end to fix the dimensions of said increased diameter end,
fixing the dimensions of the tubular braid at the other end, and
forming a concave frusto-conical open tubular braid having large base formed by the tubular braid increased diameter one end, a small diameter frusto-apex formed by the tubular braid other end,
and an apertured woven strand tubular concave surface interconnecting the base and apex end.

3,225,432
SHEET METAL ASSEMBLY TOOL AND METHOD
Erwin R. Widman, 86—15 Elmhurst Ave., Elmhurst, N.Y.
Filed Jan. 31, 1963, Ser. No. 255,368
10 Claims. (Cl. 29—429)



7. A method of assembling a longitudinally extending topwall sheet to a pair of longitudinally extending sidewall sheets wherein said topwall sheet and a longitudinal edge of each of said sidewall sheets are adapted to be joined together, said method comprising the steps of standing said pair of sidewall sheets upright and in a predetermined spaced-apart and substantially parallel relationship with respect to each other with said respective longitudinal edges thereof uppermost, said predetermined spacing being substantially equal to the transversely measured width of said topwall sheet, disposing an elongated tool in transverse direction with respect to said sidewall sheets and placing the tool in contact engagement at an underside surface thereof with both of said longitudinal edges of the sidewall sheets at a location spaced away from one end of the pair of sidewall sheets, said underside surface of the tool including a pair of spaced apart and transversely disposed guide means respectively receiving and retaining said longitudinal edges of the sidewall sheets, and said tool when so engaging said longitudinal edges retaining said predetermined spacing between said sidewall sheets, placing said topwall sheet in contact engagement with the opposite, upperside surface of said tool and substantially in position to be joined to said longitudinal edges of the sidewall sheets, placing one end of said topwall sheet in joining relation with respect to both of said respective longitudinal edges of the sidewall sheets at said one end of the latter, and progressively placing said topwall sheet in joining relation along its length with the respective lengths of said longitudinal edges of the sidewall sheets while to substantially the same extent progressively and substantially sliding said tool along the remaining lengths of said longitudinal edges of the sidewall sheets, said tool always being positioned ahead, in the direction of said progressive joining, of the location along the length of said topwall sheet which is then being so joined to said longitudinal edges of the sidewall sheets.

3,225,433
METHOD AND APPARATUS FOR INDEXING AND ASSEMBLING A CORE STRIP TO A HONEYCOMB CORE PANEL
Roy L. Anspach, Orange, Calif., assignor, by mesne assignments, to Aeronca Manufacturing Corporation, Middletown, Ohio
Filed Aug. 8, 1963, Ser. No. 300,818
9 Claims. (Cl. 29—429)



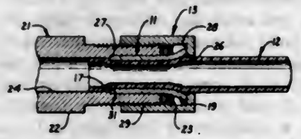
1. A method of indexing a honeycomb core strip to the edge of a previously formed honeycomb core panel, comprising the steps of:
placing said panel and said strip in a substantially parallel arrangement;
advancing them together in a longitudinal direction;
as a first work location is passed, establishing, by means which engages said panel edge, a preliminary longitudinal alignment of said strip relative to said panel;
changing said preliminary longitudinal alignment by a predetermined amount as a second work location is passed;
and, upon reaching a third work location, moving said strip transversely into engagement with said panel edge in a condition of final longitudinal alignment relative thereto.

3,225,434
METHODS OF PREFABRICATING SECTIONS OF BUILDINGS
Cornelis van der Lely, Zug, and Hendricus Jacobus Cornelis Nieuwenhoven, Baar, Switzerland, assignors to C. van der Lely N.V., Maasland, Netherlands, a Dutch limited-liability company
Filed Oct. 9, 1962, Ser. No. 229,408
Claims priority, application Netherlands, Nov. 7, 1961, 271,126
17 Claims. (Cl. 29—430)



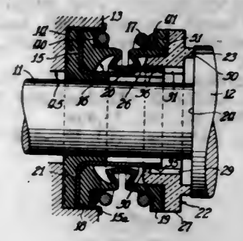
1. A method of producing large prefabricated box-shaped sections to be assembled in a building in predetermined relationships which comprises the steps of placing the frameworks of said sections on an assembly line including transport means adapted to move said frameworks therealong, detachably connecting said frameworks of at least two of said sections, fabricating said sections while same are firmly attached together in said predetermined relationships, while moving same along said assembly line and thereafter disconnecting said detachable connections between said sections, whereby said sections may be transported individually for assembly at the site for said building.

3,225,435
METHOD FOR ATTACHING CONNECTOR ELEMENTS TO RESILIENTLY FLEXIBLE TUBING
Erik W. Anthoe, Kensington, Calif., assignor to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware
Filed May 7, 1965, Ser. No. 454,085
6 Claims. (Cl. 29—432.2)



1. A method for assembling an anchoring sleeve on a resiliently flexible plastic tubing comprising the steps of selecting a piece of brittle tubing having an internal diameter slightly smaller than the external diameter of the plastic tubing, fracturing the brittle tubing transversely of its axis to provide an anchoring sleeve having a sharpened rim at one end thereof, reducing the size of an end portion of the plastic tube to provide an external diameter smaller than the internal diameter of the anchoring sleeve throughout a length of tubing which is longer than the sleeve, inserting the reduced end portion of the plastic tube through the anchoring sleeve with the anchoring sleeve oriented so that the tube goes through the sharpened rim of the anchoring sleeve last, and providing an end of the tube extending beyond said sharpened rim with an outside diameter larger than the internal diameter of the rim.

3,225,436
METHOD OF ASSEMBLING A FLUID SEAL STRUCTURE
John Talamonti, Chicago Heights, Ill., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Original application June 22, 1962, Ser. No. 204,410. Divided and this application June 3, 1963, Ser. No. 290,271
1 Claim. (Cl. 29—436)

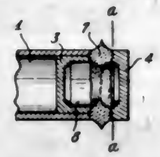


A method of making an integral seal assembly comprising the steps of providing a tubular member with a radial outwardly extending wall at the rear terminal end thereof, a group of axially extending ribs on the outer periphery of said tubular member, and a group of nipple-like extensions on the outer periphery of said tubular member; providing a body portion of rubber-like material having a central cylindrical portion and annular inner and outer radially extending flanges; providing a keyed sealing ring having a central opening with a group of axially extending grooves and a group of axially extending slots in the internal periphery thereof, the grooves characterized by extending the axial length of said sealing ring and the slots characterized by having a shoulder preventing their extending the full axial length of said ring; placing said body portion around said tubular member so as to position one of said radially extending flanges adjacent said radial rear wall; positioning said sealing ring over said tubular member so that said group of grooves are in registered relation to said first group of ribs on said tubular member and said group of slots are in registered relation with said group of nipple-like extensions on said tubular member, forcing said sealing ring over said tubular member to cause said nipple-like extensions on said tubular member to snap into said slots in said sealing ring and said first enlargements in said tubular member to seat in said grooves of said sealing ring to thereby provide an integral seal assembly.

3,225,437
FLUID-TIGHT CLOSURE OF FUEL ELEMENTS SHEATHED WITH PARTIALLY OXIDIZED POWDERED METALS
Jacques André Stohr, 83 Rte. de Chartres, Bures-sur-Yvette, France, and Claude Bridoux, 22 Ave. Henri Barbusse, Bagneux, France
Filed Oct. 6, 1961, Ser. No. 143,330
Claims priority, application France, Oct. 18, 1960 841,643
6 Claims. (Cl. 29—473.5)

1. A process for forming a fluid-tight closure of a nuclear fuel element sheath composed of consolidated, slightly oxidized, powdered metal, comprising the steps

of inserting a concave plug of consolidated, slightly oxidized, powdered metal into said fuel element sheath, covering said plug and the end of said sheath with a con-



vex counter-plug of consolidated, slightly oxidized, powdered metal, simultaneously welding said sheath, plug and counter-plug and subsequently removing the excess metal by machining.

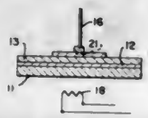
3,225,438

METHOD OF MAKING ALLOY CONNECTIONS TO SEMICONDUCTOR BODIES

Theodore W. Cooper, Torrance, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Original application Dec. 23, 1957, Ser. No. 704,616, now Patent No. 3,007,092. Divided and this application Nov. 22, 1960, Ser. No. 75,044

3 Claims. (Cl. 29—488)



1. The method of providing a connection to a semiconductor crystal body by alloying a bonding material to a layer of metal deposited thereon comprising: depositing on at least a portion of one surface of said body a layer of silver; depositing on said layer of silver a layer of gold; contacting said layer of gold with a bonding material which readily wets gold and has a low solubility for silver; heating the combination to a temperature above the melting point of said bonding material but below the melting point of silver; and cooling the combination whereby said bonding material is alloyed with said layer of gold to form a connection to said semiconductor crystal body.

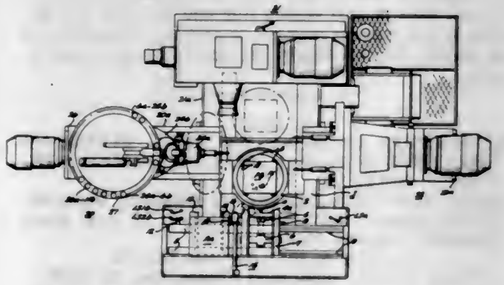
3,225,439

MACHINE TOOL CONTROL

Charles B. Perry, Palos Verdes Estates, and William F. Webb, Torrance, Calif., assignors to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed May 29, 1962, Ser. No. 198,681

15 Claims. (Cl. 29—568)



1. A machine control, comprising:
a movable member;
power means coupled to said movable member to move said movable member;
power control means coupled to said power means to control said power means;
discrete signal, position indicator means coupled to and operated by said movable member;
a pair of discrete signal program devices;
circuit means interconnecting one program device and said position indicator means in one sense and having an output circuit coupled to said power control means to control said movable member in accordance with the discrete signals of said one program device;
circuit means interconnecting the other of said program devices and said position indicator means in a different sense from the interconnection of said one program device and said position indicator means and having an output circuit coupled to said power control means to control said movable member in accordance with a predetermined modification of the discrete signals of said other program device;
and selector means coupled to said program devices for selectively operating said program devices.

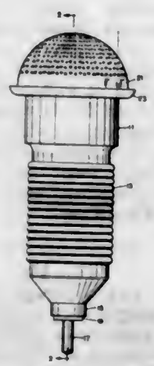
3,225,440

ELECTRIC SHAVER HAVING ANGLED BLADES ADAPTED TO BE INSERTED IN CORRESPONDING ANGLED SLOTS IN A BLADE SUPPORTING MEMBER

Neal Owens, 2223 Carondelet St., New Orleans, La.

Filed Sept. 19, 1963, Ser. No. 310,084

3 Claims. (Cl. 30—43.4)



1. A shaving device comprising a housing, an electrical motor mounted within said housing, a shaft connected to said motor and extending outwardly from one end of said housing, a solid substantially hemispherical blade supporting member mounted on said shaft, a plurality of arcuate slots in said blade supporting member extending from the periphery of said member inwardly towards the axis of said shaft, a substantially hemispherical comb having a plurality of apertures therein secured to said one end of said housing, the radius of said comb being greater than the radius of said blade supporting member, a blade having an arcuate cutting edge slidably positioned within each of said slots, the cutting edge of said blades having a curvature substantially equal to the curvature of said comb and being spaced therefrom when said blade is resting in said slot, and a continuation of each of said slots at substantially right angles thereto, said continuation being substantially parallel to the axis of said shaft, and an extension connected to each of said blades which conforms to the configuration of said continuation of each of said slots.

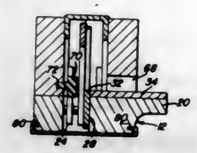
3,225,441

ENVELOPE SHEAR

Dwight G. Myers, Scottsbluff, Nebr., assignor to Letter Lover, Inc., St. Charles, Mo., a corporation of Missouri

Filed Apr. 24, 1963, Ser. No. 275,374

4 Claims. (Cl. 30—231)



1. An envelope shear consisting of upper and lower shearing blades, an enlarged base, a vertical elongated slot through said base, said lower blade being located within said slot and fixedly secured to one side thereof with the severing edge of the lower blade being positioned in substantially the same plane as the top of the base, means pivotally mounting the upper blade for movement, from a generally raised position relative to the lower blade, past the lower blade in a plane parallel to the plane of the lower blade in a manner so as to sever a portion of an envelope positioned therebetween, means resiliently biasing the upper blade away from the lower blade, removable means closing the bottom of the slot so as to retain severed portions therein, a resilient stop projecting from the plane of the side of the slot opposite from the side to which the lower blade is secured so as to act as a limit to the insertion of an envelope between the blades, the envelope to be sheared being abutted against said stop, and means for flexing each portion of the stop downwardly and rearwardly away from the lower blade upon the severing of that part of the envelope engaged thereagainst so as to assist in the discharge of the severed portion of the envelope.

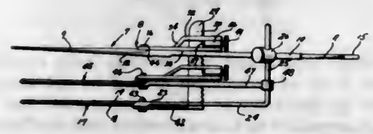
3,225,442

TONSORIAL INSTRUMENT

David C. Persyn, 9108 Seymour Road, Swartz Creek, Mich.

Filed Aug. 29, 1963, Ser. No. 305,382

5 Claims. (Cl. 30—233.5)



4. In combination with a pair of shears and a hair lifter the arms of which are operatively connected to the shanks of said shears, means for supporting said hair lifter and shears in adjustably spaced, parallel arrangement with the pivots and the lines of closure of the blades of said hair lifter and shears in alignment comprising, a post having a plurality of indentations therein and supported upon said hair lifter normal to the plane of the blades of said hair lifter, a support member borne by said shears and having an aperture adapted to receive said post, and means for releasably engaging said support member with a selected indentation of said post.

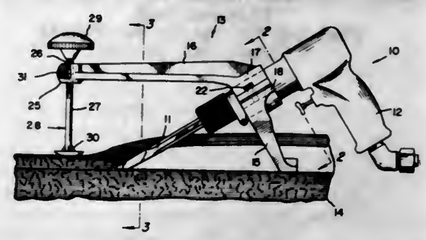
3,225,443

SUPPORT MEANS FOR VIBRATORY HAND-HELD POWER TOOLS

Douglas L. G. Young, Pierrefonds, Quebec, Canada, assignor to Canadian Ingersoll-Rand Company Limited, Quebec, Quebec, Canada, a corporation of Canada

Filed July 23, 1964, Ser. No. 384,690

8 Claims. (Cl. 30—273)



1. A support member for a hand-held, power-operated tool having a housing and means for effecting the reciprocation of a work-engaging implement, the support member supporting the tool above and on a supporting surface while the implement slits the surface, the support member comprising:
(a) a frame detachably connected to the housing of the power tool,
(b) said frame having at least two spaced feet for engaging the supporting surface at spaced points on said surface with one of said feet being located forward of said work-engaging implement to support the power tool in spaced relation to the supporting surface.

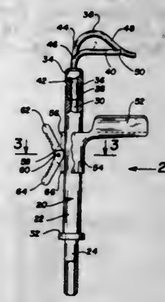
3,225,444

CHIN-SECURED DENTAL ASPIRATOR

William B. Greenman, La Mesa, Calif., assignor to Instro-Dynamics Corporation, San Diego, Calif., a corporation of California

Filed Oct. 14, 1963, Ser. No. 298,657

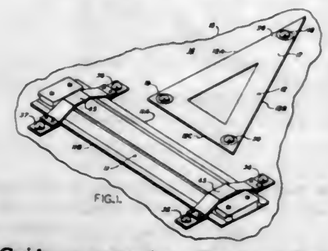
4 Claims. (Cl. 32—33)



4. A chin-secured dental aspirator operable from a suction line and comprising, in combination, a hollow stem, adapter means at one end of said stem for removably connecting the same to said suction line, a chin rest sleeved on said stem and having means for releasably securing the chin rest to the stem in adjusted position therealong, a hollow head detachably secured to the opposite end of said stem in communication therewith, said hollow head and said opposite end of said stem having interfitting surfaces for detachably securing the same together, at least one tube formed as a unit with said head and extended therefrom in open communication therewith, said means for releasably securing the chin rest to the stem comprising a cam pivotally secured to the chin rest and engagable with the stem when the cam is pivoted, and an engagable actuator for said cam extended longi-

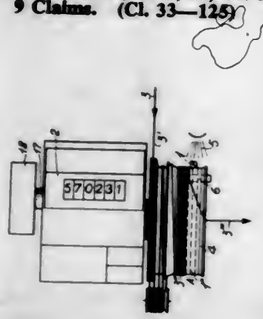
tudinally of said stem and to either side of the pivotal support for the cam for pivoting the same as either of the actuator extensions is depressed toward the stem.

3,225,445
GUIDE APPARATUS FOR DRAFTING INKING
Aloysius McIlvaine Duggan, 189 N. Marengo Ave., Pasadena, Calif.
Filed Aug. 19, 1963, Ser. No. 303,014
3 Claims. (Cl. 33—107)



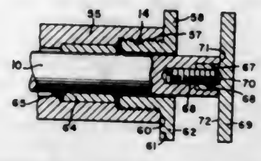
1. Guide apparatus for ruling inked lines upon a working surface comprising a ruling instrument having a bottom surface, a guiding edge on the instrument, a plurality of attachment means fixed to the ruling instrument, each attachment means having a top clamp and a retainer strip with ends extending beyond the guiding edges of the ruling instrument, a protruding contact means held by each attachment means and adapted to raise the bottom surface of the instrument above the working surface, each contact means diminishing in its horizontal cross-sectional area away from the said bottom surface of the instrument.

3,225,446
METHOD AND APPARATUS FOR HANDLING FILAMENTS
Alberto Gustavo Sarfati and Giuseppe Vischiani, Busto Arsizio, Italy, assignors to Sobrevin Soc. de Brevets Industriels Etablissement
Filed Oct. 29, 1962, Ser. No. 233,645
Claims priority, application Italy, Oct. 31, 1961, Patent 659,733; Aug. 11, 1962, 16,151/62
9 Claims. (Cl. 33—125)



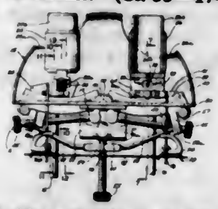
1. A method of handling a filament of indeterminate length, comprising winding the filament on a drum from a direction substantially tangential to the drum at a first linear velocity of the filament to form a single layer of turns of filament on the drum, advancing said layer by pressure of the last turn of the layer, simultaneously withdrawing said filament from the drum in a direction substantially endwise of the drum at a second velocity of the filament which is substantially different from said first velocity, and exerting on said filament as it leaves the drum a retarding force that maintains the withdrawn filament at constant tension.

3,225,447
MICROMETER MEASURING DEVICE HAVING FEELERS
Irvin E. Bryant, Hawthorne, Calif., assignor to The Lufkin Rule Company, Saginaw, Mich., a corporation of Michigan
Filed Feb. 13, 1961, Ser. No. 89,060
2 Claims. (Cl. 33—143)



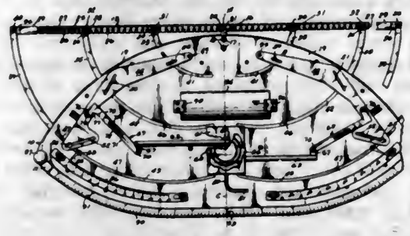
1. A measuring instrument comprising a spindle, a first laterally outwardly projecting feeler of predetermined thickness, said spindle having a threaded concentric axial bore, threaded means connecting with said feeler received in said bore and removably connecting said first feeler to the front end of said spindle, said spindle having a radial feeler confronting face and said first feeler having a hub portion, and said feeler including a radial face engaging and aligning with said confronting face, a tubular frame, a second outwardly projecting feeler of predetermined thickness on the front end thereof, means removably connecting said second feeler to one end of said tubular frame, said spindle projecting through said tubular frame with said first and second feelers juxtaposed, means for relatively axially moving said spindle and said tubular frame, and means for indicating the relative positions of said spindle and tubular frame.

3,225,448
FINGER-HOLD MODELS FOR BOWLING BALLS
George E. Dorey, 12243 Irving Ave., Blue Island, Ill.
Filed May 22, 1962, Ser. No. 196,764
5 Claims. (Cl. 33—174)



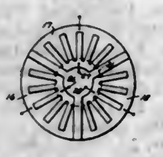
1. A finger-hold model for bowling balls comprising a support, a set of receptacles carried by the same and simulative of the holes in which the thumb and forefingers are insertible to hold a bowling ball, and a mechanism to adjust the receptacles in spacing and angular relations affording a comfortable and retentive hold of the receptacles by the thumb and forefingers, said support containing longitudinally-alined ways in which the inner ends of the receptacles are supported and slidable toward and from each other, said mechanism including means pivoting the inner ends of said ways horizontally to the support, other means carried by the latter and directed to the outer ends of said ways to swing them in relation to their pivoting means, and said means including a pair of screws extending alongside said ways, the inner ends of the screws being pivoted to those of the related ways, and the receptacles carrying traveling nuts mounted on the related screws, the outer ends of these being rotatable to slide the receptacles as stated.

3,225,449
DRAFTING INSTRUMENT
James F. Wood, P.O. Box 2145, El Paso, Tex.
Filed Mar. 16, 1965, Ser. No. 440,229
18 Claims. (Cl. 33—177)



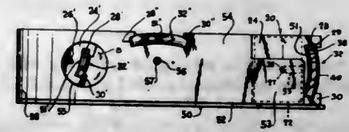
1. In a drafting instrument,
a housing having an advance edge,
a flexible rule spaced from said advance edge and having an indexing point intermediate the ends thereof,
a fixed supporting connection between said housing and said rule in alignment with said indexing point and supporting said rule to flex about said fixed connection,
and means flexing said rule equal amounts on each side of said indexing point to conform to uniform arcs in each position of flexure thereof comprising,
at least two actuator bars guided for movement in arcuate paths,
means pivotally connecting the ends of said actuator bars with opposite ends of said flexible rule,
arcuate guides in said housing on opposite sides of the transverse center thereof and struck about axes offset from the transverse center of said housing and converging toward the transverse center of said housing,
means guiding said actuator bars in said guides to move in arcuate paths,
an individual actuator lever for each bar,
said actuator levers being pivotally mounted on said housing on opposite sides of the transverse center thereof for movement about vertical axes disposed adjacent the advance edge of said housing,
slidable operative connections between said actuator levers and said actuator bars,
and manually operable means moving said actuator levers equal amounts in opposite directions to operate said actuator bars to flex said rule to conform to an exact radius of curvature for each position of flexure thereof.

3,225,450
POSITION INDICATING DEVICE
Howard E. Stanley, Los Angeles, Calif., assignor to International Rectifier Corporation, El Segundo, Calif., a corporation of California
Filed Aug. 23, 1961, Ser. No. 133,511
2 Claims. (Cl. 33—206)



1. A position indicating device comprising:
(a) a dished member having a concave lower surface;
(b) a photocell array constituted of three photocells disposed adjacent said concave surface and positioned symmetrically of the center thereof;
(c) an opaque fluid positioned within said dished member extending symmetrically of the center of the concave surface thereof when the dished member is positioned horizontally, the opaque fluid moving to block a larger area of one of said three photocells than of another of said cells when the dished member moves out of the horizontal position;
(d) a pair of terminals connected to each of said photocells, a first terminal of each of said pairs being electrically interconnected;
(e) a servo generator having a three phase stator and a single phase rotor energized by said stator, the stator windings being electrically connected to the second terminals of the respective pairs of terminals; and
(f) an indicator means mechanically connected to said rotor and being actuated thereby.

3,225,451
PIGGYBACK POCKET LEVEL
Andrew S. Olexson, Lebanon, N.J. (Bloomsbury, N.J.), and Eugene P. Olexson, Roselle, N.J. (Mine Road, Box 186B, Asbury, N.J.)
Filed Feb. 18, 1963, Ser. No. 261,555
17 Claims. (Cl. 33—207)



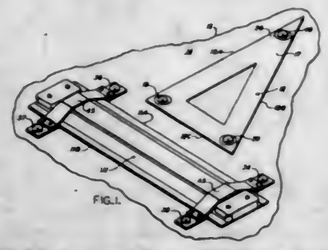
1. A leveling device, comprising a pair of flat rectangular plates made of magnetic material, a flat rectangular permanent magnet disposed between the pair of plates, each of said plates having an inverted T-shaped cutout at one edge defining a long arcuate bottom edge and a pair of overhanging opposed inverted L-shaped tabs, a tubular spirit level engaged in the cutouts of the plates between the tabs and the long bottom edges of the cutouts, said tubular level having a hollow longitudinally arcuate body with resilient ends adjustably engaged by the tabs and arcuate bottom edges of the cutouts, and a fluid incompletely filling said body to provide an air bubble movable in said body.

3,225,452
MEANS AND METHOD FOR GYROCOMPASS ALIGNMENT
Robert L. Gates, Palos Verdes Estates, Calif., assignor, by mesne assignments, to Thompson Ramo Wooldridge Inc., Cleveland, Ohio, a corporation of Ohio
Filed Apr. 30, 1962, Ser. No. 191,171
17 Claims. (Cl. 33—226)

12. A method of using an inertial gyro that comprises the steps of
first, approximately aligning a first plane defined by the local gravity vector and the spin reference axis with the local meridian plane,
then locating the input axis of the gyro in a first position in the local horizontal plane,
then measuring the total gyro drift rate with the input axis in said first position,
then locating said input axis in a second position in said local horizontal plane,
then measuring the total gyro drift rate with said input axis in said second position,

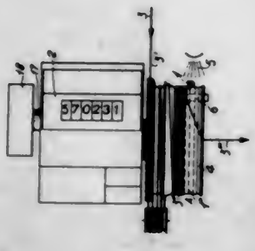
tudinally of said stem and to either side of the pivotal support for the cam for pivoting the same as either of the actuator extensions is depressed toward the stem.

3,225,445
GUIDE APPARATUS FOR DRAFTING INKING
Aloysius McIlvaine Deggan, 189 N. Marengo Ave., Pasadena, Calif.
Filed Aug. 19, 1963, Ser. No. 303,014
3 Claims. (Cl. 33—107)



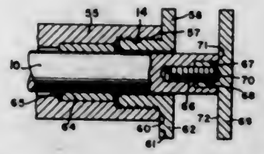
1. Guide apparatus for ruling inked lines upon a working surface comprising a ruling instrument having a bottom surface, a guiding edge on the instrument, a plurality of attachment means fixed to the ruling instrument, each attachment means having a top clamp and a retainer strip with ends extending beyond the guiding edges of the ruling instrument, a protruding contact means held by each attachment means and adapted to raise the bottom surface of the instrument above the working surface, each contact means diminishing in its horizontal cross-sectional area away from the said bottom surface of the instrument.

3,225,446
METHOD AND APPARATUS FOR HANDLING FILAMENTS
Alberto Gustavo Serfati and Giuseppe Vicchiani, Busto Arsizio, Italy, assignors to Sobrevin Soc. de Brevets Industriels Etablissement
Filed Oct. 29, 1962, Ser. No. 233,645
Claims priority, application Italy, Oct. 31, 1961, Patent 659,733; Aug. 11, 1962, 16,151/62
9 Claims. (Cl. 33—125)



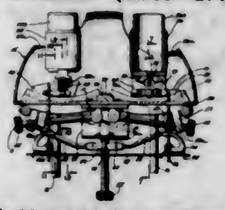
1. A method of handling a filament of indeterminate length, comprising winding the filament on a drum from a direction substantially tangential to the drum at a first linear velocity of the filament to form a single layer of turns of filament on the drum, advancing said layer by pressure of the last turn of the layer, simultaneously withdrawing said filament from the drum in a direction substantially endwise of the drum at a second velocity of the filament which is substantially different from said first velocity, and exerting on said filament as it leaves the drum a retarding force that maintains the withdrawn filament at constant tension.

3,225,447
MICROMETER MEASURING DEVICE HAVING FEELERS
Irvin E. Bryant, Hawthorne, Calif., assignor to The Lufkin Rule Company, Saginaw, Mich., a corporation of Michigan
Filed Feb. 13, 1961, Ser. No. 89,060
2 Claims. (Cl. 33—143)



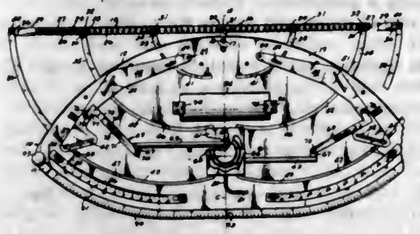
1. A measuring instrument comprising a spindle, a first laterally outwardly projecting feeler of predetermined thickness, said spindle having a threaded concentric axial bore, threaded means connecting with said feeler received in said bore and removably connecting said first feeler to the front end of said spindle, said spindle having a radial feeler confronting face and said first feeler having a hub portion, and said feeler including a radial face engaging and aligning with said confronting face, a tubular frame, a second outwardly projecting feeler of predetermined thickness on the front end thereof, means removably connecting said second feeler to one end of said tubular frame, said spindle projecting through said tubular frame with said first and second feelers juxtaposed, means for relatively axially moving said spindle and said tubular frame, and means for indicating the relative positions of said spindle and tubular frame.

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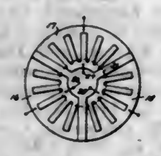
1. A finger-hold model for bowling balls comprising a support, a set of receptacles carried by the same and simulative of the holes in which the thumb and forefingers are insertible to hold a bowling ball, and a mechanism to adjust the receptacles in spacing and angular relations affording a comfortable and retentive hold of the receptacles by the thumb and forefingers, said support containing longitudinally-alined ways in which the inner ends of the receptacles are supported and slidable toward and from each other, said mechanism including means pivoting the inner ends of said ways horizontally to the support, other means carried by the latter and directed to the outer ends of said ways to swing them in relation to their pivoting means, and said means including a pair of screws extending alongside said ways, the inner ends of the screws being pivoted to those of the related ways, and the receptacles carrying traveling nuts mounted on the related screws, the outer ends of these being rotatable to slide the receptacles as stated.

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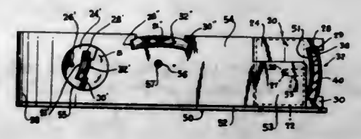
1. In a drafting instrument,
a housing having an advance edge,
a flexible rule spaced from said advance edge and having an indexing point intermediate the ends thereof,
a fixed supporting connection between said housing and said rule in alignment with said indexing point and supporting said rule to flex about said fixed connection,
and means flexing said rule equal amounts on each side of said indexing point to conform to uniform arcs in each position of flexure thereof comprising,
at least two actuator bars guided for movement in arcuate paths,
means pivotally connecting the ends of said actuator bars with opposite ends of said flexible rule,
arcuate guides in said housing on opposite sides of the transverse center thereof and struck about axes offset from the transverse center of said housing and converging toward the transverse center of said housing,
means guiding said actuator bars in said guides to move in arcuate paths,
an individual actuator lever for each bar,
said actuator levers being pivotally mounted on said housing on opposite sides of the transverse center thereof for movement about vertical axes disposed adjacent the advance edge of said housing,
slidable operative connections between said actuator levers and said actuator bars,
and manually operable means moving said actuator levers equal amounts in opposite directions to operate said actuator bars to flex said rule to conform to an exact radius of curvature for each position of flexure thereof.

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1. A position indicating device comprising:
(a) a dished member having a concave lower surface;
(b) a photocell array constituted of three photocells disposed adjacent said concave surface and positioned symmetrically of the center thereof;
(c) an opaque fluid positioned within said dished member extending symmetrically of the center of the concave surface thereof when the dished member is positioned horizontally, the opaque fluid moving to block a larger area of one of said three photocells than of another of said cells when the dished member moves out of the horizontal position;
(d) a pair of terminals connected to each of said photocells, a first terminal of each of said pairs being electrically interconnected;
(e) a servo generator having a three phase stator and a single phase rotor energized by said stator, the stator windings being electrically connected to the second terminals of the respective pairs of terminals; and
(f) an indicator means mechanically connected to said rotor and being actuated thereby.

3,225,451
PIGGYBACK POCKET LEVEL
Andrew S. Olexson, Lebanon, N.J. (Bloomsbury, N.J.), and Eugene P. Olexson, Roselle, N.J. (Mine Road, Box 186B, Asbury, N.J.)
Filed Feb. 18, 1963, Ser. No. 261,555
17 Claims. (Cl. 33—207)

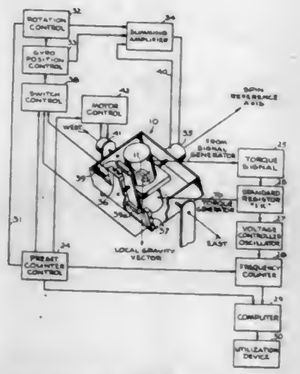


1. A leveling device, comprising a pair of flat rectangular plates made of magnetic material, a flat rectangular permanent magnet disposed between the pair of plates, each of said plates having an inverted T-shaped cutout at one edge defining a long arcuate bottom edge and a pair of overhanging opposed inverted L-shaped tabs, a tubular spirit level engaged in the cutouts of the plates between the tabs and the long bottom edges of the cutouts, said tubular level having a hollow longitudinally arcuate body with resilient ends adjustably engaged by the tabs and arcuate bottom edges of the cutouts, and a fluid incompletely filling said body to provide an air bubble movable in said body.

3,225,452
MEANS AND METHOD FOR GYROCOMPASS ALIGNMENT
Robert L. Gates, Palos Verdes Estates, Calif., assignor, by mesne assignments, to Thompson Ramo Wooldridge Inc., Cleveland, Ohio, a corporation of Ohio
Filed Apr. 30, 1962, Ser. No. 191,171
17 Claims. (Cl. 33—226)

12. A method of using an inertial gyro that comprises the steps of
first, approximately aligning a first plane defined by the local gravity vector and the spin reference axis with the local meridian plane,
then locating the input axis of the gyro in a first position in the local horizontal plane,
then measuring the total gyro drift rate with the input axis in said first position,
then locating said input axis in a second position in said local horizontal plane,
then measuring the total gyro drift rate with said input axis in said second position,

then algebraically differencing the gyro drift rate measured in said first position and said second position to determine a first misalignment angle of said first plane with respect to said local meridian plane,
then repositioning said spin reference axis 180 degrees from the original position in said first plane,
then locating the input axis of the gyro in a first position in the local horizontal plane,
then measuring the total gyro drift rate with the input axis in said last named first position,
then locating said input axis in a second position in said local horizontal plane,

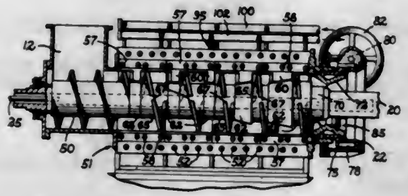


then measuring the total gyro drift rate with said input axis in said last named second position,
then algebraically differencing the gyro drift rate measured in said last named first position and said last named second position to determine the second misalignment angle of said first plane with respect to said local meridian plane, and
then summing and averaging said first and second misalignment angles to determine a final misalignment angle of said first plane with respect to said local meridian plane.

3,225,453
PROCESS AND APPARATUS FOR DRYING ELASTOMERIC MATERIALS

Andre H. Burner, Piqua, Ohio, assignor to The French Oil Mill Machinery Company, Piqua, Ohio, a corporation of Ohio

Filed July 22, 1963, Ser. No. 296,843
9 Claims. (Cl. 34—12)



1. Apparatus for mechanically dewatering rubber material while maintaining the drying rate of the dewatered material within predetermined limits, comprising wall means defining an elongated cylindrical expression chamber having an inlet at one end and an outlet at the other end thereof and a plurality of drainage openings through the walls thereof over the full length of said chamber and distributed around the entire periphery of the chamber to surround the rubber material with drainage openings through which fluids removed from the rubber material are immediately conducted away from such material, a shaft extending through said chamber having a plurality of working and conveying worms mounted at spaced locations therealong, said worms including a worm body having a substantially smaller diameter than the interior of said chamber and having worm flights extending from said worm bodies to adjacent said wall means defining said chamber, collar members mounted on said shaft between said worm members, at least some of said collar members tapering outwardly from the preceding worm body to a greater diameter than said preceding worm body, breaker lugs extending from said wall means toward said collar members, drive means connected to rotate said shaft for conveying rubber material through said chamber, said worms and said collar members and said lugs cooperating to work the rubber material for rupturing pockets therein to release fluids encapsulated in such pockets while simultaneously exerting mechanical pressure on the material, and means adjacent said chamber outlet operated by said shaft and effective to tear the dewatered rubber material passed therefrom to reduce the particle size of the dewatered rubber material without compacting thereof and without sealing the surface of the particles of rubber material.

9. In the continuous process of drying wet rubber-like material having pockets of liquid to be removed in order to produce a dry product, the steps comprising
(a) continuously conveying the wet material through an elongated expression chamber,
(b) simultaneously subjecting the material to fluctuating compression forces and to mechanical working by passing the material over collar members within said chamber and through screw flights intermediate the collar members with at least some of the collar members tapering outwardly from the worm body of the preceding screw flight to a greater diameter than said preceding worm body, whereby the material is raised in temperature above the vaporization temperature of contained liquids without reaching a temperature at which the material will be damaged.
(c) tearing and mixing the material as a part of said mechanical working to rupture the liquid-containing pockets and to permit the liquids to escape in liquid and/or vapor form producing a cooling effect on the material from transfer of heat of vaporization from the material to liquid being vaporized.
(d) relasing the escaping liquid and/or vapor from the material throughout the extent of the expressing chamber through small drainage openings in the walls thereof over essentially the entire length and distributed around the entire periphery of the chamber whereby the fluids are immediately released from the material and tend to pass directly to the outside of the chamber and be separated from the material, and
(e) breaking the material into small porous pieces as it discharges from said expression chamber to obtain a porous like product in which the liquid content is substantially reduced.

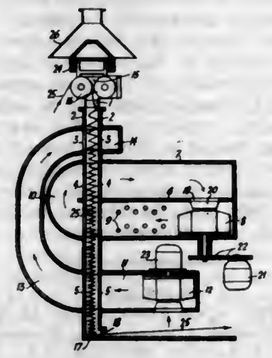
3,225,454
DEVICE FOR THERMAL FIXATION OF SYNTHETIC FIBER CABLES

Josef Joch, Mirko Kaspar, and Oldrich Kase, Brno, Czechoslovakia, assignors to Sdruzeni podniku textilniho strojirenstvi, Liberec, Czechoslovakia

Filed Nov. 15, 1962, Ser. No. 237,966
Claims priority, application Czechoslovakia, Nov. 24, 1961, 6,947/61
7 Claims. (Cl. 34—65)

1. An apparatus for setting synthetic fibers comprising, in combination:
(a) a vertically extending shaft constituted by upright wall means,

(1) said wall means defining a feed opening at the top of said shaft and a discharge opening at the bottom of said shaft,
(2) said wall means including a plurality of vertically spaced pairs of gas pervious wall portions,
(3) the wall portions of each pair being arranged on a common level and on opposite sides of said shaft;
(b) first conduit means communicating with one wall portion of a first one of said pairs;
(c) second conduit means communicating with the other wall portion of said first pair and with a first wall portion of a second pair of said pervious wall portions;
(d) third conduit means communicating with the other wall portion of said second pair and with said first conduit means, whereby said first, second, and third conduit means and said first and second pairs of wall portions define a closed circuit for the flow of a heating gas through said shaft on two levels;



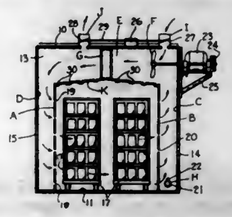
(e) first blower means for circulating said heating gas in said closed circuit;
(f) heating means for heating said gas in said circuit;
(g) fourth conduit means communicating with one wall portion of a third pair of pervious wall portions downwardly spaced from said first and second pairs;
(h) fifth conduit means communicating with the other wall portion of said third pair and with one wall portion of a fourth pair of said pervious wall portions upwardly spaced from said first and second pairs;
(i) sixth conduit means communicating with the other wall portion of said fourth pair of wall portion, whereby said fourth, fifth, and sixth conduit means and said third and fourth pairs of wall portions define a path for a cooling and pre-heating gas passing through said shaft on two spaced levels;
(j) second blower means for actuating movement of said cooling and pre-heating gas in said path from said fourth to said sixth conduit means; and
(k) feed means for feeding fibers to said feed opening.

3,225,455
TEXTILE YARN STEAMER AND DRYER

Fred W. Waddelle, 115 Eastlan Drive, Greenville, S.C.

Filed Nov. 28, 1962, Ser. No. 240,687
2 Claims. (Cl. 34—77)

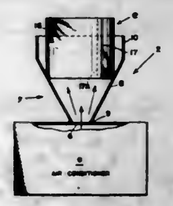
1. A textile yarn steamer and dryer and the like having a conditioning compartment for containing the yarn including, a first substantially vertical side compartment wall having spaced apertures therein, a second substantially vertical side compartment wall opposite said first wall having corresponding apertures therein, a first substantially vertical elongated chamber formed by said second wall and an outside wall, a second substantially vertical elongated chamber formed by said first wall and an outside wall, an intermediate elongated horizontal chamber through which said first chamber communicates with said second chamber above said vertical chamber walls formed by a compartment top and an outside top, spaced corrugations within the compartment top collecting and disposing of condensation formed on the compartment top in the intermediate chamber, fan means positioned within said intermediate chamber for creating a drop in static pressure in said first chamber and to remove condensation at the top of the conditioning compartment, said fan means creating a rise in static pressure in said second chamber, and means heating and means humidifying the air passing through the compartment positioned externally of the compartment.



3,225,456
APPARATUS FOR CURING TOBACCO IN BUNDLES

Rush D. Touton, Wynnewood, Pa. (% Wurton Machine Co., 9th St. and Columbia Ave., Philadelphia 22, Pa.)

Filed Jan. 23, 1962, Ser. No. 168,051
3 Claims. (Cl. 34—202)



1. Apparatus for curing tobacco, comprising a wrapping means adapted to surround a bundle of tightly packed tobacco leaves with said leaves extending substantially vertically, said wrapping means being open at its top and bottom; air conditioning apparatus having an opening for the discharge of conditioned air upwardly through the tobacco leaves contained within said wrapping means; a foraminous structure secured to said air conditioning means and extending across said opening and adapted to support thereon said wrapped bundle of tobacco leaves with the open bottom of said bundle resting on said foraminous structure; means adapted to guide said conditioned air from said opening into and through said bundle comprising a boot surrounding said opening, a portion of said boot adapted to contact the lower exterior portion of said wrapping means; and an elastic member surrounding said boot and said lower portion of said wrapping means in tight contracting relation therewith and adapted to contract to reduce the diameter of the lower portion of said bundle as the curing of the tobacco leaves progresses.

3,225,457
DEVICE FOR SELECTIVELY EXPOSING AND CONCEALING STIMULI

Alexander Schure, 274 Beach 141st St., Belle Harbor, N.Y.

Filed June 12, 1963, Ser. No. 287,273
7 Claims. (Cl. 35—9)

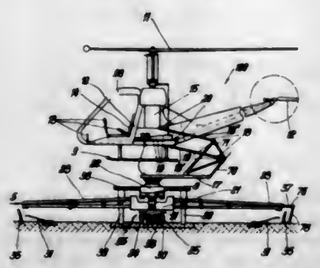


1. A teaching device comprising a matrix adapted to receive and expose consecutive frames of stimuli arranged as programmed material on a sheet, a program sheet containing stimuli associated with said matrix, at least a portion of said stimuli being optically confused and composed of sets of lineations, each set comprising alternate lines of bits of stimuli, a first observation station associated with said matrix comprising a window cut-out of predetermined size corresponding to a given unit size of a frame of stimuli and adapted to expose the same, and a second observation station consecutively arranged with respect to said first station comprising a lenticular screen of predetermined size characterized by a plurality of lens elements formed of contiguously arranged cylindrical segments for rendering said optically confused stimuli intelligible.

3,225,458
HELICOPTER TRAINING DEVICE

Hans Glöckl, Munich, Germany, assignor to Firma Bolkow Gesellschaft mit beschrankter Haftung, Munich, Germany

Filed May 21, 1962, Ser. No. 196,394
Claims priority, application Germany, May 26, 1961, B 62,637
2 Claims. (Cl. 35—12)



1. A helicopter construction comprising, in combination, a stationary base, rotary support means above said base, a mechanical swivel linkage between said rotary support means and said base and permitting tilting of said rotary support means relative to said base about at least one horizontal axis, a helicopter plane above said rotary support means, linkage means connected to and interpositioned between said helicopter plane and said rotary support means for permitting ascent and descent of said helicopter plane relative to said stationary base, and a platform above said mechanical swivel linkage and below said plane, said plane having a landing gear and said platform extending in the range of movement of said landing gear during the descent of said plane, said platform being rigidly connected with said stationary base by means of leg means extending between said base and said platform.

3,225,459
INSTRUMENT FLIGHT TRAINING HOOD

Leonard L. Wilstein, 2803 Donella Circle, Los Angeles, Calif.

Continuation of application Ser. No. 80,072, Jan. 3, 1961. This application June 15, 1964, Ser. No. 375,174
2 Claims. (Cl. 35—12)

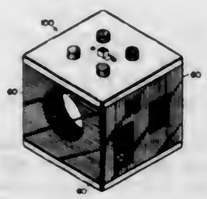


1. An instrument flight training hood comprising a shield having means whereby it may be supported from a person's head, said shield having parts around the upper and side portions of the wearer's face and an extending beak part having downwardly extending side parts, the shield being open at the bottom whereby the area that may be viewed by the wearer is limited by the length and configuration of the beak, means whereby side parts of the extending beak may be adjusted transversely to provide a variable controlled area of view, the said beak being formed so that the forward ends of the side parts thereof may be spread outwardly angularly, and an additional piece of material spanning the gap between the side parts of the beak, the side parts having adjustable relationship with said additional piece.

3,225,460
AMUSEMENT AND EDUCATIONAL DEVICE

Theodore C. Randell, 1 Wendell St., Cambridge, Mass., and Thomas S. Eldridge, Brooklyn, N.Y. (Rensselaerville, Albany County, N.Y.)

Filed June 6, 1962, Ser. No. 200,545
5 Claims. (Cl. 35—22)



1. In an educational and amusement apparatus an electrical circuit arrangement having a control means and an electrical energy source and comprising a plurality of stages connected in parallel,

each stage comprising at least two groups,

each group comprising first and second electrical devices and a single pole, double throw contact switch,

said control means connecting in series said energy source with said first electrical device and said contact switch of each group and alternatively connecting in series said energy source with said second electrical device and said contact switch of each group,

said contact switch of each group being arranged in series with a contact switch of another group in its stage and comprising means for restricting only one group in each stage to be activated at any specific time.

3,225,461
PREPRINTED HOLLOW RELIEF GLOBE, METHOD OF MAKING IT AND APPARATUS THEREFOR

Charles H. Snyder, Philadelphia, Pa., assignor, by mesne assignments, to Aero Service Incorporated, a corporation of Delaware

Filed Dec. 7, 1960, Ser. No. 74,263
1 Claim. (Cl. 35—46)



A two-part 3-dimensional substantially spherical map comprising a complementary pair of substantially hemisperical unitary one-piece parts of plastic sheet material of substantially uniform thickness throughout, each having projecting portions corresponding to land masses and adjacent spherical portions corresponding to water masses, one of said parts having a radially outwardly opening continuous parallel sided equatorial groove and the other of said parts having a radially inwardly projecting substantially flat continuous equatorial flange seated in said groove and cooperative therewith to form a joint to hold the parts together, each part being apertured coaxial with its spherical surface for receiving an element for supporting the map for rotation about its axis, each of said parts comprising a laminated assembly of at least two unitary plastic sheets including at least one transparent sheet, each sheet having its stress grain disposed at an angle with respect to the stress grain of an adjacent sheet, printed indicia designating features of the map carried by a face of one of the sheets and juxtaposed against the face of another sheet, said indicia being visible through said transparent sheet of the assembly, said sheets being free of gore lines.

3,225,462
CONVERTIBLE SHOES

Martin J. Lamberti, 116—02 232nd St., Cambria Heights, N.Y.

Filed Jan. 13, 1965, Ser. No. 425,200
4 Claims. (Cl. 36—2.5)

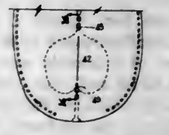


1. A convertible shoe consisting of a toe portion and a heel portion, the heel portion of the shoe having a first bottom sole and a heel upper, a plate conforming to the shape of said first bottom sole secured to the top surface thereof and having a flat substantially horizontal forward extension beyond said first sole, a first spacer strip secured to said top surface except for the forward edge of said sole, a first inner sole, the turned in lower edge of said upper being secured between said inner sole and said strip and to said inner sole and said strip, the toe portion having a second bottom sole and a toe upper, a flat substantially rectangular sleeve rectangular in cross-section secured to the top surface of said second bottom sole with an opening thereinto adjacent the rearward edge of said second bottom sole, a second inner sole, a second spacer strip secured to said top surface of said second bottom sole around said sleeve except for said rearward edge of the sole, said spacer strips being positioned adjacent the peripheral edges of their respective uppers, the turned in lower edge of said toe upper being secured between and to said second strip and said second inner sole, said forward extension of said plate being slidably releasably mounted in said sleeve, said toe upper having ears on the upper rearward ends thereof, and releasable locking means partly on said ears and partly on said heel upper for interlocking said toe and heel portions.

3,225,463
AIR VENTILATED INSOLE

Charles E. Burnham, Western Ave., Essex, Mass.

Filed Oct. 12, 1962, Ser. No. 230,228
2 Claims. (Cl. 36—3)



1. In a shoe, insole ventilating means comprising: an insole, means providing a pump in said insole having a cordate configuration in plan view and side elevation with a sharply curved base and an apex whose inwardly curving walls define slits which form air inlet and exhaust valves, respectively, for a compressible and expandable chamber in said pump, said sharply curved base being positioned in the heel portion of said insole for alternate compression and expansion by the heel of the wearer of the shoe while walking; and means providing a passageway in said insole fluidly connected at one end to said exhaust valve and terminating at the other end in vents located in the upper surface of the toe portion of said insole.

3,225,464
REINFORCED HEEL

Robert H. Goldbeam, 30 Woodland Way, Haverhill, Mass.

Filed Aug. 14, 1964, Ser. No. 389,570
1 Claim. (Cl. 36—34)



A reinforced heel having a body portion of a relatively weak material provided with a relatively large heel-seat, a stem of relatively small cross-section, and a relatively small tread end, the body portion being interiorly provided with a recess extending longitudinally from the tread end to near the heel-seat end, an elongated reinforcing dowel of round cross-section constituted of material much harder than that of the body portion provided with a heel-seat end and a tread end, the reinforcing dowel, except for the tread end, being driven into the recess to a point near the heel-seat end of the body por-

tion, the heel-seat end of the dowel being chisel-shaped with a chisel blade extending substantially the width of the dowel to prevent rotation of the dowel in the recess, and a top lift secured to the tread end of the dowel.

3,225,465
REINFORCED HEEL AND DOWEL
Arthur F. Ball, Haverhill, Mass., assignor to Essex Products, Inc., Haverhill, Mass., a corporation of Massachusetts
Filed Aug. 14, 1964, Ser. No. 389,572
8 Claims. (Cl. 36—34)



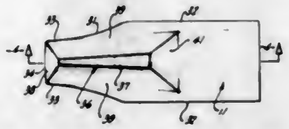
1. A reinforced heel having a body portion of relatively weak material provided with a relatively large heel-seat end, a stem of relatively small cross-section, and a relatively small tread end, the body portion being interiorly provided with a recess extending longitudinally from the tread end to near the heel-seat end, an elongated reinforcing dowel constituted of material much harder than that of the body portion provided with a heel-seat end and a tread end, the reinforcing dowel, except for its tread end, being driven into the recess to a point near the heel-seat end of the body portion, whereby the tread end of the dowel extends beyond the body portion, the extending tread end of the dowel being provided with two projections rigidly extending transversely from the stem of the dowel and one of which converges from the stem of the dowel toward the other to a degree such that the outer peripheries of the projections become positioned relatively close to each other, thereby to provide a locking pocket between the projections, at least the projection closer to said heel-seat end being integral with the stem of the dowel, and a top lift in which the said extending tread end of the dowel, including the two projections, is embedded, whereby a substantial portion of the material of the top lift becomes embedded in the locking pocket.

3,225,466
REPLACEABLE HEEL
James Milk and Theodore Pallow, both of P.O. Box 9901, Pittsburgh, Pa.
Filed Aug. 14, 1964, Ser. No. 389,755
5 Claims. (Cl. 36—42)



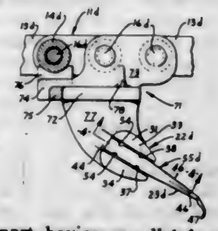
1. A shoe construction having a replaceable heel adapted for readily mounting and demounting operations, comprising: a mounting means adapted for securement with the sole of the shoe at the heel section thereof, a threaded projection extending perpendicularly from said mounting means, an annular member including a plurality of spaced nailing elements adapted to penetrate and thereby become secured to said threaded elements and including a plurality of spaced struck sections which are offset from the plane of said annular member, and a heel having a threaded socket which receives said threaded projection and is adapted to lockingly engage with said offset portions and said heel is fully threaded onto said projection.

3,225,467
TOOTH FOR DIGGING EQUIPMENT USED IN COMPACTED SOIL
William M. Troeppl, Santa Clara, Calif., assignor, by direct and mesne assignments, of one-half to Gerald A. Petersen, Santa Clara, Calif., and one-half to Anita E. Petersen, Saratoga, Calif.
Filed July 15, 1963, Ser. No. 294,994
The portion of the term of the patent subsequent to June 19, 1981, has been disclaimed
3 Claims. (Cl. 37—142)



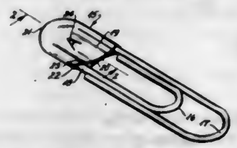
1. In a replaceable earth digging tooth for penetration and explosive-like excavation of brittle, compacted soils having a distal portion and a proximal portion, said proximal portion having substantially parallel side edges, said distal portion having a blade rectangular in cross-section and substantially more narrow in plan than said proximal portion, the top surface of said blade formed with a substantially straight, longitudinally extending spine sloping downwardly-forwardly, the flanks of said top surface of said blade on either side of said spine being concave, the front end of said tooth being truncated and square, the side edges of the distal portion of said blade being substantially vertical and in plan being shaped, with forward edges parallel to each other and to said parallel side edges of said proximal portion and smoothly inwardly curved edges interconnecting said side edges of said proximal portion and said side edges of said distal portion, the bottom surface of said distal portion of said blade being generally flat for cooperation with front end for slicing into the soil, said flanks being shaped to break away soil sliced by said end and bottom surfaces, said proximal portion having a top body comprising an integral rearward extension of said distal portion of said blade, and a socket-forming housing having triangular sides perpendicular to and on the underside of said blade and a sloping bottom interconnecting the lower edges of said sides and tapering distally toward said blade, said sides being deformable, said sides of said socket forming portion being slightly narrower than said side edges of said proximal portion.

3,225,468
SUPPORT FOR TRENCHER TOOTH
John G. Benetti, Cupertino, Calif., assignor, by direct and mesne assignments, of one-half to Gerald A. Petersen, Santa Clara, Calif., and one-half to Anita E. Petersen, Saratoga, Calif.
Original application Dec. 4, 1961, Ser. No. 156,907, now Patent No. 3,152,142. Divided and this application Nov. 5, 1963, Ser. No. 321,557
5 Claims. (Cl. 37—191)



5. A tooth support having parallel legs with aligned holes at opposite ends of inner edges of said legs, said legs spaced apart with a longitudinal space between said legs, a table interconnecting the outer edges of said legs, tooth-receiving means on said table shaped and positioned to receive a portion of a forward pointing tooth, said table having a rearward extension formed with a pad disposed centrally relative to the space between said legs, said pad having an extended length transversely of said support, the ends of said pad located adjacent but spaced from reference planes, each including an opposed surface of said legs, the inner edge of said pad being arcuate in end elevation with a center of curvature lying on a reference line which is an extension of a line connecting the centers of said holes and is spaced from the center of the rearmost of said holes a distance equal to the distance between the centers of said holes.

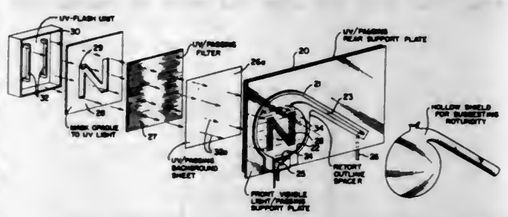
3,225,469
PAPER CLIP INDEX TAB
Marston Chase, Washington Bldg., Apt. 618, Arlington Towers, Arlington, Va.
Filed Aug. 2, 1961, Ser. No. 128,824
3 Claims. (Cl. 40—23)



1. The combination of a wire paper clip of the type having a pair of U-sections with one U-section nested within the other and with their bight portions in spaced relation, a connecting U-section extending from one leg of the one U-section to the opposite leg of the other U-section, and an index tab removably mounted on said connecting U-section, said index tab comprising an elongated sheath shaped to receive the connecting U-section, said sheath being open at one end, said sheath being of sufficient length for embracing a substantial portion of the legs of said connecting U-section substantially to a position closely adjacent both free ends of the wire of the paper clip whereby the edges of the sheath defining the open end of the index tab will serve as a stop to limit the positioning of the paper clip on the edge of the sheet whereby the free ends of the free legs of the nested U-sections will not tear the paper upon removal of the paper clip and its index tab from the paper sheet, said sheath having at least a resilient part thereof lying within a projection of the maximum transverse cross section of said connecting U-section and displaceable to the outside of the projection of said maximum transverse cross section permitting removal of said index tab from the paper clip and reapplication to the same or a different paper clip.

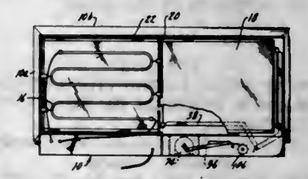
3,225,470
LIGHT-REACTANT DISPLAY DEVICES
Helmut Schwab, William R. Horst and Carol Stowe Van Voorhis, Dayton, and Stanley F. Coll, Washington Courthouse, Ohio, assignors to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland
Filed Mar. 6, 1964, Ser. No. 349,850
8 Claims. (Cl. 40—28)

1. A display device including in combination
(a) a vessel containing a body of liquid that is colorable in hue by incident ultraviolet light, said hue fading during a period of time, the colored hue being visibly but fadingly perceptible during said period;
(b) means operable to project a patterned beam of ultraviolet light into said body of liquid to make a corresponding colored image in the body of liquid; and
(c) image deletion means operable to bubble gas



through the body of the liquid to disturb the colored image and cause its loss by dilution with the uncolored part of the liquid body.

3,225,471
MOVING SIGN DISPLAY DEVICE
Gerald M. Hallburg, 827 Gardner St., South Beloit, Ill.
Filed Mar. 8, 1963, Ser. No. 263,896
3 Claims. (Cl. 40—36)

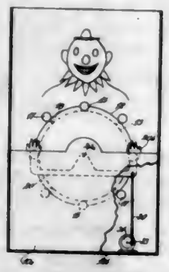


1. In a display device, a frame, a fixed display mounted at one side of said frame, a plurality of movable displays normally positioned on said frame behind said fixed display, and means for sequentially moving each of said movable displays from behind said fixed display to a position adjacent said fixed display, including a track in said frame, each of said movable displays having rolling means for moving on said track, a plurality of arms, one for each movable display, pivotal on said frame, each of said arms being slidably connected to one of said movable displays, drive means, timing means for operating said drive means at fixed intervals, and means connecting said drive means to said arms for sequentially causing said arms to pivot and to move said displays to a viewing position adjacent the fixed display, including a rotatable cam structure having a pair of notched discs for each of said movable displays with the notches in said discs being arranged in a helical pattern, a pair of spaced levers attached to each of said arms, said spaced levers being positioned for movement by said rotatable cam structure, a pull rod operably connected to said drive means and positioned for engagement with said levers, rotation of said notched discs sequentially moving said levers into engagement with said pull rod, said drive means moving said pull rod and the levers in engagement therewith in a path to pivot said arms and move the displays attached thereto.

3,225,472
SIMULATIVE DISPLAY DEVICES
Michael F. Guida, 1247 N. Lockwood Ave., Chicago 51, Ill.
Filed Aug. 22, 1962, Ser. No. 218,752
1 Claim. (Cl. 40—106.41)

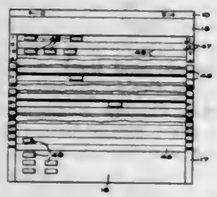
A simulative display device comprising a support, a pair of rotary members journaled on one axis in the same, a series of symbolic objects carried by each member in similar circular paths, and means for rotating the members in opposite directions to cause the objects in one series to revolve in crossing relation with those in the

other series and make the objects appear as in flight, a wall in front of one member and rising to a substantially diametrical level, whereby to present the illusion that the objects rise from the sides and cross at intermediate



points in their flight, hand symbols adjacent to the wall at said sides, and means to raise the hand symbols alternately and suggest that the objects are tossed toward each other in alternation by the hands.

3,225,473
CHART FOR INDICATING THE SALES SPACE OCCUPANCY PERIODS OF PRODUCTS DISPLAYED FOR SALE
Charles R. Bailey, 310 Pomona Ave., Burlington, Ontario, Canada
Filed Apr. 25, 1963, Ser. No. 275,577
4 Claims. (Cl. 40—124)



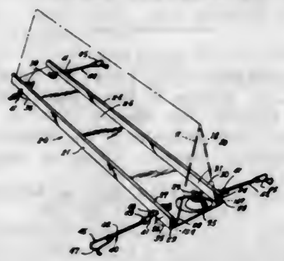
1. A movable chart device comprising; a back wall; an upper wall portion formed along the upper edge of said back wall substantially normal thereto; a lower wall portion formed along the lower edge of said back wall substantially normal thereto; side wall portions formed along opposite side edges of said back wall substantially normal thereto; an upper roller rotatably mounted adjacent said upper wall and vertically movable along a predetermined path parallel to the plane of said back wall; slotted brackets at each end of said upper roller fastened to said side walls for movably mounting same as aforesaid; coil spring means having one end fastened to said upper wall portion and the other end to said roller at each end thereof tensioned to urge same towards said upper wall portion; said roller being vertically displaceable against said spring along said path; a lower roller rotatably mounted adjacent said lower wall; an endless belt entrained around said rollers and tensioned by said spring means; vertically spaced indicia indicating the dates of the month located along at least one said side wall portion; horizontal lines on said belt dividing said belt into parallel information receiving areas of a predetermined width equal to the spacing of said indicia, said areas being movable into horizontal alignment with said indicia and means for manually moving said belt.

3,225,474
DISPLAY DEVICE
Lambert Dusseau, New York, N.Y., assignor to Package & Display Corp., Brooklyn, N.Y., a corporation of New York
Filed Aug. 8, 1963, Ser. No. 300,879
9 Claims. (Cl. 40—124.1)



1. A display device comprising a first panel; a card in back of said panel having an upper section above the upper edge of said panel, a lower section below the upper edge of said panel and a fold interconnecting said upper and lower sections; resilient means attached to said lower card section and said panel to move said fold below the upper edge of said panel; hinge means at the top of said first panel secured to said upper section adjacent said fold for foldably connecting a lower portion of said upper card section to an upper portion of said panel, the upper card section being adapted to be folded downwardly across the front of said panel to place said fold above the upper edge of said panel and thereby tension said resilient means; and a second panel foldably connected to one side to a side of said first panel and being adapted to be folded across the front of said first panel and over said upper card section to retain the latter in its downwardly folded position, whereby upon folding said second panel away from said first panel, said upper card section is released and said resilient means is effective to place said upper card section in an upright position.

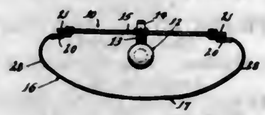
3,225,475
DISPLAY DEVICES
Rufus Harold Shank, 3114 Cornell Ave., Dallas, Tex.
Filed June 18, 1964, Ser. No. 376,113
5 Claims. (Cl. 40—129)



1. A display device including: a sign having a pair of planar panel sections and formed substantially in an inverted V-shape and having retainer sections at the lower longitudinal edges of each of the divergent panel sections in the form of upwardly and outwardly extending flanges;

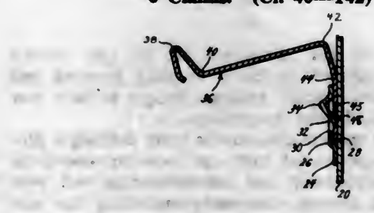
a base member having means for securing it to a vehicle top and having laterally spaced longitudinally extending holder means disposed on the upper surface thereof; said holder means having vertically extending longitudinal recesses formed therein adapted to receive the adjacent upwardly and outwardly extending flange portions of the sign, whereby each of flange portions is hooked in one of the vertical recesses of the holder means for retaining the sign in position on the base member.

3,225,476
ADVERTISING DEVICE
Arthur Bockmann, 525 W. Belmont Ave., Chicago, Ill.
Filed Apr. 8, 1963, Ser. No. 271,428
5 Claims. (Cl. 40—130)



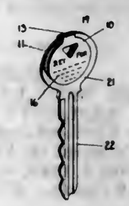
1. A changeable advertising device comprising:
a generally rectangular support member of substantially rigid sheet material adapted to be mounted in a vertical plane;
a display member of resilient sheet plastic material having in flat form a width and height appreciably greater than the width and height of said support member, said display member in flat form prior to assembly;
holding means detachably connecting the vertical edge portions of said display member to the vertical margins of said support member, said holding means on each vertical margin of said support member comprising lug means on said support member having a portion spaced forwardly of and parallel to the support member, the free end of said lug means extending toward the adjacent edge of said support member, an edge portion of said display member received between a lug means and said support member, the vertical marginal portions of said display member each tucking under and curving on an arc decreasing in curvature with distance away from the edge portion, whereby the central portion of said display member has small curvature and thus large effective display area, the resilience of said display member cooperating both to maintain engagement between said display member and said lug means and to establish the arcuate shape of the assembled display member; and
a light source mounted on said support member and illuminating said display member from behind.

3,225,477
SIGNS
Lindell N. Edwards, St. Louis, Mo., assignor to Commander Board International, Inc., St. Louis, Mo., a corporation of Missouri
Filed Mar. 1, 1965, Ser. No. 436,133
6 Claims. (Cl. 40—142)



6. A fastening device for an indicia which comprises: (a) an indicia having an substantially flat body portion bounded at the edges by rearwardly extending flange means,
(b) said flange means defining a shallow depression area at the rear of said indicia,
(c) a shallow bracket which is securable within said depression area to the rear face of said indicia,
(d) said bracket extending from the said rear face up to no more than the limiting edge of said flange,
(e) said bracket defining a pocket-like recess with one side thereof open,
(f) an opening at the rear of said bracket communicating with said pocket-like recess,
(g) said bracket having a resilient tang extending into and through said opening and into said pocket-like recess and extending toward said rear face of said indicia, and
(h) a connecting member having a foot element which can be set adjacent to and parallel to said rear face of said indicia and can then be moved parallel to said rear face of said indicia through said open side of said pocket-like recess and into said pocket-like recess,
(i) said foot element having a tang-retaining means in register with the free end of said tang whenever said foot element is disposed within said recess,
(j) said free end of said tang engaging said tang-retaining means to prevent accidental separation of said connecting member from said indicia,
(k) said connecting member having a shank which is angularly displaced from and which extends rearwardly from said foot element, and hence from said bracket and from said rear face of said indicia, to dispose the outer end of said connecting member rearwardly of said foot element and said bracket.

3,225,478
KEY MARKER
Richard Heath Rohmer, 728 Bay St., Toronto, Ontario, Canada
Filed Feb. 19, 1962, Ser. No. 173,948
1 Claim. (Cl. 40—330)



In combination, a flat key having a head with an aperture therein extending from the opposite faces of said head and having an outer edge between said opposite faces thereof, and a key covering for said key, said key head covering comprising a pair of substantially flat tabs of substantially the same shape as the opposite faces of said key head each having an aperture therein and joined together by a bendable hinge piece having a narrower width than said tabs, said tabs and hinge piece having inner and outer faces, said tabs and hinge piece having a normally tacky adhesive coating of the pressure sensitive non-drying type on the inner faces thereof, the outer face of at least one of said tabs having a section for receiving writing, a transparent cover adhesively secured to the outer faces of said tabs and hinge piece by a pressure sensitive non-drying type adhesive and having apertures therein corresponding to said apertures in said tabs, a removable protective sheet normally overlying and temporarily separating the part of said transparent cover overlying said writing and hingedly secured to said transparent cover, with said tabs and hinge piece being

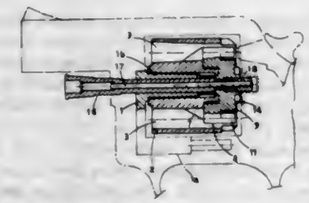
adhesively attached to the opposite faces and outer edge of said key head, respectively, and with said apertures of said tabs, and said transparent cover being in axial alignment with said aperture in said key head, whereby after writing on said section of said one tab and stripping off said removable protective sheet from said transparent cover, said transparent cover overlying said writing is adhesively attached in place to said section of said one tab having said writing thereon so that said writing is visible.

3,225,479
INDICATOR DEVICE
Roy E. Kanitz, Two Rivers, Wis., assignor to Hamilton Manufacturing Company, Two Rivers, Wis., a corporation of Wisconsin
Filed Apr. 26, 1962, Ser. No. 190,462
6 Claims. (Cl. 40—332)



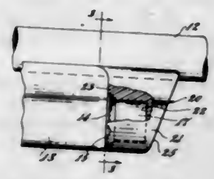
1. An indicating device for a cock having a cavity formed therein, comprising a button member having a disc portion and a generally cylindrical portion disposed coaxially with and secured to one side of said disc portion, said cylindrical portion being formed integrally with said disc portion, a plurality of spring metal fingers extending outwardly from said cylindrical portion, means formed on said cylindrical portion holding the inner ends of said fingers against substantial axial movement relative thereto, said indicating device being adapted to be positioned with said cylindrical portion and said fingers inside the cavity with the outer ends of said fingers bearing against the side of the cavity, an annular ring secured to said inner ends of said fingers, and said means comprising an annular groove which receives said ring, said groove providing shoulders preventing substantial movement of said ring.

3,225,480
TOY REVOLVER WITH LABYRINTH SEAL FOR EXPLOSIVE CAPS
Giampiero Ferri and Jori Marinai, both of Via Stoppani 38, Florence, Italy
Filed July 6, 1964, Ser. No. 380,302
10 Claims. (Cl. 42—58)



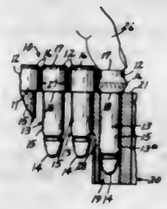
1. A toy gun comprising
a body,
a hammer pivotally mounted on the body,
a cylindrical housing defining a plurality of apertures adjacent its periphery,
housing-supporting means mounted on said body for supporting said housing for rotational movement, said means being selectively movable, together with said housing, between a first position in said gun body and a second position projecting from said gun body,
a plurality of anvils coaxially mounted on said housing for supporting explosive caps, each said anvil being disposed within one of said apertures,
means mounted between said hammer and said anvils for successively aligning the anvils with said hammer in response to successive operations of the hammer,
means projecting inwardly of the outer wall of said housing between adjacent apertures,
and means located inwardly of each of said apertures and partially encircling said anvils, said latter two means cooperating to substantially complete a housing around each anvil and to form a labyrinth seal whereby adjacent caps are shielded from an exploding cap.

3,225,481
GUN WITH PROTECTIVE GUARD FOR FOREARM EXTENSION
James H. Sholders, Cohawkin Road, R.F.D. 1, Paulsboro, N.J.
Filed Apr. 7, 1965, Ser. No. 446,253
7 Claims. (Cl. 42—71)



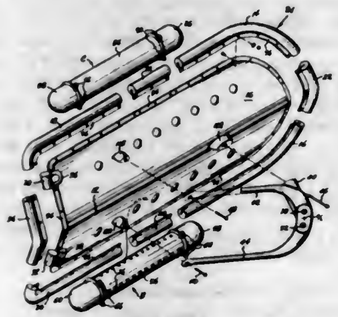
1. In a gun including a barrel, a forearm extending along the underside of said barrel and spaced from the muzzle end thereof, and a forward extension on the forward end of said forearm spaced below said barrel and terminating short of the muzzle end, the improvement comprising: a protective guard removably engaged over said forearm extension, said guard having its lower and side surfaces generally flush with the adjacent surfaces of said forearm and having its upper surface closely conforming to the underside of said barrel, to thereby occupy and substantially completely close the space between said extension and barrel to prevent the engagement therein of twigs and the like.

3,225,482
CARTRIDGE LOADING CLIP FOR REVOLVERS
Ole N. Olson, 2909 Quentin Ave. S., Minneapolis, Minn.
Filed Nov. 10, 1964, Ser. No. 410,159
5 Claims. (Cl. 42—89)



1. A hold for gun cartridges of the type having diametrically reduced projectile forming forward end portions and diametrically enlarged flanges at their rear end portions, said holder comprising:
(a) a highly resilient elastomeric body defining a plurality of open-ended cartridge receiving sleeves in parallel relationship and interconnecting web portions, said sleeves completely encircling the cartridges,
(b) each said sleeve having an internal diameter slightly less than that of a cartridge which each said sleeve is adapted to receive, whereby to permit insertion of the diametrically reduced projectile end thereinto with facility but to exert sufficient gripping force against the intermediate portion of a cartrdge to prevent accidental removal of a cartridge therefrom,
(c) the length of each said sleeve being materially less than that of a cartridge whereby to permit insertion of the major portion of a cartridge into a gun chamber when one edge of each sleeve is in engagement with the rear end flange of a cartridge retained therein; and
(d) each said sleeve being sufficiently resilient to expand sufficiently to allow axial passage of the flanged end of a cartridge therethrough when a cartridge has a predetermined minimum pressure applied along the lengthwise axis thereof, whereby to permit final insertion of a cartridge into a gun chamber.

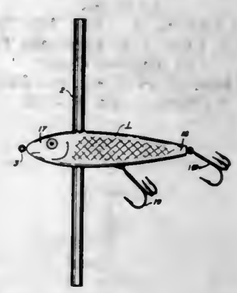
3,225,483
TRAWL DOOR CONSTRUCTION INVOLVING UNIVERSAL AND INTERCHANGEABLE COMPONENTS
Frank J. Luketa, 5567 Greenwood Ave. N., Seattle 3, Wash.
Filed June 18, 1963, Ser. No. 288,758
6 Claims. (Cl. 43—9)



1. A trawl door comprising a relatively thin, metal water reaction panel having a marginal portion; means on said panel for securement of towing warp means leading from a trawler and line means running to a net; a marginal edging consisting of individually removable sections detachably secured to said marginal portion, each said edging section comprising a bead of rubber-like material of sufficient resiliency and thickness to absorb shock of impact of the edging with solid objects, and a metal fastening strip having an outboard portion secured to said bead of rubber-like material and an inboard portion that overlaps the marginal portion of said panel, thereby providing a double thickness of metal at the margin of the panel and giving the panel a relatively high rim strength for resisting panel distortion; and means detachably securing the inboard portion of said fastening strip to the marginal portion of said panel.

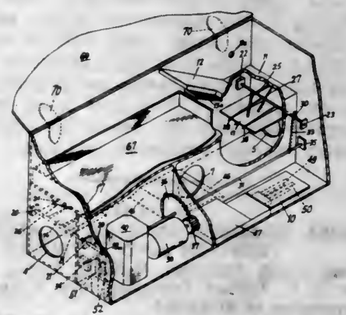
3,225,484
AEOLIAN FISH LURE
Joseph D. Richard, Miami, Fla.
(531 S. Barrancas Ave., Warrington, Pensacola, Fla.)
Filed Feb. 20, 1964, Ser. No. 346,341
2 Claims. (Cl. 43—17.1)

2. A fish lure for radiating low frequency pressure fluctuations into the water comprising: an elongated body member having at least a superficial resemblance to a small fish, the said body member being thereby visually attractive to larger predator fish; means for attaching a fishing line to one end of the said body member; at least one fish hook attached to the said body member; and an elongated substantially rigid cylindrical element projecting from the said body member, the said cylindrical element being arranged and disposed so that it projects out from the said body member an approximately equal distance on each side of the said body member, the said



cylindrical element being positioned so that its major axis is maintained perpendicular to the direction of travel when the said body member is pulled through the water and said cylindrical element being completely free on each side of the body member and having an axial length greater than the length of the body member.

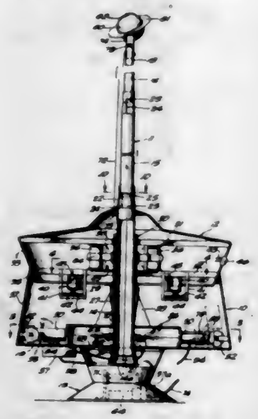
3,225,485
ANIMAL TRAP
Stanley Powell, Franklin, Ohio, assignor of one-third each to Robert S. Sutton and Jeff D. Howard
Filed May 25, 1964, Ser. No. 369,899
12 Claims. (Cl. 43—67)



1. In an animal trap having a body defining an enclosure, partition means within said enclosure dividing it into a plurality of compartments, a first of said compartments comprising an entrance compartment having an access opening therein, a door mounted for opening and closing movement relative to said access opening, driving means for moving said door from one position to the other, said driving means including a reversible electric motor, a second compartment within said enclosure adjoining said first compartment, an opening between said first and second compartments at a point remote from said access opening, treadle means adjacent the opening between said first and second compartments positioned to be contacted by an animal moving between said first and second compartments, said treadle means including a first switch means and a circuit between said first switch means and said motor operative to energize said motor so as to move said door from the open to the closed position when said treadle is contacted by an animal, and a second treadle means within said second compartment,

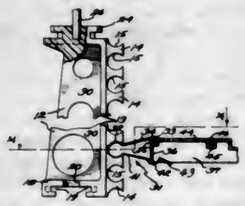
said second treadle means including a second switch means and a circuit between said second switch means and said motor operative, when actuated, to energize said motor in the reverse direction and thereby reopen said door.

3,225,486
TOY SIMULATING A TRIP TO THE MOON
Eugene A. Levy, 2429 Laterman Terrace, Los Angeles, Calif.
Filed June 11, 1962, Ser. No. 201,558
5 Claims. (Cl. 46—10)



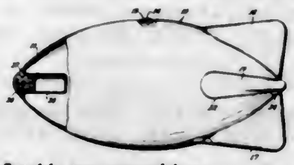
1. A toy as described comprising in combination; a base structure, a central column on said base structure, a toroidal casing normally resting on said base structure having an open bottom and slidably encompassing said column, said casing being movable vertically on said column, a plurality of spark producing devices depending from said open bottom and remotely controlled means for selectively sliding said casing vertically on said column upwardly and then downwardly therealong toward its described position on said base.

3,225,487
MODEL ROADBED INCLUDING ADJUSTABLE TRESTLES AND SUPPORTS
Durham Frank Mallalieu, Redding, Conn., assignor to The A. C. Gilbert Company, New Haven, Conn., a corporation of Maryland
Filed Oct. 17, 1963, Ser. No. 316,843
3 Claims. (Cl. 46—17)



1. In a toy trestle for supporting an elevated model roadbed, the combination of, a run of slab-like model roadbed, pillars having upright faces flanking opposite edges of said roadbed and containing a vertical series of spaced grooves, and a series of vertically spaced roadbed supporting claw-like clips on each of said upright pillar faces engaging said roadbed edges in a releasable manner such that said roadbed can be supported between pairs of said pillars at a choice of height, each of said clips having a bight lodged in a selected one of said grooves in a manner to swivel therein for adjustively swinging said clip upward and downward.

3,225,488
INFLATABLE AERIAL TOY
Adolph E. Goldfarb, 7427 Varna St., North Hollywood, Calif.
Substituted for abandoned application Ser. No. 34,806, June 8, 1960. This application Jan. 13, 1964, Ser. No. 339,067
4 Claims. (Cl. 46—89)



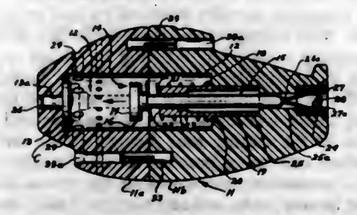
1. An inflatable toy comprising:
an envelope made of a flexible material, said material having sufficient weight that said toy, when inflated, can be kicked like a football; valve means mounted in said envelope for inflating it, said envelope when inflated being circular in transverse cross-section and having tapered forward and rearward portions; and fin means provided on said rearward portion of said envelope, said fin means extending rearwardly of said rearward portion for supporting said toy in kicking position, whereby said toy may be employed as a football, said fin stabilizing said toy during flight thereof, said fin means comprising a plurality of fins, one of said fins being positioned at a relatively small angle to a plane normal to the plane occupied by others of said fins for causing rotation of said toy about its longitudinal axis in flight.

3,225,489
DOLL HEAD AND REPLACEABLE HAIRDO CONSTRUCTION
John W. Ryan, 688 Nimes Road, Bel Aire, Calif.
Filed Aug. 17, 1962, Ser. No. 217,564
5 Claims. (Cl. 46—172)



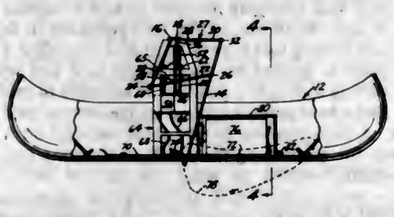
1. A doll head construction for permitting the hair arrangement of a toy doll to be readily changed, said construction comprising the combination of a doll head formed to simulate the appearance of a human head, said doll head including an integral sculptured hair design on said doll head which simulates the appearance of a hairdo for said doll head and including outwardly projecting portions, a headpiece including means simulating hair and a base section being of generally concave curvature, said base section including a resiliently contractile peripheral edge defining an opening for receiving said doll head and being comprised of shape-retaining flexible resilient material, and means disposed at said edge of said headpiece base section for engaging with said projecting portions of said sculptured hair design on said doll head to releasably lock said headpiece in position on said doll head.

3,225,490
DETONATING TOY PROJECTILE
Raymond G. Ostrom, Minneapolis, Minn., assignor to Nordic Enterprises, Inc., Minneapolis, Minn., a corporation of Minnesota
Filed May 9, 1963, Ser. No. 279,244
8 Claims. (Cl. 46—200)



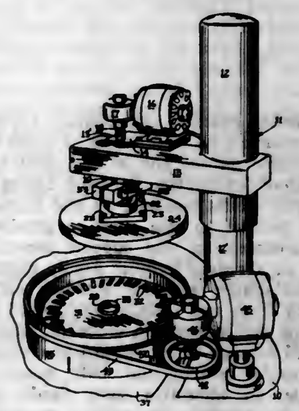
1. A detonating mechanism for a toy comprising:
(a) a hollow body provided with a detonating chamber therein;
(b) a stationary cap-detonating element mounted within said chamber;
(c) a detonating member movably mounted within said hollow body for movement from a cocked position into detonating position to produce detonating impact against a cap positioned on said stationary element;
(d) yieldable means forceably urging said movable member into impact engagement with said stationary element;
(e) releasable lock means positively holding said detonating member in cocked position but being releasable to permit movement of said detonating member into detonating position; and
(f) delay means cooperatively associated with said movable detonating member to delay the movement thereof into detonating position after release of said lock means.

3,225,491
PADDLING AQUATIC TOY
Paul E. Oberg, Minneapolis, Minn. (3231 W. 83rd St., Bloomington 31, Minn.)
Substituted for abandoned application Ser. No. 800,193, Mar. 18, 1959. This application June 17, 1963, Ser. No. 290,276
1 Claim. (Cl. 46—245)



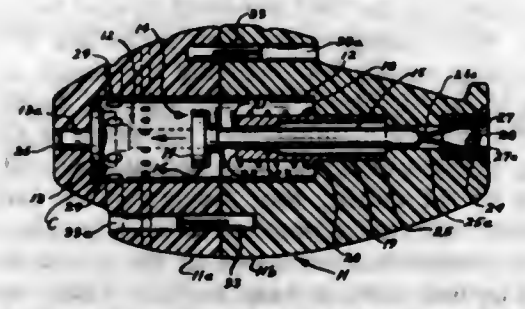
A paddling mechanism for an aquatic toy comprising, a supporting framework, a pair of spaced parallel oscillating horizontally disposed rods rotatably carried by said framework, a pair of arms, said arms being rigidly attached at the shoulders thereof to opposite ends of said rods, one arm being substantially rigid throughout its length and terminating in a free end disposed adjacent and forwardly of the shoulder of the other arm, said other arm being jointed, having the upper arm portion thereof extending downwardly from the shoulder and the forearm portion thereof pivotally jointed at its connection to said upper arm portion and extending forwardly therefrom to a free end terminating below the free end of said rigid arm, a paddle pivotally connected at its upper end to the free end of said rigid arm and at its mid portion to the free end of said jointed arm for swinging movement in a single plane as said rods are oscillated, driving means carried by said framework for moving said oscillating rods, operating means interconnecting said driving means and said oscillating rods for rotating said rods in opposite directions for a portion of their oscillating movement whereby the rigid arm raises and lowers the paddle while said jointed arm oscillates said paddle in a paddling motion, said operating means comprising a pair of actuating rods rigidly attached to the free ends of said oscillating rods and extending downwardly therefrom, said actuating rods having bifurcated ends forming guide slots, a driven rod extending between said actuating rods and having terminal cranks slidably riding in said guide slots, said cranks being about 90° out of phase with one another.

3,225,492
LAPPING APPARATUS
Lawrence Day and Joseph Dobrick, Chicago, and Arthur Kay, Evanston, Ill., assignors to Spitfire Tool & Machine Co., Inc., Chicago, Ill., a corporation of Illinois
Filed Jan. 30, 1964, Ser. No. 341,178
3 Claims. (Cl. 51—3)



1. An apparatus for lapping cylindrical workpieces comprising
(a) a rotatable retainer ring mounted for rotation upon a supporting plate,
(b) a disc-like lapping plate arranged in said ring and having a centrally located opening,
(c) slot and pin means for keying said lapping plate to said ring for rotation therewith,
(d) means for rotating said ring relative to its center axis,
(e) a disc-like workholder arranged above said lapping plate and having a plurality of slots formed therein to receive said workpieces to be lapped by said lapping plate, said workholder having a centrally located opening,
(f) an eccentric rotatably positioned in said opening of said workholder, said eccentric having a stud projecting into a centrally located opening formed in said lapping plate,
(g) reversible motor means,
(h) a shaft rotated by said motor means,
(i) a slot and pin connection between said shaft and said eccentric for rotating the latter to effect reciprocation of said workholder with respect to said lapping plate,
(j) and a vertically movable non-rotatable pressure disc positioned in said retainer ring and bearing upon workpieces positioned in said workholder.

3,225,490
DETONATING TOY PROJECTILE
Raymond G. Ostrom, Minneapolis, Minn., assignor to Nordic Enterprises, Inc., Minneapolis, Minn., a corporation of Minnesota
Filed May 9, 1963, Ser. No. 279,244
8 Claims. (Cl. 46—200)

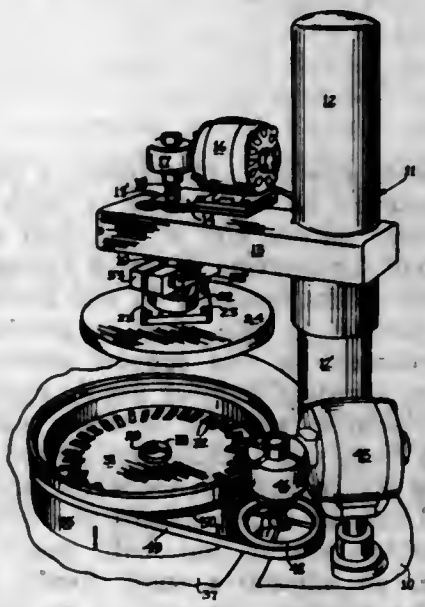


1. A detonating mechanism for a toy comprising:
(a) a hollow body provided with a detonating chamber therein;
(b) a stationary cap-detonating element mounted within said chamber;
(c) a detonating member movably mounted within said hollow body for movement from a cocked position into detonating position to produce detonating impact against a cap positioned on said stationary element;
(d) yieldable means forceably urging said movable member into impact engagement with said stationary element;
(e) releasable lock means positively holding said detonating member in cocked position but being releasable to permit movement of said detonating member into detonating position; and
(f) delay means cooperatively associated with said movable detonating member to delay the movement thereof into detonating position after release of said lock means.

3,225,491
PADDLING AQUATIC TOY
Paul E. Oberg, Minneapolis, Minn.
(3231 W. 83rd St., Bloomington 31, Minn.)
Substituted for abandoned application Ser. No. 800,193, Mar. 18, 1959. This application June 17, 1963, Ser. No. 290,276

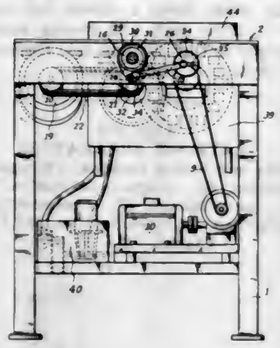
swinging movement in a single plane as said rods are oscillated, driving means carried by said framework for moving said oscillating rods, operating means interconnecting said driving means and said oscillating rods for rotating said rods in opposite directions for a portion of their oscillating movement whereby the rigid arm raises and lowers the paddle while said jointed arm oscillates said paddle in a paddling motion, said operating means comprising a pair of actuating rods rigidly attached to the free ends of said oscillating rods and extending downwardly therefrom, said actuating rods having bifurcated ends forming guide slots, a driven rod extending between said actuating rods and having terminal cranks slidably riding in said guide slots, said cranks being about 90° out of phase with one another.

3,225,492
LAPPING APPARATUS
Lawrence Day and Joseph Dobrick, Chicago, and Arthur Kay, Evanston, Ill., assignors to Spitfire Tool & Machine Co., Inc., Chicago, Ill., a corporation of Illinois
Filed Jan. 30, 1964, Ser. No. 341,178
3 Claims. (Cl. 51—3)



1. An apparatus for lapping cylindrical workpieces

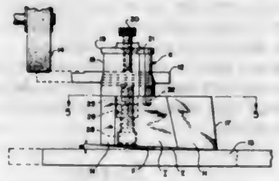
3,225,493
THIN SECTION TRUEING MACHINE
Georges L. Kulbicki, Jean Sahores, Jacques Vanuxem, André Enjalbert, and Jacques Capiaux, all of Pau, France, assignors to Société anonyme dite: Societe Nationale des Petroles d'Aquitaine, a French company
Filed Apr. 8, 1963, Ser. No. 271,100
Claims priority, application France, Apr. 10, 1962, 893,892
3 Claims. (Cl. 51—134)



1. A grinding machine, comprising: a frame; a shaft rotatably mounted on said frame; a work-holder plate fixedly mounted on one end of said shaft and having a surface thereof for carrying the work facing toward said shaft; support means mounted on said frame for sliding movement parallel to said shaft; a grindstone spindle rotatably mounted on said support means for sliding therewith; an abrading member fixedly mounted on one end of said spindle with the abrading surface thereof facing away from said spindle and toward said surface of said plate for cooperation therewith; feed means for moving said support means toward and away from said plate; means for rotating said shaft; means for rotating said spindle; an adjustable crank fixedly mounted on said shaft for rotation therewith; a connecting rod secured at one end thereof to said crank; one-way drive means operably connected to said feed means for moving said support means toward said plate upon actuation thereof; means operably connecting the other end of said connecting rod to said one-way drive means for selectively actuating it and for movement relative thereto; said last named means including a lost motion connection between said other end of said connecting rod and said one-way drive means, a locking element mounted on said connecting rod for movement between a first position locking said connecting rod to said one-way drive means for simultaneous movement of said connecting rod and said drive means and a second position permitting relative movement between said connecting rod and said drive means; and stop means adjustably mounted on said support means and movable therewith, said stop means holding said locking element in said first position during a grinding operation and releasing said locking element to permit it to move to said second position at the end of a grinding operation.

3,225,494
FIXTURE FOR GRINDING MACHINE TOOLS
Nick Battistone, 16026 St. Clair Ave., Cleveland 10, Ohio
Continuation of application Ser. No. 200,490, June 6, 1962. This application Oct. 29, 1963, Ser. No. 320,606
18 Claims. (Cl. 51—220)

1. A tool grinding fixture to be secured on a holding surface so as to position the point of a cutting tool against a grinding surface in all the positions necessary to grind the several surfaces of the point, said fixture comprising:
(a) a base member having an upper mounting surface, and bottom, side, and end surfaces defining different planes at predetermined angles to an imaginary plane passing through the centerline of the base member and intercepting the side and end surfaces;
(b) a clamping member mounted on said mounting surface, said clamping member including cutting tool mounting means for receiving the shank of the cutting tool and releasably securing said cutting tool to said clamping member with the point of the cutting tool facing away from said end surface and with the base of the cutting tool facing toward said bottom surface and being parallel to said imaginary plane;
(c) the predetermined angles of the planes defined by said bottom, side, and end surfaces being respectively related to the back and side rake angles, the side relief and side clearance angles, and the end relief angle of the face, side flank, and end flank surfaces respectively, to be ground on the point of the cutting tool so that alternately securing said base member to the holding surface by its bottom, side, and end surfaces selectively positions the cutting tool point for grinding its face, side flank, and end flank surfaces;
(d) said clamping member being rotatable on said mounting surface to rotate the cutting tool in a plane



parallel to said imaginary plane between a position parallel to said centerline and positions at angles to said centerline; and,
(e) locking means carried by one of said members and engaging the other of said members to releasably lock said clamping member to said mounting surface in any one of the cutting tool positions so that when said cutting tool is parallel to said centerline a straight point is ground on said cutting tool and when said cutting tool is in a position at an angle to said centerline a bent point is ground on the cutting tool.

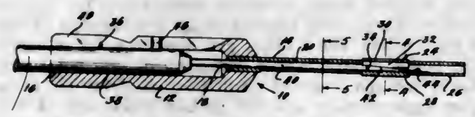
14. A tool grinding fixture to be secured on a holding surface for positioning the point of a cutting tool against a grinding surface to grind the several surfaces of a square point cutting tool including side clearance angles "*h*" and side relief angles "*f*," said fixture comprising:
(a) a base member having an upper cutting tool mounting surface and bottom, end, and side surfaces;
(b) clamping means for securing a cutting tool to said tool mounting surface with the point of the tool directed away from said end surface;
(c) said end and bottom surfaces defining planes extending at angles relative to said cutting tool such that when they are held on the holding surface they position the point for grinding the end flank and face surfaces of the point respectively;
(d) said side surfaces converging away from said bottom surface and toward said cutting tool mounting surface at equal angles "*h*" for positioning the cutting tool for grinding the side flank surfaces with side relief angles "*h*;" and,

(e) said side surfaces also converging away from said end surface and toward the point of a tool secured to the mounting surface at equal angles "*f*" each for positioning the cutting tool for grinding the side flank surfaces with side clearance angles "*f*."

3,225,495
PROCESS OF PEENING METALS WITH COATED GLASS BEADS
Eduard R. de Vries, Huntingdon, Pa., assignor to Prismo Safety Corporation, Huntingdon, Pa., a corporation of Pennsylvania
No Drawing. Filed Aug. 16, 1962, Ser. No. 217,286
6 Claims. (Cl. 51—319)

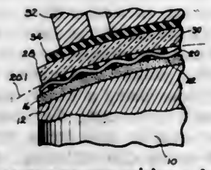
1. A process of peening metals which comprises propelling free-flowing polishing material against said metal in a blast of air, said polishing material comprising spherical glass beads of a diameter of approximately ½–50 mils having a thin coating thereon of a cured thermosetting resin binder containing polishing particles embedded therein.

3,225,496
HONING MANDREL
Joseph Sunnen, 400 S. Warson Road, Clayton 5, Mo.
Filed Sept. 17, 1962, Ser. No. 224,082
18 Claims. (Cl. 51—355)



1. A honing mandrel comprising a tubular member adapted to be moved into a bore to be honed, an elongated opening through one side of said tubular member and a single outwardly extending portion located on the opposite side thereof from said opening with a bearing surface thereon for engaging a bore during honing, the outermost portion of the bearing surface and the center of said opening being positioned less than 180° apart around the tubular member, an abrasive assembly positioned in the opening and including an outer abrasive surface for engaging a bore and an inner backing portion with an inner surface positioned inside the tubular member, said inner surface being tapered longitudinally, and means including an adjustment member having a tapered surface slidably engageable with said tapered inner backing surface along the length thereof and longitudinally movable in said tubular member for radially positioning the abrasive assembly in said opening.

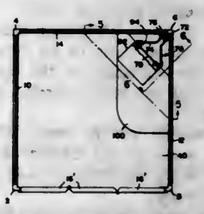
3,225,497
METHOD AND APPARATUS FOR FORMING A LENS SURFACE
Milo O. Brandt, Williamsville, N.Y., assignor to American Optical Company, Southbridge, Mass., a voluntary association of Massachusetts
Filed Oct. 19, 1962, Ser. No. 231,654
5 Claims. (Cl. 51—358)



1. Lens fining means comprising a lap member having a surface of selected curvature, a coating covering substantially all of said surface for providing said surface with a relatively high coefficient of friction, said coating embodying a plurality of strips of tape detachably adhered to said member surface in side-by-side relation, and a separate replaceable sheeting of interwoven metallic wire strands adapted to be conformed to and frictionally engaged with said coated surface for forming a protective facing for said surface, whereby the sheeting can be conformed to and held relatively immobile with reference to said lap member surface between said coated lap member surface and a rough ground lens blank surface of substantially complementary curvature during relative movement of said lap member surface and said lens blank surface for fining said lens blank surface.

3. A method for fining a surface of a selected curvature on a rough ground lens blank, said method comprising the steps of providing a lap member having a rigid surface of a curvature corresponding to that desired to be fined upon said lens blank surface, detachably adhering a plurality of strips of tape to said lap member surface in side-by-side relation for substantially covering said surface and for providing said surface with a relatively high coefficient of friction, pressing a separate, replaceable sheeting of interwoven metallic wire strands between said coated lap member surface and said lens blank surface so that said sheeting is conformed to and frictionally engaged with said covered member surface to form a protective facing for said surface and so that said sheeting can be held relatively immobile with reference to said covered member surface during subsequent relative movement between said member surface and said lens blank surface, directing an abrasive medium between said facing and said lens blank surface, and causing relative movement between said lap member surface and said lens blank surface for fining said lens blank surface.

3,225,498
TELEPHONE BOOTH CONSTRUCTION
Percival H. Sherron, Jamaica, N.Y. (% Sherron Metallic Corp., 1201 Flushing Ave., Brooklyn 37, N.Y.)
Filed July 12, 1962, Ser. No. 209,462
9 Claims. (Cl. 52—27)

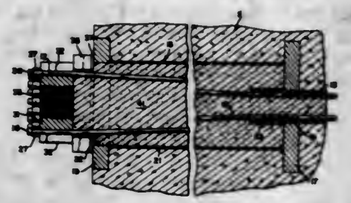


1. In a telephone booth, the combination comprising a corner post at the rear of the booth having an inner wall facing the interior of the booth, an upright member extending between the ceiling and the floor of the booth, a plurality of fastening means securing said upright member to said inner wall, and backboard means for supporting a pay phone assembly, said backboard means being secured to said upright member and extending between the ceiling and the floor of the telephone booth, said fastening means being vertically spaced throughout the length of said upright member.

3,225,499
POST TENSIONING CONCRETE REINFORCING WIRES
Jack P. Kourkene, P.O. Box 489, Berkeley, Calif.
Filed July 2, 1962, Ser. No. 206,644
9 Claims. (Cl. 52—230)

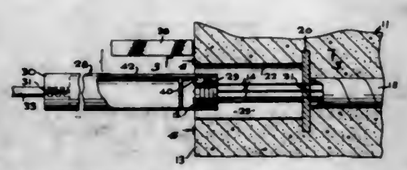
3. A stressing, reinforcing wire and anchor structure comprising a plurality of wires extending through a struc-

ture to be prestressed, each formed on at least one end with an enlarged head, a plurality of bushings disposed at least one to a wire and slidable therealong so as to abut the heads of said wires, said bushings being substantially harder than said wire heads, an anchor plate formed with apertures about the periphery thereof through which the wires extend, each of the apertures slightly



larger than the diameter of the wire but narrower than the width of the bushings, the inner end of said bushings engaging the outer face of said anchor plate, means formed on said anchor plate for engaging a tensioning device and for moving said anchor plate relative to said structure to be prestressed to thereby enable stressing of said wires, and means for securing said anchoring plate means so as to maintain said wires in stressed condition.

3,225,500
PRESTRESSED TENDON ANCHOR MEANS
Richard P. Martter, 1239 Highland Ave., Glendale, Calif.
Filed July 17, 1962, Ser. No. 210,494
3 Claims. (Cl. 52—127)



3. In a prestressed concrete body, a tendon comprised of a plurality of wires extending through the concrete body and terminating short of an outer face thereof;

a bearing plate embedded in the concrete inwardly of said face and extending normal to the direction of the tendon;

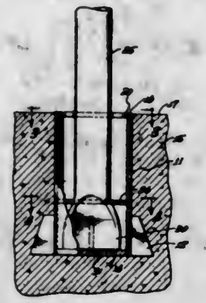
a stressing washer on the outer side of said bearing plate, the wires of the tendon passing through said plate and being anchored to said washer, said wires being in tension;

a void in said concrete body extending from said bearing plate to said outer face, the clearance between said washer and said void being less than the smallest dimension of an anchor bar;

a recess in the side of said washer, the clearance between the bottom of said recess and said void being greater than the smallest dimension of said bar, said recess receiving a portion of said bar while in longitudinal position permitting said bar to be moved past said washer into said space after placing said wires in tension;

a tool having a hollow, internally threaded inner end for threading onto said washer, said tool having a slot extending axially from its inner end for a substantial distance and adapted to be aligned to register with the recess in said washer, said tool being formed at its outer end for attachment of a jack, and said anchor bar inserted through said slot and said recess between said washer and said bearing plate when said tendon has been tensioned by pulling said washer outwardly of said plate.

3,225,501
FENCE POST
Joseph McCaron, 14133 Ballentine Place, Baldwin Park, Calif.
Filed Oct. 23, 1962, Ser. No. 232,527
3 Claims. (Cl. 52—298)

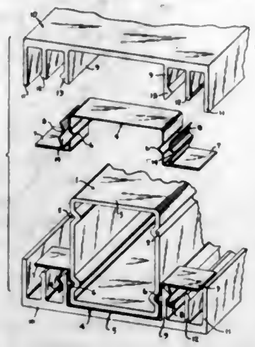


1. An improved fence construction comprising a support member having an open upper end and a closed lower end, an elongate fence post comprising an upper portion, and a lower end having a non-circular cross section with a major transverse axis dimension larger than the largest transverse axis dimension of said upper portion, first and second transverse plates across the support member each having opening means therethrough having a first portion with a major axis dimension for receiving the major transverse axis dimension of said fence post lower end and a second portion for receiving the fence post upper portion, said first portion major axes of said opening means being non-aligned and said second portions of said opening means being aligned, said first plate being proximate the upper end of said support member and said second plate being below said first plate and above said closed end of said support member a distance at least equal to the length of the end portion of said fence post, whereby said fence post lower end may be passed through said first plate first portion, then axially rotated into alignment with the second plate first portion, then passed through the second plate first portion, and then again axially rotated, so that the end portion is between said closed lower end and said second plate, and the second portions of said first and second plate opening means receive the fence post upper portion.

3,225,502
COMPOSITE FRAME
Walter Hallauer, Schaffhausen, Switzerland, assignor to Swiss Aluminium Ltd., a joint-stock company
Filed Dec. 23, 1960, Ser. No. 77,910
Claims priority, application Switzerland, Dec. 23, 1959, 82,274/59
4 Claims. (Cl. 52—461)

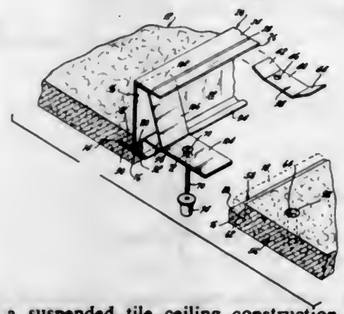
1. In a frame, for use in holding at flat building element extending in one plane, the combination of a longitudinal rigid frame member having two opposite sides perpendicular to said plane and spaced apart from each other for a distance, said frame member defining between said sides a surface parallel to said plane, and having in at least one of said sides a recess extending in said longitudinal direction, at least one rigid cover strip mounted to said frame member and including two substantially parallel projections defining a gap, at least one of said projections being a flange, and at least one spring clip resiliently connecting the cover strip removably to the frame member, said flange including a locking element, said spring clip including at least two U-shaped parts side by side and interconnected in inverted relative position having a common interconnecting leg, the first of said U-shaped parts being open at the bottom

and the second being open at the top, said first U-shaped part engaging at least a portion of said surface of said frame member parallel to said plane, the common leg having a projecting rib engaging resiliently the said recess of the said one side of the frame member, the said flange of the cover strip being engaged in the second U-shaped part of the clip thereby retaining the engage-



ment of the said projecting rib of the said common leg in said recess, the exterior leg of the said second U-shaped part of the clip having a locking element engaging resiliently said locking element of said flange of said cover strip, the said second U-shaped part of the clip having at its bottom an adjacent flat section extending parallel to said plane and being adapted to engage said building element.

3,225,503
CEILING ACCESS OPENING AND BRACKET THEREFOR
James M. Rallis, 412 16th St., Brooklyn 15, N.Y.
Filed Mar. 29, 1963, Ser. No. 269,098
7 Claims. (Cl. 52—497)



1. In a suspended tile ceiling construction, an elongated member for supporting the tiles of said ceiling in spaced relation below a main ceiling, said member having a vertical wall provided with substantially right angled flanges at the upper and lower ends thereof which define a channel and with an additional right angled flange at said lower end which extends in a direction opposite to the lower channel defining flange, said upper flange being adapted to be secured to the main ceiling and said additional channel being adapted to support a tile, and holder means mounted within said channel for supporting a tile closure plate in said ceiling, said holder means comprising substantially right angular bracket means having a vertical body portion abutting said vertical wall, an upper substantially right angled flange means abutting the upper flange of said channel, a substantially right angled lower flange provided with aperture means defined therein for receiving a securing means whereby said holder is adapted to be releasably secured to the upper surface of the tile closure plate and a substantially reverse L-shaped bend abutting the lower flange of said channel, said bend extending between the bottom of said vertical body portion and the lower flange of said bracket means, said lower flange of said holder means being disposed between said channel defining flanges and extending laterally therefrom, said upper channel defining flange having a detent portion for retaining said upper holder flange in position, and said lower channel defining flange having a detent portion for retaining said lower holder flange in position.

3,225,504
LOCKED WALL PANEL JOINT WITH FASTENER
Resta S. Gregoire, Dillsburg, Pa., assignor to Gregoire Engineering and Development Company
Filed Aug. 23, 1962, Ser. No. 218,990
3 Claims. (Cl. 52—509)



1. A locked wall sheet panel joint and fastener combination for mounting panel strips in successive joined relation onto a wall support, comprising

a pair of wall sheet panel strips each having a terminal elongated edge formation,

one of said edge formations being seated within the other of said formations and locking the strips together with their adjoining outer faces substantially coplanar,

the other of said edge formations being a substantially triangular groove extending inwardly from said outer faces, the inside and outside side walls of said triangular groove diverging from an open apex in the plane of said outer faces towards the base of said triangle, and extending further apart near both ends of the base to define hollow lobes adjoined thereto, said base being substantially parallel to said outer faces and being anchored to said wall support, one of said lobes defining an inwardly directed shoulder within said groove and part of the inside side wall connecting the base to its respective strip, the other of said lobes defining an exterior outwardly directed shoulder on the outside side wall which has a free terminal end at said open apex,

said one of said edge formations being an angular tongue extending inwardly from the outer face of its respective strip through said open apex and having a reversely turned lip at the end of said tongue resiliently pressing against said inwardly directed shoulder on the inside side wall of said triangular edge formation, forming a line-contact pressure seal in said joint and locking said strips together, the free end of said outside side wall of the triangle being biased against the inner face of the base of said tongue, and

fastener means fixed to said wall support having head portions extending over the outwardly directed shoulder of said other lobe to anchor said joint against said wall support.

3,225,505
FIRE-RESISTANT DOOR
Lucian C. Lytz, 1764 SE. 9th St., Fort Lauderdale, Fla.
Filed Aug. 13, 1963, Ser. No. 301,726
2 Claims. (Cl. 20—35)

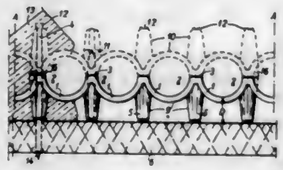
1. A fire-resistant door having a one-piece core comprising expanded mineral particles, mineral fibers and a

mineral binder, which is substantially fire-proof and dimensionally stable, a frame of substantially the same thickness as the core surrounding the edges thereof comprising fire-resistant rails and stiles, said rails and stiles being closely adjacent and unconnected with each other and allowing free relative movement between themselves and the core, a fire-stop between said frame and core in



the form of an expansion joint extending continuously around the core between the core and the frame and connected to the frame and to the core for movement relative to at least one thereof, said fire stop normally interlocking opposite faces of the core and frame in mutual flush relationship, and skins covering each of the opposite faces of the core and frame rails and stiles and secured firmly thereto and interconnecting the same.

3,225,506
FASTENER AND DISTANCE MEANS FOR TUBES AND CONDUCTORS
Anders Bertil Åberg, 11 Sodra Kvarnvagen, Klinten, Sweden
Filed May 11, 1961, Ser. No. 109,330
Claims priority, application Sweden, May 12, 1960, 4,699/60
3 Claims. (Cl. 52—701)

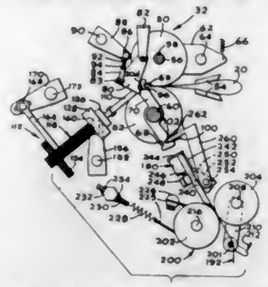


3. A spacer device for securing electric conduit or the like to the wooden form in concrete work, comprising first and second elements formed from a deformable synthetic resin, each element comprising an elongate body portion having legs at each end thereof, said body portion having at least one transverse recess of semicylindrical shape, said elements being arranged in opposed relationship with said recesses cooperating to provide a substantially cylindrical opening adapted to receive an electric conduit or the like, the oppositely disposed legs at either end of said pair of elements having aligned bores, a finishing nail disposed in each set of aligned bores with the enlarged head end of said nail engaging the outer end of the leg of said first element and with the pointed end thereof extending beyond the outer end of the leg of said second element, the outer end of the leg of said first element being of tubular configuration with a comparatively thin wall portion, and at least the major portion of the length of the bore of each leg being of a diameter greater than the diameter of said enlarged head end portion, said outer end of the bore of the leg of said first element being of a diameter less than the diameter of said enlarged head end portion and, being deformable, providing yielding engagement between said leg and said nail, said yielding engagement permitting said nail to be pulled point first through said aligned bores.

ERRATUM

For Class 52—754 see:
Patent No. 3,226,727

3,225,507
BAG CLOSING AND TYING MACHINE AND METHOD
Charles E. Cory, Oakland, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Oct. 5, 1962, Ser. No. 228,696
10 Claims. (Cl. 53—14)



9. The method of closing and tying the mouths of a series of flexible bags which comprises advancing the bags with their open end regions moving in a certain direction, gathering the end region of a first bag into a constricted neck, advancing a bag tie in said direction and following said first bag end region to overtake the same and apply the bag tie to the constricted neck, and twisting the ends of the bag tie together to tighten the bag tie around said neck while said first bag is maintained in the position where said tie was applied, and while the end region of the bag following said first bag is gathered into a constricted neck.

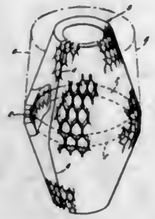
3,225,508
METHOD OF MANUFACTURING UNCONTAMINATED WELDING ROD
Warner H. Simon, 6511 Comanche Ave., Canoga Park, Calif.
Continuation of application Ser. No. 73,257, Dec. 2, 1960, now Patent No. 3,108,176, dated Oct. 22, 1963. This application Oct. 17, 1963, Ser. No. 317,089
3 Claims. (Cl. 53—22)



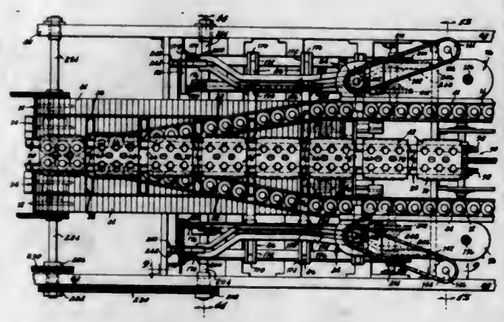
1. In a method of manufacturing uncontaminated welding rod or wire the steps of introducing the wire into a chamber containing an atmosphere of shielding gas, drawing said wire as it passes through said chamber, introducing said wire into a receptacle containing an atmosphere of the shielding gas, and hermetically sealing said receptacle.

3,225,509
SHOCK PROTECTIVE MATERIAL
George May, Wembley, England, assignor to Dufaylite Developments Limited
Filed Oct. 31, 1962, Ser. No. 234,348
Claims priority, application Great Britain, Nov. 1, 1961, 39,153/61
1 Claim. (Cl. 53—29)

A method of protecting an article by envelopment which comprises a circumferentially expandable sleeve of structural honeycomb material formed on its inner surface with at least one deep circumferential notch, compressing the sleeve axially and thereby expanding it circumferentially at and adjacent to said notch, temporarily expanding one end of the sleeve and introducing the article into the sleeve through said end during the temporary expansion thereof.

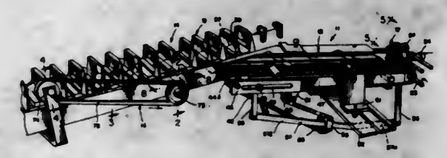


3,225,510
ARTICLE CARTONING MACHINE
Wickliffe Jones, Cincinnati, Ohio, and Robert J. Weichhand, Covington, Ky., assignors to R. A. Jones and Company, Inc., Covington, Ky., a corporation of Kentucky
Filed May 13, 1963, Ser. No. 280,033
15 Claims. (Cl. 53—48)



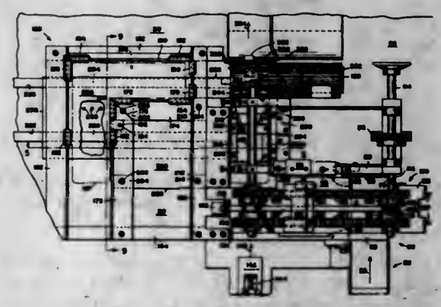
3. A cartoning machine for packing articles into cartons comprising,
magazine means for storing said cartons in a flat folded condition,
means for feeding said folded cartons sequentially from said magazine,
means for continuously moving said cartons in a path of travel after they are fed from said magazine,
means for erecting said cartons as they are transported on said continuous moving means,
conveyor means for continuously moving said articles in a continuous line toward an article packing station,
means for moving said conveyor at a first rate of speed,
a plurality of restraining members movable parallel with said article conveyor at a slower rate of speed,
means for moving said members laterally into a restraining position in front of a predetermined number of said articles as said members and said articles move toward said article handling station whereby said members engage and restrain the movement of said continuous line of articles,
means for sequentially moving said members out of engagement with said articles whereby said predetermined number of articles released by the withdrawn members move as a group at said first rate of speed on said conveyor and a gap is established between the restrained articles and the unrestrained articles.
means for moving said groups of articles into an open side of said cartons, and
means for sealing said cartons as said cartons move away from said packing station.

3,225,511
CIRCULAR PRESCORING AND TRANSFER APPARATUS
Walter H. Vogel, 215 Chamberlain Drive, Barrington, Ill.
Filed Apr. 16, 1963, Ser. No. 273,488
8 Claims. (Cl. 53—113)



2. In combination with a packaging machine for inserting articles into cartons wherein said packaging machine includes an article conveyor having spaced buckets extending transverse the conveyor and open at one end thereof, a device for feeding circulars one at a time and apparatus for receiving the circulars and transferring same into the open ends of the buckets on the article conveyor, said apparatus comprising a horizontal circular conveying surface, a circular transfer conveyor for moving the circulars along said surface, aligning the circulars and inserting same into the buckets, said conveyor including a pair of endless parallel chains extending at an incline to said article conveyor, a plurality of pairs of lugs carried by said chains for moving the circulars along the conveying surface, one of said lugs of each pair being advanced ahead of the other of said lugs of each pair to incline each circular relative to the direction of movement and align same for endwise insertion into said buckets, and one of said lugs having means for pushing the circular into said bucket.

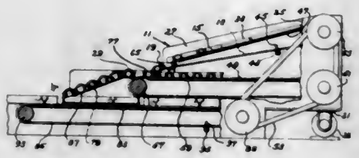
3,225,512
PACKAGING MACHINE
Robert F. Bulger, Levittown, Pa., Stephen Lucas, Bellmawr, N.J., and Walter D. Gurdack and James F. Cain, Philadelphia, Pa., assignors to Bayuk Cigars Incorporated, Philadelphia, Pa., a corporation of Maryland
Filed Sept. 14, 1962, Ser. No. 223,743
5 Claims. (Cl. 53—159)



1. In combination, means for producing a stack of items, a loading station, means adjacent the loading station for retaining a supply of folded containers, reciprocating means for successively removing one folded container at a time from said supply and transferring it to the loading station while still folded, a movable member pivotally mounted at the loading station and adapted to underlie one side of the container, means to pivot said

member to a substantially vertical position to erect the container and support said one side of the container, means movable into the front of said erected container at the loading station to guide said predetermined number of stacked items into the erected container, a weighted back-up door pivoted on a substantially horizontal axis to back up the rear of the container and means for transferring a predetermined number of stacked items from said stacking means to the interior of an erected container at the loading station and for transferring a container loaded with said predetermined number of stacked items to a point removed from said loading station by advancing the loaded container through the pivoted back up door.

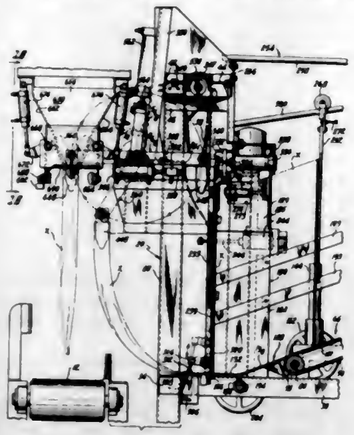
3,225,513
AUTOMATIC PACKAGING MACHINE
Albert L. Ehe, Bayside, N.Y., assignor to Multicup Automation Company, Inc., Woodside, N.Y., a corporation of New York
Filed Nov. 1, 1961, Ser. No. 149,310
7 Claims. (Cl. 53—160)



2. A machine for automatically placing a plurality of articles individually into individual compartments of a multiple compartmented flexible packing tray which comprises a downwardly inclined continuous article delivery belt, a substantially horizontal continuous tray delivery belt below the article delivery belt, variable drive means for driving the belts and controlling relative movement therof and slide means between article and tray delivery belts for sliding support and transportation of articles between the belts, the slide means having a stationary transverse member below the article delivery belt and above the tray delivery belt, whicb transverse member has a plurality of holes therein, and slide fingers pivoted, for movement upwardly and downwardly, about a portion of the transverse member and passing through the holes therein, so that articles from the article delivery belt may be slid downwardly into compartments of trays on the tray delivery belt when the slide fingers are in lower position and so that the fingers may be raised by contact with a wall of a filled compartment, pass over that wall and descend into a subsequent compartment.

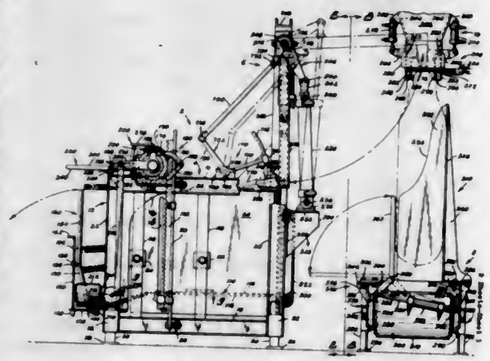
3,225,514
AUTOMATIC BAG-HANGING AND BAG-FILLING APPARATUS
Cecil M. Inglett, Augusta, Ga., assignor to Inglett & Company, Inc., Augusta, Ga., a corporation of Georgia
Filed Nov. 15, 1960, Ser. No. 69,510
29 Claims. (Cl. 53—190)

1. Bag-hanging and bag-filling apparatus, comprising: means for supporting a bag in a stack in flat condition; bag-opening means engageable with the upper end of the first bag of the stack for separating the front and rear walls of the bag to open the same; a bag-filling hopper adapted to load material into said bag; bag holding and transferring means having fingers insertable into the open bag for holding the said bag and for carrying said bag from the supporting means into position below a bag-filling hopper; means operable by said bag for retracting the fingers to release the bag and to move the holding and transferring means away from the upper end of said bag towards said stack for carrying out a like operation with the next bag in the stack; and bag-elevating



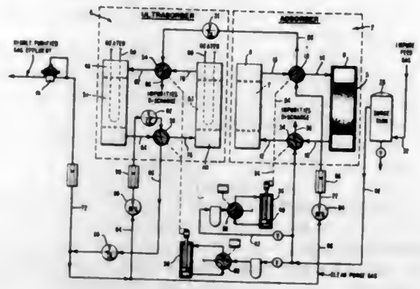
means for elevating the first bag in the stack to raise its upper end a desired amount above the upper end of the second bag in the stack.

3,225,515
AUTOMATIC BAG HANGER
Wilfred L. Inglett, P.O. Box 3425, Augusta, Ga.
Filed Apr. 9, 1963, Ser. No. 271,808
23 Claims. (Cl. 53—190)



1. A machine for hanging a bag on the filling spout of a bagging machine, said spout including means thereon for alternately grasping and releasing the top edges of a bag suspended therebelow, comprising: a frame; a magazine suported by said frame and adapted to hold a plurality of bags in a horizontally stacked position; a pair of spaced transfer arms pivotally mounted at the upper ends thereof to said frame above said magazine, the lower ends of said arms being movable between said magazine and said spout; a pair of clamping arms pivotally mounted at their upper ends to the confronting faces of said transfer arms, one clamping arm being attached to each transfer arm; means for pivoting said transfer arms between said magazine and said spout; and means for pivoting each of said clamping arms toward and away from its associated transfer arm.

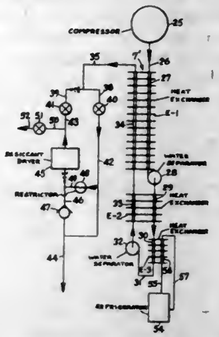
3,225,516
METHOD AND APPARATUS FOR PURIFYING GASEOUS MIXTURES BY CYCLIC ADSORPTION
Weston Emerson Smith, Pikesville, and Wallace Kemp Lehmann, Hampton, Md., assignors to The C. M. Kemp Mfg. Co., Glen Burnie, Md., a corporation of Maryland
Filed Apr. 15, 1963, Ser. No. 273,150
12 Claims. (Cl. 55—25)



1. A process for continuous non-selective separation of impurities from a gas stream containing combustion products of a hydrocarbon fuel which comprises alternately adsorbing the greater proportion of the impurities from a gas stream in one of two first adsorbent beds arranged for alternately shifting between cycles of high pressure adsorption and low pressure desorption and controlled so as to operate for short periods of cyclic adsorption and desorption, continuously recovering a partially purified effluent from one of said adsorbent beds, alternately adsorbing substantially all of the remaining impurities from said partially purified gas in another one of two second adsorbent beds arranged for alternately shifting between cycles of high pressure adsorption and low pressure desorption and controlled so as to operate for extended periods of cyclic adsorption and desorption, continuously recovering a substantially purified gas from one of said second adsorbent beds; at the same time, diverting a portion of the recovered purified effluent gas to a distribution zone, passing the major portion of the purified effluent from the distribution zone through a pressure reducing zone to expand the purified effluent, purging the impurities from the other of said first adsorbent beds with said expanded purified effluent, passing the remaining portion of gas in said distribution zone to another pressure reducing zone, and purging the impurities from the other of said second adsorbent beds with said remaining portion of said purified effluent while supplying heat to said second adsorbent bed during the desorption cycle.

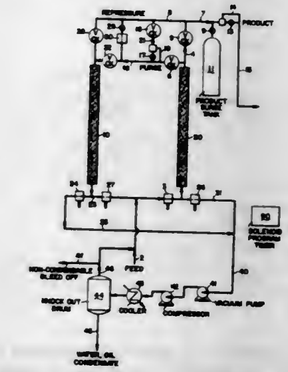
3,225,517
GAS DRYING METHOD
Erich A. Wachsmuth, Long Beach, Ind., assignor to Joy Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Jan. 22, 1963, Ser. No. 253,091
5 Claims. (Cl. 55—31)

1. The method of removing entrained condensable contaminants from a stream of gas comprising the steps of: passing a stream of gas through a regenerative refrigerative purifying means and through a desiccant purifying means seriatim at the beginning of a purifying operation while simultaneously cooling such refrigerative means to an effective operating temperature; discontinuing the passage of such stream through said desiccant means or any other desiccant purifying means as soon as said refrigerative means has reached said operating tem-



perature while continuing the passage of such stream through said regenerative refrigerative means.

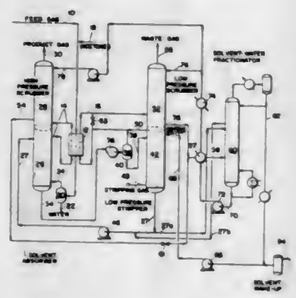
3,225,518
CLOSED SYSTEM HEATLESS DRYER
Charles W. Skarstrom, Montvale, and Bruce R. Tegge, Madison, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
Continuation of application Ser. No. 36,640, June 16, 1960. This application June 10, 1964, Ser. No. 376,293
5 Claims. (Cl. 55—33)



1. A process for the separation of a component from a gaseous mixture utilizing two adsorbent beds, said process comprising the steps of flowing a feed stream of gaseous mixture including said component through a first bed of adsorbent initially relatively free of said component at a preselected initial relatively high pressure and in a positive flow direction in an initial cycle, said adsorbent being preferentially selective for said component; discharging a gaseous stream from said first bed as a primary effluent; segregating a portion of said primary effluent as a product stream; passing the remainder of said primary effluent in a reverse flow direction through a second bed of adsorbent at a relatively low pressure, which adsorbent is relatively saturated with said component at the start of said initial cycle, whereby as said cycle continues, said first bed becomes relatively saturated with said component progressively in said positive direction and whereby said second bed becomes relatively free from said component in said reverse direction; continuing said initial cycle for a time period less than that required to secure saturation of said first bed and that required to secure freedom from said component of said second bed; discharging a gaseous stream from said second bed as a secondary effluent, said secondary effluent containing at least

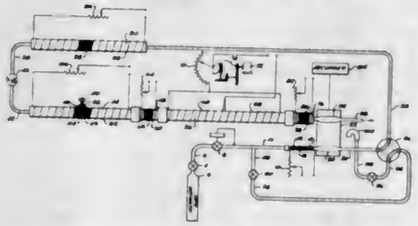
a portion of said remainder of primary effluent and desorbed component; compressing at least a portion of said secondary effluent, thereby removing said desorbed component; reintroducing said compressed secondary effluent, depleted in said desorbed component, into said feed stream; thereafter introducing said feed stream into said second bed in a positive flow direction at said initial relatively high pressure; discharging a gaseous stream from said second bed as a primary effluent; segregating a portion of said last-named primary effluent as a product stream; passing the remainder of said last-named primary effluent in reverse flow through said first bed of adsorbent at said relatively low pressure; discharging a gaseous stream from said first bed as a secondary effluent, said last-named secondary effluent containing at least a portion of said remainder of last-named primary effluent and desorbed component; compressing at least a portion of said last-named secondary effluent, thereby removing said last-named desorbed component; reintroducing said compressed, last-named secondary effluent, depleted in said last-named desorbed component, into said feed stream; and thereafter cyclically continuing said operation.

3,225,519
GAS ABSORPTION
Harold H. Stotler, Westfield, N.J., assignor to Hydrocarbon Research, Inc., New York, N.Y., a corporation of New Jersey
Filed Dec. 13, 1962, Ser. No. 244,422
10 Claims. (Cl. 55—48)



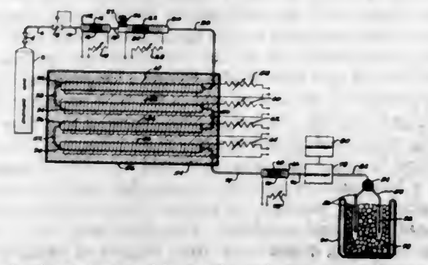
1. An auto-refrigerated absorption process for the removal at super-atmospheric pressures of hydrate forming acidic gases consisting predominantly of carbon dioxide from a carbon dioxide containing feed of mixed gases including a desired product gas which comprises:
(a) chilling the feed of mixed gases by indirect heat exchange with the subsequently separated acidic-gas-free product gas and at least a portion of the subsequently separated acidic gases;
(b) passing said chilled feed of mixed gases through an absorption zone in countercurrent contact with aqueous acetone containing 2 to 10 weight percent water at temperatures of —20° F. to 50° F. and super-atmospheric pressure whereby the major portion of the acidic gases is absorbed in the aqueous acetone to give a product gas low in acidic gases;
(c) separating the aqueous acetone rich in acidic gases from the product gas;
(d) removing and expanding said aqueous acetone rich in acidic gases at substantially the temperature it leaves the absorption zone to a low pressure stripping zone;
(e) stripping said acidic gases from said aqueous acetone in the stripping zone by contacting same and vaporizing some acetone with a stripping gas essentially free of acidic gases to produce aqueous acetone essentially free of acidic gases thereby providing auto-refrigeration by the stripping of the acidic gases and by vaporization of part of the acetone;
(f) pumping the aqueous acetone from the stripping zone to essentially the pressure of the absorption zone and passing said aqueous acetone at essentially the same temperature as it leaves the stripping zone to the absorption zone;
(g) said indirect heat-exchange of step (a) heating the separated acidic-gas-free product gas from the absorption zone and at least the portion of stripped acidic gas from the stripping zone to essentially ambient temperature by indirect heat exchange with the feed of mixed gases;
(h) recovering acetone vapors in the product gas coming from said indirect heat exchange by scrubbing said acid-gas-free product gas with water to form a water acetone solution;
(i) recovering acetone vapors in the stripped acidic gases by scrubbing said stripped acidic gases with water to form a water acetone solution;
(j) fractionating the water-acetone solutions from steps (h) and (i) to produce a concentrated aqueous acetone and water;
(k) returning the water to the water scrubbing steps (h) and (i) and returning the concentrated aqueous acetone to the stripping zone.

3,225,520
SAMPLE PREPARATION AND COLLECTION MEANS FOR GAS CHROMATOGRAPHIC COLUMNS
Frank H. Burow, Cheswick, Pa., assignor to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware
Filed June 4, 1962, Ser. No. 199,882
8 Claims. (Cl. 55—67)



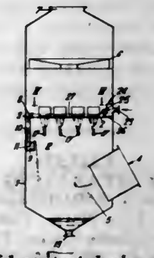
1. A chromatographic method for separating a normally liquid, wide boiling range mixture containing a plurality of close-boiling components, comprising preparing a sample of said mixture for introducing into a chromatographic separating zone by heating a tightly compacted, gas- and liquid-permeable mass of a material that is inert with respect to the sample mixture and having extensive surface area and having a thermal conductivity in the range of metals and alloys, said mass of material being confined within and substantially filling a sample vaporizing chamber that is elongated in the direction of carrier gas flow, said mass of material being heated to a temperature sufficient to promote gradual vaporization substantially in the order of decreasing volatility of the vaporizable components of the sample that are vaporizable at the conditions of the system, establishing a flow of carrier gas through said heated mass, and injecting said sample into said heated mass, vaporizing said vaporizable components in a succession of increments substantially in the order of decreasing volatility over a period of time such that each vaporized increment is swept by said carrier gas along the path of carrier gas flow at least some distance within said heated mass from the place of initial vaporization before vaporization of a subsequent increment, whereby a partial separation of said vaporizable components takes place within said heated mass, thereafter removing from said mass the gradually vaporized components of said sample in partly separated form substantially in the order which they have been vaporized by continuing the flow of carrier gas therethrough, effecting a further separation of such components into distinct portions by introducing the effluent from said mass into a chromatographic separating zone, and removing further separated components in separated form from the chromatographic separating zone by elution with said carrier gas, and accelerating elution of heavier components from said separating zone by gradually increasing the temperature of the chromatographic separating zone during elution with carrier gas, the volume of said chamber being at least about the volume of said chromatographic separating zone and substantially larger than the volume of said sample.

3,225,521
SERIALLY CONNECTED THERMOCHROMATOGRAPHIC COLUMNS
Frank H. Burow, Cheswick, Pa., assignor to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware
Filed June 4, 1962, Ser. No. 199,883
4 Claims. (Cl. 55—67)



1. A chromatographic method for separating a wide boiling range mixture containing a plurality of close-boiling components, comprising effecting a partial separation of lighter components from heavier components of the mixture at a relatively low temperature of the temperature program in a first elongated, temperature-programmed chromatographic separating column by introducing into said column a flowing stream of preheated carrier gas and a vaporous sample of the mixture to be separated, removing partly separated components from said first chromatographic separating column in the order of separation by continuing the flow of carrier gas therethrough and effecting a further separation of the partly separated components and accelerating elution of the partly separated components from said first chromatographic separating column by gradually increasing the temperature of the entire first chromatographic separating column uniformly over its entire length, thereafter effecting complete removal of the heavier components by further gradually increasing the temperature of said first chromatographic separating column to a temperature sufficient to insure elution of said heavier components from said first chromatographic separating column, effecting a further separation of the partly separated components of the mixture by passing the entire effluent from the first column into a separate, second elongated, temperature-programmed chromatographic separating column spaced apart from and fluidly communicating with said first column, said second chromatographic column being at a lower temperature then said first chromatographic column during at least a substantial part of the time in which the temperature of said first column is being increased, removing the further separated components of the mixture in the order of separation from the second chromatographic separating column and accelerating elution of the further separated components in that form, by continuing the flow of carrier gas therethrough and effecting a still further separation of the components and accelerating elution of the thus-separated components from said second chromatographic separating column by gradually increasing the temperature of the entire second chromatographic column uniformly over its entire length, and thereafter effecting complete removal of the heavier components from said second chromatographic column by further gradually increasing the temperature of said second column to a temperature sufficient to insure elution of said heavier components.

3,225,522
GAS AND LIQUID CONTACT DEVICE
Bernard Black, 31 Brockley Ave., Stanmore, Middlesex, England
Filed Sept. 5, 1963, Ser. No. 306,771
Claims priority, application Great Britain, Sept. 10, 1962, 34,526/62
6 Claims. (Cl. 55—223)

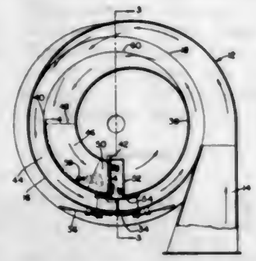


1. A gas and liquid contact device comprising, a vessel enclosing the combination of horizontally disposed diaphragm plate means having a plurality of slots therein, a corresponding plurality of chimneys having lower openings spaced from said diaphragm plate means and severally embracing and overlapping different ones of said slots, a plurality of liquid spray jets severally so disposed beneath said slots as to severally project sprays of liquid into different slots, means for injecting gas for contact with said liquid below said diaphragm plate means, means for separating the gas from said liquid and being disposed above said chimneys, means for supplying liquid under pressure to said liquid spray jets, and means for supplying liquid over said diaphragm plate means so that the lower openings of said chimneys are maintained immersed in a pool of liquid supported by said diaphragm plate means, and means constituting an inlet for liquid mounted and adapted to deliver liquid over and onto said horizontally disposed diaphragm plate means, and wherein said diaphragm plate means has an upstanding peripheral outflow rim extending around a part of its periphery and adapted to retain on said diaphragm plate a shallow pool of liquid flowing thereover, and wherein the lower openings of said chimneys are so mounted and spaced from said diaphragm plate means as to be entirely immersed in said shallow pool of liquid so flowing over said diaphragm plate means.

3,225,523
CYCLONE DUST COLLECTOR FOR REMOVING PARTICLES FROM A FLUID STREAM
Donald Wiebe, Greensburg, Pa., assignor to Joy Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 21, 1961, Ser. No. 153,859
10 Claims. (Cl. 55—224)

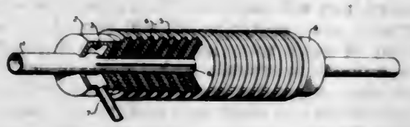
1. A separating device for removing foreign particles entrained in a fluid stream comprising, a generally cylindrical hollow shell having a clean fluid outlet on one end

thereof and a foreign particle outlet at the other end thereof, a tangential inlet communicating with the interior of said shell for directing such a fluid stream circumferentially into said shell, longitudinal wall means located centrally within said shell and extending between the ends thereof to define a path for such fluid stream which path



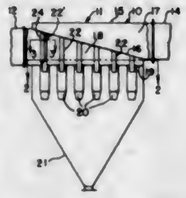
is spiral in cross section within said shell, said wall means being spaced radially inwardly of said inlet, means within said spiral path for introducing a liquid into such fluid stream passing therethrough, and other means within said spiral path for admixing such liquid with such foreign particles to cause commingling of such liquid and foreign particles.

3,225,524
APPARATUS FOR SEPARATING LIQUID FROM A BINARY PHASE LIQUID-GAS MIXTURE
James H. Berrian, U.S. Navy (Box 31, Life Sciences Dept., U.S. Navy Missile Center, Point Mugu, Calif.)
Filed May 15, 1961, Ser. No. 110,279
1 Claim. (Cl. 55—269)
(Granted under Title 35, U.S. Code (1952), sec. 266)
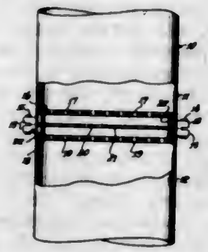


An apparatus comprising a tube of thermally conducting material through which a coolant can be passed, said tube having a plurality of flutes extendnig longitudinally on its outer surface; that portion of said tube in the vicinity of said flutes having its wall imperforate to prevent any transfer of fluids between the interior and exterior of said tube a plurality of discs of porous material, each disc constituting a membrane capable of transmitting liquid by capillary action, sleeved on said tube with their inner peripheries in contact with said flutes; a plurality of thermally conducting discs also sleeved on said tube in intimate contact with said tube to facilitate heat flow between said thermally conducting discs and said tube; each of said first mentioned porous discs being interlaminated between a pair of said thermally conducting discs so as to be in contact on opposite surfaces thereof with each, respectively, of said pair of thermally conducting discs; means compressing said interlaminated plurality of discs together against one another; a collecting chamber in communication with said flutes to collect liquid reaching said flutes; and means for applying suction to said chamber in order to produce a pressure differential across said membranes in the direction extending from the outer peripheries of said membranes toward the inner peripheries of said membranes in contact with said flutes.

3,225,525
CYCLONE DUST COLLECTOR HAVING A WEAR SHIELD
William E. Archer, Portuguese Bend, Calif., assignor to Joy Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 9, 1962, Ser. No. 229,415
6 Claims. (Cl. 55—346)



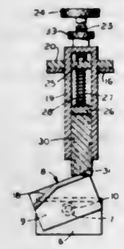
1. In a cyclone collector of the class having multiple rows of collector units, each of said collector units comprising a collector tube coaxial with a cylindrical outlet tube, said rows of collector units being disposed transversely of a stream of gases having abrasive particles entrained therein, said stream of gases entering said cyclone collector through an inlet connection, a first row of said collector units nearest said inlet connection being exposed to wearing effects of said abrasive particles: the improvement comprising the combination of individual elongated wear shields mounted on the upstream sides of said outlet tubes, respectively, of all the collector units in said first row, each of said wear shields having a longitudinal centerline parallel to the axis of said outlet tube coplanar therewith and defining a common plane parallel to a flow path along which said stream of gases flows from said inlet connection to said outlet tube, each said wear shield comprising a base portion normal to said plane and two spaced longitudinally parallel leg portions substantially parallel to said plane and equidistant therefrom and said leg portions extending downstream from the lateral edges of said base portion far enough to make line contact with the external surface of said outlet tube.

3,225,526
BLAST ACTUATED CLOSURE VALVE AND PARTICULATE FILTER
John J. Bayles, 1560 Teal Club Road, and Arthur A. Denny, 3440 S. J St., both of Oxnard, Calif.
Filed Mar. 5, 1963, Ser. No. 263,085
7 Claims. (Cl. 55—420)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A blast actuated closure valve and particulate filter in the ventilation duct of an underground protective shelter comprising, in combination:
a ventilation duct leading from an underground shelter to the earth surface above said shelter;
a plurality of parallel plates having non-aligned perforations installed in a spaced relationship across the cross-sectional area of said duct with at least one of the plates being movable substantially into abutting relation to an adjacent plate along the longitudinal axis of said duct in response to a pressure wave progressing through a portion of said duct;
resilient means for maintaining the normal separation of said plates from each other.

3,225,527
ROTARY LAWN MOWER, BLADE AND SHARPENER
Herbert W. Spear, San Bernardino, Calif., assignor to Charles A. Crete, Marysville, Calif.
Filed June 23, 1964, Ser. No. 377,282
3 Claims. (Cl. 56—25.4)



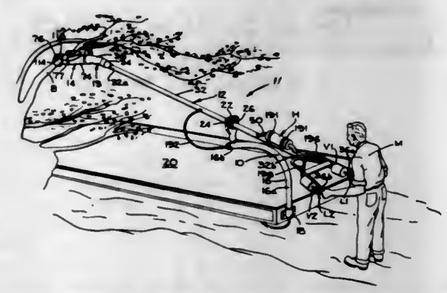
2. In a rotary lawn mower that includes a portable, wheel mounted mower chassis having a motor driven, rotatable, vertical shaft provided with blade supporting means on its lower end for supporting a plurality of substantially horizontally extending cutting blades rigid with said shaft for movement of said blades with said shaft in one direction in an annular path about said shaft when said shaft is rotated in said one direction:
(a) a plurality of substantially horizontally elongated, flat-sided, cutting blades extending longitudinally thereof radially outwardly of said blade supporting means, and one of the longitudinally extending edges of each blade being a leading edge relative to the direction of movement thereof in said path, and each blade also being bevelled on its underside along said leading edge to the upper surface of each blade whereby said leading edge is sharpened to provide a cutting edge;
(b) blade securing means for releasably securing each blade to said blade supporting means for movement of each blade relative to said blade supporting means from a lowered cutting position at a level below said shaft and said blade supporting means and with said cutting edge leading relative to said movement of said blade in said path in said one direction to an elevated sharpening position spaced above said cutting position with said cutting edge trailing relative to said direction of movement of said blade in said path, and with the bevelled surface along said cutting edge facing upwardly and horizontal;
(c) said blade securing means including means for locking said blade in said cutting position and in said sharpening position respectively;
(d) blade sharpening means carried by said chassis at a point spaced above said annular path of said blades when the latter are in said cutting position and in a position for engagement with the bevelled surface of said blade along said cutting edge when said blade is locked in said sharpening position and is moved in said one direction about the axis of said shaft.

3,225,528
COTTON PICKING SPINDLE
James H. Gray, Tupelo, Miss., assignor to Tupelo Spindle Company, Inc., Tupelo, Miss., a corporation of Mississippi
Filed May 3, 1961, Ser. No. 107,422
17 Claims. (Cl. 56—50)



13. For use in a cotton picking machine having alternate sets of oppositely rotating spindles, a two-way picking spindle adapted for use in either of said sets and having a longitudinal row of one-way right hand picking teeth and a longitudinal row of one-way left hand picking teeth in circumferentially spaced relation to said right hand picking teeth, and a longitudinal peaked ridge extending a distance substantially equal to the extent of the respective rows of teeth and being interposed intermediate the respective sets of teeth for acting upon cotton lint between the respective actions of the rows of teeth thereupon during picking operation.

3,225,529
TREE SHAKING MECHANISM
William N. King, Los Gatos, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Nov. 28, 1962, Ser. No. 240,490
20 Claims. (Cl. 56—328)

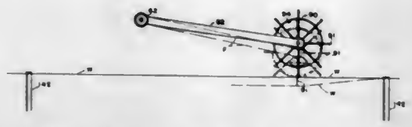


1. A tree shaking device for use in the harvesting of tree born fruit comprising: a rigid positioning arm; a shaker head mounted by and extending from one end of said arm for movement thereby into engagement with a tree limb; limb shaking means mounted within said head operable to generate linear shaking forces in a predetermined direction; a first and a second limb gripping jaw mounted by said head, said first jaw being moveable in said direction to grip a limb between itself and the second jaw, and said jaws being arranged so that, when a limb is gripped thereby, the shaker head is aligned with respect to said limb so that said direction is substantially perpendicular to the limb; a joint of variable stiffness arranged between and effecting the coupling of said one end of said arm and the shaker head; and means for controlling the stiffness of said joint whereby said joint may be rendered sufficiently stiff to enable the shaker head to be positioned by said arm to engage a free limb and whereby, when the limb has been gripped by said jaws, said joint may be rendered sufficiently flexible to allow the head to be aligned perpendicularly with respect to the limb without also aligning the positioning arm perpendicularly to said limb, and whereby said joint may be rendered sufficiently flexible to allow the head to shake the limb without substantially shaking the positioning arm.

3,225,530
APPARATUS FOR AND METHOD OF HARVESTING VINE-BORNE FRUIT FROM WIRE SUPPORTS OR THE LIKE

Raymond M. Weygandt and Raymond A. Weygandt, both of Rte. 1, Box 308, Canby, Oreg.

Filed Aug. 9, 1963, Ser. No. 301,031
3 Claims. (Cl. 56—330)



1. In a machine for harvesting fruit from vines supported in row formation comprising in combination,
a rotatable vine-impinging means carried by the machine,
means mounting said impinging means for intermittent impingement against said vines,
means associated with and rotatable independently of said vine-impinging means for imparting reciprocatory motion to the vine-impinging means,
a power source carried by the machine, and
a driving connection between said power source and said independently rotatable means.

3,225,531
TEDDERS

Cornelis van der Lely, Zug, Switzerland, assignor to Patent Concern N.V., Willemstad, Curacao, Netherlands Antilles, a limited-liability company of the Netherlands

Filed Aug. 24, 1964, Ser. No. 393,474
Claims priority, application Netherlands, Dec. 2, 1960, 258,676
26 Claims. (Cl. 56—372)



1. A haymaking machine for tedding hay and similar crop, said haymaking machine being provided with a frame movable over the ground and a tined body journaled in the frame so as to be rotatable about a substantially horizontal axis, driving means, said driving means driving the tined body in a direction whereby during operation the tines in the lowermost region of the body move forwardly relative to the direction of travel of the tedder, first guide means extending along the length of the tined body and being arranged in front of the body and rearwardly over the tined body relative to the direction of travel of the machine, second guide means attached to the tedder near the ends of the tined body, said second guide means including bent resilient rods, said resilient rods defining a deflector surface which is oblique to the vertical, said rods being positioned one above the other adjacent the tedder with the lower rods being bent towards said tined body at sharper angles than the upper rods.

3,225,532
BALE BUNCHER

Andrew Rust, Box 62, Mercer, N. Dak.

Filed Feb. 26, 1964, Ser. No. 347,574
1 Claim. (Cl. 56—475)



A bale buncher comprising:
(a) a generally horizontal base unit adapted to be pulled along the ground having a forward end portion where the bales to be bunched are deposited and a rear end portion where the bunched bales are to be discharged;
(b) a gate at the rear end of said base unit;
(c) means at the rear end portion of said base unit including an upper transverse member;
(d) means suspending said gate for swinging movement about said transverse member;
(e) a cylindrical rock shaft carried by the lower end of said gate;
(f) an arm fixedly attached to a central portion of said rock shaft and extending rearwardly therefrom;
(g) a second arm pivotally mounted to a central portion of said transverse member and extending rearwardly therefrom in substantial vertical alignment with said first arm;
(h) a link member connected at its lower end to said first arm at a point spaced from said rock shaft and connected to said second arm at a point spaced from said transverse member for rocking said rock shaft when said second arm is pivoted upwardly;
(i) a drop hook pivotally mounted at each side of said base unit formed with a downwardly facing notch of a depth greater than the radius of said cylindrical rock shaft for engaging said rock shaft to latch said gate closed to prevent bales from being discharged, and
(j) a cam member mounted adjacent each end of said rock shaft and normally projecting downwardly therefrom for effecting disengagement of said drop hooks to unlatch said gate when said shaft is rocked to raise each cam member whereby the bunched bales on said base unit are permitted to be discharged onto the ground,
(k) said drop hooks also having inclined surfaces engaged by said rock shaft as said gate swings downwardly to pivot said hooks upwardly and thereby effect re-engagement of said shaft with said notches.

3,225,533
APPARATUS AND PROCESS FOR FORMING YARNS AND OTHER TWISTED ASSEMBLIES

David Ernest Henshaw, Geelong, Victoria, Australia, assignor to Commonwealth Scientific and Industrial Research Organization, Melbourne, Victoria, Australia, a body corporate

Filed Oct. 18, 1962, Ser. No. 231,457
Claims priority, application Australia, Oct. 19, 1961, 10,441/61; Jan. 16, 1962, 13,360/62
22 Claims. (Cl. 57—34)

13. Apparatus for forming stable twisted threads comprising feeding means to feed a strand between a first

position and a second position, twisting means at an intermediate position between the first and second positions to impart to the strand alternating zones of opposite twist, said twisting means including a pair of contra-moving elastomeric surfaces arranged to contact the strand and to move transversely of the latter as the strand moves between said surfaces past the intermediate position, said surfaces further having a component of motion opposite



to the direction of motion of the strand as it moves past the intermediate position, means to feed a second strand to the second position to converge the strands, and take-up means operative to take-up the converged strands and being spaced from the second position by a distance sufficient to provide a free length of the converged strands equal to at least the length of two consecutive zones of opposite twist.

3,225,534
DIFFERENTIAL SHRINKAGE YARN

Robert Herman Knospe, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Feb. 25, 1964, Ser. No. 347,265
15 Claims. (Cl. 57—140)



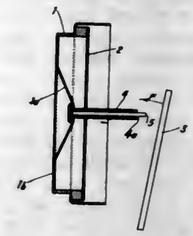
1. A filamentary yarn comprised of a plurality of intermingled, differentially shrinkable, drawn, continuous filaments of two different compositions, the first composition being polyhexamethylene adipamide, the second composition being taken from the group consisting of (1) a melt blend of polyhexamethylene adipamide and polyvinyl pyrrolidone and (2) a copolymer of hexamethylene adipamide and hexamethylene isophthalamide, said filaments being characterized as to viscoelastic equality by stress/modulus ratios differing by no more than 0.001.

3,225,535
TIME KEEPING APPARATUS POSSESSING SOUNDING ALARMS

André Deladerriere, Saint-Nicolas-d'Aliermont, France, assignor to Societe Anonyme: Revells Bayard, Saint-Nicolas-d'Aliermont, France, a corporatison of France

Filed June 26, 1964, Ser. No. 378,190
Claims priority, application France, Dec. 16, 1963, 957,293
4 Claims. (Cl. 58—16)

1. A sound producing apparatus for a time piece comprising; a timepiece housing, a driving mechanism in said housing, a dial member in said housing, a transparent cover fastened to said housing over said dial, said cover being adapted to produce an audible sound when vibrated, and said driving mechanism comprising

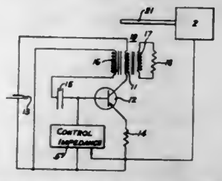


a mechanical vibrating organ having a portion arranged to impart periodic vibrations to said cover.

3,225,536
ELECTRIC CLOCK

Robert Walter Reich, Rotackerstrasse 2, Freiburg im Breisgau, Germany

Filed Oct. 15, 1962, Ser. No. 230,646
8 Claims. (Cl. 58—23)

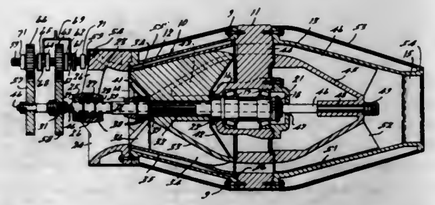


1. In an electronic clock having a clock driving mechanism including an oscillatory actuating and force transmission element for driving the said mechanism, the combination comprising: a transistor; a driving coil connected to the emitter collector path of said transistor; a feedback loop connected to the base electrode of said transistor and including a capacitor and a second coil coupled to said driving coil so as to define a blocking oscillator; means including controllable impedance means independent of the coils in the collector circuit of said transistor and connected to said base electrode for periodically enabling and disabling said oscillator at a rate corresponding to the rate of oscillation of said mechanism; and an armature cooperating with said driving coil and connected to said element for actuation of said mechanism in response to driving pulses in said driving coil.

3,225,537
FLUID AND VEHICLE PROPELLING DEVICE

Fred E. Parsons, 1656 Keller Lane, Bloomfield Hills, Mich.

Filed Oct. 1, 1964, Ser. No. 400,871
6 Claims. (Cl. 60—35.54)



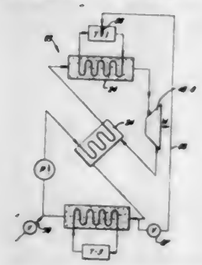
1. In a propelling device, a housing having a central supporting section and forward and rearward truncated converging housing sections containing an intake opening at the front end and an outlet opening at the rear end, a truncated conical rotor within the forward hous-

ing section, drive means supported by said central supporting section for rotating said rotor, vanes extending from said rotor for propelling fluid entering the inlet opening to the rear thereof, said central supporting section having an annular passageway communicating with the annular passageway between said rotor and forwardly extending housing section, a truncated conical stator in the rearward housing section, vanes on said truncated conical section extending outwardly therefrom into a passageway thereabout, said drive means embodying telescope shafts, the outer shaft supporting and driving said rotor, the inner shaft supporting and driving said stator, and means for retaining one of said shafts stationary when the other is rotated for reversing the direction of movement of the fluid through the device.

3,225,538
CONVERSION OF HEATS OF CHEMICAL REACTIONS TO SENSIBLE ENERGY

Reginald B. Bland, Balboa, and Frederick J. Ewing, Altadena, Calif., assignors, by direct and mesne assignments, to The Catacycle Company, Inc., Beverly Hills, Calif., a corporation of California

Filed Mar. 25, 1960, Ser. No. 17,512
3 Claims. (Cl. 60—37)

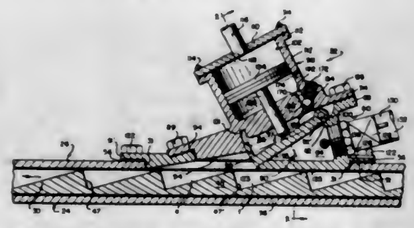


1. A method for the transfer of heat comprising the steps of heating a paraffin adapted to undergo a dehydrogenation endothermic reaction to a temperature level at which the endothermic reaction occurs by passing said paraffin in heat exchange relationship with a source of heat, absorbing heat from the source of heat as the endothermic reaction occurs and produces an olefin and hydrogen, cooling said olefin and hydrogen to a temperature level at which an exothermic reaction occurs to form a paraffin, and heating a material by passing it in heat exchange relationship with said olefin and hydrogen as the exothermic reaction occurs and evolves heat.

3,225,539
EXPLOSION INERTIA TURBINE ENGINE

George C. Coverston, 76 S. Russell St., Fallon, Nev.

Filed June 20, 1962, Ser. No. 203,890
11 Claims. (Cl. 60—39.75)

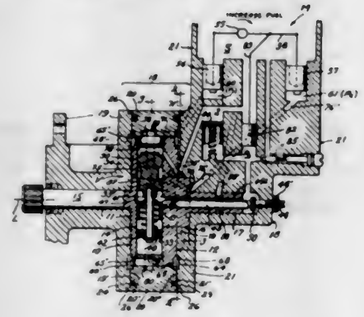


4. A firing unit for a gas turbine engine, said unit defining a combustion chamber having a movable valve forming a part of the wall of said chamber, said valve when open serving in conjunction with other portions of said combustion chamber to define a constricted throat for directing the ignited gaseous fuel out of the chamber in a narrow stream, means for supplying gaseous fuel under pressure into said chamber, means for igniting said fuel within the combustion chamber, and resiliently yieldable means constantly urging the valve toward closed position with a force in excess of the opening force exerted by fuel prior to its ignition, but less than the force exerted thereon by the ignited fuel.

3,225,540
ISOCHRONOUS, CENTRIFUGALLY ACTUATED, HYDRAULIC GOVERNOR

Darriel L. Alsobrooks, Birmingham, Mich., Aram C. Hamalian, North Caldwell, N.J., and Rufus Oldenburger, West Lafayette, Ind., assignors to Curtiss-Wright Corporation, a corporation of Delaware

Filed Oct. 6, 1964, Ser. No. 401,822
11 Claims. (Cl. 60—52)



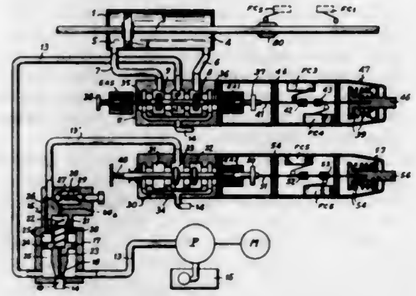
1. A hydraulic governor for engines comprising:
a casing having a generally circular recess,
a generally circular block generally filling the recess and adapted to be rotated therein at a speed proportionally to the speed of an engine to be governed,
a unitary speed error detecting valve and flyweight member contained in a diametrical bore in said block for speed error detecting movement out of a neutral position in said bore,
a hydraulic servo adapted for output movement to effect correction of such error,
means hydraulically connecting the valve member to the servo to initiate error correcting servo output movement as a function of speed error detecting movement of the valve member,
a source of hydraulic fluid,
means including cooperating vanes on the circular block and an annular cavity on an adjacent wall portion of the circular recess and constituting a turbine pump having an inlet chamber connected with said hydraulic fluid source,
the turbine pump having an outlet chamber connected to supply operating fluid to the servo.

3,225,541
HYDRAULIC ANTI-SHOCK DEVICE

Jean Piret, Vernouillet, France, assignor to Societe Anonyme Simca Automobiles, Paris, France

Filed Feb. 3, 1965, Ser. No. 430,156
Claims priority, application France, Feb. 5, 1964, 962,670
20 Claims. (Cl. 60—52)

1. A hydraulic anti-shock device associated with a hydraulic jack furnished with a piston the two faces of which, through the intermediary of a principal distributor controlled alternately by two electro-magnets, are adapted to be connected either alternately with the delivery circuit of a pump or the pump inlet by its return circuit, or simultaneously with said two circuits, and comprising: in the delivery circuit downstream of the principal regulator, a pressure regulator furnished with a closing valve interposed between the delivery circuit and the return circuit, and rigidly connected to a piston defining two chambers the lower chamber of which communicates directly with the delivery circuit and the upper chamber of which, furnished with a restraining spring urging the valve into its closing position, communicates through the intermediary of a calibrated channel with the delivery circuit; a master distributor connected, on the one hand, to the upper chamber of the valve piston and, on the other hand, to the return circuit, and adapted to be controlled by an electro-magnet in such a manner as to destroy or establish the communication between the upper chamber of said valve piston and the return circuit; and an electric circuit furnished with switches and relays for starting and stopping a motor driving the



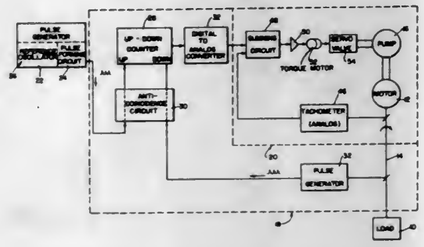
pump and for controlling the various electro-magnets, said device being characterized in that it comprises: end or travel switches adapted to be actuated by cams arranged in such a manner as to be able to follow the displacements of the armatures of the corresponding electromagnets of the distributors, the end of travel switch for the master distributor being disposed in the electric circuit of the electromagnets of the principal distributor in such a way that they can only be closed by their corresponding cams and can only permit the energization of the electromagnets of the principal distributor when the master distributor is in its neutral position, while the end of travel switches of the principal distributor are disposed in the circuit of the electromagnet of the master distributor in such a way that neither can be closed by its corresponding cam and does not permit the energization of the electromagnet of the master distributor until the principal distributor occupies one of its two extreme positions.

3,225,542
SPEED CONTROL SYSTEM

Jack T. Hansen, Arlington, and Joseph W. Broome, Sudbury, Mass., assignors to The Oilgear Company, Milwaukee, Wis.

Filed Mar. 16, 1964, Ser. No. 352,392
25 Claims. (Cl. 60—53)

1. A speed control unit for control of the speed of an output member, said speed control unit comprising
(A) an inner servo loop arranged to control the speed of said member,
(B) a reference source providing a series of signals corresponding to commanded changes in the position of said member,
(C) an outer servo loop including
(1) a generator providing a series of signals corresponding to successive changes in the position of said member,
(2) accumulating means connected to accumulate signals from said reference source and said generator
(a) with opposite senses and

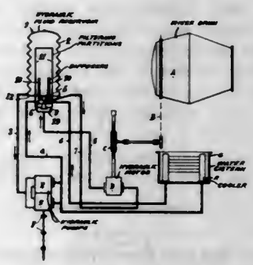


(b) providing an output signal which changes when the frequencies of said generator and said reference source are unequal,
(D) said inner loop being connected to use said output signal of said accumulating means as a velocity command signal.

3,225,543
HYDRAULIC SYSTEM NOTABLY FOR MIXER TRUCK

Claude Vivier, Charleville, France, assignor to Richier Societe Anonyme, Paris, France

Filed July 14, 1964, Ser. No. 382,605
Claims priority, application France, July 19, 1963, 942,012, Patent 1,370,837; Oct. 18, 1963, 951,078, Patent 84,532
8 Claims. (Cl. 60—53)

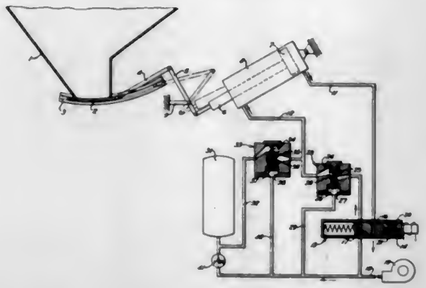


1. A hydraulic system comprising at least one pump, at least one hydraulic motor and a reservoir connected to the suction side of said pump, said reservoir comprising a base plate, at least one diffuser mounted on said base plate, filtering partitions mounted on said base plate to form a closed space around said diffuser, a lateral wall rising from said base plate around said filtering partitions, said lateral wall consisting of stacked dished annular elements of heat-conducting material, a cover closing the top of said lateral wall, said lateral wall and said cover forming around said filtering partitions another closed space, a pump supply line connected through said base plate to said other closed space, at least one pump output line leading into a load manifold also housed in said base plate, a motor feed line leading from said load manifold, a return motor line opening into a return manifold housed in said base plate and a distributor housed in said base plate and communicating with said first closed space.

3,225,544
FAIL-SAFE GATE-OPERATING APPARATUS

Kenneth F. Lemley, Pittsburgh, Pa., assignor to Barney Machinery Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Dec. 9, 1964, Ser. No. 417,042
4 Claims. (Cl. 60—57)

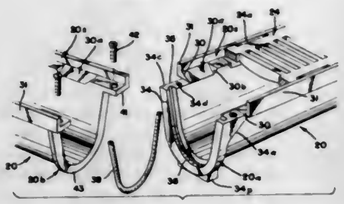


1. Fail-safe gate-operating apparatus comprising a fluid pressure cylinder, a piston therein, a piston rod attached to the piston and extending out of one end of the cylinder for opening and closing a gate, pipes connected to the opposite ends of the cylinder, a source of compressed air, control means for selectively connecting said source with either of said pipes and connecting the other pipe with the atmosphere to move the piston from one end of the cylinder to the other, a normally closed first valve in the pipe that delivers compressed air to the end of the cylinder from which the piston moves to close the gate, said valve containing fluid pressure responsive means for opening it, means for delivering compressed air from said source to said pressure responsive means to hold the valve open during normal operation of the apparatus, a reservoir containing compressed air while the apparatus is operating normally, a conduit connecting the reservoir with said valved pipe between said valve and cylinder, a normally open second valve in said conduit provided with fluid pressure responsive means for closing it, means for delivering compressed air from said source to the pressure responsive means of the second valve to hold that valve closed during normal operation of the apparatus, a predetermined reduction in the air pressure at said source or between it and said first valve permitting the first valve to close and said second valve to open so that compressed air from the reservoir can reverse the piston.

3,225,545
DRAIN CONSTRUCTION

George J. Flegel, Michigan City, Ind., assignor to Josam Manufacturing Co., Michigan City, Ind., a corporation of Delaware

Filed July 10, 1962, Ser. No. 208,859
8 Claims. (Cl. 61—10)



1. A trench drain channel element adapted in form for laying a plurality of said elements in end-to-end relation to form a drainage channel of substantially continuous internal surface and of identical transverse cross section, and providing on opposite sides above said surface opposed parallel edge formations, said channel element comprising:

an elongated body portion of generally upwardly open channel form with opposite sides terminating in parallel upper longitudinal edge portions and at opposite ends respectively an integral female end formation and an integral male end formation of generally complementary form whereby a male end formation of one channel element may be received in a compression sealed and interlocked joined relation with the female end formation of an adjacent channel element;

said male end formation comprising an integral external V-shaped flange with upper ends terminating at respective edge portions on the said opposite sides, and an integral endwise extension on each side providing continuations of the edge portions;

said female end formation including an integral endwise projecting external enlargement having a V-shaped inner face outwardly offset from the internal surface of the body portion and having in said inner face an internal groove coextensive in length with the enlargement, and seat formations on the upper ends of said enlargement adapted to receive and seat therein the respective extensions of a male end formation of an adjacent cooperating like channel element with the respective upper edge portions and the said internal surfaces of the joined elements in substantial alignment;

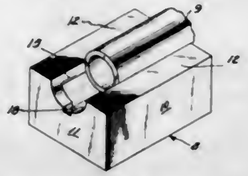
the bottom of said groove being spaced from the internal surface of the body portion a greater distance than the spacing of the outer edge of said integral flange from the internal surface whereby the said groove is adapted to receive first a compressible gasketing strip and then the external flange of a male end formation received cooperatively in the female end formation and seated on the strip when said extensions of a male end formation are seated in said seat formations of the female end formation;

said extensions and said seat formations having complementarily located apertures whereby the extensions of one channel element forming a joint with the female formation of an adjacent cooperating channel element may be brought into alignment and seated relation by insertion of the male end formation from above to receive locking bolts for securing the elements together in a vertically wedging compression joint structure with the internal surfaces of the joined channel elements in substantial alignment.

3,225,546
SUPPORT AND DRAIN TILE

Peter A. Zaucha, 5144 Baxman Road, Bay City, Mich.

Filed Aug. 5, 1963, Ser. No. 299,998
2 Claims. (Cl. 61—13)

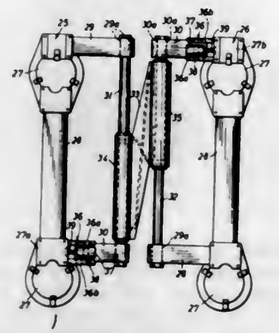


2. In combination, a hollow block and hollow drain tile mounted thereon, said block comprising, end and side walls, opposed top wall sections extending inwardly from the side walls, the space between the opposed edges of the top walls forming a central, longitudinally disposed seat extending from end to end of said block, the upper faces of the end walls between said opposed edges being arcuately recessed to accommodate less than one half of a drain tile laid therein, the edges of the opposed top wall sections and the end walls defining said seat, and a downwardly extending, cored passage open to the face of the arcuately recessed surfaces of the end walls at substantially their lowest point to permit the free drainage of seepage from the joint between the tile carried by said block.

3,225,547
TRAVELLING HYDRAULIC DEVELOPMENT FRAME FOR MINING OPERATIONS

Erich Hoffmann, Altluenen, Westphalia, Germany, assignor to Gewerkschaft Eisenhuette Westfalia, Westphalia, Germany, a corporation of Germany

Filed Sept. 1, 1964, Ser. No. 393,662
Claims priority, application Germany, Apr. 27, 1960, G 29,546
20 Claims. (Cl. 61—45)



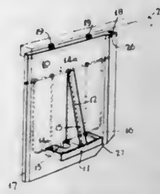
1. Advancing rack assembly for a mining prop arrangement, which comprises a pair of racks arranged in side by side relation, longitudinally operative moving means interposed between said racks and including coacting elongated portion movable longitudinally with respect to one another yet being secured in their entirety from transverse and angular movement with respect to one another, and connecting means interconnecting said racks correspondingly with said moving means via corresponding elongated portions thereof, said connecting means including variable length arm means for adjusting angularly within predetermined angular limits at least one said rack with respect to the other and also including longitudinally spaced therefrom at least one articulated connection in said connecting means between a corresponding one of said elongated portions of said moving means and said at least one rack having said at least one variable length arm means, said moving means through said connecting means operating to displace longitudinally said racks with respect to one another and in dependence upon the length of said variable length arm means to displace angularly said at least one rack with respect to the other as well.

3,225,548
RETAINING WALL AND SECTION THEREOF

David Homer Hayden, 513 Venice Lane, Siesta Key, Sarasota, Fla.

Filed Dec. 9, 1963, Ser. No. 328,970
3 Claims. (Cl. 61—49)

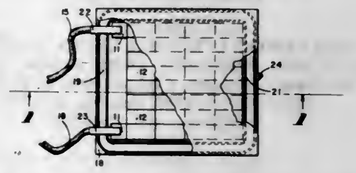
1. A precast reinforced structurally integral concrete retaining wall section having a length adjacent that of its height with its side edges shaped to provide a tongue on one side edge and a groove on an opposite side edge for engagement with a contiguous wall section on each side, and provided on its rear side with a structurally integral reinforced concrete heel and buttress, said buttress being attached to a central portion of said heel and said heel being of a length longitudinally of said wall and shore line and of about half that of said section, said buttress being in substantially a longitudinal center of said section and of said heel, said heel being of an area to balance the thrust due to static pressure head of high tide and also of an area to retain the wall in its position aganst the pressure of land fill on the rear side of said section when said heel is adjacent the low tide level but spaced above a bottom edge of said section, said bottom edge being of substantially the size of a horizontal cross section of said section exclusive of the heel and buttress, said heel being provided with a perforation adjacent said buttress and wall on each side of said buttress and each perforation being of a width normal to said section of substantially half that of said heel to allow sand and water to pass upward therethrough from the reaction of any hydraulic jetting used in setting the section in place, and a metal lifting means on the upper edge portion of said section, adapted to be enclosed by a coping, said heel having its upper and lower surfaces substantially flat whereby a jetting nozzle may be inserted through either perforation to allow loosened material to rise with water and pass upwardly through at least one perforation.



3,225,549
THERMOELECTRIC COOLING DEVICE

Thore M. Elfving, 433 Fairfax Ave., San Mateo, Calif.

Filed Apr. 18, 1962, Ser. No. 188,337
7 Claims. (Cl. 62—3)



1. A thermoelectric heat pump assembly having hot and cold sides formed by spaced cover plates comprising a plurality of thermoelectric elements having their ends secured directly to hot and cold junction plates, said thermoelectric elements each having a length which is less than three millimeters and also less than its major cross-sectional dimension, said junction plates being electrically insulated from and in thermal contact with the corresponding cover plate, means providing a seal along the edge of said cover plates to form therewith an evacuated envelope surrounding said thermocouples, and conductor means extending into said envelope for supplying electrical energy to said thermoelectric elements.

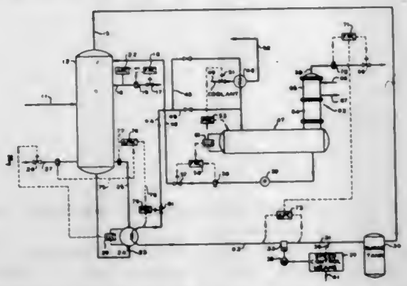
3,225,550
FRACTIONAL DISTILLATION CONTROL SYSTEM

Carl S. Kelley and Robert D. Baner, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed Mar. 4, 1963, Ser. No. 262,730
7 Claims. (Cl. 62—21)

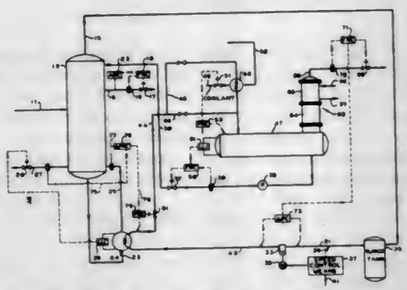
1. A process for the distillation of a multicomponent feed stock in a heat pump operation comprising introducing said feed stock into a fractional distillation zone and fractionally distilling said feed stock therein, withdrawing an overhead vaporous stream from said zone,

compressing said stream wherein the compressed stream becomes heated, withdrawing liquid kettle material from said fractional distillation zone, indirectly heating the thus withdrawn kettle material with the heated compressed stream in a first indirect heat exchange zone whereby the kettle material becomes vaporized and the compressed stream becomes cooled and partially condensed, returning the resulting condensate to the fractional distillation zone as reflux therefor, promoting vapor flow from the lower portion of said fractional distillation zone upwardly through said fractional distillation zone



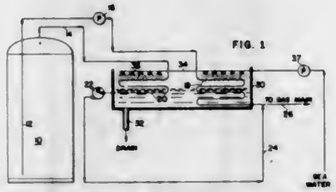
by introducing the vaporized kettle material into said lower portion of said fractional distillation zone, withdrawing vaporous bottoms product from said fractional distillation zone at a level below the level of introduction of said vaporized kettle material, separately sensing the vapor flows of said vaporized kettle material and of said vaporous bottoms product, and regulating the pressure of the compressed overhead vaporous stream responsive to the difference between the flow rates of said vaporized kettle material and said vaporous bottoms product, thereby regulating the heat input to the distillation operation.

3,225,551
FRACTIONAL DISTILLATION SYSTEM
Carl S. Kelley, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Mar. 4, 1963, Ser. No. 262,736
6 Claims. (Cl. 62—21)



1. A process for the regulation of pressure in a fractional distillation zone operating for the purification of a feed component having a boiling point intermediate the boiling points of the lowest boiling and highest boiling components of the feed to be distilled and wherein the lowest boiling component is present in said feed in too low a concentration to serve as a means for regulation of pressure in said fractional distillation zone, comprising fractionally distilling said feed in said fractional distillation zone thereby producing an overhead vapor stream containing the major portion of said lowest boiling component, compressing this overhead vapor stream thereby producing a hot vaporous compressed stream, partially condensing this hot vaporous compressed stream by indirect heat exchange with kettle contents of said zone and by further indirect heat exchange with a coolant thereby leaving uncondensed gas enriched in said lowest boiling component, separating the resulting condensate from said uncondensed gas, returning the condensate to the distilling step as reflux, sensing the differential pressure between said overhead vapor stream and said hot vaporous compressed stream, and regulating the rate of withdrawal of said uncondensed gas in response to the sensed differential pressure.

3,225,552
REVAPORIZATION OF CRYOGENIC LIQUIDS
George B. Farkas, Jackson Heights, N.Y., assignor to Hydrocarbon Research, Inc., New York, N.Y., a corporation of New Jersey
Filed May 13, 1964, Ser. No. 366,971
3 Claims. (Cl. 62—51)



1. The method of vaporizing a cryogenic liquid selected from the class consisting of liquid oxygen, liquid nitrogen, liquefied natural gas and liquid methane, for utilization in a gas distribution system which comprises passing the cryogenic liquid through a confined path, heating said path by passing water thereover to form a relatively thick ice cake on said path, and thereafter substantially continuously adding further heat at a controlled rate to said cryogenic liquid by passing water over the ice cake without substantial formation of further ice, said ice cake being proportioned in thickness to the heat absorption rate and temperature differential between the cryogenic liquid and water stream.

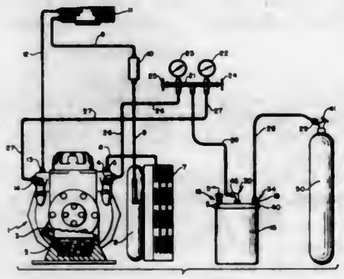
3,225,553
METHOD OF SHIPPING FROZEN FOOD
Willard L. Morrison, Lake Forest, Ill., assignor to The Union Stock Yard and Transit Company of Chicago, Chicago, Ill., a corporation of Illinois
No Drawing. Filed Jan. 21, 1963, Ser. No. 252,594
5 Claims. (Cl. 62—76)

1. In the method of shipping perishable products in a transport having a storage space of large capacity for housing the perishable products and ice bunkers alongside said storage space but separate and apart therefrom for refrigeration of air circulated through the storage space, the steps of filling said ice bunkers with ice, and contacting said ice with a liquefied gas selected from the group consisting of air and nitrogen having a boiling point at atmospheric pressure of less than —300° F. to superfreeze the ice to temperatures below freezing.

3,225,554
PRESSURE INJECTOR
William O. Alexander, P.O. Box 294, Glasgow, Ky.
Substituted for abandoned application Ser. No. 297,879, July 26, 1963. This application Nov. 3, 1964, Ser. No. 410,046
4 Claims. (Cl. 62—77)

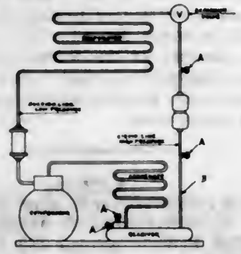
1. For use with a motor compressor in a refrigeration system which contains
(a) a suction valve on the suction side of the compressor;

(b) a pressure valve on the pressure side of the compressor;
(c) an oil reservoir and an exterior oil boss containing a channel which communicates with said oil reservoir,
a portable service pressure injector wherein oil may be added to the motor compressor without contaminating the refrigerant therein which comprises:
(a) an oil container and a source of pressurized refrigerant in which
(i) said oil container contains a refrigerant fitting for connection to a pressurized refrigerant source, a manually operated exhaust and pressure regulating valve, operative to exhaust the container of non-condensible gases and thereafter to regulate the pressure in the container, therefore regulating the rate of the oil flow, a liquid discharge fitting including an oil stem which extends downwardly so as to terminate in proximity to the bottom of said container and a means for placing a pre-determined amount of oil into said container, in combination with



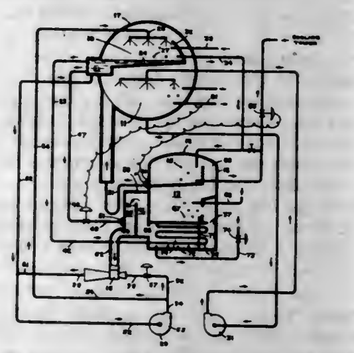
(b) connecting means for connecting said pressurized refrigerant source to said refrigerant fitting and for connecting said liquid discharge fitting to said suction valve on said motor compressor
whereby said oil container may first be exhausted of non-condensable gases and thereafter used to inject oil under pressure into said motor compressor.

3,225,555
MOISTURE INDICATOR CAP FOR REFRIGERANT SYSTEMS
Edward S. Chatlos, Morris Plains, N.J., assignor to The McIntire Company, Livingston, N.J., a corporation of New Jersey
Filed Sept. 26, 1963, Ser. No. 311,906
5 Claims. (Cl. 62—129)



1. In a refrigeration system, the combination of:
a refrigerant conducting pipe line;
a pipe fitting in lateral communication with the pipe line and being in the form of a standard male SAE fitting having a bore of a small diameter and being provided with screw threads;
an interchangeable moisture monitoring attachment adapted to be threaded to the pipe fitting and including a hollow manifold casing having an attaching inlet in a wall thereof provided with female screw threads matching the threads of the standard male SAE fitting;
plural standard second male SAE fittings provided exteriorly on said manifold casing in communication with the interior thereof;
plural moisture indicator caps for application to the respective second male SAE fittings of the manifold casing;
each of said moisture indicator caps including a cylindrical body having an inner end open and provided with female screw threads matching the external threads of a corresponding male second SAE fitting and with a window in an outer end thereof, a sight glass covering said window, a moisture indicating element positioned adjacent to said sight glass within the cap body for exposure to refrigerant flowing through the pipeline, and means to retain the moisture indicating element in the exposed position;
and wherein the respective moisture indicating elements differ one from the other in that they are responsive to different moisture proportions of the refrigerant.

3,225,556
CAPACITY CONTROL FOR ABSORPTION REFRIGERATION
Marvin K. Rohrs, Fanwood, N.J., assignor to Worthington Corporation, Harrison, N.J., a corporation of Delaware
Filed Feb. 24, 1964, Ser. No. 346,774
11 Claims. (Cl. 62—141)



1. In an absorption system including an absorber holding weak solution, a generator holding hot strong solution, an evaporator connected to chill a fluid passing therethrough, and a condenser, said respective members being connected to form a closed system circulating a saline solution consisting of vaporizable refrigerant and an absorbent material, the combination therewith of:
(a) a pumping circuit including a pump connected to the absorber and circulating weak solution received from said absorber for introduction to the latter,
(b) a heat exchanger having inlet and outlet means,
(c) at least one of said heat exchanger inlet means being connected to the absorber and receiving weak solution therefrom for introduction to the generator,
(d) a first line communicating said generator with another of said heat exchanger inlet means and carrying hot solution into heat exchange contact with weak solution therein,
(e) a receiver connected to the downstream side of

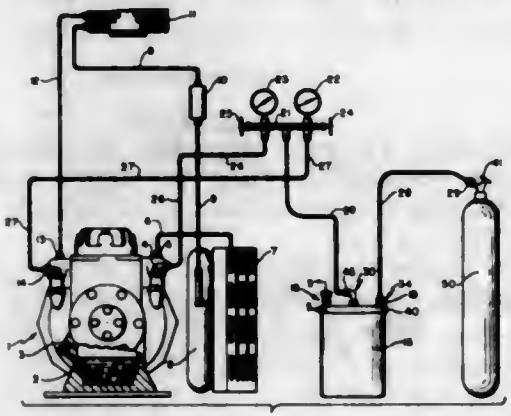
(b) a pressure valve on the pressure side of the compressor;

(c) an oil reservoir and an exterior oil boss containing a channel which communicates with said oil reservoir,

a portable service pressure injector wherein oil may be added to the motor compressor without contaminating the refrigerant therein which comprises:

(a) an oil container and a source of pressurized refrigerant in which

(i) said oil container contains a refrigerant fitting for connection to a pressurized refrigerant source, a manually operated exhaust and pressure regulating valve, operative to exhaust the container of non-condensible gases and thereafter to regulate the pressure in the container, therefore regulating the rate of the oil flow, a liquid discharge fitting including an oil stem which extends downwardly so as to terminate in proximity to the bottom of said container and a means for placing a pre-determined amount of oil into said container, in combination with



(b) connecting means for connecting said pressurized refrigerant source to said refrigerant fitting and for connecting said liquid discharge fitting to said suction valve on said motor compressor

whereby said oil container may first be exhausted of non-condensable gases and thereafter used to inject oil

an interchangeable moisture monitoring attachment adapted to be threaded to the pipe fitting and including a hollow manifold casing having an attaching inlet in a wall thereof provided with female screw threads matching the threads of the standard male SAE fitting;

plural standard second male SAE fittings provided exteriorly on said manifold casing in communication with the interior thereof;

plural moisture indicator caps for application to the respective second male SAE fittings of the manifold casing;

each of said moisture indicator caps including a cylindrical body having an inner end open and provided with female screw threads matching the external threads of a corresponding male second SAE fitting and with a window in an outer end thereof, a sight glass covering said window, a moisture indicating element positioned adjacent to said sight glass within the cap body for exposure to refrigerant flowing through the pipeline, and means to retain the moisture indicating element in the exposed position;

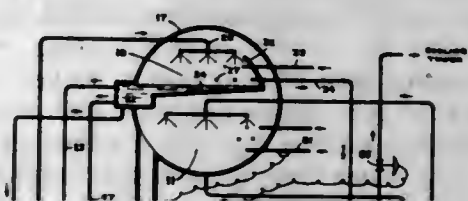
and wherein the respective moisture indicating elements differ one from the other in that they are responsive to different moisture proportions of the refrigerant.

3,225,556

CAPACITY CONTROL FOR ABSORPTION REFRIGERATION

Marvin K. Rohrs, Fanwood, N.J., assignor to Worthington Corporation, Harrison, N.J., a corporation of Delaware

Filed Feb. 24, 1964, Ser. No. 346,774
11 Claims. (Cl. 62—141)



the heat exchanger receiving and holding cooled concentrated solution,

(f) a second line communicating said absorber with the receiver and carrying a stream of weak solution for introduction to the latter to intermix with solution contained therein, and

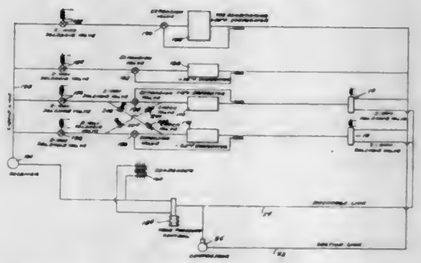
(g) conduit means communicating said receiver with said pumping means for introducing a mixture of intermediate strength solution from the receiver with weak solution in said pumping circuit.

3,225,557

THREE-WAY VALVE AND SYSTEM THEREFOR

Joseph N. Miller, Overland, Mo., assignor to Jackes-Evans Manufacturing Company, St. Louis, Mo., a corporation of Missouri

Filed June 21, 1963, Ser. No. 289,577
16 Claims. (Cl. 62—156)



1. A refrigeration system comprising a compressor having a high pressure discharge line and a suction line, a condenser, a receiver, and a plurality of parallel connected circuits connected in series between the compressor discharge and suction lines, each of said parallel connected circuits including an evaporator device and a separate control valve for selectively refrigerating or defrosting said evaporator, each of said control valves having a connection to the compressor discharge line, a connection to the compressor suction line and a connection to the associated evaporator, and operator means for each of said control valves for selectively communicating the evaporator to the compressor suction line to produce flow therethrough in one direction for refrigeration and to the compressor discharge line to produce flow therethrough in the opposite direction for defrosting, each of said control valves includes a three-way valve having a first chamber portion therein connected to the compressor discharge line, a second chamber portion therein connected to the compressor suction line, and a third chamber portion connected to the evaporator, said operator means including a valve member movable in said chamber portions for selectively communicating said third chamber portion with said first and second chamber portions.

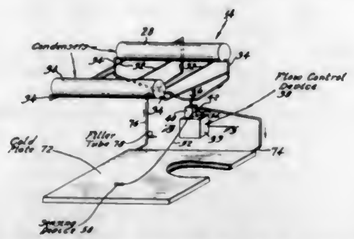
3,225,558

DRY ICE REFRIGERATOR

Joseph J. Wulfken, Plainview, N.Y., assignor to Ref Dynamics Corporation, Mineola, N.Y., a corporation of New York

Filed Jan. 28, 1964, Ser. No. 340,708
6 Claims. (Cl. 62—167)

4. In a refrigerator employing a circulating fluid refrigerant, the combination of two horizontally disposed tanks for retaining the refrigerant, means connecting said tanks and permitting the free flow of the refrigerant therebetween, means for maintaining a supply of Dry Ice adjacent to said tanks to cool the same, a plurality of drain tubes each connected to the underside of a respective one of said tanks to drain the refrigerant downward from said tanks, a cold plate below said tanks and connected to said drain tubes to receive the fluid refrigerant therefrom, and conduit means connecting said cold plate to the upper



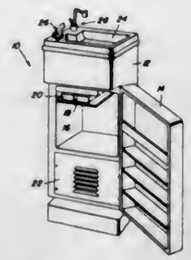
side of one of said tanks to convey the fluid refrigerant from said cold plate to said one of said tanks.

3,225,559

CONTROL SYSTEM FOR MAINTAINING DIFFERENT TEMPERATURE RANGES WITHIN COMPARTMENTS HAVING A COMMON REFRIGERATING UNIT

Harry C. Fischer, Montville, N.J., assignor to Sunroc Corporation, Glen Riddle, Pa., a corporation of Delaware

Filed Apr. 4, 1963, Ser. No. 270,671
9 Claims. (Cl. 62—180)



1. In combination with a combined water cooler and refrigerator having a single refrigerant circuit in heat exchange relation with a freezer compartment and a standby water supply, a control system comprising, water cooling control means responsive exclusively to increase in temperature of water in said standby water supply above a predetermined temperature for rendering said refrigerant circuit operative to substantially lower the temperature in the freezer compartment to a lower limit before cooling the standby water supply, heating means operatively mounted on said standby water supply for deliberate warming of the water therein above said predetermined temperature, and freeze demand means operatively connected to said heating means for energization thereof to warm the water only in response to a rise in temperature of the freezer compartment above said lower limit prior to said increase in temperature of the water in the standby water supply above the predetermined temperature.

3,225,560

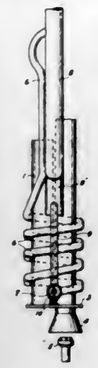
GENERATOR DEVICE FOR ABSORPTION REFRIGERATING MACHINES

Oscar Doebell, Fellenbergstrasse 239, Zurich, Switzerland

Filed May 6, 1964, Ser. No. 365,359
Claims priority, application Switzerland, Aug. 16, 1963, 10,142/63
3 Claims. (Cl. 62—236)

1. A generator device for absorption refrigerating machines comprising two heating pipes arranged vertically in immediately adjacent side-by-side relation and being welded together so as to be in thermal conducting

contact with each other, one of said heating pipes having an electric heating element disposable therein, the other of said heating pipes being open ended and having a gas burner disposed below its lower open end, a pump-pipe of a gas-bubble pump having a helical portion made up



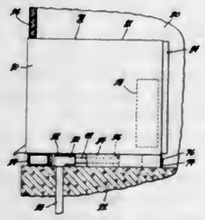
of a plurality of turns extending around both of said heating pipes and being welded to the latter so that said turns of the pump-pipe are in thermal conducting contact with both heating pipes, and a pipe for the driven-off vapors and weak absorption liquids which has a thermal conducting connection with both of said heating pipes.

3,225,561

REFRIGERATING APPARATUS

Walter B. Hall, Jr., Bellbrook, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Jan. 29, 1965, Ser. No. 428,979
7 Claims. (Cl. 62—262)



1. A structure for mounting an air conditioning unit upon a floor including a base having front and side walls, an electrical receptacle located within and fastened to the base behind the front thereof, the front of the base having a removable portion in front of said receptacle, a housing supported by and fastened to said base extending upwardly from said side walls and having a top extending laterally over said base.

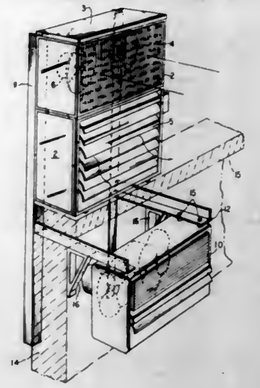
3,225,562

ROOF TOP REFRIGERATION UNIT

Israel Kramer, Trenton, N.J., assignor to Kramer Trenton Co., Trenton, N.J., a corporatiton of New Jersey

Filed Mar. 6, 1964, Ser. No. 349,959
15 Claims. (Cl. 62—263)

1. A complete refrigerating or air conditioning unit comprising, an outdoor high side member including compressor, condenser, and control panel, constructed, designed and adapted to be serviceable from the roof of a building, a low side member constructed, designed and adapted to be supported beneath the roof of and within the said building, and a framework connecting the two members, said framework comprising at least one upright portion fast to the high side member and extending downwardly therefrom and having at least one arm extending laterally and inwardly into the said building for connection to the low side member beneath the roof as well as for supporting the entire unit by resting upon the building wall.

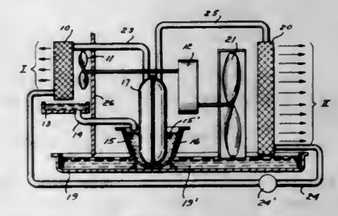


3,225,563

AIR CONDITIONING DEVICES

Arieh L. Braun, Forest Hills, N.Y., assignor of seventy-five percent to Gamma Refrigeration Company, Inc., New York, N.Y.

Filed Aug. 7, 1964, Ser. No. 388,169
4 Claims. (Cl. 62—277)



1. Apparatus for lowering the temperature and abstracting moisture from humid air comprising:

(1) an evaporator, a sealed motor-compressor unit and a condenser with means for coupling them together in an operative air-conditioning unit,

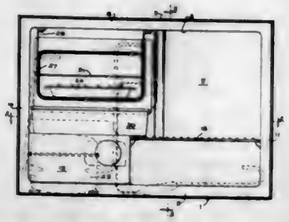
(2) collecting means for collecting condensate which drips from said evaporator,

(3) a vessel enclosing at least a portion of said sealed motor-compressor unit,

(4) conduit means for connecting said collecting means to said vessel for conducting condensate to said vessel and thereby to the outer surface of said sealed motor-compressor unit so that the temperature of the condensate is raised and the temperature of said sealed motor-compressor unit is simultaneously lowered,

(5) and transfer means for transferring condensate from said vessel to said condenser for further raising the temperature of the condensate to enhance evaporation of the condensate and lower the temperature of said condenser.

3,225,564
COMPACT REFRIGERATOR
Julius B. Horvay, Louisville, Ky., assignor to General Electric Company, a corporation of New York
Filed July 31, 1964, Ser. No. 386,651
3 Claims. (Cl. 62—377)



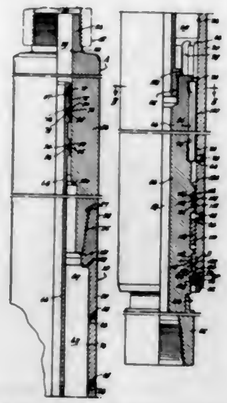
1. A refrigerator including a cabinet comprising insulated walls including an insulated back wall defining a storage compartment, having an access opening at the front thereof,
said back wall including reentrant portion in a lower corner and including front, top and side wall portions defining an area outside said storage compartment,
closure means including a door for closing said access opening having an inner liner including spaced vertical projections extending into said compartment when the door is closed and defining a recess, at least one storage shelf supported in said recess and means for pivotally supporting said door on the front of said cabinet,
the inner surface of said front wall portion being closely adjacent said vertical projections,
a refrigeration system including an evaporator and a compressor, said evaporator operating at below freezing temperatures and being disposed in an upper corner of said compartment, above said reentrant portion, in a position exposed directly to said recess,
said compressor being disposed in said area outside said storage compartment,
said front wall portion between said area and said recess in said door having a heat conductivity sufficient to maintain the contents of said recess at above freezing temperatures by heat leakage from said compressor.

3,225,565
PEARL SLIDE SHORTENER AND PIN ADAPTOR
Ernst Bohlinger, 31—15 25th Ave., Astoria, N.Y., and Samuel Friedman, 425 Neptune Ave., Brooklyn, N.Y.
Filed June 15, 1964, Ser. No. 375,147
11 Claims. (Cl. 63—2)



1. A jewelry clasp for adjusting the length of a necklace comprising an elongated tubular body having a through bore, legs depending from the ends of the body, feet radiating from the bottom of the legs, and a plate slidably supported on the feet of one of the legs, said plate adapted to be retracted from the feet of the other leg to provide a clearance for receiving a string of pearls and adapted to be moved into interlocking relation with other feet for securing the string of pearls in place, said through bore adapted to receive a portion of a brooch.

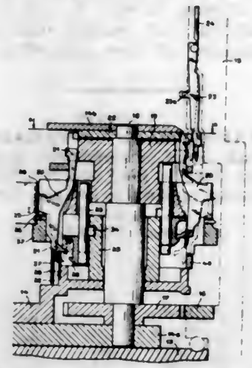
3,225,566
DRILL STRING SHOCK ABSORBER
Clarence H. Leathers, Redondo Beach, Calif., assignor to Grant Oil Tool Company, Los Angeles, Calif., a corporation of California
Filed Oct. 7, 1963, Ser. No. 314,251
2 Claims. (Cl. 64—23)



1. A drill string shock absorber comprising:
an elongated cylindrical tubular body having an open lower end;
a mandrel telescopically engageable with said body extending from said lower end thereof and adapted for longitudinal movement within said cylindrical body;
means on said body and on said mandrel for attachment and connection to other drill string apparatus above and below said shock absorber respectively;
said body and mandrel having a central passageway for transmission of drilling fluid therethrough;
said body and said mandrel defining a longitudinally extending annular chamber therebetween;
first and second transverse surface means defining closed ends of said chamber, said first transverse surface means being affixed to said body, said second transverse surface means being affixed to said mandrel, said transverse surface means defining closed opposite ends of said chamber; and
said chamber being filled with a compressible liquid whereby intermittent, shock, and vibrational forces on said mandrel cause movement of said second transverse surface means against the compressible liquid within said chamber to thereby damp said forces against the upper portion of said drill string.

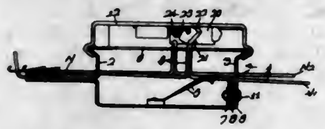
3,225,567
SELECTING DEVICES FOR CIRCULAR KNITTING MACHINES
Fritz Seller, Corcelles, Neuchatel, Switzerland, assignor to Edouard Dubied et Cie. (Société Anonyme), Couvet, Neuchatel, Switzerland
Filed Sept. 30, 1963, Ser. No. 312,519
Claims priority, application Switzerland, Sept. 28, 1962, 11,464/62
6 Claims. (Cl. 66—50)

1. A selecting device for the knitting tools of circular knitting machines, particularly of multifeed circular rib top machines comprising a plurality of pattern wheels, selectors arranged in respective of said wheels, said selectors being movable from inactive to operative pos.t ons with respect to said wheels, a common endless select on band cooperating with said plurality of pattern wheels for selection according to pattern of said selectors in respective of said wheels and permitting movement of the selected selectors into operative positions, and cam means and movable shifting members for automatically displacing the selected of said selectors from inactive into operative positions for actuation of the knitting tools which are to be operated according to the pattern dictated by said selection band and for locking the selected selectors in their operative position for any desired number



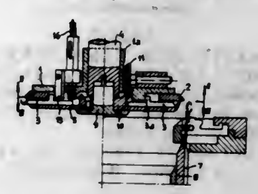
of repetitions of the dictated pattern or for returning said selected selectors to their initial inactive positions in their respective pattern wheels for succeedng selection by said selector band and level changing means whereby said selectors in said respective pattern wheels may occupy more than one initial position with respect to said se.ection band.

3,225,568
HAND-KNITTING MACHINE
Makoto Tanaka, Minato-ku, Tokyo, Japan, assignor to Art Amiki Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan
Filed Apr. 9, 1962, Ser. No. 186,235
Claims priority, application Japan, Apr. 13, 1961, 36/12,652
3 Claims. (Cl. 66—60)



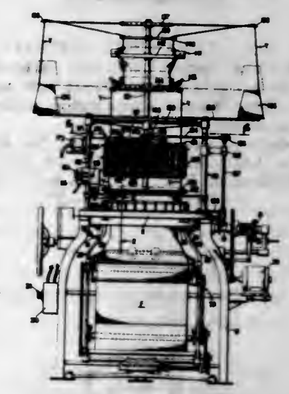
1. A hand-knitting machine comprising
a main body,
a plurality of knitting needles having a butt and disposed parallel relative to each other and movable in said main body to assume a high, operative position and a low, inoperative position, respectively,
a pattern selecting device disposed in said main body and passing across below said knitting needles,
said pattern selecting device having at its upper surface a projecting portion receiving said knitting needles,
resilient means pushing said knitting needles upwardly individually to said high, operative position and lifted from said high position by said pattern selecting device.
a carriage mounted on and movable along said main body,
cam members secured to said carriage and causing said lifted knitting needles to perform a knitting operation, and
means associated with said carriage moving said knitting needles not positioned above said projections of said pattern selecting device into said low, inoperative position.

3,225,569
CIRCULAR KNITTING MACHINE HAVING WELT HOOKS WHICH COOPERATE ONLY WITH ALTERNATE NEEDLES
Vinicio Luchi, Florence, Italy, assignor to Solis Società a Responsabilità Limitata, Florence, Italy, a corporation of Italy
Filed Apr. 14, 1964, Ser. No. 359,719
Claims priority, application Italy, Apr. 17, 1963, 7,775/63
1 Claim. (Cl. 66—95)



A knitting machine of the class described, comprising: a needle cylinder defining a circumferentially arranged series of uniformly spaced needle positions; a vertically reciprocable needle in each of said needle positions; a series of radially movable sinkers cooperating with said needles; a dial arranged for rotation in unison with said cylinder coaxially therewith, said dial having a series of radial tricks formed therein equal in number to one-half the number of said needles, the angular spacing between adjacent tricks being twice the angular spacing between adjacent needle positions, the longitudinal axes of said tricks intersecting the longitudinal axes of alternate ones of said needle positions; a welt hook slidably disposed individually in each trick; and cam means for selectively moving each welt hook between an extended operative position, a retracted inoperative position, and at least one intermediate operative position therebetween, each welt hook, in the course of its operation, cooperating with a needle in a position adjacent to one of said alternate positions, all of said welt hooks being inoperative with respect to the needles in said alternate positions.

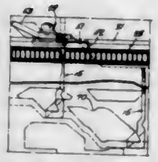
3,225,570
AUTOMATIC STITCH CONTROL
Lester Mishcon, Miami Beach, Fla., assignor to The Singer Company, a corporation of New Jersey
Filed June 27, 1963, Ser. No. 291,011
16 Claims. (Cl. 66—132)



1. In a circular independent needle knitting machine adapted to concatenate yarn into a knit fabric having an identifiable characteristic, the combination which includes yarn conditioning means associated with said knitting machine for varying said characteristic of the knit fabric

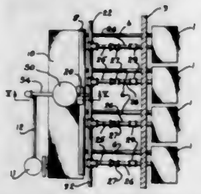
during operation of the machine, means for measuring said characteristic of the knit fabric during operation of the knitting machine and providing a measurement output varying in quantity as a function of said characteristic of the knit fabric, and control means operable in response to deviation of said measurement output from a selected norm for providing adjustment of said yarn conditioning means in proportion to the quantity of said deviation in a manner tending to reduce said deviation from said norm.

3,225,571
APPARATUS FOR YARN SEVERING IN CIRCULAR KNITTING MACHINES
Peter A. Mahler, Philadelphia, Pa., assignor, by mesne assignments, to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed July 12, 1960, Ser. No. 42,352
5 Claims. (Cl. 66—140)



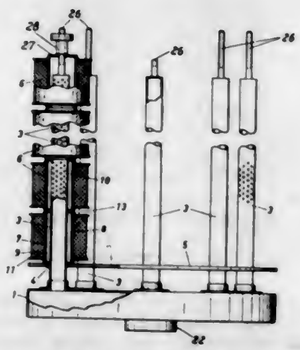
1. In a multifeed circular knitting machine having a rotary cylinder mounting a needle circle, a toothed ring mounted for rotation with said cylinder adjacent to and within said needle circle, a stationary dial cap superimposed on said ring, and at least two feed stations having feed fingers operable between active and inactive positions to respectively introduce yarn into and withdraw yarn from said needle circle and needle cams to actuate said needles to the stitch-draw level; a cutter for yarn inserted and withdrawn at at least one feed station comprising a cutter blade mounted on said dial cap and cooperative with said toothed ring to sever the yarn, said cutter blade contacting said toothed ring beyond the feed fingers of a subsequent feed station and in registry with said needle cam actuating the needles to stitch-draw level at said subsequent feed station, to thereby sever the yarn inserted and withdrawn at said one feed station following actuation of the needles at said subsequent feed station, said cutter being inoperative to sever the yarn inserted and withdrawn at said subsequent feed station.

3,225,572
DRY CLEANING SYSTEM
James D. Robbins, Spring Lake, and Richard A. Curtis, Lowell, Mich., assignors, by direct and mesne assignments, to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Original application Dec. 10, 1959, Ser. No. 858,765, now Patent No. 3,089,325, dated May 14, 1963. Divided and this application Mar. 18, 1963, Ser. No. 265,975
3 Claims. (Cl. 68—27)



1. A dry cleaning system, comprising: a plurality of cleaning machines positioned in general lateral alignment adjacent each other; a centrol dry cleaning solvent storage tank means positioned rearwardly of said cleaning machines; each of said cleaning machines raised to a height generally above said solvent storage tank means; a filtering mechanism coupled to and communicating with said solvent storage tank means; a manifold extending behind and generally parallel with said machine alignment; said manifold operably connected with said filtering mechanism and including a separate conduit means connecting each of said cleaning machines to said manifold; and a partition separating said cleaning machines from said filtering mechanism and from said solvent storage tank means.

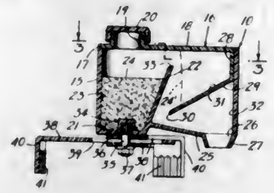
3,225,573
YARN DYEING APPARATUS
Arne Johnels, 128 Goteborgsvagen, Boras, Sweden
Filed Nov. 12, 1963, Ser. No. 322,660
Claims priority, application Sweden, Nov. 14, 1962, 12,189/62
2 Claims. (Cl. 68—198)



1. A yarn dyeing apparatus comprising a tank, a distribution chamber positioned in said tank, means for circulating dye liquid through said distribution chamber and from said tank, perforated tubes coaxially arranged in said tank, each being of a cyclindrical configuation closed at one end, connected at its opposite open end to said distribution chamber and provided with openings in its side wall evenly distributed along the length of its tube, a plurality of perforated sleeves on which the yarn to be dyed is wound and which sleeves are stacked on said tubes, each of said tubes having an outer diameter which is smaller than the inner diameter of the sleeves stacked thereon providing an area of annular cross-section therebetween, the sleeves stacked on each tube having the sum of the areas of all their perforations being larger than the sum of the areas of said wall openings in the tube carrying said stack and the last mentioned sum being smaller than the internal cross-sectional area of said tube and sealing means provided between each pair of sleeves on a tube and their respective tube separating said area of annular cross-section therebetween into separate spaces each alongside one of said sleeves.

3,225,574
SOFTENER DISPENSER FOR WASHING MACHINES
Louis C. Ziegler, 5 Skyline Drive, Englewood Cliffs, N.J.
Filed Apr. 24, 1963, Ser. No. 275,407
6 Claims. (Cl. 68—207)

1. A softener dispenser device for washing machines, said device comprising a casing having side and end walls, a top wall and bottom wall portions, the casing having means dividing the same into a primary storage chamber, a second storage chamber and a discharge chamber, means for mounting the device in connection with a support spinning during the spinning cycle of the washing machine, whereby softener material initially placed in the primary storage chamber will through action of centrifugal force be transmitted to said second chamber and on completion of a spinning cycle be automatically transferred to the discharge chamber, said discharge chamber having a discharge aperture, said first named means comprising two spaced angularly disposed partition walls in the casing, one of said partition walls ex-



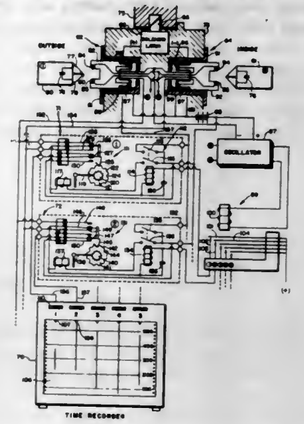
tending between side walls of the casing and upwardly from a bottom wall portion and flared with respect to one end wall of the casing and partially forming the primary chamber, and the other of said partition walls extending between the side walls of the casing and being downwardly flared with respect to the other end wall of the casing and inclined in the direction of the first partition wall and partially forming said second chamber.

3,225,575
SAFETY DEVICE FOR LOCKING DOORS AND THE LIKE
Roger Lucas, 106 Cours Albert Thomas, Lyon, France
Filed June 4, 1962, Ser. No. 199,688
Claims priority, application France, Jan. 12, 1962, 42,194, Patent 1,318,783; Feb. 9, 1962, 42,281, Patent 81,123
3 Claims. (Cl. 70—134)



1. In combination: a door member having a vertically extending rectilinear free edge portion; hinge means supporting said door member for pivotal movement between open and closed positions about a vertical axis spaced from and parallel to said edge portion; a door frame member including a rectilinear supporting portion which extends vertically throughout the entire length of said edge portion; a rectilinearly vertically elongated receiving member carried by one of said two first-named portions, said receiving member having an outwardly opening slot formed therein which extends continuously between the ends of said receiving member, the opening of said slot confronting the other one of said two portions coextensively with said other portion with the door in its closed position; a vertically elongated locking plate; mounting means supporting said locking plate on said other one of said two portions for lateral movement, said locking plate having a continuous edge portion which is substantially coextensive with said receiving member and which is receivable in and withdrawable from said slot with said door in its closed position; actuating means carried by said other portion and connected to said locking plate for causing said continuous edge portion selectively to enter into or be withdrawn from said slot with said door in its closed position; and anti-friction bearing means engaging the lower end of said locking plate to support at least a portion of the weight thereof for facilitating the lateral movement of said locking plate by said actuating means.

3,225,576
TIME RECORDING LOCK SYSTEM
Joseph D. Richard, 3569 Loquat Ave., Miami, Fla.
Filed Nov. 6, 1964, Ser. No. 409,543
4 Claims. (Cl. 70—434)

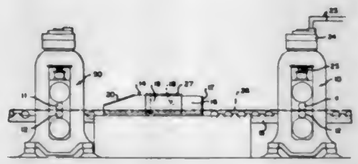


1. A recording locking system of the character described for controlling access to a locked area through a latchable door comprising in combination: a removable key assembly having at least one electronic component of a specific value and having a first set of contacts connected to said component; a key receptacle outside the locked area for receiving said key comprising a second set of contacts adapted to engage said first set of contacts when said receptacle receives said key and first switch means adapted to be operated when said receptacle receives said key; a key receptacle inside the locked area for receiving said key comprising a third set of contacts adapted to engage said first set of contacts when said receptacle receives said key and second switch means adapted to be operated when said receptacle receives said key; an electrical discriminating control circuit responsive to electronic components of the type and specific value as said component in the key assembly and having an input connectable to said component in said key assembly through said second or third set of contacts when said key assembly is inserted in either the outside or inside key receptacles; electrical switching means responsive to said discriminating control circuit; means for latching the aforementioned door in the closed position; latch controlling means comprising latch actuating circuit means connected to said switching means, third switch means having a first position connecting said first switch means to said actuating circuit for placing said actuating circuit in condition to be energized only when said first switch means and said switching means are operated simultaneously and having a second position connecting said second switch means to said actuating circuit for placing said actuating circuit in condition to be energized only when said second switch means and said switching means are operated simultaneously, and means for changing the position of said third switch means each time said latch is operated; and graphic recording means connected to said third switch means for producing a record whenever said third switch means is in said second position.

3,225,577
ROLLING MILL GUIDES
Roy R. Sloan, Blasdell, N.Y., assignor to Fox Industries, Inc., a corporation of Ohio
Filed Apr. 1, 1964, Ser. No. 356,583
3 Claims. (Cl. 72—12)

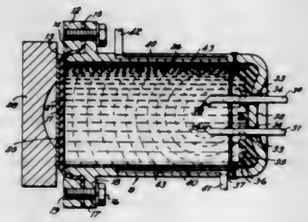
1. In a rolling mill structure having a pair of work rolls one above and one below a path of strip travel, said

rolls having an entry and an exit end and means for moving each end of said work rolls toward and away from each other, the improvement comprising a pair of preset vertically extending guide members one on each side of and parallel to said path of strip travel and spaced from the exit end of said rolls, said guide having an exit and an entry end, a pair of hinged guides, one hinged to each of the preset guides at the entry end thereof nearest the exit end of the rolls, and extended toward said rolls, means resiliently urging the free end of said hinged guides toward the path of strip travel, a top guide member on each



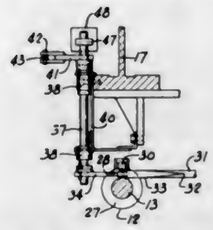
preset guide member extending angularly downwardly above the path of strip travel from a point adjacent the entry end to a point slightly above the path of strip travel at the exit end, sensing means on said hinged guide member sensing any change in position from a predetermined desired position and drive means actuated by said sensing means selectively acting on the means for moving each end of the work rolls toward and away from each other to position the rolls to maintain a product passing therethrough on a predetermined path through the moving guides.

3,225,578
METHOD AND APPARATUS FOR UTILIZING ELECTRICAL DISCHARGE PRESSURE WAVES
Erwin C. Krieger, 2321 Rohs St., Cincinnati 19, Ohio
Filed Dec. 12, 1962, Ser. No. 244,088
16 Claims. (Cl. 72—56)



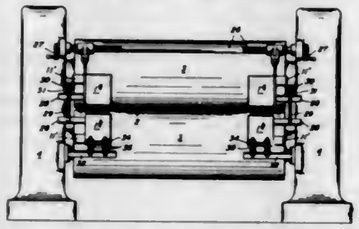
1. A method of forming material into objects having the conformation of a die which comprises,
placing the material over a die,
creating an electrical discharge pressure wave in a fluid medium,
transmitting the electrical discharge pressure wave through the fluid medium and a fluid impervious pressure wave transmitting member having approximately the same spark discharge pressure wave impedance as said fluid medium whereby said electrical discharge pressure wave passes directly through said impervious pressure wave transmitting member, and
engaging the material with the electrical discharge pressure wave to force the material into the die.

3,225,579
SQUARING SPRING FLAT FOR COILING MACHINE
Isaac M. Chambers, O'Hara Township, Allegheny County, Pa. assignor to Henry Miller Spring and Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania
Original application Jan. 23, 1961, Ser. No. 84,295, now Patent No. 3,139,136, dated June 30, 1964. Divided and this application Nov. 4, 1963, Ser. No. 321,316
4 Claims. (Cl. 72—142)



1. The method of making heavy springs comprising the steps of providing a measured section of bar spring stock, heating the same, flattening the opposite sides of both ends into a taper, positioning one end of the heated stock against a gauge stop, squaring a flat side of the bar spring stock end on a flat transverse rotary face, holding a flat side of the gauged stopped end of the heated bar stock against the flat transverse rotary face, clamping the gauged stopped end in position against a mandrel while being held against the flat transverse rotary face, releasing the hold after clamping, winding the heated stock along the mandrel to form a helical spring while the clamping subsists, and stripping the completed spring from the mandrel.

3,225,580
REDUCTION OF EDGE TAPER IN STRIP ROLLING
Abdel H. El-Waziri, Pittsburgh, Pa., assignor to United States Steel Corporation, a corporation of New Jersey
Filed Apr. 24, 1963, Ser. No. 275,282
6 Claims. (Cl. 72—236)

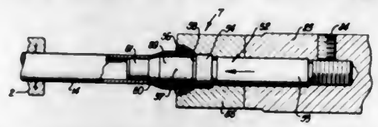


1. The process of reduction of metal strip and the like by cold rolling, comprising removal of normally present lubricants from selected areas adjacent to the strip edges, prior to roll entry, and from the corresponding areas of the roll surfaces about to contact said strip areas, to reduce edge taper of the strip material upon cold rolling, and cold rolling said strip.

3,225,581
METAL FORMING PROCESS FOR SHAPING ENDS OF TUBES
Gottlob Hinderer, Sylmar, Calif., assignor to Price-Pfister Brass Mfg. Co., Los Angeles, Calif., a corporation of California
Filed Aug. 21, 1961, Ser. No. 132,868
6 Claims. (Cl. 72—370)

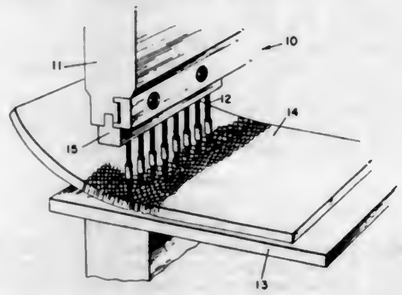
1. The process of making a plumbing fitting from a malleable tube of substantially uniform cross-section,

which comprises: securing the tube by a clamping device so that a length of the tube is exposed beyond the device; driving a forming tool into the end of the tube to define an enlarged end that merges with the main body of the tube at a substantially conical part to form a bending ring; forcing the edge of the enlarged end progressively



into a converging recess to provide an external surface contour; and applying a longitudinal compressive force between points of the tube spaced on opposite sides of said bending ring to fold material from the enlarged end rearwardly beyond the bending ring at a place spaced from said clamping device.

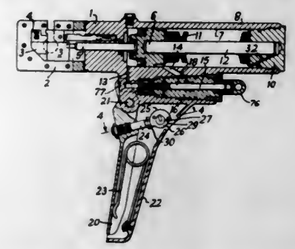
3,225,582
METHOD OF CONTOURING A HONEYCOMB CORE
John E. Broderick, Anne Arundel County, and Otto M. Behr, Baltimore County, Md., assignors to Martin-Marietta Corporation, a corporation of Maryland
Original application Dec. 8, 1959, Ser. No. 858,259, now Patent No. 3,104,694, dated Sept. 24, 1963. Divided and this application Jan. 9, 1963, Ser. No. 256,792
2 Claims. (Cl. 72—373)



1. The method of contouring a honeycomb core comprised of a number of rows of adjacent cells extending transversely of the length of the honeycomb which includes deforming portions of one end of the side walls of a number of adjacent cells while maintaining portions of the same end of the side walls undeformed to effectively reduce the cross sectional area of the cell at one end relative to the other end, thereby to foreshorten one side of the billet of the core with respect to the other side so as to conform the core to a desired curved contour.

3,225,583
MANUALLY OPERABLE CRIMPING TOOLS
William Walton, Swindon, and Arthur Manthorp Faulkner, Highworth, England, assignors to The Plessey Company Limited, Ilford, England, a company of Great Britain
Filed May 29, 1962, Ser. No. 205,817
Claims priority, application Great Britain, June 2, 1961, 19,986/61
10 Claims. (Cl. 72—412)

1. In a manually operable crimping tool having a main body including means for supporting at least two crimping jaws movable relative to each other, the combination comprising elastic means mounted in said body to form a damped chargeable energy store, reciprocatory store-charging means supported in said body and operatively connected to said elastic means, said store-charging means being manually operable to deform said elastic means in step-by-step fashion for charging the store, retaining means automatically locking the store against discharge from any one of a plurality of degrees of charging, means manually operable to release said elastic means by rendering said retaining means inoperative, and means coupling at least one of said crimping jaws to said elastic means for moving such jaw towards another of said crimping jaws under the elastic force released by said elastic means when the retaining means has been rendered inoperative.



3,225,584
GAGING APPARATUS
Clayton B. Begg and John R. Janczy, Omaha, Nebr., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Feb. 21, 1962, Ser. No. 174,892
11 Claims. (Cl. 72—461)

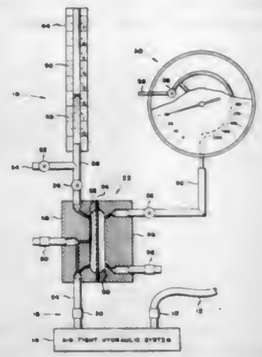


1. Gaging apparatus for locating a member in a forming device, which comprises:
a pivoted beam;
member locating means on said beam on one side of its pivotal axis engageable with the member for locating the member in the forming device; and
means on said beam on the other side of its pivotal axis engageable by the member as the member is positioned in the forming device, for rotating said beam to move said member locating means into a position in which it engages the member to locate the member in the forming device.

3,225,585
METHOD AND APPARATUS FOR MEASURING AIR IN HYDRAULIC SYSTEMS
George J. Wohnoutka, San Jose, Calif., assignor to Lockheed Aircraft Corporation, Los Angeles, Calif., a corporation of California
Filed Feb. 28, 1963, Ser. No. 261,702
6 Claims. (Cl. 73—19)

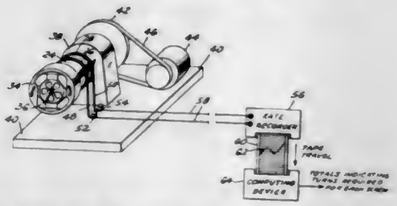
1. In an apparatus adapted for measuring the quantity of gas entrapped in a separate closed hydraulic system, the combination comprising: first means for communicating the pressure effects of a fluid and fluid therein under compression uniformly through each of two co-operating branches; valve means connected to one branch of said first means for passing or blocking the flow of said fluid in said one branch; gauge means connected to the other branch of said first means for measuring the pressure exerted on the fluids and gas of the hydraulic system; volume measuring means connected to said sec-

ond means to determine the volume of gas included in the hydraulic system which is related to the volume of fluid measured with said measuring means; and an on-



off valve and associated drain tube connected to said on-off valve which is in turn connected between said valve means and said volume measuring means for removal of fluids from said measuring means.

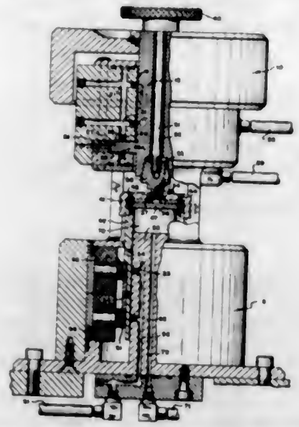
3,225,586
METHOD OF REGULATING AND POISING ADJUSTMENT
John Reber, Jr., Manheim, Pa., assignor to Hamilton Watch Company, Lancaster, Pa., a corporation of Pennsylvania
Filed Jan. 22, 1962, Ser. No. 167,758
9 Claims. (Cl. 73—6)



1. An apparatus for determining the position and average rate corrections for the balance wheel of a timepiece comprising chuck means for holding said timepiece, a microphone associated with said chuck means for sensing the ticking of said timepiece, means for rotating said chuck means and said microphone, trace rate recording means coupled to the output of said microphone, said rate recorder having a timing cycle equal to one revolution of said chuck means and said microphone so that the trace produced by said recorder represents the position error and the average rate error of said timepiece, and means for computing from said trace the adjustment to be made to said timepiece to correct its rate error.

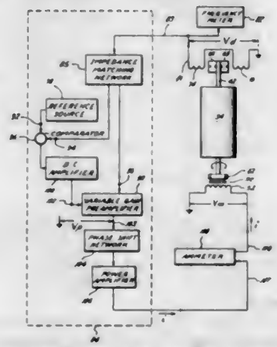
3,225,587
BEARING TORQUE TEST INSTRUMENT
Keith M. Gordon, Westmoreland, N.H., assignor to Miniature Precision Bearings, Inc., Keene, N.H., a corporation of New Hampshire
Filed Aug. 13, 1963, Ser. No. 301,845
6 Claims. (Cl. 73—9)

1. A bearing torque test instrument for testing a bearing having inner and outer race members and rolling elements disposed therebetween comprising a base housing,
a vertical drive spindle rotatably mounted within said housing and adapted to mate with the inner race member of said test bearing,
gas bearing means for axially and radially supporting said drive spindle in said housing,
a cylindrical rotor sleeve adapted to receive and mate with the outer race of said test bearing, said sleeve having an internal cylindrical wall surface provided as one surface of a gas bearing support for said sleeve,
a cylindrical spindle mounted on said base housing and defining a plurality of gas jets, said spindle being



adapted to mount inside said sleeve to cooperatively provide a substantially friction free gas bearing support for said sleeve,
means for rotating said drive spindle,
means for yieldably restraining the rotation of said sleeve with respect to said base,
and signal generator means adapted to produce an output signal proportional to the angular displacement of said sleeve with respect to said base.

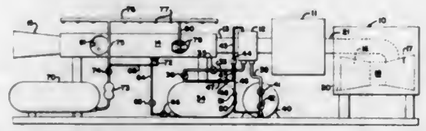
3,225,588
DENSIMETERING SYSTEMS
Jacques Fernand Moulin and Claude Lucien Bournazel, Paris, France, assignors to Societe de Prospection Electrique Schlumberger, S.A., Paris, France, a corporation of France
Filed Oct. 12, 1962, Ser. No. 230,224
9 Claims. (Cl. 73—32)



1. A density transducer for providing an alternating electrical signal having a frequency which is variable in a known manner with the density of a fluid, a hollow member having a thin wall, the external surface of which is a surface of revolution, a torsion shaft axially mounted in said hollow member, radially extending blades fixedly securing the inner wall of said hollow member to said shaft; a hollow casing completely enclosing said member

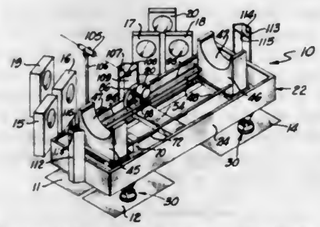
whereby an annular gap is formed between the external surface of said hollow member and the internal surface of said casing, said gap having a width greater than one-half of the wave length corresponding to said alternating signal; means fixedly securing the ends of said shaft to said casing whereby said fluid can freely flow through said casing, said means, and said hollow member; an exciter exerting an alternating torque on said shaft thereby imparting a relative alternating velocity between said member and said casing, a detector responsive to said relative velocity for providing said variable frequency electrical signal, and an amplifier having an input circuit coupled to said detector and an output circuit coupled to said exciter for maintaining said relative velocity.

3,225,589
APPARATUS FOR TESTING THE PRINCIPLES OF DETONATION COMBUSTION
Selden B. Spangler, Jr., and James L. Munier, Scottsdale, Ariz., assignors to The Garrett Corporation, Los Angeles, Calif., a corporation of California
Filed Apr. 10, 1961, Ser. No. 101,800
9 Claims. (Cl. 73—35)



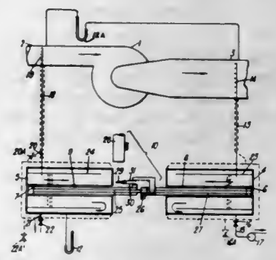
1. A test apparatus for simulating the air flow conditions in hypersonic flight for testing the principles of detonation combustion, comprising: an elongated aerothermodynamic duct; means for supplying air at high pressure to said duct; means for preheating such air while at the same time regulating the amount of oxygen therein; means for establishing and maintaining a shockwave in said duct; and means for injecting fuel into the airstream in said duct so that detonation may take place across such shockwave.

3,225,590
METHOD AND APPARATUS FOR LOCATING THE CENTER OF GRAVITY
Earl C. Ward, 20437 Harvard Way, and Erich L. Wolf, 4071 Overland St., both of Riverside, Calif.
Filed Aug. 31, 1961, Ser. No. 135,220
6 Claims. (Cl. 73—65)



1. An apparatus for locating the center of gravity of an object along the longitudinal axis thereof, comprising a pair of horizontally spaced apart scale platforms having weighing and indicating mechanisms associated therewith, a stationary platform disposed above said scale platforms, fulcrum means on each of said scale platforms supporting one end of said stationary platform thereon, means mounted upon said stationary platform for supporting said object with its longitudinal axis generally parallel to a line connecting said fulcrum means, said object-supporting means being movable with respect to said stationary platform along a line of travel parallel to said line connecting said fulcrum means, a counterweight mounted on said stationary platform for movement parallel to the line of travel of said object-supporting means, means operable to move said object-supporting means in one direction and said counterweight in the opposite direction at such rates, respectively, as to maintain the center of gravity of said object-supporting means and said counterweight at a fixed point for all adjusted positions thereof, and means positioned midway between said fulcrum means for locating the longitudinal center of gravity of said object on the side thereof when said object has been shifted on said supporting means to the point at which said scale indicating mechanisms for said two scale platforms show identical weight readings.

3,225,591
APPARATUS FOR USE IN MEASURING THE HYDRAULIC EFFICIENCY OF FLUID MACHINES, SUCH AS TURBINES
John C. Orkney, Jr., The Coach House, Drummond Place Lane, Stirling, Scotland, and John C. Orkney, 92 Switchback Road, Glasgow, Scotland
Filed July 11, 1962, Ser. No. 209,809
Claims priority, application Great Britain, July 12, 1961, 25,815/61
7 Claims. (Cl. 73—112)



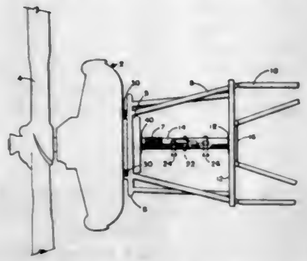
1. Apparatus for use in measuring the hydraulic efficiency of fluid machines such as turbines with entry and discharge passages comprising first and second sampling members located respectively in said entry and discharge passages for removal of sample liquid from said passages, high and low pressure containers in connection with said first and second sampling members respectively and through which flow the liquid samples from the machine, a plurality of thermally expansible elongated elements extending within said containers so as to receive heat from the liquid samples, measuring means operatively connected to said elements so as to indicate changes in the dimensions of the elements and to give a null balance indication when the lengths of the elements are the same, inlet and outlet throttle valves for the high pressure container to enable adjustment of the liquid temperature therein for null balance and gauges for measuring the liquid pressure in the high pressure container and the total pressure head over the fluid machine, the hydraulic efficiency of the machine being calculated from the ratio of the pressure in the high pressure container to the total pressure head over the machine.

3,225,592
ENGINE TORQUE MEASURING APPARATUS
Dewitt T. Greene, Jr., 3519 Falls Drive, Dallas, Tex.
Filed Sept. 3, 1963, Ser. No. 306,165
4 Claims. (Cl. 73—136)

1. Apparatus for measuring the torque delivered by an engine flexibly supported on mounts for rotation from its rest position to an angle determined by the torque delivered thereby, comprising:
(a) a torsion bar adapted for being rigidly secured at one end to said engine and at the other end to a

stationary support for being twisted along its length as said one end rotates with said engine on said mounts in response to said delivered torque,

(b) said torsion bar comprising a cylindrical shaft, the axis of which is aligned with the axis of rotation of said engine on said mounts, which includes a section adapted for freedom of expansion and contraction along the axis thereof, and



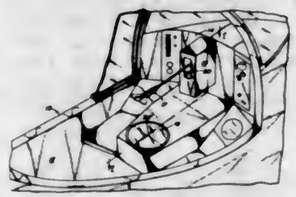
(c) pressure responsive means attached to said torsion bar and being strained proportional to the amount said torsion bar is twisted.

3,225,593
WAVE MEASURING APPARATUS
Joseph D. Richard, Miami, Fla. (531 S. Barrancas Ave., Warrington, Pensacola, Fla.)
Filed Nov. 20, 1962, Ser. No. 238,934
4 Claims. (Cl. 73—170)



1. Wave measuring and telemetering apparatus comprising: an elongated cylindrical housing suitable for dropping into the ocean; a battery within the said housing; a radio transmitter within the said housing operable from the said battery; an inflatable balloon attached to the upper end of the said housing, the said balloon, when inflated, having substantially greater buoyancy relative to the said housing; a flexible antenna attached within the said balloon and connected to the output of the said transmitter; means for inflating the said balloon when the said housing is dropped in the water, the said antenna being thereby erected and maintained substantially above the surface of the water; a relatively heavy plummet body separable from the said housing; electrically conductive wires for suspending the said plummet body beneath the said housing at a depth substantially free from orbital water motion induced by surface waves; a bladed rotor attached to the said plummet body, the said rotor being free to rotate relative to the said plummet body when moved vertically through the water; a magnetic reed switch mounted within the said plummet body; a magnet mounted within the said rotor, the said switch being thereby closed for a brief interval for each revolution of the said rotor; and means for pulse modulating the said transmitter with each closure of the magnetic switch, radio signals being thereby transmitted which are indicative of the vertical displacements of the said housing as it floats on the surface of the ocean.

3,225,594
MODEL INDICATOR FOR AIRCRAFT MOVEMENT
Arthur D. Struble, Jr., 2101 Rosita Place, Palos Verdes Estates, Calif.
Filed Feb. 14, 1963, Ser. No. 258,974
6 Claims. (Cl. 73—178)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. An apparatus for actuating an indicating model airplane in accordance with the movements of an aircraft and in reference to a plane surface representative of the earth's surface, the model airplane and plane surface being carried by the aircraft, said aircraft having pitch operated mechanism, roll operated mechanism, a velocity measuring mechanism and an altitude measuring mechanism, said apparatus comprising:

means responsive to said pitch operated mechanism for transmitting the pitch movement of the aircraft to said indicating model for moving said model in pitch in relation to the plane surface;

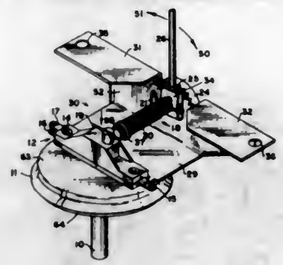
means comprehensive of said pitch transmitting means, responsive to the roll operating mechanism for transmitting the roll movement of the aircraft to the indicating model for moving said model in roll in relation to the plane surface;

means comprehensive of both the roll transmitting means and the pitch transmitting means, responsive to said altitude measuring mechanism for transmitting to the indicating model a vertical movement in relation to said plane surface in accordance with the altitude; and

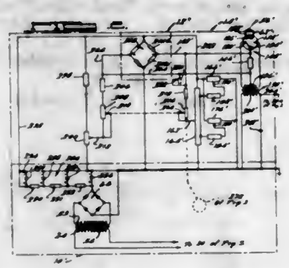
means comprehensive of the pitch transmitting means, the roll transmitting means and the altitude transmitting means, responsive to the velocity measuring mechanism of the aircraft to move said indicating model in a longitudinal direction in accordance with the velocity and in relation to a particular marking on the plane surface, each of said movements of the indicating model being performed separately or in conjunction with any or all movements.

3,225,595
FLUID DEPTH MEASURING APPARATUS
Gianni A. Dotto, Dayton, Ohio, assignor to P. R. Mallory & Co., Inc., Indianapolis, Ind., a corporation of Delaware
Filed Mar. 16, 1964, Ser. No. 352,028
14 Claims. (Cl. 73—301)

1. A manually adjustable condition responsive device actuated when a predetermined condition is exceeded comprising: a housing; flexible sheet mounted in said housing and extending thereacross so as to define a first compartment on a first side of said sheet and define a second compartment on a second side of said sheet; a first aperture in said housing to said first compartment so that the first chamber communicates with a condition; a second aperture in said housing to said second compartment; a movable arm extending through said second aperture and engaging said second side of said sheet so that said movable arm is displaced by said sheet when said sheet responds to a condition; and a switch responsive to the displacement of said movable arm only after said predetermined condition is exceeded, said predetermined condition determined by an adjustable clutch spring assembly mounted in proximity with said switch to prevent the actuation of said switch until said predetermined condition is exceeded, said adjustable clutch spring assembly comprises an adjustable clutch spring wound around a pivotable shaft, an adjustable lever coupled to said pivotable shaft so that when said lever is repositioned to a second predetermined position said clutch spring is repositioned at said second predetermined position.

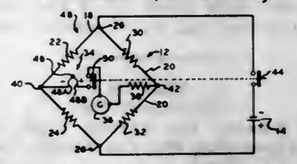


3,225,596
CONDITION INDICATING SYSTEM
George Scourtes, Detroit, Mich., assignor, by mesne assignments, to Lynch Corporation, Anderson, Ind., a corporation of Indiana
Filed Oct. 27, 1960, Ser. No. 76,085
16 Claims. (Cl. 73—361)



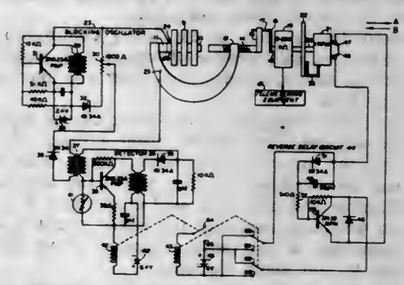
15. In an electrical apparatus for providing an indication of magnitude of a quantity detected by sensing means producing a signal having a magnitude varying in accordance with the magnitude of the quantity, the combination of potential means including a slide wire and a potential divider, said potential divider having a large electrical impedance and a small electrical impedance, movable means operatively associated with said slide wire for providing a balancing signal across said small electrical impedance having a magnitude varying in accordance with the position of said movable means along said slide wire, electrical resistance means selectively connected along said slide wire for providing substantial linearity between movement of said movable means to the various positions along said slide wire and the variations in magnitude of said balancing signal, control means for comparing the sensed signal and said balancing signal, said small electrical impedance being selectively variable for providing a calibration for said balancing signal, and driving means controlled by said control means and effective in response to the existence of a difference between the magnitudes of the signals for driving said movable means in a direction determined by the polarity of said difference.

3,225,597
PORTABLE PYROMETER
William E. Engelhard, Apalachin, N.Y. (% Pyrometer Service Co. Inc., 348 River Road, North Arlington, N.J.)
Filed Oct. 22, 1962, Ser. No. 232,085
2 Claims. (Cl. 73—361)



1. A thermocouple pyrometer comprising a Wheatstone bridge circuit having first and second branches connected between a pair of bridge terminals, a power source connected across said terminals, and a thermocouple circuit connected between said branches, said thermocouple circuit having a thermocouple and a current flow indicator, said first branch having provision to compensate for ambient temperature changes to which said thermocouple is subjected and said second branch having provision to balance voltage changes in said first branch, said provisions being the sole means to balance out the indication to voltage created at the thermocouple junction due to ambient temperature conditions, and temperature calibration means in circuit with said current flow indicator to indicate the temperature of said pyrometer.

3,225,598
AUTOMATIC PRESSURE ALTIMETER
Glenn Welch, 52 Highland Place, Indian Head, Md.
Filed Apr. 29, 1963, Ser. No. 276,666
7 Claims. (Cl. 73—386)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A device for automatically and continuously producing a signal proportional to pressure comprising:

(a) an arm member,

(b) a first electrical element mounted on one end of said arm member,

(c) pressure sensing means mounted on the other end of said arm member,

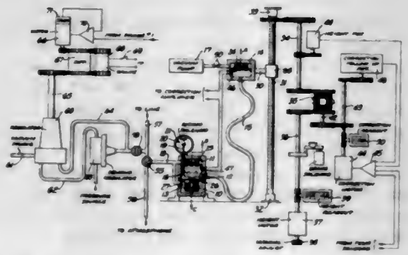
(d) a second electrical element connected to said pressure sensing means,

(e) resistive output means coupled to said first electrical element for providing an electrical output signal proportional to the pressure sensed by said pressure sensing means,

(f) drive means for driving said resistive output means and said first electrical element, said first electrical element being driven into electrical contact with said second electrical element,

(g) means connected to said second electrical element responsive to said electrical contact between said first and second electrical elements for producing an electrical signal when contact occurs,
(h) relay means operatively coupled between said means responsive to said electrical contact and said drive means and for causing said drive means to move said first electrical element away from said second electrical element after contact, and
(i) delay circuit means coupled between said relay means and said drive means for delaying said drive means when said relay means is deenergized before said drive means drives said first electrical element toward said second contact means.

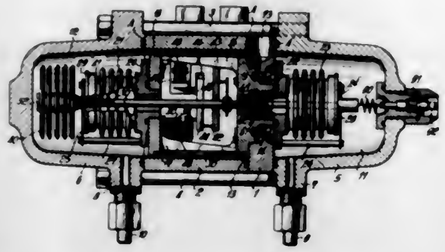
3,225,599
MANOMETER
Leo Nevin Schwien, Los Angeles, Calif., assignor to Schwien Engineering, Inc., Los Angeles, Calif., a corporation of California
Filed Jan. 18, 1963, Ser. No. 252,498
14 Claims. (Cl. 73—401)



1. In a manometer system including interconnected upper and lower cisterns, one of which is moving and the other being fixed, said cisterns carrying pools of mercury, a lower pressure source connected to the upper cistern above the pool, a higher pressure source connected to the lower cistern above the pool, and means for driving the moving cistern in elevation to balance the system, the improvement comprising:
a fixed divider plate in the lower cistern providing upper and intermediate chambers and including a passage interconnecting said upper and intermediate chambers;
a flexible divider plate in the lower cistern separating the intermediate chamber from a lower chamber, with the cistern interconnecting line connected to said intermediate chamber to fill the intermediate chamber and provide a pool of mercury in the upper chamber, and with the higher pressure source connected to said upper chamber above the pool and to said lower chamber;
means for closing and opening said passage; and
means for measuring the position of said flexible divider plate relative to the cistern to provide a signal varying as a function of the unbalance of the system.

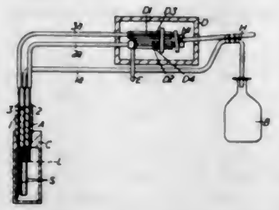
3,225,600
ELECTRICAL DIFFERENTIAL-PRESSURE METER
Horst Ziegler, Berlin-Charlottenburg, Germany, assignor to Continental Elektroindustrie Aktiengesellschaft, Askania-Werke, Berlin-Mariendorf, Germany
Filed June 28, 1963, Ser. No. 291,502
10 Claims. (Cl. 73—407)

1. Electrical differential-pressure measuring means comprising: a multipart housing having an interior divided into two pressure chambers by means of housing parts held together by screws and a partition clamped between said parts pressure coupling means communicating with said chambers; a differential-pressure measuring system sealing off an aperture in said partition, said system including two elastic elements and a connecting rod traversing said aperture and mechanically coupling said elements, any force to be measured acting upon said rod being electrically measured by means of force compensating measuring means, said last-named means being located within said multipart housing between said elastic elements in its own separate housing sealed off from said



pressure chambers and traversed by said connecting rod, said separate housing having partitions provided with apertures traversed by said connecting rod, said partitions being disposed transversely to said rod and serving as terminations for said elastic elements, said elements covering said apertures, said separate housing being located entirely within one of said pressure chambers and one of its said partitions serving to separate said pressure chambers from each other.

3,225,601
LIQUID SAMPLE CONTAINERS FOR USE IN A SPECTROPHOTOMETER
Derek David Shrewsbury, Cambridge, England, assignor to Pye Limited, Cambridge, England
Filed Aug. 20, 1963, Ser. No. 303,351
Claims priority, application Great Britain, Aug. 31, 1962, 33,451/62
3 Claims. (Cl. 73—421)



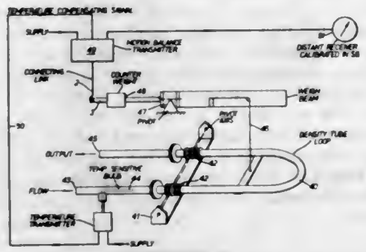
1. A liquid sampling means for use in optical apparatus comprising a sealed container for the sample, opposite wall areas of said container being transparent to light, a sampling tube connected with a supply of the liquid and extending to a predetermined level in the container, a source of suction, a first suction tube extending within said container to the said level, a second suction tube extending within said container to near the base of the container and valve means controlling the access of suction from said source to the respective suction tubes, the tubes being located at one side only of the container leaving an unobstructed path for the passage of an optical radiation beam through the sample and the transparent areas of the container.

3,225,602
BALANCE CHAMBER FOR DEEP SEA CORING
Otis Barton, % Pacific Tugboat & Salvage Co., Pier D, Long Beach, Calif.
Filed Oct. 21, 1963, Ser. No. 317,580
5 Claims. (Cl. 73—425.2)



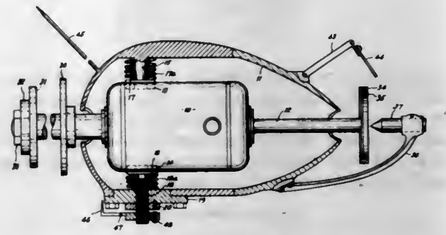
1. A deep sea coring barrel comprising:
a hollow cylindrical balance chamber and a core barrel positioned in axial alignment,
a rod fixedly attached to both the balance chamber and the core barrel and extending between the balance chamber and the core barrel,
a pipe extending into the balance chamber at one end and into the core barrel at the other end,
a manually operable valve in said pipe positioned between the balance chamber and the core barrel,
and a cable extending to the valve to open said valve.

3,225,603
FLUID DENSITY MEASURING APPARATUS
Eric Fletcher Stephenson, Wallington, and Leslie William Stagg, Warlingham, England, assignors to Rotameter Manufacturing Company Limited, Croydon, Surrey, England
Filed May 14, 1962, Ser. No. 194,598
3 Claims. (Cl. 73—434)



1. Fluid density measuring apparatus comprising an elongated hollow member pivotally supported at one end for rocking about a horizontal axis and defining a flow channel extending continuously from an inlet to an outlet positioned respectively at said one end, and flexible connecting means for connecting the inlet and outlet to a supply of the fluid whereby the fluid is caused to circulate continuously through the channel, said apparatus including output means arranged to give a signal related to the density of the fluid and compensating means positioned in the main stream of the fluid, responsive to the temperature of the fluid, arranged continuously to vary the signal in accordance with the said temperature in such a manner as to reduce or eliminate the effect of the fluid temperature variations on the output signal from the apparatus, said compensating means comprising a resiliently biased pneumatic actuating device, and means responsive to the temperature of the fluid arranged to control movement of the actuating device, the latter being arranged to vary a reference value of the density measurement in accordance with the temperature of the fluid.

3,225,604
BALANCING MACHINE
Albert Paolicchi, 25 Rosenberg Crescent, Kalgoorlie, Western Australia, Australia
Filed July 30, 1963, Ser. No. 298,697
7 Claims. (Cl. 73—475)

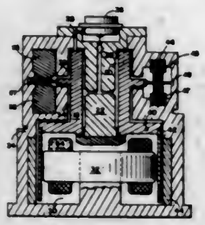


1. A balancing machine comprising an electric motor, the shaft of which projects from both ends of the motor casing, pivotally mounted on a supporting frame with the shaft substantially horizontal for rotation about a substantially vertical axis on vertical spigots fixed to the supporting frame, the spigots engaging bearings fitted into the motor casing and coiled springs being fitted around the spigots to bear against said bearings, at least one of the spigots being adjustable so that the load on said bearings can be varied as required, and said rotational movement of said motor about said vertical axis being limited by a pair of coiled springs positioned in diametrally opposed positions on each side of the motor casing, each spring being anchored to the supporting frame and said springs being spaced apart from said vertical spigots along the longitudinal axis of said motor; means for mounting the object to be balanced on one end of the shaft of the motor so that it rotates therewith; recording means fitted to the other end of the shaft, said recording means comprising a disc fixed to said other end of the shaft so that it rotates therewith in a substantially vertical plane, said disc being adapted to carrying a removable paper disc, and a spring-loaded marking device positioned adjacent to the face of the disc with the point of the marking device bearing against the face of the disc at all times and being located at the centre of the disc when the motor is at rest; a graph indicator pivotally mounted on one end of an arm the other end of which is pivotally mounted on the supporting frame so that the indicator can be moved into a position immediately in front of the face of the disc; and a pointer one end of which is pivotally mounted on the supporting frame adjacent the end of the shaft on which the object to be balanced is mounted.

3,225,605
EDDY CURRENT INDUCTION DEVICE
John M. Slater, Fullerton, Calif., assignor to North American Aviation, Inc.
Filed Sept. 30, 1959, Ser. No. 844,606
11 Claims. (Cl. 73—503)

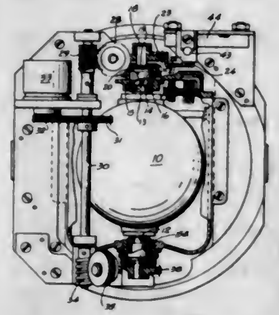
4. An integrating device comprising a support, a conductive member and a polyphase electromagnetic member adjacent thereto, one of said members being fixed to said support, means mounting the other of said members to said support for movement from a null position upon application of a force thereto, said polyphase member having windings which produce a magnetic field movable

relative thereto in response to a polyphase current supplied to said windings, generating means for supplying to said windings a polyphase current of constant peak-to-peak magnitude and variable frequency, pickoff means for detecting movement of said other member from said



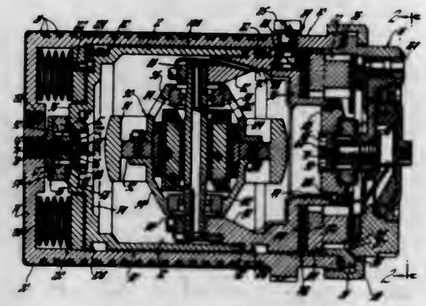
null position, means responsive to said pickoff means for controlling said generating means and adjusting said polyphase current such that said magnetic field induces eddy currents in said conductive member to urge the latter toward said null position, and means for manifesting the number of cycles of said polyphase current.

3,225,606
COUNTER-ROTATION BEARING RACE DRIVE MECHANISM FOR GYROS
John C. Stiles, Morristown, N.J., assignor to General Precision, Inc., Little Falls, N.J., a corporation of Delaware
Filed Jan. 16, 1961, Ser. No. 83,035
7 Claims. (Cl. 74—5)



1. In a gyroscope, oppositely disposed co-axially aligned shaft bearings, each comprising an inner race, an outer race and balls therebetween, respective extensions on each said outer race including respective extension shafts, a gear fixed to each of said extension shafts, a counter shaft, means drivingly connecting said counter shaft with each said extension shaft gear, and means for rotatably driving said counter shaft, the driving means comprising a reversible electric motor drivingly coupled to said counter-shaft, a reversing switch for said motor, means for actuating said switch after predetermined rotation of one of said extension shafts in each direction thereof, to effect reversal of the direction of rotation of the motor and the said outer races of the bearings, the actuating mechanism for said switch including a headed rod supported by the switch, and a sector fixedly coupled to said one extension shaft for conjoint angular movement coaxially therewith, said sector having a pair of pins fixedly attached thereto, and projecting therefrom in substantial parallelism with the axis of rotation of said one extension shaft, each of said pins being adapted individually to engage said headed rod, one of said pins being adapted to move the headed rod in a direction to cause the switch to reverse the direction of rotation of the motor, the second pin being adapted to engage the surface of the head of the headed rod thereby to move the rod in the opposite direction and cause the switch to restore the motor to its original direction of rotation.

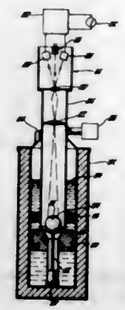
3,225,607
GYROSCOPE
Johannes G. Schaberg, New Berlin, and Frederick C. Pritzlaff, Milwaukee, Wis., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 13, 1961, Ser. No. 151,643
6 Claims. (Cl. 74—5)



1. A gyroscope comprising a closed casing defining a cylindrical chamber, a cylindrical gimbal of non-magnetic material disposed within the chamber and having a hub portion on each end, said gimbal being mounted for rotation about an output axis extending longitudinally thereof by a pair of magnetic suspension devices, each suspension device including a disk-shaped magnet with a central pole of one polarity and a coaxial annular pole of the other polarity, each suspension device also including a disk-shaped armature with a central pole and a coaxial annular pole adapted for alignment with corresponding poles of said magnet, the magnets being mounted on opposite ends of the casing in coaxial relation with said cylindrical chamber, the armatures being mounted on respective hub portions in engagement therewith and coaxially of the gimbal in axially spaced relation with the respective magnets whereby the gimbal is restrained against radial displacement by the magnetic field of said magnets, thrust means coacting between the gimbal and casing for limiting the axial displacement of the gimbal, a viscous liquid filling the space between the gimbal and the casing and supporting the gimbal in substantially neutral buoyancy, gyroscopic means disposed within said gimbal and defining a gyroscope input axis extending transversely of said output axis, and a signal generator including a magnetic field producing member on said casing and a magnetic field responsive member on said gimbal adapted to develop an output signal corresponding to displacement of the gimbal about said output axis.

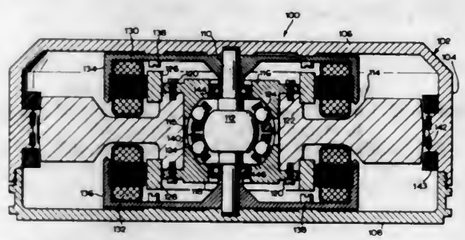
3,225,608
DIAMAGNETIC SUSPENSION SYSTEM
Ivan Simon, Belmont, Mass., assignor, by mesne assignments, to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 27, 1962, Ser. No. 240,303
27 Claims. (Cl. 74—5.6)

25. Apparatus for supporting in stable equilibrium a spherical body of diamagnetic material including: at least one electromagnetic coil of superconductive material, the coil being adapted to produce a substantially conical magnetic field of high inhomogeneity symmetrically about the axis of the coil in accordance with the current flow therein, means to provide a cryogenic atmosphere around the coil, the means including a thermally insulative container having therein a quantity of cryogenic refrigerant sufficient to maintain the coil in a superconductive state, a source of electrical energy adapted to be connected to the coil to establish current flow therein, an evacuated enclosure adapted to receive the spherical body, the enclosure extending through the coil to substantially



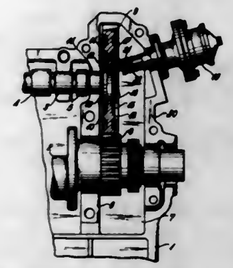
enclose the magnetic field, means disposed within the enclosure to impart a rotational motion to the spherical body thereby defining a spin axis of the body, the spin axis having a predetermined orientation with respect to the axis of the coil, and means to detect a change in the predetermined orientation.

3,225,609
TWO-AXIS GYROSCOPE
John C. Stiles, Morristown, N.J., assignor to General Precision, Inc., Little Falls, N.J., a corporation of Delaware
Filed Dec. 14, 1962, Ser. No. 244,670
2 Claims. (Cl. 74—5.7)



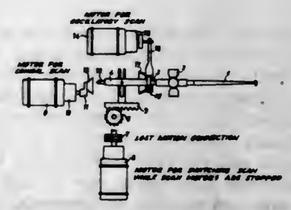
1. A two-axis gyroscope comprising:
a discoid housing;
a shaft coaxially disposed and fixed within said housing;
a globular bearing surface on said shaft intermediate its ends;
an inertial wheel coaxially disposed within said housing and having a hub portion surrounding said globular bearing surface;
means defining a spherical bearing surface on the interior of said hub portion complementary to, and radially spaced from, said globular bearing surface;
ball bearing members, disposed and retained between said bearing surfaces, rotatably mounting said wheel on said shaft;
coaxial hysteresis rings on said hub portion adjacent the respective ends thereof;
stator windings circumscribing said hysteresis rings and fixedly secured to said housing; and
signal pickoff and torquer means having coacting component parts mounted on the circumferential surface of said wheel and an adjacent, circumscribing portion of said housing.

3,225,610
CAM SHAFT DRIVE ARRANGEMENT FOR INTERNAL COMBUSTION ENGINES
Robert Binder, Stuttgart-Zuffenhausen, Germany, assignor to Firma Dr. Ing h.c. F. Porsche K.G., Stuttgart-Zuffenhausen, Germany
Filed Oct. 9, 1963, Ser. No. 314,998
Claims priority, application Germany, Oct. 26, 1962, P 30,449
10 Claims. (Cl. 74—56)



1. An internal combustion engine provided with a crankcase supporting therein a crank shaft, a cam shaft held in said crankcase in the axial direction and serving as drive means for an auxiliary unit, and means operatively connecting said crank shaft with said cam shaft for driving the latter from the former, the drive means for driving said auxiliary unit including a spring-loaded driving member, and said cam shaft being provided with control surface means at one end face thereof,
and securing means for securing said cam shaft in the axial direction, said securing means including said spring-loaded driving member which is supported in contact with said control surface means.

3,225,611
DIRECTIONAL RADAR-ANTENNA DRIVE WITH SELECTIVE COUPLING PERMITTING EITHER CONICAL OR OSCILLATORY SCAN
Jakob Alder, Dietikon, and Louis Reinhard, Zurich, Switzerland, assignors to Albiswerk Zürich A.G., Zurich, Switzerland, a corporation of Switzerland
Filed May 13, 1963, Ser. No. 279,780
Claims priority, application Switzerland, May 25, 1962, 6,345/62
13 Claims. (Cl. 74—86)

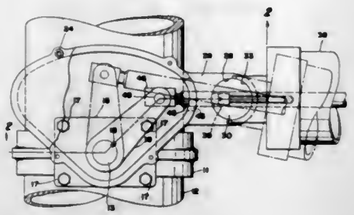


1. In a radar-antenna apparatus, in combination, a primary radiator universally mounted for rotational and reciprocatory movement; rotational drive means for imparting rotational movement to said primary radiator; reciprocatory drive means for imparting reciprocatory movement to said primary radiator; coupling means; coupling drive means for actuating said coupling means to selectively couple said primary radiator with said rotational drive means and said reciprocatory drive means respectively; and mechanical means for delaying the actuation of said coupling means by said coupling drive means.

3,225,612
VALVE OPERATOR

George F. Topinka, Riverside, Ill., assignor to Parker-Hannifin Corporation, Cleveland, Ohio, a corporation of Ohio

Filed June 17, 1963, Ser. No. 288,364
7 Claims. (Cl. 74—102)

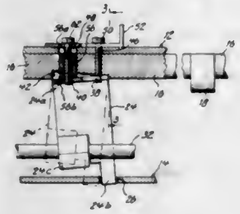


1. A mechanism for turning a valve shaft comprising a housing for rigid attachment to the valve, a piston rod, a motor attached to the rod, a pin rigidly attached to the motor, said pin being pivotally attached to the housing, an opening through the pin transversely of its pivotal axis, said rod extending through the opening and movable longitudinally therein by said motor, a link pivotally attached to the rod and having means for rigidly attaching the link to the shaft for turning the shaft upon the movement of the rod.

3,225,613
COUPLING MECHANISM

Floyd L. Cordes, Norwalk, Conn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed May 25, 1964, Ser. No. 369,964
7 Claims. (Cl. 74—110)

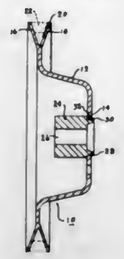


1. Mechanism for adjustably coupling a driving unit mounted for reciprocatory translation along a predetermined linear path to a driven unit similarly mounted for translation along a path parallel to and spaced from said predetermined path, said mechanism comprising; a rigid longitudinally extending connecting member having two spaced apart end portions, said member having one of said end portions attached to one of said units and the other of said end portions in engagement with the other of said units for transmitting motion therebetween, said longitudinal rigid connecting member being attached and in engagement with said units at predetermined respective points of attachment and engagement on said units, said connecting member extending between said units at a certain angle with respect to said parallel spaced paths; and means for adjusting such angle while maintaining said respective points of attachment and engagement of said member with said units, said adjustment being effective to accurately position said units with respect to each other along their respective paths of travel.

3,225,614
SHEAVE

William J. Skinner and Earl D. Scott, Walkerton, Ind., assignors, by mesne assignments, to Small Business Administration, Indianapolis, Ind., an agency of the United States

Filed June 24, 1963, Ser. No. 290,147
6 Claims. (Cl. 74—230.01)

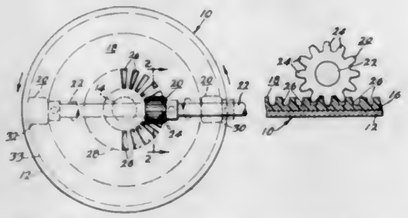


1. A sheave comprising a disc-shaped body having a generally round center opening with three equally spaced radially extending slots of generally rectangular shape in the portion of said body defining said opening, straight annular flanges joined integrally to the periphery of said body and extending outwardly therefrom at equilateral angles, the flanges being of equal thickness and having a total thickness equal to the thickness of said body, each flange having axially extending beads on the external edge thereof and being connected to one another by a relatively broad curved structure, a hub including a cylindrical member having an axial bore therethrough and a protrusion on one end of said member of the same configuration as said opening and with lugs thereon interlocking with the slots, a radially extending shoulder between said protrusion and the periphery of said member for receiving a side of said body, and a plurality of pins extending axially through said body in the space between said slots and seating in holes in said hub member, each of said pins being spaced radially outwardly from said protrusion.

3,225,615
POSITIVE DRIVE MECHANISM

Robert K. Little, Mount Holly, N.J., assignor of one-tenth to Henry Kohn, New York, N.Y.

Filed June 14, 1962, Ser. No. 202,467
5 Claims. (Cl. 74—416)

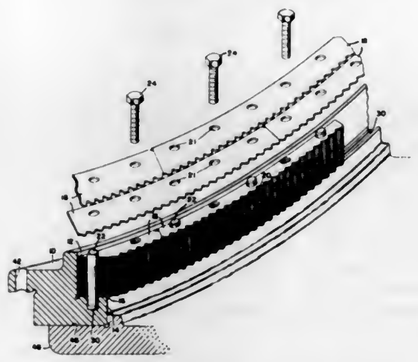


4. A positive drive mechanism, comprising a plurality of coactably disposed drive elements, drive surfaces on each of said drive elements, a plurality of spaced projections on at least one of said drive element surfaces, one surface comprising an elastic layer, said projections engaging with said elastic layer and producing elastic deformations in said elastic layer upon coaction of said drive elements, said elastic layer having delayed elastic recovery properties which prolong said deformations in substantially unrecovered form to permit reengagement of ones of said projections with ones of said deformations, the elasticity of said layer providing a complete recovery of said deformations absent reengagement of ones of said projections with ones of said deformations, coaction of said elements and engagement of said projections with said elastic layer deformations providing a positive drive effect between said drive elements.

3,225,616
GEAR CONSTRUCTION

Richard H. Whitehead, Laconia, N.H., assignor to Scott & Williams, Incorporated, Laconia, N.H., a corporation of Massachusetts

Filed May 18, 1964, Ser. No. 368,239
7 Claims. (Cl. 74—449)

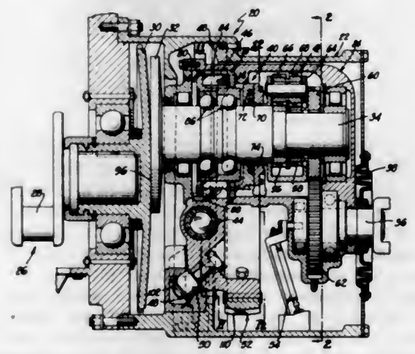


1. A gear comprising means providing a ring, a plurality of preformed arcuate segments having gear teeth of the same shape formed thereon, and means mounting said segments on a rim of said ring in a plurality of layers, each of said layers comprising a plurality of said segments arranged in end-to-end relationship, the segments in each layer being mounted with the gear teeth thereof coinciding with the teeth of the other layers, said segments being preformed in entirety including the teeth thereof prior the assembling thereof to form the gear, and segments in adjacent layers being arranged in staggered overlapping relation.

3,225,617
VARIABLE RATIO FRICTION TRANSMISSION AND CONTROL SYSTEM THEREFOR

James R. Young, 3630 Regency Drive, Racine, Wis.

Filed Jan. 9, 1961, Ser. No. 81,568
49 Claims. (Cl. 74—472)

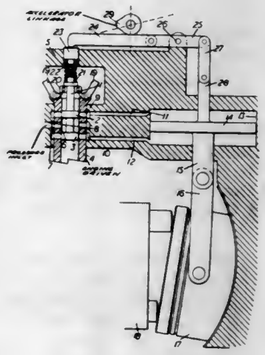


1. In a variable ratio friction transmission, the combination of: driving and driven discs rotatable about central axes and positioned in oblique facing relation and having surfaces at least one of which is a surface of revolution generated by rotating a curve about the axis of the corresponding disc, and which are frictionally engageable over an area that is small as compared to the areas of said surfaces, the distances from the centers of said discs to the area of contact between said surfaces of said discs both being variable; and means for varying the distances between the centers of said discs and said area of contact, the centers of said discs both being on the same side of said area of contact.

3,225,618
HYDROSTATIC POWER TRANSMISSION SYSTEMS

Graham D. Page, Birmingham, England, assignor to Austin Motor Company Limited, Longbridge, Birmingham, England

Filed July 31, 1962, Ser. No. 213,711
4 Claims. (Cl. 74—472)



1. In combination, a variable ratio hydrostatic power transmission system for a motor vehicle, said motor vehicle having a throttle-controlled engine and said transmission having a hydraulic control circuit, a speed-ratio-selection valve in the hydraulic circuit, a governor for controlling said valve in response to variations in engine speed, and means for opposing the controlling force of the governor in the equilibrium position of the valve comprising a connection between the valve and engine throttle and a connection between the valve and the power transmission, the speed-ratio-selection valve being a spool-type piston-valve which controls a pair of exhaust ports disposed at opposite sides of a port which is connected to a feed of high-pressure fluid; the exhaust ports communicating with opposite ends respectively of a servo-cylinder the piston of which is arranged to operate means by which the speed ratio of the transmission system is changed.

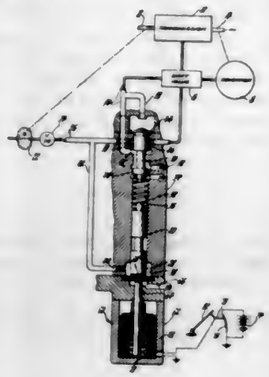
3,225,619
TRANSMISSION CONTROL SYSTEM

Robert H. Schaefer, Westfield, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Dec. 3, 1962, Ser. No. 241,900
7 Claims. (Cl. 74—472)

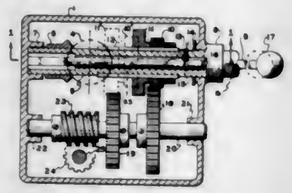
1. In a transmission control system for an engine driven vehicle, the combination of a pressure fluid responsive device for controlling the transmission, a source of pressure fluid for the device, means regulating the fluid pressure supplied to the device, electrically operated means for controlling the pressure regulating means, the electrically operated means including a source of electrical

energy and a manually operated control for varying the electrical energy in accordance with engine torque demand



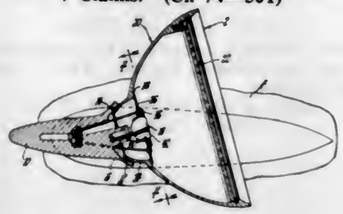
so as to cause the pressure at which the pressure regulating means regulates to correspondingly vary.

3,225,620
MULTIPLE RATIO STEERING SYSTEM
Sol Dubin, Rockville Centre, N.Y.
(217 Merrick Road, Amityville, N.Y.)
Filed Oct. 5, 1962, Ser. No. 228,518
8 Claims. (Cl. 74—500)



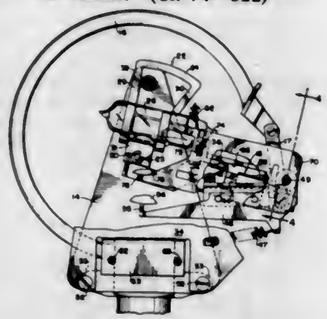
1. In a steering device, the combination of a hollow input shaft adapted to carry a steering means, two first gears of different pitch diameters connected together and slidably mounted on said input shaft for concurrent movement therealong and keyed to said input shaft for rotation therewith, a second shaft coupled to means to be steered and carrying two second gears of different pitch diameters, one of said first gears being adapted in one position along said input shaft to mesh with one of said second gears to provide a first speed combination between said input shaft and said second shaft, the other of said first gears being adapted in another position along said input shaft to mesh with the other of said second gears to provide a second speed combination between said input shaft and said second output shaft, means supporting said shafts and the four said gears in such manner as to permit said meshing of said gears, push-pull gear shifting means including a gear shifting shaft coaxial with and extending from the inside center of said input shaft, and coupling means between said gear shifting shaft and the two said first gears adapted to shift said first gears by sliding said first gears along said input shaft into said one or another position to provide either one or the other of said speed combinations whereby said steered means is driven by said steering means in one of two alternately selectable speed ratios, said input shaft having a slot in one portion thereof, and said coupling means including a pin extending through said slot and coupled to one of said first gears and to said gear shifting shaft.

3,225,621
REMOTELY CONTROLLED MIRROR
Algis G. Augunas, Detroit, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 17, 1961, Ser. No. 153,100
7 Claims. (Cl. 74—501)



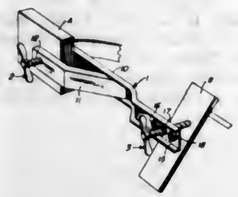
1. A remotely controlled mirror mechanism comprising a mounting bracket, a mirror support having a mirror element mounted therein, means universally pivoting said mirror support on said mounting bracket, a disk member frictionally engaging the mirror support so as to control movement thereof in response to movement of the disk member, means pivotally mounting said disk member on said bracket, means providing for rotation of the mirror support relative to said disk member and bracket about an axis substantially perpendicular to the plane of said mirror element, an actuator located remotely from said mounting bracket, and a plurality of operating cables having the opposite ends thereof respectively directly connected at spaced points to said disk member and actuator whereby movement of the latter results in pivotal movement of the disk member and mirror support about axes parallel to the plane of said mirror element.

3,225,622
CONDITION RESPONSIVE DEVICE
Robert C. Du Bois, Fairfield, Randall Goff, Weston, and Edward J. Plavcan, Stratford, Conn., assignors, by mesne assignments, to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Filed Apr. 29, 1963, Ser. No. 276,647
18 Claims. (Cl. 74—522)



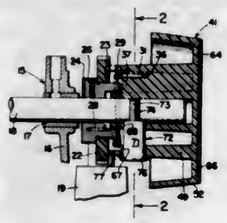
1. In a condition responsive device, an actuating member, yieldable pivot means mounting one end of said member, means for moving the other end of said member in one direction about said pivot means, fulcrum means spaced substantially from and engageable with said member intermediate the ends of said member for restraining movement of said member about said pivot means in response to movement of said member a predetermined amount about said pivot means in said one direction whereby upon continued movement of said other end of said actuating member in said one direction said yieldable pivot means will be moved relative to said fulcrum means, and means responsive to the movement of said yieldable pivot means.

3,225,623
FAST IDLER ATTACHMENT FOR CARS
Sidney S. Hyman, 10000 Old Field Drive, Bon Air, Va.
Filed Mar. 9, 1964, Ser. No. 350,444
1 Claim. (Cl. 74—532)



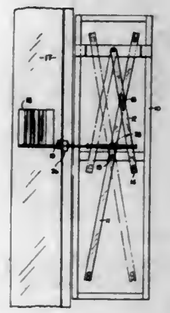
A fast idling attachment for an automobile comprising a rigid unitary flat frame element having two flat legs at one end thereof; screw clamp means in one of said legs, said screw clamp means extending inwardly toward the other said leg whereby the attachment may be secured to the brake pedal of the automobile; the other end of said flat frame element being laterally offset from said legs; a threaded aperture in said offset end; a screw threaded element in said threaded aperture and extending parallel to and operative in the same direction as said screw clamp means whereby said screw threaded element may depress the accelerator pedal of the automobile when said attachment is clamped to the brake pedal of the automobile; a plurality of additional longitudinally spaced screw threaded apertures in said offset end, whereby the screw threaded element may be selectively positioned in said offset end to provide for differences in the distance between the brake and accelerator pedals.

3,225,624
HANDWHEEL FOR SEWING MACHINES
Frederick G. Creter, Bricktown, N.J., assignor to The Singer Company, a corporation of New Jersey
Filed Dec. 10, 1962, Ser. No. 243,529
3 Claims. (Cl. 74—573)



1. A handwheel for use with family type sewing machines, said handwheel comprising a first radially and axially apertured plastic hub, the axial aperture of said hub being adapted to receive an arm shaft of the sewing machine, a second radially apertured plastic hub, said second hub being concentrically located with respect to said first plastic hub, spoke like radial plastic ribs connecting the external surface of said first plastic hub with the internal surface of said second plastic hub, a counterbalancing metallic stud located in the radial apertures of said first and second hubs and adapted to secure said handwheel to the arm shaft of said sewing machine, and a plastic rim carried by said second hub.

3,225,625
COIN VENDING MACHINES
Stewart A. Maxwell, Walsall, England, assignor to Fisher & Ludlow Limited, Birmingham, England, a British company
Filed Aug. 1, 1962, Ser. No. 213,946
Claims priority, application Great Britain, Aug. 2, 1961, 27,989/61; July 19, 1962, 27,688/62
1 Claim. (Cl. 74—582)



Overload preventing mechanism mounted for connection between an actuated means and an actuating means therefor comprising,

support means for said mechanism,

lever means mounted on said support means for pivoted movement in response to said actuating means,

said lever means having means for connection to the actuating means,

axially movable rod means for connection between the actuated means and actuating means,

pin means interconnecting one end of said axially movable rod means and the actuated means,

said pin means including a portion projecting laterally of said rod means,

means responsive to overload conditions interposed between and connecting said rod means and said lever means,

said overload responsive means comprising linkage including a load transmitting member slidably mounted on said rod means and pivotally attached to said lever means,

a pair of abutment members mounted coaxially on said rod means in predetermined spaced relation to each other,

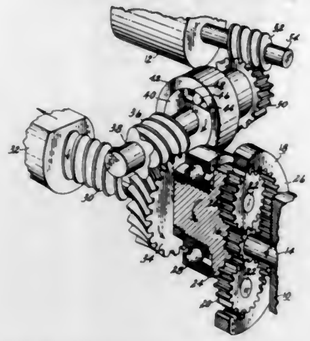
spring means interposed between and engaging said spaced abutment means on said rod means providing a connection therefor with said load transmitting member,

said spring means being operative to transmit a predetermined load without yielding between said load transmitting member and said rod means in either direction of its axial movement but yielding when the said predetermined load is exceeded to thereby cause said load transmitting member to slidably move on said rod means without effecting axial movement thereof,

a manually actuable means mounted on said support means,

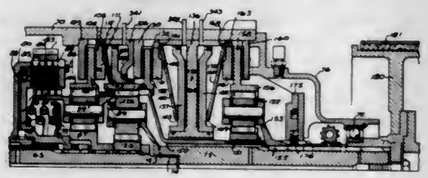
said manually actuable means engaging with said laterally projecting portion of said connecting pin means on said rod means and operable to actuate the actuated means and said rod means independently of the actuating means.

3,225,626
ELECTROMECHANICAL ACTUATOR SYSTEMS
Howard M. Geyer, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed May 22, 1963, Ser. No. 282,272
16 Claims. (Cl. 74—661)



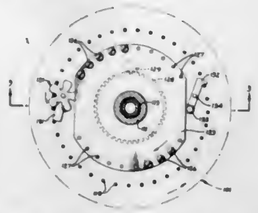
1. An electromechanical actuator system for high mass loads comprising, a screw and nut actuator and dual drive paths for extending and retracting said actuator, one of said drive paths including a high efficiency reduction unit operatively connected with said actuator and the other of said drive paths including a low efficiency irreversible reduction unit operatively connected with said actuator.

3,225,627
TORQUE TRANSMITTING MECHANISM
Howard W. Christenson, Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Original application Dec. 4, 1953, Ser. No. 396,272, now Patent No. 3,073,179, dated Jan. 15, 1963. Divided and this application July 31, 1962, Ser. No. 213,712
4 Claims. (Cl. 74—769)



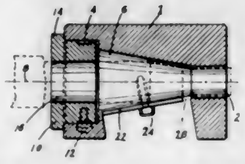
1. In a transmission, a substantially cylindrical housing having a central axis; a drive member and driven member located coaxially on said axis in said housing; a planetary gear unit connecting said drive and driven members having gearing and first and second ratio establishing means respectively operative to establish a first ratio of low torque and to establish a second ratio of high torque; said gearing of said gear unit having a substantially cylindrical coaxial envelope, said first and second ratio establishing means including respectively first and second annular friction disc means located concentrically between said housing and said gearing; first and second annular friction means of substantially the same size mounted concentrically to fit between said gearing and said housing operative to respectively engage said first and second disc means; a first annular fluid motor located concentrically between said gearing and said housing having a small area providing a small force for engaging said first friction means to provide a low torque; one of said members having a portion of small diameter compared to the diameter of said gearing and located next to said gearing; a second annular fluid motor located in said housing next to said gear unit and extending substantially between said small diameter portion of a member and said housing and having a large area to provide a high force for engaging said second friction means to provide a large torque.

3,225,628
TURNTABLE DRIVE
Erik W. Anthon, Kensington, Calif., assignor, by mesne assignments, to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J.
Filed Feb. 26, 1962, Ser. No. 175,716
5 Claims. (Cl. 74—822)



1. In a turntable apparatus for holding and conveying containers adapted to carry analytical sample between stations, in combination, a turnable drive for rotating the turntable between a plurality of stations and stopping the same at individual stations according to a predetermined program, comprising a shaft, a turntable rotatably mounted on the shaft, a gear adapted to rotate the turntable through an angle directly proportional to the rotation of the gear, means associated with the gear to prevent reverse rotation of the turntable, a cam mounted for rotation on the shaft in position to drive said gear, means for rotating the cam, means activated by the cam to hold the turntable against forward rotation during an arc of rotation of said cam, and pins carried on said cam in position so as to engage said gear on rotation of the cam, said pins being spaced so as to provide at least two groups of different numbers of pins whereby the gear is driven through different angles of forward rotation.

3,225,629
DEVICE FOR REMOVING INSULATION FROM CABLES
Raymond G. Horrocks, Lakewood, Ohio, assignor to PLM Products, Inc.
Filed Feb. 27, 1964, Ser. No. 347,836
4 Claims. (Cl. 81—9.5)



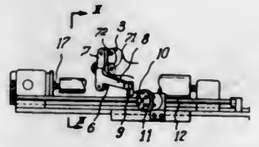
1. A tool for removing insulating and semi-conductive material from an electric conductor, said tool comprising:

(a) a body comprising two hingedly connected semi-cylindrical parts provided with means to clamp them together, said body having an aperture extending therethrough and including coaxial, large and small diameter end portions and a frusto-conical intermediate portion, an adapter comprising two semi-cylindrical parts removably secured in said large end portion and having an aperture coaxial with said aperture in the body and only slightly greater in diameter than the diameter of the insulated conductor, the diameter of the small end portion of the aperture in the body being only slightly greater than that of the bare conductor,

(b) the body having a slot in said intermediate portion of the aperture extending longitudinally from the small end portion to adjacent to the large end portion of the aperture,

(c) and a blade removably secured to the body against movement relative thereto, said blade being positioned along one side of said slot and having a cutting edge extending into the intermediate portion of the aperture between the adjacent side of the slot and a plane passing through the axis of said aperture and through the slot, said edge being tangent to a circle having a radius which is less than the radius of the intermediate portion of the aperture by the desired thickness of insulation to be removed in one cut, said edge extending from adjacent to the large end aperture to within a short distance of the small end aperture, the space between the end of the blade and the small end portion of the aperture serving as an escape hatch for semi-conductive material as it is removed from a conductor by said cutting edge.

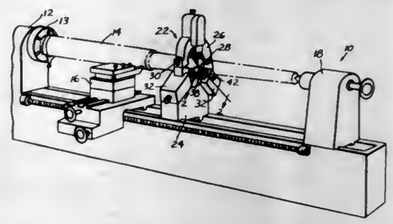
3,225,630
CUTTING CONTROL MEANS FOR LATHES
Jules Louis Jeanneret, 13 a 21 Rue H. Gelin, Niort, Deux-Sevres, France
Filed May 27, 1964, Ser. No. 370,546
10 Claims. (Cl. 82—14)



1. A copying lathe having a revolving work support and a tool support movable relative thereto in axial and radial directions, feeler means connected for axial movement with the tool support and radially displaceable relative thereto, means responsive to radial displacement of the feeler means relative to the tool support for imparting corresponding radial movement to the tool support relative to the work, first stop means adjustable in a radial direction and interposable in the path of radial feeler displacement for limiting said radial displacement thereof and determining the depth of cut of the tool into the work, and second stop means adjustable in an axial direction and interposable in the path of axial feeler movement for limiting said axial movement thereof and determining the length of said cut.

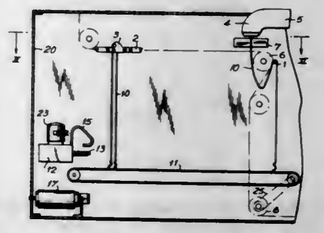
3,225,631
SELF-ADJUSTING STEADY REST ROLLER
Otto Hermann, Cincinnati, Ohio, assignor to The R. K. Le Blond Machine Tool Co., Cincinnati, Ohio, a corporation of Delaware
Filed Nov. 22, 1963, Ser. No. 325,612
8 Claims. (Cl. 82—39)

1. A steady rest comprising; a frame adapted for being closed about a workpiece to be supported, a plurality of radial plunger means in distributed relation in the frame, each plunger means being radially adjustable toward and away from the axis of the workpiece, a shaft on the inner end of each plunger means having its axis in the plane of the axis of the workpiece and substantially parallel thereto, a roller on the shaft, and means engageable with opposite ends of said shaft for tilting said



shaft in said plane so the roller will conform to taper of the workpiece.

3,225,632
MACHINE FOR HANDLING CONTINUOUSLY EXTRUDED PLASTIC MATERIAL
Werner Remund, Uzwil, Switzerland, assignor to Gebruder Buhler, Uzwil, Switzerland, a company of Switzerland
Filed Aug. 5, 1963, Ser. No. 299,966
Claims priority, application Switzerland, Aug. 10, 1962, 9,612/62
9 Claims. (Cl. 83—83)

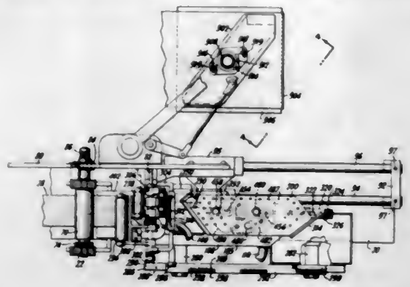


5. A machine for the automatic handling of continuously extruded plastic material, in particular stranded alimentary paste products such as spaghetti, maccaroni and the like, including in combination, a first conveyor carrying suspension rods, means adjacent said first conveyor suspending extruded strands of plastic material onto said suspension rods, cutting means for uniformly trimming said depending strands disposed along the path of movement of said strands on said first conveyor in the zone of the ends of the strands depending from said suspension rods, and a second conveyor disposed in a parallel position in respect to said first conveyor within the zone of the ends of said depending strands and extending beyond said trimming means and forming a supporting surface for the ends of the strands as they are moved by said first conveyor.

3,225,633
TOBACCO WEB FEED WITH UNIVERSAL BINDER SHAPER
Sterling Ture Gustavson, Rosedale, N.Y., assignor to American Machine & Foundry Company, a corporation of New Jersey
Filed Oct. 18, 1961, Ser. No. 145,948
7 Claims. (Cl. 83—152)

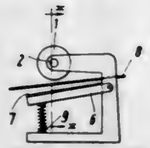
1. A subcombination of a machine for cutting a cigar binder or wrapper from a continuous web of tobacco material, said subcombination comprising a shaft rotatable through a limited angular range, a suction table having a V-shaped end secured to the top of said shaft, a V-shaped binder or wrapper cutting knife secured to said end of said table, said knife rotatable by said shaft through said range, means for securing said knife in any desired

angular position within said range, means coacting with said knife for severing said binder or wrapper from said



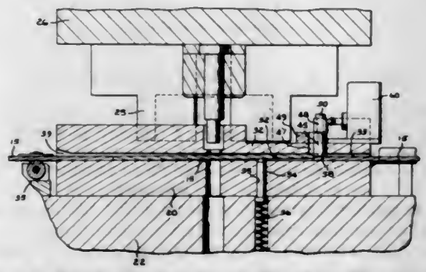
web and means for also displacing said knife rectilinearly in a plane normal to the longitudinal axis of said shaft.

3,225,634
APPARATUS FOR DIVIDING A FILM OF THERMOPLASTIC MATERIAL INTO SMALL STRIPS
Hermann Becker, Raesfeld, Kreis Borken, Westphalia, Germany
Filed Sept. 28, 1962, Ser. No. 227,648
Claims priority, application Germany, Sept. 29, 1961, B 64,184
4 Claims. (Cl. 83—171)



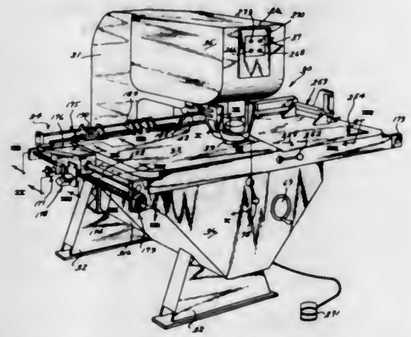
1. In apparatus for dividing a film of thermoplastic material into small strips, a plurality of thin knife blades each having a circular knife edge, a fixed shaft, said knife blades being nonrotatably mounted on said fixed shaft, means for heating said knife blades, means for guidably supporting said film including an interchangeable layer of a material weaker than the knife blade edges, said means for guidably supporting said film and said shaft being movable relatively to each other.

3,225,635
DEVICE FOR POSITIONING FLAT ARTICLES
Edward A. Brandt, Chicago, and Constantine N. Drevalas, Wheaton, Ill., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Feb. 10, 1964, Ser. No. 343,780
5 Claims. (Cl. 83—268)



1. A device for positioning articles in an apparatus having a vertically movable tool which comprises:
means for supporting a plurality of articles in abutting relation to one another for movement along a horizontal path transversely of and into the path of movement of the tool;
a stop member mounted above and in close proximity to the path of movement of the articles for horizontal movement to and from one position and a gaging position;
resilient means for moving said stop member from the gaging position to said one position; and
means yieldably mounted in the path of movement of the articles and adjacent said stop member for raising the leading end of an advancing article to a predetermined elevation with the upper portion of the article extending above the preceding article without disengaging the preceding article so that the upper portion of the article will engage and move said stop member horizontally to the gaging position and cause the article to be stopped thereby in a predetermined position beneath the tool.

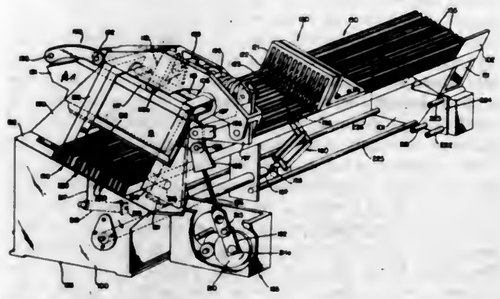
3,225,636
PUNCHING MACHINE AND STRUCTURE THEREFOR
Arthur K. Schott, Kenmore, Kenneth J. Bartha, Tonawanda, and Charles Lee Rovoldt, Getzville, N.Y., assignors to Houdaille Industries, Inc., Buffalo, N.Y., a corporation of Michigan
Filed Nov. 1, 1960, Ser. No. 66,639
33 Claims. (Cl. 83—468)



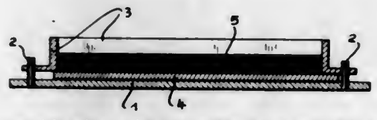
1. A punching machine comprising in combination: a frame having means adapted to support and to reciprocate punch and die means relatively to each other; a horizontally directed table disposed to support a workpiece adjacent to one of the punch and die means; side rail bar means fixedly secured to said table; a gage bar assembly slidably supported at its ends on said bar means and extending transversely thereto along the upper surface of said table, said gage bar assembly having a reference surface perpendicular to said side rail bar means for being engaged by an edge of the workpiece, said gage bar assembly including at least one stop slidably adjustable for a distance along the length of said gage bar assembly and having a reference surface parallel to said side rail bar means for being engaged by another edge of the workpiece.

3,225,637
RECIPROCABLE CUTTING MECHANISM FOR AUTOMATIC CUTTING MACHINES
Carl Thumim, Lombard, Ill., assignor to Miehle-Goss-Dexter, Inc., Chicago, Ill., a corporation of Delaware
Original application Nov. 7, 1956, Ser. No. 620,928, now Patent No. 3,033,067, dated May 8, 1962. Divided and this application Feb. 13, 1962, Ser. No. 173,074
4 Claims. (Cl. 83—526)

1. A knife assembly for a cutting machine comprising a knife body supported on the cutting machine, a drive member connected to said knife body, and a spring having one end coupled to said knife body for normally biasing the knife body to its non-operating position and being of sufficient strength to lift said knife body to inactive position independently of said drive member, further including mechanism for operating said drive member including a drive shaft, a brake therefor, and means including an overrunning clutch between said drive member and said drive shaft whereby said drive shaft may be braked to stop and said knife body be reset to its non-operating position independently of said drive shaft.

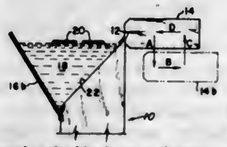


3,225,638
MACHINE FOR TRIMMING SHEET MATERIAL
Otto Greiner, Simter Strasse, Erlenbrunn, near Pirmasens, Germany
Filed Apr. 8, 1964, Ser. No. 358,206
Claims priority, application Germany, Apr. 9, 1963, M 44,394
3 Claims. (Cl. 83—658)



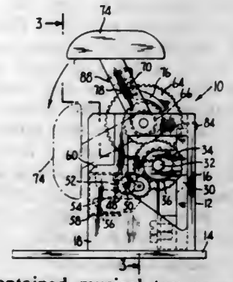
1. In combination with the table of a punching press having upstanding guide elements, a punching guide frame for the material to be punched, and a punch base interposed between said table and said frame which latter has portions coacting with said guide elements whereby said frame is precluded from sliding over the table top, but capable of being raised relatively to said table top, to permit of adjustment of said punch base by sliding between said table top and said frame.

3,225,639
MICROTOME KNIFE
Robert Martinelli, 5938 Walnut St., Pittsburgh, Pa.
Filed Feb. 21, 1964, Ser. No. 346,546
2 Claims. (Cl. 83—915.5)



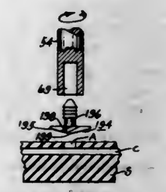
1. A tissue cutting knife for a microtome formed from a piece of glass so fractured as to form a sharp cutting edge, said glass being fused from a batch consisting essentially of the following ingredients in percent by weight: 65% to 75% SiO_2, 8% to 18% Na_2O, 3% to 9% CaO, 3% to 7% MgO, .5% to 1.5% NaCl, .5% to 1.5% Na_2SO_4, 3.5% to 5% Mn_3O_4, and .05% to .15% Cr_2O_3.

3,225,640
MUSICAL TOY
Oskar W. Kunz, 20 Brown Place, Bergenfield, N.J.
Filed Nov. 1, 1963, Ser. No. 320,720
2 Claims. (Cl. 84—95)



1. A self-contained musical toy comprising, in combination, a support, a cylinder with pins rotatably mounted in said support for unidirectional rotation, a comb having musical strips of different lengths positioned to be selectively engaged by the pins on the cylinder as the cylinder rotates, a weighted arm comprising a weight and an arm pivotably mounted in said support for movement through an arc of at least 90 degrees from a rest position wherein the weight overlies one side of said support to a driving position wherein said weight overlies an adjacent side of said support upon inversion of said support, said arm having a length which is less than the largest dimension of said support, spring means biasing the weighted arm in the direction of the rest position and being mounted to be tensioned upon movement of the weighted arm from the rest position to the driving position upon inversion of the support, and a unidirectional driving connection between the weighted arm and the cylinder for unidirectional rotation of the cylinder during movement of the weighted arm from the driving position to the rest position under the action of gravity and under the action of gravity and of the tensioned spring upon return of the support to its original position.

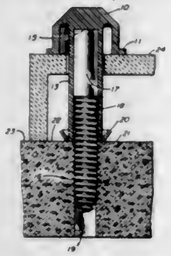
3,225,641
APPARATUS AND ARTICLE OF MANUFACTURE
Edward P. Harris, Dayton, and Cletus L. Moorman, Trotwood, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Original application June 22, 1961, Ser. No. 126,419, now Patent No. 3,199,184, dated Aug. 10, 1965. Divided and this application Feb. 12, 1965, Ser. No. 432,322
1 Claim. (Cl. 85—5)



On a fastening device of plastic material having a head and an integral stem portion with a multi-tapered end shape, said stem portion including plural abutment means projecting laterally outwardly thereon to engage a mounting panel, and elastomeric weatherstrip means having lateral access openings undercut into cavity locations into which said head portion fits with the stem portion projecting outwardly through a predetermined access opening, the improvement which comprises said head portion being annular and having a flat undersurface, said head having an apex with the uppersurface of said

head being downwardly and outwardly inclined from the apex to the periphery of said head, said apex being smaller than said lateral access opening, and a semi-arcuate partial spiral helical slot extending from said upper surface to said undersurface and in one quadrant thereof, said partial spiral helical slot having a location that tapers laterally outwardly from said apex so that said slot and apex together resiliently dilate individual access opening of limited size in the elastomeric weatherstrip means so as to permit said head portion to be threaded through the access opening during a turning and twisting movement transmitted thereto through said stem portion, said stem portion that projects outwardly through the access opening having a diameter substantially equal to the diameter of said lateral access opening and having a longitudinal axis about which said head portion is turned as said apex engages said slot to resiliently dilate said weatherstrip opening.

3,225,642
ANCHORING DEVICE FOR WATER CLOSETS
Philip J. Brewington, 6401 Emerald St., Austin, Tex.
Filed Apr. 5, 1963, Ser. No. 270,857
1 Claim. (Cl. 85—9)



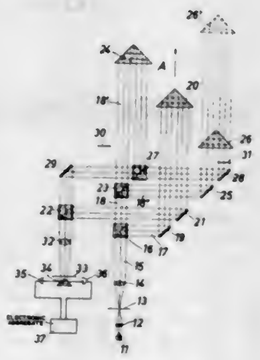
An anchoring device for water closets for securing the rim of a closet bowl to a bathroom floor, comprising a screw having a single coarse thread with cutting edges extending from one end, a cylindrical portion of slightly smaller diameter than the threaded portion and extending from the threaded portion to the opposite end of the screw and a one-piece cooperating member of a size to pass readily through the usual hole in the rim of the closet bowl, said member being of plastic and softer than the screw and including a cap having a multi-faced head with an outwardly extending lip to engage the top of the rim of the bowl and a coaxial tube to fit snugly the cylindrical portion of the screw and to be tapped by the thread of the screw when the screw is embedded in the floor and the cap is turned about the axis of the screw; said cap closing the end of the tube and extending laterally beyond said end, said tube being longer than said cylindrical portion and having a smooth walled bore, said head and tube being positioned to form an annular space between them facing the leading end of the tube, whereby when the tube is forced downward by turning the cap, the bottom of the tube will flare and the cap will be brought into firm contact with the top of the rim of the closet bowl.

3,225,643
GUSSET PLATE FOR TRUSS SYSTEMS
Claude R. Couch, 2414 Newland St., Edgewater, Colo.
Filed Mar. 11, 1963, Ser. No. 264,188
1 Claim. (Cl. 85—13)



An integral fastener and reinforcing plate unit adapted for holding structural members together when said unit is applied as by driving or pressing said unit into said structural members comprising a sheet of material, a plurality of fastener elements struck in row pattern from said sheet material forming a plurality of elongated openings therein with the free end of said elements raised to a position normal with respect to said sheet material, the center line of the plate defining a line of symmetry wherein said elongated openings extend away from the center line on each side thereof with the fastener elements being connected to the plate at the end of the openings nearer said line, said fastener elements being bent along the vertical length thereof to provide V grooves adapted to reinforce, guide and strengthen said normally disposed fastener elements with the V grooves of adjacent fastener elements in a row being disposed in opposite direction, each of said fastener elements being slotted along a portion of its length at the free end thereof to provide a pair of penetrating points, and guide faces on the contact edges of said points converging in a direction toward the plate from the tips of said points to the slot for cooperative coaction with said directional V grooves for biasing said individual penetrating points in independent directions as the plate unit is applied to said structural members whereby the total holding power of said fastener elements and plate unit is increased.

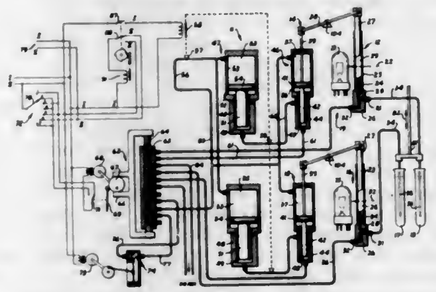
3,225,644
APPARATUS PRODUCING INTERFERENTIAL TEST DATA FOR MEASURING AND CONTROL INSTRUMENTS
Kurt Schuch, Jena, Germany, assignor to VEB Carl Zeiss Jena, Jena, Germany
Filed Oct. 16, 1961, Ser. No. 145,514
3 Claims. (Cl. 88—14)



1. In an apparatus for producing interferential test data for measuring and control instruments, a light source, a condenser, a diaphragm having an aperture, said condenser imaging said light source in said aperture, a collimator lens making parallel the divergent light rays emanating from said aperture, in the parallel ray path optical ray-dividing elements splitting said path into three partial beams, said three partial beams being a measuring-ray beam and two reference-ray beams, first stationary deflecting surfaces disposed in and deflecting at least two of said partial beams emanating from said ray-dividing elements, three optical deflectors, one of said deflectors deflecting said measuring-ray beam at least approximately 180° and being continuously displaceable in the measuring process, the two other of said deflectors deflecting respectively said reference-ray beams at least approximately 180° and being alternately so displaceable in the measuring process that the change in length of the respective reference-ray beam is no greater than twice the coherence length of the used light, each of said two other

deflectors being effective only when in position of rest, a diaphragm related to each of said reference-ray beams and insertable into and out of said beams, other stationary deflecting surfaces disposed in and deflecting at least two of said partial beams emanating from the respective displaceable deflectors, optical ray-fusion elements for combining with the measuring-ray beam the effective reference-ray beam, a convergent optical component for producing images of the interferences due to fusion of said effective reference-ray beam and said measuring-ray beam, a pair of photocells in the plane of said interference images, between said convergent optical component and said photocells means for causing one and the same interference image while being displaced to successively influence said two photocells and thereby to produce current impulses, an impulse former exactly defining the current impulses emanating from said photocells, a discriminator controlling the counting direction in derivation from the phase of the exactly defined current impulses, and a mechanism for directionally counting the impulses from said discriminator.

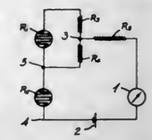
3,225,645
CUVETTE AND SUPPLY SYSTEM THEREFOR
Hans Baruch, Berkeley, and Erik W. Anthon, Kensington, Calif., assignors, by mesne assignments, to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J.
Filed Oct. 4, 1962, Ser. No. 228,337
7 Claims. (Cl. 88—14)



1. An apparatus for transferring a sample to a sensing device, comprising a sample site where sample is provided, a cuvette in the sensing device for receiving sample, a first duct in communication with said cuvette positionable to receive sample from the sample site, a piston carried in the cuvette for moving liquids into and out of the cuvette, a scavenging cylinder having a piston therein for collecting liquids removed from the cuvette, a second duct in communication with both the cuvette and the first duct and adapted to communicate with the scavenging cylinder, a scavenging cylinder duct adapted for communication with the second duct and to drain the scavenging cylinder, valve means for connecting the second duct to the scavenging cylinder duct for removing liquid from the cuvette and for disconnecting said ducts to drain the scavenging cylinder, and means for operating the pistons oppositely.

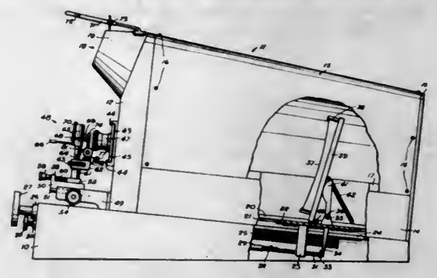
3,225,646
PHOTO-CONDUCTIVE EXPOSURE METER
Torao Nagai, Kitatama-gun, Tokyo, Japan, assignor to Tokyo Kogaku Kikai Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan
Filed July 3, 1962, Ser. No. 207,260
Claims priority, application Japan, July 7, 1961, 36/24,498
1 Claim. (Cl. 88—23)

A photo-conductive exposure meter which comprises a first photo-conductor for use mainly for a high intensity range of illumination, a plruality of resistors coupled to each other in series and connected in parallel with said first photo-conductor, a second photo-conductor for use mainly for a low intensity range of illumination, one side of which is directly connected to one side of the said first photo-conductor, and a power source, an ammeter



and a compensation resistor connected in series and coupled in a branch circuit between the other side of the said second photo-conductor and a coupling between two of the said plurality of resistors, the said compensation resistor being for maintaining the resistance of the branch circuit at a constant value.

3,225,647
APPARATUS FOR VIEWING GEMS AND SIMILAR OBJECTS
Douglas Albert Robinson, Lytton Melville Robinson, and James Dods, all of 186 Edward St., Brisbane, Queensland, Australia
Filed Dec. 28, 1961, Ser. No. 162,678
Claims priority, application Australia, Dec. 29, 1960, 67,928/60
6 Claims. (Cl. 88—24)

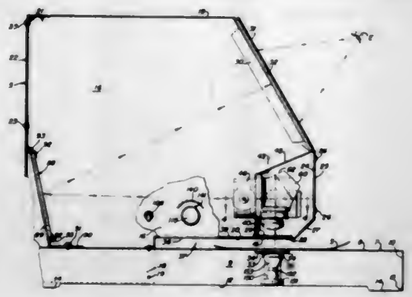


3. Apparatus for projecting an image of a gem, including a hollow holder to support said gem, a light source within said holder to illuminate said gem, and projecting means consisting of a lens passing light from said gem to a concave mirror and thence directly to an observer's viewing position at the focus of said mirror.

3,225,648
APPARATUS FOR PROJECTING TRANSPARENCIES AND OPACITIES
Benjamin L. Toler, 502 Ridge Road SW., Vienna, Va.
Filed Dec. 3, 1962, Ser. No. 242,022
3 Claims. (Cl. 88—24)

1. In a projecting apparatus, a base having a top wall, a casing mounted above said base in spaced relation therefrom to form an entrance slot for receiving image bearing material in face up relation with the top wall of said base forming a support for said material, a screen mounted in a window opening in said casing above said slot directed upwardly and rearwardly, illuminating means above and below said slot for optionally viewing transparent and opaque material, a lens mount in said casing above said base, a collecting lens in said lens mount arranged in spaced relation with respect to said base top wall, a penta-roof prism mounted above said collecting lens for reflecting the image rays from said material and reflecting the same through a vertical wall of said prism, a second lens mount arranged normal to said first mount and in front of said

prism vertical wall, a projecting lens in said second lens mount for projecting image rays from said prism, a control shaft extending through said casing, an eccentric pin on said control shaft received in an opening in said lens



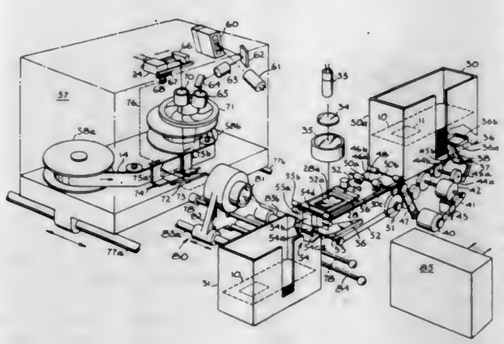
mount for adjusting said projecting lens along its optical axis in a direction toward and away from said prism, and a reflecting mirror in said casing at the rear thereof for projecting the image rays on said image bearing material on said screen in an upright and non-reverted position.

3,225,649

APERTURE CARD CONVERSION CAMERA

Norman R. Timares, Woodland Hills, and Ronald MacKenzie, Playa Del Rey, Calif., assignors to FMA, Inc., El Segundo, Calif., a corporation of California

Filed June 3, 1963, Ser. No. 285,073
8 Claims. (Cl. 88—24)



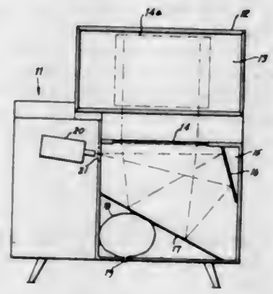
1. Apparatus for converting information recorded on cards to a single reel of film, said information being recorded on frames of film respectively mounted in apertures in said cards, said apparatus comprising: a light source; a mirror; means for successively positioning the cards so that the frames of film are between said light source and said mirror, whereby light passes through the frames of film to said mirror; a camera mounted to receive the light reflected from said mirror, said camera containing the reel of film; a first structural arrangement for projecting successive frame-counter numbers toward said camera that respectively correspond to the order in which the cards are fed to the apparatus; a second structural arrangement for projecting toward said camera code bars whose positions between the edges of the film reel respectively approximate said frame-counter numbers; additional means for simultaneously admitting said number and code bar projections to said camera for recordation on the reel of film therein; further means for projecting the light reflected from said mirror to said reel of film for recordation of the film frames thereon, said film frames being recorded between said code bars and frame-counter numbers; and equipment for advancing the reel of film a predetermined amount after each recording sequence.

3,225,650

APPARATUS FOR SCREENING FILMS, SLIDES AND THE LIKE IN ADVERSE LIGHT CONDITIONS

Arthur Reginald Wright, 609 Wellington St., Perth, Western Australia, Australia

Filed June 7, 1963, Ser. No. 286,283
1 Claim. (Cl. 88—24)



Apparatus for screening films and the like in adverse light conditions comprising an open top cabinet, a lid pivotally mounted on said cabinet open top, a mirror carried by said lid, a hermetically sealed compartment in said cabinet containing an inert gas which is substantially dust and moisture free and having a wall facing said mirror, said compartment having a second wall, a porthole in said compartment second wall, a rear projection screen providing a part of said compartment first mentioned wall and positioned within said cabinet below the open top thereof, a projector for films, slides and the like positioned exterially of said compartment and within said cabinet for directing light through said compartment porthole, a front surface projection mirror mounted within said compartment and facing said compartment second wall porthole, a second front surface projection mirror mounted within said compartment and facing said rear projection screen and said first mentioned projection mirror and a breathing lung positioned in said compartment and having a tube extending through said compartment.

3,225,651

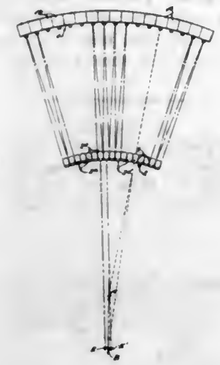
METHODS OF STEREOSCOPIC REPRODUCTION OF IMAGES

Wallace A. Clay, Box 120, R.F.D. 3, Ogden, Utah

Filed Nov. 12, 1964, Ser. No. 410,586
17 Claims. (Cl. 88—24)

1. The method of reproducing stereoscopically a panoramic scene, comprising the steps of: equivalently photographing overlapping sectors of said panoramic scene from a divergent exposure orientation camera pattern toward the scene being photographed wherein the angle of divergence between adjacent exposure orientations is of the order of 2°; producing from said photographing a series of side-by-side disposed sector image anamorphoses adjacent ones of which overlap as to subject matter and are stereoscopically related, said series being regularly progressive in correspondence with the progression of said camera pattern; placing said image amorphoses behind a series of corresponding narrow horizontally expanding cylindrical lenses at a distance less than the focal length of said lenses; and optically, anamorphoscopically restoring respective selected portions of said image anamorphoses, the portions selected depending upon the position

of the respective eyes of the observer, as seen through said lenses, to produce two continuous panoramas each



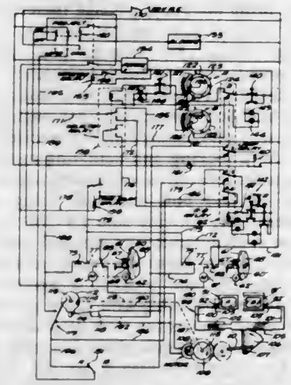
viewable by a respective eye of the observer, and not by his remaining eye, corresponding portions of said panoramas being stereoscopic doublets.

3,225,652

REMOTE CONTROL SLIDE PROJECTOR

Norman A. Sauppe, Pasadena, Calif., assignor to Spindler & Sauppe, Los Angeles, Calif., a corporation of California

Filed Mar. 28, 1962, Ser. No. 183,098
32 Claims. (Cl. 88—28)



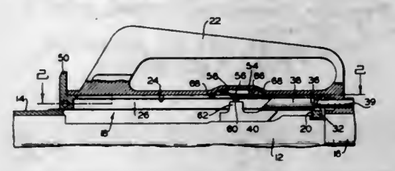
1. A remote control image projector of the type having a projection light and lens assembly for projecting an image onto a screen in enlarged form, that improvement which includes rotary magazine means for normally compactly storing a series of images on image-bearing media in close side-by-side relation in readiness for transfer into projecting position in said image projecting assembly, remote control means operable to rotate said magazine means until an individual image selected successively in any random order is in a predetermined position and for thereupon transferring the selected image edgewise in the plane of said image for a distance not substantially greater than the length of the image-bearing media and individually into projecting position in said image projecting assembly and including means for retrieving a previously selected image back into a predetermined storage position therefor in said magazine before permitting said magazine to rotate to a position for displaying the next image selected at random.

3,225,653

CHARGING HANDLE ASSEMBLY

Charles F. Packard, East Longmeadow, Mass., assignor to the United States of America as represented by the Secretary of the Army

Filed May 5, 1964, Ser. No. 365,218
6 Claims. (Cl. 89—1)
(Granted under Title 35, U.S. Code (1952), sec. 266)



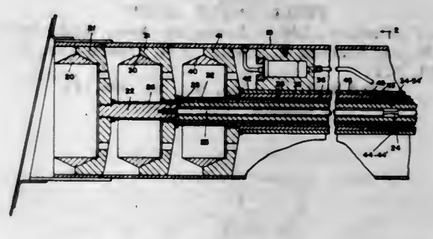
1. In a firearm having a receiver, a bolt slidably disposed in the receiver for longitudinal reciprocation into and out of battery position, and a charging handle slidably mounted in the receiver in abutment with the forward end of the bolt for transferring the manual retraction of the charging handle thereto, the improvement of, releasable interlocking means on the charging handle and on the bolt for providing a positive connection therebetween during the return of the charging handle to battery position, a cam surface in the receiver operative on said charging handle at the beginning of the retracting movement thereof to initiate said positive connection with the bolt, and means for automatically disconnecting said charging handle from the bolt during movement of the latter into battery position whereby said charging handle is inoperative during subsequent reciprocation of the bolt.

3,225,654

MULTIPACKAGE LAUNCHER

Irwin R. Barr, Lutherville, Md., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army

Filed May 28, 1964, Ser. No. 371,162
3 Claims. (Cl. 89—1.5)



1. A multitube launching apparatus for launching pairs of decoy packages simultaneously, said apparatus comprising

a cylindrical barrel adapted to be incorporated within a missile,

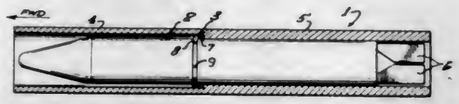
a series of pairs of decoy packages positioned by sabots slidably inserted in said barrel, the packages comprising each pair of said series being positioned on opposite sides of the middle of said barrel and equidistant therefrom and being joined to each other by connecting means,

each of said connecting means being alternately arranged with concentric tubes coaxially aligned with the longitudinal axis of said barrel and comprising piston means slidably inserted in and positioned at opposite ends of said tubes,

said piston means in each tube being joined to provide therebetween an annular space separating the joining means from its immediate circumscribing tube, each such annular space communicating with a sepa-

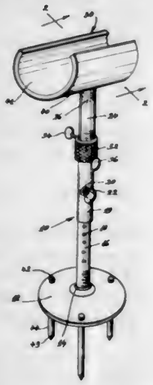
rate source of propellant gas pressure, said pressure being sufficient to effect failure of said joining means and to launch the resultant unjoined pair of decoy packages.

3,225,655
CONTROLLED TIP-OFF LAUNCHER
Ronald T. Inglis, Mount Baldy, Calif., assignor to General Dynamics Corporation, Pomona, Calif., a corporation of California
Filed May 25, 1964, Ser. No. 369,776
7 Claims. (Cl. 89—1.7)



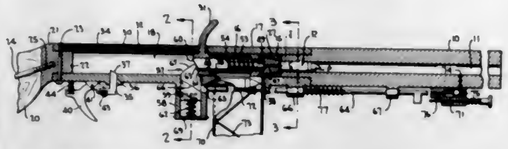
1. A controlled tip-off launcher mechanism for missiles or the like comprising: a launcher body defining forward and rearward portions of different internal diameters, the internal diameter of each of said forward and rearward portions having a substantially constant cross-sectional configuration along the length thereof, said rearward body portion being smaller in internal diameter than said forward body portion, said rearward body portion functioning to support an associated missile adapted to be positioned within said launcher body, and slidable means adapted to be attached to an associated missile and positioned in said launcher body so as to be movable with respect to at least the forward portion of said launcher body, said slidable means comprising a plurality of segments, whereby tip-off is controlled by the time relation between the slidable means clearing the forward end of the forward body portion of the launcher and the aft end of an associated missile clearing the forward end of the rearward body portion of said launcher, and whereby said slidable means is separated upon same clearing the forward end of the forward body portion of the launcher.

3,225,656
FIELD RIFLE REST
John T. Flaherty, 246 S. Lexington Ave., White Plains, N.Y., and Richard R. Scholz, 22 N. French Ave., Elmsford, N.Y.
Filed Sept. 14, 1964, Ser. No. 396,143
5 Claims. (Cl. 89—37)



1. A rifle rest, comprising a base, a post extending vertically upward from the base, a first tube telescopically receiving the post, means for adjustably securing the tube on the post in any one of a plurality of predetermined positions axially of the post, a second tube axially aligned with the first tube, a threaded collar connecting the first and second tube for adjustably spacing the tubes axially of each other, means rotatably engaging the collar on one of the tubes at a certain position so that the collar remains at said certain position while rotating around said one tube, a cradle generally U-shaped in cross section for supporting the rifle, joint means connecting the second tube and cradle, and means for anchoring the base on a support.

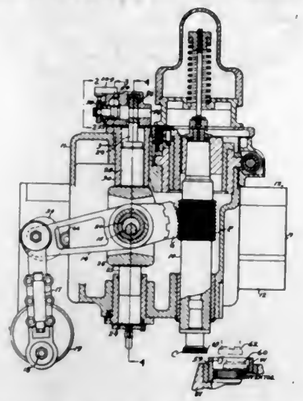
3,225,657
CLOSED BREECH GUN
George R. Kruzell, 4301 Hotchkiss, Bay City, Mich.
Filed July 15, 1964, Ser. No. 382,864
9 Claims. (Cl. 89—187)



1. A firearm comprising a barrel formed with a bore therethrough defining a firing chamber at its rear end and terminating rearwardly in a breech opening, means defining a rearwardly presented sealing surface around said breech opening, a receiver operatively connected to said barrel, a bolt guided in said receiver for movement in a predetermined path between a rearwardly retracted position and a forwardly projected position in which a forwardly presented sealing surface on said bolt operatively engages said sealing surface around the breech opening, resilient means for urging said bolt toward its projected position, selectively releasable means for maintaining said bolt in its retracted position, said bolt being formed with a firing pin guide passage therethrough opening forwardly toward said breech opening, a firing pin guided in said passage for forward projection and retraction movement, resilient means normally urging the firing pin toward its retracted position, sealing means on the firing pin and bolt respectively for engagement with each other to seal said passage in the projected position of the firing pin, a locking and actuating member guided on said firearm for operative movement across the paths of movement of said bolt and said firing pin, spring means for operatively moving said member, cooperating cam means on said member and on said bolt and firing pin respectively, for successively urging said bolt toward its projected position and locking it against retraction and for operatively projecting said firing pin and locking it against retraction, means for retracting said locking and actuating member to permit retraction and cocking of the bolt, and cooperating means on the bolt and the locking and actuating member respectively, for moving the said member out of the path of the bolt during forward projection of the bolt from its retracted position.

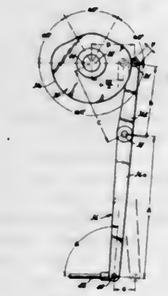
3,225,658
CUTTER SPINDLE ELEVATING MECHANISM
Harry Levanovich, Springfield, Vt., assignor to The Fellows Gear Shaper Company, Springfield, Vt., a corporation of Vermont
Filed Oct. 21, 1963, Ser. No. 317,498
9 Claims. (Cl. 90—7)

1. In a machine of the character described, a saddle, a cutter spindle mounted in said saddle, a work spindle mounted adjacent to said cutter spindle, a yoke slidably mounted in said saddle, a pivot bushing fixed in said yoke, an operating arm mounted to oscillate on said pivot bushing, means to oscillate said operating arm, means connecting said operating arm to said cutter spindle so as to reciprocate said cutter spindle as said operating arm is oscillated, and means to move said yoke vertically whereby said cutter spindle is given a vertical movement in addition to that imparted to it by said oscillating operating arm said last named means being actuated by a timing mechanism responsive to a given amount of relative rotation of



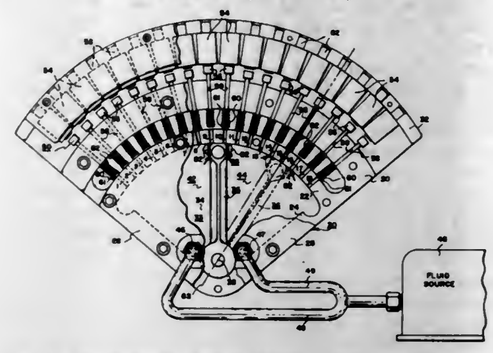
said cutter and work spindle whereby said additional vertical movement is given to said cutter spindle to allow clearance between cutter and work after said given relative rotation occurs.

3,225,659
CAM CUTTING MACHINE AND METHOD
Stanley J. Gartner, Emporium, and James E. Morean, Austin, Pa., assignors to Sylvania Electric Products Inc., New York, N.Y.
Filed Apr. 13, 1963, Ser. No. 301,854
17 Claims. (Cl. 90—13.7)



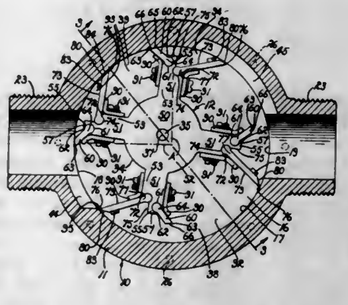
1. A machine for automatically developing and cutting a cam of the type which is rotated on a cam shaft and which moves a follower and motion transmitting means in a prescribed motion as said cam is rotated comprising a work table mounted for rocking movement about a work table pivot, a rotary work-supporting turntable including means to secure a cam blank thereto, means mounting said work-supporting turntable on said work table for rotary movement about a turntable pivot, a cutter head including a cutter tool adapted to rotate about a cutter axis oriented parallel to the axis of said turntable pivot and engageable with said cam blank, means for rotating said work-supporting turntable at a cam-cutting speed, an analog system corresponding to said cam follower and motion transmitting means and operatively engaged with said work table, and motion producing means engaged with said analog system and engaged with said turntable rotating means for simultaneously rocking said work table about said work table pivot in timed relation to the rotation of said work-supporting turntable and in an amount and at a rate related to the motion to be produced at said follower.

3,225,660
FLUID ACTUATED POSITIONING DEVICE
Klaus K. Stange, Phoenix, Ariz., assignor to General Electric Company, a corporation of New York
Filed Aug. 28, 1964, Ser. No. 392,822
19 Claims. (Cl. 91—51)



1. An information transfer system comprising information storage means; a transducer operatively associated with said storage means for effecting an information transfer therewith; and positioning means connected to said transducer for moving said transducer with respect to said storage means, said positioning means comprising: a housing; a dividing element disposed within said housing for substantially dividing said housing into a plurality of fluid chambers, said housing and said element being relatively movable; a fluid input to each of said fluid chambers, a plurality of fluid exhaust means arranged such that at least one of said exhaust means is in communication with each of said fluid chambers at all times; means for selectively rendering each of exhaust means effective; and means operatively associated with said dividing element defining first and second pairs of fluid passageways, said first pair of fluid passageways acting in cooperation with a first mode of rendering selective exhaust means effective to effect a first type of positioning between said housing and said dividing element and said second pair of fluid passageways acting in cooperation with a second mode of rendering selective exhaust means effective to effect a second type of positioning between said housing and said dividing element.

3,225,661
ROTARY FLUID MOTORS
James A. Smyser and Edgar T. Smyser, Bakersfield, and Clifford E. Smyser, Northridge, Calif., assignors to Smyser Fluid Motors, Bakersfield, Calif., a partnership
Filed Mar. 10, 1964, Ser. No. 350,716
10 Claims. (Cl. 91—149)



1. In a fluid motor, the combination of a body member having an internal chamber defined by a substantially cylindrical side wall circumscribing a central axis,

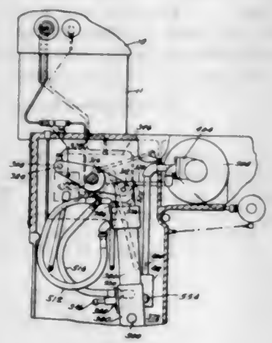
and inlet and outlet ports having respective centers spaced circumferentially of the chamber adapted respectively to receive and to discharge flowing fluid, said cylindrical chamber spacially occupying four quadrants centered about the central axis of said chamber having a common coordinate plane passing through the center of said inlet port; a rotor mounted eccentrically in the chamber for rotation in a predetermined direction about an axis disposed in a quadrant of said chamber situated contiguous to the center of said inlet port and extending therefrom in the direction opposite to the direction of rotation of the rotor, said rotor having a peripheral surface in spaced relation with said wall, said side wall providing elongated cavities respectively contiguous to each of said ports communicating therewith and extending circumferentially of the chamber in the direction of rotation of the rotor from their respective ports; fluid-sealing blade means mounted on the peripheral surface of said rotor adapted freely to pivot rearwardly of the direction of rotation of the rotor, yieldably engaging the side wall of the chamber in all positions of the rotors to form substantially fluid-tight rotary compartments for constraining the flowing fluid and imparting rotational impetus to said rotor; and fluid-sealing means mounted on the peripheral surface of said rotor proximately forwardly of the pivotal blade means adapted yieldably slidably to engage the wall adjacent to the inlet port in the direction therefrom opposite to the direction of rotation of the rotor and to block fluid flow through the chamber in the direction opposite to the direction of rotation of the rotor.

3,225,662

SUBMERGED SERVOMOTOR WITH PREFILL VALVE FOR GUILLOTINE TYPE PAPER CUTTING MACHINE

Carl Thumim, Westbury, N.Y., assignor, by mesne assignments, to Miehle-Goss-Dexter, Inc., a corporation of Delaware

Filed Aug. 26, 1960, Ser. No. 52,128
1 Claim. (Cl. 91—210)



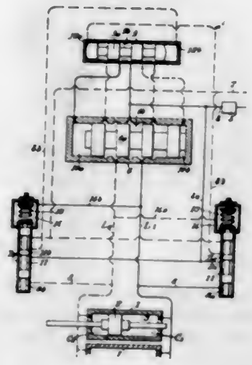
In a hydraulic system for the clamp of a cutting machine, tank for fluid, a hydraulic power cylinder disposed within said tank, means rockably mounting an end of said cylinder within said tank, said cylinder having a piston rod extending therefrom and movable therein and means for connecting said rod to a clamp for actuation thereof, and flexible tubing connected to said cylinder for effecting flow of pressure fluid with respect thereto, a prefill valve carried by said cylinder and disposed for submergence within said tank whereby fluid in said tank has access to said cylinder through said valve, said cylinder having a lower end in said tank and said prefill valve being secured thereto at said lower end and being openable by suction within said cylinder.

3,225,663

HYDRAULIC CONTROL SYSTEMS INCLUDING DOUBLE ACTION RECEIVER APPARATUS

Claude Georges Daniel Julien Pelisson, Sartrouville, France, assignor to Societe d'Exploitation des Materiels Hispano-Suiza, Seine, France, a society of France

Filed Apr. 6, 1964, Ser. No. 357,666
Claims priority, application France, Apr. 9, 1963, 930,942, Patent 1,361,466
3 Claims. (Cl. 91—305)



1. A system for controlling the reciprocating displacements of a piston in a cylinder divided by said piston into two working chambers which system comprises, in combination, a high pressure liquid inflow conduit, an outflow conduit, a reversing distributing valve mechanism including a casing having two different portions thereof in communication with said inflow and outflow conduits respectively and a valve member movable in said casing, two connecting conduits extending between two different portions of said casing and said working chambers, respectively, said valve member being switchable in said casing from one to the other of two positions, in one of which it places in communication one of said connecting conduits with said inflow conduit and the other of said connecting conduits with said outflow conduit, and in the other of which it reverses said communications, two detector devices each comprising a casing, a slide valve in said last mentioned casing adapted to divide it into several compartments two of which, a first one and a second one, are of variable volume, spring means between each of said detector device casings and the corresponding slide valve for resiliently opposing increase of the volume of said first compartment, conduit means for connecting said first chambers with said connecting conduits respectively, means operatively connected with said detector devices, with said high pressure inlet conduit and with said reversing distributing valve mechanism for switching said reversing distributing valve mechanism from one of said positions to the other in response to a rise of pressure in one of said connecting conduits, and conduit means for connecting the second compartment of each one of said detector devices with the connecting conduit corresponding to the other of said detector devices.

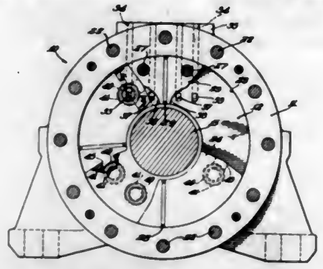
3,225,664

SNUBBING MEANS FOR ROTARY HYDRAULIC ACTUATORS

Rollin Douglas Rumsey, Buffalo, N.Y., assignor to Houdaille Industries, Inc., Buffalo, N.Y., a corporation of Michigan

Filed Jan. 9, 1964, Ser. No. 336,734
16 Claims. (Cl. 91—408)

1. In a rotary hydraulic actuator construction including a housing defining a working chamber having an abutment therein with a hydraulic fluid exhaust port in a wall surface defining the chamber adjacent to the abutment and located to be covered by a vane relatively oscillatably responsive to hydraulic pressure fluid within the working chamber to effect relative oscillation of the



housing and a wing shaft assembled therewith, the improvement comprising:

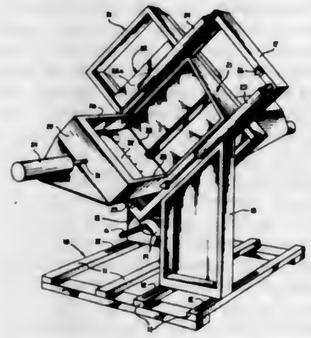
a snubber valve mounted in the vane and biased into sliding shear engagement with said wall surface for progressively closing off said port as the vane and abutment reach the limit of relative movement toward one another.

3,225,665

CONTAINER PARTITION ASSEMBLING APPARATUS

William E. Lovett, Acton, and George F. Harrington, Indianapolis, Ind., assignors to Economation, Inc., Indianapolis, Ind., a corporation of Indiana

Filed May 15, 1963, Ser. No. 280,553
8 Claims. (Cl. 93—37)



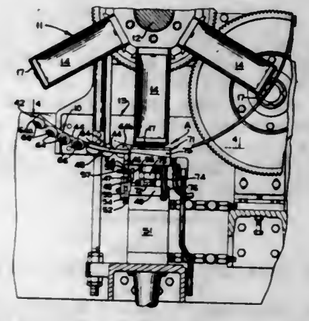
1. In an apparatus for making an assembly of cell partition members which have spaced slots along one margin, two magazine support frames mounted with their sides in spaced, parallel relation to each other, a magazine mounted upon each of said frames and adapted for rectilinear movement within the respective frame, the axes of movement of said magazines being at ninety degrees with each other, said magazines having planar, opposed faces with each opposed face having an elongated feed aperture sized to pass a single, partition member, the major axes of said apertures being transverse to the axis of motion of its respective magazine, a series of elongated guide members mounted on each of said magazine faces and disposed parallel to the axis of motion of their respective magazines, said guide members being generally V-shaped in transverse cross section with their bight facing the remote magazine face and their ends disposed closely adjacent the feed aperture of the magazine face to which they are attached, the guide members being spaced within each series a distance substantially equal to the distance separating the slots in the partition members, power means for moving said magazines within their support frames in increments substantially equal to the distance separating the slots in said partition members, each of said magazines having an element adapted to project a partition member through its feed aperture at the termination of each of said motion increments of said magazine, whereby partition members may be added in pairs to the cell partition member assembly as the incremental motion of said magazines proceeds, with said ends of said guide members at the feed apertures supporting partition members projected from their adjacent feed aperture and the bight of said guide members guiding the partition members projected from the remote feed aperture.

3,225,666

FLAP FOLDING APPARATUS

James L. Reimers, San Jose, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware

Filed June 26, 1963, Ser. No. 290,795
5 Claims. (Cl. 93—44.1)



1. A flap folding apparatus comprising a plurality of rollers each having an axis of rotation, first means supporting a first group of said rollers in a generally helical pattern, second means for supporting a second group of said rollers adjacent said first group of rollers in a second generally helical pattern with the helical pattern running in a direction opposite from that of said first helical pattern, the axis of rotation of an end roller in each group being directed downwardly and toward the associated end roller in the other group, the axes of rotation of the rollers on the opposite ends of each group being horizontal, and means for supporting and moving a carton having flaps to be folded past said rollers so that one flap engages one group of rollers and another flap engages the other group of rollers and are folded from extended positions to positions in substantially planar alignment.

3,225,667

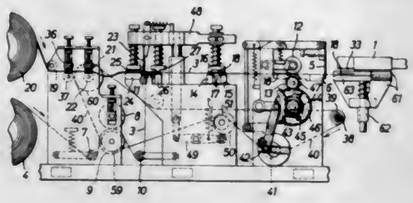
MACHINE FOR PRODUCING FOLDED BOXES

Martin Fuchs, Munster, Westphalia, Germany, assignor to Fr. Hesser Maschinenfabrik-Aktiengesellschaft, Stuttgart-Bad Cannstatt, Germany

Filed July 1, 1963, Ser. No. 292,022
Claims priority, application Germany, July 3, 1962, H 46,273
8 Claims. (Cl. 93—44.1)

2. A machine for producing folded boxes each having an inner lining bag and a cardboard reinforcing collar of U-shape in the lining bag, comprising, in combination, a mandrel wheel comprising a plurality of forming mandrels, apparatus comprising a pair of draw rollers for feeding in a horizontal plane to the forming mandrels a web of packaging material from a supply roll, apparatus for feeding towards the path of feed of the web of packaging material in a horizontal plane a web of cardboard from a supply roll, the width of which is equal

to the length of a reinforcing collar, a cutting device arranged along the path of feed of the web of cardboard and adjacent the path of feed of the web of packaging material for severing reinforcing collar strips from the web of cardboard, this device being so arranged relatively to the path of feed of the web of packaging material that the reinforcing collar strips are correctly positioned on this web, a device arranged along the path



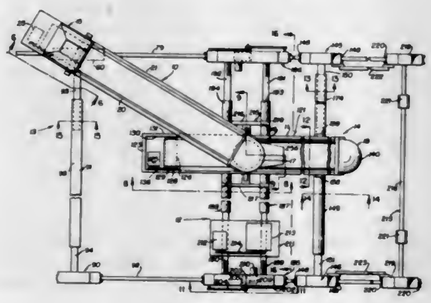
of feed of the web of packaging material for fastening the reinforcing collar strips to the web of packaging material at regular distances from one another, a cutting device arranged along the path of feed of the web of packaging material after the last-mentioned device for dividing this web into individual lining bag blanks, each with a reinforcing collar strip thereon, and a folding tool associated with the mandrel wheel for folding the lining bag blanks around the forming mandrels.

3,225,668

METHOD AND APPARATUS FOR DISTRIBUTING CONCRETE

Hamilton J. Maginniss, 563 Russell Road, Mansfield, Ohio

Filed Aug. 30, 1962, Ser. No. 220,412
13 Claims. (Cl. 94—46)



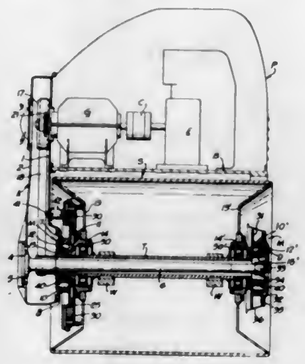
2. A concrete distributor comprising, a lead and lag conveyor assembly each capable of transporting concrete therealong and each having a discharge end, said lead conveyor assembly adapted to receive concrete from a supply source, said lag conveyor assembly adapted to discharge concrete onto a receiving surface, a main carriage assembly, said main carriage assembly having longitudinally movable lateral track means and a truck means laterally movable on said track means, said truck means supporting the discharge end of said lead conveyor assembly at all times in overlapping relationship with said lag conveyor assembly, a gudgeon means rotatably interconnecting said lead and lag conveyor assemblies for articulation, means on said main carriage to permit said lag conveyor to be displaced longitudinally of itself with respect to said main carriage and means at the discharge end of the lag conveyor to vibrate the concrete as it is discharge onto the receiving surface.

3,225,669

VIBRATING ROLLERS

Rowland Percy Green, Bath, England, assignor to Stothert & Pitt Limited, Bath, England, a corporation of the United Kingdom

Filed Nov. 1, 1961, Ser. No. 149,313
Claims priority, application Great Britain, Nov. 3, 1960, 37,881/60
11 Claims. (Cl. 94—50)



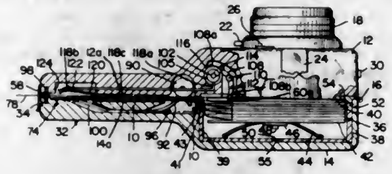
1. A self propelled vibratory roller comprising a roller shell having one unobstructed end and one other end and having end plates, each of said end plates having an opeing substantially centrally located therein; a central hub piece having an axial spigot mounted on each of said end plates; a hollow rotatable vibratory shaft mounted to revolve in said hub pieces in bearing relationship thereto; an end frame structure adjacent said other end of said roller shell and having an extension portion adjacent said roller shell; a power unit disposed on said extension portion; first drive means coupled to said power unit adjacent said end frame structure for imparting drive to said roller shell; second drive means coupled to said power unit adjacent said end frame structure for imparting drive to said vibratory shaft; a first and a second bearing means respectively rotatably mounting said axial spigots; and means supporting said bearing means on said end frame structure with said one end of said roller shell unobstructed, the means supporting said first bearing means at said unobstructed end of said roller shell comprising a cantilevered dead shaft having one end secured to said end frame structure and a free end extending through and projecting beyond said vibratory shaft, and a resilient mounting device secured to said free end of said cantilevered dead shaft and being coupled with said first bearing means, the means supporting said second bearing means at said other end of said roller shell comprising another resilient mounting device secured to said end frame structure and being coupled with said second bearing means, each of said resilient mounting devices comprising a pair of components, each pair including an outer component disposed relatively close to an adjacent end of said cantilevered dead shaft and an inner component spaced from said outer component toward the opposite end of said cantilevered dead shaft, both said components being disposed in planes at right angles to the axis of said roller shell, and rubber means interconnecting said inner and outer components, the outer component of one of said pairs of components being secured to said end frame and the outer component of the other of said pairs of components being secured to said free end of said cantilevered dead shaft, the one of said end plates at said unobstructed end of said roller shell being dished and the free end of said cantilevered dead shaft and the supporting means an bearing means at said free end of said cantilevered shaft lying within the dished end plate and said roller shell.

3,225,670

CAMERA APPARATUS

Melvin Friedman, Watertown, and Milton S. Dietz, Lexington, Mass., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

Filed Dec. 28, 1962, Ser. No. 248,092
14 Claims. (Cl. 95—13)



1. A miniature camera for use with film units of a type including a photosensitive area, a substantially rigid slide mount surrounding said area, a processing liquid releasably contained next to said area, and a leader for manually advancing each film unit linearly to a location outside of said camera, said camera being adapated to produce a finished transparency, ready-mounted for projection, and consisting of housing means constituting a first chamber for supplying and exposing at a focal plane a plurality of said film units in succession, means forming a narrow exit passage at one end of said first chamber of a width adapted to permit the individual removal of exposed film units from said chamber, housing means constituting a second chamber in which each of said film units is processed when drawn thereinto through said passage from said first chamber, said last-named housing means being of reduced front-to-rear dimensions relative to said first-named housing means so as to provide thereby a readily-held grip for picture-taking purposes, means pivotally connecting said first- and last-named housing means, a pair of compressive members mounted in said second chamber immediately adjacent to said passage from said first chamber between the adjacent surfaces of which each film unit is drawn so as to be compressed for releasing and spreading said processing liquid therewithin, platform and guide means in said second chamber for supporting and guiding said leaders and film units, and means forming an exit aperture for said film units leading exteriorly of the camera in said second chamber at an end opposite to that of said passage, said focal plane, passage, adjacent surfaces of said compressive means, platform means, and exit aperture lying substantially in a single plane so as to avoid deformation of said substantially rigid slide mount and displacement of film materials mounted therein.

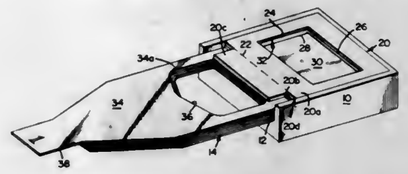
3,225,671

CONTAINING DEVICE FOR A PHOTOGRAPHIC FILM ASSEMBLY

Melvin Friedman, Watertown, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

Filed Dec. 28, 1962, Ser. No. 248,094
18 Claims. (Cl. 95—13)

1. A photographic film containing device adapted to be mounted in a camera for holding and successively supplying a plurality of photographic film units, each film unit comprising a laterally extending leader, said device comprising a container having a plurality of walls, a pressure plate dimensionally smaller than the internal dimensions of said container so as to be capable, when unopposed, of substantially free movement forwardly and rearwardly in said container, means for biasing said pressure plate forwardly toward the front of said container, fastener means releasably holding said pressure plate, in opposition to the bias of said biasing means, adjacent to a rear wall of said container, said fastener means being accessible to a force applied through contact with cooperating



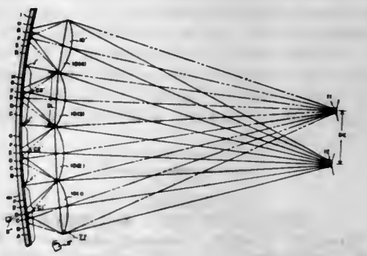
means located externally of said container for effecting a release of said fastener means to permit said movement of said pressure plate forwardly in said container toward a focal plane of said camera, and means forming an elongated aperture in a side wall of said container adjacent to the front thereof for accommodating the leaders of said film units.

3,225,672

STEREOSCOPIC PHOTOGRAPHING AND REPRODUCTION APPARATUS AND METHOD

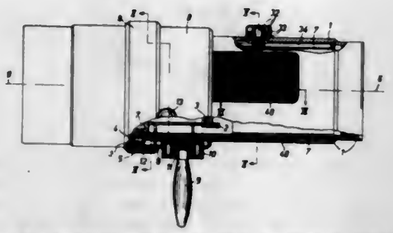
Wallace A. Clay, Box 120, R.F.D. 3, Ogden, Utah

Filed Oct. 2, 1961, Ser. No. 142,401
7 Claims. (Cl. 95—18)



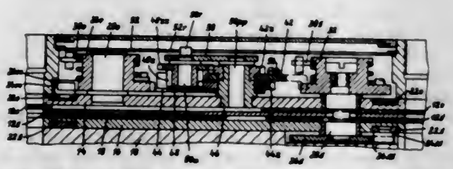
1. Camera apparatus for producing stereoscopically viewable panoramic scenes, said camera apparatus including, in combination, camera means including objective lens means, shutter means cooperatively disposed therewith, and exposable, image receiving means disposed rearwardly of said objective lens means and said shutter means; structure defiing a dark chamber, open at opposite ends, disposed proximate to said camera means, one end of said dark chamber structure being disposed about said objective lens means in light communicative relationship; a divergently viewing camera window fixedly disposed over the remaining end of said dark chamber structure and also over and in light communicative relationship with said objective lens means but spaced therefrom, said camera window comprising a multiplicity of juxtaposed, elemental, anamorphosizing lens means, mutally secured together in side-by-side relationship for equivalently compressing widthwise the respective light patterns of scene sectors passing therethrough, preparatory to their passage through said camera objective lens means for focusing thereby onto said exposable, image receiving medium juxtaposed, anamorphoses of sectors of the panorama viewed by said camera window, said elemental lens means being so constructed and arranged, and spaced from said objective lens means, to produce adjacent images which are stereoscopically related.

3,225,673
PHOTOGRAPHIC OBJECTIVE
Karl-Heinz Wöhner, Oberkochen, Wurttemberg, Germany, assignor to Carl Zeiss-Stiftung, doing business as Carl Zeiss, Heidenheim (Brenz), Wurttemberg, Germany, a foundation established under the laws of Germany
Filed Dec. 5, 1963, Ser. No. 328,383
Claims priority, application Germany, Dec. 7, 1962, Z 9,807
8 Claims. (Cl. 95—45)



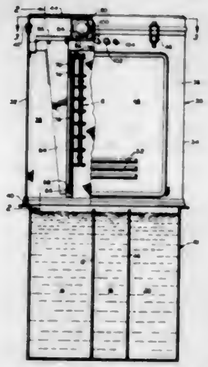
1. A photographic objective with a built-in adjusting device comprising an objective mount 2 connected with a cylindrical member 7, a tubular member 1 for fixed attachment to a camera, means for mounting said cylindrical member for axial movement without play in said tubular member, a ring 8 on said cylindrical member 7 arranged to move axially with the same and surrounding said tubular member 1, a tripod nut fixedly attached to said ring, a handle releasably attached to said tripod nut in such a manner that the thumb of the hand holding said handle is able to press against said tubular member so as to easily move said cylindrical member axially relative to said tubular member which is fixedly attachable to said camera, whereby during the movement of said thumb in axial direction of said tubular member an axial movement of said tubular member relative to the handle and the cylindrical member and the objective mount connected to the latter takes place.

3,225,674
PHOTOGRAPHIC SHUTTER
Peter Lermann, Munich, Germany, assignor to Compur-Werk Gesellschaft mit beschrankter Haftung & Co., Munich, Germany, a German firm
Filed Nov. 4, 1963, Ser. No. 321,173
Claims priority, application Germany, Nov. 7, 1962, C 28,357
11 Claims. (Cl. 95—63)



1. A photographic shutter comprising means defining an exposure aperture, a first blade system movable from closed position to open position with respect to said aperture to initiate an exposure, a second blade system independently movable from open position to closed position with respect to said aperture to terminate an exposure, drive means tending to move said second blade system from its open position to its closed position, latch means for latching said drive means to hold said second blade system open, and differential gear train means for releasing said latch means, said differential gear train means including an input member, a first sun gear operatively connected to said iput member to be driven thereby, a second sun gear operatively connected to said latch means to release said latch means by movement of said second sun gear, and planet pinion means meshing with both of said sun gears to drive the second sun gear from movement of the first sun gear, and means operative during movement of said first blade system from closed position toward open position for moving said input member of the differential gear train means, thereby to release said latch means so that said drive means may become operative to move said second blade system toward its closed position.

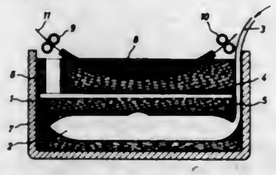
3,225,675
AUTOMATIC FILM PROCESSING APPARATUS
Dee H. Cross, 18891 Ansley Place, Saratoga, Calif., Frank J. Lohman, 940 Stoneburst Way, Campbell, Calif., and Frank R. Ward, San Jose, Calif.; said Ward assignor to said Cross and said Lohman
Filed Jan. 31, 1963, Ser. No. 255,300
2 Claims. (Cl. 95—89)



1. In a film processing apparatus including three tanks of processing liquids, a carriage mounted for horizontal sliding movement, a bracket mounted on said carriage to project downwardly therefrom, means supporting an endless sprocket chain for movement on said bracket so that at least one flight of said chain extends substantially vertically, means for suspending film from one link of said chain, motor means for moving said carriage horizontally, separate motor means for moving said sprocket chain, and means sequentially energizing said carriage-moving motor means and said chain-moving motor means so that film suspended from said chain is immersed successively in the first, second, and third tank, then back to the second of the tanks, and finally returned to its initial position over the first tank, said energizing means including an electric circuit having automatically-controlled multiple switch means for said motor means, said multiple switch means including a first switch means energizing said carriage-moving motor means in one direction, a second switch means energizing said carriage-moving motor means in the opposite direction, a third switch means energizing said chain-moving motor means in one direction, and a fourth switch means energizing said chain-moving motor means in the opposite direction.

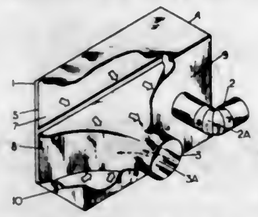
3,225,676
DEVICE FOR DEVELOPING OR FIXING EXPOSED PHOTOGRAPHIC PAPERS IN AUTOMATIC PICTURE TELEGRAPH EQUIPMENT
Reinhard Gesell, Kiel, Germany, assignor to Dr.-Ing. Rudolf Hell Kommanditgesellschaft, Kiel-Dietrichsdorf, Germany, a German company
Filed July 15, 1965, Ser. No. 472,369
1 Claim. (Cl. 95—89)

In automatic picture telegraph equipment, a device for developing or fixing exposed photographic papers comprising a hollow body serving as a buffer tank for the liquid, said hollow body being insertable into the developing or fixing tank with only little play between the walls, being fixable as to height and being provided with a hole or a valve in its bottom and with a short piece of pipe at its top side, an inflatable bag being situated between the bottom of the tank and the bottom of the hollow body, said bag, in inflated condition, sealing the hole or shutting the valve in the bottom of the hollow body and displacing the liquid being located between the bottom of the tank and the bottom of the hollow body, said liquid just filling the tank volume between said bot-



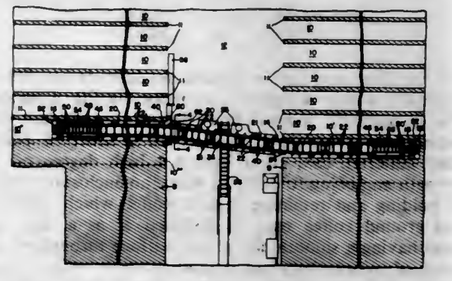
toms, into the tank volume above the hollow body to such an extent that the liquid flows into the short piece of pipe of the hollow body, thereby filling said hollow body with a quantity of liquid being sufficient for some hundreds of developing and fixing procedures, and said bag, in non-inflated condition, unblocking the hole or opening the valve in the bottom of the hollow body and clearing the tank volume below the hollow body for the liquid flowing back through the open hole or valve and along the side-walls of the tank, until the level of liquid has reached again the level of the bottom of the hollow body.

3,225,677
JUNCTION CHAMBER FOR EQUALIZING PRESSURE OF CONDITIONED-AIR SUPPLY INCORPORATING RETURNED-AIR DUCT
Richard M. Steele, P.O. Box 1121, Stockton, Calif.
Filed Oct. 10, 1963, Ser. No. 315,273
2 Claims. (Cl. 98—33)



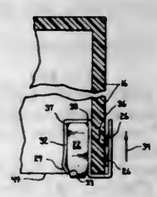
1. A combination comprising airtight, contiguous and congruous juncture of an air-conditioning unit with a junction chamber defining an interior reservoir volume with a top, bottom, front, back, and right and left sides, the said back side comprising two apertures adapted to conjoin said chamber to said air-conditioning unit in said combination, the first said aperture providing means to join said back side in said juncture with the section of the face of said combined air-conditioning unit whence a supply of conditioned-air is introduced through said first aperture under pressure to said interior reservoir volume within said chamber, a plurality of outlet ducts affixed in tapping attachment to said chamber providing conduct of said supply of conditioned-air from said interior reservoir volume, the second said aperture providing means to join said back side in said juncture with the section of the face of said combined air-conditioning unit to which air is returned, airtight means comprising a returned-air duct penetrating the said front side of said chamber and passing directly through the said interior reservoir volume of said chamber, sealed airtight at juncture of said penetrating and said front side of said chamber and at juncture to said second aperture of said back side, there terminating in fitting juncture with said second aperture and said section of said face of said air-conditioning unit in said combined combination.

3,225,678
MINE VENTILATION SCHEME
Neal W. Densmore, Franklin, Pa., assignor to Joy Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania
Continuation of application Ser. No. 196,706, May 22, 1962. This application July 10, 1964, Ser. No. 382,442
3 Claims. (Cl. 98—50)



1. A process of ventilating an underground mining plan including a main gallery having oppositely extending bore holes formed in the lateral confronting sides thereof comprising, moving the atmosphere from a bore hole being formed to a formed bore hole on the opposite side of such gallery by fans mounted at spaced portions in a conduit, initially separating certain of the particles in such atmosphere by the deceleration of such atmosphere in the formed bore hole, exhausting and cleaning such atmosphere from the formed bore hole by means of an additional fan and a filter, respectively, located in such gallery.

3,225,679
AIR DEFLECTOR
Christoph P. Meyer, 3860 Glencairn, Indianapolis, Ind.
Filed May 9, 1963, Ser. No. 279,217
3 Claims. (Cl. 98—103)

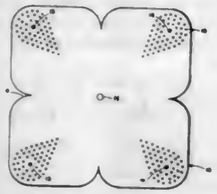


1. An air deflector comprising: a pair of spaced end walls joined by a third wall, each of said end walls having a linear marginal edge with the linear marginal edges of both of said walls lying in a common plane: a generally S-shaped spring clip having first and second channels opening in opposite directions, one of said channels having a floor and having punched spring fingers in a wall thereof with said fingers resiliently engaging a surface of one of said end walls and retaining said clip on said one end wall, said fingers extending from said channel wall in a direction toward said floor and said floor abuttingly engaging the said marginal edge of said one of said end walls; and a magnet disposed in the other of said channels and resiliently engaged and retained in said other of said channels by a wall portion of said other of said channels.

3,225,680
FILTER AND RETAINING DEVICE

Vincent W. Cirrincione, Rochester, N.Y., assignor to Andex Corp., Rochester, N.Y., a corporation of New York

Continuation of application Ser. No. 187,846, Apr. 16, 1962. This application Jan. 8, 1964, Ser. No. 340,580
2 Claims. (Cl. 99—312)

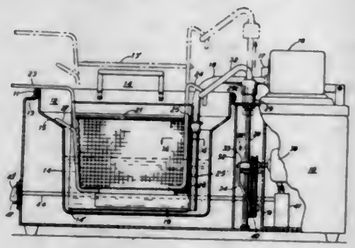


1. A filter and coffee ground retainer device for installation within a coffee percolator having a strainer and a centrally located fluid delivery percolator tube therein consisting in its entirety of a sheet of porous filter material, said sheet having a high degree of wet strength and being foldable to define an enclosure capable of holding and retaining ground coffee which enclosure and ground coffee may be disposed of as a unit, said sheet having a smooth, flat planar surface throughout and being of substantially square configuration with an opening in the center thereof, each corner of said sheet terminating in a rounded edge portion to eliminate excess material from said sheet in forming said enclosure, each corner having an aperture formed therein spaced inwardly from said rounded edge towards said center opening, each of said corners provided with a multiplicity of pierced perforations surrounding said aperture with the greatest number of said perforations being between said aperture and center opening, said sheet being positionable within said strainer with said tube extending through said center opening, said corners being foldable towards said tube to form an enclosure for coffee grounds with said tube being threaded through said apertures and said corners overlapping one another with the rounded edge of one corner overlapping only a portion of the perforations between the aperture and the center opening of the diametrically opposite corner to improve the porosity of the overlapping portion of said sheet of material and permitting the ready passage therethrough of the fluid from said tube whereby a smooth and even distribution of the fluid is obtained over the coffee grounds in said enclosure.

3,225,681
LIFT MECHANISM FOR DEEP FAT FRYERS

George F. Wells, San Francisco, Calif., assignor to Wells Manufacturing Company, San Francisco, Calif., a corporation of California

Filed Mar. 21, 1960, Ser. No. 16,467
10 Claims. (Cl. 99—336)

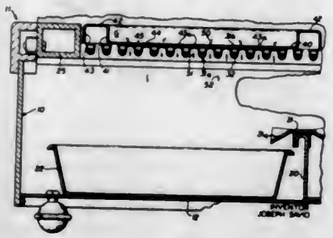


1. An automatic cooking machine comprising a housing having a well in the top thereof, a cooking tank removably mounted in said well, an electrical heating element disposed in the bottom of said tank, a foraminous basket removably disposed in said tank, and means for automatically lowering said basket into said tank and raising said basket out of said tank comprising a frame in said housing slidable along a generally vertical path adjacent one side of said tank and extending above the top of said tank, means for suporting said basket on said frame, a unidirectional electric motor, connecting means connecting said frame to said electric motor and operative to reciprocate said frame along said path when said motor is energized, a first electrical conductor adapted to be connected to a power source, a normally closed limit switch in said first conductor positioned to be opened when said frame is near the bottom of its vertical path, a second electrical conductor adapted to be connected to said power source, a normally closed limit switch in said second conductor positioned to be opened when said frame is near the top of said path, means for connecting one terminal of said motor to a source of electrical power, and a timing switch adapted to connect said first and second conductors alternately to the other terminal of said motor, said timing switch normally connecting said second conductor to said terminal but operative to connect said first conductor to said terminal for a predetermined period of time, said frame comprising two rods slidably mounted in said housing along parallel generally vertical paths adjacent to the side of said tank and extending above the top of said housing, a cross-piece connecting the tops of said rods and extending downwardly therefrom toward said tank, and a cross bar connecting a portion of said rods below the top of said housing, and said means for supporting said basket on said frame comprising a hook extending from said basket and adapted to engage said cross-piece, two generally vertically extending cam surfaces on said basket, and a generally horizontal bearing surface in said tank positioned to contact said cam surfaces.

3,225,682
GRIDDLE PLATE

Joseph Savio, Floral Park, N.Y., assignor to Electro-Char Corporation, New York, N.Y., a corporation of New York

Continuation of application Ser. No. 55,486, Sept. 12, 1960. This application Oct. 26, 1962, Ser. No. 233,472
1 Claim. (Cl. 99—446)



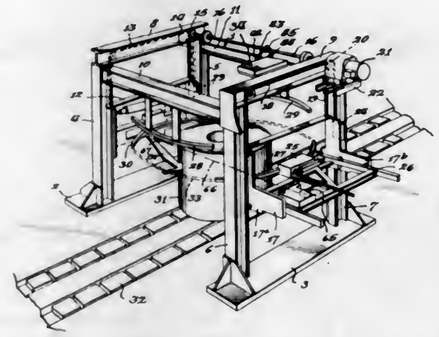
Electrified cooking apparatus comprising a frame having opposed end walls, a plurality of heating elements each comprising a generally straight hollow metal tube containing a heating wire, said tubes extending longitudinally between said end walls and being extended supportedly through said end walls, said wires extending out of said tubes and being electrically inter-connected, said tubes being thus supported in spaced, generally parallel relationship, the upper surfaces of said tubes being flat and generally coplanar, and a unitary, heat conducting griddle plate removably positioned on said upper surfaces of said tubes, said griddle plate being shorter than the distance between said end walls and being divided by laterally spaced longitudinal slots into flat strips extending in the direction of length of and resting flush upon

and of substantially the same width as and in one-to-one relation with said tube upper surfaces, each of said strips having flanges on each side thereof extending downwardly outwardly therefrom below the level of said top surface, said longitudinal slots terminating short of the respective ends of said plate, said plate also having an upstanding flange unitary therewith extending entirely around the periphery thereof.

3,225,683
STRAPPING MACHINE CONTROL

Donald W. Rhea, Glen Ellyn, Ill., assignor to Interlake Steel Corporation, a corporation of New York

Filed Mar. 17, 1964, Ser. No. 352,562
11 Claims. (Cl. 100—4)

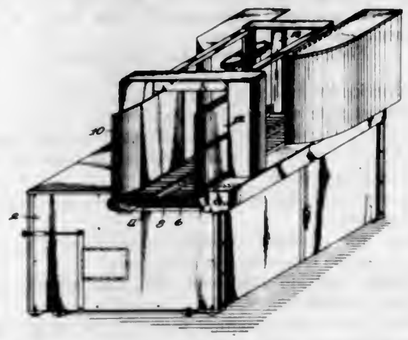


1. The combination in a strapping machine comprising, strapping means, a work piece support, means to raise and lower the strapping means relative to the work piece support, arresting means to arrest the lowering of the strapping means, and control means responsive to passage of the strapping means by the upper level of a work piece resting on the work piece support to cause the arresting means to arrest the strapping means at a predetermined level relative to the upper level of the work piece, said control means including a light sensitive relay and a light beam impinging upon said relay with the light beam directed to be interrupted by the work piece as the strapping means is lowered to thereby cause actuation of said relay.

3,225,684
MACHINE FOR TYING BUNDLES

Norman J. Smith, Benton Harbor, Mich., assignor to Signode Corporation, a corporation of Delaware

Filed Sept. 2, 1964, Ser. No. 393,887
17 Claims. (Cl. 100—4)

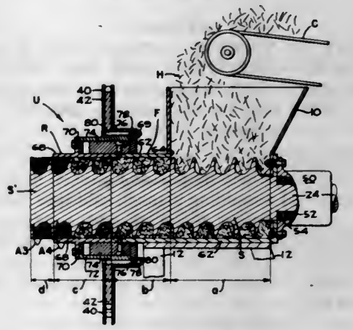


1. Apparatus for tying a stack of materials into a bundle including conveying means for moving the material to be bundled through a series of stations, side aligning means for squaring up the sides of the bundle, means for directing a wrapper beneath the stack, end aligning means for squaring up the ends of the stack, compressing means for compacting the stack, means for moving the stack into position to be clamped, means for clamping the stack, and means for directing and tying a ligature about the stack.

3,225,685
METHOD AND APPARATUS FOR WAFERING FIBROUS ORGANIC MATERIAL

William N. King, Los Gatos, and Arthur L. McGee, San Jose, Calif., assignors to FMC Corporation, San Jose, Calif., a corporation of Delaware

Filed July 19, 1963, Ser. No. 296,226
11 Claims. (Cl. 100—41)

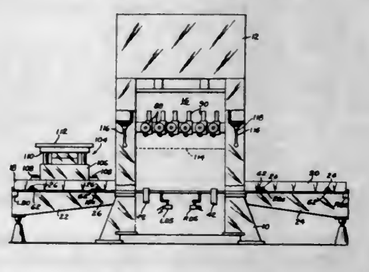


8. Material extruding and compacting apparatus comprising a rotatable screw of uniform diameter and flight depth, a fixed cylindrical casing surrounding an intermediate portion of said screw, a rotatable cylindrical casing forming a prolongation of said fixed casing and surrounding the delivery portion of said screw, means for rotating said screw in one direction, and means for rotating said rotatable casing in the same direction but at a slower speed, and means for adjusting the rotational speed of said rotatable casing relative to that of said screw.

3,225,686
PRESS WITH SLIDING BOLSTER AND DIE CLAMP

Albert Clements, Hamilton, Ohio, assignor to The Minster Machine Company, Minster, Ohio, a corporation of Ohio

Filed Aug. 30, 1963, Ser. No. 305,693
19 Claims. (Cl. 100—43)



1. In a sliding bolster press; a press bed having track means extending thereacross, support means extending from the bed and including track means linearly coplanar with the bed track means, bolster means having projections on the sides thereof and also having support rollers engaging said track means for movement or the bolster

means into and out of the press, said bed track means having vertically movable sections on which the rollers rest when the bolster means is in working position on the bed, said vertically movable sections also having clamping means adaptable for engaging said projections, there being at least four of said rollers and four said sections, an actuating arm for each section, shafts extending through the bed interconnecting each said arm on one side of the bed with an arm on the other side of the bed, links on each side of the bed interconnecting all of the arms on the same side of the bed, and a motor connected to said arms for the simultaneous actuation thereof, each said actuating arm being adaptable to lower and raise the pertaining vertically movable section to simultaneously lower and clamp the said bolster means to said bed and to simultaneously raise and unclamp said bolster means.

3,225,687

METHOD OF MAKING STEREOTYPE MATRICES AND BACKING SHEET FOR USE THEREIN

Charles Fritschi, 5427 Wynnefield Ave., Philadelphia, Pa.

Filed June 10, 1963, Ser. No. 286,603

8 Claims. (Cl. 101—17)

6. In the method of making a stereotype matrix in which a mat is formed by pressing a moist flong between a type form and a molding blanket, said type form having surface characteristics of image and non-image areas, whereby the flong is impressed with the surface characteristics of the type form, the steps which comprise

(1) placing between the flong and the molding blanket a back-sheet consisting of

(a) a single sheet of paper cross-creped to a thickness of about three to about five times its original thickness and indented on both facial surfaces with a plurality of crushable protuberances of substantially equal dimensions, the protuberances being uniformly spaced so that the convexities of the protuberances on either facial surface define the concavities between the protuberances on the other facial surface, the overall thickness of the backing sheet after indentation, measured from the tips of the protuberances on one facial surface to the tips of the protuberances on the other facial surface, being from about ten to about twelve times the original thickness of the paper before cross-creping, and

(b) an aqueously activated adhesive in a substantially tackless condition affixed to the uppermost portion of the protuberances on one facial surface and covering at least 50% of that surface so that the uppermost portions of the protuberances on the facial surface of the backing sheet having the adhesive thereto affixed are in substantial contact with the flong,

(2) applying sufficient pressure to impress the flong with the surface characteristics of the type form so as to form a mat, the protuberances of the backing sheet which are in image areas thereby being completely flattened while those which are in non-image areas are compressed to a thickness slightly exceeding the depth of the non-image areas, and the adhesive thereby being activated by the moisture squeezed out of the flong, and

(3) drying and forming the combined mat and backing sheet so as to perfect the bond between the two and provide adequate support in the non-image areas for subsequent casting, the drying and forming being performed under a force differential between the face of the mat and the back of the backing sheet to further compress the protuberances in the non-image areas until a substantially uniform level is obtained on the back of the combined mat and backing sheet.

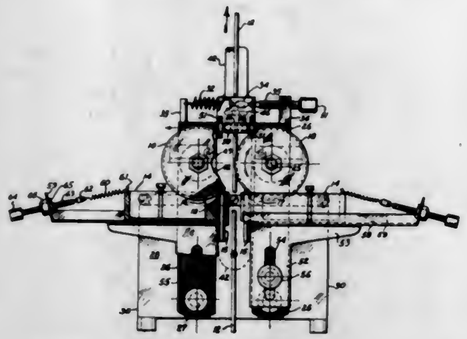
3,225,688

APPARATUS FOR PRINTING A SERIES OF INDICIA ON AN ELONGATED WORKPIECE

Duncan M. Gillies and Charles F. Spencer, West Boylston, Mass., assignors to Duncan M. Gillies Co., Inc., West Boylston, Mass., a corporation of Massachusetts

Filed June 8, 1964, Ser. No. 373,231

3 Claims. (Cl. 101—36)



1. Apparatus for marking a series of indicia on a longitudinally moving workpiece of indefinite length comprising a pair of opposed wheels, the periphery of at least one of which is provided with an intaglio engraving, and which are peripherally shaped to mark a contacting work piece moving there between, parallel horizontal axles for said wheels arranged on opposite sides of the work piece, means for guiding and moving the work piece upwardly between and in contact with the wheel peripheries and through a drying zone above the wheels, the peripheral portions of the wheels in contact with the work piece moving upwardly therewith, two separate ink pots located beneath the wheels, said wheels dipping into the ink in the pots, a horizontal table upon which each ink pot is movably mounted, two wheel periphery wipers, a support on each pot which holds one of said wipers in operative engagement with the upwardly moving peripheral portion of the associated wheel, means for moving each pot to cause the wiper thereon to engage the wheel periphery operatively for removing excess ink therefrom, and a wheel side wiper carried by and fixed relative to the pot which removes excess ink from each wheel side irrespective of said movement of the pot.

3,225,689

COMBINED FEEDING AND MARKING APPARATUS

Francis J. Fuchs, Jr., Princeton Junction, N.J., and William R. Wyatt, Greenville, S.C., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed Nov. 13, 1963, Ser. No. 323,400

1 Claim. (Cl. 101—44)

In a device for marking and feeding an article,

a support plate having a front face,

a printing member pivotally mounted on said support plate for movement toward and away from the front face of said plate,

type mounted on and projecting from said printing member,

means for resiliently holding said printing member against the face of said support plate,

a storage rack in alignment with said printing member for receiving an article,

a follower mounted within said rack for engaging an article fed into said rack,

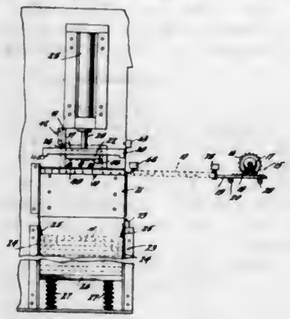
spring means mounted on the sides of said rack for retaining said article against said follower,

means for advancing an article between said printing member and said rack,

means actuated by the advancing means for moving the support plate and printing member to advance the type into engagement with said article to feed said article past said spring means and into said rack against said follower,

resilient means acting against said follower for opposing the movement of the article into said rack whereby said type moves into firmer engagement with said article,

lugs extending from opposite ends of the front face of



said support plate a distance less than the distance that the type projects from said support plate for restraining said article from lateral movement during feeding,

means responsive to the feeding of said article into said rack for reversing the movement of said plate and printing member,

means positioned in the path of movement of the printing member for engaging and pivoting said printing member against said resilient means and away from the face of the support plate, and

an ink pad positioned in the path of pivotal movement of the type on said printing member.

3,225,690

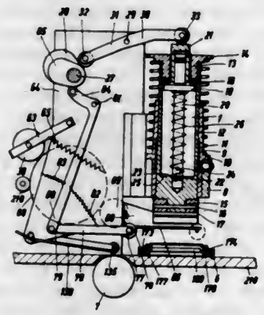
PRINTING MACHINE

Gert Saeger, Hamburg-Lensahl, Germany, assignor to John H. Stielow, Hamburg, Germany

Filed May 7, 1964, Ser. No. 365,599

Claims priority, application Switzerland, May 13, 1963, 6,063/63

9 Claims. (Cl. 101—48)



1. A printing machine for indicating information arranged on information printing plates, which comprises in combination a frame, a frame plate, a guide path for the information printing plates, which guide path is directed over the frame plate, a delivery magazine arranged at one end of the guide path and secured to the frame, a collection magazine arranged at the other end of the guide path and secured to the frame, conveyor means arranged on the frame and adapted to move so as to convey a printing plate from the delivery magazine to the guide path and further successively to move information printing plates located therein and to guide them to the delivery magazine, a printing ram, means mounting said ram on the frame for reciprocation perpendicular to said guide path between a raised position relative to the guide path, and a lowered printing position wherein said ram contacts a printing plate in the guide path, driving means for moving the printing ram between said raised and lowered positions, guide means mounted on the frame and adapted to guide material to be printed over the frame plate and under the guide path in the region of the printing ram, to permit transfer of the information on a printing plate located in the guide path to the material to be printed by actuation of the printing ram, said printing ram consisting of first and second relatively movable parts which are guided together and a spring disposed between the parts and adapted to urge them apart, said guide path being constructed of elastic material yieldable at least in the direction of movement of the printing ram and consisting of first and second rails which are supported on the frame plate in downwardly yieldable manner at locations remote from the region of the printing ram.

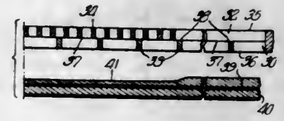
3,225,691

PRINTING PLATE FOR GASKET TYPE CLOSURES

Alfred W. Kehe, Berkeley, and Otto E. Heartstedt, Winnetka, Ill., assignors to Continental Can Company, Inc., New York, N.Y., a corporation of New York

Filed Mar. 10, 1961, Ser. No. 94,931

3 Claims. (Cl. 101—127)



1. A printing plate for depositing a flowable plastic gasket forming material on a sheet metal blank which is adapted to be formed into closure caps, said printing plate being formed from a thin sheet of solid metal and having an apertured circular printing area corresponding to the configuration of the gasket forming area and a center liner forming area within the gasket area, said printing area being etched so as to provide a series of radially extending apertures separated by radially extending ribs formations with the rib formations terminating at an apertured center grid formation, said rib formations and said center grid formation being etched away on the bottom forming side of the plate so that they are of lesser thickness than the body of the plate thereby to permit the deposit of the gasket material in a confined area corresponding to the gasket and liner forming areas when the plate is positioned with the bottom side on a cap forming blank and the gasket forming material is forced into the apertures and onto the blank.

3,225,692

CYLINDER AND SHAFT RELEASABLE CLUTCH MEANS

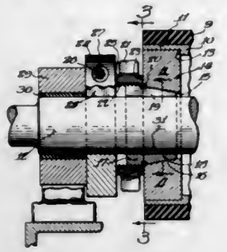
Gradie Oakes, 1200 W. Monroe St., Chicago, Ill.

Filed Feb. 15, 1963, Ser. No. 258,781

3 Claims. (Cl. 101—375)

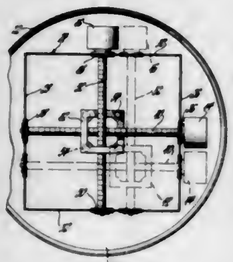
1. Releasable clutch means of the character described comprising, a shaft arranged to operate in bearings, a hollow cylinder positioned concentrically on said shaft and provided with frusto-conical bores at each of its ends, collar elements secured to said shaft and spaced with respect to said ends, resilient collet means slidably fitted on said

shaft and provided with a frusto-conical body portion adapted to engage said frusto-conical bores, and further provided with a threaded portion and a longitudinal



slotted portion, and nut means confined against lateral movement and threadably secured to said threaded portion which when rotated in one direction will cause integration of said shaft and cylinder.

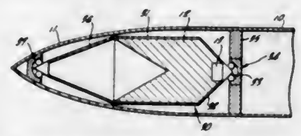
3,225,693
ROCKET VEHICLE ATTITUDE CONTROL
William Edward Cuttill, Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 5, 1961, Ser. No. 135,838
5 Claims. (Cl. 102—50)



1. A rocket vehicle comprising an elongated cylindrical body housing a rocket engine and fuel supply, payload carried by said body, said body having an axis that coincides with the thrust axis of said engine, said body having a center of gravity lying on the thrust and body axis and said payload having a fixed center of gravity normally lying on thrust and body axis whereby the center of gravity of said vehicle is normally on the thrust and body axis, and an attitude control for said vehicle comprising motor driven support means for shifting said payload laterally of said body in any direction to thus shift the fixed center of gravity of said payload from the thrust and body axis so that the center of gravity of said vehicle is likewise displaced from the thrust and body axis whereby the resultant torque applied to said vehicle by said engine causes a change in direction.

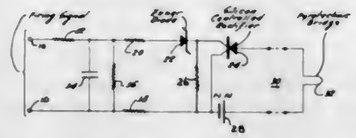
3,225,694
MISSILE
Gunnar P. Michelson, 505 Sea Ranch Drive, Santa Barbara, Calif.
Filed Jan. 20, 1964, Ser. No. 338,949
3 Claims. (Cl. 102—56)

1. A missile comprising a housing, a shaped charge having a forwardly opening recess, a container disposed around the shaped charge, the container including a cylindrical intermediate portion, a hollow front cone secured at its base to the front of the cylindrical portion of the container, a rear cone secured at its base to the rear of the cylindrical portion of the container, a detonator in contact with the shaped charge and rear cone, a nose secured to the housing and disposed around the cone to enclose the cone and shaped charge within the housing, and



separate bearings mounted on the housing to support the apex of each cone, the forward cone being mounted to receive the shock impact of the missile nose striking a target to transmit the shock to the detonator and ignite it.

3,225,695
PYROTECHNIC BRIDGE DETONATING CIRCUIT WITH ZENER DIODE CIRCUIT CONTROLLING SWITCHING OF SCR
Benjamin Kapp, Los Angeles, and R. Carr Wilson, Redondo Beach, Calif., assignors to Space Recovery Systems, Inc., El Segundo, Calif., a corporation of Delaware
Filed Aug. 4, 1961, Ser. No. 129,295
2 Claims. (Cl. 102—70.2)



1. A system for applying a preselected detonating current from a source of detonating current forming an integral part of an independent detonating circuit that comprises a pyrotechnic detonating bridge circuit, said detonating circuit being actuated by a normally electrically isolated switching circuit which is actuated by a firing voltage applied to said switching circuit from a source remote in space therefrom, comprising, in combination:

(A) an electrical switching circuit including,

(1) a low pass filter network having input and output terminals for passing without substantial attenuation at said output terminals all frequencies below a predetermined cut-off frequency appearing at said input terminals and blocking with substantially high attenuation at said output terminals all frequencies above said predetermined cut-off frequency, said low pass filter network including resistance and capacitance means connected in series across said input terminals with said capacitance means connected across said output terminals and a shunt resistor connected across said capacitance means and said output terminals:

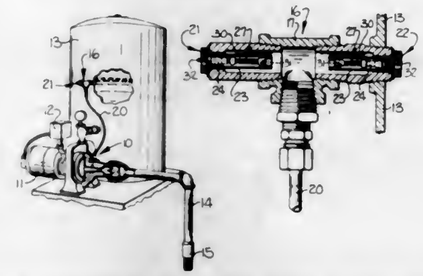
(2) a Zener diode circuit coupled to said output terminals including first, second and third resistor means connected in series across said shunt resistor, and a Zener diode including an anode connected in series with said first resistor means and a cathode connected in series with said second resistor means, said Zener diode having a high ratio of reverse to forward resistance until avalanche breakdown occurs at a predetermined avalanche breakdown voltage.

(3) means to apply a firing voltage from said remote source of firing voltage to said input terminals to produce said predetermined avalanche breakdown voltage across said Zener diode to drive said Zener diode into conduction for producing a switching voltage across said second resistor means proportional to said firing voltage, and

(4) a silicon controlled rectifier connected across said second resistor means including an input electrode connected between said second and third resistors means, an output electrode and a gate electrode connected in series with said cathode, said silicon controlled rectifier normally representing an open circuit to the flow of current and able to switch rapidly to a conducting state when said switching voltage is produced across said second resistor means; and

(B) a detonating circuit including a pyrotechnic detonating bridge circuit connected in series with a source of detonating current of predetermined value, said pyrotechnic bridge circuit connected in series with said output electrode and said source of detonating current connected in series with said input electrode so that said predetermined detonating current is applied to said pyrotechnic bridge circuit only when said silicon controlled rectifier responds to said switching voltage.

3,225,696
VALVE ARRANGEMENT FOR WELL PUMPS
Walter L. Brigman, 307 Eleby Road, Rockingham, N.C.
Filed Feb. 8, 1965, Ser. No. 431,073
5 Claims. (Cl. 103—6)



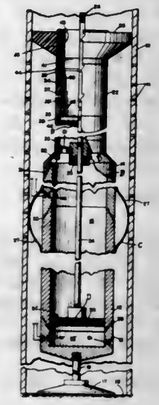
1. In combination with a water supply system having a pump with an ejector stage and a centrifugal stage operable in series and an air cushion pressure water tank for receiving water from the pump and supplying water under pressure to the system; means for maintaining the cushion within the water tank and reducing pump running load comprising:

first valve means operatively communicating with the atmosphere and the input side of the centrifugal stage of the pump and responsive to a predetermined pressure differential across the valve means for admitting air into the centrifugal stage to be carried by water flow into the tank to maintain the air cushion, and

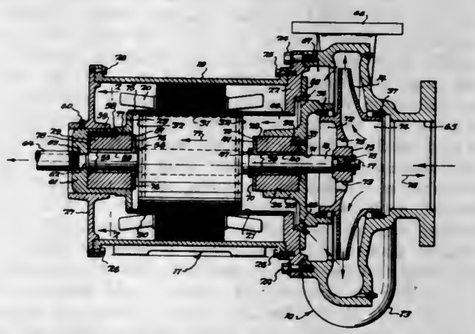
second valve means operatively communicating with the water tank below the air cushion and the input side of the centrifugal stage of the pump and responsive to a predetermined pressure differential across the second valve means for admitting water from the tank to the centrifugal stage to balance the pressures across the centrifugal stage.

3,225,697
LIQUID PUMP FOR DEEP WELLS
Kenard D. Brown, Denver, Colo. (1227 S. Willow St., Casper, Wyo.)
Filed Mar. 1, 1962, Ser. No. 176,594
12 Claims. (Cl. 103—25)

1. A liquid pump for deep well operation and the like comprising an elongated body having a cylindrical chamber therein, a piston in said chamber, an intake valve at the top of said chamber providing communication with the cutside above said chamber for admitting liquid to said chamber above said piston, a discharge valve at the top of said chamber, power means for lifting said piston, means dependent upon the accumulation of a predetermined quantity of liquid in said chamber above said piston for actuating said power means to lift said piston and discharge liquid through said discharge valve, and means dependent upon the discharge of said predetermined quantity of liquid for controlling said power means to stop the upward movement of said piston and initiate the return stroke thereof.



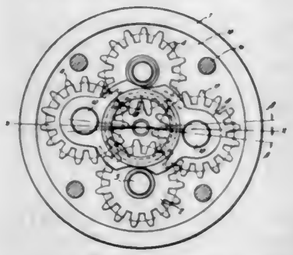
3,225,698
HERMETIC MOTOR-PUMP CONSTRUCTION
Daniel R. Spisiak, Depew, N.Y., assignor to Buffalo Forge Company, Buffalo, N.Y., a corporation of New York
Filed Nov. 29, 1963, Ser. No. 326,685
3 Claims. (Cl. 103—87)



1. A hermetic motor-pump unit comprising a housing, a motor including a rotor and a stator in said housing, a pump including an impeller in said housing, a shaft having first and second ends, said rotor being mounted on said shaft between said first and second ends, said impeller being mounted to one side of said rotor proximate said first end of said shaft, first and second bearing means for mounting said shaft on said housing, said first bearing means being located to one side of said rotor proximate said impeller and said second bearing means being located on the opposite side of said rotor from said impeller proximate said second end of said shaft, circuit means for conducting a portion of fluid which is pumped by said impeller across said rotor, orifice means in said housing located proximate said second end of said shaft, said orifice means being axially spaced on the opposite

side of said second bearing means from said rotor, and a taper formed relative to said second end of said shaft and axially spaced between said second bearing means and said orifice means for varying the effective opening of said orifice means in response to axial movement of said shaft relative to said orifice means to thereby vary the rate of fluid flow through said orifice means and thereby cause said shaft to cease axial movement when a first axial thrust force is produced on said rotor due to the pressure drop of fluid thereacross which is equal and opposite to a second axial thrust force which is due to rotation of said impeller, the location of said taper and said orifice means contributing to the existence of fluid at said second bearing means regardless of the flow through said orifice means.

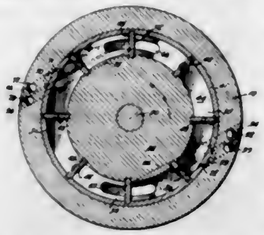
3,225,699
CONTROLLABLE HYDRAULIC PUMP OR MOTOR
Georg Wiggermann, Kressbronn (Bodensee), Germany, assignor to Reiners & Wiggermann Getriebe- und Maschinenbau, Kressbronn (Bodensee), Germany
Filed Aug. 20, 1962, Ser. No. 218,804
Claims priority, application Germany, Aug. 18, 1961, 30,957
9 Claims. (Cl. 103—120)



1. A hydraulic machine comprising a housing having inlet and outlet ducts for hydraulic medium, a closed train of gears comprising at least four gears defining a path through which said medium passes, means rotatably mounting at least one of said gears in said housing in radially fixed position, and means mounting another of said gears for variable displacement of said other gear in a direction transverse to the rotational axis thereof so as to vary the specific delivery quantity and direction of said medium passing through said gear train, at least each alternate gear in said gear train being variably displaceable in a direction transverse to the rotational axis thereof, each two adjacent mating gears of said train defining together two instantaneous circles of contact of variable diameters corresponding to variable depths of engagement of the meshing gear teeth thereof, and means for guiding the displaceable gears in said housing and for adjustably varying the size of said diameters in respectively opposite senses to a predetermined value so that radial displacement of a displaceable gear of said train in one direction results in a variation in an opposite direction of the depth of engagement of the teeth of the gear mating therewith.

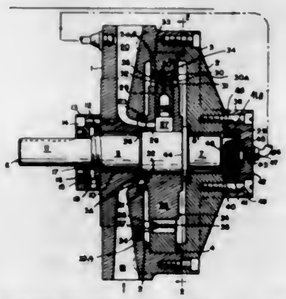
3,225,700
FLUID FLOW DEVICE
Edward T. Cech, Sr., Albuquerque, N. Mex., assignor to William Kaiser, Albuquerque, N. Mex.
Filed Oct. 3, 1963, Ser. No. 313,537
6 Claims. (Cl. 103—139)

1. A fluid flow device suitable for use as a pump or a motor comprising a casing having supply and exhaust ports, said casing having a chamber, a shaft disposed in said chamber and journaled in said casing, a rotor member mounted on said shaft in said chamber, said chamber having annular cam surfaces disposed on each side of said rotor member having parallel contours with portions thereof in sealing engagement with said rotor member defining at least one operating chamber on each side of said rotor, said rotor having a plurality of circumferentially spaced radial slots, a retainer ring mounted on said rotor having a plurality of axially extending recesses registerable with said radial slots in said rotor,



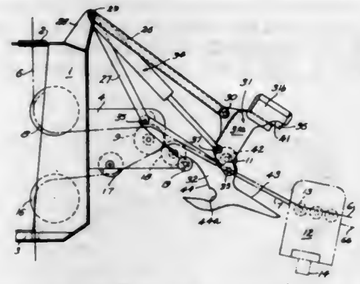
each of said radial slots in said rotor having an axially slidable vane mounted therein extending into a registered recess in said retainer ring and having the opposite edges thereof engaging said cam surfaces, said operating chambers having inlet and outlet ports, said device having fluid passage means communicating with said supply port and said inlet ports and said device having fluid passage means communicating with said outlet ports and said exhaust port.

3,225,701
HYDRAULIC PUMPS
Raymond C. Griffith, 12683 Arnold St., Detroit, Mich.
Filed Apr. 4, 1963, Ser. No. 271,050
19 Claims. (Cl. 103—161)



1. A fluid pump comprising a stator casing structure, a rotatable shaft extending through and supported by said stator casing, a rotor secured on said shaft, said stator casing having a chamber provided with an eccentric cam surface, said rotor having pumping chambers and pumping instrumentalities slidably contacting said cam surface and operable on rotor rotation to pump fluid into and out of said pumping chambers, said rotor and said casing having slidably contacting complementary faces disposed in a plane normal to the shaft axis, inlet and exhaust passages in said stator having intake and exhaust passages communicating with the pumping chamber and opening to said faces in timed alternate registration with the stator casing intake and exhaust passage openings, said casing having an end cap enclosing the end of said shaft disposed on the side of the rotor opposite to said faces, said end cap having a recess with its walls axially and radially spaced from the end of said shaft and a port communicating with the exhaust passage of said stator casing whereby to admit fluid pressure to the end of said shaft to provide sealing contact forces on said contacting faces, spring means compressed between the end of the shaft and said cap to provide pressure urging said faces into sealing contact when fluid pressure is lower at slow pump speeds, and a separate leakage sealing element in said cap recess circumferentially enclosing and contacting the end of said shaft and contacting the adjacent area of said casing through which said shaft end extends, said sealing element exposed to fluid pressure to be urged radially inwardly on said shaft end and axially against said casing adjacent area, and second spring means compressed between said cap and said sealing element to provide pressure urging said element and casing adjacent area into sealing contact when said fluid pressure is lower at slow pump speeds.

3,225,702
PANTOGRAPH-TYPE RECEIVING APPARATUS
James L. Hill, 2448 Hilltop Drive, Bremerton, Wash.
Filed Jan. 24, 1964, Ser. No. 340,109
7 Claims. (Cl. 104—114)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. Apparatus for receiving an object-carrying trolley secured to a suspended haul line and movable to a receiving station by said line along a suspended tension line, comprising,

first and second inboard level arms,

a first hinge means carried by said outrigger and pivotally supporting the inner ends of said inboard arms,

a first outboard arm having its inner end pivotally coupled to the outer end of said first inboard arm,

a second outboard arm having its inner end pivotally coupled to the outer end of said second inboard arm,

a second hinge means pivotally mounting the outer ends of said first and second outboard arms whereby said arms form a quadrilateral,

contractable buffering means having one of its ends pivotally coupled to said first hinge means and its other end coupled to one of said outboard arms proximate to said second hinge means whereby said buffering means extends substantially as a diagonal of said quadrilateral,

haul line support means for guiding an incoming trolley into close proximity with said second hinge means,

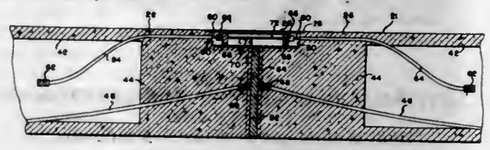
the outboard arms each having outer portions formed into toggled jaws adapted to open and close in response to contractions and expansions of said quadrilateral,

one of said outer portions being formed to receive and support said incoming trolley and the other outer portion being formed for pivotally closing about the trolley whereby said outer portions can pivotably trap and support the trolley,

the force of said incoming trolley directed against said second hinge means causing said quadrilateral to expand and said diagonal to contract, and

said buffering means resisting said contractions for cushioning said force.

3,225,703
MONORAIL BEAMWAYS
Eberhard Lemcke, Bellevue, Wash., assignor to Wegematic, New York, N.Y., a corporation of New York
Filed Sept. 18, 1963, Ser. No. 309,802
14 Claims. (Cl. 104—120)



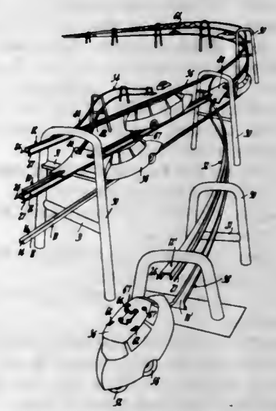
1. In a monorail transportation system:

(a) a series of adjacent, aligned, elongated continuous beams forming a vehicle supporting and guiding beamway;

(b) a plurality of longitudinally spaced beam-supporting columns intermediate the ends of each beam, said beam being longitudinally fixed with respect to said columns; and

(c) expansible means between the juxtaposed ends of adjacent beams to accommodate longitudinal movement therebetween including force transmitting means comprising a fluid filled cylinder mounted at the end of one beam and a cooperating piston mounted in said cylinder and secured to the juxtaposed end of an adjacent beam to provide a dashpot effect for longitudinal movement therebetween.

3,225,704
TRANSPORTATION SYSTEMS
Martin Gilvar and William L. Alden, Westboro, Mass., assignors to Alden Self-Transit Systems Corporation, Westboro, Mass., a corporation of Massachusetts
Original application Dec. 18, 1961, Ser. No. 159,930. Divided and this application July 16, 1964, Ser. No. 383,008
14 Claims. (Cl. 104—121)



1. In combination, a transportation system having two separate lines and a junction between said lines, each said line including a generally horizontal drive surface of indeterminate length and guide means including a generally vertically disposed guide surface coextensive with each said line,

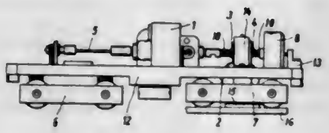
the vertically disposed guide surfaces of said two lines being aligned with one another adjacent said junction,

a vehicle adapted to engage said drive surface for movement therealong, and

guide follower means carried by said vehicle adapted to engage said guide surfaces for providing direc-

tional control of said vehicle while said vehicle is on said transportaiton system comprising a vertically reciprocable guide follower unit and control means for moving said guide follower unit between a lower position in engagement with one of said guide surfaces and an upper position in engagement with the second of said guide surfaces.

3,225,705
DRIVING ARRANGEMENT FOR ELECTRICAL TOY TRAIN
Hans Heinzl, Aulberstrasse 8, Reutlingen, Wurttemberg, Germany
Filed Jan. 3, 1964, Ser. No. 335,620
Claims priority, application Germany, Dec. 19, 1963, H 47,881
6 Claims. (Cl. 105—29)



2. A driving arrangement for the driving car of a toy train adapted to run on electrically conductive tracks comprising in combination

a support plate,

at least a pair of wheel frames supported on said support plate and carrying wheels engaging said tracks,

electric motor means fixed to said support plate and having a rotatable motor shaft,

said motor shaft having a first shaft extension at one side of said motor means and a second shaft extension at the other side of said motor means,

bearing means for said first shaft extension and said second shaft extension,

a wheel drive connected to said first shaft extension for driving the wheels of one of said wheel frames,

a guide frame for said second shaft extension,

a fly wheel connected to said second shaft extension,

a worm gear slidably mounted on said second shaft extension and received in said guide frame,

said worm gear having a longitudinal groove in its inner surface facing said second shaft extension,

a projection on said second shaft extension engaging said groove in said worm gear,

abutment means fixed to said second shaft extension at opposite sides of said worm gear,

spring means disposed between said worm gear and said abutment means,

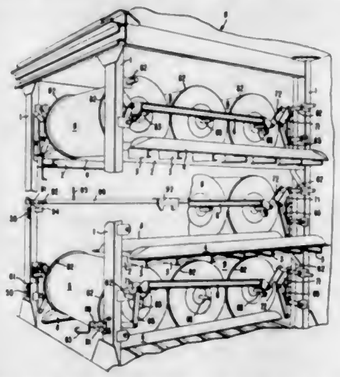
a gear wheel mounted on another wheel frame and coupled with said worm gear,

and rack means associated with preselected portions of said tracks,

said gear wheel rotating constantly during operation of said motor means and engaging said rack means over said preselected track portions to support said wheel drive of said one wheel frame.

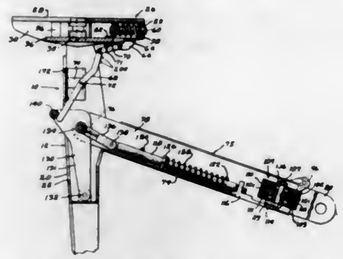
3,225,706
BEAM RACKS FOR RAILROAD CARS
William Henry Bogar, Newark, Del., Edward Lewis Davis, Chicago, Ill., Robert Leo Hassenauer, Chicago Heights, Ill., Paul John Pakurar, Wilmington, Del., and James Claude Ruffolo, Chicago, Ill., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Nov. 16, 1962, Ser. No. 238,096
8 Claims. (Cl. 105—367)

1. In combination with a railroad freight car having a longitudinal dimension generally corresponding to the direction of travel of the car, a given width and a given height, said freight car comprising a main body unit supported on wheeled trucks, a slidable drawbar assembly extending longitudinally through said body unit and provided with car coupling devices, a shock absorber mechanism cooperating with said drawbar assembly and the main body unit to cushion longitudinal impacts and forces transmitted to the main body unit by the drawbar assembly, said car further comprising a housing secured on said main body unit and enclosing a space for freight, said housing comprising opposed end walls, a longitudinally extending roof structure, and opposed longitudinally extending side walls, said side walls formed by a plurality of movable door members constructed and arranged to permit direct lateral access into the space for freight from either side at any longitudinal position along the car length; an improved frame structure mounted in housing structure for handling and supporting a plurality of beams, of the type comprising a central elongated shaft structure and two axially spaced opposed annular rim elements carried by said shaft structure, said frame structure also adapted to secure the beams against movement relative to the car and each other during movement of the car, said frame structure constructed and arranged to support and secure said plurality of beams in a plurality of groups at longitudinally spaced positions along the car, the beams of each group having their axes parallel to



each other and substantially parallel to the longitudinal dimension of the car and the direction of car travel, the beams of each group being supported by substantially flat rail members of said frame structure in aligned rows extending vertically and laterally across the width of the car at each longitudinally spaced position for direct lateral loading and unloading of individual beams from the car from either side and both sides thereof at each of said longitudinally spaced positions, said improved frame structure comprising a plurality of vertical support members mounted at longitudinally spaced locations in said housing, a plurality of sets of vertically spaced superimposed substantially horizontal parallel rail members mounted on said vertical support members and extending laterally across the width of the car at each of said longitudinally spaced positions to form a series of vertically aligned horizontal guideways extending across the width of said car between said side walls of the housing, each guideway constructed and arranged to engage and support for rolling engagement therewith a plurality of parallel laterally aligned beams with the beam axes substantially parallel to the length of the car and its direction of travel of the car, said frame structure provided with abutment means positioned to cooperate with said beams to prevent axial movement of the beams longitudinally of the car, said frame structure further provided with releasable means adjacent each guideway for engagement with the shaft structure of beams supported on said guideway to positively secure such beams in position on said guideway and prevent vertical and lateral movement of such beams with respect to the guideway.

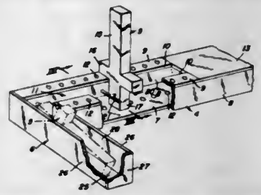
3,225,707
COLLAPSIBLE SUPPORT
Dallas W. Rollins and Earl L. Fischer, St. Charles, Mo., assignors to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed Nov. 18, 1963, Ser. No. 324,461
14 Claims. (Cl. 105—368)



1. A fifth wheel stand adapted to engage a kingpin of a trailer or the like, said fifth wheel stand comprising a support structure movable between a collapsed inoperative position and a raised operative position, said support structure when in raised position having a generally vertical support member and a diagonal support member connected to the vertical member on the side thereof adjacent the trailer or the like, a fifth wheel plate structure carried by said vertical support member and including latch means adapted to cooperate with the kingpin of a trailer or the like to secure same, said diagonal member being movable between an extended position in the raised position of the support structure and a retracted position in the collapsed position of the support structure, means movable between locked and unlocked positions for releasably locking the diagonal member in extended position and permitting movement of the diagonal member to retracted position only when unlocked, said vertical and diagonal members being mounted for pivotal movement adjacent their lower ends upon movement of the support structure between collapsed and raised positions, said vertical support member and said fifth wheel plate structure swinging in a rearward direction toward the trailer upon collapsing of the hitch from raised position, the lower pivoted ends of the vertical and diagonal members being spaced horizontally from each other and remaining at such spacing upon movement of the support structure between raised and collapsed positions said diagonal member comprising laterally spaced associated pairs of telescoping arms having openings in each pair of associated arms which are aligned when the arms are in extended position, said means for releasably locking the diagonal member comprising locking pins positioned within said aligned openings in the extended position of the arms, means to bias the locking pins into locking position within the aligned openings, and means to guide the associated telescoping arms into extended position with said openings being aligned whereby said locking pins are received within the aligned openings for locking the fifth wheel stand in raised position.

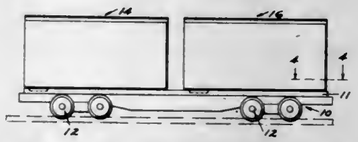
3,225,708
ADJUSTABLE SIDE STAKE
Keith L. Holman, Payson, Utah, assignor to United States Steel Corporation, a corporation of New Jersey
Filed June 6, 1963, Ser. No. 286,079
3 Claims. (Cl. 105—380)

1. In staking apparatus for restraining loads against movement over a floor, a hollow box-like socket in said floor comprising a base plate spaced below the surface level of said floor, a pair of side plates projecting upwardly from opposite edges of said base plate, and a pair of laterally spaced plates projecting inwardly from the upper edges of said side plates and respectively forming a part of the said surface of said floor, said surface plates having inner edges defining an elongated opening therebetween, a stake insertable in said opening in selectably adjustable positions along the length thereof in which its lower end has abutting engagement against said base plate, said stake having a thickness not greater than the distance between the said inner edges of said surface plates, side bars projecting from opposite sides of said



stake and overlying said surface plates for abutting engagement therewith when said stake lower end engages said base plate, anchoring pins projecting downwardly respectively from said side bars and said stake lower end, and openings at spaced intervals along the length of each of said surface plates and said base plate in which said anchoring pins are received when said stake is inserted in said opening to a position with said side bars and stake lower end in abutting engagement respectively with said surface plates and said base plate, said anchoring pins and openings cooperating to hold said stake against movement out of the selected position in which it is inserted in said socket opening.

3,225,709
END LOADING CARGO VEHICLE
Lynn M. Francis, 21611 Raymond, St. Clair Shores, Mich.
Filed June 20, 1962, Ser. No. 203,882
2 Claims. (Cl. 105—455)



1. A railroad freight car consisting of the combination of a frame and a permanent body including at least one cargo container;

means mounting the container on the frame in a normal longitudinally aligned relation therewith, said mounting means including pivot means connecting one end of the container to the frame for swinging movement about a vertical axis and for limited rocking movement in a direction transverse to the axis;

a loading opening in the end of the container opposite to the end pivotally connected to the frame;

fixed supporting means carried by the frame for engagement with the container adjacent the loading end thereof to prevent swinging movement about said axis comprising at least a pair of upwardly projecting members carried by said frame, and sockets on the underside of the container adapted to be engaged by the upper portion of said members;

roller supporting means carried by the frame for engagement with the underside of the container adjacent the loading end thereof;

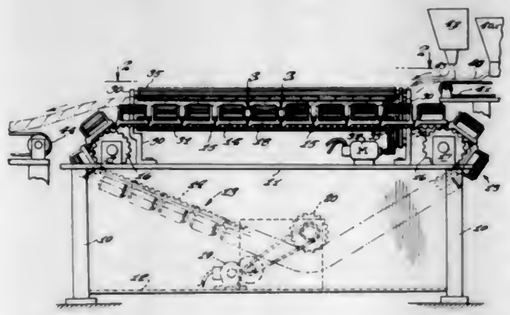
means for vertically moving one of said supporting means relative to the other to transfer the support of the loading end of the container from one supporting means to the other, such relative movement being accompanied by rocking movement of the container transverse to the pivot axis, said means for relatively moving the fixed and roller supporting means comprising jack means for moving the roller supporting means upwardly into engagement with the undersurface of the container to raise the loading end thereof out of engagement with said fixed supporting members; and

means for swinging the container about the pivot axis on said roller supporting means from a normal longitudinally aligned position relative to the frame to an angular position in which the loading opening of the container is accessible from a loading platform alongside of the car, said pivot means being so located relative to the frame and the pivoted end of the container that the side of a container opposite the loading platform does not project into interfering relation with movement of another freight car on an adjacent track when the container is swung to an angular position for loading or unloading.

3,225,710
PASTRY CONVOLUTING DEVICE

Leonhard Schafer, 113 E. 125th St., New York, N.Y.

Filed Apr. 15, 1964, Ser. No. 359,938
5 Claims. (Cl. 107—9)



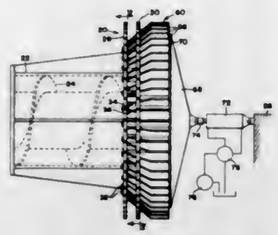
1. A device for continuously convoluting a strip of pastry dough having jam disposed centrally thereon comprising a frame having a top horizontal platform; a pair of opposed stanchions secured to said platform; a longitudinal motivated gear supported by said stanchions; a sprocket driven conveyor belt comprising a plurality of rack units linked together, each of said rack units having a rack to engage said sprocket, a pair of suitably spaced-apart fluted rollers and actuating gear means engaging said rollers and engaging said longitudinal gear whereby when said strip is disposed obliquely upon and between said rollers it is carried forward by said rollers while being convoluted by the rotation of said rollers.

3,225,711
WAFERING DIE

Murray W. Forth and Roy E. Harrington, Moline, Ill., assignors to Deere & Company, Moline, Ill., a corporation of Delaware

Filed Jan. 2, 1962, Ser. No. 163,408
15 Claims. (Cl. 107—14)

1. Die structure for a wafering machine, comprising: support means including an annulus having a pair of closely coaxially spaced apart ring-like side members and a plurality of uniformly circumferentially spaced generally radial spacers rigid with and interposed between the members and providing a like plurality of generally radial die cells having inlet and outlet ends arranged respectively in concentric circumferential rows, said inlet ends being adapted to receive material for radial passage through the cells to emerge as wafers at said outlet ends and said cells respectively having interior radial surfaces terminating at said outlet ends to afford frictional resistance to the passage of such material; additional resistance means arranged concentrically adjacent to the row of outlet ends of the cells and having frictional surface portions equal in number and circumferential spacing to the cells; means mounting said additional resistance means

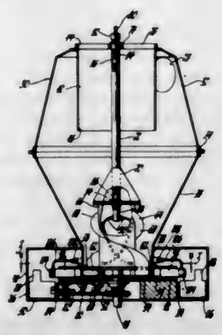


on the support means for movement between a minimum position in which said surface portions are respectively offset from and exteriorly of the aforesaid surfaces of the die cells and generally clear of emerging wafers and a maximum position in which said surface portions lie respectively in parallelism with the line of material passage and in radial register with said die cell surfaces and radially beyond said outlet ends so as to present radial extensions of said die cell surfaces for frictional contact with the emerging wafers while retaining the cross-sectional areas of the respective cells; and means operatively connected between said additional resistance means and the support means for moving said surface portions between said positions.

3,225,712
HAY WAFERING APPARATUS

Stanley L. Lawrence, Livonia, Mich., assignor to Massey-Ferguson Inc., Detroit, Mich., a corporation of Maryland

Filed Aug. 23, 1962, Ser. No. 218,964
7 Claims. (Cl. 107—14)



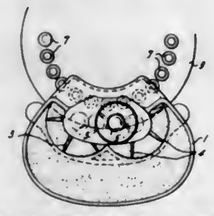
1. In an apparatus for making compressed hay wafers, and of the type having an annular series of die cells including entrance ends thereof circumferentially spaced about and communicating with a wafering chamber in which there is mounted a rotary hay compaction means for compacting hay received within said chamber into

and through said die cells to form wafers; the improvement comprising a feed hopper having one end thereof communicating with said chamber, rotatable feed auger means mounted within said hopper and including a hollow hub having one end thereof drivingly connected to said rotary hay compaction means for rotation therewith, a plurality of auger flights secured to the exterior of said hub for feeding hay therealong from said hopper into said chamber, and moisture supply means including a plurality of moisture supply conduits corresponding to the number of said auger flights disposed within said hub and discharging exteriorly of the latter adjacent and in advance of the rotative paths of said respective auger flights to supply moisture to hay traveling therealong to said chamber.

3,225,713
MATERIAL FEEDING DEVICE FOR TABLETING MACHINES AND THE LIKE

Otto Kruse, Elchenweg, Schwarzenbek, Germany, assignor to Wilhelm Fette, Schwarzenbek, Germany

Filed Sept. 25, 1962, Ser. No. 226,031
Claims priority, application Germany, Sept. 26, 1961, F 35,006
8 Claims. (Cl. 107—17)



1. For use in a tableting machine, or the like, in combination, a hopper adapted to contain a particulate material and having a bottom formed with an outlet through which the particulate material is adapted to be discharged from the hopper; a pair of rotary, bladed wheels located in said hopper closely adjacent to said outlet and respectively having blades which interfinger during rotation of said wheels, the blades of said wheels having bottom edges closely adjacent to said bottom of said hopper and said blades being inclined with one face of each blade directed toward and the other face of each blade directed away from the bottom of the hopper and said one face of each blade leading said other face thereof in the direction of rotation of said wheels so that particulate material located in a mold directly beneath said outlet will be compressed by the movement of said one face of each blade across said outlet; and drive means operatively connected to said wheels for rotating them respectively in opposite directions with said one face of each blade leading said other face.

3,225,714
DOUGH-MOULDING MACHINES

Edward Stanley Gaskell, Highbury, Milton Grove, Orrell Mount, Wigan, Lancashire, England

Filed May 2, 1963, Ser. No. 277,565
Claims priority, application Great Britain, May 5, 1962, 17,364; Apr. 4, 1963, 13,339
8 Claims. (Cl. 107—19)

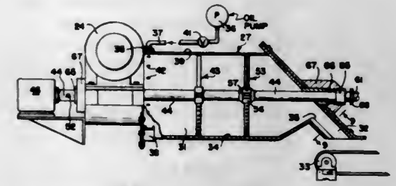


1. A moulding machine of the class described having a gyratory frame member and a moulding ring or cup supported on said frame member for gyration therewith to knead or work dough pieces, characterized in that the interior and moulding wall of said ring or cup is provided with a plurality of spaced apart substantially convex ribs with intermediate concave undulations, said ribs extending axially of said ring or cup and being convex in cross-section transversely of said ribs, and extending substantially from the top to the mouth or bottom of said ring or cup as dough-working formations.

3,225,715
APPARATUS FOR PRODUCING ROLL-IN TYPE DOUGHS

John A. Page, Minneapolis, Minn., assignor to General Mills, Inc., a corporation of Delaware

Filed Mar. 19, 1962, Ser. No. 180,614
7 Claims. (Cl. 107—30)

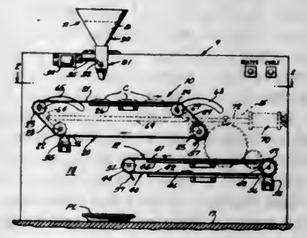


7. An apparatus for processing pastry dough which comprises a dough extruder having a chamber and an outlet, means for forcing dough through said chamber to the outlet of said extruder, a shortening dispenser mounted in said chamber and having a series of nozzles for distributing shortening in said dough, and means mounted in said chamber for agitating said dough as said dough moves through said chamber and having a series of apertures communicating with the ambient atmosphere to discharge air which is entrapped under pressure in said dough.

3,225,716
GRIDDLE CAKE COOKING APPARATUS

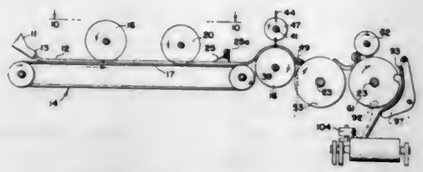
Robert J. Krooss, Mountain Lakes, N.J., and Robert L. Saxe, New York, N.Y., assignors of fifteen percent to Leo C. Krazinski, New York, N.Y., and twenty-five percent to Robert J. Krooss

Filed Aug. 9, 1963, Ser. No. 300,969
13 Claims. (Cl. 107—57)



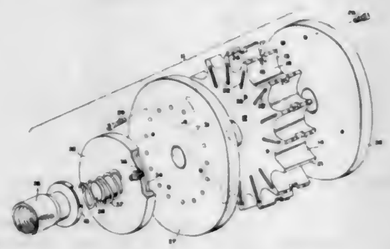
1. In apparatus for cooking griddle cakes, the combination of an endless conveyor serving as a griddle for cooking one side of the cakes thereon, means for supporting said conveyor to provide a horizontal strand and a side strand at one end of said horizontal strand having an inclined upwardly facing surface, and means for normally retracting said supporting means to maintain said surface of said side strand facing upwardly and for selectively shifting said upwardly facing surface into an inclined downwardly facing position to turn over and deliver cakes having one side cooked.

3,225,717
DOUGH CURLING DEVICE
John A. Page, Minneapolis, Minn., assignor to General Mills, Inc., a corporation of Delaware
Filed Mar. 27, 1962, Ser. No. 182,730
5 Claims. (Cl. 107—69)



1. An apparatus for molding dough cylinders from a sheet of pastry dough which comprises means for scoring said sheet along its length to produce a score mark, means for severing a segment of dough from said sheet, means for engaging an edge of said segment to turn said segment back upon itself along said score mark to form a cylinder of dough and a drum having a pocket for capturing a cylinder of dough and for discharging said cylinder of dough out of engagement with said engaging means.

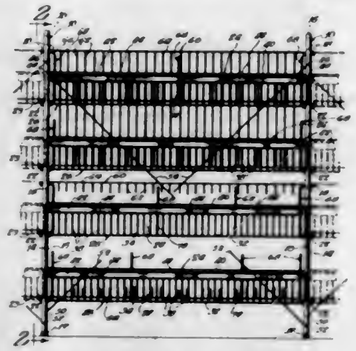
3,225,718
ROLL CUTTER
John A. Page, Minneapolis, Minn., assignor to General Mills, Inc., a corporation of Delaware
Filed Aug. 3, 1962, Ser. No. 214,616
7 Claims. (Cl. 107—69)



1. A dough forming apparatus comprising a first conveyor for moving a dough rope along the longitudinal axis of the rope, engaged rotary cutters positioned near said first conveyor, each of said rotary cutters having severing blades and scoring blades, said first conveyor advancing the dough rope between said cutters, the scoring blades of each of said cutters contacting along a portion of their length the respective scoring blades of another of said cutters to score the dough rope advanced between the cutters and the severing blades of each of said cutters contacting along their entire length the respective severing blades of another of said cutters to sever sections of the dough rope advanced between the cutters, and means positioned near said engaged cutters for removing scored and severed dough sections from between said engaged cutters.

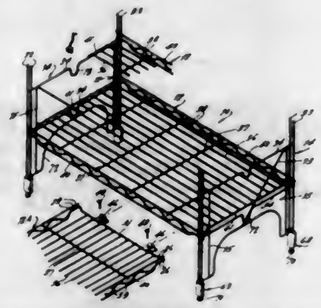
3,225,719
DISPLAY AND STORAGE SHELVING
Howard J. Marschak, 1544 W. Elmdale Ave., Evanston, Ill.
Filed June 27, 1962, Ser. No. 205,620
5 Claims. (Cl. 108—61)

1. A display and storage shelving comprising a plurality of supporting members each having spaced front and rear legs, said rear legs having a plurality of spaced clip members each extending laterally thereof and providing an eyelet, said front leg having spaced brackets extending laterally thereof, a shelving member having a base and an upwardly extending front, with said base formed of spaced longitudinal and transverse wires with the opposite end transverse wires having their rear ends bent to form hooks, which hooks are detachably interlocked with said clip members laterally of said rear leg, and with the front end of said base of said shelf detachably secured to said brackets laterally of said front leg so that said shelving is supported by and between said supporting members, said upwardly extending front of said shelf having spaced vertically extending wires which are bent intermediate their ends to form a generally V-shaped front end, a separate back section formed of spaced horizontal wires and a plurality of transverse wires



secured at spaced intervals to said horizontal wires, said horizontal wires having their opposite ends bent to form hooks for detachable engagement with said clips on said rear leg laterally of said rear leg, and a divider, said divider comprising spaced horizontal wires and a plurality of transverse wires secured at spaced intervals to said horizontal wires, the bottom said horizontal wire having its end bent to form a hook which is detachably interlocked with one of the longitudinal wires on said base of said shelving, said divider having spaced means extending forwardly thereof for detachable securement to said upwardly extending front of said shelf above and below the intermediate bend of said vertically extending wires.

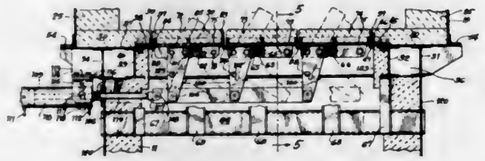
3,225,720
CORNER BRACE
Louis Maslow, Huntsville Road, Dallas, Pa.
Filed May 3, 1963, Ser. No. 277,923
2 Claims. (Cl. 108—64)



1. A shelving assembly comprising a horizontal open frame shelf and spaced vertical frame supports mounting said shelf substantially at each end thereof, an additional horizontal open frame shelf mounted in right angular relation to said first frame shelf, means releasably securing one end of said additional shelf in braced relation to said

first mentioned frame shelf, and a spaced vertical frame support mounting the other end of said additional shelf, said frame shelves including parallel sides and opposite transverse ends, said sides comprising pairs of spaced ribs, said bracing means interengaging one transverse end of said additional shelf and one pair of spaced ribs on said first mentioned frame shelf, the spacing of said ribs being perpendicular to the plane of the frame, and said bracing means having complementary portions engageable with said perpendicularly spaced ribs, said bracing means comprising a substantially U-shaped clip having a bight and a pair of arms extending therefrom, said bight being engaged with said additional shelf and said arms being provided with companion confronting portions which engage said perpendicularly spaced ribs, one of said arms extending in straight linear relation to its free end, the other of said arms having a first portion extend from said bight in substantially parallel relation to said one arm and a second portion between said first portion and the associated free end, said second portion extending obliquely outwardly from said first portion.

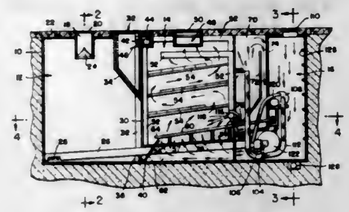
3,225,721
DUMPING REFRACTORY HEARTH FURNACE
Harold A. Rowley, Palos Heights, Ill., assignor to M. H. Detrick Company, Chicago, Ill., a corporation of Delaware
Filed Jan. 4, 1962, Ser. No. 164,286
4 Claims. (Cl. 110—7)



4. In a furnace, refractory walls forming a vertically elongated combustion chamber and an ash pit vertically aligned with and extending under the major portion of said combustion chamber, a refractory hearth extending between said walls at the bottom of said combustion chamber comprising a plurality of horizontally adjacent hearth sections extending between said combustion chamber and said ash pit, means for supplying air to said combustion chamber above said hearth, means for closing said ash pit against entrance of air below said hearth, each of said hearth sections having an imperforate metallic body portion comprising an imperforate bottom plate, a downwardly offset lip projecting laterally from said body portion and means extending downwardly from said bottom plate to mount said metallic body portion to pivot about an axis located below said bottom plate in said ash pit, an imperforate refractory body portion mounted on top of said bottom plate and co-extensive therewith and means for simultaneously swinging said sections about said axes between a fuel supporting position and a dumping position, said bottom plates of said sections overlapping said lips on adjacent sections in their fuel supporting position to form an imperforate closure between said combustion chamber and said ash pit constituting the closed bottom wall of said combustion chamber and the top wall of said ash pit.

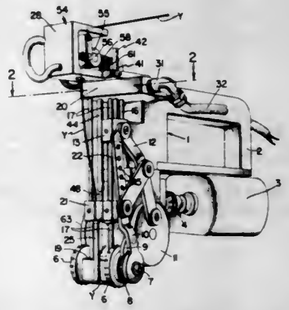
3,225,722
AUTOMATIC FURNACE
William W. Robson, Jr., 1621 Highland, Wilmette, Ill.
Continuation of application Ser. No. 130,858, Aug. 11, 1961. This application Mar. 9, 1964, Ser. No. 351,275
13 Claims. (Cl. 110—38)

13. In combination with an automatic furnace system, a grate structure comprising a plurality of individual elongated hollow members each having a sealed compartment extending a major portion of its length, said members being secured together in side abutting relationship and having recesses formed in spaced relationship in their



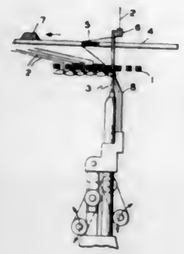
abutting side walls along said compartments for passage of air therethrough, each of said compartments being filled with sodium.

3,225,723
AIR FEED TUFTING MACHINE
Albert J. Wilkes, Chattanooga, Tenn., assignor, by mesne assignments, to International Leasing Corporation, La Grange, Ga., a corporation of Georgia
Filed July 6, 1962, Ser. No. 207,970
3 Claims. (Cl. 112—80)



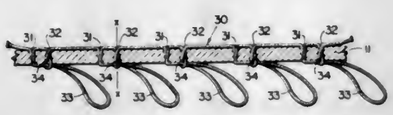
1. In a tufting machine for forming yarn pile in a fabric having a frame, drive means on said frame, a needle carrier mounted on said frame for reciprocation, means connecting said needle carrier and said drive means for imparting to said needle carrier reciprocation comprising a work pentrating stroke and a return stroke, a hollow needle having a shank secured within said needle carrier and reciprocable therewith, said needle having a work penetrating end and a yarn inlet opening in the shank thereof and a yarn outlet opening in the work penetrating end thereof for introducing a yarn into the hollow of said needle and out the work penetrating end thereof, a source of air under pressure, conduit means for directing a flow of air from said source to said needle carrier, said conduit means including telescoping tubular elements comprising a first element secured to said frame and a second element secured to said needle carrier, said needle having an air inlet opening in the shank thereof and said needle carrier having a bore communicating with said conduit means and with said air inlet opening, said bore and the air inlet opening in said needle being inclined relatively to the axis of said yarn inlet opening for directing the flow of air into the hollow of said needle and toward the work penetrating end thereof on the upstroke of the needle to force outwardly of the work penetrating end of said needle a length of yarn for forming a loop that is adapted to be of a length greater than the depth of penetration of the needle at the end of the work penetrating stroke thereof.

3,225,724
CHAIN STITCHING METHOD AND ARTICLE
Aloys Klassert, Frankfurt am Main, Germany, assignor to Walter Ullrich, Kalberau, Bavaria, Germany
Filed Nov. 29, 1962, Ser. No. 241,075
5 Claims. (Cl. 112—410)



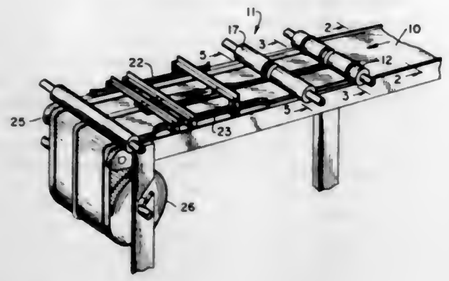
1. Chain stitching comprising a base fabric having a plurality of chain loops disposed at one side of said base fabric, said stitching including backing stitches connected to said chain loops and being disposed at the other side of said base fabric, part of said backing stitches extending away from said base fabric and being cut to form tufts and the other part being uncut and drawn tight against said other side of said base fabric, said two types of stitches alternating in a predetermined relationship.

3,225,725
LOCKED TUFTING STITCH
Aveo John Casselli, Oakland, N.J., assignor to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed Dec. 9, 1963, Ser. No. 328,807
3 Claims. (Cl. 112—410)



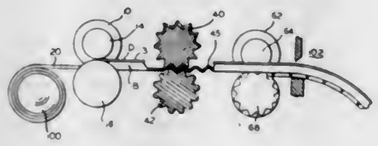
1. A stitched seam in a workpiece comprising a single thread formed into a succession of loops, each loop projecting through said workpiece from one side thereof, each alternate one of said succession of loops being a tufting loop, each loop of said succession of loops between said tufting loops being a locking loop, said tufting loops being passed each through the next succeeding locking loop and thereafter extended beyond said passed through locking loop to a length substantially greater than the distance between the points at which said locking loop and the next succeeding tufting loop are projected through the workpiece, each of said locking loops being twisted one half turn about the axis of penetration of said locking loop through the workpiece and before said preceding tufting loop is passed therethrough, said locking loops each being set into said workpiece while said tufting loop passed therethrough is maintained extended, said tufting loops each being maintained free of concatenation with any succeeding tufting loops and each of said locking loops being projected through the workpiece at a point nearer to the point at which the next preceding tufting loop is projected through the workpiece than to the point at which the next succeeding tufting loop is projected through the workpiece.

3,225,726
ANTI-SPLASH ROOF VALLEY
Alfred A. Tennison, Jr., P.O. Box 7, Texarkana, Ark.
Filed Mar. 1, 1962, Ser. No. 176,754
2 Claims. (Cl. 113—116)



1. The method of preparing a splash valley for a building roof comprising the steps of
(A) feeding a strip of sheet material into a forming machine,
(B) forming a central inverted V-shaped portion in said sheet of material,
(C) compressing said V-shaped portion so that the contiguous legs thereof are substantially vertical,
(D) folding said V-shaped portion so that it is substantially parallel with the strip of sheet material,
(E) rolling said strip of material into a continuous coil,
(F) removing a desired length of material from said coil,
(G) severing said length from said coil,
(H) raising said V-shaped portion until the legs thereof are substantially vertical, and
(I) spreading the legs of said V-shaped portion at an angle to the material on the opposite sides of said V-shaped portion.

3,225,727
METHOD OF FORMING FOIL PANS
Stanley J. Winton, Wilmette, Ill., assignor to Kitchens of Sara Lee, Inc., Chicago, Ill., a corporation of Maryland
Filed May 1, 1963, Ser. No. 277,175
10 Claims. (Cl. 113—120)



1. A process for forming a side wall structure of a pan from an elongated strip of foil material comprising the consecutive steps of:
forming a plurality of spaced impressions in said elongated strip to form a corrugated side wall of said pan;
bending said elongated strip along one edge thereof to extend substantially transversely of said side wall to form a bottom shelf adapted to support an independent bottom of said pan; and
securing one end of said elongated strip to its other end whereby said bottom shelf constitutes an annular flange extending substantially transversely to and radially inwardly of said side wall.

3,225,728
HULLED BODY EQUIPPED WITH WAVE-RIDING DEVICE
Suetsugu Nomura, 53 Kizuki-Ohamachi, Kawasaki-shi, Kanagawa-ken, Japan, and Shizuo Kikuhara, 1–46 Kosonecho, Nishinomiya-shi, Hyogo-ken, Japan
Continuation of application Ser. No. 158,291, Dec. 11, 1961. This application Oct. 8, 1963, Ser. No. 314,810
7 Claims. (Cl. 114—66.5)



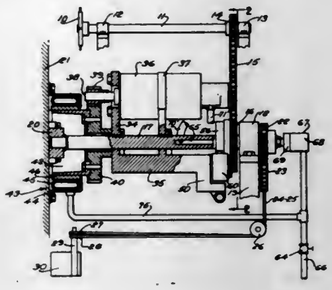
1. In combination with an elongated hull adapted to float upon water and to move longitudinally thereupon; a downwardly extending supporting member having its upper end fixed to the stern portion of said hull, the lower end of said supporting member being free; a transversely extending hydrofoil member positioned below said hull rearwardly of the center of buoyancy of said hull to be normally immersed in said water; means pivotally connecting the leading edge portion of said hydrofoil member to the free end portion of said supporting member for angular displacement of said hydrofoil member about an axis perpendicular to the longitudinal axis of said hull; and control means supported by said hull and connected to the trailing edge portion of said hydrofoil member for altering the angle of inclination which said hydrofoil member would otherwise assume during movement through said water if said trailing edge were free, said angle of inclination of said hydrofoil member during forward movement of said vessel through said water producing a downwardly directed pull on said stern portion rearwardly of said center of buoyancy to produce a torque about an axis extending transversely of said hull intermediate said stern portion and said center of buoyancy, said torque tending to elevate the nose portion of said hull, the magnitude of said downwardly directed pull being controllable by said control means.

3,225,729
HIGH SPEED SEA GOING PLANING HULL
Fred B. Ewing, Jr., 677 Neck Road, Tiverton, R.I.
Filed Dec. 11, 1963, Ser. No. 329,759
5 Claims. (Cl. 114—66.5)



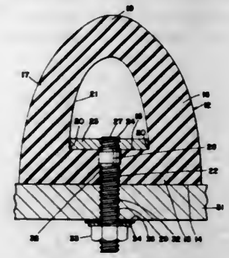
1. A high speed vessel planing type hull comprising a forward section and an after section, said forward section comprising a body having a vertical transom at its after end extending substantially the width of the vessel and a sharp V bottom at the bow at its entry into the water with said bottom merging into a flatter V as it progresses aft to said transom which has a generally flat V lower edge, said sharp V bottom at the bow having a major portion thereof above the at rest water line of the forward section, thus providing a portion of the sides of the vessel, whereby to provide a sharp entry into a wave and a relatively flattened wake intermediate the ends of the vessel and said after section having portions entering said flattened wake as the vessel moves forward.

3,225,730
POWER ASSIST FOR VESSEL STEERING MECHANISM
Luther H. Blount, Poppasquash Road, Bristol, R.I.
Filed Sept. 9, 1963, Ser. No. 307,596
4 Claims. (Cl. 114—144)



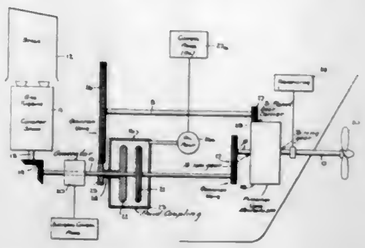
1. In a steering mechanism for a vessel having a rudder and a manual wheel, a shaft means to transmit motion of said shaft to a rudder, mechanical means to rotate said shaft comprising a motor fixed on said shaft, a sun gear co-axial with said shaft, a pinion gear driven by said motor and meshing with said sun gear, means to hold the sun gear fixed relative to said shaft, a power supply for said motor, and control means responsive to the rotation of said manual wheel to apply power to said motor to rotate said shaft.

3,225,731
BOAT FENDER
James H. McCulley, Akron, Ohio, assignor to The Johnson Rubber Co., Middlefield, Ohio, a corporation of Ohio
Filed Oct. 19, 1964, Ser. No. 404,752
5 Claims. (Cl. 114—219)



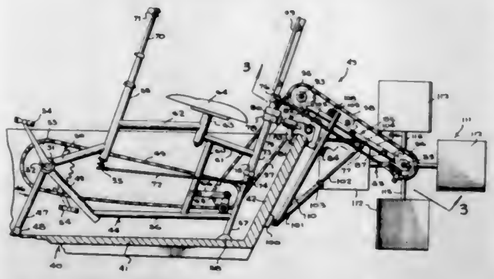
1. A resilient fender device for protecting a surface against damage comprising an elongated bumper element formed of an elastomeric material, said element including a base wall adapted to seat against said surface and similar but opposite imperforate side walls extending laterally in one direction from opposite edges of said base wall, said side wall curving together and being joined at a point spaced from said base wall whereby said walls all cooperate to form a longitudinal passage in said bumper element, a bar positioned along said passage against the inner surface of said base wall, longitudinally spaced threaded openings in said bar, said base wall being formed with apertures through said base wall aligned with said threaded openings in said bar, threaded studs extending through said base wall apertures and threaded into said threaded openings, means locking said studs against movement relative to said bar, said studs extending laterally from said bumper element beyond said base wall and being adapted to receive mounting nuts.

3,225,732
REVERSIBLE MARINE PROPULSION SYSTEM
Kurt Carlsen, 65 Alwat St., Woodbridge, N.J.
Filed May 11, 1962, Ser. No. 193,969
7 Claims. (Cl. 115—.5)



1. A marine propulsion system for operating the propeller of a vessel having a stack, said system comprising a gas turbine engine rotating at a constant rate in one direction and mounted vertically in said vessel for gas exhaust into said stack, a planetary gear assembly, means including a primary input shaft extending at right angles to the vertical axis of said engine coupling said engine to one input of said assembly, a secondary power source operatively coupled to said engine and including adjustable means to produce an output whose speed varies from zero to a speed corresponding to said constant speed, means including a secondary input shaft coupling said secondary source to another input of said planetary gear assembly to produce an output whose direction and speed may be varied in accordance with said adjustment of said secondary source, and an output shaft coupling said assembly to said propeller.

3,225,733
BOAT PROPELLING MECHANISM
Fred Schwarzer, 292 Maugers Mill Road, Pottstown, Pa.
Filed July 20, 1964, Ser. No. 383,782
2 Claims. (Cl. 115—23)



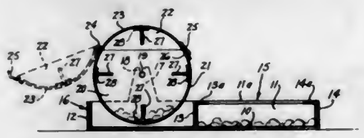
1. A boat propelling mechanism for a boat which includes a transom and a bottom, comprising an inboard section arranged within the boat and including a rest for engagement with said bottom, said inboard section embodying a frame which includes a pair of first portions affixed to said rest, second and third portions arranged angularly with respect to the upper ends of said first portion and affixed thereto, a bushing at the junction of said second and third portions, a first axle journaled in said bushing, a first sprocket secured to said axle, foot pedals connected to said first axle, an upstanding fourth portion affixed to said third portion, a generally horizontally disposed fifth portion affixed to the lower portion of said second portion, an upstanding sixth portion affixed to the rear end of said fifth portion, and said sixth portion having a rest on its lower end for engagement with the bottom of the boat, a back rest connected to the upper ends of the sixth portion, an upstanding seventh portion having its lower end affixed to said fifth portion, an eighth portion extending between said sixth and seventh portions and affixed thereto, a ninth portion connected to said fourth portion, an upstanding tenth portion affixed to said eighth and ninth portions, and said tenth portion having a seat thereon, a second axle journaled in the frame of the inboard section, second and third sprockets mounted on said second axle, an endless chain trained around said first and second sprockets, a column rotatably mounted in said fourth portion, a handle connected to said column, a lug connected to the lower end of said column, a first rod having its front end connected to said lug, a second rod rotatably mounted adjacent said sixth portion and said second rod being connected to said first rod by means of a lug, a bracket affixed to said sixth portion, a strap secured to said bracket, screw members extending through said strap, bushings receiving said screw members, set screws extending through said bushings for engaging said screw members, clamps affixed to said bushings for engaging the transom; said boat propelling mechanism further including an outboard section including a framework that embodies a first pair of spaced parallel members, cross pieces extending between said first members and secured thereto, aligned tubular second members secured to the rear ends of said first members, a shaft extending through said second members, angularly arranged third members affixed to said second members, fourth members secured to the front ends of said third members, spaced parallel bars secured to the inner ends of said fourth members, a horizontally disposed rod extending between said last named bars, fourth and fifth sprockets mounted on said last named rod, an endless chain trained over said third and fourth sprockets, a fifth sprocket on said shaft which extends through the second members, an endless chain on said fourth and fifth sprockets, a support piece for engaging the rear of the transom, cylinders connected to said support piece, a rod adjustably and telescopically connected to each of said cylinders, cross elements connecting the upper ends of said last named rods to said first members of the framework, a rod element extending between the first members of the framework, a tubular piece rotatably mounted on said last named rod, a connecting piece extending between said tubular piece and said support piece, a pair of similar paddle units detachably mounted on the ends of the shaft that extend through the second members of the framework, and each of said paddle units comprising a support member rotatably mounted on said shaft, and said support member having an apertured central portion for the projection therethrough of the shaft, and said support member having a plurality of radially disposed arms affixed thereto, angularly arranged blades affixed to said arms, said support member including a circular rim, a clutch unit comprising a body member contiguous to said support member, and said body member having a central opening therein for the projection therethrough of said shaft, a hub on the central portion of said body member, a set screw securing said last named hub to said shaft, a pair of spaced apart movable plates interposed between said body member and support member, spring members connected to the hub of the body member for normally urging said plates out of engagement with said rim, a pair of cams interposed between said plates, fingers connected to said cams, arm pieces connected to said fingers, rollers connected to the inner ends of said arm pieces, a straight cone slidably mounted on the shaft that extends through the second members of the framework adjacent each end of the shaft, said cone being engaged by said rollers, said cone having a grooved portion, brackets affixed to second members of the framework, yokes pivotally connected to said brackets and engaging said grooved portions, push-pull rods connected to said yokes, a bell crank lever connected to said last named push-pull rods, and a rod connecting said bell crank lever to a lug that is connected to the top of the rod that is arranged contiguous to the sixth portion of the inboard section.

3,225,734
EXTENSIBLE FLAG POLE
Edward R. Bule, Mamaroneck, N.Y., assignor to All-N-One Products Corporation, New Rochelle, N.Y., a corporation of New York
Filed Nov. 29, 1963, Ser. No. 326,948
1 Claim. (Cl. 116—173)



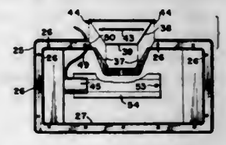
A combined telescopic flag pole and nameplate holder assembly comprising a plurality of telescopic pole sections including a lower section of greater diameter than the sections above the lower section, at least one intermediate section, and a top section, a flag detachably secured to said top section, the lower section being received in the ground to support the assembly and being tapered to substantially a point at its lower end and having a plurality of drainage openings in said lower end, the upper end of the lower section being provided with a cap having a hole therein to receive the intermediate section and a sealing gasket having an opening therein aligned with the opening in the cap and secured below the cap to form a seal between said intermediate section and the lower section, and means securing a nameplate to the lower section.

3,225,735
AGITATOR FOR BREADING MEATS
Domenico Arcabasso, St. Louis, Mo.
(460 Sky Lark Drive, Florissant, Mo.)
Filed Apr. 30, 1962, Ser. No. 191,196
2 Claims. (Cl. 118—19)



1. An agitator for breading meats comprised by a base having a bottom, side walls, and a transversely extending partition forming with one end wall and the side walls a batter pan, and forming with the other end wall and the side walls a trough, a rotary cylindrical element having circular end walls and a cylindrical side wall of slightly less diameter than the length of the trough, and said end walls being cut away along sectors having coplanar chords and said cylindrical side wall being cut away along an arcuate length subtended by said chords to form a door opening, and a door on said cylindrical element for closing the door opening having end walls of sector shape complementing the circular end walls of the cylindrical element, and an arcuate side wall complementing the side wall of the cylindrical element, bearing means rotatably supporting the cylindrical element transversely of and partially within the trough and providing for the partial rotation of the cylindrical element to a position where one side of the door opening is in closely spaced relationship with the top of the partition, pivotal means between the cylindrical element and the door on the side wall of the cylindrical element disposed away from the partition, and complementary catch means on the cylindrical element and the door on the side wall of the cylindrical element adjacent the partition, and longitudinally extending and arcuately spaced agitator plates on the inner surfaces of the side walls of the cylindrical element and the door.

3,225,736
AQUARIUM ASSEMBLY
Allan H. Willinger and Harding W. Willinger, New Rochelle, N.Y., assignors to Aquariums Incorporated, Maywood, N.J., a corporation of Delaware
Original application Aug. 10, 1959, Ser. No. 832,747, now Patent No. 3,091,220, dated May 28, 1963. Divided and this application Jan. 11, 1963, Ser. No. 256,794
2 Claims. (Cl. 119—5)

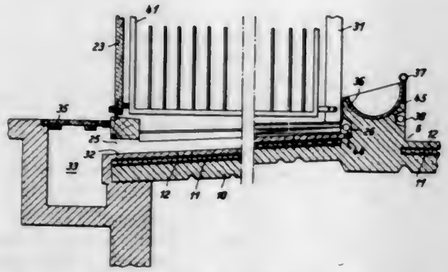


1. A cover member for an aquarium tank, said cover member comprising a planar wall having a raised housing provided with opposing end portions and opposing side portions, one of said side portions having opposing side walls which are connected by a wall portion to define a recessed portion in said housing, said housing being open between said side walls, and a removable panel mounted by said housing to close said opening, said planar wall having an upper surface and a peripheral depending flange, said panel having an upper surface disposed within the plane of the upper surface of said planar wall, and said panel having a peripheral depending flange aligned with the peripheral flange of said planar wall, said panel being provided with lateral projections at the ends of its depending flange, said projections being engageable with the adjacent inner surface portions of the depending planar wall flange.

3,225,737
PIG REARING HOUSES
Heinrich Biehl, Heinrichshof, near Trittau, Germany
Filed Feb. 18, 1964, Ser. No. 345,621
Claims priority, application Germany, Apr. 2, 1963, B 71,373
1 Claim. (Cl. 119—16)

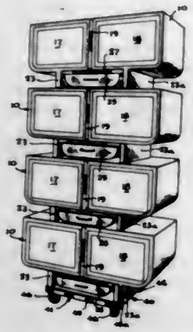
A pig-rearing house comprising, in combination, an enclosed structure defined by a floor, a pair of end walls, a pair of side walls and a roof, a plurality of partitions within said structure defining a plurality of pens therein, said partitions being disposed adjacent said floor and having an upper portion terminating well below said roof permitting unrestricted circulation of air throughout said structure interior, a pair of parallel, spaced, elongated feed troughs extending between the end walls of said structure, said troughs defining a footway therebetween and forming a portion of said pens, said partitions ex-

tending from said side walls to the nearest trough, ventilation means and insulation means associated with said structure, a dung area defined on the floor within each of said pens, said dung areas extending from a trough to a structure side wall and sloping downward from said trough toward said side wall, dung-receiving channels defined below said dung area and adjacent said side walls, means establishing communication between the lowermost portion of said dung areas and said channels, a dung-collecting pit defined below said floor and adjacent



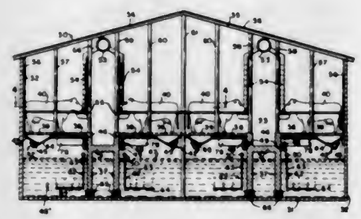
one of said end walls, said dung-receiving channels communicating with said pit, an elongated recess defined in each of said troughs opening toward the associated pens and nearest side wall, water conduits completely received within said recesses including at least one nozzle directed toward each dung area, said nozzles adapted to spray water upon and across said dung areas into said dung-receiving channels, said recesses being of greater depth than the cross-sectional dimension of said conduits and nozzles thereby completely shielding said conduits and nozzles from livestock within said pens.

3,225,738
ANIMAL CAGE AND SUPPORT APPARATUS
Luis A. Palencia, Apartado 25247, Mexico City, Mexico
Filed Oct. 7, 1963, Ser. No. 314,332
4 Claims. (Cl. 119—17)



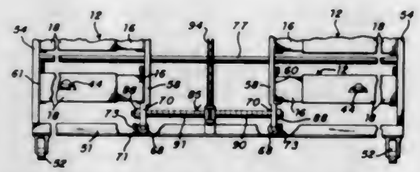
1. An assembly of animal cages comprising in combination, a cage support means, a plurality of contiguous superimposed animal cage units each having an interconnected generally rectangular cage body, each said cage body having spaced engaging means formed on a wall thereof which are in detachable engagement with said cage support means, said cage support means having a lower cage supporting frame which receives a first cage thereon and having fixedly secured to one side of the supporting frame two spaced vertically extending cage support bars, each said cage support bars having a plurality of vertically aligned cage support elements at spaced points along the length thereof which are disposed opposite cage support elements on an adjacent cage support bar, and each pair of oppositely disposed cage support elements being in detachable supportive engagement with the said spaced engaging means formed on a wall of each of said cage bodies, said cage support elements being vertically spaced apart a distance equal to the overall vertical height of each cage; whereby a plurality of animal cages can be maintained assembled as a unitary group of superimposed cages and with each cage contacting an adjacent cage.

3,225,739
AGRICULTURAL DAIRY ESTABLISHMENT
Merrill S. Brodrick, 58 College Ave., Mansfield, Pa.
Filed Nov. 5, 1963, Ser. No. 321,615
8 Claims. (Cl. 119—27)



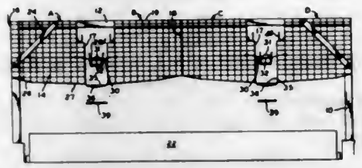
7. In an agricultural establishment, a stall with an elevated bed, grating in said elevated bed, said stall having one side at about a 90 degree inside angle with the front of the stall and the opposing side of the stall having greater than a 90 degree inside angle with the front of the stall and defining an animal area inside the stall and a work area between adjacent stalls.

3,225,740
EGG HATCHING SYSTEM
Sydney C. Orr, Jr., Springfield, Ohio, assignor to Buckeye Manufacturing Company, Kansas City, Mo., a corporation of Delaware
Filed Dec. 13, 1963, Ser. No. 330,399
9 Claims. (Cl. 119—35)



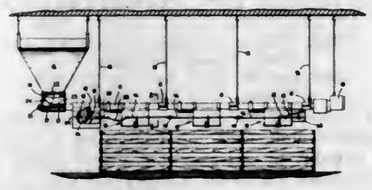
1. Apparatus for handling eggs during incubation and hatching thereof comprising, an expandable tray movable between an incubation position adapted to receive a plurality of eggs therein in intimate contact with one another for preventing any substantial relative movement between the eggs during handling of said trays and a hatching position wherein said tray is enlarged in size to provide the plurality of eggs with sufficient space therebetween for proper hatching the eggs, and rack means for receiving a plurality of said trays and for simultaneously moving said plurality of trays between said incubation and hatching positions to eliminate the transfer of eggs from one tray to a larger tray for incubation and hatching.

3,225,741
LAYING CAGES
William B. Ernst, Owatonna, Minn., assignor to The National Ideal Company, Hicksville, Ohio, a corporation of Ohio
Filed Jan. 6, 1964, Ser. No. 335,893
1 Claim. (Cl. 119—48)



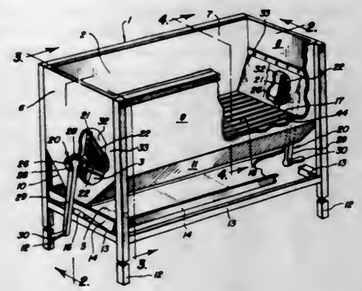
A laying cage structure for chickens comprising two pairs of adjoining, elongated rows of separate compartments of open wire grill construction and provided with a common wall between the inner rows of each pair, the two rows in each pair being spaced from each other and forming a channel between two opposed front walls of the compartments, a bottom wall extending across all four rows and having central sections extending across the channels between the two pairs of rows and formed of spaced wire, a feeding trough in the channels extending the full length thereof and accessible to the chickens in both rows, an endless moveable conveyor which runs down the feeding trough in one channel and back in the other for supplying feed over the full length of the troughs in the two rows, watering troughs in the channels located above the feed trough, an endless egg conveyor belt in each channel and having a lower course and an upper course, the latter being supported on the spaced wires forming said central section of the lower wall for the cages extending across the channels, terminal sections of said spaced wires which are bent upwardly forming abutments limiting sidewise movement of the conveyor belt, each front wall of the rows of cages having an upper section formed of spaced vertical wires to permit the chickens to have access to the feeding trough, and a lower imperforate front wall section, said bottom wall for the cages being downwardly inclined toward the egg conveyor, the lower edge of said imperforate wall section being spaced from said bottom wall to permit eggs to roll from the bottom wall onto the conveyor.

3,225,742
ANIMAL FEEDER
Kenneth W. Hagans, Mentone, Ind.
Filed Mar. 2, 1964, Ser. No. 348,596
5 Claims. (Cl. 119—51.11)



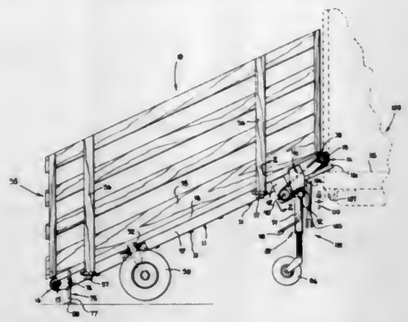
5. A feeder for animals, said feeder comprising:
a plurality of feed containers;
conveyor means coupled to said containers to convey feed thereto;
a dispenser member connected to each of said containers, each dispenser member supporting feed in the container to which it is connected, and each dispenser member being movable, by the feed it supports, from a container closing condition to a container opening condition to dispense feed from the container;
means latching said dispenser members in container closing condition, said latching means being operable, when actuated, to release said dispenser members and disable said conveyor means;
retainer means movable in response to opening of said dispenser members to hold said latching means in actuated condition and thereby maintain the disabled condition of said conveyor means until all of said dispenser members have returned to the container closing condition;
and fill condition sensor means in one of said containers and coupled to said conveyor means to operate said conveyor means for filling said containers in response to the sensing of an insufficiently filled condition in said one container.

3,225,743
HOPPER AND TROUGH FEEDER WITH ADJUSTABLE SUPPLY MEANS
Mark McClure, 621 Oneida, Joliet, Ill.
Filed Nov. 28, 1962, Ser. No. 246,286
9 Claims. (Cl. 119—53)



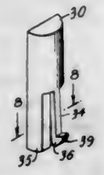
1. A grain feeder comprising;
(a) a storage compartment including generally upright walls defining an enlarged area,
(b) a discharging compartment including tapering walls defining a spill orifice of lesser area than the enlarged area,
(c) a grain receiving feed trough beneath the orifice,
(d) and a plurality of movable separator elements spaced apart from one another dividing the storage compartment from the discharging compartment and defining generally vertically extending grain flow spaces between the elements each separator element having an upward generally vertical facing grain load-sustaining surface adapted to carry a generally vertical static column of grain for allowing a vertical column of grain in a grain flow space between two successive elements to gravity flow freely and reduce grain load conjestion in the spill orifice, and support means holding the elements in the feeder and maintaining the upward surfaces facing vertical and providing for moving of the separator elements generally laterally toward and away from one another for increasing and decreasing the spaces between the elements,
(e) and element shifting means mounted on the grain feeder for moving the elements over the support means toward and away from one another for decreasing and increasing the spaces.

3,225,744
STOCK LOADER
Elzie H. Procter, Rte. 3, Elwood, Ind.
Filed Apr. 16, 1964, Ser. No. 360,327
3 Claims. (Cl. 119—82)



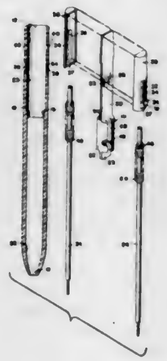
1. A stock loader comprising a pair of spaced parallel elongated channels opening inwardly toward one another, an elongated plate of rigid material fixed to the top of said channels and extending therebetween and having curved opposite end portions, a pair of parallel shafts journal mounted on said channels and extending therebetween with each of said shafts parallel and each located below an opposite end portion of said plate, a pair of sprockets fixedly mounted on each of said shafts, each of said plate curved end portions being curved about the axis of a respective one of said shafts and each having a pair of slots each adjacent a transverse edge of said plate with the teeth of each sprocket projecting through a respective slot, a pair of closed chains each trained across one of the sprockets of each pair and extending longitudinally of said plate adjacent a respective transverse edge thereof, a plurality of parallel slats fixed at their opposite ends to the respective chains and spaced at equal intervals along the complete closed lengths of said chains, means for rotating one of said shafts to drive said loader, said plate being on an incline providing an upper end portion and a lower end portion, and road wheels rotatably mounted on said channels adjacent said lower end portion and positioned on opposite sides of said loader.

3,225,745
PLUNGER LATCH FOR A BALL-POINT PEN
Emil Hechtle, Oradell, N.J., assignor to Radiant Pen Corp., Kenilworth, N.J.
Original application Aug. 11, 1961, Ser. No. 130,851, now Patent No. 3,143,101, dated Aug. 4, 1964. Divided and this application Dec. 16, 1963, Ser. No. 330,758
1 Claim. (Cl. 120—42.03)



A cartridge positioning member for a ballpoint pen, said pen having a barrel provided with a catch, said cartridge positioning member comprising a body having oppositely positioned extending rigid portions defining a hollow passageway extending transversely across the entire rigid portions, forming openings at both ends, and an extending resilient member formed into a latch for engaging said catch, said latch having a dimension in the direction of movement equal to the transverse distance of the passageway across said rigid portions, and movable into the hollow passageway providing maximum clearance for the latch, said rigid portions terminating in a cartridge-engaging means for positioning a cartridge thereby.

3,225,746
PEN PLUNGER LATCH
Emil Hechtle, Oradell, N.J., assignor to Radiant Pen Corp., Kenilworth, N.J.
Original application June 28, 1963, Ser. No. 292,209. Divided and this application Dec. 16, 1963, Ser. No. 331,647
2 Claims. (Cl. 120—42.03)

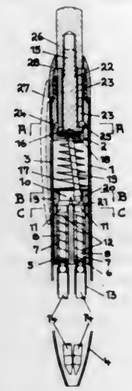


1. A cartridge positioning member for a ballpoint pen having a barrel provided with a catch comprising a longitudinally extending body having a passageway, said passageway defined by two longitudinally extending legs connected by a cartridge positioning means, and a resilient arm extending into the passageway from the body with a free end formed into a spring biased latch causing the latch to engage the catch of the barrel when in proper position, said latch deflectable into the passageway in a transverse direction, said passageway extending across the entire body in the same direction as the latch deflection for allowing the latch full deflection across said body without interference, said longitudinally extending legs and connecting cartridge positioning means defining a frame continuously about an opening through which the passageway extends.

3,225,747
MULTICOLOR PEN, PARTICULARLY A MULTICOLOR BALL POINT PEN
Hans Ottmar Schmidt, St. Georgen, Black Forest, Germany
Filed Apr. 30, 1963, Ser. No. 276,797
4 Claims. (Cl. 120—42.13)

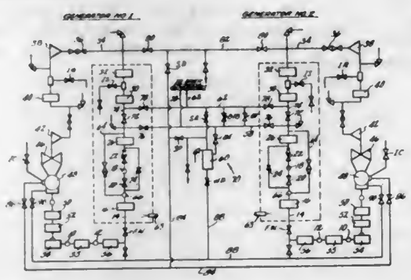
1. In a multicolor ball-point pen, a cartridge selecting and propulsion unit, said unit comprising a cylindrical sleeve, a plurality of cartridge guides displaceable in one end of said sleeve, means for securing ball-point cartridges of different colors to said cartridge guides, guide means for said cartridge guides, a pendulum in said sleeve for selectively propelling said cartridge guides outwardly of said sleeve, said pendulum being displaceable in a longitudinal and conical path, a pressure member extending through the other end of said sleeve into the sleeve's interior and displaceable in a longitudinal and circular path, said pendulum being pivotally secured to said pressure member, first spring means biasing said pressure member outwardly

of said sleeve, second spring means biasing said cartridge guides inwardly of said sleeve, ball point cartridges differing in color, secured to said guides by said means, means for indicating the color of a selected cartridge and a cylindrical housing detachably secured outwardly of said unit, said housing having a frusto-conical open end portion for the passage of a predetermined one of said cartridges, said unit when removed from said housing being adapted for insertion into one of a plurality of appropriate housings, said guide means comprising a pair of spaced guide discs having a plurality of aligned openings, an axially disposed spacer therebetween, said cartridge securing



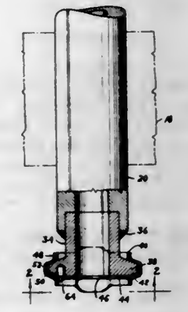
means extending through said openings, an axially disposed guide pin extending from one of said discs towards said pendulum, said second spring means comprising spiral springs enclosing said cartridge guides a flange for pivotally supporting said pendulum, said axially disposed guide pin being of cross-shaped section and having beveled edges said means for securing said cartridges to said guides being slotted tubular elements secured to said guides, said guides having inwardly extending tubular portions terminating as circular shoulders and flat portions and a selector wheel provided with recesses for engaging one of said flat portions.

3,225,748
COMMON STARTUP SYSTEM
Wolfram G. Schuetzenduebel, Avon, Conn., assignor to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware
Filed Dec. 30, 1963, Ser. No. 334,409
9 Claims. (Cl. 122—1)



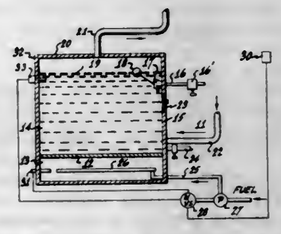
1. In combination a plurality of once-through forced flow vapor generators each having a first heating section and a second heating section, conduit means interconnecting the inlets to all of said second heating sections, conduit means interconnecting the outlets of all of said first heating sections, valve means for each generator connecting said conduit means and connecting said heating sections of the respective generator in series flow relation, a common startup unit connecting said conduit means in parallel with said valve means and including a separator and a throttling valve in series, and shut-off valves in each of said conduit means between said startup unit and each generator.

3,225,749
FLUID HEATER ORGANIZATION WITH IMPROVED FLOW CONTROL MEANS
Bernard Froot, West Hartford, Conn., assignor to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware
Filed Dec. 23, 1963, Ser. No. 332,751
7 Claims. (Cl. 122—406)



1. An orifice assembly for controlling flow in a tubular fluid heater comprising a tubular member provided at the extremity of one of its two ends with a radially outward extending flange having an outwardly narrowing transverse section, a disc member overlying the face of said one end in complementary relation therewith and having an orifice communicating with the interior of the tubular member, means releasably retaining the disc in place including a circumferentially expandable clamp means disposed about said flange and disc and having axially spaced surfaces snugly embracing the flange and disc, and mechanical indexing means for indexing the disc member having an orifice of particular size with the tubular member and effective unless properly indexed to retain the disc member spaced from the tubular member sufficiently to prevent receipt of the flange and disc intermediate the axially spaced surfaces of said clamp.

3,225,750
CONTROL APPARATUS
William F. Sommer, 531 Hillcrest Ave., Westfield, N.J.
Filed Dec. 28, 1964, Ser. No. 421,365
1 Claim. (Cl. 122—448)



In a steam heating system having a water reservoir, inlet means for delivering water to said reservoir, outlet means in an upper portion of said reservoir for permit-

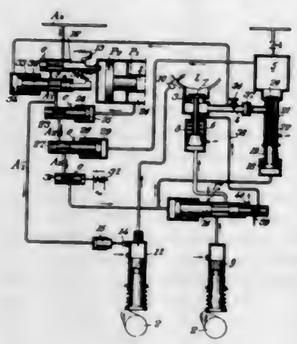
ting escapement of steam therefrom, means controlling said inlet means to maintain water content in said reservoir at a predetermined level substantially below said outlet means, a fuel combustion chamber for heating water in said reservoir, means for delivering fuel to said combustion chamber, means for actuating said fuel delivery means, temperature responsive means immersed adjacent but just below said predetermined water level, a steam return line connected to a lower portion of said reservoir, and means controlled by said immersed means for regulating said fuel delivery means, said fuel delivery actuating means including a thermostat positionable in an area to be heated by said system, said fuel delivery means including a pump, and said regulating means including a variable speed motor interconnecting said thermostat and pump, so constructed and arranged that when reservoir water is heated to a boiling point to produce steam, a minimum amount of fuel is thereafter delivered to maintain said water boiling point.

3,225,751

INTERNAL COMBUSTION ENGINES, AND IN PARTICULAR FREE PISTON ENGINES, OF THE GASEOUS FUEL INJECTION TYPE

Helge Horgen, Lyon, and Maurice Bouvier, Villeurbanne, France, assignors to "Societe d'Etudes et de Participations, Eau, Gaz, Electricite, Energie S.A.," Geneva, Switzerland, a society organized under the laws of France

Filed May 7, 1963, Ser. No. 278,733
Claims priority, application France, May 9, 1962, 897,022
7 Claims. (Cl. 123—46)



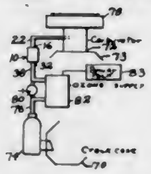
1. In combination a free piston generator, first means for feeding a liquid fuel to said free piston generator, second means for feeding a gaseous fuel to said free piston generator, both of said first and second means being operative by a regulating pressure, a first circuit for supplying said regulating pressure to said first means, first safety devices within said first circuit controlled by first factors of operation of said free piston generator and adapted to cut off the downstream portion of said first circuit from its upstream portion and to connect the former portion with the atmosphere when said first factors of operation come out from a predetermined range of values, a second circuit for supplying said regulating pressure to said second means, second safety devices within said second circuit controlled by second factors of operation of said free piston generator adapted to cut off the downstream portion of said second circuit from its upstream portion and to connect the former portion with the atmosphere when said second factors of operation come out from a predetermined range of values, said second circuit branching off from said first circuit downstream from said first safety devices, whereby operation of said first safety devices cuts off both the liquid and gaseous fuel feeding to said free piston generator whereas operation of said second safety devices cuts off only the gaseous fuel feeding to said free piston generator.

3,225,752

BY-PASS VALVE FOR ENGINES

Harold E. Robinson, Great Neck, N.Y., assignor to Dyna-Nuclear Corporation, Atlantic Highlands, N.J., a corporation of New Jersey

Filed Nov. 8, 1963, Ser. No. 322,312
10 Claims. (Cl. 123—119)



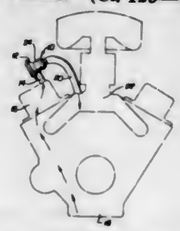
1. A valve device comprising a main housing having a chamber formed therein, a first end wall in said chamber and formed with an opening defining a first end wall valve seat, first duct means connecting with said chamber through said first end wall valve seat and connectable to the crankcase of an engine, a second end wall in said chamber and spaced from said first end wall at the oppos te end of said chamber, second duct means connecting with said chamber through said second end wall and connectable to the carburetor and intake manifold of said engine for conducting gases and vapors from said crankcase to said intake manifold for combustion in said engine, second valve seat means formed in said second end wall, side liner wall means in said chamber so that said chamber is lined with said first and second end walls and the interconnecting side liner wall means aforesaid, and valve plunger means movably disposed in said chamber and slidably engaging said side liner wall means, said valve plunger means being constructed and arranged for movement from a first position at which it blocks communication between said first duct means and said chamber when said engine is not operating, to a second operated position in seating engagement with said second valve seat means and out of contact with seating engagement with said first valve seat means, for providing limited restricted communication between said first and second duct means for gas and vapor flow therebetween to said carburetor.

3,225,753

FIRE CHECK AND COLD START CONTROL DEVICE FOR CRANKCASE VENTILATOR

Louis J. Bintz, Placentia, Calif., assignor to Norris-Thermador Corporation, Los Angeles, Calif., a corporation of California

Filed Oct. 5, 1964, Ser. No. 401,344
15 Claims. (Cl. 123—119)



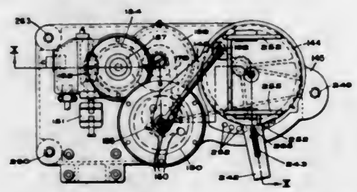
7. Apparatus for use in a crankcase ventilating conduit extending between the crankcase and the intake manifold of an internal combustion engine comprising: a flow regulator comprising a casing, a flexible diaphragm within the casing divided into a first chamber and a second chamber, said first chamber having a gas inlet and a gas outlet adapted to be connected into said conduit so that gases flowing downstream through said conduit for the normal direction of gas flow from the crankcase to the intake manifold will flow through said casing from the inlet to the outlet, a valve nozzle inside the first chamber, one end of the nozzle communicating with the gas outlet, the other end of the nozzle terminating in an open end adjacent said diaphragm, the open end of the nozzle being at least partially blocked to the passage of gases therethrough by the diaphragm when the diaphragm is drawn to the open end of the nozzle by intake manifold negative pressures in the nozzle, and a spring supported in the casing biasing the diaphragm away from the nozzle to keep open said open end of the nozzle for outlet gas pressures equal to and more positive than a pre-selected gas pressure; and a fire check and cold start control device comprising a housing adapted to be disposed in said conduit, said housing having a passage therethrough forming a part of said conduit, a valve seat proximate said passage in said housing facing downstream, and a valve element in said housing on the downstream side of said seat, said valve seat and valve element being composed of magnetic material and at least one of them being magnetized so that said valve element is normally magnetically biased to a closed position against said seat, said valve element being held by the flow of gases in an open position spaced downstream from said valve seat during normal engine operation when the intake manifold is at a lower pressure than the crankcase so that the valve element will not substantially interfere with control of the flow of blowby gases by the diaphragm, said magnetic biasing force being sufficient to hold the valve element in its closed position against said valve seat when the engine is being cranked during cold engine starting conditions and the intake manifold vacuum is less than during normal engine operation, and the valve element also being movable to a closed position against said seat to block the flame front from the crankcase upon a pressure reversal resulting from backfiring in the engine fuel intake system.

3,225,754

TARGET THROWING APPARATUS HAVING AUTOMATICALLY VARIED THROWING ANGLE

Harry Clark Foster, East Alton, Ill., assignor to Olin Mathieson Chemical Corporation, East Alton, Ill., a corporation of Virginia

Original application June 12, 1958, Ser. No. 741,571, now Patent No. 3,119,383, dated Jan. 28, 1964. Divided and this application Aug. 15, 1960, Ser. No. 61,795
8 Claims. (Cl. 124—9)



1. A target trap comprising a base, a target throwing mechanism pivotally mounted on said base with said mechanism having a target throwing arm mounted thereto, means for constant and continuous oscillation of said mechanism in a repetitive cycle of non-uniform motions during the cocking and throwing functions of said target throwing arm, and a motor for continuously driving said oscillating means, said oscillating means comprising a driving gear, a gear train connecting said motor and driving gear, a cylindrical hub eccentrically mounted on the center of said driving gear, an externally toothed second gear concentrically journaled about said hub, a link pivotally fixed at one end to said second gear and pivotally fixed at its other end at a point remote from said second gear, an internally toothed circular third gear mounted in axial alignment with said driving gear and meshing said second gear, and means to transmit the motion of said third gear to said target throwing mechanism.

3,225,755

HORIZONTAL ARROW REST

Milford N. Shankland, Kenosha, Wis., assignor of one-half to John H. Shankland, Hinsdale, Ill.

Filed Apr. 1, 1963, Ser. No. 269,425
2 Claims. (Cl. 124—41)



1. An arrow rest comprising: a flexible base member for use in mounting a group of bristle elements to a substantially vertical surface of a bow, said base member conforming to any slight contour of said surface and having an elongated slot and an arrow-contacting surface thereabove; brush means secured to said base member, including a plurality of flexible bristle elements connected at corresponding ends to said base member, said bristle elements having a length greater than the diameter of an arrow shaft, said bristle elements being mounted to extend outwardly from said base member and having medial portions adapted to receive and resiliently support the shaft of an arrow, said bristle elements being free at positions away from said base member whereby resiliently to respond independently to the passage of the fletching of a supported arrow and said bristle elements being aligned in a group having greater length than width, the width dimension of said group of bristle elements being disposable transversely of the shaft of a supported arrow whereby to minimize the contact effects on arrow fletchings propelled thereover, said brush means further including relatively rigid interconnecting means joining said corresponding ends of the bristle elements to preserve the general organization and the alignment thereof and said relatively rigid interconnecting means conforming to the shape of said slot for telescopic assembly therein with the base member; and pressure sensitive adhesive means on said base member for positively attaching said base member and said brush means to said bow surface in conformity with any slight contour variation of the subjacent bow surface.

3,225,756

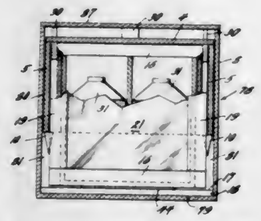
STORAGE AND SHIPPING KIT FOR STOVE-LANTERN APPARATUS

Paul Bencoe, Albuquerque, N. Mex., assignor to Southwest International, Inc., Albuquerque, N. Mex., a corporation of New Mexico

Original application Apr. 27, 1962, Ser. No. 190,584, now Patent No. 3,154,065, dated Oct. 27, 1964. Divided and this application Jan. 8, 1964, Ser. No. 342,326
5 Claims. (Cl. 126—9)

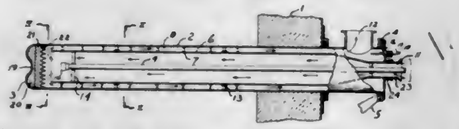
1. A shipping and storage container including a knockdown stove-lantern apparatus comprising an outer container including a bottom wall and side walls extending

upwardly therefrom, said outer container being demensioned to receive a stove combustion compartment member, the stove combustion compartment member having an open bottom portion, a cooking top, and side wall panel members depending therefrom and inset from the respective side walls of said cooking top, said combustion compartment member being disposed within said outer container in an inverted position with the cooking top supported on the bottom of said container with the side wall panels of the combustion compartment member extending upwardly therefrom and in spaced, generally parallel relation to the respective side walls of the outer container, an inner container including a bottom wall and upwardly extending side walls and provided with partition members dividing the interior of the inner compartment into a piurality of upwardly open compartments extending from top to bottom thereof, said inner container being dimensioned to fit snugly within upwardly directed open end of the combustion compartment member and disposed therein with the open ends of the compartments directed upwardly and with the bottom of said inner container supported by the cooking top of the combustion



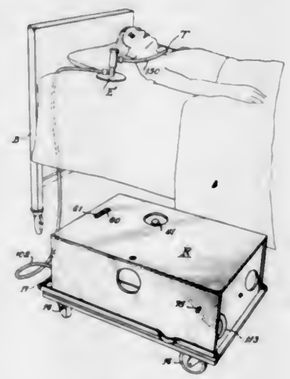
compartment member, plural fuel cartridges for use with said stove-lantern apparatus disposed in said compartments respectively, said compartments and said inner container being dimensioned to receive said cartridges snugly and to provide space within the compartments above the cartridges therein to receive and store stove accessory parts, and a stove base member including a top plate, side wall panels and an open bottom, said base member being dimensioned to telescopically and snugly fit over the upwardly directed side wall panels of the combustion compartment member with the side wall panels of the base member being disposed between the inner faces of the respective side walls of the outer container and the outer side faces of the side wall panels of the combustion compartment member and being so disposed within the outer container with the top plate thereof overlying and at least partially closing the upper ends of the compartments of the inner container, and cover means for closing the open top of the outer container.

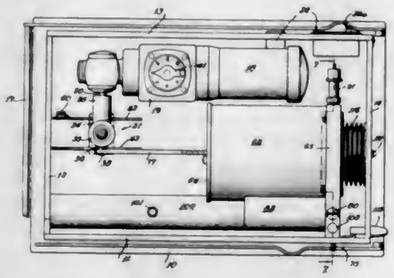
3,225,757
RADIANT TUBE HEATERS
John D. Keller, Pittsburgh, Pa., assignor to Hazen Engineering Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 9, 1962, Ser. No. 236,550
1 Claim. (Cl. 126—91)



In a radiant tube heater an outer housing of tubular construction having a closed end and having a passage for exhausting the products of combustion adjacent the other end thereof, a tubular shaped member of substantially the same shape as said outer housing disposed therein and spaced therefrom to form a combustion chamber therebetween extending substantially the effective length of said heater, said last named tubular member having openings in the wall to supply jets of air at spaced intervals through out the length of the combustion chamber to support combustion of the fuel and air mixture passing from the closed end to the exhaust passage of the combustion chamber, a fuel supply tube disposed within said air tube having a burner tip adjacent the closed end of the housing, and a radiant at the closed end of the housing opposite the burner tip to support combustion of a small portion of the fuel adjacent said radiant, said air tube being mounted to be axially movable within the combustion housing to regulate the proper amount of fuel and primary air fed into the combustion chamber at the closed end of the combustion chamber.

3,225,758
PISTON TYPE RESPIRATOR
Ernst Trier Mörch, 5816 Blackstone Ave., Chicago, Ill.
Filed Dec. 30, 1959, Ser. No. 862,869
17 Claims. (Cl. 128—29)

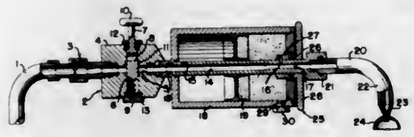




15. In a respirator, a casing including side walls and an end wall hingedly connected to one of said side walls and adapted for latching engagement with the other side wall, a pump mounted in said casing longitudinally thereof, said pump including a cylinder having an end wall disposed adjacent the end wall of said casing, a piston reciprocable in said cylinder to the side of the cylinder end wall opposite the casing end wall, a piston rod extending from said piston out the opposite end of said cylinder, a motor and variable speed transmission mounted in said casing adjacent said cylinder and including an output shaft extending transversely of said piston rod, an elongate crank arm secured to said shaft transversely thereof, a cam

member slidably but non-rotatably mounted on said crank arm for movement radially of said shaft and connected to said piston rod for reciprocating the piston, a rotary drive member journalled on said arm and operatively connected to said cam member for moving the same relative to said arm, a drive wheel connected to said drive member and orbiting about said shaft upon rotation of said shaft, a pair of arcuate members conforming to and disposed to opposite sides of the orbital path of movement of said wheel, means for selectively moving said arcuate members into the path of orbital movement of said wheel for causing said wheel to be rotated selectively in opposite directions thereby to move said cam member toward and away from said shaft during operation of the respirator to vary the displacement of said piston and thereby the volume of respiratory fluid, means independent of the last-named means for varying the speed of rotation of said shaft during operation of the respirator to vary the rate of respiration, said pump including an inlet and an outlet communicating with the space between said piston and the end wall of said cylinder, an aperture through said cylinder end wall, a bellows disposed between and secured to said end walls in surrounding relation to said aperture, a valve member carried by said casing end wall within said bellows, said valve member closing said aperture when said casing end wall is latched to said other side wall, said casing end wall being oscillatable about its hinged connection for constituting said bellows, a hand pump having as its inlet and its outlet the said inlet and outlet of said pump, a one-way check valve in the inlet of said pump, an exhalation valve spaced from said pump and located adjacent the patient, said exhalation valve including an inlet, an outlet to atmosphere, an outlet disposed between the inlet and said outlet to atmosphere for connection with the patient, a valve seat between said inlet and the outlet to the patient, a valve seat between said outlets, and a valve member movable between said seats, a conduit extending from the outlet of the humidifier to the inlet of said exhalation valve, the valve member of said exhalation valve being responsive to the pressure pulsations produced by said pump for movement alternatively between the first-named valve seat and the second-named valve seat thereby to control alternate supply of fluid from the pump to the patient and venting of the patient to atmosphere for controlling the pressure profile of the respiratory cycle.

3,225,759
DENTAL CLEANING AND MASSAGING DEVICE
Myron E. Drapen, 3538 Woodbine St., and Arnold E. Seigel, 3302 Pauline Drive, both of Chevy Chase, Md.
Filed May 31, 1963, Ser. No. 284,480
4 Claims. (Cl. 128—66)



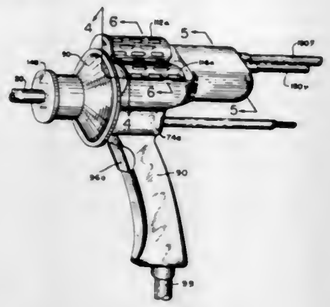
2. A dental hygiene device for delivering a liquid stream to the teeth to clean the teeth and massage the gums, said device comprising:
- a spring-biased valve;
- means for supplying liquid to said spring-biased valve;
- a rigid pipe rigidly connected to said spring-biased valve;
- a container rigidly mounted on said pipe, the outer end of said rigid pipe extending beyond said container and being curved;
- two spaced openings in said pipe for establishing communication between the interior of said container and the interior of said pipe, whereby a portion of the liquid flowing through the pipe is diverted through one of said spaced openings and flows into the container and exerts pressure on the contents of the container;
- means associated with the other of said spaced openings for effecting a movement of material while under said pressure from said container into said pipe to mix with the liquid flowing through said pipe;
- a separate valve for said other of said spaced openings;
- a nozzle rigidly detachably mounted on the curved end of said rigid pipe, said nozzle having an orifice of a diameter capable of forming a solid stream of liquid of small cross section;
- a cup-shaped element of soft resilient material mounted on the end of said nozzle and extending therebeyond sufficiently to prevent contact of said nozzle with the teeth when said cup-shaped element is placed against the teeth, said cup-shaped element being in surrounding relation to the stream of liquid issuing from said nozzle, the inside diameter of said cup-shaped element being larger than said orifice and stream;
- and means to simultaneously and independently control with one hand both the velocity of the solid stream issuing from the nozzle and the amount of material entering the pipe from the container so that the amount of material in the stream may be varied without affecting the velocity of the stream, said control means including a pair of separate valve actuators, one for each of said spring biased valve and said separate valve, said valve actuators being constructed and positioned sufficiently close to each other to enable an operator to actuate both of said valves simultaneously but independently with one hand;
- whereby the pipe may be grasped with one hand and the two valves may be simultaneously but individually controlled with the same hand by the operator during the flow of liquid from the nozzle to determine the velocity of the stream issuing from the nozzle independently of the amount of material entering the pipe from the container and to vary the amount of material entering the pipe from the container independently of the velocity of the stream issuing from the nozzle and while the cup-shaped element is being moved in contact with the teeth with the same hand.

3,225,760
APPARATUS FOR TREATMENT OF BONE FRACTURE
Michael A. Di Cosola, Sarasota, Fla., assignor to Orthopaedic Specialties Corp., Sarasota, Fla., a corporation of Florida
Filed Nov. 14, 1962, Ser. No. 237,688
7 Claims. (Cl. 128—83)

1. A device of the class described comprising a housing having a mixing chamber with an outlet at one end,
- a mixing member rotatably mounted in the chamber,
- a hollow member extending through said outlet coupled to said mixing member and having openings in communication with said chamber,
- means carried by said housing for progressively supplying ingredients to said mixing chamber under pressure in a predetermined proportion to place the mixing chamber under pressure and force mixed ingredients in the chamber out through said hollow member,
- said means including a plurality of ingredients containing capsules of approximately the same length each having a movable wall,

a plurality of cylinders and a plurality of pistons in said cylinders for engaging said movable walls,

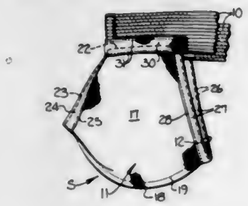
conduit means interconnecting the cylinders from the discharge side of one piston to the power side of another piston,



means supplying the power side of said one of the pistons in its cylinder with hydraulic fluid under pressure, and

means for receiving fluid from the discharge side of said other piston in its cylinder for moving pistons simultaneously.

3,225,761
FATIGUE SUPPORT FOR MEN NO LEG STRAPS
Robert Swensen, 120 Poinciana Drive, Martinez, Ga.
Filed May 20, 1963, Ser. No. 281,840
2 Claims. (Cl. 128—158)



1. A suspensory for a male person comprising, in combination, a blank of flexible material folded along a central arcuate bottom edge portion to form a pouch, said pouch including a pair of side panels extending upwardly from said bottom edge portion each terminating in a substantially straight upper edge, each of said side panels having a substantially vertically extending rear edge and a substantially vertically extending forward edge thereby forming the sole means of support of said pouch, a continuous belt arranged to be worn around the body of said male person adjacent the waist, means securing the upper edges of said side panels to said belt whereby said rear edges on said side panels form a rear opening in said pouch and said front edges on said side panels form a front opening in said pouch.

3,225,762
INTRAVENOUS STYLET CATHETER
Yolan R. Guttman, 675 E. 234th St., Bronx, N.Y.
Filed Oct. 25, 1963, Ser. No. 319,045
4 Claims. (Cl. 128—214)

1. An intravenous catheter comprising, in combination, a flexible tube having a wall containing a bore and having front and back ends, the front end of said tube forming a first opening, the wall of said tube contatining a second opening behind said front end, a hub on the back end of said flexible tube, and a round rigid pointed member of substantially the same diameter as the bore of said ube extending into said tube through said second opening and emerging through said first opening to extend beyond the



front end of said tube so that said member and the front end of said catheter may be inserted into a vein before said member is removed from said tube and said tube is advanced further into the vein.

3,225,763
MEDICINAL INJECTOR
Neil S. Waterman, Stamford, Conn., assignor, by mesne assignments, to Chesebrough-Pond's, Inc., New York, N.Y., a corporation of New York
Filed June 18, 1962, Ser. No. 203,195
3 Claims. (Cl. 128—232)



1. A medical injector composed of plastic and comprising, a chambered body having compressible side walls, a rigid hollow nozzle integral with the body and having a thicker wall than the side walls of the body, the nozzle being provided at one end with an outwardly-extending, relatively rigid peripheral flange located between the base portion of the nozzle and the upper end of the body, the nozzle being tapered from said flange to its forward end, the nozzle having an outlet opening in said forward end, a plurality of longitudinal grooves in the side wall of the nozzle, at least some of said grooves being provided in their bottoms with a row of elongated outlet slots, which slots decrease in size from the outer part of the nozzle in a direction toward the flange, said nozzle having a sealing cover, the flange on the nozzle terminating in a rounded peripheral edge and having an upwardly facing angular groove located inwardly of said rounded edge, the sealing cover having a base flange adapted to superpose the nozzle flange, said base flange having an annular downwardly-extending bead entering the groove in the nozzle flange when the cover is fitted over the nozzle, the base flange having an annular recess located outside of the bead and adapted to fit around and interlock with the rounded peripheral edge of the nozzle flange when the cover is placed over the nozzle and the bead is entered into the groove.

3,225,764
BABY PANTS OR OTHER ARTICLE HAVING TUBULAR EDGING
Sidney H. Magid, 110 Elm Drive, Roslyn, N.Y.
Filed Dec. 19, 1962, Ser. No. 245,830
5 Claims. (Cl. 128—288)



1. An article of thermoplastic material having attached thereto at least one annular edging formed of a band of flexible thermoplastic air-impervious material, said annular edging being folded circumferentially upon itself to provide two flaps and a bight therebetween, said flaps being bonded to said article and defining a hermetically sealed tunnel, there being a quantity of air and an elastic constricting element in said tunnel, said air being of sufficient quantity to maintain the confronting walls of the tunnel free to move relative to each other when said constricting element is in the contracted state.

3,225,765
MENSTRUAL PAD AND HOLDER
Jeanette E. J. Mosier and Jack M. Mosier, both of 606 Ocean Blvd., Seal Beach, Calif.
Filed Sept. 25, 1962, Ser. No. 226,007
3 Claims. (Cl. 128—290)

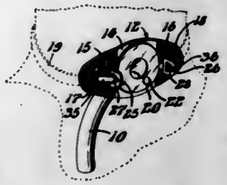


1. A catamenial device comprising an elongated flat spring curved longitudinally to a convexo-concave shape, said spring having resiliency in longitudinal bending and having the property of forcibly returning to its nonstressed shape, an elongated sanitary napkin carried by said spring, a pair of loops of elastic material secured to said spring for encircling the respective legs of the wearer, said napkin having in the lower surface thereof a pair of slots which are parallel to one another and spaced longitudinally of said napkin, said spring having its opposite end portions received respectively in said slots.

3,225,766
METHOD OF MAKING ABSORBABLE SURGICAL SUTURES FROM POLY BETA HYDROXY ACIDS
James N. Baptist, Clarksville, and John B. Ziegler, Olney, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut
No Drawing. Filed Mar. 26, 1962, Ser. No. 182,682
4 Claims. (Cl. 128—335.5)

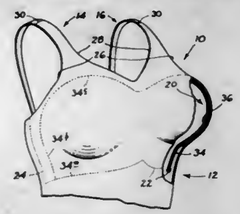
1. A method for making absorbable prosthetic devices from bacterial poly beta hydroxy acids which comprises inoculating a growth medium with suitable bacteria, allowing the bacteria to grow until maximum turbidity of the culture is reached, harvesting and drying the cells, extracting the polymer from the dried cells, recovering and drying the pure polymer, and finally molding the polymer into prosthetic devices.

3,225,767
TRACHEAL TUBE DEVICE
Clifford W. Smith, Upper Darby, Pa., assignor to South Chester Corporation, Lester, Pa., a corporation of Delaware
Filed Mar. 13, 1964, Ser. No. 351,759
5 Claims. (Cl. 128—351)



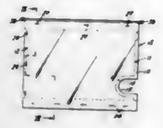
1. A tracheal tube assembly, comprising: a curved outer cannula and a similarly curved inner cannula formed of non corrosive resilient material, said outer cannula being adapted for insertion into the trachea of a user, said inner cannula being insertable into said outer cannula, the proximal end of said outer cannula being provided with a radial flange having a flat central portion and opposed wing portions, each of said wing portions having a tab which extends forwardly and inwardly, said inner cannula having at its proximal end a flat radial flange adapted for abutting against the flat center portion of the outer-cannula flange, said inner-cannula flange being provided with oppositely-disposed apertured ears extending forwardly and outwardly, the normal distance between the tips of the tabs of the outer-cannula flange being slightly less than the normal distance between the apertured ears as measured between points located just below the apertures, whereby when said inner cannula is being inserted into said outer cannula the tabs of said outer-cannula flange engage the lower portion of the ears of said inner-cannula flange, forcing the ears slightly together until the tips of the tabs enter the apertures of the ears, thereby to releasably interlock said inner and outer cannulas.

3,225,768
FABRIC LAMINATED BRASSIERE
Bernard I. Galitzki and Robert C. Burbank, Portland, Oreg.; said Burbank assignor to Jantzen Inc., a corporation of Nevada
Filed July 17, 1961, Ser. No. 124,610
12 Claims. (Cl. 128—463)



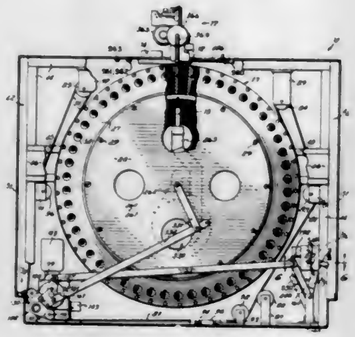
6. In a woman's garment, an outer body portion and means for holding it on a woman's body above her breasts, a breast-covering portion inside said body portion including cup portions for receiving the breasts, said breast-covering portion having a laminated construction comprising at least one layer of flexible sheet plastic and having at least one cloth layer joined thereto, said cloth layer having a margin that extends upwardly beyond the plastic layer, said cloth layer having stretchable and resilient properties, and means joining the margin of said cloth layer to said outer body portion whereby the said breast-covering portion is beld depending from said margin of the cloth layer.

3,225,769
ENVELOPE FOR INFORMATION-BEARING SHEETS AND THE LIKE
Angel Bernardo de Uriarte Piña, Madero 40–101 and 102, Mexico City, Mexico
Filed Sept. 25, 1961, Ser. No. 140,330
4 Claims. (Cl. 129—16)



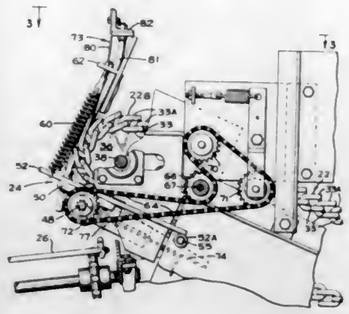
1. An envelope for information-bearing sheets and the like, said envelope comprising, in combination, a substantially rectangular rear panel and a substantially rectangular front panel, said front panel consisting at least in part of transparent material and each of said panels having an upper edge portion, a lower edge portion and two lateral edge portions; means for connecting said panels along the lower and along one lateral edge portion thereof, the other lateral edge portion of at least one of said panels having cutout means for facilitating removal and insertion of a sheet between said panels; and envelope-guiding means secured to the upper edge portion and extending beyond the lateral edge portions of said rear panel.

3,225,770
CARD SELECTING APPARATUS
Robert A. Lasley, Hamilton, Ohio, and Warren D. Novak, Chappaqua, N.Y., assignors to The Mosler Safe Company, Hamilton, Ohio, a corporation of New York
Filed May 9, 1963, Ser. No. 279,260
31 Claims. (Cl. 129—16.1)



1. The method of selecting a predetermined coded card from a plurality of coded cards comprising,
storing a discrete class of coded cards in each of a plurality of compartments, the cards of each individual class being arranged in random order within a compartment,
indexing said compartments relative to a card selector to locate a selected compartment having a selected class of coded cards stored therein adjacent the card selector,
restraining all of the cards within said selected class except said predetermined card against movement, and
sequentially directing a gaseous stream against said selected class of cards at a gas velocity sufficient to move said predetermined card whereby said predetermined card is moved to a physically discrete position relative to the remainder of cards within said class.

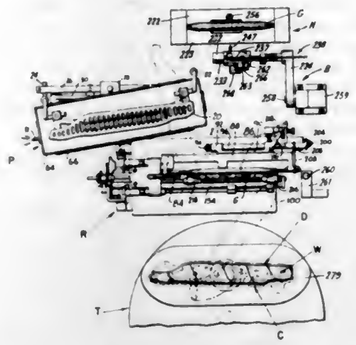
3,225,771
ROLLER-TYPE SEPARATING MEANS FOR A POTATO HARVESTER
Leon R. McRobert, Williamston, Mich., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Continuation of application Ser. No. 119,697, June 26, 1961. This application Aug. 26, 1963, Ser. No. 305,027
5 Claims. (Cl. 130—30)



1. In a potato harvester, means for separating vines from potatoes comprising an endless conveyor for conveying potatoes and vines to a potato discharge station, a de-vining roller mounted at said discharge station with its roller surface being substantially parallel to and adjacent to the conveyor surface on the underside of said endless conveyor to define a nip therebetween for separating said vines and potatoes, the de-vining roller being positioned with respect to the conveyor so that the tangential projection from said conveyor at said discharge station which is perpendicularly located with respect to the projection of the upper flight of the conveyor passes outside of said roller surface whereby potatoes discharged at said discharge station will gravitate away from said roller and said nip, a plurality of transversely spaced members positioned adjacent the conveyor at the discharge end thereof to retain said vines on the conveyor and direct them to said nip, the spacing between said members being such that said potatoes will pass therethrough, means mounting said roller for movement toward and away from said conveyor, means for directing vines to said nip between said roller and said conveying surface, and drive means for rotating said roller in a direction to move the periphery of said roller at said nip in substantially the same direction as said conveying surface at the nip whereby said driven roller and said conveyor draw vines through said nip causing any remaining potatoes to be separated from the vines, said drive means being operatively connected with said roller to supply positive driving power in all positions of the roller as it is moved away from or toward said conveyor.

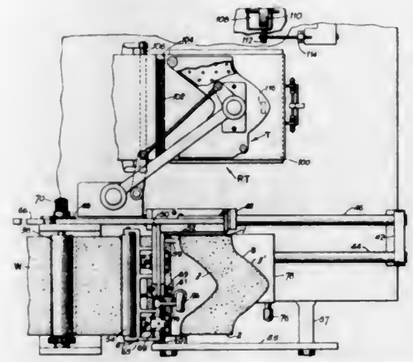
3,225,772
CIGAR AND METHOD OF APPLYING A WRAPPER
Thomas A. Godfrey, Elmont, and Sterling Ture Gustavson, Rosedale, N.Y., assignors to American Machine & Foundry Company, a corporation of New Jersey
Original application Jan. 9, 1961, Ser. No. 81,361, now Patent No. 3,139,091, dated June 30, 1964. Divided and this application Oct. 9, 1963, Ser. No. 315,004
4 Claims. (Cl. 131—8)

1. A method of applying a wrapper to a cigar bunch which comprises applying paste to substantially the entire surface of one face of a length of tobacco wrapper material, winding the pasted wrapper spirally around the cigar in such manner that one edge of said wrapper overlaps an adjacent edge of said wrapper, applying slight longitudinal tension and with a transverse tension gradient



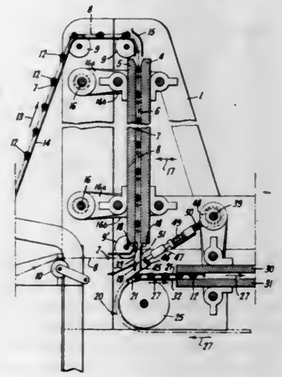
to said wrapper during the winding step to impart a higher tension in the overlapping edge portion of the spirally wound wrapper than at the other edge portion of said wrapper.

3,225,773
METHOD OF MAKING A MULTIPLE-LENGTH CIGAR BUNCH UTILIZING AN APPROXIMATE HORSESHOE SHAPED BINDER
Sterling Ture Gustavson, Rosedale, L.I., N.Y., assignor to American Machine & Foundry Company, a corporation of New Jersey
Filed Oct. 2, 1963, Ser. No. 313,390
4 Claims. (Cl. 131—20)



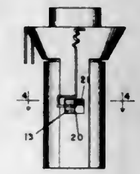
1. The method of making two cigar bunches simultaneously, which method comprises the following steps:
(A) Forming one substantially cylindrical filler of tobacco of double-bunch length;
(B) Providing a continuous web of tobacco, said web having two opposed parallel rectilinear edges, said edges spaced apart a distance equal substantially to the combined length of two bunches;
(C) Cutting off the free end of said web repetitively by equal substantially U-shaped cutting strokes, each stroke extending throughout said distance, to provide successive one-piece substantially U-shaped binders, each binder having two opposed parallel edges formed by the edges of said web, having a width correlated to the diameter of the bunch and extending in the direction of the length of said web, and having two opposed parallel substantially U-shaped sides substantially symmetrical with respect to a line parallel to and midway between said edges;
(D) Rolling the binder around the filler, starting with the middle of the U at the middle of the cylinder;
(E) Continuing the rolling until the two legs of the U encoil the two ends of the filler substantially simultaneously;
(F) Pasting the two legs, to prevent unravelling after severing the double-bunch at its middle.

3,225,774
CIGAR PRESSING MACHINE
Friedrich Pietruska, Hemmerlestrasse 2, Memmingen, Germany
Filed Apr. 15, 1963, Ser. No. 273,178
5 Claims. (Cl. 131—80)



1. A pressing machine for pressing substantially cylindrical elongated smoking articles, said machine comprising a pair of opposed spaced plates, eccentric means for actuating at least one of said plates to oscillate toward and away from the other of said plates to produce a cycle of alternating pressure and nonpressure on smoking articles positioned therebetween, first means effecting movement of said smoking articles forwardly, with their longitudinal axes in parallel alignment and spaced substantially one from another, between said pair of plates during the nonpressure portion of the cycle only, and second means effecting movement of said first means continuously during both the pressure portion and nonpressure portion of the cycle.

3,225,775
CIGARETTE QUENCHER
Wladimir Nyc, 3125 U St., Sacramento, Calif.
Filed Jan. 20, 1964, Ser. No. 338,783
3 Claims. (Cl. 131—256)



1. A cigarette quenching device comprising:
(a) an elongated slit tube of bimetallic material, said tube having, when cool, a diameter greater than the diameter of a cigarette and when heated, a diameter slightly less than the diameter of a cigarette;

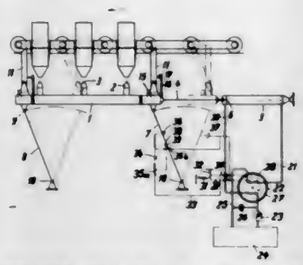
(b) means on said tube for temporarily limiting the longitudinal movement of a cigarette through said tube while said tube is cool; and

(c) means on said tube for deactivating said limit means as said tube is heated, said deactivating means being responsive to the contraction of said tube.

3,225,776
CONTAINER WASHING APPARATUS

Karl Plock, Dortmund-Lucklemberg, Georg Mertins, Dortmund-Korne, and Joachim Ciongwa, Dortmund, Germany, assignors to Holstein & Kappert Maschinenfabrik Phönix G.m.b.H., Dortmund, Germany

Filed Mar. 20, 1964, Ser. No. 353,543
11 Claims. (Cl. 134—129)

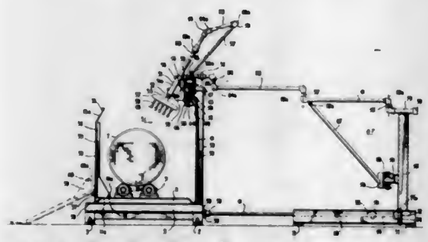


1. In a washing machine, in combination, conveyer means for conveying articles along a given path; washing means for washing the articles; resiliently actuated reciprocating means operatively connected to said washing means for moving the latter independently of said conveyor means first in one direction along the same general path and in the same general direction as the articles while the latter are conveyed by said conveyer means but at a rate of speed different from the speed of said conveyer means and then in an opposite direction opposed to the direction of movement of the articles by said conveyer means; and aligning means carried by said washing means and engaging part of said conveyer means during movement of said washing means by said resiliently actuated reciprocating means in said one direction for coupling said washing means to said conveyer means for movement therewith at the same speed in said one direction so as to align said washing means with said articles to wash the latter during part of the movement of the articles along said path by said conveyer means.

3,225,777
APPARATUS FOR CLEANING TUBE BUNDLES

Robert Q. Shelton, Forrest C. Pittman, and Robert G. Love, Duncan, Okla., assignors to Halliburton Company, Duncan, Okla., a corporation of Delaware

Filed July 16, 1964, Ser. No. 383,188
9 Claims. (Cl. 134—141)



9. An apparatus for applying pressurized fluid to articles, said apparatus comprising:

frame means;

fluid discharging means movably mounted upon said frame means;

outrigger means adapted to be movable relative to said frame means;

means for connecting said outrigger means in spaced, rigid relation with said frame means; and

conduit means comprising a plurality of rigid conduit sections interconnected by swivel joint means, with one end of said conduit means being detachably connected with said fluid discharging means and with another end of said conduit means being mounted on said outrigger means and adapted to be connected to a source of pressurized fluid;

skid means connected with said frame means;

arm means interconnecting said conduit means and said outrigger means;

first pivot means having a vertical pivot axis attaching said arm means to said outrigger means;

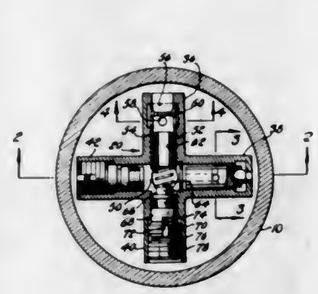
said arm means being attached at one end with a portion of said conduit means and attached at an opposite end with said first pivot means; and

second pivot means having a vertical pivot axis substantially coincident with the pivot axis of said first pivot means and connecting said portion of said conduit means with said outrigger means for pivotable movement about said axis, with said second pivot means comprising a swivel joint of said conduit means.

3,225,778
HYDRAULIC RESISTORS

Ralph K. Londal, Detroit, Mich., assignor to Holley Carburetor Company, Warren, Mich., a corporation of Michigan

Filed Nov. 6, 1961, Ser. No. 150,552
5 Claims. (Cl. 137—54)

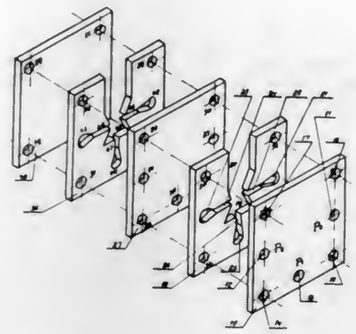


1. A hydraulic resistor comprising a pressure chamber, a restricted inlet passage for connecting said chamber to a source of fluid under pressure, said chamber having an outlet port for connection of a signal pressure transmission passage thereto, a hollow rotor, an outlet passage connected to the interior of said rotor, a pair of centrifiugally biased valves in said rotor connected in parallel to control fluid flow from said chamber through said rotor, said valves each comprising a radially inwardly facing valve seat, a valve element movable radially toward and away from said seat, means for subjecting said valve element to a radially acting resultant force dependent on the pressure differential between said chamber and the interior of said rotor, one of said valve elements being substantially heavier than the other valve elements so as to have a substantially greater rate of change of centrifugal force than the other valve element during change in the speed of rotation of said rotor.

3,225,779
PNEUMATIC OR HYDRAULIC AUTOMATIC CONTROL SYSTEM

Jury Vladimirovich Lootzook, Moscow, U.S.S.R., assignor to Pneumo-Hydraulic Automatic Control Laboratory of Automatic Control and Telemechanics Institute of the Academy of Sciences of the U.S.S.R., Moscow, U.S.S.R.

Filed Aug. 18, 1961, Ser. No. 133,015
2 Claims. (Cl. 137—81.5)

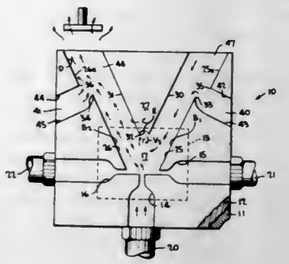


1. A fluid pressure control device comprising a cover plate, said cover plate having an aperture for attachment to a source of constant pressure fluid, said cover plate having a second aperture providing a fluid pressure outlet, said cover plate having a third aperture for attachment to a source of control fluid pressure, an intermediate plate, a central chamber in said intermediate plate, a slot in said intermediate plate leading from said chamber to the edge of said intermediate plate to provide communication with the atmosphere, a recess in said intermediate plate communicating with said first aperture, a nozzle passage communicating with said recess and said chamber and disposed at an angle to said slot, a second recess in said intermediate plate communicating with said second aperture, a second nozzle passage in alignment with said first nozzle passage and communicating with said second recess and said chamber, a third recess in said intermediate plate on the opposite side of said chamber from said slot and communicating with said third aperture, a third nozzle passage disposed in alignment with said slot and at an angle to said first and second nozzle passages and communicating with said third recess and said chamber, a second cover plate in engagement with said intermediate plate and having apertures in alignment with said first, second and third apertures, a second intermediate plate in engagement with said second cover plate, a central chamber, slot, recesses and nozzle passages in said second intermediate plate duplicating those in said first intermediate plate and with the recesses in said second intermediate plate communicating with the apertures in said second cover plate, a third cover plate in engagement with said second intermediate plate, and means to clamp all of said plates in staked fluid-tight relationship to provide a multi-stage parallel control device, whereby pressure control fluid flowing from said third nozzle passages will deflect fluid flowing from said first nozzle passages across said chambers into said slots in accordance with the pressure of said control fluid to control the quantity of fluid flowing from said chambers into said second nozzle passages and the pressure of fluid flowing from said second recesses through said second apertures.

3,225,780
PRESSURE RECOVERY FROM BISTABLE ELEMENT

Raymond W. Warren, McLean, Va., and Ralph G. Barclay and John G. Moorhead, Silver Spring, Md., assignors to the United States of America as represented by the Secretary of the Army

Filed May 20, 1963, Ser. No. 281,847
8 Claims. (Cl. 137—81.5)
(Granted under Title 35, U.S. Code (1952), sec. 266)

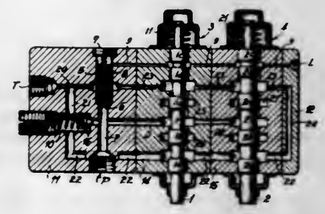


1. A pure fluid system comprising an interaction chamber for receiving and confining fluid flow, a power nozzle for issuing a power stream into one end of said chamber, a control nozzle for issuing a control stream in interacting relationship with said power stream for effecting amplified directional displacement thereof, plural passages located downstream of said interaction chamber for receiving fluid flow therefrom, a substantially wedge shaped flow splitter located between said passages for splitting flow into said passages, a concave tip formed at the converging end of said flow splitter for receiving fluid from said power nozzle and a duct extending laterally from at least one of said passages downstream of the apex of said flow splitter and communicating with a predetermined fluid environment, the walls forming said duct being substantially parallel.

3,225,781
SHUT-OFF VALVE AND ASSOCIATED PRESSURE RELIEF MEANS

Heinz Krüger, Berlin-Charlottenburg, and Ullrich Baumgarten, Frankfurt am Main, Germany, assignors to Kamper-Maschinenbau G.m.b.H., Berlin-Marienfelde, Germany

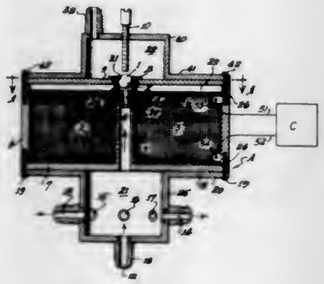
Filed Aug. 13, 1962, Ser. No. 216,426
Claims priority, application Germany, Aug. 14, 1961, K 44,495
3 Claims. (Cl. 137—108)



1. In combination, a spool valve having a body with a first bore having an inlet adapted to be connected to a high pressure source of fluid and an outlet adapted to communicate with a fluid operable device; an independently operable spool member in said bore having a neutral position and constructed and arranged to stop flow through said inlet to said outlet when in said neutral position;

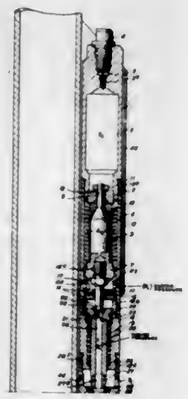
a fluid pressure operated safety valve in communication on opposite sides thereof with said inlet and a region of low pressure and adapted to establish communication between said inlet and region of low pressure when pressure in said inlet exceeds a predetermined amount; a second bore in said body adapted to communicate with said region of low pressure and with said inlet; and means associated with said second bore to control flow through said second bore; said means comprising, a fluid pressure operated pressure valve including a passage connected at one end to said inlet and at the other end to an enlarged diameter chamber in communication with said region of low pressure; a valve seat in said chamber adjacent said passage; a piston in said chamber having a valve thereon adapted to cooperate with said valve seat, said piston being biased to move said valve to open position by pressure in said inlet and to closed position by pressure and spring means in said chamber; a restricted passage through said piston and valve establishing communiction between said inlet and said chamber; means associated with said spool member adapted to shut off communication between said chamber and said region of low pressure when said spool member is moved from its neutral position and rendered ineffective when said spool member is in its neutral position; a third bore in said body having one end in communication with said chamber adjacent the valve seat and the other end in communication with said region of low pressure; said valve being adapted to shut off flow of fluid from said inlet to said third bore when it is biased to its seat.

3,225,782
FLUID CONTROL SYSTEM
Warren W. Begley, 14900 Hiawatha St., Mission Hills, Calif.; Robert E. Wilcox, 12436 Landale St., North Hollywood, Calif.; and Eugene A. Hoskinson, 9722 Rangeview Drive, Santa Ana, Calif.
Filed Apr. 5, 1963, Ser. No. 270,972
4 Claims. (Cl. 137—115)



1. A fluid control system, comprising:
(a) a body having a fluid passage therethrough;
(b) said fluid passage defining a longitudinally extending flared throat, the diameter of said throat increasing from one end thereof to the other end thereof;
(c) said fluid passage defining an inlet orifice extending from said one end of said throat;
(d) a magnetically attractable sphere freely disposed and longitudinally movable within said throat to define an annular throat passage between said sphere and the wall of said throat;
(e) means for exerting a magnetic force on said sphere toward said inlet orifice in opposition to the force exerted on said sphere by fluid flowing through said fluid passage;
(f) the arrangement being such that the magnetic force acts directly on said sphere;
(g) a chamber, a fluid inlet, a fluid outlet having a fluid outlet line connected thereto, said inlet, outlet and fluid passage communicating with said chamber; and
(h) means for sensing the pressure of fluid in said fluid outlet line and for supplying a signal proportional to said outlet pressure to said magnetic force exerting means to thereby maintain said fluid outlet pressure substantially constant upon fluctuation of pressure delivered to said chamber through said fluid inlet.

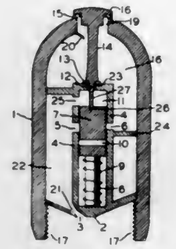
3,225,783
PILOT GAS LIFT VALVE
Leon A. Stacha, Dallas, Tex., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Filed Oct. 15, 1962, Ser. No. 230,362
6 Claims. (Cl. 137—155)



1. In a flow valve arranged to be mounted on a tubing string, a housing; a pressure chamber in the housing; a bellows diaphragm suspended below the pressure chamber and communicating therewith; an upper valve stem and head attached to the end of the bellows diaphragm; a partition in the housing having a passage therethrough through which the upper valve stem extends; a restricted fluid flow passage between the stem and the passage; a port through the wall of the housing above the partition, communicating with the exterior of the bellows; a lower valve stem; a piston head on the upper end of the lower valve stem slidably engaging the wall of the housing; a valve head on the lower end of the lower valve stem; an axial bore through said lower valve stem, piston and valve head; a chamber between the partition and the piston about the upper valve stem; a valve seat in the upper end of the bore arranged to receive the upper valve head, said valve seat being secured to and movable with the bore; spring means arranged between the lower valve stem and the housing to normally urge the valve stem upwardly in the housing; an outlet passage in the lower end of the housing; a valve seat in the upper end of the outlet passage arranged to receive the valve head on the lower valve stem to cause communication between the bore and the outlet passage; at least one lateral passage through the wall of the housing communicating with the lower valve head and arranged to communicate with the outlet passage when the lower valve head is lifted off the seat in the upper end of the outlet passage; the pressure chamber and bellows diaphragm being sealed at a pressure

sufficient to seat the upper valve head on the seat in the bore, and force the lower valve head against the seat in the housing against the spring means.

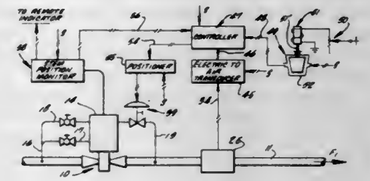
3,225,784
LOW PRESSURE WARNING DEVICE
George R. Call, 20 McDonald Drive, Sioux City, Iowa
Filed Feb. 25, 1963, Ser. No. 260,539
1 Claim. (Cl. 137—234)



A low pressure warning device for use with a vehicle pneumatic tire, comprising a casing, means for attaching said casing to the outer end of a valve stem on a pneumatic tire, said casing including a first abutment portion closing the lower portion of said casing and adapted to actuate the valve of a valve stem, a piston chamber, a piston sealingly and slidably engaged in said piston chamber, said piston chamber having aligned openings, said piston having a transverse opening adapted to be aligned with said chamber openings, said piston chamber including a lower abutment portion, a spring bearing against said lower abutment portion and said piston, said first abutment portion having an opening therethrough, said piston chamber having an opening at its upper end, said casing having an end opening, a stem attached to said piston, said stem extending through said opening and including a sealing portion externally of said casing for abutment with said end opening, a whistle causing member within said casing attached adjacently to said opening whereby air impinging thereagainst will cause a warning sound, said opening in the upper end of said piston chamber being in communication with a portion of said casing exteriorly of said piston chamber, decrease of pressure to a pre-determined value in said piston chamber causing said spring to force said piston outwardly to cause alignment of said piston transverse opening and said aligned chamber openings, and to release said sealing portion from said end opening whereby air passing through said piston transverse opening and said aligned chamber openings will cause air impingement against said whistle causing member.

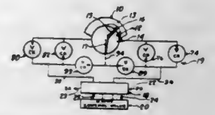
3,225,785
SERVO-SYSTEM FOR FLUID FLOW REGULATING VALVES
Thomas M. Golke, Trumbull, Conn., assignor to Consolidated Electrodynamics Corporation, Pasadena, Calif., a corporation of California
Filed Mar. 1, 1963, Ser. No. 262,031
4 Claims. (Cl. 137—486)

4. Apparatus for controlling the rate at which a fluid flows through a conduit in a fluid flow system comprising, in combination,
(a) valve means in the conduit operable principally in response to pressures existing upstream and downstream thereof in fluid in the conduit for varying the rate of fluid flow through the conduit including:
(1) a control valve disposed in the conduit,
(2) a cylinder and a spring-loaded piston reciprocably mounted therein, the piston being coupled to the control valve for operation of the control valve in response to movement of the piston,
(3) pressure balance duct means connected to the cylinder adjacent opposite sides of the piston and to the conduit upstream and downstream of the control valve, and
(4) a pilot valve in the pressure balance duct means for regulating the communication of pressure between one side of the piston and the conduit to regulate operation of the control valve,
(b) a flowmeter disposed in the conduit downstream of the control valve for monitoring the actual down-



stream flowrate and for producing an output signal having a value indicative of said actual downstream flowrate,
(c) a controller to which the flowmeter output signal is applied for comparing the flowmeter output signal with a reference signal indicative of a desired downstream flowrate and for producing a control signal indicative of the comparison result,
(d) means for supplying the control signal to the pilot valve for control thereof to regulate the adjustment of the control valve so that the actual downstream flowrate follows the desired flowrate, and
(e) means coupled between the valve means and the controller for generating a feedback signal indicative of the setting of the valve means and applying the feedback signal to modulate the control signal in relation to the value of the feedback signal.

3,225,786
VANE PRESSURIZING MEANS
John L. Elliott, Birmingham, Mich., assignor to Tracer Control Company, Hazel Park, Mich., a corporation of Michigan
Filed Nov. 19, 1962, Ser. No. 238,602
11 Claims. (Cl. 137—512)



1. A combination manifold and valve assembly adapted for use with a sliding vane type reversible hydraulic motor having a first and a second port for alternately receiving and discharging a working fluid depending upon the direction of operation of the motor and a third port for receiving a fluid to urge the vanes of the motor outwardly, said manifold and vane assembly comprising,
(a) a first housing structure having a pair of spaced passages and valve means selectively operable to deliver fluid under pressure to either of said passages,

(b) a second housing structure having a first plurality of radially spaced through passages and a second plurality of radially spaced through passages,
(c) a check valve being positioned in each of said radially spaced passages and means providing communication between one of said first housing structure passages and said first plurality of radially spaced passages and means providing communication between the other of said first housing structure passages and said second plurality of radially spaced passages,
(d) a first port means adapted for connection to the first port of said motor and registering with said first plurality of radially spaced passages and a second port means adapted for connection with said second port of said motor and registering with said second plurality of radially spaced passages,
(e) at least two of said check valves in each of said first and second plurality of radially spaced passages being disposed in opposite directions whereby fluid may be alternately directed to and from said first and second port means depending upon the position of said valve means,
(f) a third port means provided in said second housing structure adapted for connection to said third port of said motor and a first passage connecting one of said first plurality of radially spaced passages to said third port means and a second passage provided in said second housing connecting one of said second plurality of radially spaced passages to said third port means,
(g) said check valves being carried in said third port means connected radially spaced passages being operable to open in the same direction, and
(h) means blocking fluid from said third port means connected passages to said first and second port means.

3,225,787
BATCHING PIG AND SEPARATION OF INTERFACES IN PIPE LINE FLOW

William B. Gogarty and Gary I. Nielson, Littleton, Colo., assignors to Marathon Oil Company, a corporation of Ohio

Filed Mar. 15, 1962, Ser. No. 179,879
7 Claims. (Cl. 137—561)

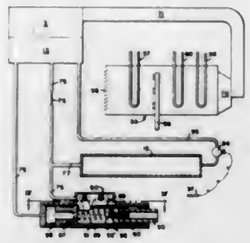


1. The combination with a pipe line for transport of successive flows of liquids of different composition having at least two sections of different diameter and an interconnecting coupling section having an internal bore merging with the bores of the abutting ends of said sections, of a batching pig disposed in said line in separating relation to successive flows and comprising an elastic hollow body of substantially greater length than diameter, the normal diameter of said body when filled being substantially the same as the bore of the section of greater diameter, and a slowly-flowing viscous fluid sealed within and filling the hollow portion of said body and slowly movable within the enclosure under line pressure directed against the upstream end of said body without rupture of its enclosing surface to extend or contract said body so as to conform to the diameter of the bore through which said pig is being impelled in linear movement by said line pressure.

3,225,788
AIR DISTRIBUTING UNITS

Richard A. Church, North Syracuse, and Boris W. Haritonoff, Geneseo, N.Y., assignors to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware

Original application June 30, 1959, Ser. No. 823,907, now Patent No. 3,143,292, dated Aug. 4, 1964. Divided and this application Sept. 25, 1963, Ser. No. 311,565
6 Claims. (Cl. 137—599)



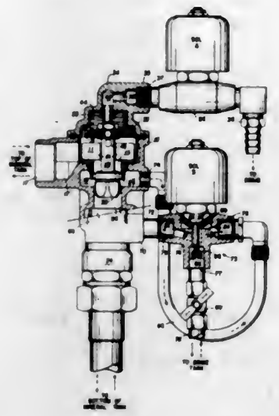
1. A pressure-responsive valve for use in a control system for an air distributing unit including a control fluid chamber, comprising a first chamber adapted to be placed in communication with the control fluid chamber, means adapted to place the first chamber into communication with the control chamber, a second chamber located adjacent said first chamber and being in communication therewith by means of an orifice, a piston reciprocatingly mounted within said second chamber and separating the second chamber into a first portion and a second portion to meter said orifice, the second portion being in communication with the first chamber through said orifice to apply pressure against one end face of the piston, means adapted to place the first portion into communication with a source of pressure substantially equal to the pressure of air supplied the air distributing unit to apply said last named pressure to the opposite end face of said piston, movement of said piston serving to vary the size of the orifice placing the first chamber into communication with the second portion thereby varying pressure in the second portion, means for biasing the piston in a direction opposite the direction of movement caused by the pressure supplied to the first portion, said biasing means being located in the second portion, and said second portion having an exhaust port.

3,225,789
WATER SOFTENER VALVE

Richard G. Thompson, Stillwater, Minn. (% National Soft Water Company, 310 E. Prentiss St., Iowa City, Iowa)

Filed Nov. 13, 1962, Ser. No. 237,039
9 Claims. (Cl. 137—599.1)

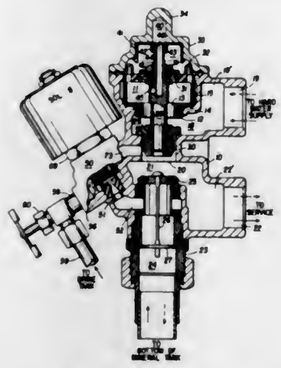
1. In a fluid treatment control assembly, said assembly having an untreated fluid inlet passage, an untreated fluid outlet passage communicable with said inlet passage, a treated fluid passage, an injector passage communicable at its upstream end with said untreated inlet passage and at its downstream end with said treated fluid passage, first valve means operable to one position to permit flow of fluid from said untreated inlet passage to said untreated outlet passage and prevent flow from said untreated inlet passage to said injector passage and to a second position to permit flow of fluid from said untreated inlet passage to said injector passage and prevent flow from said untreated inlet passage to said untreated outlet passage, an injector including a nozzle and a throat, said injector being operatively mounted in said injector passage to form a suction chamber between said nozzle and throat when fluid flows from said untreated inlet passage through said injector to said treated fluid passage, and a regenerative fluid inlet passage operatively communicating with said chamber, the combination therewith of a fast rinse fluid passage communicable at its upstream end with said untreated inlet passage and at its downstream end with said chamber effective to bypass said nozzle, said throat having a constriction less than that of said nozzle but sufficient to cause a predetermined pressure drop in fluid flowing from said fast rinse passage to said treated fluid passage whereby said throat controls the rate of flow of rinse fluid in said treated fluid passage, and second valve means normally closing said fast rinse passage.



3,225,790
WATER SOFTENER VALVE WITH FAST RINSE MEANS

James C. Laughlin, Iowa City, Iowa, assignor, by mesne assignments, to Jack F. Shabel, Iowa City, Iowa

Filed Jan. 14, 1963, Ser. No. 251,338
1 Claim. (Cl. 137—599.1)

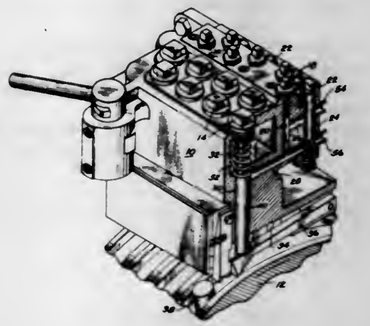


In a fluid treatment control assembly, said assembly having an untreated fluid inlet passage, an untreated fluid outlet passage communicable with said inlet passage, a treated fluid passage, an injector passage communicable at its upstream end with said untreated inlet passage and at its downstream end with said treated fluid passage, main valve means operable to one position to permit flow of fluid from said untreated inlet passage to said untreated outlet passage and prevent flow from said untreated inlet passage to said injector passage and to a second position to permit flow of fluid from said untreated inlet passage to said injector passage and prevent flow from said untreated inlet passage to said untreated outlet passage, an injector including a nozzle and a throat, said injector being operatively mounted in said injector passage to form a suction chamber between said nozzle and throat when fluid flows from said untreated inlet passage through said injector to said treated fluid passage, and a regenerative fluid inlet passage operatively communicating with said chamber, the combination therewith of means providing a bypass of said nozzle for fast rinse fluid, said means including a nozzle chamber forming a portion of said injector passage upstream of said suction chamber and spacedly surrounding said nozzle, said chamber normally communicating with the upstream end of the nozzle passage and having a valve seat at its downstream end, said nozzle carrying closure means normally operatively engaging said seat in order to permit flow of fluid between said nozzle and suction chambers only through said nozzle passage and being movable in said chamber to a bypass position disengaging said closure means from said seat, the orifice provided by said seat and the movement of said nozzle being sufficient to provide a rate of fluid flow directly between said nozzle and suction chambers greater than provided through said nozzle passage, the orifice provided by said throat having a restriction to fluid flow greater than that of the orifice of said seat, and means to move said nozzle to said position.

3,225,791
APPARATUS FOR FORMING HOLLOW GLASS ARTICLES

Earl T. Fairman, Sr., 3825 W. Waco Drive, Waco, Tex.

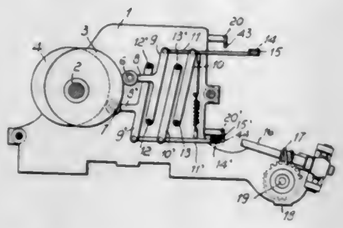
Filed June 19, 1961, Ser. No. 126,413
7 Claims. (Cl. 137—624.18)



1. Apparatus for forming a hollow glass article comprising a body mold and a vacuum valve in connection with the mold in which the valve has a valve closing portion substantially of the same diameter extending throughout more than half of the length of the valve, a reduced stem connected to one end thereof and a guiding head at the other end of the stem, the mold having an open chamber through which the stem of the valve passes, a stud in the top of the chamber with a depending sleeve into which the said head extends with the valve passage opening at the bottom of the chamber in line with the stud sleeve to guide the valve and with the passage near the chamber extending into the valve passage and closed by said valve closing portion when the valve is raised.

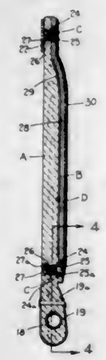
3,225,792
DOBBY, SPECIALLY ADAPTED FOR SPEEDY LOOMS
Giovanni Piazzolla, Via Salieri 6, Milan Italy, and Carlo Villa, Via Giuseppe Mazzini 24, Melzo, Milan, Italy
Filed Aug. 6, 1963, Ser. No. 300,302
Claims priority, application Italy, Dec. 15, 1962, 24,672/62
12 Claims. (Cl. 139—71)

1. A dobby comprising, in combination, a pair of dog means mounted for reciprocating movement along two paths; drive means for reciprocating said dog means in opposite reciprocating forward and rearward strokes; baulk lever means mounted for oscillatory movement; a pair of draw hook means mounted on said baulk lever means for angular movement between first positions located in said paths of said dog means, respectively, and second positions spaced from said paths; and rotary pattern means including periodically moving control means and motion transmitting means actuated by said periodi-



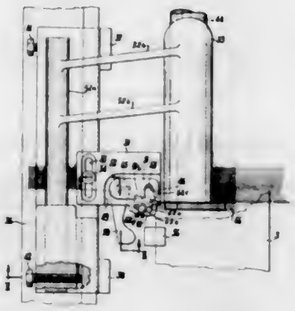
cally movable control means of said rotary pattern means and cooperating with said draw hook means for placing each draw hook means in said first position thereof during the forward stroke and also during the last part of the rearward stroke of the correlated dog means whereby the respective hook means is reciprocated by the correlated dog means and is already in said second position thereof when the correlated dog means starts the forward stroke thereof.

3,225,793
SHUTTLE CHECKING DEVICE
Coy L. Huffman, Jr., 107 Brookside Way, Greenville, S.C., and Robert Lee Springfield, 106 Galphin Drive, Greenville, S.C.
Continuation of application Ser. No. 348,343, Mar. 2, 1964. This application Mar. 22, 1965, Ser. No. 444,924
4 Claims. (Cl. 139—185)



1. For use in a loom shuttle box, a shuttle binder comprising, an elongated longitudinally disposed element having a curved portion adjacent a shuttle receiving end thereof for receiving the shuttle on initial impact, and an inner substantially flat surface extending rearwardly therefrom substantially in alignment with the elongated element so that the adjacent portion of the elongated element has a substantially uniform cross-section, a relatively thin flat formed member substantially conforming to the inner surface of the elongated element, said thin flat member being constructed from material capable of dissipating heat and withstanding flexing and impact from the shuttle during weaving, means fastening the thin flat member to the elongated element adjacent the forward end of the elongated element, means fastening the thin flat member to the elongated element adjacent the rear end thereof, said fastening means resisting thrust longitudinally of the thin flat member caused by engagement of the binder by the shuttle, said thin flat member being in substantially overlying relationship to the elongated element, an air space between the elongated element and the thin flat member extending between the fastening means, and a shuttle engaging leather-like strip substantially covering the thin flat member.

3,225,794
WEAVING FRAME HAVING IMPROVED WEFT TRIMMING MEANS
Yves Juillard, Mulhouse, Haut-Rhine, France, assignor to Societe Alsacienne de Constructions Mecaniques, Mulhouse, Haut-Rhine, France, a company of France
Filed Dec. 27, 1963, Ser. No. 333,802
Claims priority, application France, Jan. 12, 1963, 921,244
9 Claims. (Cl. 139—266)



1. In a loom, in combination with means for feeding a sheet of warp, means for cyclically forming a shed in the warp and alternately reversing said shed, means for shooting picks of weft across the warp through the shed at successive reversals thereof whereby a web of fabric is woven having weft ends protruding from a side edge thereof, batten means cyclically operated to strike home the picks of weft into the fell of said fabric, means for feeding said web over a surface and means for taking up said web; the provision of reciprocable trimming cutter means supported at said surface in the path of said side edge of the web of fabric for engagement with the protruding ends of weft, a shaft pivotally mounted for rotation about a vertical axis and carrying said cutter means on an upper end portion thereof, an arm connected to and projecting from a lower end portion of said shaft, means on said batten means positioned to strike said arm as the batten is advanced to strike the weft home into the fell of the fabric thereby to drive said cutter means through its cutting stroke, a backing plate supported on the other side of the web from said cutter means and extending substantially along the path of said side

edge of said fabric to cooperate with said cutter means in shearing said protruding ends of weft, and retractile means biasing said cutter means.

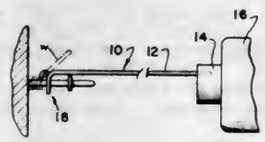
3,225,795
MACHINE FOR FORMING AN EYE AT EITHER END OF A WIRE BINDER ON WIREBOUND BOX COMPONENTS
William J. Hogan and Charles A. Endahl, Jr., Dover, N.J., assignors to Stapling Machines Co., Rockaway, N.J., a corporation of Delaware
Filed Aug. 16, 1963, Ser. No. 302,582
10 Claims. (Cl. 140—104)

1. A machine for forming an eye at either end of an intermediately positioned wire binder or wirebound box components comprising means for supporting a box component with an intermediately positioned wire secured thereto and having portions of the wire extending beyond the edges of said box component, guide means for engag-



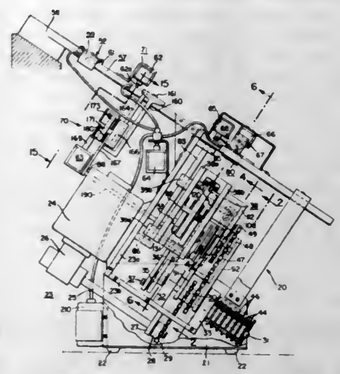
ing said extending portions of the wire and moving them transversely if necessary into pre-determined transverse positions, and means for bending the ends of said positioned wire portions into substantially closed eyes.

3,225,796
WIRE WRAPPING DEVICE
Edward L. Allen, Ulster, Pa., assignor to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Filed July 23, 1963, Ser. No. 297,062
9 Claims. (Cl. 140—117)



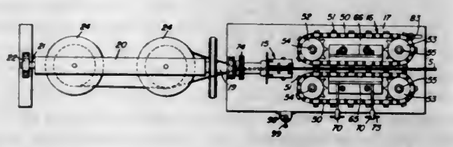
1. A resilient wire-form device for wrapping wire on a terminal, when rotated, comprising:
(a) a receiver disposed in a lateral plane, and formed to define a lateral opening extending axially therethrough for receiving a terminal to be wire wrapped;
(b) an elongated shank connected at one end to the receiver at the periphery of the defined opening, and extending axially therefrom substantially normal to the plane of the receiver on one side thereof;
(c) the shank being adapted at its other end to be connected eccentrically to a rotatable driving means having an axis of rotation substantially alined with the axis of a terminal disposed in the receiver to rotate the device for wire wrapping;
(d) a formed hook connected to the receiver, and adapted to engage and guide a wire for wrapping on a terminal disposed in the receiver when the device is rotated; and
(e) the hook being disposed on the side of the plane of the receiver opposite from the shank.

3,225,797
APPARATUS AND METHOD FOR STRAIGHTENING WIRE-LIKE OBJECTS
Ralph E. Stoody, 370 Elkwood Terrace, Englewood, N.J.
Filed June 11, 1962, Ser. No. 206,534
7 Claims. (Cl. 140—147)



1. Apparatus for arranging yieldable elongated members which extend from a given body, comprising:
(a) means for causing said members to lie substantially in the same plane,
(b) means for separating said members which lie substantially in the same plane from one another in the region thereof adjacent to said body,
(c) means for separating said members from one another throughout the substantial remainders of their respective lengths, and
(d) means for straightening said members throughout substantially their entire lengths.

3,225,798
MEANS FOR PROCESSING STONE SAWING WIRES
Joseph Theodore Dessureau and John B. Dessureau, both of 53 Granite St., Barre, Vt.
Filed Nov. 26, 1963, Ser. No. 326,180
6 Claims. (Cl. 140—149)

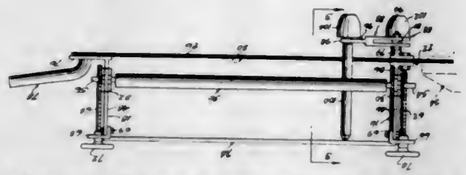


2. Apparatus for producing a twisted stone sawing cable the wires of which are free from tension, comprising
a plurality of wire supply reels;
rotatably mounted twister head means including a first pair of parallel relatively adjustable opposed rollers between which the wires from said reels are fed;
means including a reversible electric motor for selectively driving said twister head means in either direction to twist the wires into a cable;
tractor means for drawing the cable through said twister head means, said tractor means having its inlet end immediately adjacent the discharge end of said head and including opposed endless chain means for gripping opposite sides of the cable to hold the gripped portions in a straight line that is in alignment with the axis of the twister head means;

automatic reversing mechanism means driven by said motor during the operation thereof in either direction for driving said tractor means solely in the cable drawing direction;

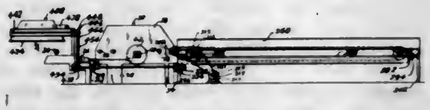
and means preventing axial turning of the wires as they pass through said twister head means and said tractor means, respectively, comprising a second pair of relatively adjustable opposed rollers connected with said twister head means adjacent the discharge end thereof and between which said wires are fed, said first and second roller pairs being parallel, and means clamping together the rollers of said first and second roller pairs, respectively, in tight engagement with said wires, said means preventing axial turning of the wires including also a pair of relatively adjustable parallel pressure bars for forcing said endless chain means in gripping engagement with the cable, and means clamping together said pressure bars to effect tight engagement of said endless chain means with said cable.

3,225,799
LUMBER SAWING ATTACHMENT FOR PORTABLE CHAIN SAW
Ernest A. Hayden, P.O. Box 248, Callahan, Calif., and John S. Tanner, Auke Bay, Alaska; said Tanner assignor to said Hayden
Filed Jan. 10, 1961, Ser. No. 81,899
19 Claims. (Cl. 143—32)



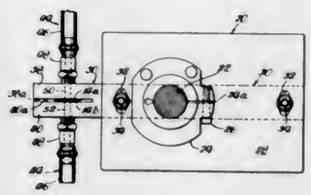
1. A portable log saw assembly comprising a carriage to extend across a reclining log, means mounted on the carriage to bear movably upon the log, a saw guide bar mounted on the carriage and spaced below said means, a saw chain trained around said guide bar, said carriage having a first and a second end and said chain having a leading flight working toward said first end, a saw chain driving means mounted on said carriage and operably connected to said saw chain, lateral thrust means mounted on the carriage at said first end having thrust head means located on the carriage at said first end and having thrust head means located below the level of the saw chain and guide bar for engaging the side of a log in thrust opposition to the action of the leading flight of said saw chain, said first mentioned means comprising a leading roller, a middle roller, and a trailing roller, said rollers being in the same horizontal plane, with said saw guide bar and said saw chain located between the middle roller and the trailing roller.

3,225,800
EDGING PICKER
Lionel Pease, Seattle, Wash., assignor to Mill Equipment, Inc., Seattle, Wash.
Filed Dec. 31, 1962, Ser. No. 248,327
9 Claims. (Cl. 143—37)



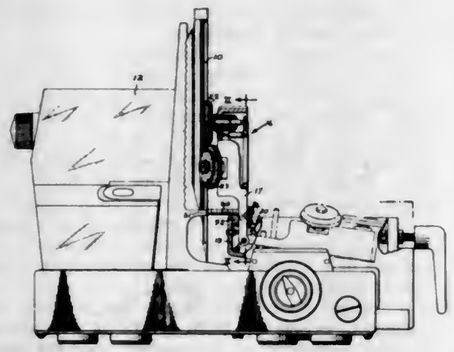
1. A sawmill edger, said sawmill edger comprising a plurality of rotatable saws capable of being moved laterally to adjust the space therebetween, a plurality of cylinders, having plungers, mechanical means connecting the plungers of the cylinders with the saws so as to move the saws in response to the movement of the plungers, a means for removing lumber from said sawmill edger, said means comprising belts for removing lumber from the edger and said belts being capable of being moved laterally with respect to the movement of the saws, and mechanical means connecting said plungers and said belts so as to move the belts in response to the movement of the plungers and with respect to said saws.

3,225,801
GUIDE MEANS FOR BAND SAW BLADE
Lyman D. Dunn, Chicago, and Stanley Gembicki, Des Plaines, Ill., assignors to Marlan Company, a corporation of Illinois
Filed Mar. 17, 1964, Ser. No. 352,446
8 Claims. (Cl. 143—160)



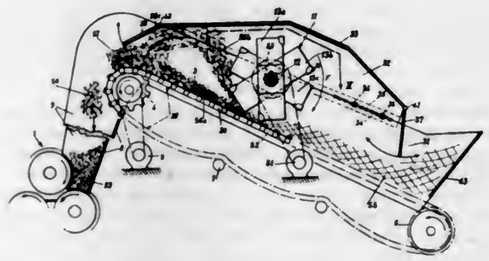
1. Guiding means for a power saw having an endless band saw blade continually running through a working station for cutting a work piece held at the station, comprising: a support adjacent the path of travel of the blade, fluid conducting elements on either side of the path of travel of said blade secured to said support; means directing fluid under pressure to said elements and against the opposite faces of said blade; and means regulating the pressure of the fluid to create a balance on either side of the blade for maintaining the blade in proper alignment.

3,225,802
SLICING MACHINE INCLUDING KNIFE SHARPENING MEANS
Walter Engi, Zurich, Switzerland, assignor to Adolf Ditting
Filed Dec. 28, 1964, Ser. No. 421,300
Claims priority, application Switzerland, Mar. 13, 1961, 2,976/61
6 Claims. (Cl. 146—102)



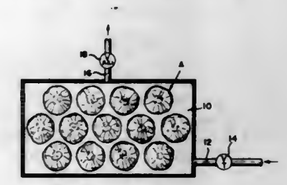
1. A slicing machine, comprising a circular rotary knife with a cutting edge, said knife having an axis of rotation, a reciprocable movable carriage for carrying the articles to be sliced, a support on said carriage rotatably supporting a first and a second grinding disc for sharpening the knife, said support being movably mounted on said carriage for movement of said support into a working position wherein said discs are substantially in the plane of said knife or into a retracted position wherein the discs are disposed out of the plane of said knife, the axis of said first disc being substantially parallel to the axis of said knife, the axis of said second disc being inclined relative to the axis of said first disc and offset therefrom in the peripheral direction of said knife, those parts only of said first and second grinding discs nearest said knife being disposed on respectively opposite sides of the plane of the cutting edge of said knife, spindles in said support on which said discs are respectively mounted, biasing means biasing said discs in a direction laterally of the knife so that the said portion of said second disc nearest said knife is urged toward the knife, said first disc being axially spaced from the respective side of the knife, whereby upon movement of said support toward the knife, the said knife will be first engaged by said second disc, and means operable upon yielding of said biasing means when said second disc engages the respective side of the knife for moving said first disc into engagement with the respective side of the knife, whereby said second disc sharpens the edge of the knife and said first disc clears from the knife any burr formed thereon by said second disc.

3,225,803
CRUSHING MACHINE FOR SUGAR-CANE STALKS
Marcel Hayot, Basse-Pointe, Martinique, West Indies
Filed Nov. 15, 1963, Ser. No. 324,052
Claims priority, application France, Jan. 11, 1963, 921,087, Patent 1,353,017
7 Claims. (Cl. 146—119)



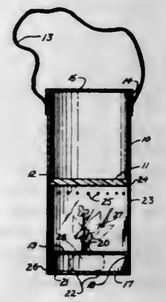
1. Crushing machine for processing sugar-cane in stalks in order to convert said stalks into pulp, said machine being located ahead of the head mill of a line of sugar cane rolling mills, said head mill being fed with cane by an apron carrier, said machine comprising a shaft rotatably fitted above said apron carrier in a direction transverse thereto, means to rotate said shaft in a direction corresponding to the feeding movement of said carrier, an assembly of rigid blades perpendicularly secured to said shaft and substantially radially projecting therefrom, each blade projecting in two opposite directions, and the directions of said blades being angularly offset with respect to each other, corner caps fitted at the extremity of each of said blades, on the same side as the leading edges thereof with respect to the rotating direction of said blades, said corner caps having flat front surfaces facing the forward movement of said blades and laterally projecting beyond said blades, there being a free passage of at most a few centimetres between said apron carrier and the rotor constituted by said blades assembly.

3,225,804
METHOD OF SHELLING COCONUTS
Luis E. Cancel, Rio Piedras, Puerto Rico, assignor to the Commonwealth of Puerto Rico
Filed Oct. 29, 1963, Ser. No. 319,754
2 Claims. (Cl. 146—223)



1. The method of removing the brownish skin which adheres to the exterior of the marketable white pulp meat of a coconut, comprising the steps of subjecting the whole coconut, including the hard outer shell, to steam at 148° C. to 163° C. and at a pressure of 50 to 70 p.s.i. for a period of 6 to 10 minutes, then instantaneously reducing the pressure to atmosphere, and while still hot breaking the hard outer shell from the kernel taking the brownish skin with it and leaving the white pulp meat uncovered.

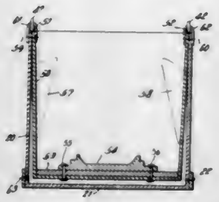
3,225,805
SECTIONAL HANDBAG
Glenn E. Wise, 2415 39th Place NW., Washington 7, D.C.
Continuation of abandoned application Ser. No. 39,357, June 28, 1960. This application Oct. 9, 1963, Ser. No. 315,742
4 Claims. (Cl. 150—35)



1. A sectional handbag comprising: a first substantially rigid supporting section having integral attaching means thereon; a second substantially rigid supporting section having integral attaching means thereon, said second section being spaced above said first section and adapted to form a roof over said first section; said first section including a bottom member and material confining means, said material-confining means including an endless wall-forming portion attached to and extending upwardly from said bottom member and flange-forming means rigidly attached to and extending inwardly from the top of said wall-forming portion so as to define an aperture; connecting means removably attaching said second section to said first section, said connecting means comprising a substantially rigid transparent tubular portion having opposite ends, one of said ends having thereon integral attaching means removably engaged with the integral attaching means on said first section, and the other of said ends having thereon integral attaching means removably engaged with the integral attaching means on said second

section; an upper tubular portion attached at its lower end to said second section and extending upwardly from said second section; a handle having opposite ends attached at spaced locations to the upper tubular portion near the top thereof; and a removable lid closing the top of said upper tubular portion.

3,225,806
CARRYING BAG CONSTRUCTION
Victor S. Pollak, Yardley, Pa., and Theodore W. Cart, Harbourton, N.J., assignors to Atlantic Products Corporation, Trenton, N.J., a corporation of New Jersey
Filed June 7, 1962, Ser. No. 200,779
3 Claims. (Cl. 150—52)



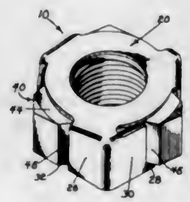
1. A carrying bag comprising a flexible tubular body portion; a bottom portion secured to and extending across the bottom of said tubular body portion, closure means secured to the top of said flexible tubular body portion; and carrying handle means; one end of said carrying handle means being connected to a first portion of the top of said flexible tubular body portion; the other end of said carrying handle having fastener means secured thereto; a second portion of said top of said flexible tubular body portion diametrically opposite said first portion having fastener receiving means for cooperating with said fastener; said carrying handle having a length of the order of ⅓ of the periphery of the top of said flexible tubular body portion; and sling means internal of said bag having first and second ends secured to said first and second portions respectively of said flexible tubular body portion; the length of said sling means being substantially equal to or less than the adjacent length of the said carrying bag body portion and bottom portion; the bottom of said sling means having a weight receiving platform secured thereto; said bottom portion being relieved of carrying the weight carried by said weight receiving platform; the sides of said sling being of flexible material; said sides having pockets therein.

3,225,807
NUTS
Arthur Sidney Watkins, 9 Courtland Terrace, Merthyr Tydfil, Glamorgan, Wales
Filed Sept. 24, 1963, Ser. No. 311,175
Claims priority, application Great Britain, Sept. 25, 1962, 36,311/62
3 Claims. (Cl. 151—7)



3. A multiple nut device comprising a cubic body member including mutually perpendicular pairs of transversely spaced substantially square parallel faces having three mutually intersecting and perpendicular apertures formed and extending completely through said cubic body, the apertures of at least two adjacent faces being of different dimensions and adapted to engage correspondingly different screw members, and a common locking member carried by said body member in longitudinal alignment with an aperture of each of said pairs thereof, said body member having a slot formed therein extending diagonally across a corner thereof and communicating with all three intersecting apertures, and said locking member comprising a block of relatively soft plastic material disposed in said slot and extending into longitudinal alignment with each of said screw engaging apertures.

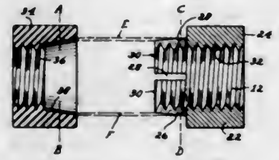
3,225,808
LOCK NUT
Charles E. Gutshall, Roselle, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Filed Jan. 15, 1964, Ser. No. 337,944
6 Claims. (Cl. 151—15)



1. A composite lock nut for use with a complementary threaded stud member comprising a rigid body member having a central threaded aperture and transverse end faces and being provided with a plurality of peripherally spaced wrench engaging portions and with a plurality of portions each being intermediate said wrench engaging portions and projecting radially outwardly less than said wrench engaging portions, said flexible body member having an angular body and a plurality of downward depending peripherally spaced flanges and being superimposed and assembled with said rigid body member said flanges being of greater axial length than that of said rigid body member, said annular body overlying a transverse face of said rigid body to assure alignment of said annular body with said central threaded aperture in said rigid body member, said depending flanges having an angular configuration and disposed intermediate said wrench engaging portions of said rigid body member thereby providing wrench engaging portions alternately disposed with said wrench engaging portions of said rigid body member and preventing relative rotation between said rigid body and said flexible body, said angular configuration of said flanges effecting substantially a continuation of said wrench engaging portions of said rigid body member whereby both said portions may be simultaneously engaged by a wrench for torque carrying purposes, said depending flanges having means remote from the end adjacent said annular body for engaging the undersurface of said rigid body member for detachably securing said flexible body member thereto.

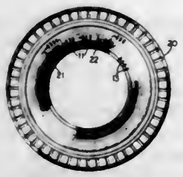
3,225,809
LOCK NUT COMBINATION
George P. Peak, Sr., Trenton, N.J., assignor of one-half to Parker C. Peak, Opa-locka, Fla.
Filed June 15, 1964, Ser. No. 374,939
1 Claim. (Cl. 151—19)

In the combination of a threaded bolt, an internally threaded metal holding nut including an integral, internally threaded frusto-conical portion divided by longitudinal slots into a plurality of fingers projecting axially from one end of said nut, and in internally threaded metal jam nut having a conical socket diverging from the inner end of the threaded portion of said jam nut for reception therein of the frusto-conical portion of said holding nut; said holding nut being made of a ductile metal of a lesser hardness than that of said jam nut, the angle of taper of said frusto-conical portion being about 5 degrees, and that of the socket being about 9 degrees, the diameter of the smaller end of the frusto-conical portion of said holding nut being coincident with the diameter of the socket in said jam nut at a plane approximately midway between the outer end of said socket and the threaded portion of said nut to permit the necessary forcible movement of the jam nut toward the holding nut to contract the fingers of said holding nut into locking engagement with the threads



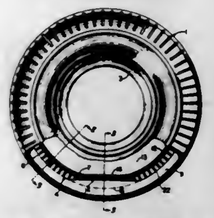
of said bolt, with the outer peripheries of said fingers in rigid linear contact with said socket from the free ends of said fingers to the outer end of said socket when the locking engagement is completed, the frusto-conical portion of the holding nut being of the correct length to leave said holding nut short of the end of the jam nut, and the free ends of said fingers short of the opposed smaller end of the socket in the jam nut when the locking engagement is completed; and the larger diameter of the frusto-conical portion of the holding nut being greater than that of the outer end of the conical socket of said jam nut, so that the axial movement of the jam nut in forcing the fingers of the holding nut into locking engagement with the threads of the bolt will also bring the frusto-conical portion of the holding nut into rigid contact with the outer edge of the socket in said jam nut.

3,225,810
DIGITAL CODED ELASTOMERIC ARTICLE
Robert S. Enabnit, Cuyahoga Falls, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed June 26, 1963, Ser. No. 290,724
11 Claims. (Cl. 152—330)



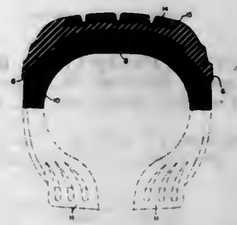
8. The combination comprising a pneumatic tire having completely encapsulated in the structure thereof electromagnetically susceptible elastomeric elements that contain a paramagnetic material, said elements placed around the tire in spaced relationship to one another to form a predetermined pattern that can be used to form a positive identification system in which the information is capable of being detected by electrical apparatus employing a magnetic field.

3,225,811
TIRE WITH RUN-FLAT WARNING DEVICE
Joseph S. Hawkes, Cuyahoga Falls, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed Apr. 27, 1964, Ser. No. 362,724
4 Claims. (Cl. 152—340)



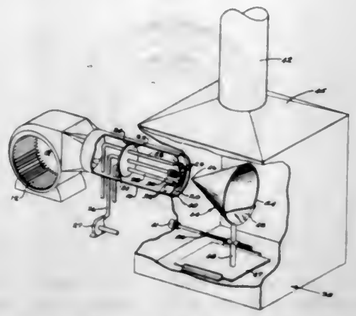
1. In the combination of an outer tire mounted on a rim and an annular safety wall dividing the space between said rim and tire into radially disposed inner and outer chambers with means for inflating said chambers, that improvement in the safety wall which comprises making said safety wall of substantially uniform cross-section and radial extent at its outer circumference and providing a rubber tread on said outer circumference having a major circumferential portion appreciably less than 360° of the circumference of said wall and a circumferentially adjacent minor portion of lesser radial thickness than said major portion thus forming an area at the outer circumference of said tread of less radial extent than said adjacent major portion, the rubber in said tread being substantially uniformly distributed throughout the major and minor portions to provide for substantially equal distribution of the weight of the rubber, the major portion having the rubber therein expanded to a greater thickness than the minor portion by the provision of numerous voids therein.

3,225,812
AIRPLANE TIRE
Donald L. Barrett, Akron, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed June 10, 1963, Ser. No. 286,816
4 Claims. (Cl. 152—361)



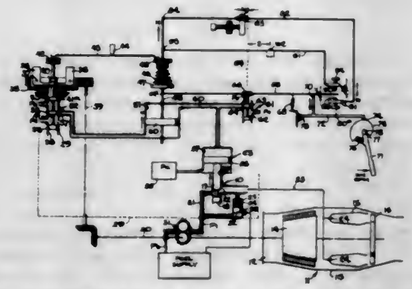
1. A toroidal tire with beads and a carcass, for use on airplanes or the like, with two circumferential grooves in its tread surface, and a narrow band composed entirely of vulcanized rubber compound forming the tread surface between the grooves with each end of the band forming the outer portion of a wall of each groove, and contacting the inner surface of this band a concentration of short lengths of synthetic organic filaments each individually surrounded by vulcanized rubber compound, the band becoming thicker as it approaches each groove whereby said concentration of short filament lengths dips downward under the bottom of each groove and is adjacent the bottom thereof.

3,225,813
OIL BURNER APPARATUS
Bruce R. Walsh, Wilkinsburg, Pa., assignor to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware
Filed Mar. 14, 1963, Ser. No. 267,379
9 Claims. (Cl. 158—4)



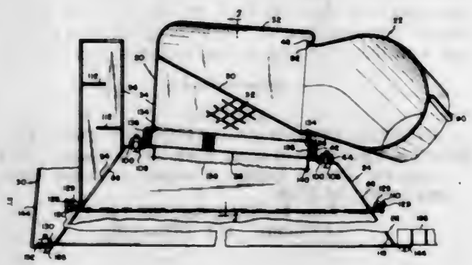
1. An apparatus comprising in combination swirling fuel spray nozzle means for producing a swirling spray of atomized oil droplets, said spray nozzle means having a discharge orifice, an air tube, a cone having an apex and a base, said nozzle means disposed coaxially within said air tube, said cone disposed outside and aligned with said air tube with its apex directed toward said air tube, disk means slightly smaller in diameter then said air tube disposed concentrically within said air tube upstream from said nozzle means for forcing the air flowing in said air tube to be substantially confined to the region near the wall of said air tube, air directing means disposed at the discharge end of said air tube for directing an air stream from said air tube toward the surface of said cone, said air directing means defining an air tube discharge opening, both the discharge orifice of said nozzle means and the apex of said cone disposed at a distance from said air tube discharge opening which is no greater than the diameter of said air tube discharge opening, the apex angle and the base of said cone being sufficiently large that the swirling spray of atomized oil droplets from said nozzle means and the air stream from said air tube discharge opening are both concentrically directed toward said cone, said apparatus adapted so that said air stream and said spray of atomized oil droplets admix with each other in proximity to the surface of said cone during transit toward the base thereof.

3,225,814
SPEED AND ACCELERATION REGULATOR
Howard B. Capwell, Rockford, Ill., assignor to Woodward Governor Company, Rockford, Ill., a corporation of Illinois
Filed Sept. 27, 1963, Ser. No. 312,102
26 Claims. (Cl. 158—36.4)



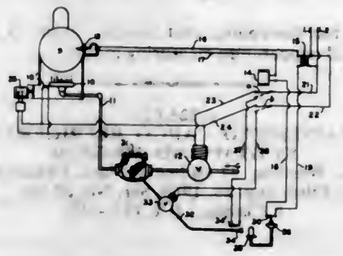
1. The combination of, a valve part movable back and forth to regulate the flow of fuel to a prime mover, a first fluid servo having a first cylinder and a first piston slidable therein and coupled to said valve part, means biasing said piston and valve part in one direction, a second fluid servo having a second piston slidable in a second cylinder, a passage connecting one end of said cylinders for movement of said first piston against said biasing means and in response to flow changes in the passage, a speed sensor including a valve member movable back and forth across a centered closed position to respectively admit pressure fluid to and release the same from the other end of said second cylinder, a feedback connection for transmitting a differential force, which is a function of the position of said second piston, back to said valve member to restore the same to said centered position to constitute said sensor and said second servo a speed measuring tachometer whereby the velocity of said second piston corresponds closely to acceleration of the primer mover, a reset valve having elements relatively movable back and forth across a centered closed relation to respectively admit pressure fluid to and release the same from said passage, a movable stop normally abutting one of said elements, manually operable means for adjusting said stop and the prime mover speed at which said centered relation is restored following a speed change of the prime mover, and means transmitting the motions of said second piston to one of said elements in directions to restore said centered relation and thereby provide for isochronous operation of the prime mover at each speed setting of adjusting means.

3,225,815
GAS BURNERS
Konrad E. Bauer, Mentor, and Harry R. Carlson, Cleveland, Ohio, assignors to Hupp Corporation, Cleveland, Ohio, a corporation of Virginia
Filed June 15, 1962, Ser. No. 202,729
1 Claim. (Cl. 158—99)



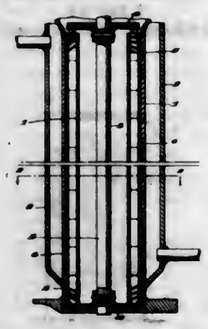
A radiant heater comprising a dish shaped distributing chamber having a base wall and side walls, said chamber being elongated and being of progressively decreasing cross-sectional area from one end to the other, essentially planar burner means comprising a plurality of perforated refractory blocks mounted to form a wall in said distributing chamber opposite said base wall, a screen co-extensive with the aggregate area of said blocks, a plurality of clips, each clip having a mounting portion attached to said distributing chamber and a slotted portion, said screen being supported in said slotted portion of said clips in parallel spaced relation with said outer surface of said blocks, a venturi assembly mounted externally of said distributing chamber and extending along one of said side walls and having its outlet end in communication with the interior of said chamber through said one side wall adjacent said one end thereof, the axis of said venturi being inclined to dispose the inlet end thereof below the outlet end thereof, a fuel nozzle carried by said venturi adjacent its inlet end to supply gaseous fuel to said venturi, the flow of gaseous fuel entering said venturi, entraining combustion air, the gaseous fuel and air being mixed in said venturi and delivered to said one end of said distributing chamber for passage through said perforated burner means and combustion on the outer surface thereof.

3,225,816
SAFETY DEVICE FOR GAS FIRED BOILERS
George H. Famlio, Oswego, N.Y., assignor of fifty percent to Harvey J. Tucker, Syracuse, N.Y.
Filed Aug. 10, 1962, Ser. No. 216,198
11 Claims. (Cl. 158—125)



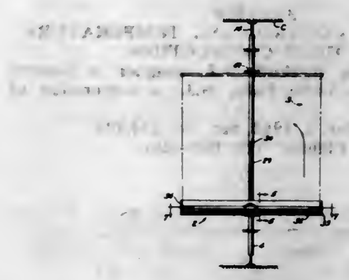
1. A safety device for signalling a leak past an automatically operated supply valve in a line for supplying gas at a normal pressure, comprising: a pressure sensitive valve in the supply line downstream from the supply valve, said pressure sensitive valve having a gate that opens under normal gas pressure in the line and is biased toward closed position at less than normal gas pressure, a bleed line connected in the supply line between said supply valve and said biased gate, automatically operated valve means in said bleed line, means for closing said last-named valve when the supply valve is open and opening said last-named valve when the supply valve is closed, and means at the end of the bleed line for sensing the presence of gas escaping therefrom whereby a leak in the supply valve can be detected.

3,225,817
ROTOR FOR THIN-LAYER VAPORIZERS
Bernd Thier, Marl, Germany, assignor to Chemische Werke Huls Aktiengesellschaft, Marl, Germany, a corporation of Germany
Filed May 6, 1963, Ser. No. 278,119
Claims priority, application Germany, Mar. 23, 1963, C 29,456
9 Claims. (Cl. 159—6)



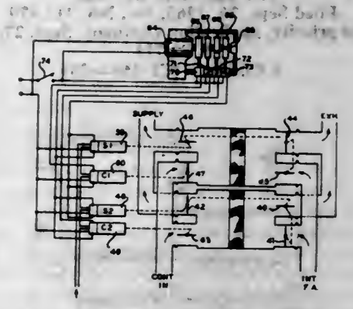
1. Apparatus for vaporizing liquids comprising an evaporating chamber having a cylindrical inner surface, a rotor assembly mounted to rotate coaxially within said chamber, said rotor assembly comprising a plurality of tensioned flexible cylindrical coil springs, each spring being supported at its opposite ends and extending parallel to the axis of and adjacent to said cylindrical surface and a set of cylindrical sleeves supported end to end by each spring and extending substantially the entire length thereof.

3,225,818
PROJECTION SCREEN
Glenn E. Wise, 2415 39th Place NW., Washington, D.C.
Continuation of application Ser. No. 62,743, Oct. 14, 1960. This application Aug. 14, 1963, Ser. No. 303,215
5 Claims. (Cl. 160—24)



1. In combination: a hollow elongated supporting pole; a housing; connecting means joining said housing to said pole and providing for movement of said housing radial of, parallel to and angularly of the longitudinal axis of said pole, said connecting means including means rigid with said housing extending through slot means formed in said pole and terminating within said pole; biasing means within said pole engaging said connecting means for urging said housing toward said pole; and additional means on said pole providing auxiliary support for said housing in at least two different positions.

3,225,819
APPARATUS AND METHOD FOR AIR TO AIR HEAT EXCHANGE
Eddie S. Stevens, Orange, N.J., assignor to Daniel Moretti, East Orange, N.J.
Filed Aug. 31, 1962, Ser. No. 220,681
2 Claims. (Cl. 165—2)



2. A method for air to air heat exchange comprising,
(a) continuously generating negative pressure at each of two opposing ends of a plurality of housings,
(b) passing a first stream of gas through heat exchange media in at least one housing by means of said negative pressure generating means, the said first stream initially having a temperature higher than the tem-

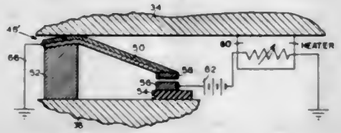
perature of the media in the housing through which it is passing,

(c) simultaneously passing a second stream of gas through heat exchange media in at least one of the other housings by means of said negative pressure generating means, the second said stream initially having a temperature lower than the temperature of the media in the housing through which it is passing,

(d) periodically alternating the housings through which the said first and second streams of gas pass, and,

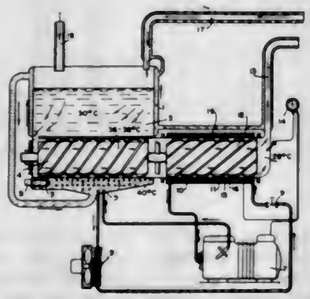
(e) purging each housing by means of said negative pressure each time the hotter stream is terminated and before the colder stream is commenced.

3,225,820
DEVICE FOR CONTROLLING TEMPERATURE BY HEAT CONDUCTION
Hugh E. Riordan, Wyckoff, N.J., assignor to General Precision, Inc., Little Falls, N.J., a corporation of Delaware
Filed Nov. 1, 1962, Ser. No. 234,799
8 Claims. (Cl. 165—26)



8. A temperature control system comprising: a controlled body; heater means operable to supply heat to said body; a heat sink of uncontrolled temperature normally lower than that of said body; a variable thermal resistant device, inversely responsive to the temperature of said sink, interposed in thermally conductive relation between said body and heat sink; said variable resistance device including a temperature responsive member in a continuous heat conductive relation with said heat sink; and switching means effective upon the attainment of a condition of maximum thermal resistance by said device to render operative said heater means.

3,225,821
PROCESS AND APPARATUS FOR MAINTAINING CONTROLLED TEMPERATURES IN CHOCOLATE CANDY MASSES
Robert Sollich, Auf der Breden 12, Bad Salzuflen, Germany
Filed Sept. 26, 1963, Ser. No. 311,879
Claims priority, application Germany, Sept. 27, 1962, S 81,711
6 Claims. (Cl. 165—30)



1. Apparatus for maintaining controlled temperatures in a chocolate candy mass comprising in combination

conveyor means for advancing the candy mass along a path and including a heating cylinder and a cooling cylinder serially arranged along said path,

condenser means disposed in heat exchange relationship with said heating cylinder,

evaporator means disposed in heat exchange relationship with said cooling cylinder,

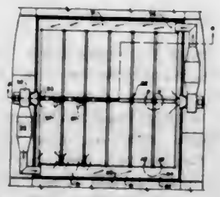
compressor means for circulating a fluid through said condenser means and said evaporator means, expansion means between said condenser means and said evaporator means,

heating means disposed in heat exchange relationship with said evaporator means,

means for measuring the temperature of the candy mass at the discharge end of said conveyor means, and

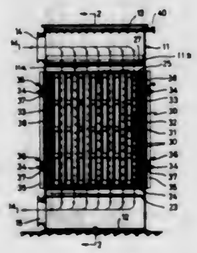
means for controlling said heating means in response to said temperature measuring means.

3,225,822
CONTAINERIZED CARGO REFRIGERATION SYSTEM AND METHOD
Lester L. Westling, 37 Hillwood Place, Oakland, Calif.
Filed Aug. 26, 1960, Ser. No. 52,306
5 Claims. (Cl. 165—48)



1. A containerized cargo refrigeration system comprising means defining a chamber, a resident source of refrigeration including means for supplying refrigerated air to said chamber, a plurality of transportable insulated cargo containers adapted to carry cargo as a single unit, means providing communication between the interior of select conta ners and the refrigerated air in said chamber, and independently powered air circulating means carried in each of said containers for circulating refrigerated air from the chamber through the selected containers.

3,225,823
HEAT EXCHANGER
Franklin Fröhlich, St. Leonhardstrasse 39, St. Gallen, Switzerland
Filed Jan. 22, 1962, Ser. No. 167,816
Claims priority, application Switzerland, Feb. 27, 1961, 2,363/61
3 Claims. (Cl. 165—69)



1. A heat exchanger, comprising

housing means including at least one vertical wall defining a chamber;

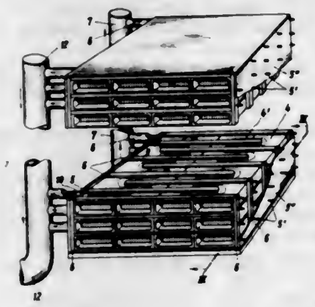
a stack of separable, parallel brittle heat exchanger plates mutually spaced by spacing strips;

means supporting said stack in said housing upon the edges of said plates, said plates being parallel with and spaced from said vertical wall, said supporting means including a rigid metal tension plate spaced from said vertical wall and contiguously engaging one end of said stack, and means supporting the other end of said stack;

resilient means biasing said tension plate solely in a first direction to apply a longitudinal compressive force upon said stack of plates, said resilient means comprising a layer of an elastic, compressible material intermediate and contiguous with said housing wall and said tension plate;

and screw means connected between said housing and said tension plate and extending through said elastic layer for displacing said tension plate in the opposite direction to reduce the compressive force applied to the stack by said resilient means.

3,225,824
AIR-COOLED HEAT EXCHANGER FOR COOLING LIQUID MEDIA
Kurt Wartenburg, 14 Kemmanns-Weg, Kettwig, Germany
Filed Sept. 24, 1963, Ser. No. 311,153
Claims priority, application Austria, Sept. 29, 1962, A 7,717/62
7 Claims. (Cl. 165—122)



1. A heat exchanger comprising, in combination:

(a) a plurality of tubular elements elongated in a common direction,

(1) said elements being secured to each other to constitute a plurality of rows,

(2) the elements of each row being contiguously juxtaposed in a common plane and being spaced from the elements of adjacent rows in a direction transverse of said plane, said rows jointly constituting a stack of tubular elements;

(b) two wall members extending in said common direction in respective planes transverse of said common planes and being spaced from said stack of elements in opposite directions;

(c) a plurality of spacer members elongated transversely of said common direction and interposed between said rows,

(1) the spacer members interposed between each pair of adjacent rows constituting a group of spacer members spaced from each other in each other in said common direction and alternatingly extending from said wall members to a point spacedly adjacent the other wall member,

(2) whereby each pair of said rows, the interposed group of spacer members, and said wall members define an elongated serpentine shaped flow path having a plurality of areas of flow reversal adjacent said wall members, the several flow paths being spaced in said transverse direction,

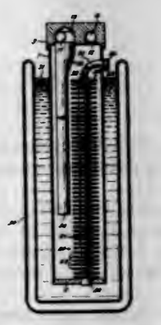
(3) the spacer members of the several groups being aligned with each other in respective planes of alignment spaced in said transverse direction and transverse thereto;

(d) a plurality of partition members interposed between said wall members and said stack of elements in said planes of alignment whereby said wall members, said partition members, and said stack jointly define a plurality of passages connecting the areas of flow reversal of adjacent flow paths in said transverse direction, said partitions respectively separating adjacent passages;

(e) first means for passing a first fluid through said tubuar elements in said common direction; and

(f) second means for passing a second fluid longitudinally through said flow paths.

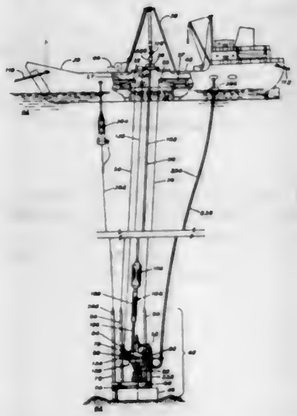
3,225,825
COLD TRAP
James E. Lewis, Louisville, Ky., assignor, by mesne assignments, to The Martin Sweets Company, Inc., Louisville, Ky., a corporation of Kentucky
Filed July 13, 1962, Ser. No. 209,629
7 Claims. (Cl. 165—157)



1. A cryogenic-fluid immersible cold trap for separating gases with differing freezing temperatures from a mixture of such gases, said cold trap comprising: a hollow member for immersion in a body of cryogenic fluid held in a suitable container, said hollow member comprising bottom, side and top wall means defining a closed chamber; an inlet extending through said wall means at the bottom of said chamber through which such cryogenic fluid may be admitted; an outlet extending through said wall means at a point spaced from and above said inlet through which such cryogenic fluid may be discharged; conduit means within said chamber and interconnecting said cryogenic fluid inlet and outlet, said conduit means having a coefficient of thermal conductivity substantially greater than that of the wall means of said chamber and defining a passage extending through said chamber but not in communication with the interior thereof and through which such cryogenic fluid may pass; fin means on the exterior of said conduit means in said chamber; inlet and outlet ports for said gaseous mixture extending through said wall means at the top of said chamber; and directing means in said chamber between said gaseous mixture inlet and outlet ports for causing gaseous mixture introduced through said gaseous mixture inlet to flow over said fin means to reach said gaseous mixture outlet, whereby when said

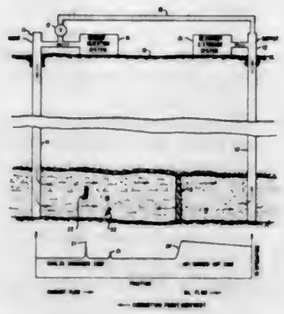
cold trap is immersed in a body of cryogenic fluid and said fluid enters said cryogenic fluid passage through the bottom of said immersible member, said fluid will absorb heat through the walls of said conduit means from gaseous mixture flowing over said fin means within said chamber and may then boil off through said cryogenic fluid outlet.

3,225,826
METHOD AND APPARATUS FOR WORKING ON SUBMERGED WELLS
William R. Postlewaite, Menlo Park, Calif., assignor to Chevron Research Company, a corporation of Delaware
Filed Nov. 5, 1962, Ser. No. 235,433
12 Claims. (Cl. 166—.6)



1. The method of working on submerged wellhead apparatus having adjustable portions therein from a floating vessel which is positioned on the surface of a body of water comprising:
(a) fixedly securing in relation to a submerged wellhead apparatus a plurality of rigid guide posts having respective flexible guidelines connected between the top end thereof and a vessel floating on the surface of a body of water,
(b) which said flexible guidelines enable said vessel to move on said surface while remaining connected to said submerged wellhead apparatus,
(c) lowering on said guidelines from said vessel a transverse guide member to which is connected the lower end of a string of drill pipe having a rotatable operator element secured to the end thereof for engagement with a rotatably adjustable complementary portion of said wellhead apparatus,
(d) placing a weight on the lower end portion of said string of drill pipe of a sufficient amount to prevent substantial curvature of said string of drill pipe in the region between said weight and a support on said vessel for the upper end of said string of drill pipe,
(e) to dispose said string of drill pipe substantially in a straight line between said transverse guide member and said vessel when said vessel is displaced laterally from a position vertically above said wellhead apparatus.
(f) lowering said transverse guide member and the connected said lower end of said string of drill pipe on said guide posts and engaging said operator element with said complementary rotatably adjustable portion of said wellhead apparatus, and
(g) rotatably displacing said upper end of said string of drill pipe at said vessel to adjust said complementary rotatably adjustable portion of said wellhead apparatus.

3,225,827
UNDERGROUND COMBUSTION CONTROL
Michael Prats, Houston, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Original application Apr. 25, 1963, Ser. No. 275,515. Divided and this application Apr. 29, 1965, Ser. No. 451,737
2 Claims. (Cl. 166—11)



1. A method of recovering hydrocarbon from a hydrocarbon oil-bearing formation which is penetrated by substantially spaced output and input means comprising:
(a) initiating the combustion front in the portion of the formation immediately surrounding the output means;
(b) maintaining the combustion front by introducing a combustion supporting fluid through the input means;
(c) controlling the rate of oxidating heating by said combustion supporting fluid that is introduced through said input means to prevent spontaneous ignition of the formation upstream from said combustion front by selectively varying the region of the hydrocarbon oil-bearing formation into which said combustion supporting fluid is introduced through said input means; and
(d) removing hydrocarbons from the formation through said output means.

ERRATUM
For Class 166—46 see:
Patent No. 3,226,728

3,225,828
DOWNHOLE VERTICAL SLOTTING TOOL
John D. Wisenbaker and Robert W. Stuart, Dallas, Tex., assignors to American Coldset Corporation, Teterboro, N.J., a corporation of Texas
Filed June 5, 1963, Ser. No. 285,816
7 Claims. (Cl. 166—55)

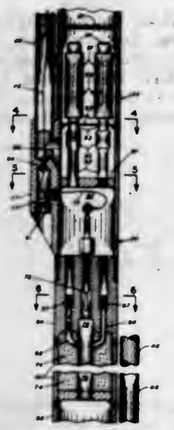
1. A down-hole vertical slotting tool comprising a housing adapted to be lowered into a well borehole on a wire line, and having an elongated longitudinally extending opening in the wall thereof, a motor within said housing, means for supplying power to said motor, a cutter mounted for movement in a vertical plane and mechanically coupled to said motor to be driven thereby, means for moving said cutter longitudinally of said housing, and means for moving said cutter transversely of said housing to cause it to project through said opening and into cutting relation with the sidewall of said borehole at the first portion of such longitudinal movement, then to cause it to move longitudinally of said

housing while projecting through said opening and cutting a vertical slot in said sidewall, and finally to cause



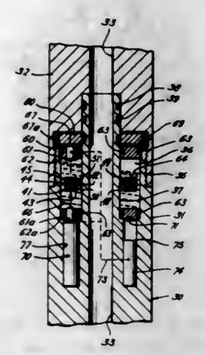
it to retract into said housing at the latter portion of such longitudinal movement.

3,225,829
APPARATUS FOR BURNING A COMBUSTIBLE MIXTURE IN A WELL
Robert G. Chown, La Mirada, and Leslie D. Rose, Whittier, Calif., assignors to Chevron Research Company, a corporation of Delaware
Filed Oct. 24, 1962, Ser. No. 232,696
12 Claims. (Cl. 166—59)



12. Apparatus for burning a combustible gas in a well comprising means defining a combustion chamber having an exhaust means at its lower end, an inlet in the upper portion of said combustion chamber, ignition means to ignite the gas in said combustion chamber, a filter section above said inlet, porous filter means in said filter section, entry port means in said filter section for flowing a combustible gas into said filter section below said porous filter means and conduit means connecting said porous filter means with said inlet to form therewith the only passage for gas flow out of said filter section into said combustion chamber.

3,225,830
APPARATUS FOR BOTTOM HOLE ORIENTATION
Herman G. Livingston, P.O. Box 1040, Liberty, Tex.
Filed Sept. 30, 1963, Ser. No. 312,556
1 Claim. (Cl. 166—66)

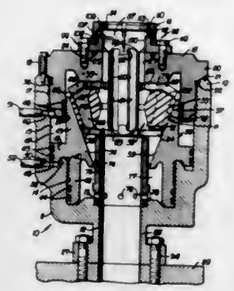


An apparatus for orienting a device on a well string in a well bore, comprising:
(a) a housing
(1) adapted to be secured in a well string,
(2) said housing defining a longitudinal bore for circulating drilling fluids in the well string, and
(3) said housing defining a circumferential void therein extending about but spaced from the bore in said housing,
(b) a ring shaped transparent member mounted for rotation in a plane perpendicular to the longitudinal axis of said housing and in said circumferential void defined by said housing about said bore of said housing,
(c) a slotted opaque member of circular shape coaxially mounted on said ring member, said slotted member being slidable on said ring member whereby said slotted member may be adjustably positioned on said ring member and will rotate therewith,
(d) a weighted portion included in said ring member which rotates said ring member and maintains the low side of the well bore, said ring member rotating said slotted member therewith to a predetermined relationship to the low side of the well bore,
(e) an optical system including:
(1) a source of light, and
(2) a light sensor, said system supported in predetermined alignment relative to the device to be oriented in the well bore,
(f) said slotted member interposed between the light source and sensor of said optical system to control light falling on the sensor, and
(g) signaling means operable by the light sensor to indicate a relationship between the object to be oriented and the low side of the well bore.

3,225,831
APPARATUS AND METHOD FOR PACKING OFF MULTIPLE TUBING STRINGS
Granville S. Knox, Glendale, Calif., assignor to Hydril Company, Los Angeles, Calif., a corporation of Ohio
Filed Apr. 16, 1962, Ser. No. 187,841
20 Claims. (Cl. 166—75)

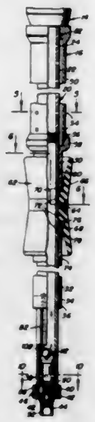
12. In combination, a radially constrictable sealing annulus having a bore forming a vertical passage therethrough, for passing parallel well tubing strings, and a packer body of elastomeric material inserted downwardly into said passage, said body having spaced apart generally parallel recesses extending generally vertically between opposite ends of said body and which are open generally toward said bore and along the body extent between said

ends in offset relation to the body axis, said recesses being sized to receive spaced generally parallel well tubing strings which are run endwise therethrough when the



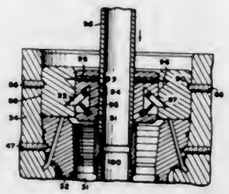
packer body is free of body material deforming constriction imposed by said annulus, and said packer body being sized to deform and sealingly engage said tubing strings when the body is constricted by said annulus.

3,225,832
ZONE ISOLATION ADAPTER FOR PACKERS
Leon Pyle, 1503 Leslie St., Bossier City, La.
Filed May 22, 1963, Ser. No. 282,312
2 Claims. (Cl. 166—146)



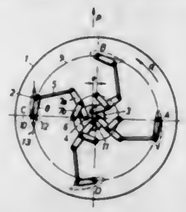
1. A zone isolating and treating device for wells comprising first and second spaced packers each releasably seatable in a well bore and defining therebetween an isolated region having free and continuous communication with an adjacent surrounding zone of the well which is to be isolated and treated, a hollow mandrel upon which said packers are mounted, said second packer being mounted for relative sliding movement toward and away from said first packer, releasable means preventing said sliding movement of said second packer, passage means establishing communication of the mandrel interior with said isolated region for treating the communicating zone, a first and a second by-pass means connecting the mandrel interior with the well bore below said packers and isolated region, a pair of control means each associated with said mandrel and each controlling one of said by-pass means and selectively operable to effect opening of the associated by-pass means when the other by-pass means is closed.

3,225,833
WELL PRESSURE CONTROL APPARATUS WITH PROTECTOR DEVICE
Warren E. Parkhurst 210 Bristol Place, New Orleans 14, La., and Cassius L. Tillman III, Peter Road, Harvey, La.
Original application Nov. 15, 1961, Ser. No. 152,576, now Patent No. 3,151,680, dated Oct. 6, 1964. Divided and this application June 5, 1964, Ser. No. 379,759
6 Claims. (Cl. 166—207)



6. The combination of a well installation having outer casing, a body member adapted to be attached to and supported on the upper end of the casing, said body member having a vertical opening axially therethrough, said opening having a relatively enlarged upper bowl portion, a restricted lower portion and a wear protector ring in said bowl portion, means releasably securing the ring to the body, said ring having annular grooves on its interior side, an annular member having recesses at its outer periphery, fingers pivotally mounted on the annular member in said recesses, said fingers being engaged with and latched into said groove, means resiliently biasing the outer ends of the fingers to a protracted position on the exterior of the recesses, the cross-sectional configuration of the grooves being right triangular, the hypotenuses thereof lying inwardly and facing each other.

3,225,834
CYCLOIDAL SHIP PROPELLER
Karl Blickle, Bolheim, Eugen Höflich, Heidenheim, and Wilhelm Hub, Saarbrucken, Germany, assignors to J. M. Voith G.m.b.H., Heidenheim, Germany
Filed Nov. 14, 1962, Ser. No. 239,866
2 Claims. (Cl. 170—148)

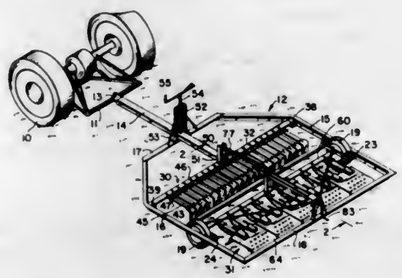


1. A cycloidal ship propeller comprising: a blade wheel body rotatable on a central axis, a plurality of blades pivotally supported by said blade wheel body and having their pivot axes arranged along a circle concentric with said blade wheel central axis and in substantially uniformly spaced relationship to each other, said pivot axes being substantially parallel to each other and also parallel to said central axis, each of said blades being capable of an oscillating movement about its pivot axis, adjustable control means common to all of said blades and movable selectively from a central position coaxial with said central axis of said blade wheel body into any one of a plurality of positions eccentric with regard to said central axis of said blade wheel body and vice versa to govern the oscillating movement of said blades, each of said blades comprising a pivot and being oscillatable about a middle position of the blade in which the respective blade is tangential to the circle along which the pivot axes of said blades are arranged, a plurality of blade actuating linkage systems respectively operatively connecting said adjustable control means with said blades so that each of said blades will be operable in response to a rotation of said wheel body and while said adjustable control means occupies any of its possible positions to carry out an oscillating movement having the predetermined magnitude of the blade angles which correspond to the respective circular positions of the pivot axes of the blades during their circular movement with said blade wheel body, each of said blade actuating linkage systems comprising at least one lever operatively connected to the respective blade pivot and also comprising a connecting rod linked to said lever, each of said blade actuating linkage systems furthermore comprising a two-arm lever having one of its arms connected to said connecting rod and having its other arm linked to said adjustable control means in spaced relationship to the center thereof, a link having one end pivoted to said two-arm lever in the region of the junction of the two arms thereof and the other end pivoted to a point on said wheel body, said point on the wheel body being located in a radial plane passing through the axis of rotation of said wheel body and through the axis of the pivotal connection of the respective blade with said blade wheel body and also being located between said axes, the arrangement being such that for each blade and the linkage system pertaining thereto, with regard to the direction of rotation of said wheel body, the lever and rod and at least that arm of the two-arm lever which is linked to said rod, all pertaining to said blade actuating linkage system, in the central position of said control means are located behind said radial plane, the two arms of said two-arm lever forming with each other an angle of approximately 170°, and said angle being located on the same side of said two-arm lever as said link.

ERRATUM

For Class 170—159 see:
Patent No. 3,226,031

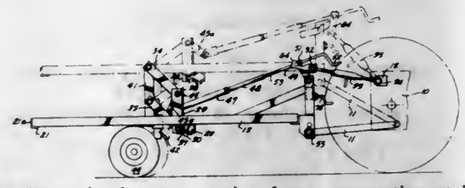
3,225,835
PASTURE CONDITIONER
Hermann J. Steinbach, Lancaster, Pa.
(25 Keith Ave., Barre, Vt.)
Continuation of application Ser. No. 178,025, Mar. 6, 1962. This application Dec. 15, 1964, Ser. No. 434,727
6 Claims. (Cl. 172—138)
(Filed under Rule 47(b) and 35 U.S.C. 118)



1. A pasture conditioner for spreading fertilizer and breaking the soil to encourage growth in a field comprising a frame, ground engaging wheels supporting said frame intermediate the ends thereof, a pair of cross bars

pivotally carried by said frame intermediate the ends thereof, an elongated tongue pivotally connected at one end to one of said cross bars, yoke means mounted on the front of said frame, adjustable means carried by said yoke means and engageable with said tongue for controlling the angular relation between said tongue and said frame, a gang of implements mounted on each of said cross bars, one gang of implements being located forwardly of said wheels and one gang of implements being located rearwardly of said wheels, and adjustable means for rotating said cross bars simultaneously for raising and lowering said implements, whereby either or both groups of implements can be selectively moved into engagement with the earth or out of engagement therewith.

3,225,836
ADJUSTABLE IMPLEMENT HITCH MEANS
Clarence E. Newkirk, 227 N. Emily St., Anaheim, Calif.
Filed June 8, 1964, Ser. No. 373,165
4 Claims. (Cl. 172—319)

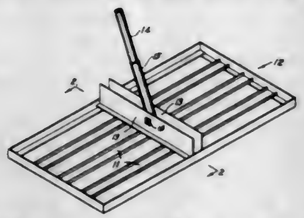


4. In an implement carrying frame, supporting at its front end the conventional A-type hitch structure for attaching to and forming a part of a tractor having stub arm and dirigible front members, the rear portion of said frame having secured thereto a parallelogram means pivotally connected with a rolling ground engaging member, the top link of said parallelogram means being formed with an angular depending lever arm portion, leverage, and linkage members including an angular lever arm pivoted to the top portion of the upstanding A section of said A-type hitch, a yoke member rigidly secured to the upper end of said lever arm, and the lower end of said lever arm in adjustable abutting relation with stop means on the lower portion of said A-type section of said hitch, the rear portion of said yoke pivotally supporting a swivelable block member and having a circular opening forming an aperture therethrough, an adjustable crank member positioned through said aperture and provided with a stop member intermediate the ends thereof and forward of said block member, the opposite end of said adjusting crank being secured in pivotal relation to the depending lever arm of said parallelogram, and the forward end of said yoke having the third leg of the A-type hitch formed as an adjustable threaded telescoping member thereto, and the opposite end of the said third leg of the A-type hitch being pivoted to a stub arm of the tractor, the combination of adjusting means providing the adjustable leverage and linkage means to maintain the implement carrying frame in the desired predetermined angular relation with the ground surface while maintaining ground contact of the tractor dirigible members.

3,225,837
DEVICE FOR SPREADING MATERIAL ON LAWNS OR FOR LEVELING SOFT SOIL AND THE LIKE
Ronald George Richards, 3 Grosvenor Road, Meltham, Western Australia, Australia, assignor of one-half to Charles John Philip Smith, Sydney, New South Wales, Australia
Filed May 11, 1964, Ser. No. 373,898
3 Claims. (Cl. 172—371)

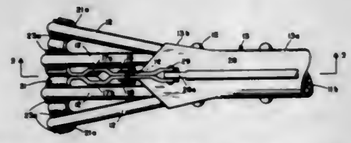
1. In a device for manually spreading material on lawns, a rectangular metal frame, having end pieces and

side pieces, a plurality of bars having a base portion and a lateral portion mounted extending parallel to said side pieces, a pair of closely spaced bracket plates centrally mounted in said frame and extending upwardly transversely thereof between said side pieces, a handle pivotal-



ly mounted between said bracket plates, the lower edges of said bracket plates and said end pieces being marginally notched for flush reception of said bars within the periphery of said bracket plates and end pieces, said bars being mounted in said frame with their base portions parallel to the plane of said frame.

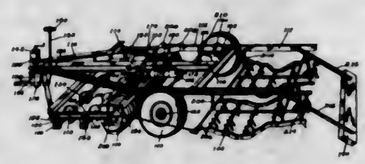
3,225,838
COMBINATION SOIL CULTIVATOR AND WEEDER IMPLEMENT
George Gotzinger, 457 S. Harbor Drive, Indian Rocks Beach, Fla.
Filed Feb. 21, 1963, Ser. No. 260,175
2 Claims. (Cl. 172—378)



1. A combination soil cultivator and weeder implement comprising an elongated handle having a plurality of soil penetrating tines secured to one end and which curve laterally of the longitudinal axis thereof, said tines being spaced apart laterally with respect to the handle, a lever, means pivoting said lever to said handle to swing about an axis extending transversely of the direction the soil penetrating sections of said tines extend, means forming gripping surfaces at one end of said lever comprising semitubular sections each having the open side thereof facing and aligned with the respective tines whereby said semitubular sections receive intermediate sections of said tines therein and grip weeds therebetween, said lever pivoting means being disposed to cause said lever to swing said gripping surfaces thereon about an arc approaching said tines from the soil working ends thereof at an angle thereto of appreciably less than 90° to thereby impart a substantial component of movement of said gripping surfaces longitudinally of said tines and away from the soil penetrating ends of the tines, and means to swing said lever about said pivot means to move said gripping surfaces to and from said tines.

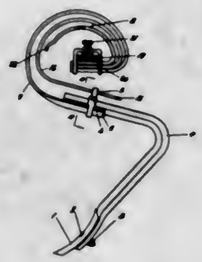
3,225,839
MECHANISM FOR ADJUSTING TOOL AND GROUND SUPPORT RELATIVE TO SUPPORTING FRAME
William H. Petitt, 5310 Connell St., Chattanooga, Tenn.
Filed Nov. 2, 1964, Ser. No. 409,351
1 Claim. (Cl. 172—398)

A seed bed preparation device, comprising:
(A) a frame;
(B) a plurality of ground engaging implements supported upon first and second tooth bars and pivoted on said frame;
(C) a rock shaft pivotably supported in said frame apart from said tooth bars and said ground engaging implements;
(D) a pair of transport wheels depending from said rock shaft;
(E) link means pivoted upon said frame and interconnecting said rock shaft and said tooth bars, said link means being longitudinally adjustable with respect to said tooth bars so as to vary the degree of pivotability of said tooth bars and the degree of cut of said ground engaging implements in the ground, said link means including
(I) dual adjusting arms having first and second ends, said first ends secured to said rock shaft,
(II) a bell crank located intermediate said second ends of said adjusting arms,
(III) means for securing the top of said bell crank to said second ends of said arms in adjustable relationship along said arms,



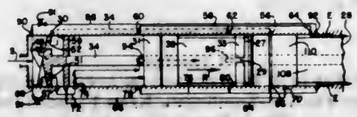
(IV) a control link pivotably attached at one end thereof to the bottom of said bell crank and at the other end thereof to said first tooth bar, and
(V) dual bars having first and second ends, said first ends being pivotably attached to said first tooth bar; and
(G) manual control lever means for varying the degree of pivotability of said tooth bars and said implements independently of said rock shaft and the longitudinal position of said dual adjusting arms, said lever means including a set lever being fixedly secured at one end thereof to said second tooth bar and pivotably secured near its mid-portion to said second ends of said dual bars, said set lever terminating at the other end thereof in a handle.

3,225,840
RESILIENT HARROW TOOTH
Anders Andersen, Godthaab, Denmark, assignor to A/S A. Andersens Staalvarefabrik, Godthaab, Denmark
Filed Apr. 21, 1964, Ser. No. 361,487
Claims priority, application Denmark, May 4, 1963, 1,055
4 Claims. (Cl. 172—708)



1. A resilient tooth assembly for a harrow having a frame, said tooth assembly comprising a primary resilient soil working member including a main leaf spring carrying a tooth point at the free end portion thereof, the other end of said main leaf spring being secured to said harrow frame, and an auxiliary leaf spring mounted on said harrow frame and extending adjacent to and spaced from said main spring, said auxiliary leaf spring having a free end portion shaped to make flush engagement with a portion of said primary soil-working member and a bracket member carried by said primary soil working member and normally holding the free end portion of said auxiliary leaf spring spaced a selected distance rearwardly from said primary soil working member, the free end portion of said main leaf spring moving rearwardly when a predetermined load is applied to said tooth point whereby a portion of said primary soil working member initially engages the free end portions only of said auxiliary spring whereby a stepwise increased resistive force is applied to said tooth point in opposition to said predetermined load.

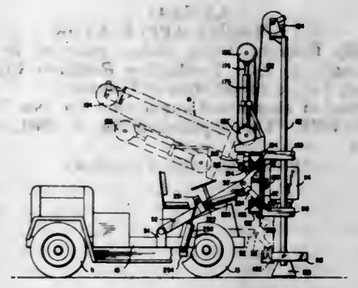
3,225,841
DRILLING APPARATUS
Charles T. Thompson, Claremont, N.H., assignor to Joy Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 31, 1962, Ser. No. 220,682
5 Claims. (Cl. 173—15)



1. A down-the-hole drilling device for forming holes in geological formations comprising, an elongated tubular body, a drilling element captively slidably carried at one end of said body, valve means carried at the other end of said body, elongated hammer means in and slidably engaging the interior of said body and being reciprocable between alternate terminal positions intermediate said drilling element and said valve means, a plurality of fluid passageways in said body communicable with said valve means, said valve means being operable to alternately supply pressure fluid to interior spaces within said body with opposite ends of said spaces being defined by opposite longitudinally spaced surfaces of said hammer means for reciprocating said hammer means in said body, ported passageway means for exhausting pressure fluid from said interior spaces alternately said hammer means having an axial bore therethrough, internal and external fluid passageway means through and around said drilling element respectively to form a dual fluid exhaust path extending longitudinally of said body, elongated tubular means extending axially from said drilling element and slideably received in said axial bore, said tubular means having an end communicating with said internal passageway means and a portion spaced longitudinally of said one end thereof alternately communicating with said interior spaces as said hammer means approaches said alternate terminal positions and said external fluid passageway means communicating with a port of said ported passageway means to exhaust such pressure fluid through said external passageways.

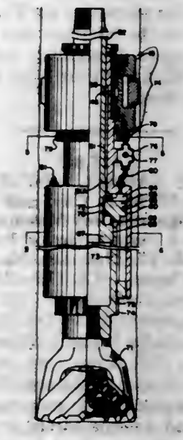
3,225,842
SELF-PROPELLED PERCUSSION TOOL ASSEMBLY
William R. Roeschen, Springfield, Va., assignor, by mesne assignments, to Rex Chainbelt, Inc., a corporation of Wisconsin
Filed Jan. 7, 1963, Ser. No. 249,851
10 Claims. (Cl. 173—24)

10. In a mobile percussion tool apparatus, a power driven carriage, a transverse horizontal trackway movably mounted at one end of said carriage, power driven means operatively connected to raise or lower said horizontal trackway bodily relative to said carriage, a frame member slidably mounted on said movable trackway for movement therealong transversely of said carriage, a vertically disposed guideway pivotally mounted on said frame member for tilting movement about an axis disposed longitudinally of said carriage, and a percussion tool slidably mounted in said vertically disposed guideway for reciprocatory impacting operation therein, the arrange-



ment being such that said tool guideway may be raised or lowered relative to said carriage by operation of said power driven trackway raising or lowering means and may be traversed transversely of said carriage and tilted in its transverse plane to position it for guiding said percussion tool in impacting a surface being worked, a hydraulic actuator for said percussion tool, and a variably controlled hydraulic buffer at one end of said actuator to control movement of said percussion tool after impact.

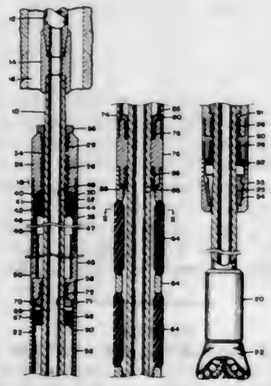
3,225,843
BIT LOADING APPARATUS
John E. Ortloff and Richard J. Howe, Tulsa, Okla., assignors, by mesne assignments, to Esso Production Research Company, Houston, Tex., a corporation of Delaware
Filed Sept. 14, 1961, Ser. No. 138,015
11 Claims. (Cl. 175—93)



6. An apparatus for forcing a bit against the bottom of a borehole which comprises in combination: an arbor; means to rigidly attach said arbor to said bit; a housing

means surrounding said arbor in a longitudinally slidable and non-rotatable relationship therewith; pushdown means positioned between said arbor and said housing means operable upon actuation to exert a downward force on said arbor; an anchor case means mounted about said housing means in a rotatable and non-longitudinally movable relationship therewith; and wall anchor means mounted on said case means for anchoring said case means to the wall of the borehole.

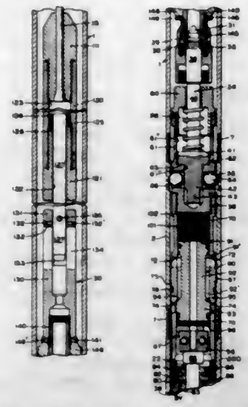
3,225,844
BIT WEIGHT APPLICATOR
Alan Philip Roberts, Tulsa, Okla., assignor, by mesne assignments, to Esso Production Research Company, Houston, Tex., a corporation of Delaware
Continuation of abandoned application Ser. No. 735,226, May 14, 1958. This application May 5, 1961, Ser. No. 110,604
19 Claims. (Cl. 175—230)



10. In a rotary drilling method wherein a stream of drilling fluid is circulated through a string of drill pipe suspended in a borehole and a drill bit is supported from the string, the improvement which comprises: rotating said bit and said string in rigid longitudinal relation, generating a pressure differential within the circulating stream of drilling fluid in the vicinity of the bit, applying a downward axial thrust to the bit from said drill string in response to said pressure differential, and transmitting the resultant upward reaction thrust from said drill string to the wall of the borehole.

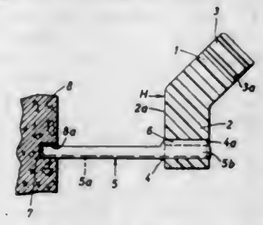
3,225,845
CORE BARREL ASSEMBLY
James H. Koontz, Michigan City, and Robert A. Miller, Culver, Ind., assignors to Joy Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Feb. 17, 1961, Ser. No. 89,994
3 Claims. (Cl. 175—236)

1. A core barrel assembly for use in a drill string comprising, a head assembly axially slidable in such a drill string, latching means for latching connection of said head assembly to such a drill string, core receiving means operatively connected to said head assembly for sliding movement in such drill string and for movement relative to said head assembly, fluid passage means in said head assembly for conducting pressure fluid from an upper portion of such drill string to the lowermost end of such a drill string, a valve located in said passage means operatively connected to said core receiving means and slidably mounted in said head assembly for closing off said fluid passage means upon upward movement of said core receiving means relative to said head assembly, and said valve having an upper fluid reactive surface exposed to



said pressure fluid that is equal in area to a lower reactive surface exposed to said pressure fluid on closing off of said fluid passage means.

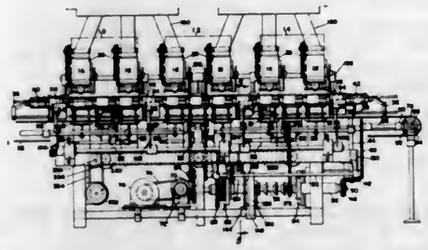
3,225,846
HOLDER FOR BORING BITS AND THE LIKE
Artur Fischer, Tumlingen, Kreis Freudenstadt, Black Forest, Germany
Filed May 14, 1963, Ser. No. 280,379
Claims priority, application Germany, May 16, 1962, F 36,820
9 Claims. (Cl. 175—403)



1. A handle for boring bits and similar tools of the type having an elongated end portion and a projection extending laterally of such end portion, said handle consisting of a single piece of blow-resistant synthetic plastic material and comprising a pair of mutually inclined elongated prongs each having a transversely extending through bore and an elongated slot parallel to and communicating with the respective bore, said bores having different diameters so that each thereof may accommodate the end portion of a differently dimensioned tool whereby the projection of the tool extends into the respective slot to prevent rotation of the tool with respect to the handle.

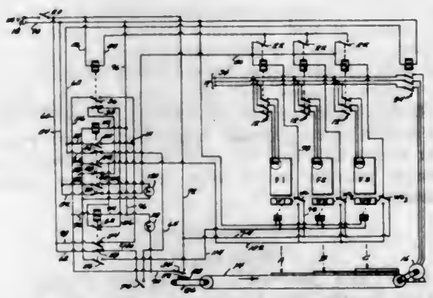
3,225,847
WEIGHING MACHINE
Robert W. Vergobbi, Braintree, and Edmund L. Dodd, Quincy, Mass., assignors to Pneumatic Scale Corporation, Limited, Quincy, Mass., a corporation of Massachusetts
Filed Dec. 21, 1962, Ser. No. 246,382
21 Claims. (Cl. 177—52)

1. In a gross weight weighing machine operating in successive cycles and having a plurality of spaced multiple weighing units arranged in a line, each multiple weighing unit having at least two weighing stations for providing a bulk load and a drip load into successive single containers delivered thereto, means for intermittently moving the single containers in the weighing line one station each cycle of operation, a continuously moving container supply and discharge conveyer, and container and handling means comprising means for moving containers laterally into and out of said weighing line including a plurality of cyclically operated transfer means, a plurality of cyclically operated stop means, and means for operating said transfer means and said stop means to admit containers onto the conveyer in a contiguous group each cycle of



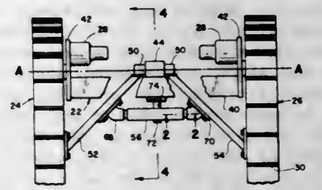
operation corresponding in number to the number of multiple weighing units and to distribute and transfer the individual single empty containers of successive groups from the conveyer into the weighing line during successive cycles to be filled and weighed by their respective multiple weighing units, said transfer means and said stop means also operating to transfer successive individual single filled and weighed containers from the weighing line back onto said conveyer during successive cycles and to regroup said individual single filled containers in contiguous relationship on the conveyer to be discharged from the machine.

3,225,848
AUTOMATIC CONTROL SYSTEM FOR BLENDING EQUIPMENT
Cecil S. Wise, Dallas, and Kenneth G. Lytton, Gastonia, N.C., assignors to Fiber Controls Corporation, Gastonia, N.C., a corporation of North Carolina
Filed Nov. 19, 1962, Ser. No. 238,385
8 Claims. (Cl. 177—80)



1. A system for controlling operation of equipment of the type that collects material in discharge means while effectively measuring the material by sensing for a given quantity of a predetermined characteristic related to said material for a desired operation of the equipment and of the type that said discharge means releases the collected material onto conveyer means movable by energizable means, said system comprising:
- means for energizing said energizable means for causing said conveyer means to run,
- switch means movable to first and second positions in response to the running of said conveyer means,
- means operable in response to movement of the switch means to said first position for disconnecting said energizing and energizable means,
- means for sensing completion of measurement of said given quantity of said characteristic, and
- means operable in response either to event (A) which is the sensing of measurement completion as aforesaid
- or to event (B) which is the movement of said switch means to said first position, according to which one of said (A) and (B) events occurs last as long as the other thereof has already occurred and, in the case of event (A) occurring last, notwithstanding any intervening return of said switch means from said first position to said second position, for automatically re-energizing said energizable means via said energizing means and causing said discharge means to release its collected material onto the running conveyor means.

3,225,849
TILTING SUSPENSION FOR CRAWLER FRAMES
George Norman La Casse, Claremont, N.H., assignor to Joy Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Feb. 21, 1964, Ser. No. 346,500
3 Claims. (Cl. 180—9.5)



3. A mobile rock drill support comprising: two parallel crawler assemblies; a crawler frame within each of said assemblies; rearward portions of said assemblies having a common transverse axis, said assemblies being pivotable about said axis; a transverse frame pivotable about said axis, pivotably secured to said crawler frames; two elongated rigid support members, rigidly secured to and extending rearwardly and inwardly from intermediate portions of said crawler frames, respectively, said support members being pivotably secured to each other; universally pivotable bearings mounted on intermediate portions of said support members, respectively, said bearings being slidable transversely of said support members; an elongated rigid crossbar member extending between and fixedly secured to said universal bearings; said crossbar member having a central transverse bore therethrough; pivot means rigidly secured to said transverse frame, said bore and said pivot means having a common axis normal to said transverse axis and said bore slidably receiving said pivot means to permit said crawler frames to rotate with respect to each other within the limits imposed by the clearance between said rigid frame and said support members.

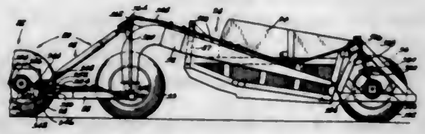
3,225,850

TRACTION FOR EARTH MOVERS AND THE LIKE

Lovel R. Simmons, Jackson, Miss., Hollis H. Travis, Dallas, Tex., and James T. Monk, Louisville, and Andrew W. Ogletree, Clinton, Miss., assignors to M-R-S Manufacturing Company, Flora, Miss., a corporation of Delaware

Original application May 27, 1960, Ser. No. 32,195. Divided and this application June 5, 1964, Ser. No. 372,936

5 Claims. (Cl. 180—14)



1. A machine for moving earth and the like comprising a tractor having drive wheels, a power source and means for driving said drive wheels from said power source to enable said tractor to develop a first drawbar force, means providing an operator's station on said tractor, a trailer having front and rear wheels, and power means on said trailer comprising mechanical drive means drivingly connected to at least said trailer rear wheels to enable said trailer to develop a second drawbar force, said trailer having a gooseneck frame, power coupling means interconnecting said tractor power source and said trailer power means for driving at least said trailer rear wheels from said tractor power source, draft means interconnecting the bottom of the gooseneck frame of said trailer and said tractor for pulling of said trailer by said tractor, said power coupling means running along said draft means, said trailer mechanical drive means running up and over said gooseneck frame, means interconnecting the rear of said tractor and the front of said trailer and operative to transfer at least a part of the weight of said trailer from said front to said rear wheels thereof and to said drive wheels of said tractor, and control means at said operator's station on said tractor operatively connected to said weight transfer means and to said trailer power means for selectively operating both thereof, whereby the operation together of said weight transfer means and said power means of said trailer with said power source of said tractor enables said earth moving machine to develop a third drawbar force greater than the sum of said first and said second drawbar forces, thereby permitting said machine to traverse terrain which provides inherently low traction.

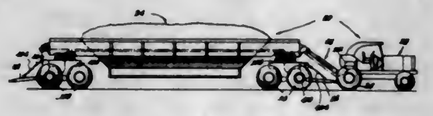
3,225,851

TRACTION FOR EARTH MOVERS AND THE LIKE

Lovel R. Simmons, Jackson, Miss., Hollis H. Travis, Dallas, Tex., and James T. Monk, Louisville, and Andrew W. Ogletree, Clinton, Miss., assignors to M-R-S Manufacturing Company, Flora, Miss., a corporation of Delaware

Original application May 27, 1960, Ser. No. 32,195. Divided and this application June 5, 1964, Ser. No. 372,966

4 Claims. (Cl. 180—14)



1. A machine for moving earth and the like comprising a tractor having drive wheels, a source of electric power carried by said tractor, means providing an operator's station on said tractor, a trailer having left and right front and left and right rear wheels, power means on said trailer and comprising two electric motors respectively connected to said left and right rear wheels of said trailer to enable said trailer to develop a driving force, draft means interconnecting said trailer and said tractor for pulling of said trailer by said tractor, electric power transmission means between said tractor electric power source and said motors, means interconnecting the rear of said tractor and the front of said trailer and operative for transferring at least a part of the weight of said trailer from said front to said tractor rear wheels, control means at said operator's station on said tractor operatively connected to said weight transfer means and to said electric motors for selectively operating both thereof, and means for selectively driving the wheels at one end of said trailer or the other, said selective driving mans comprising said two electric motors for said left and right rear wheels respectively, and two additional electric motors for the left and right front wheels respectively, and means for selectively energizing said motors.

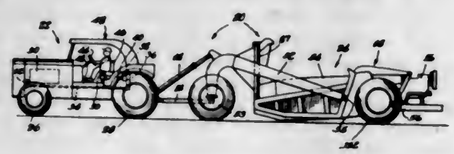
3,225,852

TRACTION FOR EARTH MOVERS AND THE LIKE

Lovel R. Simmons, Jackson, Miss., Hollis H. Travis, Dallas, Tex., and James T. Monk, Louisville, and Andrew W. Ogletree, Clinton, Miss., assignors to M-R-S Manufacturing Company, Flora, Miss., a corporation of Delaware

Continuation of application Ser. No. 32,195, May 27, 1960. This application June 5, 1964, Ser. No. 374,882

17 Claims. (Cl. 180—14)



1. A machine for moving earth and the like comprising a tractor having drive wheels, a power source and means for driving said drive wheels from said power source, means providing an operator's station on said tractor, a trailer having front and rear wheels, power means on said trailer for selectively driving said trailer rear wheels, draft means interconnecting said trailer and said tractor for pulling of said trailer by said tractor, means interconnecting the rear of said tractor and the front of said trailer and operative for transferring at least a part of the weight of said trailer from said front to said rear wheels thereof and also to said drive wheels of said tractor, and control means at said operator's station of said tractor operatively connected to said weight transfer means and to said trailer power means for selectively operating said weight transfer means and said power means, means to the speed of said machine, and means operatively connected to said speed response means and to said weight transfer means and operable automatically to deenergize said weight transfer means when said machine reaches a predetermined speed.

3,225,853

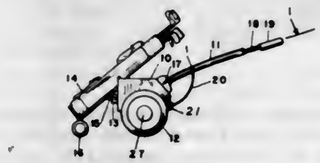
CONTROL HANDLE FOR GOLF CART

Orlo Clair Norton, 544 Virginia Ave., Erie, Pa., Joseph Spiteri, Erie, Pa., and Will J. Schaaf, 502 Seminole Drive, Erie, Pa.; said Spiteri assignor to said Schaaf and said Norton

Filed July 25, 1962, Ser. No. 212,356

2 Claims. (Cl. 180—19)

1. A vehicle having ground engaging wheels thereon, a reversible motor having reversing means therein operatively connected to drive at least one of said wheels, means for supplying power to said motor,
control means to selectively drive said motor forward and in reverse,
said control means comprising a variable resistor having a first and a second spaced resistance element with a dead space therebetween and a movable element,
means connecting said power supplying means to said movable element,
means connecting said resistance elements remote from said dead space to said reversing means of said motor,
a handle on said vehicle,
said handle having a first and a second part telescopically movable relative to each other,
one of said first and second parts of said handle comprising a hand engaging member,
said variable resistor being disposed on a part of said handle,
said movable element being connected to said second part of said hand engaging member and slidable relative to said first part of said hand engaging member,



and balanced spring means biasing said parts of said hand engaging member to bring said movable element to rest on said dead space between said resistance elements,
said resistance elements moving to bring said movable element into engagement with said first resistance element to drive said vehicle in a first direction when said handle is pushed,
said resistance element moving to bring said movable element into engagement with said second resistance element when said handle is pulled,
said movable element being movable relative to said resistance elements toward said connections of said resistance elements to said motor against the force of said spring means in proportion to the force exerted on said handle to reduce the amount of resistance thereof between said power supplying means and said motor whereby said motor is driven faster as said resistance is decreased.

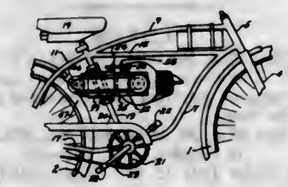
3,225,854

ENGINE DRIVE ARRANGEMENT FOR A BICYCLE

Leighton Goerner, 8826 Big Bend, Webster Groves, Mo.

Filed Mar. 23, 1964, Ser. No. 354,032

9 Claims. (Cl. 180—33)



1. In combination, a bicycle including front and rear wheels and a frame carried thereby and having a single upright column forming a seat mast, there being a saddle on said mast, a power drive-mounting comprising a stationary member fixedly secured to said upright column, a carrier member slidable horizontally on said stationary member below and adjacent a horizontally disposed upper part of said frame, an engine on said carrier member in front of said column and movable forwardly and rearwardly of the bicycle, a wheel-engageable friction roller journaled on said carrier member and operatively connected to said engine, and a device mounted directly on said members and readily actuated manually for adjusting and holding said members in selected position relative to each other lengthwise of said frame.

3,225,855

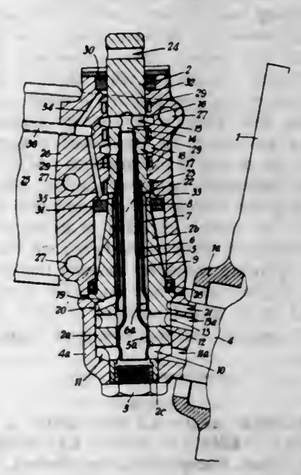
SWIVEL MOUNTINGS FOR FLUID-DRIVEN STEERABLE VEHICLE WHEELS

Theo Sherwen, Gloucestershire, England, assignor to Prime Movers (Wiltshire) Limited, Birmingham, England, a British company

Filed Apr. 20, 1964, Ser. No. 361,057

Claims priority, application Great Britain, Apr. 30, 1963, 17,033/63

6 Claims. (Cl. 180—43)



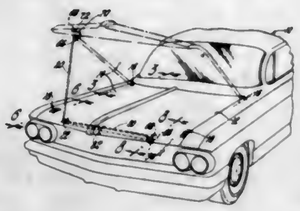
1. A swivel mounting for a steerable vehicle wheel having a built in hydraulic motor, said mounting including: a kingpin having a head adapted for attachment to the inner end of a wheel stub-axle and a shank adapted for connection with a steering arm; a bearing sleeve engaged around the kingpin between the head and shank of the latter so that the kingpin is rotatable with respect to the bearing sleeve, said bearing sleeve being attachable to the vehicle chassis; the kingpin being generally cylindrical in form, the head thereof being of larger diameter than the shank thereof; means defining a tapering neck connecting said head to said shank; means providing communicating flow passages and separate communicating return passages for hydraulic fluid respectively through the kingpin and bearing sleeve, and means providing communicating drain passages through the kingpin and sleeve; the communication between the flow, return and drain passages being effected through annular channels provided around the kingpin, said annular channels being axially spaced along the kingpin and made fluid-tight by sealing rings which encircle the kingpin; the bearing sleeve peripherally surrounding at least portions of the shank and tapering neck of the kingpin, said bearing sleeve being oversize in relation to said tapering neck and having a lower end seated on a thrust bearing carried on an external shoulder formed about the kingpin.

3,225,856

SAFETY HINGE AND LATCH FOR A VEHICLE BODY CLOSURE

George Caramanna, Detroit, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Oct. 1, 1963, Ser. No. 312,995
19 Claims. (Cl. 180—69)



1. In combination with a vehicle body member having a compartment opening,

a closure member engageable with the body member to close said compartment opening,

means hinging said closure member on said body for swinging movement between opened and closed positions and for limited linear movement in compartment closing engagement with the body member between said closed position and a safety position conditioning said hinging means to prevent opening swinging movement of the closed closure member,

a support rod pivotally mounted on one of said members and swingable between a stored position and a raised position engageable between said members to maintain the closure member in its opened position,

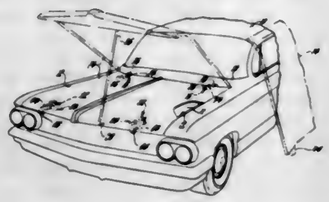
and said body and closure members each having closely spaced opposing shoulders formed thereon remotely of said hinging means and normally interengaged by said rod in its stored position to latch said closure member against linear movement from its safety position.

3,225,857

SAFETY HINGE AND LATCH FOR A REMOVABLE VEHICLE BODY CLOSURE

Wolbert De Haan, Farmington, and Robert A. Vogelei, Southfield, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Oct. 1, 1963, Ser. No. 312,997
9 Claims. (Cl. 180—69)



1. In combination with a vehicle body member having a compartment opening,

a closure member for said body opening,

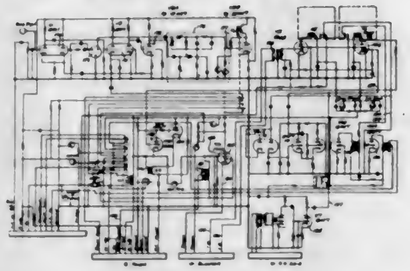
hinge means for mounting said closure member on said body member for hinged swinging movement between an opened position and a compartment closing hinged position and for linear movement between said hinged position and an extreme closed position, said hinge means being disengageable by limited linear movement between said members to permit removal of the closure member from the vehicle body member, and cooperating means associated with said hinge means and normally engageable therebetween to prevent said swinging movement of the closure member upon movement in a hinge disengaging direction from said hinged position to said extreme closed position.

3,225,858

RADIO SYNCHRONIZED FIRING CONTROL

Benedict H. Pfab, Monrovia, Calif., assignor to Western Geophysical Company of America, Los Angeles, Calif., a corporation of Delaware

Filed Sept. 7, 1960, Ser. No. 54,505
8 Claims. (Cl. 181—.5)



4. In a seismic exploration method wherein a seismic disturbance is created by apparatus positioned at a shot station and the disturbance recorded by apparatus positioned at a remote recording station, both the shot station apparatus and the recording station apparatus including radio transmitting means and receiving means for communication therebetween on a predetermined frequency channel, the sequence of events in spaced time relationship comprising:

initiating said sequence of events by operating the radio transmitting and receiving means at said recording station for a first predetermined time interval;

transmitting from the recording station to the shot station on the predetermined frequency channel a radio timing tone signal at completion of said first predetermined time interval;

in response to said timing tone signal at the termination of said first time interval automatically converting said shot station apparatus to the transmit condition and said recording station apparatus to the receive condition;

initiating a second predetermined time interval;

actuating said recording apparatus during second time interval;

initiating the seismic disturbance at the end of said second time interval and transmitting a time-break pulse from said shot station to said recording station on said predetermined radio frequency; and

recording seismic intelligence signals during a third predetermined time interval.

3,225,859

PIPE LINE HYDROPHONE SYSTEM

Lawrence C. Davidson, Annapolis, Md., assignor to the United States of America as represented by the Secretary of the Navy

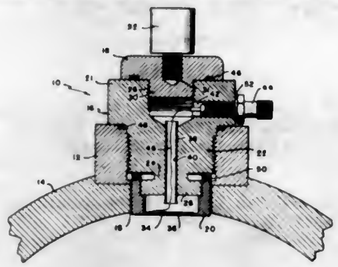
Filed Mar. 30, 1964, Ser. No. 355,971
10 Claims. (Cl. 181—.5)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. Apparatus for measuring acoustic pressure in a fluid contained by a pipe wall having an aperture therethrough comprising:

a hydrophone having a pressure sensitive surface on one end thereof;

means for mounting said hydrophone on the pipe wall with said pressure sensitive surface of said hydrophone disposed in the pipe aperture, flush with the inner surface of said pipe, and spaced from the peripheral wall of said aperture;

said hydrophone including a body member comprising a central portion, a head portion on one end of said



central portion, a pedestal portion on the other end of said central portion, and a reduced neck portion separating said central portion from said pedestal portion for strain isolating said pedestal portion from said central portion; and

said hydrophone further including a transducer container secured on said pedestal portion of said body member.

3,225,860

SPEAKER ASSEMBLY

Charles R. Fox, Brooklyn, N.Y., assignor to Metro Electronics Corporation, Brooklyn, N.Y., a corporation of New York

Filed July 20, 1964, Ser. No. 383,584
7 Claims. (Cl. 181—31)



1. The combination with a support wall which has a blind opening therein, of a speaker assembly comprising a mounting ring adapted to be secured in engagement with the wall extending about said opening, a speaker basket disposed within said wall opening, extension means on said basket and secured to said ring to mount said basket in said wall opening, flange means on said mounting ring projecting away from said wall, and cover means extending across said mounting ring and removably secured to said flange means.

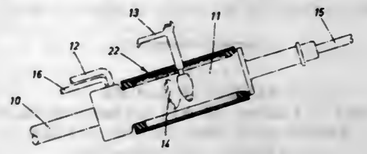
3,225,861

SOUND SUPPRESSING DEVICE COMPRISING ELASTIC TUBULAR SLEEVE FOR AIR ACTUATED PERCUSSIVE TYPE TOOLS

John W. Reynolds, Kimberley, British Columbia, Canada, assignor to The Consolidated Mining and Smelting Company of Canada Limited, Montreal, Quebec, Canada, a corporation of Canada

Filed Sept. 13, 1963, Ser. No. 308,822
7 Claims. (Cl. 181—36)

1. A sound suppressing device for an air actuated percussive type tool having an air cylinder, a piston therein, an air inlet port and at least one air exhaust port, said device comprising a pair of spaced annular elements on said cylinder with said air exhaust port therebetween, an expansible elastic tubular sleeve stretchably embracing said annular elements in close fitting relationship and standing substantially free of the cylinder for forming an enclosure for receiving air from said air exhaust port, and for defining a gap between the sleeve and at least one of said annular elements for escape of said air as a pulsating stream, and means for holding said sleeve in place.

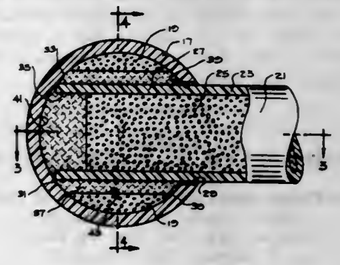


3,225,862

DIELECTRIC LADDER

Miller H. Fink, Centralia, Mo., assignor to A. B. Chance Company, Centralia, Mo., a corporation of Missouri

Continuation of application Ser. No. 132,665, Aug. 21, 1961. This application Aug. 19, 1963, Ser. No. 303,728
3 Claims. (Cl. 182—46)



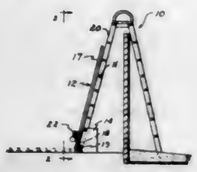
1. A dielectric ladder assembly comprising:

a pair of spaced, generally parallel side rails; and

a plurality of spaced rungs connected to and spanning the distance between said side rails in generally prependicular relationship thereto, each of said rails and the rungs being defined by a tubular element of relatively rigid, noncellular, reinforced synthetic resin material and filled with a cellular, moisture-resistant, synthetic resin foam, said rails each being of greater diameter than the diameter of each rung and opposed portions of the rail elements having opposed, generally aligned openings therein for receiving the extremities of respective rungs, said openings being of only slightly greater diameter than said diameter of the rungs, there being a cavity of generally cylindrical configuration in the foam within each side rail aligned with respective openings in the elements thereof, coaxial with corresponding openings, of greater transverse diameter than respective openings and exposing the rough interior surfaces of the rail elements in surrounding relationship to the openings as well as in direct opposition to said openings, said extremities of the rungs extending through corresponding openings on the rail elements and terminating adjacent said exposed rough surfaces of the rail elements, a substantial portion of the extremities of the rungs positioned within said side rails being devoid of said foam and thereby defining inwardly extending depressions in each of the rungs communicating directly with corresponding cavities and exposing circumferentially extending internal surfaces of respective rung elements of major width, and a mass of solidified, monolithic, noncellular, relatively rigid synthetic resin material filling each of said

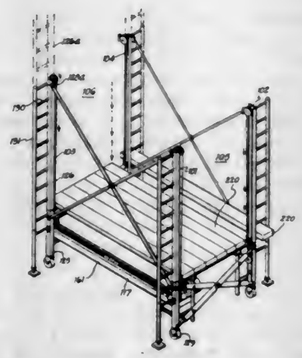
cavities and respective depressions aligned therewith, and firmly bonded to said exposed internal surfaces of the side rail elements and the rung elements to securely connect the rungs to the side rails and preclude rotation of the rungs relative to the side rails.

3,225,863
SAFETY LADDER
Howard T. Ludlow, 48 Ash Terrace, Parlin, N.J.
Filed June 4, 1964, Ser. No. 372,624
4 Claims. (Cl. 182—104)



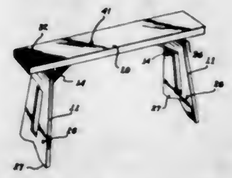
4. In a device for a swimming pool, a support, a ladder, said ladder resting on said support, hinge means secured to the bottom end of said ladder and adjacent said support, an elongated cover secured at its bottom end to said hinge means for movement between an open position resting on said support and a closed position covering said ladder and means locking said cover to said one ladder in said closed position.

3,225,864
WORK BENCH, SCAFFOLD AND LIFT COMBINATION
Martin Green, Mahwah, N.J., assignor of one-half to John Cornelia, Jr., Wayne, N.J.
Filed May 29, 1963, Ser. No. 284,127
8 Claims. (Cl. 182—144)



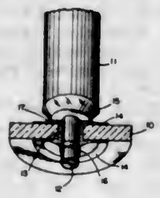
1. A scaffold, comprising in combination, four vertical rail members forming front and rear tracks defining the ends of a rectangular frame; a pair of horizontally disposed lifting members each with the ends thereof designed to move vertically along the tracks; longitudinal rotary screw drive means including a longitudinal screw drive shaft extending horizontally along the one side of said frame, a drive boss being threadedly mounted thereon, the traveling of said drive boss being accomplished by turning of said shaft, turning means to turn said shaft and, a cord and pulley arrangement, the cords of which are coupled to the ends of the lifting members and to said traveling drive boss, said cord and pulley arrangement including first horizontal and vertical lower pulleys adjacent one end rail on one track, additional vertical lower pulleys adjacent each of the other three end rails at about the same horizontal level as said first lower pulleys, a second horizontal pulley adjacent the other end rail on said one track at about said same level, upper vertical pulleys towards the tops of said rail members, and, four separate cords each extending from said drive boss to a different end of said lifting members, traveling over said pulleys.

3,225,865
SAW-HORSE
Jack W. Downey, P.O. Box 6131, Tucson, Ariz.
Filed Mar. 26, 1963, Ser. No. 268,139
3 Claims. (Cl. 182—155)



1. A portable foldable sawhorse comprising
(a) a generally rectangular elongated body member in the form of a relatively wide board with top and bottom surfaces,
(b) a pair of legs pivoted to the bottom surface of the body member near ends thereof,
(c) each such leg having a top edge of approximately the width of the body member,
(d) each such leg having a longitudinal slot and being flared outwardly with its bottom edge shaped to form two feet,
(e) a brace for each leg disposed in said slot when the sawhorse is folded,
(f) a hinge connection between a top end of each brace and its associated leg permitting said brace to be rotated about its said hinge to place a lower end of said brace in contact with an under side of said body member, and
(g) means releasably connecting the unhinged bottom end of each brace to a lower surface of said body member to hold said brace in diagonal relation between the leg and body member with said leg sloping outwardly from said hinged top to bottom to stabilize the sawhorse when in use.

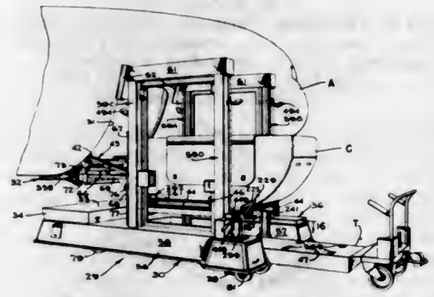
3,225,866
LUBRICATION SYSTEM FOR FINE MECHANISMS
Marianne K. Bernett, Washington, D.C., and William A. Zisman, Silver Spring, Md., assignors to the United States of America as represented by the Secretary of the Navy
Filed Nov. 19, 1963, Ser. No. 324,897
5 Claims. (Cl. 184—1)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. In a mechanical assembly of fine parts comprising a part arranged for movement in frictional contact with another part,

means for containing a lubricating oil of the spreading type at the area of frictional contact between said parts,
including a thin low surface energy film of a polymer of a monomer of the group consisting of 1H,1H-pentadecafluorooctyl methacrylate and 2-(N-propylperfluorooctane sulfonamido)ethyl acrylate coated on each of said parts near the area of frictional contact therebetween and arranged to intercept oil spreading from said area.

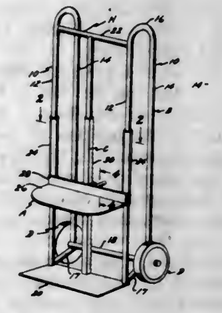
3,225,867
CARGO HANDLING APPARATUS
Donald M. Ingham, Santa Clara, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Original application May 12, 1961, Ser. No. 109,731, now Patent No. 3,136,433, dated June 9, 1964. Divided and this application May 1, 1963, Ser. No. 277,176
7 Claims. (Cl. 187—9)



1. In baggage handling apparatus, the combination of a wheeled carrier, power means for driving the wheels of said carrier, brake means mounted on said carrier and having ground-engaging means, a fluid pressure system operatively connected to said brake means, said ground engaging means being movable to a position immobilizing said carrier only when the pressure in said system reaches a predetermined value, control means operatively connected to said carrier power means and sensitive to the pressure in said system for deactivating said power means when said pressure is equal to or greater than said predetermined value and for activating said power means when its pressure is below said value.

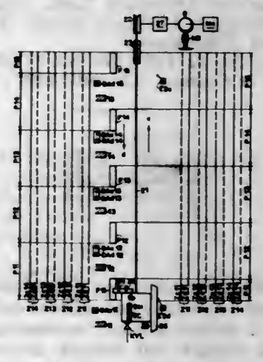
3,225,868
HAND TRUCK
Elmer J. Barnes, 10750 Jurupa, Mira Loma, Calif.
Filed Oct. 9, 1964, Ser. No. 402,900
4 Claims. (Cl. 187—9)

1. A hand truck, including:
(a) two inverted U-shaped transversely spaced side pieces, each of which comprise forward and rear legs that develop on their upper ends into a curved web which serves as a handle when said truck is being moved;
(b) two extensions of said rear legs which slope downwardly and forwardly from the lower ends thereof and are rigidly connected at the forward ends to the lower rear end portions of said forward legs;
(c) a plate affixed to the lower ends of said forward legs and projecting forwardly therefrom;
(d) a cross piece extending transversely between the upper portions of said forward legs;
(e) a toothed rack bar intermediately disposed between said forward legs, with the upper and lower ends of said forward legs being rigidly connected to said cross piece and plate;
(f) a transversely disposed shaft affixed to the lower portions of said rear legs;
(g) two wheels rotatably supported on end portions of said shaft;
(h) two elongated tubular sleeves slidably mounted on said forward legs;
(i) a platform affixed to the lower forward portions of said sleeves and extending forwardly therefrom; and



(j) a manually operable jack mechanism that engages said rack bar, said jack mechanism being rigidly connected to said platform and when manipulated being capable of moving upwardly on said rack bar, moving said platform therewith, with said rack bar together with said side pieces, cross pieces, extensions and said plate cooperatively defining a frame of sufficient strength to withstand the maximum weight that will be placed on said platform, and with said rack bar also cooperating with said jack mechanism to permit said platform to be raised to a desired elevation above said shaft.

3,225,869
LOGICAL ELEVATOR CONTROL SYSTEM USING MINIMUM·LOGICAL COMPONENTS
Marcel Schibli, Zurich, Switzerland, assignor to Schweizerische Wagons- und Aufzugefabrik A.-G. Schlieren-Zurich, Schlieren, Switzerland
Filed Nov. 15, 1961, Ser. No. 152,565
Claims priority, application Switzerland, Nov. 25, 1960, 13,234/60
8 Claims. (Cl. 187—29)



1. In an elevator control for a multi-floor structure serviced by an elevator including a cabin and means for moving said cabin in a first or second direction and having

static switching means: a first plurality of call influenced memories, each of said memories being associated with a floor and a first direction of travel for remembering which floor called for said elevator and which direction of travel is called for with respect to said floor, a second plurality of call influenced memories each of said memories being associated with a floor and a second direction of travel for remembering which floor called for said elevator and which direction of travel is called for with respect to said floor, a first plurality of floor-call switches, each on a different floor, connected respectively to said call influenced memories of said first plurality whereby a passenger at a floor can call for said elevator to travel in a first direction with respect to said floor, a second plurality of floor-call switches, each on a different floor, connected respectively to said call influenced memories of said second plurality whereby a passenger at a floor can call for said elevator to travel in a second direction with respect to said floor, a position indicating means for indicating the position of said cabin, direction indicating means for indicating the direction of travel of said cabin, a first plurality of coincidence elements connected to said first plurality of call influenced memories and said position indicating means for indicating when said cabin is at the floor whose floor-call switch in a first direction was operated, a second plurality of coincidence elements connected to said second plurality of call influenced memories and said position indicating means for indicating when said cabin is at the floor whose floor-call switch in a second direction was operated, first collective means responsive to said first plurality of coincidence elements and said direction indicating means for stopping said cabin only when said position indicating means and said first plurality of call influenced memories indicate said cabin is at any floor called for by said first plurality of floor-call switches and said cabin is moving in said first direction, and second collective means responsive to said second plurality of coincidence elements and said direction indicating means for stopping said cabin only when said position indicating means and said second plurality of call influenced memories indicate said cabin is at any floor called for by said second plurality of floor-call switches and said cabin is moving in said second direction.

ERRATUM

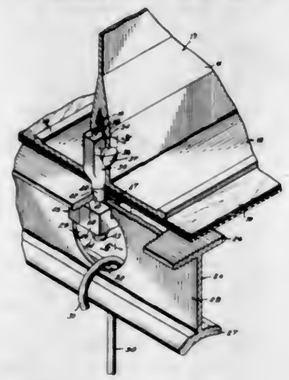
For Class 188—62 see:
Patent No. 3,225,873

3,225,870
SHOCK ABSORBER BAFFLE MEANS
John E. Heckethorn, Dyersburg, Tenn., assignor to Oldberg Manufacturing Company, Grand Haven, Mich., a corporation of Michigan
Filed Oct. 21, 1963, Ser. No. 317,453
11 Claims. (Cl. 188—100)



1. A hydraulic shock absorber of the direct-acting type including, in combination, a first cylinder defining a working chamber, a second cylinder surrounding and spaced from the first cylinder and defining therewith a liquid reserve chamber, closure means for the adjacent ends of the working and reserve cylinders, a piston reciprocable in the working cylinder, a rod connected with the piston and extending through an opening in the closure means at one end of the working cylinder, said piston having passages therein, valve means carried by the piston for controlling flow of liquid from one side of the piston to the other in the working cylinder, a foot valve assembly adjacent the opposite end closure, said foot valve assembly including a member having passages accommodating flow of liquid between the working and reserve chambers, valve means associated with said member for controlling flow of liquid through the passages, baffle means disposed in said reserve chamber, said baffle means including an annular member secured to one of said cylinders, said member having a plurality of circumferentially arranged vanes in the reserve chamber, each of said vanes being arranged at an acute angle with respect to a plane normal to the axis of the working cylinder and defining open areas facilitating flow of liquid along said vanes in a generally spiral direction whereby to maintain the liquid at each side of the vanes in a substantially integrated state by the liquid adjacent the vanes of the baffle means.

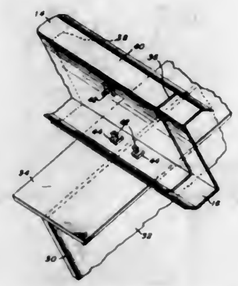
3,225,871
RAIL MOUNT
David G. Tillinghast, Cincinnati, Ohio, and Paul E. Sembach, Longview, Tex., assignors to Trailmobile Inc., Cincinnati, Ohio, a corporation of Delaware
Filed Dec. 10, 1962, Ser. No. 243,302
4 Claims. (Cl. 189—36)



1. A rail mount comprising,
an upper rail having a depending stud,
a lower rail crossing said upper rail and having an upper flange integral with a vertical web,
said web having at least one transverse aperture therethrough,
said lower rail having a vertical hole passing from said aperture to the upper surface of said flange,
a U-shaped washer having a bight portion passing through said aperture and having a leg engaging the surface of said flange on each side of said hole, said washer having a hole in alignment with said flange hole,
said stud passing through said flange and washer holes, and
a nut threaded on the end of said stud.

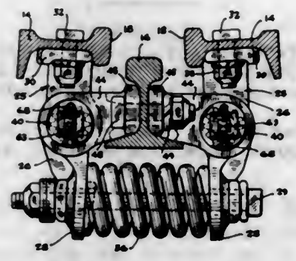
3,225,872
STRUCTURAL MEMBER
Paul S. O'Brien, Houston, Tex., assignor to National Steel Corporation, a corporation of Delaware
Continuation of application Ser. No. 644,087, Mar. 5, 1957. This application Dec. 31, 1962, Ser. No. 248,720
6 Claims. (Cl. 189—36)

1. In combination with an elongated first structural member having a flat surface, a plurality of second structural members disposed transversely of the elongated first structural member, the second structural members overlapping each other in a region of overlap of a length substantially greater than the width of the flat surface of the elongated first structural member; each second structural member comprising an elongated flat web and a flat flange extending laterally from each side edge of each web and being disposed on opposite sides of the plane of the web, each flange including a lip integral and disposed at an obtuse angle therewith each lip extending along the outer side edge of its associated flange to form an obtuse dihedral therewith, the obtuse dihedral formed by one lip and its associated flange opening toward the obtuse



dihedral formed by the other lip and its associated flange; the web, flanges and lips of each second structural member being contiguous along at least a portion of the surfaces thereof with the web, flanges and the lips, respectively, of another second structural member in the region of overlap; a portion of a flange of a second structural member being contiguous with a portion of the flat surface of the first structural member; the second structural members having uniform cross-sectional dimensions substantially throughout their length; and means for securing together in unitary assembly the first structural member and a flange of each second structural member in the region of overlap.

3,225,873
RAILROAD CAR RETARDER
John L. Devaney, Downey, Calif., assignor to American Brake Shoe Company, New York, N.Y., a corporation of Delaware
Filed Feb. 27, 1964, Ser. No. 347,724
3 Claims. (Cl. 188—62)



1. An adjustable mounting means for a lever arm pivotable about its middle portion, one of a pair of opposed braking elements secured to the upper end of said lever arm and adapted to engage a side of a car wheel of a railroad car, said adjustable mounting means including a bracket means adapted to be secured to the traffic rail, a pair of spaced lugs projecting outwardly from said traffic rail, said spaced lugs being provided with axially aligned apertures therein, opposed inserts inserted in each of the apertures in the lugs and each having integral portions thereon adapted to extend toward one another and to be disposed in an aperture in a lever arm for pivotally mounting the lever arm, said integral portions being of a smaller diameter than the diameter of said apertures to permit said lever arms to turn in a longitudinal direction on said integral portions to reduce stresses on said integral portions, said portions pivotally mounting the lever arm being disposed on an axis adapted to orbit about the center line of said axially aligned openings in said lugs so that rotation of said inserts changes the position of said axis and changes the position of said retarder elements relative to one another, said inserts each having an integral interlocking surface and said lugs each having interlocking surfaces thereon, said interlocking surfaces preventing rotation of said inserts in said apertures in said lugs so that the inserts may be locked in each of the adjusted positions.

3,225,874
UNIDIRECTIONAL SELF STARTING DEVICE FOR SYNCHRONOUS MOTOR
Lee A. Woolley, Kokomo, Ind., assignor to Kingston Products Corporation, Kokomo, Ind., a corporation of Indiana
Filed Apr. 26, 1963, Ser. No. 276,026
6 Claims. (Cl. 192—4)

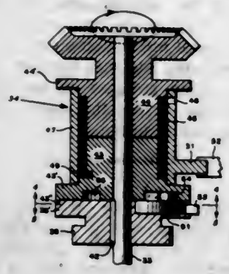


1. In a self-starting motor having a rotor capable of starting in either direction, the improvement comprising:
(a) a pair of interengaged gears, normally driven continually in response to rotation of said motor in a certain direction; and
(b) a reversing member frictionally carried by one of said gears, and also having a first portion, pivoted about the rotational axis of said one gear and slidably engageable with the other of said gears when said motor runs in said certain direction, and having a second portion blockingly engageable with said other of said gears when said motor begins to run in an opposite direction to effect rotation thereof in said certain direction.

3,225,875
ONE REVOLUTION CLUTCH APPARATUS
Terry Thomas, Hatboro, and Richard D. Dafrico, Ambler, Pa., assignors to the United States of America as represented by the Secretary of the Navy
Original application Jan. 29, 1963, Ser. No. 254,840, now Patent No. 3,148,606, dated Sept. 15, 1964. Divided and this application May 13, 1964, Ser. No. 367,258
4 Claims. (Cl. 192—26)
(Granted under Title 35, U.S. Code (1952), sec. 266)

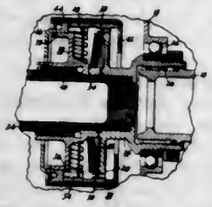
1. An intermittent and resetting drive means comprising:
a continuously running unidirectional motor,
an input gear connected to the output of said motor,
an output gear,

a resilient means operatively connected to said output gear opposing rotation thereof,
a cam coaxially disposed between said input and output gears,
a torsional spring coaxially surrounding said input gear and said cam and grippingly urged thereto for establishing a drive force therethrough,
solenoid-actuated means normally opposing the torsional force of said spring for disestablishing the drive force,



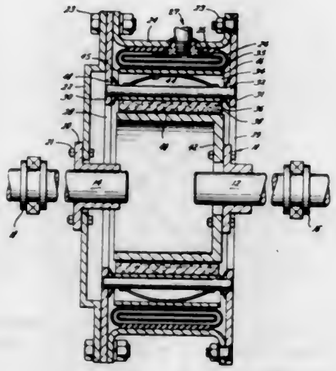
follower means operatively connected between said output gear and said cam for transmitting said drive force therethrough for one revolution of said cam and output gear, and
escape means operatively connected to said follower means for disengaging the drive force to said output gear after the one revolution thereof;
whereby an electrical pulse to said solenoid-actuated means provides a positive one-revolution drive and reset at said output gear.

3,225,876
AIRCRAFT SAFETY COUPLING
James R. Dison, Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed May 13, 1964, Ser. No. 367,090
8 Claims. (Cl. 192—46)



1. A safety coupling for an aircraft power plant having an engine and a propeller including, an engine driven shaft, an intermediate shaft operatively connected to said propeller, a housing into which both of said shafts extend, said housing being partially filled with hydraulic fluid, a first coupling disc connected to rotate with said engine driven shaft, a second coupling disc connected to rotate with said intermediate shaft, said first and second coupling discs having external helical spline teeth of the same lead but opposite hands, a coupling annulus having spaced sets of internal helical spline teeth of the same lead but opposite hands mating respectively with the external helical spline teeth of said coupling discs, resilient means reacting against said coupling annulus for maintaining said coupling discs engaged with said coupling annulus to transmit power from said engine driven shaft to said intermediate shaft, said helical spline teeth interacting to overcome said resilient means and disengage said first coupling disc from said coupling annulus in response to a predetermined torque transmitted from said intermediate shaft to said engine driven shaft, and centrifugally actuated hydraulic means reacting against said coupling annulus for maintaining said first coupling disc in an anti-ratcheting position.

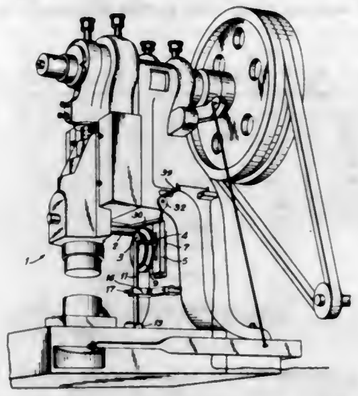
3,225,877
CLUTCH AND THE LIKE
Robert G. Gantt, 6105 England St., Houston, Tex.
Filed Aug. 2, 1962, Ser. No. 214,283
2 Claims. (Cl. 192—76)



1. The combination of two power-transmitting shafts in series and individually journalled at least approximately in axial alignment, two rotary structures mounted upon and constrained to rotate with the shafts respectively and adapted for substantially full-circle frictional engagement with each other, one of the same including a plurality of torque bars circumferentially arranged and radially spaced with the respect to the location of the full circle frictional engagement, a plurality of segmental engaging elements movably disposed on the torque bars for movement into and out of said full circle frictional engagement and movable axially with respect thereto, and yieldable elements operatively bearing against at least one of the sides of the segmental engaging members yieldably permitting axial movement thereof while said engaging members are in firm full circle frictional engagement with the other of the rotary structures as aforesaid.

3,225,878
SAFETY LOCKING APPARATUS TO RENDER INOPERATIVE MACHINE TOOLS AND THE LIKE
José Estephanio, Rua Buenos Aires 310, Rio de Janeiro, Brazil
Filed Mar. 26, 1963, Ser. No. 268,097
Claims priority, application Brazil, Oct. 22, 1962, 114,038
11 Claims. (Cl. 192—129)

1. In combination with a machine tool having a work space, a work-engaging member movable into said work space, and driving means for said work-engaging member; a safety arrangement comprising, in combination, a work space sweeping arm pivotally mounted on said machine for swinging through said work space; driving mechanism connecting said arm to said driving means for swinging of said arm in synchronism with movement of said work-engaging member, said driving mechanism swinging said arm through said space immediately in advance of movement of said work member into said space; detector means, including an element on said arm, operable, responsive to engagement of said element with an obstruction in said space, to interrupt operation of said machine tool; said detector means element comprising a striking device on the free end of said sweeping arm and extending substantially parallel thereto; means movably mounting said striking device of said sweeping arm for movement toward and away from said sweeping arm; spring means biasing said striking device outwardly of said sweeping arm; a first inner shaft extending longitudinally



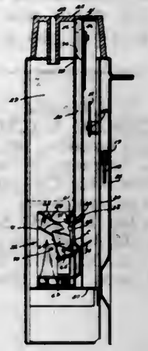
of said sweeping arm and rotatably mounted therein; spring means operatively associated with said shaft and biasing the same to rotate in a selected direction; and interengageable catch means on said striking device and said shaft effective to retain said shaft against rotation by said spring means; said interengaging catch means being released upon said striking device engaging an obstruction in said work space.

3,225,879
TELESCOPING CONVEYOR
Carl J. Falcon, Grand Rapids, and Daniel A. Fogg, White Cloud, Mich., assignors to The Rapids-Standard Company, Inc., Grand Rapids, Mich., a corporation of Michigan
Filed Feb. 14, 1963, Ser. No. 258,586
4 Claims. (Cl. 193—35)



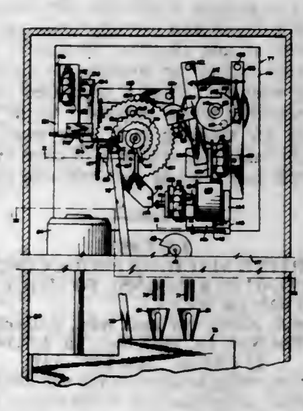
1. An extendible gravity conveyor, including: at least two conveyor sections adapted to telescope together, said sections vertically spaced from each other in telescoped position; horizontal flanges extending along the sides of said sections; a connecting element operably secured between said sections, said element having a pair of side plates and conveying means interconnecting said plates; rollers secured to said plates of said element adapted to ride on said flanges of one of said sections; downwardly sloping guide flanges serving as an extension of said flanges from one end of said one section; an arm secured to and extending from each plate of said element toward the adjacent end of the other of said sections and pivotally secured to the sides of said other section, when said sections are shifted apart lengthwise said rollers travel along said flanges of said one section and down said guide flanges, the inclination of said guide flanges causing said arms to pivot with respect to said other section, shifting said element into a plane common to both of said sections for forming a continuous conveying surface between said sections.

3,225,880
COIN MECHANISM
Richard T. Cornelius, Minneapolis, and Henry C. Kovar, Anoka, Minn., assignors to The Cornelius Company, Anoka, Minn., a corporation of Minnesota
Filed Nov. 15, 1962, Ser. No. 237,871
23 Claims. (Cl. 194—1)



1. A device for dispensing articles, including in combination:
(a) a coin rejector mechanism having an upper coin-receiving end, and operative to classify a coin as being acceptable or rejected; and
(b) a coin return mechanism extending beneath a portion of said rejector mechanism for receiving a rejected coin, and operative to raise such coin externally of said rejector mechanism to a position adjacent to said upper end of said rejector mechanism where it is rendered accessible.

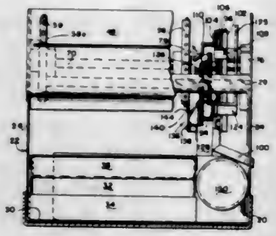
3,225,881
COIN CONTROLLED GASOLINE DISPENSER
Vern W. West, Fort Collins, Colo., assignor to Pat Griffin, Fort Collins, Colo.
Filed Nov. 8, 1962, Ser. No. 236,245
18 Claims. (Cl. 194—3)



1. In a coin controlled fluid dispensing apparatus, a pump, a motor, a valve, electrically energizable means for opening said valve, an energizing circuit for said motor and said electrically energizable means for opening said valve including a main line conductor, a normally

closed switch in said conductor, electrically energizable means for opening said switch, an energizing circuit from said main line conductor to said electrical energizable means for opening said normally closed switch including a normally open switch, closing upon the jarring of said normally open switch, and energizing said electrically energizable means to effect the opening said normally closed switch and the deenergizing of the energizing circuit to said pump and motor, and latch means holding said normally closed switch open until manually reset.

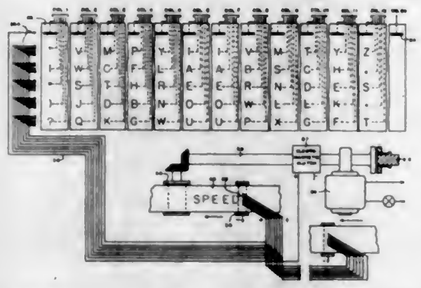
3,225,882
VENDING MACHINE
Robert N. Edwards, Chamblee, and Lawrence C. Reese, Sr., Atlanta, Ga., assignors, by mesne assignments, to The Oiljak Manufacturing Company, Inc., Stroudsburg, Pa., a corporation of New Jersey
Original application Jan. 13, 1958, Ser. No. 708,559, now Patent No. 3,092,234, dated June 4, 1963. Divided and this application Apr. 30, 1962, Ser. No. 196,024
4 Claims. (Cl. 194—6)



1. An electrical coin switch and release assembly comprising: a mounting block of insulating material; a generally upright movable coin chute having front and rear panels, said chute being pivotally suspended near its upper end for swinging movement toward and away from said block; first and second vertically spaced electrical contacts mounted on said block and projecting therefrom through openings in one of said panels into and at least partially across said chute in a position to retain and be bridged by a large coin; a movable coin release member normally extending at least partially across the chute near the lowermost of said electrical contacts to coact with said lowermost contact for arresting the movement of a smaller coin when said chute is positioned adjacent said block; and actuating means responsive to the bridging of said contacts for swinging said chute away from said block whereby said chute is cleared of coins by separating the chute from said contacts and from said release member.

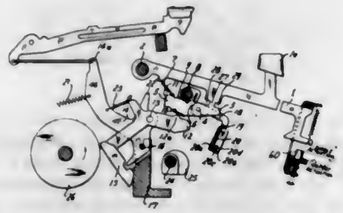
3,225,883
WORD WRITING MACHINE PRODUCING CLOSED-UP PRINTING IN RESPONSE TO SIMULTANEOUS ACTUATION OF KEYS
Waldemar A. Ayres, 401 Park Ave., Rutherford, N.J.
Filed Nov. 13, 1962, Ser. No. 237,144
17 Claims. (Cl. 197—11)

1. In text recording equipment, the combination including a keyboard constructed for simultaneous selection of characters for the recording of words with full normal spelling, keys in said keyboard providing more than one full alphabet of characters with only one finger being required to record any character of the alphabet, said keys being constructed to be operated by both hands simultaneously, each hand being capable of selecting a plurality of characters simultaneously, a set of master characters corresponding to said keys, each of said master characters being energizable by actuation of its corresponding key or keys on said keyboard, sequence means constructed to fix said master characters relative to each other in a predetermined left-to-right character position sequence, character connecting means constructed to operatively energize the master characters corresponding to actuated character keys, sequence scanning means capable of being actuated by any selected key and constructed to scan all of said master characters in the se-



quence predetermined by said sequence means, a record member upon which selected characters are recorded, character recording means controlled by said sequence scanning means and constructed to record said energized master characters in said predetermined sequence, and moving means constructed to move said record member relative to said character recording means only when said sequence scanning means has sensed an energized master character or the space key has been actuated whereby blank character spaces occur only between words and not between characters of the same word.

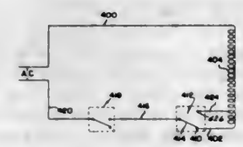
3,225,884
TYPE LEVER ACTION CONTROL ARRANGEMENT
Otto Krauss and Manfred Link, Nurnberg, Germany, assignors to Max Grundig, Furth, Bavaria, Germany
Filed Jan. 12, 1961, Ser. No. 82,285
Claims priority, application Germany, Jan. 12, 1960, G 28,779
14 Claims. (Cl. 197—17)



1. A type lever action control arrangement comprising, in combination, a power roll; a spring-loaded operating means including a coupling member, said operating means being movable between a normal inoperative position, an intermediate position, and in one direction to an operative position, said coupling member engaging said power roll in said intermediate position so that said operating means is moved to said operative position; a key lever means; a fulcrum member and an abutment member located in the plane of movement of said key lever means; an actuating means including a spring biasing said actuating means to abut said abutment member; mounting means supporting said actuating means on said key lever means for turning movement and for translatory movement in said one direction longitudinally of said key

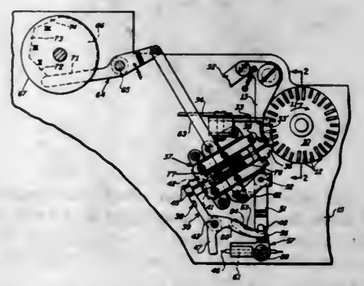
lever means, said actuating means having a portion located opposite said coupling member in the path of movement of said operating means and abutting said abutment member under the action of said spring, said actuating means having a normal position in which said portion is turnably supporting said actuating lever on said fulcrum member, and a longitudinally shifted and angularly displaced position in which said portion is spaced from said fulcrum member and said actuating means is spaced from said coupling member a greater distance than in said normal position so that when said key lever means is depressed a distance smaller than said greater distance, said actuating means in said normal position turns about said fulcrum member to an actuating position engaging said coupling member for moving said operating means to said intermediate position, whereby said operating means engages said actuating means and shifts said actuating means in said translatory movement to said displaced position to prevent a repeat actuation by the depressed key lever means due to said greater distance between said actuating means and said coupling member.

3,225,885
CARRIAGE RETURN MECHANISM DRIVEN BY A TEMPORARILY OVERLOADED INDUCTION MOTOR
Aaron C. Zeamer, Groton, and Paul G. Robinson, Locke, N.Y., assignors to SCM Corporation, Syracuse, N.Y., a corporation of New York
Filed Mar. 25, 1963, Ser. No. 267,683
1 Claim. (Cl. 197—66)



An office machine, comprising:
(a) a movable carriage;
(b) a carriage return mechanism therefor;
(c) a variable powered induction motor;
(d) a continuously unidirectionally rotating power member operatively connected to said motor;
(e) a sleeve having clutch teeth formed thereon mounted on said power member and rotatable relative to said power member;
(f) a centrifugal clutch having an output means adapted to be operatively engaged by said sleeve and an input means connected to said power member;
(g) a spur gear operatively connected to the output means of said centrifugal clutch;
(h) a friction clutch having input means and output means, said friction clutch input means being operatively connectable to said spur gear;
(i) means operatively connected between the output means of said friction clutch and said carriage for advancing said carriage to its initial position, said last named means being actuated solely by said friction clutch output;
(j) a pair of leads connected to the opposite ends of the winding of said induction motor and adapted to be connected to a source of alternating current;
(k) a tap lead connected to said winding at a point intermediate its ends and adapted to be connected to said source of alternating current;
(l) a switch means for interrupting the continuity of one of said end-connected leads and simultaneously establishing continuity in said tap lead; and
(m) actuator means for simultaneously operatively engaging said sleeve with the output means of said centrifugal clutch and said spur gear with the input means of said friction clutch and for actuating said switch means to connect said winding to said source of alternating current through said tap lead, thereby simultaneously increasing the power output of said motor and initiating the operation cycle of the carriage return mechanism.

3,225,886
MULTI-UNIFORM AND VARIABLE PITCH ESCAPEMENT MECHANISM
Louis Cetran, Newington, and Kenneth R. Frechette, Bristol, Conn., assignors, by mesne assignments, to Royal Typewriter Company, Inc., New York, N.Y., a corporation of Delaware
Continuation of application Ser. No. 252,113, Jan. 17, 1963. This application Mar. 17, 1965, Ser. No. 446,462
13 Claims. (Cl. 197—84)

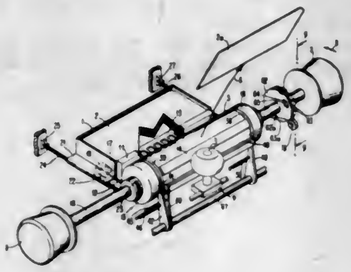


1. In a typewriter adapted to interchangeably mount uniform and variable width type fonts, said typewriter having a normally arrested escapement member yieldably urged in letter feed direction,
mechanism movable to release said escapement member after a character has been typed,
settable means movable into the path of movement of and thereafter operative in combination with said mechanism to determine the extent of movement of said escapement member,
first means for selectively moving said settable means in accordance with the widths of characters in a variable width type font selected for typing; the improvement comprising alternatively manually operative means to preselectively move said settable means whereby the release of said escapement thereafter will effect movement over uniform distances corresponding to the width of type in a uniform width type font.

3,225,887
DOCUMENT FEEDING DEVICE
Charles H. Belderbecke and Marsden B. Emig, Lexington, Ky., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed June 17, 1963, Ser. No. 288,294
12 Claims. (Cl. 197—130)

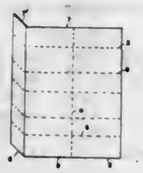
1. Apparatus for successively feeding each of a plurality of documents into position for printing in an office machine comprising:
a drive shaft;
a cylindrical member, said member being normally freely and rotatably mounted on said drive shaft, and positioned adjacent said documents, and said member having an element positioned thereon for receiving and retaining the leading edge of each document fed;

a drive disc, said drive disc being freely mounted on said drive shaft adjacent said member;
a feed knife strap associated with said drive disc, said strap having an end thereof peripherally attached to said disc and initially extending from said disc to engage an individual document;
a drive plate, said drive plate being fixedly mounted on said drive shaft intermediate said member and said drive disc;
a drive element, said element being mounted on said drive plate for engagement with said drive disc during a portion of a feeding cycle and for engagement with said cylindrical member during another portion of a feeding cycle;



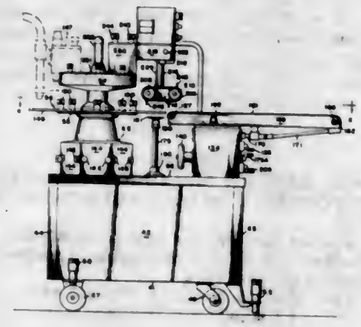
means for rotating said drive shaft, to thereby rotate said drive disc, and its associated feed knife strap in order to feed a document into engagement with said retaining element and to thereafter rotate said document around to a printing position;
means operative during a cycle for disengaging said drive element from said drive disc and for engaging the same with said cylindrical member;
means for restoring said drive disc and its associated feed knife strap to their initial positions in preparation for feeding another document;
means responsive to continued rotation of said drive shaft for disengaging said drive element from said cylindrical member and for again engaging the same with said drive disc;
and means operative following disengagement of said drive element from said cylindrical member for restoring said member in preparation for a subsequent cycle.

3,225,888
COLOR TYPE MEANS
Sol Javors, 57 Maplewood Drive, Plainview, Long Island, N.Y.
Filed Feb. 24, 1965, Ser. No. 434,926
2 Claims. (Cl. 197—150)



1. Means for typing different colors without changing ribbons comprising,
a sheet of carbon paper of predetermined color,
a light color backing sheet affixed to said carbon sheet so that the user can see the typed impressions,
and means connected to said backing sheet to affix said backing sheet and said carbon paper to a predetermined position on the paper being typed on, said last means comprising a flap on said backing sheet which is adapted to fold over around the edge of said paper being typed on, said backing sheet and carbon sheet being formed with perforations of predetermined spacing to facilitate tearing them off in the desired size.

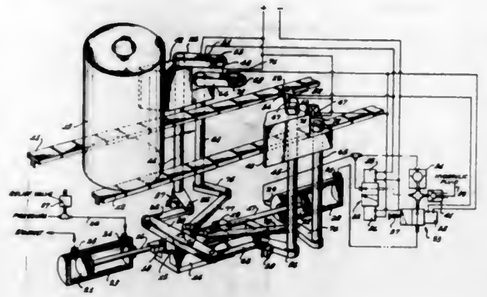
3,225,889
MACHINE FOR PACKAGING FOOD PRODUCTS
John B. West, P.O. Box 362, Grasty Road, Pikesville, Md.
Filed July 2, 1963, Ser. No. 292,359
13 Claims. (Cl. 198—20)



1. A machine of the character described comprising a horizontal loading wheel having a series of circumferential apertures adapted to support open containers to be filled, a vertical cylindrical sleeve concentrically secured to the wheel, means for rotatably supporting the sleeve, a shaft rotatably mounted in the sleeve, coaxially, means for rotatably supporting the shaft, a driving gear adapted to drive auxiliary units of the machine, said gear being connected to the shaft for rotation therewith, a source of power, means actuated by the source of power for intermittently rotating the sleeve and means actuated by the same source of power for rotating the shaft independently of the sleeve, a housing for the driving gear, and an auxiliary unit removably attached to and supported by the housing in juxtaposition to the driving gear, said unit having a power input gear in meshed relation with said driving gear.

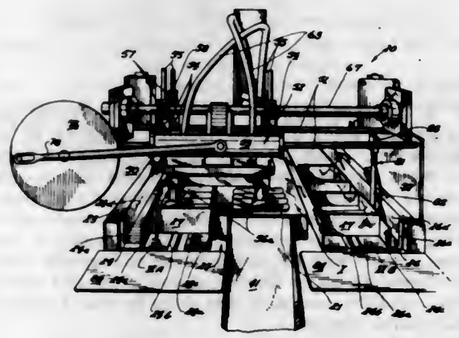
3,225,890
ARTICLE ALIGNING APPARATUS
Klaus H. Wiese, Rialto, Calif., assignor to Kaiser Steel Corporation, Oakland, Calif., a corporation of Nevada
Filed Nov. 29, 1963, Ser. No. 326,923
7 Claims. (Cl. 198—29)

1. Apparatus for automatically centering articles of varied sizes being transported on a conveyor comprising: size sensing means mounted on opposite sides of the vertical plane through the axis of the conveyor and movable by the passage of an article therebetween to a separated position wherein the distance therebetween is substantially equal to the dimension of the article transversely of the conveyor, said sensing means being movable to positions spaced differently from said plane so as to sense an article's dimension while it is offset with respect to said plane; article shifting means mounted on opposite sides of said plane and movable to vary the spacing therebetween but always maintained equidistant from said plane; means interconnecting said size sensing means and said shifting means so as to effect automatic separation of said shifting means in response to movement of said size sensing means to effect a separation between said shifting means neither less nor substantially greater than the separation between said size sensing means; means locking said shifting means in



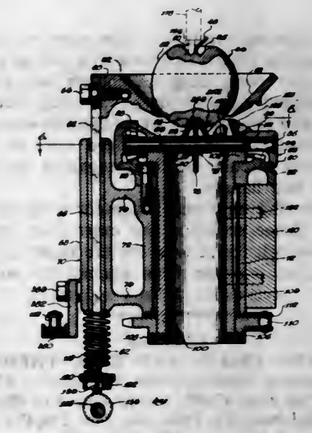
adjusted position prior to engagement of a sized article therewith so that the article must shift bodily into alignment with said plane to clear said shifting means; and means for releasing said shifting means after shifting of the article thereby.

3,225,891
METHOD OF AND APPARATUS FOR TRANSFERRING ARTICLES
Robert J. Hickin, Seville, Edwin J. Plough, Wadsworth, and Gerald H. Steele, Leroy, Ohio, assignors, by mesne assignments, to Packaging Corporation of America, a corporation of Delaware
Filed Dec. 3, 1963, Ser. No. 327,609
12 Claims. (Cl. 198—31)



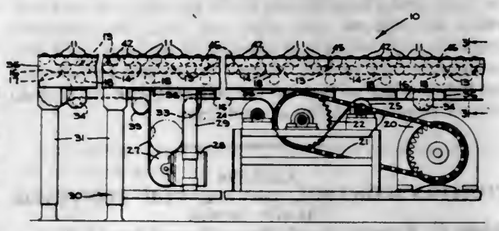
1. An article transferring apparatus comprising a power actuated article conveyor, a first station aligned with said conveyor and upon said articles are successively deposited at a predetermined location thereon by said conveyor, second stations spaced from and disposed on opposite sides of said first station, and means operable between said first and second stations for alternately transferring articles from said first station to said second stations; said means including a pair of relatively spaced article transfer elements, one of said transfer elements being aligned with one of said second stations when the other element is aligned with said first station, and said other element being aligned with the other of said second stations when said one element is aligned with said first station, said elements when in station-aligned positions being adjustable whereby the element aligned with said first station engages the article deposited at said first station while the other element simultaneously disengages at a second station the article previously engaged by said other element at said first station.

3,225,892
FRUIT PROCESSING METHOD
Thomas B. Keesling, Los Gatos, Calif., assignor, by mesne assignments, to FMC Corporation, a corporation of Delaware
Original application May 13, 1957, Ser. No. 658,846, now Patent No. 3,016,076, dated Jan. 9, 1962. Divided and this application Oct. 17, 1961, Ser. No. 148,789
7 Claims. (Cl. 198—33)



1. The method of orienting a fruit having two indents on the stem axis thereof comprising the steps of rotating the fruit relatively to a first indent finder to bring one of the indents into registry with the first indent finder to find a first indent in the fruit, and thereafter shifting the fruit and a second indent finder laterally of the stem axis with respect to each other while retaining the fruit with the first found indent and the first indent finder in indent found relative position to find the other indent to orient the fruit.

3,225,893
ACCUMULATING CONVEYOR
Francis Currie, San Jose, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Oct. 15, 1962, Ser. No. 230,340
17 Claims. (Cl. 198—127)



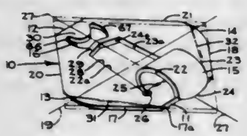
1. A conveyor comprising a plurality of rollers horizontally arranged in side-by-side relationship, means mounting all of said rollers for vertical movement, said mounting means including means for biasing said rollers upwardly, and drive means normally spaced from and below said rollers, said rollers being movable into driving engagement with said drive means upon the reception of an article upon the rollers to effect rotation of the rollers and thereby propel the article along the conveyor.

3,225,894
MACHINE FOR HARVESTING BERRIES AND SIMILAR PRODUCE FROM THEIR PLANTS
Raymond M. Weygandt and Raymond A. Weygandt, both of Rte. 1, Box 308, Canby, Oreg.
Filed Aug. 9, 1963, Ser. No. 301,032
3 Claims. (Cl. 198—140)



1. In a harvesting machine, a conveyor for conveying harvested material from a first zone to a second zone,
said conveyor comprising an endless belt having an uninterrupted integral flange at each side margin thereof and integrated buckets therebetween,
a sheave unit engaging the flanged sides of said belt and having circular portions engaging the rim portions of said flanges,
said unit having only one flange for each belt flange,
each unit flange engaging the outer face only of its respective belt flange whereby the inner faces of the belt flanges are free from contact by said sheave unit.

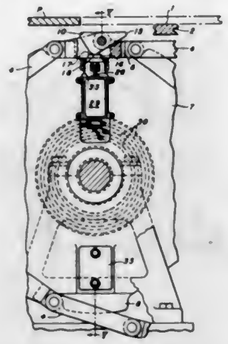
3,225,895
CONVEYOR CHAIN AND LINK THEREFOR
Kirk W. Reimers, Lincoln, Nebr., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Nov. 19, 1962, Ser. No. 238,477
7 Claims. (Cl. 198—168)



1. A chain link comprising a body portion, an upstanding tongue near one end of said body portion bent forward toward said one end to form a shallow loop, means defining a tongue accommodating hole near the other end of said body, means providing a flat bearing surface on the side of said tongue facing the other end of said body and extending substantially transversely of the body, and a lobe formed in the periphery of said hole which lies adjacent said other end, said lobe extending ongitudinally toward said one end of the body, said lobe aving a curved surface adapted for rolling contact with he flat bearing surface of the adjacent link of a chain ormed from a plurality of said links.

3,225,896
POSITION CONTROL DEVICE FOR CONVEYOR CHAIN DOGS
Glenn N. Krueger, North Riverside, and John J. Taylor, Orland Park, Ill., assignors to United States Steel Corporation, a corporation of New Jersey
Filed Feb. 19, 1963, Ser. No. 259,512
2 Claims. (Cl. 198—170)

1. In a chain conveyor of the pusher dog type including counterweighted pusher dogs mounted on a conveyor chain for pivotal movement to and from operative pushing positions and a sprocket at one end of said conveyor over which said chain travels, the combination therewith comprising cooperating parts on said sprocket and dogs respectively for preventing pivotal movement of said dogs relative to said chain and sprocket during arcuate movement of the respective portions of said chains on which said dogs are supported over said sprockets, said sprocket part comprising a lug mounted for radial movement on



said sprocket from a radially inner and inoperative position to a radially outer operating position in which it is adapted to have abutting engagement with said dog part during movement over said arcuate path, and means for moving said lug to its said operating position.

3,225,897
CONVEYOR DEVICE
Lester G. Rollins, Claremont, N.H.
Filed Oct. 17, 1962, Ser. No. 231,615
3 Claims. (Cl. 198—171)

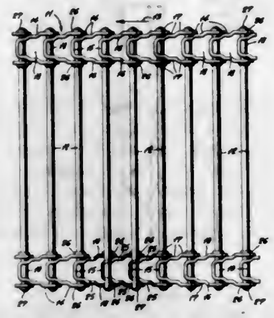


1. A conveyor apparatus comprising; an orbital tension member being disposed, through a portion of the orbit thereof, closely adjacent an elongated planar support; flight means secured to said tension member and extending outwardly therefrom and adjacent said planar support; each said flight means including a formed portion having steps on the surface thereof contiguous to said planar support with the step adjacent said tension member adapted to be in slidable contact with said planar support and the remaining step being in spaced relation to said planar support.

3,225,898
COLLAPSIBLE CONVEYOR BELT
Gerald C. Roinestad, Winchester, Va., assignor to Ashworth Bros. Inc., Winchester, Va., a corporation of Massachusetts
Filed Feb. 26, 1964, Ser. No. 347,531
5 Claims. (Cl. 198—181)

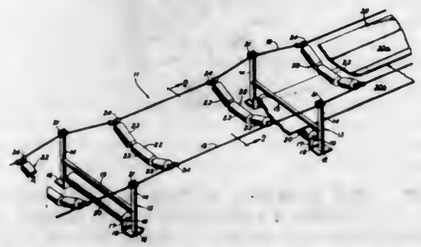
1. A conveyor belt comprising
a plurality of spaced rods extending transversely of the path of movement of said belt,
a plurality of connecting links disposed in a pair of spaced rows at the opposite ends of said rods, said links slideably interconnecting said rods to permit the collapse of either side of the belt during travel around horizontal curves,
each of said links having a base portion and a pair of spaced legs rigidly connected to the outer ends of said base portion,

each of said legs having a plurality of stepped portions parallel to said path, the stepped portions on opposing legs being spaced apart a relatively narrow distance at said base portion and a relatively wide distance at the opposite end thereof,
said links being arranged in partially nested relation with narrower stepped portions of respective ones of said links being received in closely fitting sliding relation within the wider stepped portions of adjoining links,



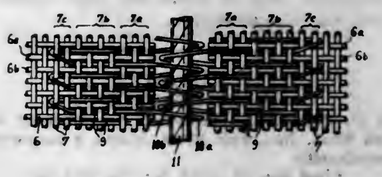
the inner surfaces of said wider stepped portions having a substantial straight length ahead of the adjoining outer surfaces of said narrower stepped portions and said outer surfaces having a substantial straight length behind said inner surfaces when the belt is in normal position for straight travel to permit said outer surfaces to slide forward within said inner surfaces when the belt collapses for curved travel,
and means to retain said links against lateral displacement relative to said rods.

3,225,899
ROPE FRAME CONVEYOR WITH CONTROLLED BELT DEFLECTION
Roy F. Lo Presti, Chicago, Ill., and Jerome C. Salmons, Baltimore, Md., assignors to Goodman Manufacturing Company, Chicago, Ill., a corporation of Illinois
Continuation of application Ser. No. 521,772, July 13, 1955. This application Jan. 2, 1959, Ser. No. 785,109
5 Claims. (Cl. 198—192)



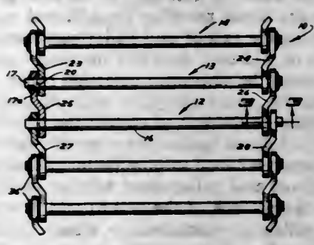
1. In a belt conveyor, a pair of flexible strands trained along generally parallel courses, two elongated troughing roller assemblies suspended at intervals along said strands and between said strands at portions of said strands which are relatively freely movable toward and away from one another, each of said troughing roller assemblies being transversely flexible across its own length in a direction to move the ends thereof toward and away from one another, a belt having a load-carrying reach supported for movement along said roller assemblies and a return reach beneath said roller assemblies, and a strand spacing means separate from said troughing roller assemblies suspended between the strands intermediate the portions of the strands where the roller assemblies are connected and extending between the belt reaches, said strand spacing means being wholly supported by said strands for movement up and down therewith with load variations on the belt.

3,225,900
LIGHTWEIGHT DRYER FELT SEAMS
Donald G. MacBean, Verdun, Quebec, and Harold M. Cross, Valois, Quebec, Canada, assignors to Fabric Research Laboratories Inc., Dedham, Mass.
Filed Dec. 13, 1963, Ser. No. 330,367
10 Claims. (Cl. 198—193)



1. A lightweight endless belt formed from a length of fabric having an open weave of warp and weft strands, the said length of fabric having its ends joined together to form the endless belt, the said joint comprising a pair of monofilaments interwoven with a series of weft strands one at each end of the fabric, the interweave of the monofilaments extending transversely across the full width of the fabric and forming a series of loops extending beyond the ends of the fabric, the said loops at one end of the fabric adapted to interleave with the loops at the other end of the fabric when the ends of the fabric are brought together, and a pin projecting through the interleaved loops holds the ends of the fabric in an endless belt.

3,225,901
DRAPER CHAIN STRUCTURE
Harold P. Heinisch, Braham, Minn., assignor to Dahlman Manufacturing & Sales, Inc., Braham, Minn., a corporation of Minnesota
Filed Sept. 30, 1964, Ser. No. 400,331
1 Claim. (Cl. 198—195)



An endless draper chain of the character indicated having in combination
a plurality of links respectively comprising
a rod,
spaced bearing surface areas spaced inwardly from the respective end portions of said rod,
non-cylindrical portions of said rod comprising flat side portions adjacent said bearing surface areas,
a pair of longitudinally upset connecting bars,
one end portion of each of said bars having cylindrical apertures therethrough,
the other end portions of each of said connecting bars having non-cylindrical apertures therethrough each having a flat side therein to receive said non-cylin-

drical rod portions therein to accommodate and mate with said flat side portions,

said bearing surface areas of said rod being journaled in said cylindrical apertures of said bars, said bars being disposed in spaced relation to accommodate and support said rod,
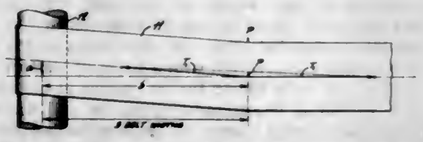
a second rod identical to said first mentioned rod,

a second pair of connecting bars identical to said first mentioned pair of connecting bars,

said second rod having its bearing surfaces journaled in said cylindrical apertures of said second pair of connecting bars, and

the non-cylindrical portions of said second rod being disposed in said non-cylindrical apertures of said first mentioned pairs of connecting bars whereby said links are interconnected.

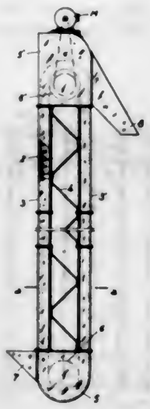
3,225,902
BELT CONTROL
Gerald C. Reinestad, Winchester, Va., assignor to Ashworth Bros., Inc., Fall River, Mass., a corporation of Massachusetts
Filed Jan. 17, 1963, Ser. No. 252,226
6 Claims. (Cl. 198—202)



1. A method of controlling lateral movement of an endless conveyor belt traveling longitudinally around a pulley which method comprises positioning a plurality of supporting rollers extending laterally in engagement with the underside of the belt at locations spaced from said pulley and from each other, providing a pair of upright thrust detection rollers closely adjoining opposite edges of the belt and intersecting the plane thereof substantially at a location spaced from the pulley on the belt run approaching the pulley where the progressive decrease in potential lateral thrust of the belt relative to distance from the pulley begins a virtual plateau, said detection rollers being positioned between said pulley and at least one of said supporting rollers, each of said detection rollers being substantially fixed against outward lateral movement to resist thrust resulting from lateral movement of the belt fixing the axis of said pulley substantially normal to the axis of said belt, detecting the magnitude of thrust exerted against the respective detection roller as said belt moves laterally, and varying the angle of said supporting rollers relative to the belt to correct the alignment of the belt when said thrust against the respective detection roller rises to a predetermined substantial magnitude while leaving the axis of said pulley fixed relative to the belt until the angle of approach of the belt to said detection rollers and said pulley is maintained so closely normal to the axis of the pulley that said thrust against said detection rollers remains below said predetermined magnitude for a substantial time without further adjustment of said supporting rollers.

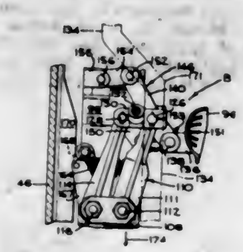
3,225,903
ENCASED BELT CONVEYORS
Georges Piémont, 7 Rue Rabelais, Vanves, Seine, France
Filed Feb. 6, 1963, Ser. No. 256,603
Claims priority, application France, Mar. 2, 1962, 889,795, Patent 1,324,286
4 Claims. (Cl. 198—206)

1. In an encased belt conveyor for transportation of bulk granular materials in a plane which is inclined to the horizontal, in combination an endless belt having a working face, a plurality of spaced endless sinuous retaining walls upstanding from said belt working face, a closed casing housing said belt with said walls extending across the interior of said casing, means for supporting



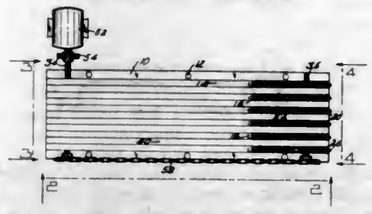
and driving said belt the length of said casing, a first hopper opening into said casing and disposed to supply said belt, and a second hopper opening into said casing and disposed to receive conveyed material from said belt.

3,225,904
FRUIT PREPARATION MACHINE
Leslie Vadas, Los Gatos, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed July 1, 1963, Ser. No. 291,997
7 Claims. (Cl. 198—211)



1. In a fruit processing machine, a driven rotatable turret, a cup having a substantially central aperture and an arcuate inner face adapted to engage an ovoid fruit, a leg extending from the outer face of said cup at one side of the aperture, a lever pivotally connected to said cup leg, an ejecting pin mounted on said lever and projecting toward the cup in approximate axial alignment with said aperture, parallelogram mounting means including said lever for pivotally mounting said cup to said turret for substantially linear movement of the cup in a path toward and away from the turret, and camming means engageable with said cup mounting means for moving the cup along said linear path, movement of said cup in a direction away from said turret causing said ejecting pin to project through said aperture in order to forcibly eject the fruit from the cup.

3,225,905
RECIPROCATING INTERFINGERED CONVEYORS
Clayton J. La Belle, 142 Charles St., River Rouge 18, Mich.
Filed Sept. 13, 1963, Ser. No. 308,773
2 Claims. (Cl. 198—219)



1. A base, a series of spaced elongated stationary members supported on the base, a series of movable elongated members disposed between the stationary members in an alternate arrangement, at least two transverse shafts rotatably mounted in the elongated stationary members, and cams on the transverse shafts directly supporting the series of movable elongated members.

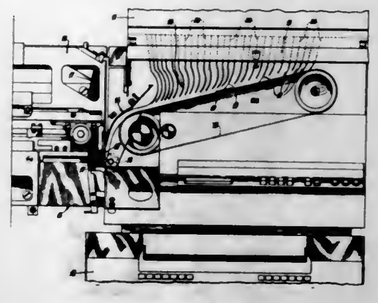
3,225,906
SPACEBAND BOX FOR TYPOGRAPHICAL COMPOSING MACHINES
William B. Abbott, Pleasantville, N.Y., assignor to Eltra Corporation, a corporation of New York
Filed Sept. 18, 1963, Ser. No. 309,660
2 Claims. (Cl. 199—22)



1. In a typographical linecasting machine having a spaceband box in which spacebands are stored for release therefrom one at a time in response to spaceband signals, spaceband release mechanism comprising, in combination, a member for lifting spacebands from said box, a spaceband release solenoid for moving said member through an active stroke, spring means for restoring said member to its normal non-lifting position, time delay circuit means for controlling the energization of said solenoid, switch means for initiating operation of said time delay circuit, keyboard cam mechanism including a power roller and a timing cam for actuating said switch means, and means for triggering said keyboard cam mechanism to initiate a spaceband release operation.

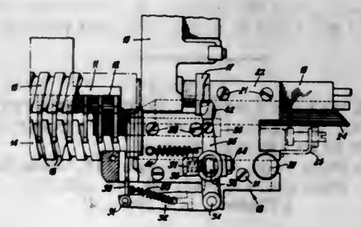
3,225,907
ASSEMBLING MECHANISM FOR LINECASTING MACHINES
David L. Greenwood, New York, and Herbert Klepper, Brooklyn, N.Y., assignors to Eltra Corporation, a corporation of New York
Filed Sept. 25, 1963, Ser. No. 312,253
2 Claims. (Cl. 199—28)

2. In an assembly mechanism for a linecasting machine wherein matrices are released from a storage magazine, fall freely through an assembler front having guides for directing the falling matrices through prescribed paths to a traveling delivery belt that advances the matrices to a stacking element which stacks the matrices in a composed line in an assembling station, the combination of a plurality of spring members, each connected to the bot-



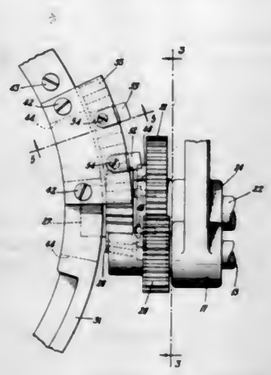
tom end of selected assembler front guides spaced along the run of the delivery belt and acting to press a matrix passing thereunder to the delivery belt, and a delivery belt having a urethane surface which has a high sliding coefficient of friction.

3,225,908
DISTRIBUTING MECHANISM FOR LINECASTING MACHINES
Herbert Klepper, Brooklyn, and William B. Abbott, Pleasantville, N.Y., assignors to Eltra Corporation, a corporation of New York
Filed Nov. 14, 1963, Ser. No. 323,627
4 Claims. (Cl. 199—33)



1. In a typographical machine having a toothed distributor bar, a distributor screw for conveying matrices along said bar, a distributor box, means for shifting matrices into said distributor box, and means for engaging the lower end of matrices in said box and lifting the same one by one from said box into engagement with said distributor screw, said lifting means including a matrix lift member movable from a lower position wherein a matrix is engaged to an upper position wherein the matrix is presented to said distributor screw, the improvement which comprises means for cyclically moving said lift member from a first lower dwell position in which matrices can be engaged to a second intermediate and higher dwell position in which matrices cannot be engaged to a fully raised dwell position in which engaged matrices are presented to said distributor screw and finally back to the first lower position, the arrangement being such that if a matrix is prevented from advancing to its lifting position by the preceding matrix that has already been presented to the distributor screw during the time the lift member is in the lower dwell position, the lift member will undergo an idle stroke.

3,225,909
MOLD DISK TURNING MECHANISM FOR LINECASTING MACHINES
Herbert Klepper, Brooklyn, and William Barkley Abbott, Pleasantville, N.Y., assignors to Eltra Corporation, a corporation of New York
Filed June 4, 1963, Ser. No. 285,309
4 Claims. (Cl. 199—52)



1. In or for a typographical linecasting machine having an intermittently rotatable mold disk and means for rotating said disk, said means including a pinion, a pinion shaft on which said pinion is fixedly mounted, a power driven mold wheel, and a gear segment carried by said wheel for engaging said pinion to intermittently rotate the pinion shaft and the mold disk, the combination therewith of a member carried by said mold wheel means secured to said pinion shaft for rotation therewith, and a cam element connected to said means in a position to be engaged by said member after said gear segment disengages from said pinion, said cam element being shaped to gradually arrest the rotation of said pinion shaft and bring said mold disk to a stop in a fixed position.

3,225,910
GETTER DEVICES WITH NON-EVAPORATED GETTERING MATERIAL, FOR MAINTAINING VACUUM IN ELECTRONIC TUBES
Paolo Della Porta, Via Gallarate 215, Milan, Italy
Filed Apr. 13, 1961, Ser. No. 102,756
3 Claims. (Cl. 206—.4)



1. In a getter device for maintaining a vacuum in electronic tubes, the combination comprising
a non-evaporable gettering means,
support means for said gettering means including a flat perforated metallic strip means,
said gettering means including a tabloid of compressed non-evaporable gettering material,
said tabloid having a peripheral portion and oppositely disposed surface portions separated thereby,
said peripheral portion being formed integrally with said perforated metallic strip means through an interstice thereof,
each of said tabloid surface portions defining a surface area on one side of said support means whereby said tabloid is exposed to gases on both sides of said support means.

3,225,911
RING-SHAPED GETTER WITH TOP DEFLECTOR, FOR IMPROVING AND/OR KEEPING UP VACUUM IN ELECTRONIC TUBES
Paolo Della Porta, Via Gallarate 215, Milan, Italy
Filed Aug. 10, 1961, Ser. No. 131,059
6 Claims. (Cl. 206—.4)



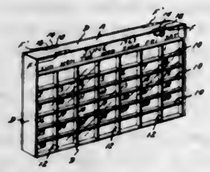
1. Getter means for selectively controlling the distribution of getter material over the interior surface area of a vacuum tube comprising an annular trough having an open upper periphery adapted to contain an evaporable getter material, and an annular deflector means immediately above and substantially coextensive with said open upper periphery of said trough, said deflector means being so shaped and so proportioned relative to said trough as to form internally and externally disposed peripheral exhaust slits between said trough and said deflector means.

3,225,912
DRYING ASSEMBLY
Ben L. Bryant, Los Angeles, Calif.
(385 Weymouth Place, Laguna Beach, Calif.)
Filed Nov. 13, 1962, Ser. No. 237,189
1 Claim. (Cl. 206—37)



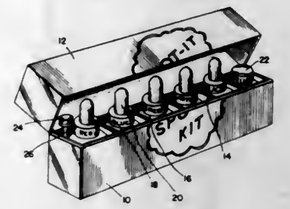
An artificial fishing fly-drying assembly, comprising: a controllably openable and closable container having a back portion, a controllably openable front portion, fastening means adjacent to one end thereof and a plurality of flat, thin absorbent sheets lying in adjacent, substantially area-contiguous parallel relationship and having similar ends thereof firmly fastened by said fastening means with respect to said back portion of said container adjacent to said one end thereof with the opposite remote ends of said sheets being positioned in area-contiguous but freely digitally graspable and displaceable relationship with respect to each other and being positioned adjacent to the opposite end of said back portion of said container; and a plurality of flat, thin, water-impervious separator sheets, having the same dimensions as said absorbent sheets, mounted by said fastening means in intervening alternating relationship with respect to said plurality of absorbent sheets, with each pair of adjacent absorbent sheets separated by an intervening water-impervious separator sheet, said water-impervious separator sheet preventing a front-positioned absorbent sheet, after use in drying an artificial fishing fly, from causing water to be transported rearwardly into the next absorbent sheet positioned immediately therebehind; each of said sheets having a weakened tear line therein, said tear lines being in parallel aligned relationship to each other and being positioned closely adjacent to said fastening means, whereby to provide for forcible removal of a particular one of said plurality of water-impervious separator sheets along with the absorbent sheet lying immediately in front thereof; said container comprising a thin-sheet of flexible wrap-around material including said back portion, said controllably openable front portion, and an interconnecting hinge portion longitudinally spaced from said fastening means; said fastening means comprising a curved trough-shaped portion receiving and mounting similar fastened ends of said plurality of absorbent sheets and intervening alternating water-impervious separator sheets and a staple joining front and rear parts of said trough-shaped portion together with said ends of said sheets firmly secured therebetween; said back portion of said container having openable and closable garment-engageable means secured thereto for mounting the entire assembly on a selected portion of a garment.

3,225,913
CAPSULE AND TABLET POCKET CARRIER
Laurel M. Lee, 3262 Tucker Lane, Los Alamitos, Calif.
Filed Sept. 30, 1963, Ser. No. 312,511
1 Claim. (Cl. 206—42)



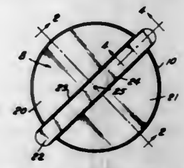
In combination with a generally rectangular multi-page monthly calendar, a portable tablet or capsule medication reminder and dispensing device, which includes:
(a) a transparent rectangular panel which is slightly longer and wider than said calendar;
(b) a continuous flange extending around said panel, which flange projects rearwardly from said panel a distance slightly greater than the thickness of said calendar, with said flange extending forwardly from said panel a substantial distance;
(c) a plurality of parallel ribs arranged in uniformly spaced rows and columns that project forwardly from said panel substantially the same distance as said flange, with the forwardly extending portion of said flange and said ribs cooperatively providing a plurality of compartments of such size that each overlies the day of the month on one of the pages of said calendar when the same is placed in a first space defined by said panel and said rearwardly projecting portion of said flange;
(d) a rearwardly disposed cover;
(e) first means for hingedly supporting said cover from said rearwardly disposed portion of said flange;
(f) second means for removably locking said rear cover to said rear portion of said flange to maintain said calendar in said first space;
(g) a forwardly disposed transparent cover;
(h) third means for hingedly supporting a forward cover from said forward portion of said flange; and
(i) fourth means for removably locking said forwardly disposed cover in abutting contact with the forward extremities of said ribs and said portion of said flange to maintain said tablets or capsules in said compartments in which they are placed until removed therefrom, with all of said tablets or capsules in said compartments being visible to the user through said forward cover to indicate whether the same have been consumed on a particular day shown on said calendar.

3,225,914
KIT FOR SPOT REMOVAL
Solomon A. Klein, Newton, Mass. (355 Lexington St., Auburn 66, Mass.), and Louis Polakoff, Newton, Mass. (82 Stanley Road, Waban 68, Mass.)
Filed June 10, 1963, Ser. No. 286,591
1 Claim. (Cl. 206—47)



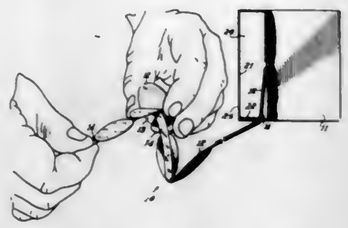
A kit for home use in removing spots from fabrics, comprising a box, partition means dividing said box into a plurality of compartments, a cover hinged to said box, a bottle in each of said compartments, one of said bottles having a flat screw cap closure thereon, the remaining bottles being provided with a closure having a squeeze bulb drop dispenser, each of said bottle closures having a different colored identification indicia thereon, at least one sheet of blotting paper housed on the inner face of said hinged cover, said one bottle having the flat screw cap closure containing an absorbent pulverulent material, the remaining bottles containing respectively perchloroethylene, acetone, a sulfonated aliphatic alcohol, ammonia, and Stoddard solvent, an applicator for said pulverulent material, and an instruction sheet housed on the inner face of said hinged cover, said instruction sheet indicating which cleaning agent is to be used for treatment of any type of spot by reference to said colored indicia.

3,225,915
COMBINED CLOSURE, STIRRER, AND CONDIMENT CONTAINER FOR DRINKING VESSEL
Glenn E. Wise, 2415 39th Place NW., Washington 7, D.C.
Continuation of application Ser. No. 105,472, Apr. 25, 1961. This application Sept. 28, 1964, Ser. No. 403,429
6 Claims. (Cl. 206—47)



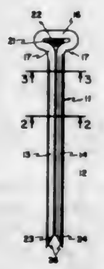
1. A closure structure for a vessel, said closure comprising: a bottom; said bottom including horizontal base forming means and upstanding wall forming means attached to the periphery of said base forming means and providing at least one compartment; other wall forming means located in said compartment, said other wall forming means exhibiting, at least at one location, an inverted substantially U-shaped vertical cross-section with lower portions of said other wall forming means attached to said base forming means, said other wall forming means also including at least a portion substantially centered with respect to said base forming means; a top means attached to said bottom and closing said compartment; said top means including pre-formed integral detachable stirrer means engaging the top of said other wall-forming means, said stirrer means having a portion overlying said compartment whereby detachment of said stirrer means provides an opening into said compartment.

3,225,916
ASSEMBLAGE OF ABRASIVE ELEMENTS
Henry M. Field and Billy A. Anderegg, Dayton, Ohio, assignors to Dayton Abrasive Products, Inc., Dayton, Ohio, a corporation
Filed Jan. 9, 1963, Ser. No. 250,282
3 Claims. (Cl. 206—56)



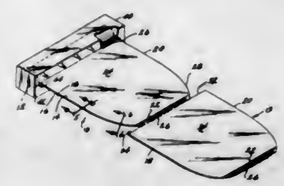
1. A package of abrasive discs comprising,
an elongated ribbon having a series of abrasive discs secured to it, said ribbon having a width substantially less than the width of said disc, said discs being spaced apart a distance greater than the combined thickness of adjacent discs,
a rectangular carton having end walls, side walls, and a bottom wall, said ribbon being accordion folded in said carton, said end walls having a width slightly greater than the width of said disc,
a flap hinged at one end to the edge of one end wall,
said flap extending over the top of said carton and terminating in a tab insertable into said carton adjacent the other end wall,
said other end wall having a slot of greater width than said ribbon and extending from the free edge of said wall into a substantial portion of said wall,
the length of said tab being approximately equal to the depth of said slot for engaging said ribbon between said spaced discs.

3,225,917
SPLIT SHANK NAIL AND PACKAGING SYSTEM
Claude R. Couch, 2414 Newland St., Edgewater, Colo.
Filed Mar. 11, 1963, Ser. No. 264,162
1 Claim. (Cl. 206—56)



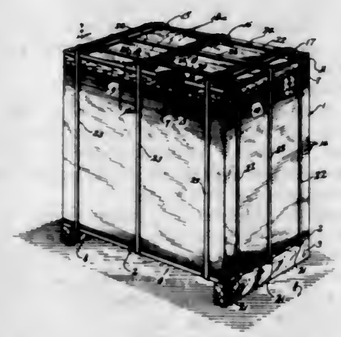
A package of drive type fasteners that are individually made from cut lengths of fastener stock and are presented in side-by-side stick relationship for convenient use in automatic nailing machines comprising a flexible material carrier strip and a plurality of individual fasteners each having a first shank element formed from said fastener stock, a flat driving head element formed from a portion of said stock closely adjacent to said first shank elements and disposed at right angles thereto, and a second shank element formed at right angles to said driving head element and disposed in side-by-side relation with said first shank element to provide a void therebetween of width less than the thickness of said flexible material carrier strip, said shank elements being formed about said flexible carrier strip whereby said carrier strip is deformed within the formed fastener to hold said plurality of fasteners in desired side-by-side stick relationship.

3,225,918
BABY PANTS FOR COVERING DIAPERS
Julian L. Mines, 14950 E. Tacuba Drive, La Mirada, Calif.
Filed May 18, 1964, Ser. No. 367,991
5 Claims. (Cl. 206—58)



2. In combination, disposable baby pants comprising, a dispenser carton having a front wall, said front wall having a passageway provided therein, and a roll of a continuous strip of water impervious material mounted in said carton, said strip extending through said passageway to the exterior of said carton, said strip comprising upper and lower layers of said material, the upper layer being joined to said lower layer along the longitudinal edges of said strip, said upper layer also being joined to said lower layer to form seams at spaced intervals transversely across said strip intermediate the said longitudinal edges, said longitudinal edges being arcuately cut away adjacent said transverse seams to provide openings in the said strip for a child's legs, and said strip having means to facilitate having segments constituting baby pants to be severed from the said roll along transverse lines adjacent to said arcuate cut aways to provide baby pants open at the top and bottom leg openings.

3,225,919
PALLETIZED LOAD
Roy E. Swingle, Park Forest, Ill., assignor to Interlake Steel Corporation, a corporation of New York
Filed Dec. 18, 1962, Ser. No. 245,587
4 Claims. (Cl. 206—60)



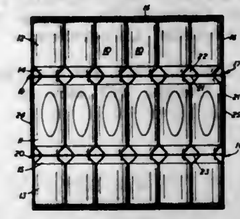
2. A package comprising, a first platen and a second platen, a load in the form of stacked sheets which shrink in volume after being formed into a package resting on said second platen, longitudinal spacer members resting on the upper marginal edges of the top sheet of the stacked sheets, and the first platen resting upon the spacer members which thereby space the first platen above the load to form an air pocket between the first platen and the top sheet of the load, at least one tensioned binder encircled in a closed loop around the package and extending along the upper surface of the first platen, down one side of the load, along the lower surface of the second platen and upward along the opposite side of the load, the tension in the binder urging the platens and the spacer members toward each other and the load applying a compressive force to the load, and positioned within the air pocket an inflated air tight container applying a reaction force between the first platen and the top sheet of the load urging the stacked sheets more tightly together, the volume of said container and the inflated pressure therein being sufficient to maintain compression in the sheets and tension in the binder while the sheets shrink.

3,225,920
WRAPPER
Paul C. Reilly, Milford, Conn., assignor to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware
Filed Apr. 30, 1964, Ser. No. 363,715
8 Claims. (Cl. 206—63.2)



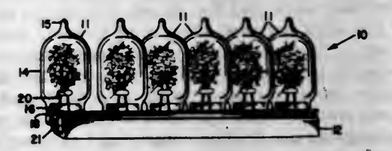
1. A package including an outer tear-away enclosure and an inner wrapper having a pair of surgical gloves or the like enclosed thereby, said inner wrapper comprising a rectangular sheet of foldable material having opposed side edges and opposed end edges adjoining said side edges, said sheet having first, second and third horizontally disposed fold lines diagonal to and extending between a side edge and its horizontally opposed end edge, said first and second diagonal lines dividing said sheet into first, central and second panels, said central panel having a major portion of generally rectangular configuration with a primary tab horizontally extending from each end thereof, said third horizontally disposed fold line wholly within said first panel and forming a secondary tab thereon, said second panel having a peripheral portion defined by a side edge and its horizontally opposite end edge and forming a secondary tab, said secondary tabs being in generally superposed contiguous relationship with each other, a plurality of vertically disposed fold lines including a central, end and intermediate fold lines, said vertical end fold lines defining the extent of said primary tabs, said central and said intermediate vertical fold lines dividing the wrapper into a plurality of generally rectangular secondary panels composed of inner panels and an outer panel adjoining each of said inner panels, each outer panel overlying its adjoining inner panel, a pair of said surgical gloves and the like enclosed by said panels and in full contact with respective said inner panels and said outer panels in superposed relationship to each other with said primary tabs in generally superposed contiguous relationship between said outer panels.

3,225,921
PACKAGE OF CRACKER AND METHOD OF MAKING SAID PACKAGE
Philip Steward Powling, Ilford, Essex, and Ray Louvain Pettit, Woodford, Essex, England, assignors to Nellsons Gaiety Limited
Filed Jan. 9, 1963, Ser. No. 250,396
Claims priority, application Great Britain, Jan. 11, 1962, 1,098/62
11 Claims. (Cl. 206—65)



8. A package of crackers consisting essentially of a rectangular box having a bottom wall and side and end walls, a plurality of crackers packed in said box side by side and parallel to said side walls, said crackers being of substantially equal size and each having a cylindrical middle portion and cylindrical end portions separated from said middle portion by waist portions, said waists lying in two rows extending perpendicular to said side walls, a slit in each side wall adjacent to each end of each row of waists, each slit extending downwardly from an edge of a side wall substantially to the level of the adjacent waist and a closed loop of strand material extending across said rows of waists, through said slits and across said side walls between said slits.

3,225,922
FLASHBULB HOLDER
Edward R. Straight, 1661 Sweets Corners Road, Penfield, N.Y.
Filed Oct. 23, 1963, Ser. No. 318,334
5 Claims. (Cl. 206—65)



1. A package comprising at least one flash lamp that is formed with a bulbous body that has an outwardly projecting, rigid fin that has a proximal end adjacent the bulbous body of the lamp and a distal end remote from the body of the lamp, and that has a pair of opposed faces in which it is formed with a pair of aligned grooves respectively, the fin being of reduced thickness between said grooves relative to the distal portion of the fin, and a holding element for the lamps that is of generally U-shaped cross-section and that is formed as a finished product from an extrusion of a homogeneous synthetic plastic material and that has a flat, ribbon-like base and a pair of upstanding arms that project from said base along opposite marginal edges thereof, and that are spaced from each other along their respective lengths and at their respective free ends to form a longitudinal opening between said free ends, and that are formed at their outer ends respectively with confronting rounded, convex ridges that converge toward each other and open outward, said arms being sufficiently pliable and resilient to permit the insertion therebetween, at any point along the length of the element, of the distal end of a lamp

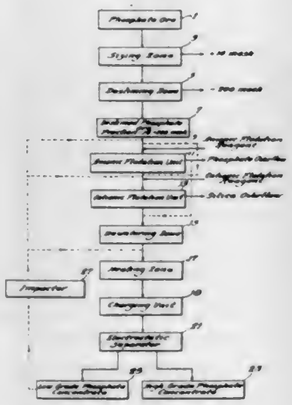
fin that has a greater thickness than the normal distance between the converging ridges at the ends of said arms, and to permit said ridges to engage in said grooves, resiliently to grasp the inserted fin and hold said fin and said distal end between said arms with said bulbous body disposed outward beyond said arms.

3,225,923

BENEFICIATION OF PHOSPHATE ORES

James E. Lawver, Lakeland, Fla., assignor to International Minerals & Chemical Corporation, a corporation of New York

Filed Sept. 22, 1961, Ser. No. 140,048
9 Claims. (Cl. 209—3)



1. A process for beneficiating a substantially deslimed, −4+200 mesh Florida pebble phosphate ore fraction comprising coarse and fine phosphate particles and coarse and fine silica particles, silica being a major gangue constituent of said ore fraction which comprises removing a substantial amount of the relatively smaller size silica particles from said ore fraction as a float product in a cationic froth flotation operation to produce an intermediate phosphate ore fraction containing a substantially lower concentration of relatively smaller size silica particles as compared to the pebble phosphate ore fraction feed, heating said intermediate phosphate ore fraction to a temperature of at least 70° F. to dry said fraction, differentially charging said dried fraction, passing the differentially charged fraction through an electrostatic field at a temperature not greater than about 500° F., and recovering a phosphate concentrate.

3,225,924

PROCESS FOR THE ELECTROSTATIC SEPARATION OF CARNALLITE-CONTAINING CRUDE SALTS

Hans Autenrieth, Hannover-Kirchrode, Gerd Karl Peuschel, Bonnenberg, Hannover, and Günter Weichart, Hannover-Dohren, Germany, assignors to Kali-Forschungs-Anstalt, Gesellschaft mit beschränkter Haftung, Hannover, Germany

No Drawing. Filed Aug. 13, 1962, Ser. No. 216,332
Claims priority, application Germany, Aug. 26, 1961, K 44,586
4 Claims. (Cl. 209—9)

1. A process for the electrostatic separation of crude carnallitic mixed salts comprising:

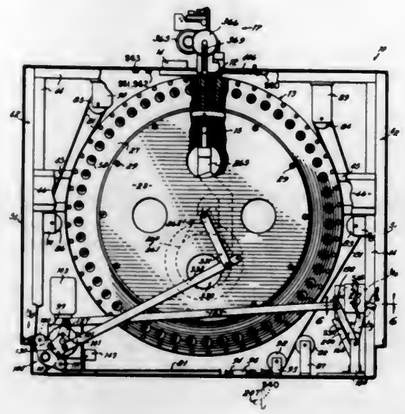
(a) grinding crude carnallitic mixed salts;
(b) admixing with the ground salts of (a) an operable amount of a first chemical conditioning reagent, said first chemical conditioning reagent selected from the group consisting of
Sodium salt of oxystearinsulfonic acid,
Sulfate of oxystearic acid amide,
Sodium salt of a sulfonated naphthylester,
Saccharine,
Oleic acid,
Ricinic acid,
Oxystearic acid,
Glutamic acid,
Mixture of fatty acids C_5–C_{10},
Mixture of fatty acids C_7–C_{12},
Mixture of fatty acids C_{13}–C_{18},
Linseed oil fatty acids,
Crude naphthenic acids,
Shellac,
Alizarine yellow G,
Eosin,
Uranine,
Benzo orange R,
Glycocolldodecylester,
Olive oil,
Margarine,
Mixture of saccharin and ortho-benzoic sulfimide,
1:1 mixtures of fatty acids C_5–C_{10} and sodium salt of alkylsulfonic acid,
Nonyl sulfate,
Sodium salt of alkylsulfonic acid,
Sodium salt of ricinic acid,
Sodium salt of alkylbenzenesulfonic acid,
Sodium salt of alkylnaphthalenesulfonic acid,
Sodium salt of benzylnaphthalenesulfonic acid,
Sodium salt of naphthylestersulfonic acid,
Sulfonated amides of fatty acids,
Alkylsulfonate,
1:1 mixture of sodium salt of alkylsulfonic acid, and sodium salt of alkylnaphthalenesulfonic acid,
1:1 mixture of sodium salt of oxystearinsulfonic acid and sodium salt of sulfonated ricinic acid,
1:1 mixture of sodium salt of oxystearinsulfonic acid and sodium salt of alkylsulfonic acid,
Mixture of fatty acids C_{14}–C_{22},
Distilled naphthenic acid, and
6-sulfanil-2,4-dimethyl-pyrimidine;
(c) electrostatically separating the conditioned ground salts of (b) into a carnallite preconcentrate fraction substantially free of non-potassium containing salts and a non-potassium containing fraction;
(d) admixing with said carnallite preconcentrate a second chemical reagent different from said first chemical reagent, said second chemical reagent selected from the group consisting of benzoic acid, salts of benzoic acid, phthalic acid, salts of phthalic acid, salicylic acid, salts of salicylic acid, cinnamic acid, atropic acid, salts of atropic acid, phenyl acetic acid, salts of phenyl acetic acid, alpha-nitroso-beta-naphthol, beta-nitroso-alpha-naphthol, methyl benzoic acid, salts of methyl benzoic acid, chlorobenzoic acid, salts of chlorobenzoic acid, methyl salicylic acid, salts of methyl salicylic acid, ethyl salicylic acid, salts of ethyl salicylic acid, vanillin acid, salts of vanillin acid, and mixtures of said chemical reagent; and
(e) electrostatically separating the admixture of (d) into a sylvite concentrate poor in carnallite and a carnallite concentrate poor in sylvite.

3,225,925

CARD SELECTING APPARATUS

Robert A. Lasley and Siegfried K. Handel, Hamilton, and David L. Eisenstadt, Cincinnati, Ohio, assignors to Mosler Safe Company, Hamilton, Ohio, a corporation of New York

Filed May 9, 1963, Ser. No. 279,234
8 Claims. (Cl. 209—74)



1. Apparatus for selecting a predetermined coded card from a plurality of coded cards comprising,
a card carrying drum for storing a class of coded cards in each of a plurality of compartments located around the periphery of said drum,
a plurality of cards arranged in random order in each of said compartments,
card selection means including an air ejection nozzle for sequentially scanning all of the randomly arranged cards in a selected class and for locating a predetermined card within said selected class and moving said card to a physically discrete position relative to the remainder of the cards within said class,
motor means for effecting relative indexing movement between said compartments and said card selection means to locate a selected compartment adjacent said card selection means,
control means operable to automatically actuate said card selection means in response to location of a selected compartment adjacent said card selection means, and
card transport means including motor driven rollers operable automatically in response to movement of said preselected card to a physically discrete position to remove said card from said file.

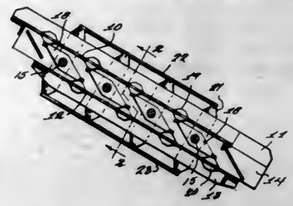
3,225,926

VIBRATING SIEVES

Albert W. Dostatni, Fontainebleau, France, assignor to Preparation Industrielle des Combustibles, a French concern

Filed Sept. 5, 1962, Ser. No. 221,505
Claims priority, application France, Sept. 8, 1961, 872,810, Patent 1,299,963
1 Claim. (Cl. 209—315)

A vibrating sieve comprising a supporting frame, a first screening surface mounted on said frame, a second screening surface vertically spaced from and disposed substantially parallel to said first screening surface, a plurality of shafts resiliently and pivotally mounted on said frame between said spaced screening surfaces and disposed substantially parallel to each other, lever means rigidly secured to one end of each of said plurality of said shafts, said lever means comprising a plurality of levers connected at their upper and lower ends to a pair of connecting rods, an electromagnetic drive means connected to at least one of said plurality of shafts, and a plurality of drive lever means each rigidly secured to one shaft and driven thereby, means pivotally connecting said



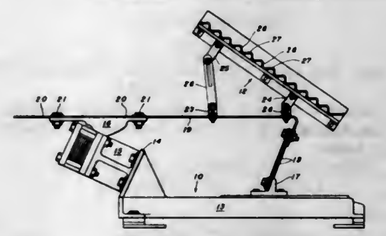
drive lever means between said first and second screening surfaces, said shafts connected to said electromagnetic drive means, said lever means associated with said shafts, said connecting rods, and said drive lever means imparting the vibrational forces produced by said electromagnetic drive means to said first and second screening surfaces.

3,225,927

PARTICLE CLASSIFIER

Upendra N. Bhrany, Wilkinsburg Borough, Pa., assignor to United States Steel Corporation, a corporation of New Jersey

Filed Aug. 30, 1961, Ser. No. 134,924
2 Claims. (Cl. 209—479)



1. A classifier for separating particulate material into size fractions comprising a vibrator and a tray, said vibrator having a base, an electromagnetic mechanism supported on the back portion of said base, a movable shelf operatively connected to said electromagnetic means, an upstanding leaf spring carried by the front portion of said base, and a strip fixed at its ends to said shelf and said leaf spring, said tray being supported on the front portion of said strip and sloping toward the front and having a plurality of treads and risers forming steps along its upper face, said vibrator vibrating said shelf, strip and tray as said electromagnetic means is energized and deenergized to throw larger particles of a sample down the steps to the exclusion of smaller particles, said spring acting as a fulcrum to move the back portion of the tray through greater distances than the front portion.

3,225,928

ENDLESS BELT FILTER

Hugh R. Black, Birmingham, Mich., assignor to H. R. Black Company, Detroit, Mich., a Michigan copartnership

Filed Jan. 16, 1962, Ser. No. 166,521
19 Claims. (Cl. 210—121)

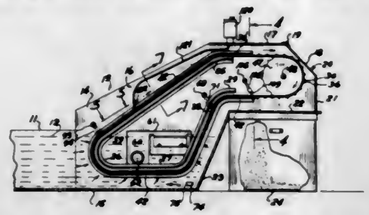
6. In combination, an outlet box adapted for connection to a supply of fluid and having an outlet adjacent the bottom thereof, the fluid on the outlet box maintaining a fluid level;
a skimmer housing within said outlet box including a partition wall, the upper portion of said partition

wall being apertured defining a skimming inlet for the flow of top surface fluids from said outlet box into said skimmer housing;

an outlet pipe adjacent the bottom of said skimmer housing for draining the fluid therein, the fluid collected in the skimmer housing defining a control fluid level;

a vertically adjustable float in said outlet box adjacent said partition wall;

an upright dam mounted on said first float for con-



trolling the flow of fluid through said skimmer inlet;

a second float within and adjacent the bottom of said skimmer housing for sensing the control fluid level therein, automatically movable upwardly when said control fluid level approaches a determined high relative to the fluid level in the outlet box and automatically movable downwardly when said control fluid level approaches a determined low relative to the fluid level in the outlet box;

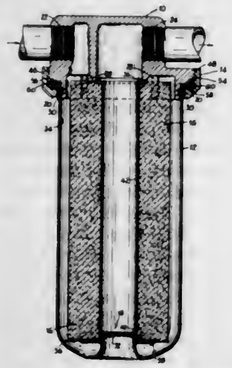
and means adjustably interconnecting said floats for movement in unison.

3,225,929

CLOSURE MEANS FOR FILTER CONTAINING PRESSURE VESSELS

Marcel Clarence Sicard, Cheshire, Conn., assignor to American Machine & Foundry Company, a corporation of New Jersey

Filed Oct. 11, 1961, Ser. No. 144,472
2 Claims. (Cl. 210—232)



1. A pressure container enclosing a filter element, comprising a head and a sump, one of which has a screw thread and the other a flanged edge respectively, said element having one end engaging said head and the other end engaging said sump, one end of said element being rotatable relative to said sump, whereby said element may be fixed within said container, a closure nut for sealing said head and sump, said nut being threaded to engage said screw thread and having a flange to engage said first mentioned flange, said first mentioned flange and said nut flange having interlocking means for causing positive engagement therebetween and conjoint rotation of the flanged member and said nut during closure and opening of said container.

3,225,930

AQUARIUM CLEANING DEVICE

Allan H. Willinger, New Rochelle, N.Y., assignor to Aquariums Incorporated, Maywood, N.J., a corporation of Delaware

Filed Oct. 9, 1963, Ser. No. 315,088
4 Claims. (Cl. 210—241)



1. A portable aquarium cleaning device comprising an elongated housing, a centrifugal pump disposed in a casing at one end of said housing and means for continuously driving said pump including motor means at the other end thereof, means for energizing said motor interconnected therewith, said centrifugal pump being drivably connected with said motor, said centrifugal pump casing being provided with an axially disposed inlet opening and a radially extending outlet, elongated tube means depending from said casing, one end of said tube being in communication with said inlet opening, the other end of said tube being open, a filter secured to said outlet, the operation of said pump by said motor causing water to be continuously drawn from an aquarium tank through said tube and pump casing and recirculated into the tank in filtered form after passage through said outlet and filter, whereby upon operation of said pump, water may be continuously drawn from an aquarium tank through said tube and pump and recirculated into said tank in filtered form after passage through said outlet and filter receptacle, the circulation of water through said tube when the open end thereof is disposed adjacent to aquarium gravel causing said gravel to be continuously elevated and agitated in the lower end of said tube, thereby subjecting said gravel to a continuous cleaning action and causing an initial separation of said gravel from the lighter particles of waste material interspersed therewith.

3,225,931

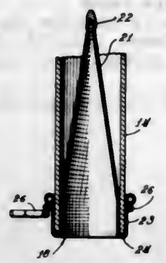
ADAPTABLE STRAINER FOR PAINT GUNS

Willy O. Schaub, 1507 Maple Ave., Evanston, Ill.

Filed May 31, 1961, Ser. No. 113,934
2 Claims. (Cl. 210—251)

1. The combination of a paint gun having a bowl for holding a supply of paint and a gun mechanism having an intake tube extending deep in the bowl; and a slip-on strainer including a body of wire mesh screening formed to generally conical shape, continuing beyond the larger end of the body outwardly through a return bend all around the body, and back along but spaced from the body as a generally cylindrical cuff tending to retain its shape and resiliently resist enlargement and curled outwardly to form a rim at the free end of the cuff; the length of the cuff being several times longer than its spacing from the body adjacent the return bend to provide,

over a substantial length, closely spaced walls adapted to cling to a variety of tube diameters, with the cuff resiliently gripping the outside surface of larger tubes and the body



partially contracted by smaller tubes to a cylindrical shape parallel to the cuff and resiliently pressing on the inside surface of smaller tubes.

3,225,932

FILTER CARTRIDGE

Joseph B. Dunn, Vandalia, and Marvin O. Ross, Dayton, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Original application May 14, 1963, Ser. No. 280,349, now Patent No. 3,174,165, dated Mar. 23, 1965. Divided and this application Dec. 17, 1964, Ser. No. 418,978
2 Claims. (Cl. 210—282)



1. A disposable cartridge for use with dry cleaning solvent such as perchlorethylene to condition the solvent by controlling the color thereof and comprising:

a fabric bag having an outer portion adapted to receive through the perforations thereof solvent to be conditioned,

a perforated center tube concentric with said outer portion and having one end open for dispensing condition solvent therethrough,

an annular imperforate lower end plate at the lower end of said cartridge supporting said outer portion a spaced distance from said center tube to define an annular solvent conditioning chamber,

a lower cover having solvent outlet means in communication with said one end of said center tube, said one end of said center tube, said center tube being fastened at said one end to said lower cover in a manner to support said center tube generally perpendicular thereto,

said fabric bag having an inner portion enveloping said center tube and an intermediate portion in juxtaposition to the inside of said lower cover and the outside of said lower end plate,

said fabric bag, said lower end plate, said center tube and said lower cover forming a lower cover and center tube assembly,

said lower cover having a yieldable press-fit edge frictionally engaging the intermediate portion of said fabric bag along the inner peripheral edge of said lower end plate for partially closing the lower end of said chamber and for supporting said center tube in said chamber,

activated carbon granules in said chamber for removing non-particulate matter from solvent flowing therethrough to control the color thereof,

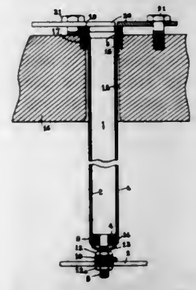
and means at the upper end of said cartridge for sealing said carbon granules in said chamber.

3,225,933

MOUNTING FOR CLUSTER OF FILTER TUBES

Jacques Rolland Alexandre Berline, 72 Rue des Sablons, Mareil-Marly, Seine-et-Oise, France

Filed July 25, 1961, Ser. No. 126,568
Claims priority, application France, July 27, 1960, 834,347
3 Claims. (Cl. 210—333)



1. In a filter comprising a cluster of vertical filter tubes consisting each of a perforated tube surrounded by a filtering sheath and outflared at its upper end and through which the product to be filtered is caused to flow from the exterior to the interior before escaping through the top portion of the tube, said filter tubes being adapted to be cleaned by causing the forced filtrate to flow in the opposite direction, a horizontal plate solid with the upper portion of the filter and apertured to permit the passage with play of the upper end of each tube therethrough, a circular groove formed in the upper edge of each aperture, a resilient gasket fitting in each groove and adapted elastically to engage the outflared upper edge of each tube, a flange removably mounted with respect to each tube for securing the upper end of each tube on the relevant gasket, washers disposed above said supporting plate and engaging said flanges with their edges, and means for adjustably clamping said washers on said supporting plate.

3,225,934

CENTRIFUGE

Pieter van Riel, Delft, Netherlands, assignor to Machinefabriek Reineveld N.V., Delft, Netherlands, a limited-liability company

Filed May 14, 1962, Ser. No. 194,422
Claims priority, application Germany, May 13, 1961, M 49,052
3 Claims. (Cl. 210—370)

1. A centrifuge for the separation of liquids from solids, comprising:

a housing;

a centrifuge drum mounted in said housing for rotation about a generally vertical axis;

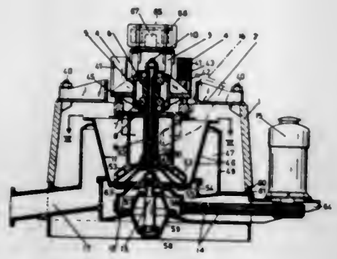
a head resiliently mounted on said housing and rotatably supporting said drum;

a shaft connected with said drum and extending into said head;

a pair of axially spaced bearings within said head for journaling said shaft therein, said bearings each being provided with an inner race entrained by said shaft and an outer race entrained by said head, said outer races both being formed with raceways conforming to segments of a common spherical surface, said bearings each being provided with a plurality of angularly spaced rollers having surfaces complementary to the respective raceways and axes inclined to the axis of said shaft;

spacing means within said head and surrounding said shaft while engaging said inner races for maintaining mutual axial spacing between said inner races of said bearings, said head forming a bearing casing surrounding said bearings and said spacing means while defining an annular lubricant chamber therewith;

a pair of sealing means surrounding said shaft at opposite ends of said casing axially outwardly of said



bearings for retaining lubricant in said chamber, at least one of said sealing means including an annular first element proximal to said shaft and radially shiftable therewith, an annular second element secured to said casing, and a resiliently deformable annular sealing membrane transverse to said axis and interconnecting said elements;

support means in said housing axially spaced from said shaft and connected with said drum at a location remote from said head for centering said drum, said support means including a central member, means journaling said central member in said housing for rotation about a generally upright axis normally aligned with that of said shaft, and an axially deformable annular resilient centering membrane surrounding said central member and connected with said drum for permitting limited axial displacement of said drum while centering same; and

oscillating means on said head for axially reciprocating said shaft and said drum.

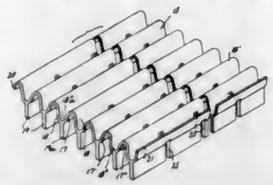
3,225,935
DRAINAGE BED

John A. Porteous, Montreal, Quebec, Canada, assignor to United States Rubber Company, New York, N.Y., a corporation of New Jersey

Filed Jan. 10, 1963, Ser. No. 250,551
8 Claims. (Cl. 210—404)

1. A one-piece extruded plastic drainage grid for a filter comprising:

(a) a corrugated sheet having an inner surface and an



outer surface, said corrugations defining, on each said surface, alternate parallel ridges and grooves;

(b) each said ridge on the inner surface of said sheet having an integral planar support strip joined thereto by one of its edges;

(c) each said support strip having a free opposite edge parallel to its joined edge, all of said support strips being of substantially equal edge-to-edge width and extending parallel to the corrugations of said sheet and perpendicular to the plane of said sheet;

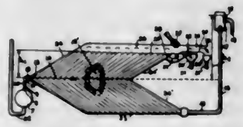
(d) said grid being intersected by at least one transverse drainage aperture extending in cross-section through at least part of said support strips and through part of said corrugated sheet into said grooves on the outer surface thereof and extending in a transverse direction across at least some of said support strips; and

(e) said grid being flexible in a direction perpendicular to said corrugations.

3,225,936
APPARATUS FOR CONTINUOUSLY SEPARATING LIQUIDS HAVING DIFFERENT SPECIFIC GRAVITIES

Mario Ballestra, Via XX Settembre 36/15, Genoa, Italy

Filed Apr. 15, 1963, Ser. No. 272,930
Claims priority, application Italy, Oct. 11, 1958, Patent 596,280
2 Claims. (Cl. 210—519)



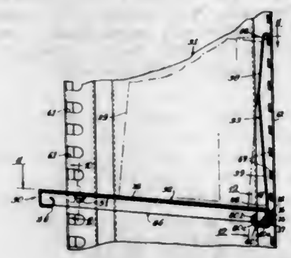
1. An apparatus for continuously separating two liquids with different specific gravities and insoluble in each other, comprising: a container adapted to contain a layer of a heavier liquid and a superposed layer of a lighter liquid, said container being of substantially rectilinear configuration when viewed in plan and having a vertical cross section constituted by two superposed rhomboids having one side in common and being symmetrically arranged with respect to said side in common; said vertical section being obtained by providing the container with a horizontal flat bottom and two longitudinal V-shaped walls, each of said longitudinal V-shaped walls being formed by two flat surfaces, namely an upper surface and a lower surface, disposed in a V-shape and connected to each

other along a horizontal connection edge, the first of said V-shaped walls having its concavity towards the inside of the container and the second of said V-shaped walls having its concavity towards the outside of the container; said container including means defining at least one narrow horizontal rectilinear slot for the inlet of a mixture of said lighter liquid and said heavier liquid into said container substantially in the form of a rectilinear planar film, said slot being disposed exactly in correspondence with the horizontal connection edge of the two flat surfaces disposed in a V-shape forming the V-shaped wall which has its concavity towards the inside of the container; means for withdrawing said lighter liquid from the uppermost portion of the V-shaped wall which has its concavity towards the outside of the containers; means for withdrawing said heavier liquid from the lowermost portion of said V-shaped wall which has its concavity towards the outside of the container; and means for maintaining a constant ratio between the pressure on the free surface of the lighter liquid and on the interface between said two layers of liquids having different specific gravities, so that the plane of said interface passes through both of said connection edges.

3,225,937
SHELF CONSTRUCTION

Franklin R. Amthor, Jr., Manitowoc, and James M. Katzfey and Roy E. Kanitz, Two Rivers, Wis., George L. Schaefer, New York, N.Y., and Reuben P. Kodet and Frank Haban, Manitowoc, Wis., assignors to Hamilton Manufacturing Company, Two Rivers, Wis., a corporation of Wisconsin

Filed Apr. 5, 1963, Ser. No. 270,898
7 Claims. (Cl. 211—148)

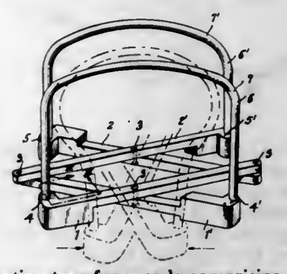


1. A mildew preventing shelf for supporting books comprising a bottom member having an upper book supporting surface, and a back member extending upwardly from the rearward edge of said bottom member, said back member having a relatively flat upper portion adapted to engage the books on said surface, said relatively flat upper portion lying on a line extending perpendicularly from a point on said supporting surface spaced forwardly from the rearward edge of said bottom member, and a lower portion extending between said upper portion and the rearward edge of said bottom member and spaced rearwardly from said perpendicular line and from the books on said surface, whereby an air pocket is formed between said lower portion of said back member and the books, said air pocket permitting air circulation around the books and hence preventing mildew from forming.

3,225,938
SUPPORTING TRAY FOR VESSELS

Nils Adolph von Brömssen, Skytteholmsvagen 20, Solna, Sweden

Filed May 23, 1963, Ser. No. 282,773
Claims priority, application Sweden, June 21, 1962, 6,985/62
4 Claims. (Cl. 211—85)

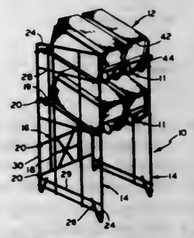


1. A supporting tray for vessels comprising, a plurality of rods crossing one another and constituting a support for a vessel, the rods being pivotally connected to one another at their points of crossing to thereby provide a lazy-tong arrangement, a plurality of inverted U-shaped resilient clamps connected to and extending upwardly from the ends of the rods, one leg of each clamp being mounted in the end of one of the rods and the second leg of the clamp being mounted in the end of another rod so that when the ends of these rods are brought toward one another, the clamp will be resiliently bowed in an upward direction.

3,225,939
DISPLAY AND DELIVERY FOR PACKAGED GOODS

Bernard Braun, 130—72 226th St., Laurelton, N.Y.

Filed Feb. 12, 1964, Ser. No. 344,339
6 Claims. (Cl. 211—148)



1. A frame including a plurality of downwardly inclined supports, in combination with a plurality of cartons of cans to be dispensed and carried in said supports, the cartons having an end wall opening of a size to permit one can at a time to roll from the carton while on said inclined support, a stop mounted on the frame adjacent the lower end of each support limiting forward travel of the carton on the support and a cradle extending forwardly of each support to receive a can as it rolls from the carton and to be replaced by a second can when the first one is removed by raising it upwardly from the cradle.

3,225,940
CLOSET SHELF AND HANGER

William K. Story, 1145 Median St., Opa-locka, Fla.

Filed Sept. 28, 1964, Ser. No. 399,663
5 Claims. (Cl. 211—153)

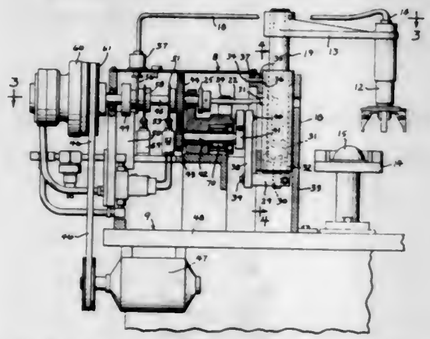
1. In a closet shelf having garment hanger means, the combination comprising, an integrally formed elongated member of uniform transverse cross-sectional shape hav-

ing a top wall shelf portion, strengthening means formed along one longitudinal edge of said top wall portion at the underside thereof, a side wall extending perpendicularly downwardly to the underside along the other longitudinal edge of said top wall portion, a perpendicularly



outwardly extending wall portion at the outer end of said side wall, and an inverted U-shaped wall portion extending upwardly and outwardly of the outer end of said outwardly extending wall portion to provide a transversely curved, longitudinally extending upper wall surface for hanging wire hook garment hangers.

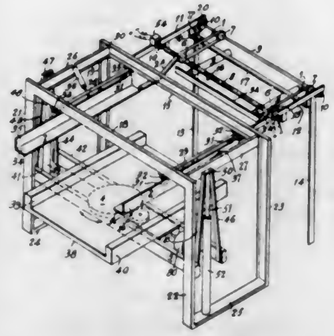
3,225,941
AUTOMATIC ASSEMBLING OR TRANSFERRING UNITS
Robert E. Slattery, Rockford, Ill., assignor to Hill-Rockford Co., Rockford, Ill., a corporation of Illinois
Filed Nov. 18, 1963, Ser. No. 324,459
20 Claims. (Cl. 214—1)



1. In a mechanical movement, the combination of a stationary tubular cam having a cylindrical bore therein and a generally U-shaped cam slot provided in the wall thereof, a plunger reciprocable and oscillatable in said bore having a follower pin projecting radially therefrom and guided in said slot predetermining the oscillation of said plunger in relation to its reciprocation, the two legs of the U-slot converging toward a midpoint toward which the follower pin moves at the end of each stroke in that direction, means for transmitting reciprocatory movement to the plunger, and means operated in timed relation to the last mentioned means for directing said pin laterally from the midpoint first into one leg of the U-slot and then into the other leg alternately when the pin at the end of each stroke of the plunger reaches the midpoint.

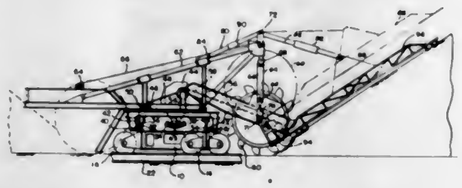
3,225,942
STACKING DEVICE
Germain B. Fossenier, New Westminster, British Columbia, Canada, assignor to Dominion Tar & Chemical Company, Limited, Montreal, Quebec, Canada
Filed Mar. 8, 1963, Ser. No. 263,824
4 Claims. (Cl. 214—6)

1. An apparatus for stacking ties into ricks having alternate rows containing different predetermined numbers of ties with the ties in any one row being substantially parallel to each other and with the ties in adjacent rows oriented substantially 90 degrees, said apparatus comprising: a pair of spaced parallel slides for accumulating said predetermined different number of ties, said spaced slides being positioned to support said ties by engaging said ties adjacent their opposite ends, means individually moving ties onto and positioning each tie adjacent one end of said slides, said ties extending substantially transversely between said pair of slides, means for shifting of slides from a supporting position wherein said slides



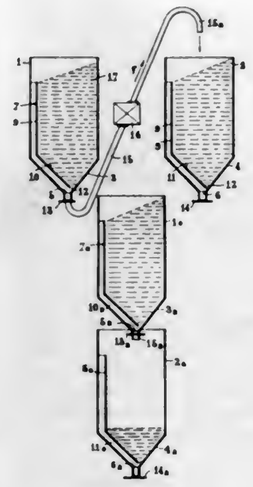
would support ties adjacent to their opposite ends and a dumping position wherein said ties are substantially simultaneously freed to fall, a receiver mounted for rotation about a vertical axis beneath said slides, means for rotating said receiver 90 degrees after each predetermined number of ties has been dumped and means for vertically moving said receiver to lower said receiver in steps substantially equal to the thickness of the ties being ricked.

3,225,943
CANTILEVER ROTARY RECLAIMER
John Sasadi, Newark, N.J., assignor, by mesne assignments, to Hewitt Robins, a corporation of Delaware
Filed May 29, 1962, Ser. No. 198,667
6 Claims. (Cl. 214—10)



1. In a reclaimer comprising a wheeled frame movable toward a pile of material and a bucket wheel supported by said frame and movable across the face of the pile while supported on said frame, and having a harrow extending upwardly and forwardly of said wheel to rake a pile in front of said wheel and wherein said wheel and harrow can be raised and lowered with respect to said frame, the improvement wherein the means supporting said wheel and harrow on said frame comprises a parallelogram linkage interconnecting said wheel and harrow said linkage being operable to maintain a selected angular position of said harrow relative said wheel during raising and lowering movements of said wheel and harrow relative said frame.

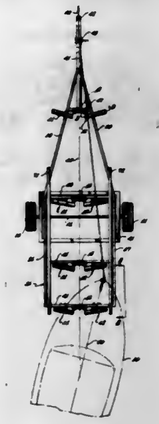
3,225,944
STOCKING SYSTEMS
André Reimbert, 67 Blvd. de Reuilly, Paris, France
Filed Apr. 28, 1964, Ser. No. 363,238
Claims priority, application France, May 3, 1963, 933,533
3 Claims. (Cl. 214—17)



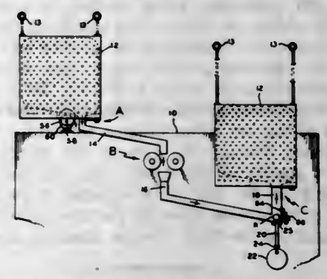
1. A system for stocking granular, pulverulent and like products, comprising in combination a first silo and a second silo, a discharge orifice at the bottom of each silo, a discharge tube extending within each silo substantially throughout the height of the corresponding silo and leading into the discharge orifice of the corresponding silo, perforations disposed along the height of the discharge tube of each silo, the dimensions of said perforations being calculated to permit the passage of the stocked product and in such a manner that during discharge of material from the respective silo, only the uppermost portion of the material located at any instant in the silo will move therein to be discharged therefrom, a retractable shutter associated with the discharge orifice of each silo, and duct means disposed beneath the discharge orifice of said first silo and adapted to receive the materials discharged from said first silo and to transfer them into the upper portion of said second silo, the upper end of said discharge tube in said second silo being constructed and arranged with respect to said duct means so that material discharged from the latter can pass into said upper end only after said second silo is substantially filled, whereby material fed first into said first silo will be discharged first from said second silo.

3,225,945
LOAD SUPPORTING AND DIRECTING DEVICE
Stanley W. Yoder, P.O. Box 67, Little Rock, Ark.
Filed June 8, 1962, Ser. No. 201,044
1 Claim. (Cl. 214—84)

Boat transporting means comprising: a movable carriage having a boat supporting frame thereon; a series of like roller assemblies mounted on said frame and spaced along the longitudinal axis thereof to define a transporting conveyor for a boat, each of said roller assemblies including a pair of like, normally fixed rollers each disposed equidistantly on opposite sides of the longitudinal axis of the supporting frame and skewed in opposite directions from the vertical so that their adjacent ends are offset upstream of the direction of loading of a boat upon the conveyor roller assemblies and frame, said skewed rollers also being canted upwardly and outwardly out of the horizontal, said skewed and canted rollers coacting to automatically direct the axis of a boat being loaded upon said supporting frame into alignment with the longitudinal axis thereof as said boat being loaded passes from one of said roller assemblies to the next of said roller assemblies, each of said roller assemblies further including a central roller disposed with its axis of rotation substantially horizontal and transverse to the longitudinal axis of said frame and with the upper surface of each central roller being not substantially above the lowest edges of the upper surfaces of the skewed and canted rollers of its assembly; and side bars extending along the longitudinal axis of said frame at opposite sides thereof, said side bars being adjustable vertically from a lowered, noninterfering position to an upper, boat holding position.



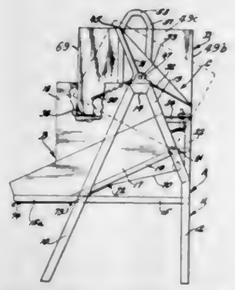
3,225,946
CARRIER AND DISPENSER FOR WORK PIECES
Steve Kopchik, Jr., Hastings-on-Hudson, N.Y., Francis R. Kelley, Ridgefield, and Norman Frank Parrett, Stamford, Conn., assignors to Universal American Corporation, a corporation of Delaware
Filed July 24, 1963, Ser. No. 297,398
3 Claims. (Cl. 214—300)



1. The combination of a portable dispensing hopper for generally cylindrical work pieces and means to discharge the work pieces therefrom, said hopper including a generally rectangular frame with a downwardly inclined lower wall having a discharge opening for the work pieces at the lower end thereof, and side walls carried by the frame and spaced apart a distance not less than the axial length of the work pieces to form a compartment to receive said work pieces, said lower wall

also having a narrow elongated slot adjacent the discharge opening, said discharge means including an eccentrically mounted feed disc positioned for rotation within said slot to move upwardly and then downwardly into said compartment to break up any locked condition of the work pieces and urge them to move in the direction of the opening and out through the same, a motor for rotating the disc, a gate for closing the opening when the hopper is moved from place to place, and means for removably supporting the hopper in operative relation to said eccentric feed disc with the latter disposed in said lower wall slot to permit movement of the hopper to another location.

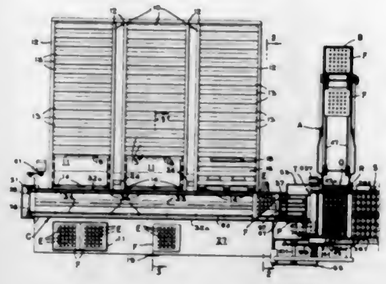
3,225,947
DUMP HOPPER
Donald A. Anderson, Racine, Wis., assignor to American Motors Corporation, Kenosha, Wis., a corporation of Maryland
Filed Nov. 29, 1963, Ser. No. 326,719
8 Claims. (Cl. 214—302)



1. A dump hopper and container assembly comprising spaced frame members; a hopper positioned between the frame members and carried thereby; a saddle carried by the frame members above the hopper, said saddle including spaced side walls and a trunnion projecting outwardly from each side wall; a bearing on each frame member, each having a trunnion rotatably received therein, whereby the saddle is mounted for swinging movement about the axes of the tunnions; a container removably carried by the saddle between the side walls thereof; said trunnions being located eccentrically relative to a vertical plane passing through the longitudinal center of the container and through the longitudinal centers of the saddle side walls, whereby gravity and momentum causes the saddle and container, when loaded, to rotate counterclockwise about the axis of the trunnions throughout an arc in excess of 120 degrees and gravity and momentum causes the container, when empty, and saddle to rotate throughout the same arc in excess of 120 degrees clockwise; the center of gravity of the saddle and container at one end of the arc being situated forwardly of a vertical plane drawn through the axes of the trunnions and the center of gravity of the saddle and container at the opposite end of the arc being situated rearwardly of the vertical plane drawn through the axes of the trunnions and also above the level of such trunnion axes.

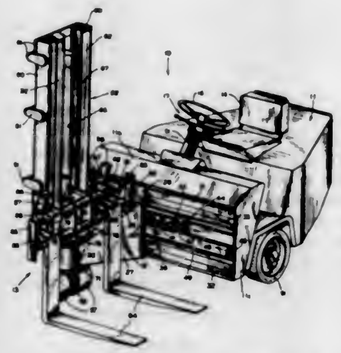
3,225,948
MACHINE FOR HANDLING EGGS
Harold J. Mumma, Riverside, Calif., assignor to FMC Corporation, a corporation of Delaware
Filed Oct. 31, 1960, Ser. No. 66,335
19 Claims. (Cl. 214—314)

1. Apparatus for transferring eggs that are vertically disposed in a filler to an egg separator conveyor which is adapted to support the eggs horizontally for candling, said apparatus comprising a feeder conveyor for the egg-bearing filler, a pocketed egg separator conveyor spaced from said feeder conveyor, a filler transfer device mounted between said conveyors, said transfer device comprising means for picking up an egg-bearing filler from



said feeder conveyor and inverting it and moving it to a position with the eggs disposed above said separator conveyor, means for engaging each egg in said filler before inversion thereof and continuously during said inversion, and means for releasing eggs from said engaging means and for depositing eggs into the pockets of said separator conveyor.

3,225,949
LIFT TRUCK WITH LOAD HANDLING ASSEMBLY MOUNTED ON A MOVABLE FRAME SUPPORTED BY THE STEERING WHEEL OF THE TRUCK
Dennis E. Erickson and John S. Messner, Battle Creek, Mich., assignors to Clark Equipment Company, a corporation of Michigan
Filed Aug. 17, 1962, Ser. No. 217,657
10 Claims. (Cl. 214—660)



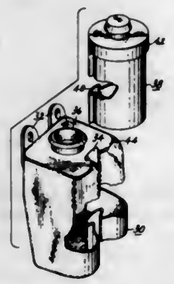
1. An industrial truck comprising primary frame means, secondary frame means mounted on and movable transversely of said primary frame means along a linear path, ground-engaging wheels means for supporting said primary frame means, ground-engaging steering wheel means mounted on said secondary frame means for supporting said secondary frame means, said steering wheel means being rotatable about a vertical axis through at least 180 degrees, and load supporting and elevating means mounted on said secondary frame means and being rotatable independently of said steering wheel means about a vertical axis through at least 180 degrees.

3,225,950
PLASTIC BOTTLE
Roy C. Josephsen, Hillsdale, Joseph R. Tino, Clifton, and Charles R. Fulcher, Bloomfield, N.J., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut
Filed Mar. 22, 1965, Ser. No. 441,566
3 Claims. (Cl. 215—1)



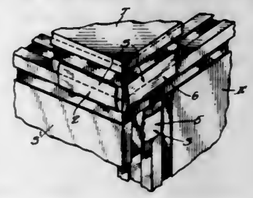
1. A plastic bottle having a generally rectangular body, a raised open necked top at one of the ends, a recessed domed bottom wall at the other end, a raised flat strip of plastic running from one side of the domed bottom wall up one wall over the top and down the opposite wall to the opposite side of the domed bottom wall and with each of the two remaining side walls containing an arcuate recessed portion at the top of said side walls with a plurality of transverse flat lands and flat grooves which are spaced between the bottom portion of the arcuate section and the bottom of the bottle and extend from the flat strip of one adjacent side wall to the flat strip of the other adjacent side wall; the said flat lands having a width of from about 0.1 to about 0.3 inch and a center-to-center spacing of from about 0.25 to about 0.8 inch and the said flat grooves having a width of from about 0.06 to about 0.3 inch and a depth of from about 0.05 to about 0.2 inch with the angle formed between wall and bottom of the groove being from about 98° to about 110°.

3,225,951
WINDSHIELD WASHER EQUIPMENT
Irvin E. Poston, Birmingham, and August R. Zielinski, Detroit, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed July 16, 1963, Ser. No. 295,342
1 Claim. (Cl. 215—6)



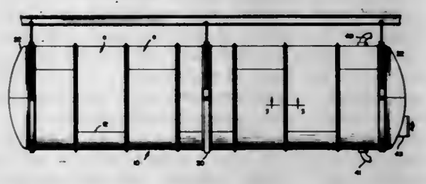
Vehicular windshield washer equipment comprising, a washer reservoir of resiliently flexible plastic material having top, bottom and side walls and adapted for attachment to a vehicle, and a washer solvent container adapted to be supported by said reservoir, said reservoir having a recess of dovetail configuration in one of its side walls and said solvent container having a complementary dovetailed projection which terminates in a rim adjacent the top of the container, said projection being adapted to be received in the recess of said reservoir with the rim in engagement with the top wall of said reservoir so as to resiliently support the container on the reservoir.

3,225,952
LOCKING STRIP
Phillip H. Stiles, Palos Verdes Peninsula, Calif., assignor to Z. Z. Corporation, Compton, Calif., a corporation of California
Filed Sept. 30, 1963, Ser. No. 312,764
10 Claims. (Cl. 217—65)



1. The combination of two elements having elongated edges adjacent each other and means for locking said elements together comprising an elongated groove in each of said elements spaced from their adjacent edges and substantially parallel to each other when said edges are together, said grooves extending throughout the lengths of said elongated edges, and an elongated strip of resilient material extending throughout the length of said adjacent edges and which is substantially straight longitudinally and bowed transversely, said strip having a plurality of spaced fingers along its side edges extending at substantially right angles from said side edges, said fingers being in the form of notched flanges wherein the notches thereof extend into said side edges of said strip so that said fingers are adapted to be spread apart for progressively entering into said two grooves by curving said strip longitudinally to thereby flatten its transverse curvature.

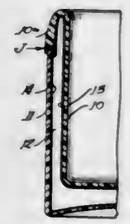
3,225,953
TANK STRUCTURE
Russell C. Wolfe, Baltimore, Md., assignor to Dixie Manufacturing Company, Inc., Baltimore, Md., a corporation of Maryland
Filed May 20, 1963, Ser. No. 281,611
7 Claims. (Cl. 220—5)



1. A thin walled stainless steel tank for containing beer therein comprising a plurality of substantially cylindrical sections, said sections being disposed in longitudinal alignment with each other to form an elongated cylindrical tank, adjacent ends of said sections being positioned from each other to form circumferential spaces therebetween, a shear ring member disposed adjacent each space and overlapping the outer surfaces of said adjacent ends, a bead of stainless steel welding material deposited in each space and securing the overlapping ring member and adjacent section ends to each other in a liquid tight relationship, the sections disposed at opposite ends of said tank being provided with closure members secured thereto, suspension means secured to said tank at spaced

intervals therealong for suspending the tank from an overhead structure including ring girder members extending around said sections, and rod means secured to said girder members for transmitting the reaction load thereto, said rod means being secured to said girder members outside of the neutral axis of said girder members, said ring girder members being two C channel members welded together to form a box structure, said means secured to the ring girder member comprising vertical reinforcement plates secured to the inner faces of the flanges of said C channel members, said reinforcement plates and C channel members being provided with horizontal slots adjacent the center line of said tank, a horizontal suspension plate having its inner end disposed in said slots and its outer end extending beyond the outer face of said C channel members welded to said C channel members and said reinforcement plates, gusset plates secured to the outer faces of the flanges of said C channel members in alignment with said reinforcement plates, and a cover plate secured to said gusset plates and suspension plate, and aperture means provided in said suspension and cover plate beyond the outer surface of said C channel members.

3,225,954
INSULATED CONTAINER
Wallace D. Herrick, Wichita, Kans., and Howard W. Christie, Kansas City, Mo., assignors to The Coleman Company, Inc., Wichita, Kans., a corporation of Kansas
Filed Aug. 30, 1963, Ser. No. 305,704
5 Claims. (Cl. 220—9)



1. In an insulated container having an inner and an outer wall with an evacuated space therebetween, at least one of said walls being formed of a plastic material, and opposed end portions of said walls forming a joint, the improvement comprising a vacuum-retaining, electrodeposited metal coating covering at least one side of said one plastic wall opposite said evacuated space so that said one wall is capable of maintaining a high vacuum, said metal coating on said one wall extending into said joint between the opposed surfaces of said end portions, the end portion of said one plastic wall having metal particles imbedded in the surface thereof beneath said metal coating for promoting the adherence of the metal coating to the plastic surface, and a solder layer in said joint between the said opposed surfaces, said solder layer being bonded to said metal coating for connecting and sealing said joint, the vacuum maintained in said space being higher than 10^{-3} mm. Hg.

3,225,955
LAND STORAGE FOR LIQUEFIED GASES
George B. Farkas, Jackson Heights, N.Y., and Andrew D. Korin, Oakland, N.J., assignors to Hydrocarbon Research, Inc., New York, N.Y., a corporation of New Jersey
Filed Sept. 27, 1963, Ser. No. 313,142
4 Claims. (Cl. 220—9)

1. Land storage tankage for the storage of liquefied gases at temperatures below about —40° F. and at substantially atmospheric pressure which comprises an external tank adapted to be supported on a ground mounted foundation, said external tank including a base and a wall extending upwardly therefrom, a layer of insulation on said base, a layer of insulation mounted against the internal face of said wall, and an internal tank adapted to receive liquefied gases, said internal tank including a base and a wall extending upwardly from said base, said base of said internal tank being supported from the base of said external tank and being spaced therefrom by the

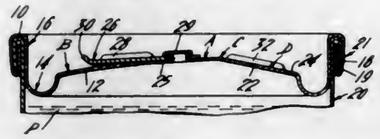


layer of insulation thereon, the insulation mounted against the inner face of the wall of the external tank being spaced from the wall of said inner tank a sufficient distance for personal inspection of the wall of the inner tank and the insulation, a substantially flat cover for said inner tank, insulation on said cover, columnar means to support said cover from the base of said inner tank, a roof for said external tank spaced from said cover, means to support said roof from said cover, and means to seal said roof with respect to the wall of the external tank.

3,225,956
PRESSURE VESSEL SEAL
Lindon C. Laming, Redhill, Surrey, England, assignor to Foster Wheeler Corporation, New York, N.Y., a corporation of New York
Filed Aug. 17, 1962, Ser. No. 217,663
Claims priority, application Great Britain, Aug. 23, 1961, 30,418/61
6 Claims. (Cl. 220—46)

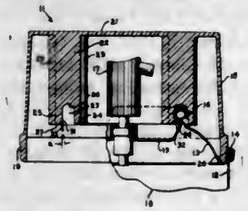
1. In a pressure vessel having a closure member therefor, a sealing arrangement cooperating with said vessel and closure member comprising a pair of continuous annular mating rings adapted to be disposed between opposed surfaces of said vessel and closure member, the facing surfaces of said rings being grooved to define a toroidal chamber, a flexible toroidal membrane disposed within said chamber, means communicating the inside of the pressure vessel with the inside of said toroidal membrane, pairs of gasket means disposed on opposite sides of said rings between distal surfaces of the rings and the opposed surfaces of the vessel and closure member, each gasket means comprising in combination an annular continuous ring of pliable material and an opposite continuous ring having at least one continuous knife-like blade adapted to press into the pliable material, the pressure within the vessel forcing said rings apart and in good sealing contact with said opposed surfaces, said pairs of gasket means providing sealed-off spaces on opposite sides of the ring members.

3,225,957
METAL END CLOSURE
Carl Alexander Huth, Closter, N.J., assignor to American Can Company, New York, N.Y., a corporation of New Jersey
Filed Sept. 20, 1963, Ser. No. 310,207
1 Claim. (Cl. 220—54)



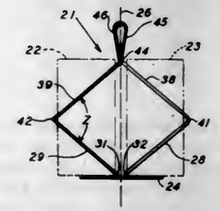
A tearable metal end closure for a container having a pressurized product therein, comprising a circular recessed central panel enclosed within an upstanding end wall, a removable section within said panel enclosed by an endless score line and extending generally along a first radius of said panel, a substantially rigid lift lever having one end secured to the inner end of said removable section adjacent said score line by an integral rivet formed in said section at the center of said central panel, said lift lever extending generally along a second radius which is disposed at an obtuse angle to said first radius, the metal of a substantially circular portion of said central panel surrounding said rivet being thinner than the adjacent surrounding annular portion of said panel, a pair of generally radially extending beads disposed in said annular panel portion on opposite sides of said removable section to shield the raw metal edges of said score line when said removable section is torn from said panel, the inner ends of said beads terminating adjacent said thinner panel portion, said beads reinforcing the immediately adjacent area of said annular panel portion to cause said area and said removable section to symmetrically deform radially inwardly and upwardly in a generally straight plane when said central panel is bowed upwardly by the pressure within the container, said symmetrical deformation of said reinforced panel area causing said thinner panel portion and said lift lever to be inclined radially downwardly relative to said reinforced panel area to insure that the free end of said lift lever will be disposed beneath the upper edge of said upstanding end wall when said panel is bowed upwardly.

3,225,958
PLASTIC OVERCAP FOR DOMED TOP AEROSOL CAN
Henry E. Frankenberg, Berwyn, Ill., assignor to Continental Can Company Inc., New York, N.Y., a corporation of New York
Filed Apr. 17, 1963, Ser. No. 273,599
7 Claims. (Cl. 220—60)



1. An overcap for a can, said overcap comprising a cup-shaped shell having a tubular side wall and a transverse wall closing an end thereof; an annular member depending from said transverse wall, said annular member including an outer wall and an inner wall; a channel in said annular member, said channel providing spaced concentric inner and outer flange extensions for receiving therebetween a curled formation of said can; and a plurality of protuberances circumferentially spaced in staggered relationship on a lower edge of said inner and outer flange extensions on the sides adjacent the channel therebetween.

3,225,959
CARRIER FOR CONTAINERS
Albert L. Jamison, Whittier, Calif., assignor of one-third to Byron V. Curry, Arcadia, Calif., and one-third to Arthur B. Willis, Newport Beach, Calif.
Filed May 15, 1963, Ser. No. 280,536
6 Claims. (Cl. 220—102)

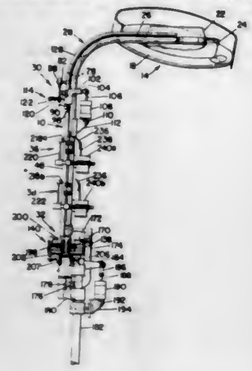


1. A carrier and container package comprising a pair of containers arranged in side-by-side upstanding relation, a floor member for restricting downward motion of each container, said floor member having a central axis on opposite sides of which the containers are arranged, and engaging the bottom end of each container; a pair of first girdles articulately attached to the floor member adjacent the central axis thereof, the girdles sloping oppositely outwardly and upwardly from the floor member and each encircling one of adjacent containers on opposite sides of said central axis; a pair of second girdles articulately attached each to a first girdle on opposite sides of said axis, each of the second girdles sloping oppositely inwardly and upwardly from the first girdle and encircling adjacent containers on opposite sides of the axis; handle means located at the upper end of said carrier and connected to the inner upper ends of the second girdles so as to urge the outer ends of said gridles upwardly and inwardly whereby said girdles press the containers toward each other as upward displacement of the handle in opposition to container weight alters the attitude of the girdles wtih respect to one another, bringing the girdles into more restrictive relation to the peripheries of the containers.

3,225,960
CONTAINER HANDLING APPARATUS
James P. Whelan, Quincy, Mass., assignor to Pneumatic Scale Corporation, Limited, Quincy, Mass., a corporation of Massachusetts
Original application Oct. 26, 1960, Ser. No. 65,191, now Patent No. 3,100,562, dated Aug. 13, 1963. Divided and this application Nov. 21, 1961, Ser. No. 153,831
6 Claims. (Cl. 221—10)

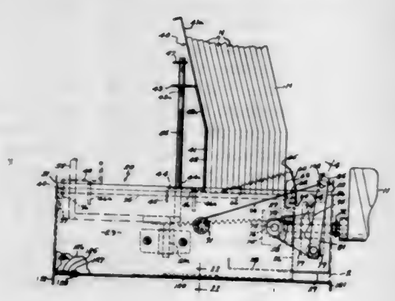
1. In apparatus for handling containers, a vertical guide chute, means for depositing relatively lightweight plastic containers longitudinally end to end into said chute, means for retaining and periodically releasing successive containers deposited into the chute to provide a group of longitudinally aligned containers in the chute, means for periodically removing successive lowermost containers in the group simultaneously with the operation of said releasing means whereby to maintain a group of substantially uniform height, said group being normally maintained

at a height such as to provide sufficient weight above the lowermost containers to hold the latter in operative relation to said removing means and also such as to permit slight elevation of the group during the removing operation, and control means for maintaining said height com-



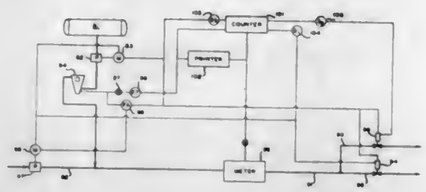
prising means for terminating operation of said container releasing means when the height of the group reaches a predetermined maximum height, and means for terminating operation of said container removing means when the height of the group falls below a predetermined minimum height.

3,225,961
VENDING MACHINE
Regis E. Parks, Columbia, Pa., assignor to Newspaper Enterprise Association, Inc., Cleveland, Ohio, a corporation of Delaware
Filed Jan. 28, 1963, Ser. No. 254,212
9 Claims. (Cl. 221—20)



9. In a vending machine for such articles as newspapers, magazines and the like wherein said articles are sequentially located in dispensing position: pivoted bar means for elevating the lead article to dispensing position in effecting the discharge of the article from the machine; said bar means being provided with a plurality of aligned, laterally spaced article penetrating pins which are axially adjustable relative to said bar means so that they may extend therefrom any desired distances, with consequent limitation of the extent to which they penetrate said article; means for tilting said bar means generally about its longitudinal axis in its elevated position; and said bar means also being provided along a substantial portion of its length with parallel strip means of resilient character movable against the lead articles and causing the withdrawal of said pins of said bar means from the article being elevated when said article reaches a predetermined elevation and said bar means is tilted.

3,225,962
METHOD OF AND MEANS FOR SUPPLYING ADDITIVE TO A FLUID
Robert E. Leobeck, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed July 16, 1964, Ser. No. 383,101
6 Claims. (Cl. 222—1)

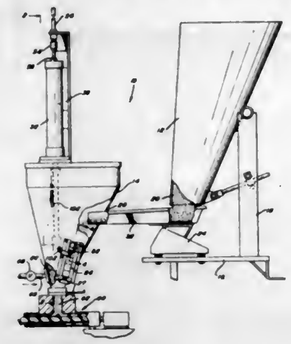


1. A method for supplying an additive to a fluid, comprising the steps of:
transferring a stream of said fluid through a fluid conduit;
introducing said additive into said fluid in said fluid conduit;
metering the flow of said stream of fluid in said fluid conduit and producing a first signal representative of the rate of flow of said stream;
metering said additive introduced into said fluid conduit and producing a second signal representative of the rate of flow of said additive;
integrating said first signal and actuating a first electrical circuit responsive to the occurrence of a first predetermined value of the integration of said first signal;
actuating a second electrical signal responsive to the occurrence of a second predetermined value of the integration of said first signal;
integrating said second signal and actuating a third electrical circuit responsive to the occurrence of a predetermined value of the integration of said second signal;
reducing the rate of flow of said fluid responsive to said actuation of said first electrical circuit;
discontinuing transfer of said fluid responsive to said actuation of said second electrical circuit;
discontinuing the injection of said additive responsive to said actuation of said second electrical circuit when said actuation of said second circuit occurs before said actuation of said third circuit; and
discontinuing the injection of said additive responsive to said actuation of said third electrical circuit when said actuation of said third circuit occurs before said actuation of said second circuit.

3,225,963
HOPPER APPARATUS AND METHOD
Vasken F. Arpajian, Philadelphia, Pa.
(% F. J. Stokes Co., 5500 Tabor Road, Philadelphia, Pa.)
Filed Dec. 7, 1964, Ser. No. 416,514
10 Claims. (Cl. 222—1)

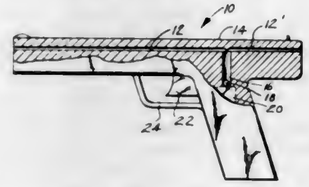
1. Apparatus comprising a hopper having an outlet, feeding means for supplying material to said hopper, control means coupled to said hopper and said feeding means to interrupt the supply of material from the feeding means to the hopper when the level of material in the hopper is above a predetermined level, and means associated with the hopper for agitating the material in the hopper to prevent the material therein from bridging, said agitating means including a member movably

mounted in the hopper for up and down movement above and below said control means, said member moving from a position above the control means to a point adja-



cent said outlet, and a nozzle for introducing pressurized air into the hopper below the predetermined level to keep the material fluffy.

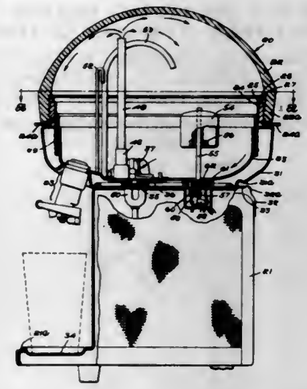
3,225,964
WATER PISTOL HAVING AN UNPREDICTABLE EJECTION DIRECTION
Robert E. Rogstad, 1619 N. 33rd St., Milwaukee, Wis.
Filed July 31, 1964, Ser. No. 386,597
3 Claims. (Cl. 222—79)



1. A novel water pistol comprising in combination a body of pistol shape providing a handle means for holding the pistol, a pivotable trigger carried by said body providing a means within said body for urging water under pressure from a water cylinder within the handle of said pistol, a plurality of inner-connected passageways within said body and communicating with said urging means, a floating ball carried by said body providing a means for closing off one of the inner connected passageways within said body to enable a stream of water to be ejected either forwardly or rearwardly of said pistol.

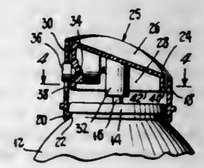
3,225,965
APPARATUS FOR DISPENSING BEVERAGES
William H. Jacobs, Brookline, Edwin Nahikian, Wayland, and Alfred Armstrong, Norwood, Mass., assignors to Product R & D, Incorporated, Waltham, Mass., a corporation of Massachusetts
Original application Oct. 5, 1961, Ser. No. 146,063. Divided and this application Oct. 21, 1964, Ser. No. 416,667
15 Claims. (Cl. 222—129.1)

9. In a beverage dispenser having a bowl for beverages with a generally flat bottom wall, a circulating pump assembly comprising,
a circular well in the bottom wall of the bowl having a flat lower surface and a cylindrical side wall,
a circular cap seated in the plane of the bottom wall of the bowl and having a flat rim which is seated on the bowl bottom about the edge of the well,
an opening through the center of the cap,
a volute-shaped inverted trough provided in the bottom of the cap and defining a central impeller chamber beneath the opening in the center of the cap,
a second opening in the cap at the end of the volute-shaped trough for discharging beverage from the end of the trough,



and an impeller located in the impeller chamber for drawing beverage in the bowl through the opening in the center of the cap and driving it through the trough and discharging it through the second opening.

3,225,966
ACTUATOR CAP CONSTRUCTION FOR AEROSOL DEVICES
Philip H. Sagarin, Bridgeport, Conn., assignor to Valve Corporation of America, Bridgeport, Conn., a corporation of Delaware
Filed Aug. 20, 1963, Ser. No. 303,239
10 Claims. (Cl. 222—153)



1. A one-piece molded plastic actuator cap for a dispensing container comprising, in combination:
(a) a tubular cap body having means for securing it to an aerosol container,
(b) a depress button disposed for vertical movement within and spaced from the cap body,
(c) means on said button, engageable with a valve stem of the aerosol container to actuate the stem,
(d) said button having an orifice for discharging aerosol substance received from the valve stem,
(e) a plurality of short frangible webs spaced from each other and located in the space between and connecting the button and cap body,
(f) said webs being integral with both the button and cap body and the latter and button being otherwise spaced apart and otherwise unattached to each other except by said webs,
(g) said webs normally holding the button in an operative position spaced within the cap body and all said webs becoming completely severed upon the first occasion of the button being shifted vertically in the body for the purpose of actuating the said valve stem,

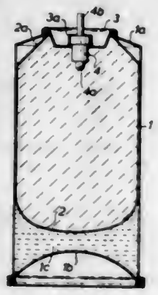
said button being thereby freed of the cap body and carried wholly by the valve stem for movement independently of the body in a path determined by the stem, with which latter it is engaged.

3,225,967

DEVICE FOR DISPENSING LIQUIDS, PASTES AND OTHER FLOWABLE MATERIAL

Josef Heimgartner, Oberrieden, Zurich, Switzerland, assignor to Trichema AG., Zurich, Switzerland

Filed Feb. 18, 1963, Ser. No. 259,000
Claims priority, application Switzerland, Feb. 19, 1962, 1,975/62
1 Claim. (Cl. 222—183)



A device for dispensing liquids, pastes and other flowable materials under pressure, comprising a container, a cone-shaped cover member for the container, the edge of the cover member being engaged on the top edge of the container, a dispensing valve in the cover member, and a bag shaped diaphragm of rubber-elastic material within the container, said diaphragm having a free edge clamped to the cover member, said bag-shaped diaphragm forming a chamber communicating with said dispensing valve and adapted to receive the material to be dispensed, said container being a cylindrical metallic receptacle with an outwardly crimped cover flange, over which the free edge of the diaphragm bag is turned and the cover member is provided with a corresponding flange which follows the curvature matingly of the outwardly curved cover flange, the free edge of the elastic bag also following the curvature of both flanges and being confined therebetween so that the portion of the bag adjacent the lower edge of the crimp is confined, in the bag collapsed position, against the cone shaped element to provide a correspondingly cone shaped portion of the bag rigidly clamped by means of the outwardly crimped edge of the cover member.

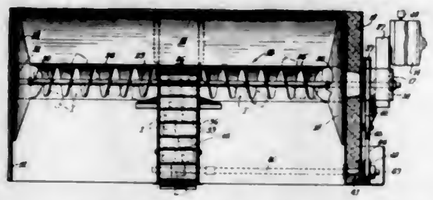
3,225,968

ICE MAKER DISPENSING APPARATUS

Wynn G. Winkler and Donald F. Swanson, St. Paul, Minn., assignors to Whirlpool Corporation, a corporation of Delaware

Filed Jan. 6, 1964, Ser. No. 335,853
10 Claims. (Cl. 222—238)

10. Apparatus for dispensing ice bodies, comprising:
means defining a collecting space for containing a plurality of collected ice bodies and defining a dispensing outlet;
means at said space and spaced from said outlet for agitating said ice bodies as a result of a delivery of ice bodies thereto; and
conveyor means at said space for moving the collected ice bodies toward said outlet for dispensing the ice



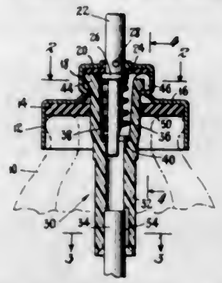
bodies and alternatively in a direction other than toward the outlet to said agitating means for agitating the ice bodies.

3,225,969

AEROSOL VALVE CONSTRUCTION

William R. O'Donnell, Trumbull, Conn., assignor to Valve Corporation of America, Bridgeport, Conn., a corporation of Delaware

Filed Aug. 20, 1963, Ser. No. 303,240
6 Claims. (Cl. 222—394)



1. In an aerosol valve construction, in combination:
(a) a tubular, molded plastic valve housing adapted to be mounted in the upper portion of a pressurized aerosol container, said valve housing having an annular end part arranged to be normally disposed in the gas area of the container, and having a passage through it for aerosol substance,
(b) valve means connected with the valve housing, for controlling the flow of aerosol substance through the passage thereof,
(c) a tubular part tightly engaged with the annular end of the valve housing, said part having a passage through which the aerosol substance passes as it flows through the valve housing,
(d) said annular end part of the valve housing and tubular part having a common connection constituted of co-engaging annular surfaces, one of said parts having a fine groove of commensurate width and depth in the annular surface thereof, said groove being directed at the said passage for aerosol substance in the valve housing and providing a by-pass escape passage for gas through the connection formed by the annual surfaces whereby such gas as a fine jet impinges on and mixes with the aerosol substance passing through the valve housing.

3,225,970

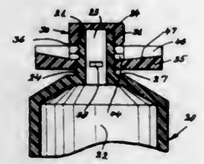
CONTAINER CLOSURE WITH INTEGRAL SPOUT

William J. Rooney, Box 264, Phillipsburg, N.J.

Filed Oct. 2, 1964, Ser. No. 401,133
12 Claims. (Cl. 222—484)

1. A container comprising in combination: a generally cylindrical hollow body for containing fluid, a neck on one end of said body providing communication between the interior of said body and the exterior thereof, said

neck being externally threaded and having a pair of lateral openings in diametrically opposed positions opening into the neck, and a closure on said neck, said closure comprising a cylindrical internally threaded cap removably engaged on said neck, an internally threaded collar integral with said cap engaged on the neck, said closure having a weakened portion between the cap and collar to facilitate separation of the cap and collar when the collar is twisted around the neck while the cap remains stationary, said collar having a pair of holes therein in opposite sides located in diametrically opposed positions for align-



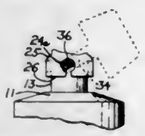
ment with the openings in the neck respectively when the collar is turned down on said shoulder, said collar having imperforate portions located at said openings to seal the same closed both when the collar is joined to the cap and when the collar is turned up on the neck and locked against the cap after being broken loose from the cap, and a pair of generally rectangular wings extending radially outward of said collar at diametrically opposite points thereof aligned with said holes respectively, said wings serving to facilitate turning the collar on said neck.

3,225,971

CAPTIVE CAP FOR CONTAINERS

Alfred Curci, 183 London Drive, Hamden, Conn.

Filed June 3, 1964, Ser. No. 372,151
4 Claims. (Cl. 222—515)



1. In a dispensing container, the combination of a threaded neck part with an axial discharge orifice; a threaded cap part screwable onto and unscrewable from said neck part; tongue and groove formations on said parts, respectively, arranged to be out of and in register with each other on screwing motion of said cap part and on motion of the unscrewed cap part axially of said neck part, respectively, said formations when registering defining between said parts a pivot connection floatable axially of said neck part within limits at one end of which said cap part clears said neck part and is turnable out of and into alignment with said orifice; and means operative on turning motion of said cap part into and from alignment with said orifice to lock said formations in register with each other, whereby said cap part is held permanently captive on said neck part.

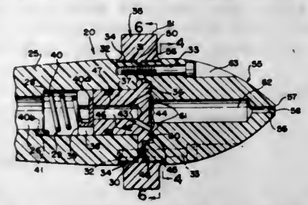
3,225,972

FLUID DISPENSER

Robert E. Brumbach, Box 371, Mantua, Ohio

Filed Jan. 13, 1964, Ser. No. 337,286
7 Claims. (Cl. 222—516)

1. A fluid dispenser comprising, a receiver having an axial bore adapted at one end for connection to a fluid supply line, a nozzle having an axial through bore attached to the second end of said receiver, a disk control valve rotatably mounted between said receiver and said nozzle, an axial hub at the center of said control valve, a stem at one end of said hub matingly engaging said axial bore in the second end of said receiver, means torsionally loading said control valve with respect to said receiver, a valve



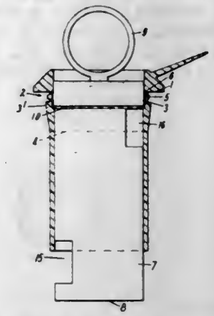
face at the second end of said hub having at least one port communicating with said axial bore in said receiver, a valve seat in said nozzle engaging said valve face and being radially slotted from said through bore for selective communication with said valve face port, and means for controlled rotation of said control valve.

3,225,973

GROMMET APPLIANCES

Rogor Strange Waddington, 6 Magdalene House, Manor Fields, Putney, London, England, and Bruce Duval, "Toftrees," Church Road, Woldingham, England

Filed July 12, 1963, Ser. No. 294,675
Claims priority, application Great Britain, July 13, 1962, 26,962/62
7 Claims. (Cl. 222—522)



4. A dispensing apparatus for a container which comprises a grommet fitting, a liquid delivery tap reciprocable within the grommet fitting in liquid-tight relationship therewith, external circumferential shoulders on the grommet fitting defining therebetween an external groove for locating the grommet fitting axially with respect to the container, a circumferential groove, of greater width than the external groove formed internally within the grommet fitting in such an axial position as to have an axially intermediate part thereof surrounded by the external groove and, between the external shoulders, an external circumferential rib positioned to surround an axially intermediate part of the groove formed internally within the grommet fitting.

3,225,974

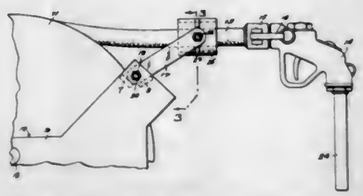
HOSE NOZZLE SUPPORTING DEVICE

Stanley T. Athas, Lowell, Mass., assignor to the United States of America as represented by the Secretary of the Army

Filed July 28, 1964, Ser. No. 385,809
2 Claims. (Cl. 222—529)
(Granted under Title 35, U.S. Code (1952), sec. 266)

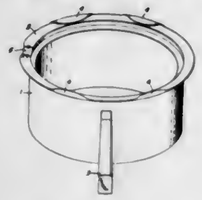
1. In combination with a hose reel including a frame therefor, a hose coiled on said reel and a tubular collar for guiding said hose and supporting said nozzle, said col-

lar being sized to permit free passage of the hose therethrough but being too small to permit passage of the nozzle therethrough; a yoke for mounting said collar on said frame comprising a pair of laterally spaced arms having upper and lower ends, tubular bearing means connecting said lower ends together, an axle fixed to said frame forwardly of said coiled hose and extending through said bearing, said collar having aligned lateral extensions in the nature of tubular trunnions, stub shafts fixed to the



upper ends of said yoke arms and pivotally received in said tubular trunnions whereby said yoke is capable of swinging movement to and from a retracted position wherein said nozzle is supported forwardly of said collar adjacent said coiled hose and an operative position wherein said nozzle is supported in radially outwardly disposed relation to said coiled hose, reel and frame, and interengaging stop means on said frame for limiting the swinging movement of the yoke to said retracted and operative positions.

3,225,975
COOKING VESSELS WITH A POURING LIP
Stig Lennart Hallerbäck, Jarpstigen 6, Sodertalje, Sweden
Filed Feb. 13, 1963, Ser. No. 258,248
3 Claims. (Cl. 222—572)

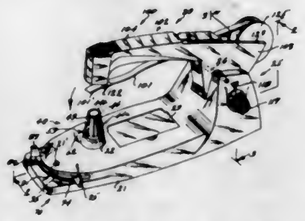


1. A cooking vessel particularly a saucepan comprising a body having a closed lower end, side wall defining means and an upper open end, handle means attached to the body and a separate lid, said body being provided at said open upper end with a flared-out annular rim with an elliptic circumference, said rim being formed with a shallow stepped portion adapted to guide said lid concentrically of the body, at least one pair of holding lug means formed integrally with said rim and disposed beyond the outer circumference of said lid when guided by said stepped rim portion, and said holding lug means being adapted to engage and retain the lid when displaced sideways in tilted positions of the body but providing no obstructions to the removal and placement of the lid in a normal fashion.

3,225,976
BOW MAKING MACHINE
Adolph E. Goldfarb, 7427 Varna St., North Hollywood, Calif.
Filed Jan. 23, 1964, Ser. No. 339,808
9 Claims. (Cl. 223—46)

1. A manually operated machine for making decorative bows from a continuous length of ribbon comprising:

(a) rotatable loop retaining means adapted to hold in a fixed position thereon ribbon applied thereto and to be rotated independently by the first hand of the bow machine operator, said loop retaining means including a rotatably mounted spindle, a sleeve coaxially and slidably mounted on the end of said spindle, said sleeve being biased to a forward position extending partially beyond the spindle end so as to define a cavity and being adapted to be retracted to a rearward position whereby said cavity is at least substantially reduced in depth, and pin retaining means for removably holding a pin extending from said spindle end with the pointed end of said pin adjacent said ribbon feed means, said pin retaining means including an annular shelf in said spindle end with at least one overhanging lip and a locking lever pivotally mounted on said spindle, said locking lever having an

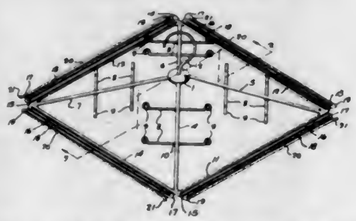


inwardly extending prong on its first end, having a second end extending externally of said sleeve and being biased to have said prong overhang said shelf;

(b) loop operating means for rotating said loop retaining means successively through a predetermined angle, said loop operating means including an operating lever adapted to rotate said loop retaining means by repeated rotation between the same angular positions; and

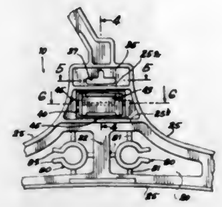
(c) ribbon feed means adapted to successively apply portions of ribbon spaced along the continuous length thereof to said loop retaining means successively to form radiating loops of ribbon and to be operated independently by the second hand of the bow machine operator, said ribbon feed means being adjacent to said sleeve.

3,225,977
HANGERS
John M. Gandy, Box 84, Callery, Pa.
Filed Sept. 4, 1963, Ser. No. 306,560
1 Claim. (Cl. 223—85)



A hanger comprising a hook, a plurality of radial rods each having opposite ends with one of said ends connected to said hook and said rods extending radially from said hook, a plurality of straight side rods each extending between and having opposite ends connected to the other of said ends of a pair of said radial rods, sinuous rods each having an end fixedly connected to one of said opposite ends of one of said side rods, each of said sinuous rods having a plurality of straight sections each of a length similar to their connected side rod with adjacent sections positioned alongside one another and one straight section thereof extending alongside its connected side rod and all of said sinuous rods and side rods being positioned in the same plane.

3,225,978
GARMENT HANGER
Bohumil J. Wach, Western Springs, Ill., assignor, by mesne assignments, to Neo Products Co., Chicago, Ill., a corporation of Illinois
Filed Oct. 9, 1963, Ser. No. 315,037
8 Claims. (Cl. 223—91)



1. A garment hanger formed of thin-walled, lightweight, relatively stiff, resilient material, having

(a) a pair of divergent arms, and

(b) means adjacent the juncture of said arms for detachable engagement with a relatively fixed support,

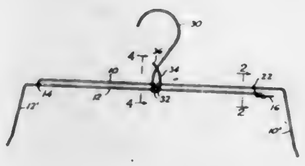
(c) said hanger having a deformation adjacent said juncture for attachment and support of a second hanger in tandem relation thereto,

(d) an auxiliary member molded integrally with said hanger,

(e) a frangible neck securing said auxiliary member to said hanger,

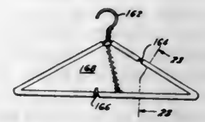
(f) said auxiliary member being manually detachable and then interengageable with the hanger in a different position to facilitate support of a garment.

3,225,979
GARMENT HANGER
Ben E. Lundman, P.O. Box 325, Bay City, Oreg.
Filed Mar. 19, 1963, Ser. No. 266,248
4 Claims. (Cl. 223—94)



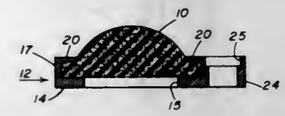
1. A garment hanger comprising first and second elongated rods spaced apart vertically in superimposed parallel relation with the first rod disposed above the second rod and each having an inner end and a garment engaging outer end, guide means on the inner end of the first rod forming an opening freely receiving therethrough an intermediate portion of the second rod for adjusting the outer ends of the rods toward and away from each other, locking means interengaging the rods for releasably securing the rods together against inward movement of the outer ends thereof, a hanger hook, attaching means on the lower end of the hanger hook frictionally gripping the second rod for adjustment along the latter for centering the hooks between the outer ends of the rods, and confining means between the hook and attaching means defining a laterally extending opening freely receiving the first rod only therethrough and confining the latter against rotation around the second rod.

3,225,980
CLOTHES HANGER
Gerhard Wieckmann, Los Angeles, Calif. (15520 Budlong Place, Apt. 3, Gardena, Calif.)
Filed Aug. 2, 1963, Ser. No. 299,501
6 Claims. (Cl. 223—98)



6. A clothes hanger including a hook, from the lower end of which hook two shoulder portions extend downwardly and outwardly, with a cross piece extending between the lower ends of said shoulder portions, said hook, cross piece and shoulder portions being formed entirely from wire which hanger is further characterized by resin beads that envelop said shoulder portions and cross piece, said beads having an integral web of resin extending therebetween.

3,225,981
COMBINATION PROTECTIVE AND UTILITY DEVICE FOR SEWING MACHINES
Angelo Micale, 995 Nassau St., North Brunswick, N.J.
Filed Nov. 14, 1963, Ser. No. 323,634
3 Claims. (Cl. 223—109)



1. In a sewing machine having a frame, a needle bar, said frame having a hole for oiling said needle bar, an attachment comprising a cushion adapted to absorb oil and to hold pins and needles, a holder in which the cushion rests, said holder including a bottom having an aperture formed therein to allow splashed oil to rise through said hole to reach the cushion, an upstanding flange rising from the peripheral edge of the bottom, a cushion-retaining annular flange extending inwardly from the top of the upright flange, the peripheral margin of the cushion compressed between the bottom and the annular flange, and releasable means on said holder for securing the holder to a fixed part of a sewing machine.

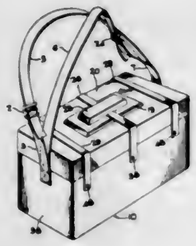
3,225,982
ADJUSTABLE AND PORTABLE FLASHLIGHT
Carl M. Melton, 3183 Delsa Drive, Salt Lake City, Utah
Filed Mar. 11, 1964, Ser. No. 351,036
7 Claims. (Cl. 224—5)



1. A portable light comprising in combination a neckstrap, an enlarged bearing member having a flat plate-like surface connected to said neckstrap and adapted to

rest against the chest of the user, adjustable ball and socket means connected to said bearing member, a flashlight unit, said ball and socket means connected to said flashlight unit and connecting said flashlight unit to said bearing member whereby said flashlight may be supported about the neck of the user and the weight of said flashlight transmitted to said bearing member and distributed across the flat plate-like surface of said bearing member to avoid undue pressure upon the chest of the user, said bearing plate being constructed of two parts, means pivotally connecting said two parts together, said neckstrap having one end thereof connected to the first bearing plate part and the other to the second bearing plate part whereby upon pivoting said two parts of said bearing plate said neckstrap portions may be disposed in a close together position for easy transportation and in a spaced apart position for placement about the neck of the user.

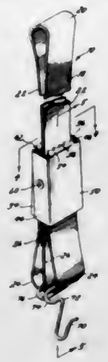
3,225,983
COMBINATION FISHING CREEL AND PORTABLE COOLER
Andrew J. Majka, 717 N. Willard Court, Chicago, Ill.
Filed May 6, 1964, Ser. No. 365,464
5 Claims. (Cl. 224—5)



1. A combined fishing creel and portable cooler comprising a box like container molded from a lightweight insulating material and having a bottom, parallel sides and end walls extending upwardly therefrom and terminating in coplanar upper edges, a top cover for said container having a downwardly opening recess extending thereabout and having a plane marginal surface engaging said coplanar upper edges of said side and end walls and having vertical surfaces depending from said plane marginal surface and extending along the inner sides of said side and end walls to form a substantial seal therefor, a fabric envelope for said container extending along said bottom side and end walls and upwardly along said top cover and over the top thereof and closely fitting said container and cover and forming a hinge for said cover, carrying straps secured to opposite sides of said envelope adjustable to accommodate the carrying of the container on the shoulder and fastening straps secured to the back wall of said envelope and extending over the top of said envelope and securing said cover in a closed position, and accommodating ready opening thereof.

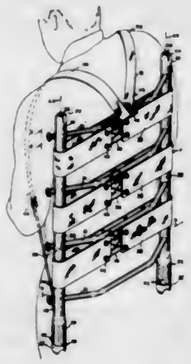
3,225,984
SUPPORT FOR SAXOPHONES AND SIMILAR MUSICAL INSTRUMENTS
Raymond Hyman, 1120 Centennial Road, Narberth, Pa.
Filed July 6, 1964, Ser. No. 380,380
10 Claims. (Cl. 224—5)

1. A support for a musical instrument comprising an elongated substantially flat, generally vertical strap, having a single loop at its upper end opening downwardly and adapted to embrace a person's neck and a pair of loops at its lower end opening upwardly, a hook member slidably engaging and separating said pair of lower loops and adapted for removable attachment to a musical instrument and a means to adjustably lengthen and shorten said single upper loop relative to said pair of lower loops, said means to adjustably lengthen or shorten said loops including a pair of housing members encompassing said



strap intermediate its ends, a horizontal pin pivotally joining said housing members and engaging said strap between said pair of lower loops, gripping means at one end of said housing members to engage said strap, and spring means acting on said housing members to normally urge said gripping means into engagement with said strap.

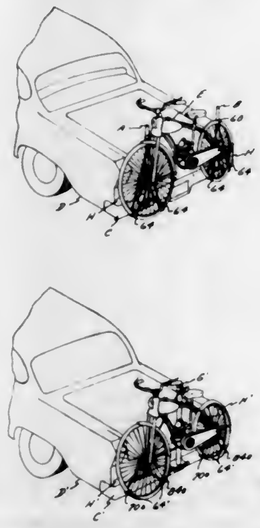
3,225,985
MULTI-PURPOSE PACK CARRIER
Russell H. Romney, 3259 Bon View Drive, Salt Lake City, Utah
Filed Oct. 22, 1963, Ser. No. 317,978
2 Claims. (Cl. 224—25)



1. A pack frame including, in combination, a pair of mutually spaced, upstanding, tubular side members, each of said side members having plural, mutually and longitudinlaly-spaced, transverse, through apertures; plural transverse members, of less cross-sectional dimension than that of said side members, disposed through corresponding ones of said apertures of said upstanding side members in mutually spaced relationship, at corresponding junctures therewith, the opposite extremities of said transverse members protruding outwardly beyond said side members; and means for determining the positions of said transverse members with respect to said side members, and wherein aligned pin apertures are disposed through said junctures of said side members

and said transverse members, and wherein said positions determining means comprise pin means for fixing said transverse members to said side members, and wherein said transverse members are also tubular, said pack frame being provided with projection inserts secured to and within said transverse members by said pin means at their said extremities and having respective head portions of greater dimension than the outside dimension of said transverse members within which they are disposed, protruding outwardly therebeyond.

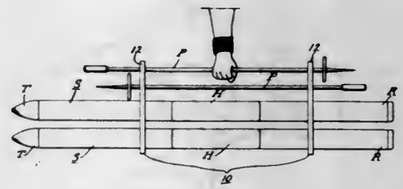
3,225,986
BUMPER CARRIER FOR A TWO-WHEELED VEHICLE
Wayne E. Anderson, 14514 Benfield Ave., Norwalk, Calif.
Filed Aug. 18, 1964, Ser. No. 390,439
10 Claims. (Cl. 224—42.03)



1. A device for removably carrying a two-wheeled vehicle on either end of an automobile having a bumper, including:
(a) an elongate rigid member;
(b) clamp means for removably supporting said member in an upright position from said bumper;
(c) two legs pivotally supported from the upper portion of said upright, which legs have outwardly and upwardly curved lower first portions;
(d) two arms pivotally supported from the lower portions of said legs, which arms have upwardly and outwardly curved lower second portions;
(e) first adjustable means for holding said legs at an angle relative to said upright;
(f) second adjustable means for holding each of said arms at an angle relative to said leg on which it is mounted, with said arms and legs being adjustable to positions where each set of first and second portions cooperatively provide a support for one of the wheels of said two-wheeled vehicle;
(g) means adjustably mounted on said upright for engaging a portion of said two-wheeled vehicle when said vehicle is supported on said first and second portions to hold said vehicle outwardly from said automobile; and
(h) means for removably maintaining said two-wheeled vehicle in a fixed position relative to said upright, legs and arms when the wheels of said vehicle are supported on said first and second portions.

7. A device for removably carrying a two-wheeled vehicle on either end of an automobile equipped with a bumper, including:
(a) two elongate rigid members;
(b) clamp means for removably supporting said members in transversely spaced upright positions from said bumper;
(c) two pairs of legs, each pair of which is pivotally supported from an upper portion of one of said uprights, with said legs having outwardly and upwardly curving lower end portions;
(d) adjustable means for holding each of said pair of legs at a desired angle relative to said member on which said pair of legs is supported, with said lower end portions of each of said pair of legs when so angularly disposed providing a support for one of the wheels of said two-wheeled vehicle;
(e) means adjustably supported on said upright for engaging a portion of said two-wheeled vehicle when said vehicle is supported on said curved lower end portions to maintain said vehicle outwardly from said automobile; and
(f) means for removably holding said two-wheeled vehicle in a fixed position relative to said uprights and legs when the wheels of said two-wheeled vehicle are supported on said curved lower end portions.

3,225,987
SKI AND POLE CARRIER
Eugene V. Bonner, Jr., Maple Glen, Pa., assignor to Sole Manufacturing Co., Inc., Maple Glen, Pa., a corporation of Pennsylvania
Filed July 3, 1964, Ser. No. 380,183
10 Claims. (Cl. 224—45)

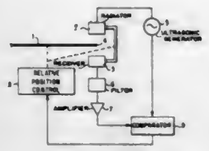


2. A carrier for skis and poles including at least one support frame, means defining at least one pair of pockets disposed in side by side relation in said support frame within which the skis engage and means in said suppor frame for detachably supporting the poles therein, said pole support means and pockets being spaced apart and disposed relative to one another to support the skis and poles in a common plane.

3,225,988
ULTRASONIC WEB POSITION DETECTOR AND ALIGNING MEANS
John W. Drenning, Baltimore, Md., assignor to Koppers Company, Inc., Pittsburgh, Pa., a corporation of Delaware
Filed Aug. 7, 1963, Ser. No. 300,497
5 Claims. (Cl. 226—19)

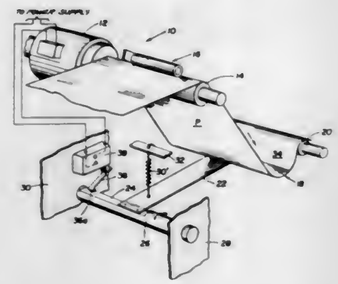
1. Web handling apparatus comprising means for supporting a web, ultrasonic radiator means positionable adjacent an edge of a web on said support in spaced relation thereto and operative to establish an ultrasonic energy field of static intensity level configuration; ultrasonic receiving means positioned to receive energy from the radiator means at levels determined by web edge position relative to the direct transmission channel between the ultrasonic means; actuator means for adjusting the relative position of at least one ultrasonic means and the

edge of a web on said support; circuit means responsive to the ultrasonic receiving means operative to supply a control voltage of a magnitude and polarity dependent on the degree and direction of misalignment of the edge



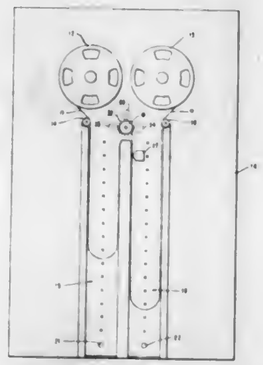
of the web with the direct transmission channel; and means for operating the actuator means responsive to the control voltage to maintain a predetermined alignment of said one ultrasonic means and the edge of a web on said support.

3,225,989
CONTROL SYSTEM
Richard L. Stine, Cardiff by the Sea, Calif., assignor to General Dynamics Corporation, Rochester, N.Y., a corporation of Delaware
Filed Oct. 14, 1963, Ser. No. 315,867
1 Claim. (Cl. 226—44)



In a strip paper feed mechanism which comprises a paper feed roller, a paper guide roller, and a loop of paper between said rollers, wherein paper is withdrawn from said loop at said guide roller and is fed into said loop at said feed roller; the combination therewith of a paper loop control system including an actuating lever having its distal end in contact with the bottom surface of said paper loop and its proximate end fixed to a rotatably mounted shaft, spring biasing means having one end thereof connected to said lever at a point intermediate said proximate and distal ends of said lever, the other end of said biasing means being secured to a fixed point located above said lever for urging said lever upward against the weight of said paper loop, whereby the angular position of said shaft is determined by the size of said paper loop, selectively energizable means for positively rotating said feed roller to feed paper into said loop solely in response to the energization thereof, said selectively energizable means including a plunger-type switch having a movable actuator arm for effecting the energization of said selectively energizable means in response to said arm achieving a first predetermined position and for effecting the deenergization of said selectively energizable means in response to said arm achieving a second predetermined position, coupling means coupling said arm to said shaft for moving said arm between said first and second predetermined positions thereof in accordance with the angular position of said shaft, said arm achieving said first predetermined position thereof at a given minimum size of said paper loop and said arm achieving said second predetermined position thereof at a given maximum size of said paper loop, said coupling means includes a milled flat portion on said shaft, a cam roller riding on said milled flat portion, said cam roller being attached to the end of said arm for moving said arm in response to angular rotation of said shaft.

3,225,990
DIGITAL TAPE DRIVE SYSTEM
Raymond A. Barbeau and Joseph H. Fagut, Poughkeepsie, Dwight O. Johnson, Jr., Wappingers Falls, and Eugene S. Pearson, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 24, 1962, Ser. No. 246,757
7 Claims. (Cl. 226—51)

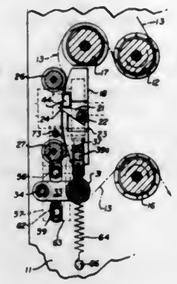


1. A tape driving arrangement for quickly accelerating tape to a required speed,
comprising a continuously rotating friction wheel, a capstan,
a capstan friction wheel, a tape engaging said capstan,
energy dissipative fluid coupling means connectable serially with said capstan friction wheel and said capstan,
and remotely-controlled means for engaging said rotating friction wheel with the surface of said capstan friction wheel to quickly accelerate said capstan.

3,225,991
INTERMITTENT FILM TRANSPORT AND METHOD
William A. Palmer, Menlo Park, Calif., assignor to W. A. Palmer Films, Inc., San Francisco, Calif., a corporation of California
Filed Mar. 1, 1963, Ser. No. 262,002
8 Claims. (Cl. 226—56)

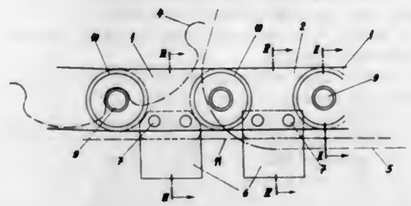
1. In an intermittent film transport for advancing film having perforations therein, a film shoe against which the film is adapted to ride, means mounted on one side of the film shoe and serving as an arresting guide, a fixed registration pin mounted in said shoe away from said arresting guide and adapted to engage the perforations in the film to hold the film stationary on the film shoe in a predetermined zone, means continuously feeding the film over the arresting guide and over the film shoe, means mounted on the other side of the film shoe for continuously taking up the film, roller means engaging the film between the film shoe and the take up means, means yieldably applying a moderate force continuously

to the roller means to cause the roller means to continuously urge the film past the registration pin, a push-off bar adapted to engage the film in the vicinity of the registration pin, a lever arm, means pivotally mounting the lever arm intermediate the ends thereof, means forming a connection between one end of the lever arm and the roller means, cam means engaging the other end of the lever arm, means rotatably mounting the cam means, yieldable means engaging the lever arm and serving to move the lever arm in a direction so that it is urged into



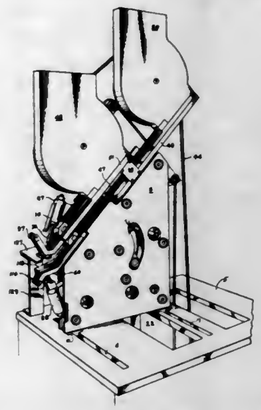
engagement with said cam means, and means for causing movement of said push-off bar and said cam means so that said push-off bar causes said film to be pushed off of said registration pin and substantially simultaneously causes said lever arm to be released so that the lever arm is moved rapidly into engagement with the roller means under the force of the yieldable means to thereby rapidly accelerate the roller means and the film to provide a fast pull-down of the film.

3,225,992
APPARATUS FOR GUIDING ELONGATED MEMBERS
Fritz Ungerer, Arlingerstrasse 6, Pforzheim, Germany
Filed Oct. 7, 1963, Ser. No. 314,309
Claims priority, application Germany, Oct. 15, 1962, U 9,326
7 Claims. (Cl. 226—170)



1. For use in an apparatus for moving and guiding elongated members such as elongated sheet metal bands or the like, in combination, a chain including a plurality of links each comprising a pair of spaced, elongated, substantially parallel plates, the ends of the plates of one link overlapping the ends of the plates of the link adjacent thereto, and pivot pins pivotally connecting the overlapping ends of adjacent links; a hardened socket member for each link and each socket member having an attaching portion extending between the plates of the respective link and a guide portion projecting to one side beyond said plates and being formed with an elongated open-ended slot extending substantially parallel to said plates and adapted to engage an edge portion of the elongated member to be guided; and connecting means for releasably connecting each socket member in a fixed position directly to the plates of the respective link.

3,225,993
SNAP FASTENER ATTACHING MACHINE
St. John Merrill Hall, Peabody, Mass., assignor to Scovill Manufacturing Company, Waterbury, Conn., a corporation of Connecticut
Filed Oct. 9, 1964, Ser. No. 402,858
8 Claims. (Cl. 227—18)

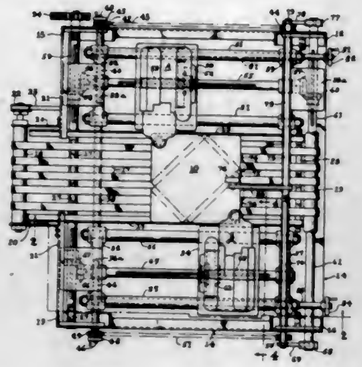


1. A snap fastener attaching machine comprising a frame, a plurality of complete snap fastener attaching units mounted side by side on said frame and adjustable toward and away from each other, each unit comprising
(a) a pair of spaced vertical support plates;
(b) upper and lower feed tracks, one for the snap fastener elements, the other for the attaching members;
(c) a pair of hoppers for feeding fastener elements and attaching members to said tracks;
(d) supporting means for said tracks and hoppers, said supporting means being secured to said plates;
(e) an escapement device attached to each track;
(f) escapement operating means guided in said supporting means;
(g) upper and lower setting tools;
(h) operating means for each of said tools, including a lever having a pivotal mounting between said plates;
(i) means for actuating said levers including a cam between said plates and a downwardly extending link; all of said means defined in clauses (b) (c) (d) (e) (f) (g) (h) and (i) being located substantially within the vertical confines of the outer side faces of said plates; and common power driven means connected to all of said links for simultaneously operating all of said attaching units.

3,225,994
MACHINE FOR SETTING FASTENERS UPON BLANKS
Eugene A. Anderson, Lombard, Ill., assignor to Scovill Manufacturing Company, Waterbury, Conn., a corporation of Connecticut
Filed Oct. 14, 1963, Ser. No. 316,103
9 Claims. (Cl. 227—39)

1. In a machine for applying a pair of complementary snap fastener elements to a blank; said machine comprising a frame consisting of four end standards joined by connected channels, one pair of standards being at the entrance end of the machine and the other pair being at the discharge end of the machine; cross rods connecting the entrance end and the discharge end standards together, four sets of carriages slidably mounted on said cross rods, means connecting two sets of carriages together so that

they can slide as a unit transversely of the machine; a pair of fastener setting units, one unit mounted on one of carriage connecting means and the other unit mounted on the other carriage connecting means; longitudinal and transverse drive shafts connected between all of said car-



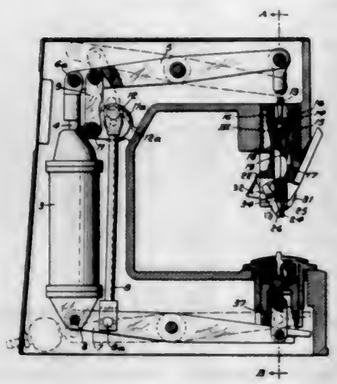
riages and arranged in a rectangular pattern; means for operating each of said shafts within said carriages, one of transverse shafts being power driven; and drive means for operating said setting units directly from said longitudinal shafts.

3,225,995

MACHINE FOR AUTOMATIC APPLICATION OF CIRCUIT ELEMENTS, PREFERABLY OF PRINTED CIRCUITS

Herbert Martin Dorrer, Muhlhausen, Pforzheim, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed Sept. 12, 1962, Ser. No. 223,222
Claims priority, application Germany, Sept. 14, 1961, St 18,323
3 Claims. (Cl. 227—85)



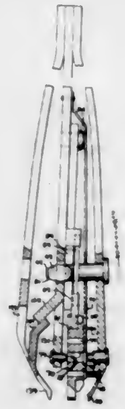
1. A machine for forming, inserting, and fastening leads of lead bearing components to substrates having holes therein, comprising: a source of power, an upper and lower driving rod, means coupling said source of power to said rods, said upper rod having a lower ball shaped end fitting into a tiltable rocker cup, a drift punch, a wire bender, the upper ends of said drift punch and wire bender being adapted to be engaged by said rocker cup and driven thereby, a member having a shoulder over which the leads of the components are bent, means including a guide controlling the tilt of the rocker cup to initially move the drift punch in advance of the wire bender downwards towards the leads to bend the leads once to form a first shoulder, then to advance the wire bender ahead of the drift punch to bend said leads again to form a second shoulder, and finally to advance both the drift punch and the wire bender to insert the lead ends into holes of the substrate, and a plunger having an anvil at its upper end and operated by said lower driving rod to bend the leads passing through said hole against said substrate.

3,225,996

INDIVIDUAL STAPLER

Rudolph F. Mallina, Hastings on Hudson, N.Y., assignor to Codman & Shurtleff Inc., Boston, Mass., a corporation of Massachusetts

Filed July 2, 1963, Ser. No. 292,498
16 Claims. (Cl. 227—137)



1. A stapler, for use in fastening at each actuation a single miniature staple having two legs and a crown connecting the legs, comprising in combination,

(a) a pair of forceps including two arms movable relative to each other,

(b) a cartridge holder mounted between said two arms on said forceps, and

(c) a cartridge removably emplaceable in predetermined position on said holder, said cartridge defining an opening having two opposite straight parallel grooves each adapted to receive the leg of a staple pointing with its free end in one direction, the grooves being spaced apart from each other for a distance comparable to the width of the staple thereby engaging frictionally the legs of the staple suspending the staple with the crown extending across said opening, one of said arms comprising

(d) an anvil adjacent the position of the free end of the legs of said suspended staple when the cartridge is emplaced and having two curved clinching grooves, the other arm comprising

(e) a driver adjacent the position of said staple crown when said cartridge is emplaced and including a plate element movable arcuately oppositely towards and from said anvil and operable to abut, and to press against, said crown thereby to drive the staple in a straight movement in said direction towards said clinching grooves,

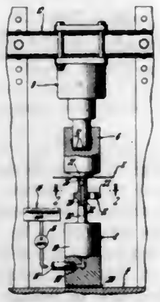
(f) sa d plate element having a width greater than the thickness of said crown.

3,225,997

SONIC VIBRATION SPOT WELDER

Floyd A. Wyczalek, Birmingham, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed July 31, 1962, Ser. No. 213,813
5 Claims. (Cl. 228—1)



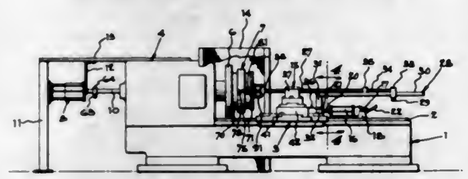
1. Apparatus for welding metal members together comprising a pair of columns having end portions between which said members to be welded are disposed, means for moving one of said columns into end portion contact with said members so as to apply a predetermined force in one area thereof, the other column formed with a confining chamber which is located on an axis offset from the column axis, a mass disposed in said chamber and adapted to orbit about the chamber so as to create a rotating force vector in a plane normal to said column axis, and means for driving said mass in said orbital path at a frequency which causes said column to resonate in a standing wave with torsional and oscillatory bending whereby vibratory energy is directed to said one area to form a weld between the members.

3,225,998

APPARATUS FOR CLOSING THE ENDS OF PIPES

Dudley Bowman, Lebanon, Ohio, assignor, by mesne assignments, to Gas Appliance Supply Corporation, Indianapolis, Ind., a corporation of Indiana

Filed June 18, 1962, Ser. No. 203,235
8 Claims. (Cl. 228—2)



1. A machine for closing an end of a pipe section by progressively swaging a heated end portion thereof comprising, a frame, a rotatable pipe closing head mounted on the frame, means for clamping the pipe section against rotation with the heated end portion thereof presented to said head and with the longitudinal axis of the pipe section located substantially in alignment with the axis of rotation of the head, a pipe closing element mounted on said head for rotation therewith and for motion from a retracted position along the head toward and across the axis of rotation of said head, and back-up means mounted on the head for rotation therewith, said back-up means mounted in a position opposite to the said closing element and adapted to engage the periphery of the pipe section on the side opposite the closing means during the motion of the closing element toward and across the axis of rotation of the head, whereby the closing element is adapted to swage the heated end portion of the stationary pipe section to the form of an end wall having a substantially flat external surface disposed at right angles to the longitudinal axis of the pipe section while the back-up means support the end portion of the pipe against the pressure applied thereto by the closing element.

3,225,999

JOINING DEVICE FOR METAL STRIP MATERIAL

John F. Heller, Lyndhurst, Ohio, and John D. Morley, Monitor Township, Bay County, Mich., assignors to National Electric Welding Machines Co., Bay City, Mich., a corporation of Michigan

Filed Oct. 1, 1962, Ser. No. 227,446
3 Claims. (Cl. 228—4)



1. An apparatus for joining together adjacent ends of two elongated strips of weldable material, comprising:

means for supporting two elongated strips of weldable material and feeding same in a longitudinal direction so that adjacent longitudinal ends of said strips are overlapped;

a frame adapted for receiving the overlapped adjacent ends of said two strips;

clamping means for clamping together said adjacent ends to said two strips while maintaining such overlapping relation;

a movable carriage and means mounting said carriage on said frame for transverse movement with respect to said strips from one lateral edge of said strips to the opposite lateral edge thereof;

a pair of vertically spaced seam welding roller electrodes mounted on said carriage and adapted to be positioned respectively above and below said strips and engaging opposite sides thereof whereby, as said carriage is moved transversely across said trips, the overlapped adjacent end of said strips can be welded together with the longitudinal extent of the weld zone being less than the longitudinal extent of the overlapping;

a pair of substantially parallel, offset and adjacent shearing means mounted on said carriage for movement therewith, said shearing means being located behind said seam welding electrodes and being movable simultaneously therewith for cutting off portions of the strips between the weld zone and the free edges of said strips.

3,226,000

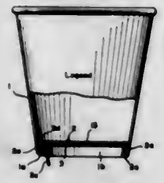
CUP WITH DESTRUCTION INDUCING MEANS

Gean Poole and J. Robert Hoff, Omaha, Nebr., assignors to Ballantyne Instruments and Electronics Inc., Omaha, Nebr., a corporation of Delaware

Filed Aug. 3, 1964, Ser. No. 386,998
4 Claims. (Cl. 229—1.5)

1. A container of the type intended to be destroyed against reuse as such after a single use thereof, including means inducing the holder thereof to destroy same, com-

prising a body having a continuous side wall and a bottom therefor, said bottom comprising a plurality of thicknesses of material with space between them for the reception of reward indicating indicia, one of said thickness comprising a skirted disc seated within the lower portion of said container with the skirt portion of said disc in frictional contact with the wall of said container, the other of said thicknesses comprising a disc seated against the lower wall of said first thickness within the confines



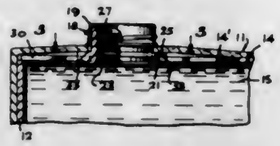
of said skirt, and a tab extending outwardly of said skirt portion, the lower edge of said container being folded around the edge of said skirt portion and enclosing a portion of said tab within said fold, the folded portion of said container being crimped against said skirt and a portion of said tab, a further portion of said tab projecting outwardly of said crimped portion, whereby it may be gripped to pull said bottom out of said container, said bottom thicknesses being separable to disclose said space.

3,226,001
CANS AND BOTTLES WITH SELF-CONTAINED DRINKING STRAWS
Nabor Sequeira, 16 Sagar Darshan Warden Road, Bombay 26, India
Filed June 22, 1964, Ser. No. 376,871
Claims priority, application Great Britain, Sept. 26, 1963, 38,047/63; May 11, 1964, 19,615/64
3 Claims. (Cl. 229—7)



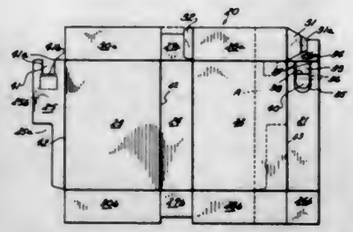
1. A drink dispenser which comprises a can, a wall sealing one end thereof, a drinking straw housed within the can with the first end of the straw positioned adjacent to the periphery of the sealing wall and the second end of straw in abutment with the periphery of the other end of the can at a position opposite from the first end of the straw, a straw engagement component within and adjacent to the sealing wall and spaced downwardly from said sealing wall and being seamed to the side wall of the container, said component being formed with an elongate tapered aperture, one end of which aperture has a gripping fit for the straw to engage the straw near the first end of the straw and thereby locate the straw in the can, and, after opening the sealing wall of the can, to grip the straw at any required position along the length thereof and thereby hold it projecting outwardly from the can by any required amount, and the other end of which aperture is wider than the outer transverse dimension of the straw.

3,226,002
FLEXIBLE CONTAINER, FITTING THEREFOR, AND COMPOSITE PACKAGE
James W. Walker, 1003 S. Los Robles, Pasadena, Calif.
Filed Apr. 22, 1963, Ser. No. 274,630
1 Claim. (Cl. 229—14)



A composite package for the storage, shipment and handling of liquids and other contents in non-rigid containers, comprising a carton having side walls terminating at one end in flaps adapted to be folded to lie substantially in a plane normal to the side walls to form a multilayer end wall, a non-rigid container within said carton adapted, when filled, to occupy substantially the entire interior space of the carton, a substantially rigid tubular fitting secured to said container and serving as a neck therefor, said fitting having a pair of axially spaced flanges, one of said flanges being at the inner end of said fitting and providing an end face against which said non-rigid container is secured, two of the end flaps of the carton each extending from their side walls substantially one-half the distance across the end of the carton toward each other and being recessed at their adjacent inner margins to receive the portion of the fitting between said flanges whereby said flanges overlie and underlie said two end flaps, and outer end flap means overlying said two end flaps and secured thereto, said outer end flaps means being apertured to receive the projecting portion of the fitting, said fitting having at least one integral relatively thin radial web between said flanges received between the adjacent edges of said two end flaps whereby to lock said fitting against rotation relative to the carton.

3,226,003
CARTON AND BLANK THEREFOR
Robert J. Hickin, Seville, Ohio, assignor, by mesne assignments, to PKG Corporation, Evanston, Ill., a corporation of Delaware
Filed Nov. 29, 1963, Ser. No. 326,718
6 Claims. (Cl. 229—17)



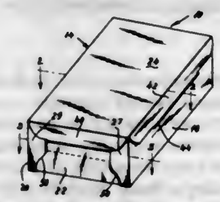
1. A seal end carton comprising a first panel and a second panel secured to the concealed surface of said first panel; a tab formed in said first panel and partially defined on the exposed surface thereof by a first pair of spaced cut-scores, and partially defined on the concealed surface thereof by a second pair of spaced cut-scores, the spacing between the cut-scores of said first pair being greater than the spacing between the cut-scores of said second pair and defining tab marginal portions; said first panel including a foldably connected top-closing dust flap, the foldline therefor defining in part the periphery of said tab; and a foldable top-closing cover flap which overlies said dust flap to effect closing of the carton top, said cover flap including a foldable ear which overlies and is secured to the exposed surface of said tab; said second panel being provided with an opening disposed in registered relation with respect to said tab, the portions of said second panel circumjacent said opening being in sealing engagement with said tab marginal portions.

3,226,004
EGG CARTON
Francis A. Cilluffo, Elmhurst, N.Y., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Apr. 8, 1963, Ser. No. 271,348
11 Claims. (Cl. 229—28)



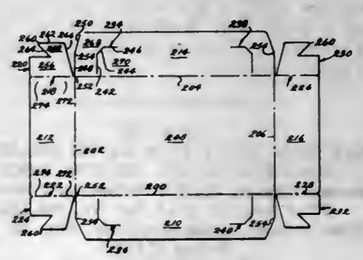
1. In containers of the type including an article compartment and at least first and second panels joined to each other along a fold line, the improvement comprising a tab formed from and normally coplanar with the first and second panels, said tab being defined by a cut line and a line which is weaker than the material of either of the panels, said cut line being located in the first panel and extending at least slightly across the fold line into the second panel, and said weakening line being spaced to one side of said cut line and being located in both of said panels and extending across said fold line, said weakening line terminating at said cut line in both the first and second panels, said weakening line defining means for permitting the automatic projection of said tab from the normal coplanar position thereof into said article compartment upon the folding of said first panel relative to said second panel about said fold line in a first direction, and said weakening line also defining means for preventing the projection of said tab of the coplanar relationship thereof with said first and second panels upon the folding of said first panel relative to said second panel about said fold line in a second direction opposite to said first direction.

3,226,005
FOLDABLE PAPER CONTAINER
Richard E. Paige, 411 E. 57th St., New York, N.Y.
Filed Mar. 12, 1964, Ser. No. 351,396
3 Claims. (Cl. 229—33)



1. A tray-like rectangular folding carton comprising a bottom panel, a front panel hingedly connected to one side of said bottom panel, a back panel hingedly connected to the opposite side of said bottom panel, and two side flaps hingedly connected to the opposite side edges of both the front panel and the back panel, each of the said side flaps having a hook, two hingedly connected end panels, each having two hooks to engage the side flap hooks which extend from the front panel and back panel; said bottom panel having two slits running from the ends of the juncture of each end panel with said bottom panel and extending toward the center of the bottom panel for a limited distance, to permit the two end panels to rise slightly, hook onto the hooks of the four side flaps, then sink back to flat bottom position with the four side flaps held directly over the bottom wall slits, thus interlocking the hooks in their engaged position and the bottom wall slits in their flat position.

3,226,006
CARTON BLANKS AND RESULTING CARTONS WITH FULCRUM LOCKING OF SIDE PANELS
Maurice B. Dunn, Charlotte, N.C., assignor to Memco Machinery Corporation, Charlotte, N.C., a corporation of North Carolina
Filed Nov. 27, 1962, Ser. No. 240,298
11 Claims. (Cl. 229—35)

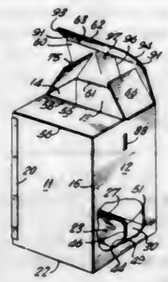


1. In a blank foldable to form a carton or the like having a plurality of corners, the area of the blank for one of said corners being formed by first and second outside panels and an inside panel to which said outside panels are hinged respectively along adjacent inside panel edges, said first outside panel having hinged to its end edge at said one corner a flap which defines a locking tab having a tip, said second panel having an internal slit adjacent its end edge at said one corner for receiving said locking tab, the improvement comprising fulcrum means at the said end edge of said second panel and including a fulcrum intermediate the outer edge of said second panel and the hinge of the second panel to said inside panel for initially preventing at least complete entry of said tip into said slit when said first panel is fully folded about its hinge with the said inside panel but then allowing complete entry of said tip into said slit when the so fully folded first panel is then flexed about the fulcrum to cause said tip to rotate toward said inside panel and through said slit.

3,226,007
CARTONS
Robert Thies and John F. Ratsaitz, New Hyde Park, and Francis L. Mathieu, Long Island City, N.Y., assignors to Herbert A. Post, Inc., Woodside, N.Y., a corporation of New York
Filed Apr. 3, 1964, Ser. No. 357,047
5 Claims. (Cl. 229—39)

1. A carton comprising four panel walls rectangularly arranged, a pair of outer semiclosure flaps integrally connected to the upper ends of two opposite panel walls respectively by respective fold lines and having tuck extensions at their free ends separated from said flaps by fold lines and tucked inside said carton, said flaps being dimensioned to bring the two tuck extensions together face to face, one of said semiclosure flaps having a trap door in

the form of a tongue supported only at one end along a hinge line for hinge action about said hinge line, said hinge line being substantially parallel to and spaced from the fold line of the tuck extension of the latter semi-closure flap, said trap door extending from said hinge



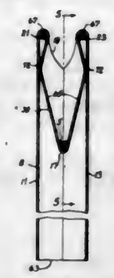
line towards the latter fold line and having its other free end near the latter tuck extension, said tuck extensions forming a guide wall inside said carton for guiding articles dropped into said carton through the entranceway defined by said trap door.

3,226,008
CONNECTION JOINT FOR PAPER-BOARD-MADE PACKING BOXES OR THE LIKE
Bartolomeo Chiorri, Via XX Settembre 5, Monza, Italy
Filed Aug. 26, 1963, Ser. No. 304,739
Claims priority, application Italy, Aug. 28, 1962, Patent 674,925
1 Claim. (Cl. 229—49)



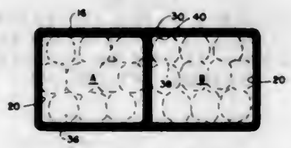
A connection joint for connecting folded corner edges of packing boxes, comprising an integral elongated section member having in its cross-section a U-shaped portion with two spaced apart arm portions and a central portion connecting said two arm portions and extending transverse thereto said arm portions having each a free extremity and mutually converging in the direction leading beyond said free extremities, the angle of said convergency being an acute angle, a diaphragm portion connected with one end thereof to an intermediate portion of said central portion and extending at a right angle therefrom between said arm portions, said diaphragm portion having a free end projecting beyond the free extremity of said arm portions, and being spaced apart from said arm portions, a wing portion fixed on said free end and extending transverse to said diaphragm portion above said free extremities, said wing portion having a central portion perpendicular to said diaphragm portion and free ends inclined towards said free extremities and extending along a length of said arm portions near said free extremities thereof and in spaced relationship thereto, thereby to provide a first gap between said free ends and said arm portions near said free extremities and extending substantially in the direction of said arms, and a second gap communicating with said first gap and extending between said arms and said diaphragm member at an acute angle to said first gap.

3,226,009
BAG
Robert C. Mueller, Affton, Mo., assignor to Bemis Bro. Bag Company, St. Louis, Mo., a corporation of Missouri
Filed June 9, 1961, Ser. No. 115,964
7 Claims. (Cl. 229—66)



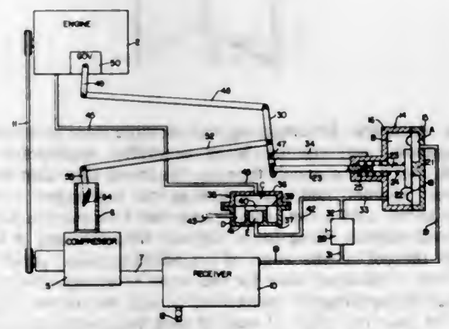
1. A drawstring bag of flexible material having in its initially manufactured condition: a closed top end, an open bottom end, and opposed side edges, and including oppositely disposed front and back face panels merging together in three lines of fold at said top end, said lines of fold being spaced from and alternating in direction of fold with respect to each other to provide an interiorly disposed gusseted construction which is entirely below said top end and which includes two oppositely disposed interior panels respectively adjacent said front and back face panels, each of said interior panels, at their respective ends and adjacent the middle fold of said three lines of fold, being attached to the respective of said side edges of the bag, and each said interior panel being further attached, substantially along its length between said side edges and in parallel spaced relation with respect to the respective of said first and third lines of fold, to the said respectively adjacent of said front and back face panels to provide a tubular hem of each of said front and back face panels adjacent said top end, and drawstring means disposed within said tubular hems, said middle line of fold includes a weakened line of tear for manual rupturing thereof substantially along its length.

3,226,010
CIGARETTE PACKAGING
Ford Rogers, Jr., Alger Court, Bronxville, N.Y.
Filed Nov. 26, 1963, Ser. No. 325,965
1 Claim. (Cl. 229—87)



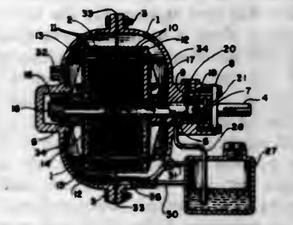
A cigarette package having separate dual compartments for jointly packaging twenty cigarettes, such package being of the standard soft paper type and adapted to be dispensed in a machine normally handling standard size packages, said package consisting of a common foil lined wall member having a back portion, a first front portion of less width than the back portion, a second front portion of a width, together with the width of the first front portion, equalling the width of the back portion, said first front portion having integral first and second end portions, the first end portion also being integral with the back portion, said second end portion having an integral seal portion adapted to be sealed to the back portion to constitute a closed wall first compartment, the second front portion having integral first and second end portions of the same width as the first and second end portions of the first compartment and also having an integral seal portion adapted to be secured to the back portion to form a closed second compartment, each of said compartment portions having independent overlapping flap portions to form separate independent sealed compartments, each of said wall members having an integral tear strip whereby each compartment is separately opened and a wrapper for said combined compartments.

3,226,011
COMMANDAIR CONTROL SYSTEM
Roger B. Gustafson, Michigan City, Ind., assignor to Joy Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 27, 1964, Ser. No. 356,352
12 Claims. (Cl. 230—2)



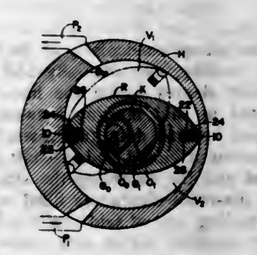
1. A compressor control system for an engine driven compressor comprising; power means for driving such compressor, flow control means for controlling the flow of fluid to the compressor, a control regulator having a movable diaphragm therein dividing said regulator into a first and second chamber, stop means mounted in said first chamber limiting the movement of said diaphragm in a first direction to reduce the volume of said first chamber, linkage means connecting said diaphragm and said flow control means for regulating fluid flow through said flow control means, said regulation of fluid flow resulting upon movement of said diaphragm away from said stop means which direction defines a second direction opposite in direction to said first direction, said flow control means regulatable from a full open position through a progressive throttling to a shut-off position wherein the flow of fluid to the compressor is correspondingly controlled by movement of said diaphragm from a position adjacent said stop means to a position further away from said stop means resulting from movement in said second direction to a fully extended position corresponding to said shut-off position of said flow control means, said linkage means having flow restrictive means actuated upon movement of said diaphragm to said fully extended position for venting said second chamber to atmospbere, said second chamber having spring means for biasing said diaphragm against said stop means, a control device having a pre-settable valve therein for controlling the upper limits of pressures of fluid passing therethrough, said control device having an upstream connection to said receiver and a downstream connection to said second chamber, said presettable valve maintaining the downstream pressure in said downstream connection at a pressure up to said upper limit, and said diaphragm being responsive to a difference in the pressures in said chambers to regulate said flow control means.

3,226,012
CENTRIFUGAL COMPRESSOR
Allen Trask, 1 Noyes St., Utica, N.Y.
Filed Oct. 28, 1963, Ser. No. 319,325
4 Claims. (Cl. 230—117)



1. A centrifugal compressor rotor including an axial tubular shaft and comprising a stack of concentric annular discs including a number of large discs and a number of smaller discs, and end plates defining a central rotor chamber, one of each smaller discs being disposed alternately betwen adjacent large discs, said large annular discs each having a number of radial tapered slots between its inside and outside circumferences, said slots diminishing in width toward the periphery of the rotor, said smaller annular discs being dimensioned to cover said tapered slots except for their ends whereby said slots become radially tapered passages providing communication between the inside and outside circumferences of said smaller discs.

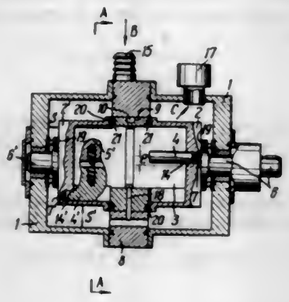
3,226,013
ROTARY MACHINE
Shoichiro Toyoda, Nagoya, and Shigeru Sakakibara, Chita-gun, Japan, assignors to Toyota Motor Company Limited, and Aichi Kogyo Kabushiki-kaisha, Toyota, Japan
Filed Apr. 28, 1965, Ser. No. 451,592
Claims priority, application Japan, May 4, 1964, 39/25,191
22 Claims. (Cl. 230—145)



1. In a rotary machine comprising a rotor member, a housing member including therein a plurality of chambers for compressing a fluid introduced therein, said rotor member being disposed in the interior of said housing member to define said plurality of chambers with said housing and capable of being driven eccentrically to the central axis of said interior of said housing, said housing member and said rotor member having respectively an internal cross-sectional profile and an external cross-sectional profile determined on the basis of an *n*-ple epitrochoidal curve, and an apex seal structure between any pair of adjacent chambers for hermetically sealing therebetween, the combination of said seal structure having a profile based upon an isosceles

triangle substantially smaller in dimension than the radius vector of said *n*-ple lobed epitrochoidal curve, and including at least a pair of longitudinal ridge portions; said housing member having the internal cross-sectional profile following a curve prepared by moving an isosceles triangle identical to said isosceles triangle for said seal structure, along said epitrochoidal curve in such a manner that two vertices for the base of the moving triangle move along a modified curve spaced in parallel from said epitrochoidal curve a predetermined minute length while the remaining vertex depicts said epitrochoidal curve to determine said modified curve, and radially displacing said modified curve in parallel thereto by a length equal to a distance between the extremity of said ridge portion of said seal structure and the base of the triangle for said seal structure; and said rotor member having the external cross-sectional profile determined by an envelope formed of said curve determining said internal cross-sectional profile of said housing member; said seal structure being disposed at each apex of the rotor member to hermetically contact the housing member.

3,226,014
TWO-STAGE PLATE ROTARY VACUUM PUMPS
Nikolai Petrovich Janenkov, Varshavskoe Chaussee, 153, Block I, Apt. 16, Moscow, U.S.S.R.
Filed July 12, 1963, Ser. No. 294,566
4 Claims. (Cl. 230—158)



1. A vacuum pump, particularly of the two-stage type, comprising a housing, two coaxially and oppositely arranged rotatable sleeves within the housing, a bushing rigidly mounted in said housing between said sleeves, said sleeves and bushing constituting working chambers, each sleeve having a closed end, a shaft rigidly secured to each closed end for mounting the sleeves within the housing with pre-rated clearances filled with oil for ensuring pump sealing, one of said shafts defining a driving shaft, a rotor mounted within said sleeves eccentrically to the axis of rotation of said sleeves, said bushing in said housing serving as a rotor bearing and isolating said working chambers from each other, said bushing being provided with duct means defining the two pump stages during successive connection of the working chambers and ducts for the inlet and outlet of the transferred medium, said rotor having a slot at each end thereof, said slots being arranged at an angle of 90° relative to each other, spring-cushioned vanes arranged in each slot, and two of said vanes being jointly coupled to the inner surface of each sleeve so that during rotation of the sleeve having the driving shaft secured to said vane jointly coupled to the inner surface of said sleeve, rotation is imparted to the rotor and from the rotor to the other sleeve via the vane jointly coupled to the inner surface of the closed end of the other sleeve.

3,226,015
WASTE RECEPTACLE
Mario Manfredonia, Glen Cove, N.Y., assignor to Union Bag-Camp Paper Corporation, New York, N.Y., a corporation of Virginia
Filed July 9, 1964, Ser. No. 381,388
6 Claims. (Cl. 232—43.2)

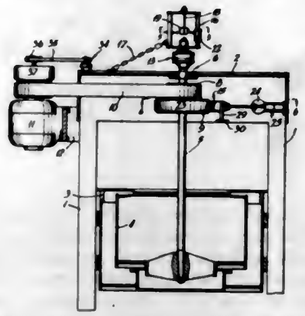


1. A cabinet for enclosing a disposable liner in a waste receptacle, said cabinet being generally rectangular in form and having panels forming the front, sides and back of said cabinet, said panels having free top edges; a bottom panel; and a top panel; the panel forming the front of said cabinet being longitudinally hinged along a side edge thereof to the edge of an adjoining side panel to provide a full front door for the waste receptacle; said top panel being hingedly connected along one of its edges to the free top edge of one of said panels forming the sides and back of said cabinet to thereby provide a lid means for the waste receptacle; said top panel further including a flange member along its front edge extending normal to the plane of the top panel, said flange member overlapping the adjoining free top edge of said panel forming the front door of said cabinet when the top and front panels are in closed position; individual flap means hingedly secured to said top edges of each of the front, side and back panels of said cabinet, said flap means being secured to hang vertically downward parallel to and closely adjacent said front, back and side panels of said cabinet; and a handle-bumper member extending substantially parallel to said bottom panel of said cabinet, said handle-bumper including a rigid outwardly extending portion for enabling the cabinet to be grasped and lifted and for preventing the cabinet side and back panels from lying against a fixed flat surface at the location of said handle-bumper member.

3,226,016
INDUSTRIAL CENTRIFUGES
Mervyn George Couper, Blackburn, and Lindsay Doubleday, West Footscray, Victoria, Australia, assignors to Monsanto Chemicals (Australia) Limited, West Footscray, Victoria, Australia, a company of Victoria
Filed July 9, 1962, Ser. No. 208,197
19 Claims. (Cl. 233—23)

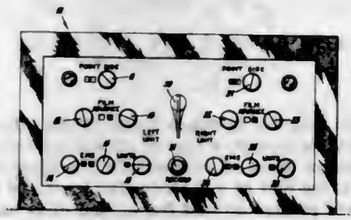
1. An imbalance-of-rotation arresting means for use with an industrial centrifuge equipped with a rotatably mounted centrifuge basket, an electrical drive motor associated with said centrifuge for driving said centrifuge basket, and a brake for retarding the rotational movement of the centrifuge basket; said imbalance-of-rotation arresting means comprising a resonant reed device operatively associated with said centrifuge and being resonant-responsive to centrifuge basket imbalance-of-rotation frequency of vibration, said resonant reed device being

substantially coaxially aligned with the center of rotation of said centrifuge basket, means operatively associated with said resonant reed device and said electrical drive motor for de-energizing said electrical drive motor, said last named means being actuated when said resonant reed device resonates responsive to said centrifuge basket imbalance-of-rotation frequency of vibration, means operatively associated with said resonant reed device and said brake for actuating said centrifuge basket brake



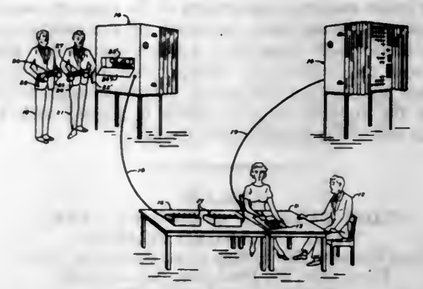
when said resonant reed device resonates responsive to said centrifuge basket imbalance-of-rotation frequency of vibration, and means operatively connected to each of said last named means for restraining de-energization of said electrical drive motor and restraining actuation of said centrifuge basket brake when the frequency of vibration of the centrifuge basket corresponding to the natural frequency of vibration of said resonant reed device is encountered in reaching the maximum speed of rotation of said centrifuge basket.

3,226,017
DUAL INDICATOR ATTACHMENT FOR PHOTOTYPOGRAPHICAL MACHINES
Ernest H. Fingerlos, San Rafael, Calif., assignor to Eltra Corporation, a corporation of New York
Filed July 15, 1963, Ser. No. 295,139
2 Claims. (Cl. 234—5)



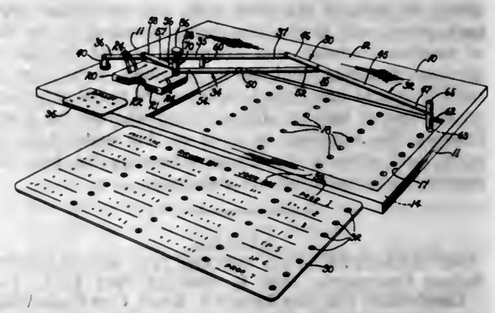
1. In or for a keyboard machine which controls the operation of a phototypographical composing machine, said machine having a justification computing mechanism and a group of machine controls including means for setting said justification mechanism to accord with a selected justified line length, film advance setting means and point size setting means, the improvement which comprises, in combination therewith, a second group of machine controls including second means for setting said justification computing mechanism to accord with a selected justified line length, second film advance setting means, and second point size setting means, means for operatively connecting in the keyboard machine one of the groups of machine controls, and manually operable means for causing signals representative of the settings of the operatively connected film advance setting means and the point size setting means to be stored in a memory.

3,226,018
RAPID PREFERENCE SYSTEM
Horace E. Railsback and Harold W. Stewart, both of P.O. Box 1737, San Francisco 1, Calif.
Filed Nov. 29, 1961, Ser. No. 155,544
5 Claims. (Cl. 235—50)



1. A polling place apparatus for electromagnetically recording voter's preferences as they are made from an election ballot displayed on said apparatus, a primary electrical circuit, a plurality of manually operable preference designating switches movably mounted on said apparatus and electrically connected into said primary electrical circuit, said preference designating switches being adapted to be moved to a preference designating position into a non-preference designating position and into a locked position, a master recording tape movably mounted in said apparatus, said master recording tape comprising a strip having a plurality of slots in a plurality of successive areas thereof, and a magnetizable coating on said strip in sections thereof adjacent to each of said plurality of areas containing said plurality of slots, and means associated with said primary electrical circuit for transporting said tape in one direction and for simultaneously recording bits thereon in successive ones of said plurality of areas which correspond to the designations made by each successive voter of his ballot preferences by movement of at least one of said switches to a preference designating position.

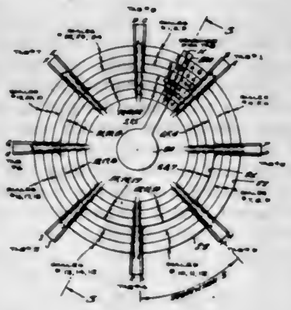
3,226,019
VOTING MECHANISM
David J. Byrnes, Jr., 2649 W. Iris, Visalia, Calif.
Filed Oct. 11, 1963, Ser. No. 315,653
5 Claims. (Cl. 235—50)



1. A voting mechanism comprising a support member having a master ballot constraining portion providing a plurality of reference locations thereon, a pantographic device having a register end connected in spaced relation to said master ballot constraining portion for relative planar movement and an extended selector end disposed above said master ballot constraining portion of the

support member for selective alignment with said reference locations thereon, ballot card holding means having a plurality of registrations corresponding to said reference locations on the master ballot constraining portion of the support member and being rigidly mounted on the support member beneath said register end of the pantographic device in predetermined spaced relation to said master ballot constraining portion of the support member, and vote registering means mounted on the pantographic device above said ballot card holding means for alignment with the registration therein corresponding to the reference location on the master ballot constraining portion of the support member which is aligned with said selector end of the pantographic device.

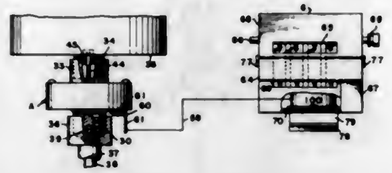
3,226,020
SLIDE RULE OF CIRCULAR TYPE, WITH ENLARGED SCALES
Igor Ezopov, 336 Union Ave., Brooklyn, N.Y.
Filed Mar. 29, 1965, Ser. No. 443,448
5 Claims. (Cl. 235—84)



1. A circular slide rule comprising a plurality of circular discs pivotally mounted about the same central axis wherein the diameters of the said disc decrease in direction from the innermost to the outermost of the said discs in combination with a searcher disc tab mounted about the same axis, and superimposed over the said discs wherein said searcher tab is transparent and extends radially beyond the disc of the greatest diameter, and having a radial hair line for aligning pre-determined locations on the said discs, in further combination with a series of transparent reader tabs radially arranged about the axis of the slide rule, and equidistant from each other, said reader tabs being attached to the disc of smallest diameter, and extending beyond the disc of greatest diameter, and being provided with pairs of radially spaced hair lines having inward radial extensions on the disc of smallest diameter and wherein the spaces between the hair-lines on each of the reader tabs are equal, and wherein the spaces separating the hair-lines between each reader tab, are also equal.

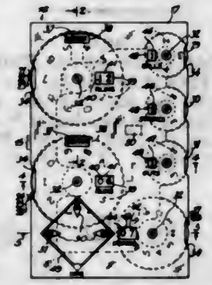
3,226,021
IMPULSE-OPERATED ODOMETER MECHANISM
Robert Dusinberre, 2800 E. Oakland Park Blvd., Fort Lauderdale, Fla., and Russell E. Kraft, Fort Lauderdale, and Frederick A. Greenawalt, Pompano Beach, Fla.; said Kraft and said Greenawalt assignors to said Dusinberre
Filed June 4, 1964, Ser. No. 372,535
11 Claims. (Cl. 235—96)

1. For application to a rotatable speedometer cable having two aligned sections, a coupling assembly drivingly interconnecting the cable sections, the coupling assembly comprising, in a single unit, a stationary housing concentric with the cable sections, and a two-position dwell-free switch unit mounted within the housing and in connection with one of the cable sections to be periodically operated thereby to a momentarily closed position, the switch unit comprising a train of gears adapted to transmit motion from one of the cable sections to the terminal gear in the train, two spring blades, each supported at one end, the first on a fixed mounting within the housing and the second on the terminal gear to be carried thereby through an orbital path into which the free end of the



first blade is projected slightly whereby, with each rotation of the terminal gear, to produce a brief sliding engagement of one blade with the other to momentarily close the switch, the switch unit being interposed in an electrical circuit contained in a second unit including a counter mechanism having an electro-magnetic-driven dial wheel assembly acting, with each periodic operation of the switch to its closed position, to complete the circuit whereby to produce a concurrent operation of the electro-magnetic-driven dial wheel assembly.

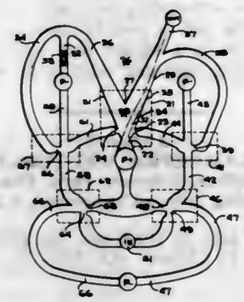
3,226,022
GAME SCORING INDICATOR
Otto Walthers, 1702 N. 4th St., Milwaukee, Wis.
Filed Apr. 8, 1963, Ser. No. 271,178
6 Claims. (Cl. 235—114)



1. In an indicator device, a frame having a front plate with a window therein, a pair of coaxial individually settable indicator disks of substantially the same diameter disposed at the rear of said front plate in axially adjacent relation and pivoted on said frame, said disks having exposed manually engageable peripheral portions and having respective forwardly facing concentric radially adjacent inner and outer circular series of digits thereon selectively visible through said window to display two-digit numbers made up of digits in said radially adjacent circular series, the digits in one circular series being units digits, and the digits in the other circular series being tens digits.

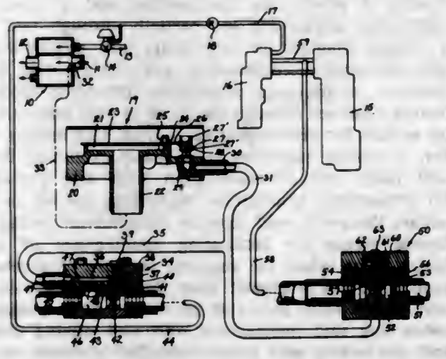
3,226,023
FLUID SCALARS
Billy Mitchusson Horton, 9712 Kensington Parkway, Kensington, Md.
Filed June 25, 1962, Ser. No. 204,820
23 Claims. (Cl. 235—201)

1. A fluid pulse converter adapted to issue an alternating fluid stream from a pair of output tubes of a pure fluid amplifier incorporated in said converter as a result of a single input tube receiving a sequential series of pulsed fluid signals, said pulse converter comprising a fluid amplifier through which a fluid stream can flow, a pair of opposed control nozzles in said amplifier adapted to switch the fluid stream flowing through said amplifier from one output tube to another as a result of alternating jets of fluid issuing from said nozzles, and tube and nozzle means adapted to convert and convey successive fluid signals received thereby alternately to each of said control nozzles.



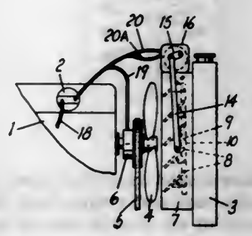
20. A fluid scalar comprising cascaded counter stages each having a fluid signal input passage, and at least two fluid signal output passages, means for producing a stream of fluid and means responsive to successive fluid input signals applied to said fluid signal input passage to switch the stream of fluid between said output passages in alernation, means coupling one of said output passages of each counter stage to an input passage of the succeeding counter stage and means for reducing flow to said input passage of each of the succeeding counter stages at a predetermined interval after initiation thereof.

3,226,024
CONTROLS FOR COMBINATION HEATING AND COOLING SYSTEMS
Thomas M. Holloway, Waukesha, Wis., and Joseph E. Fleckenstein, Columbus, Ohio, assignors to Johnson Service Company, Milwaukee, Wis., a corporation of Wisconsin
Filed Sept. 26, 1963, Ser. No. 311,830
8 Claims. (Cl. 236—1)



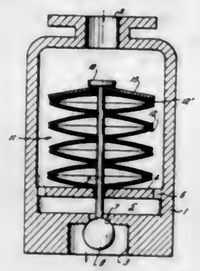
1. In combination with a heat exchanger having a low pressure air circulating blower for moving air past said heat exchanger in heat exchange relation therewith and having a normally open thermostatically controlled pneumatically operated valve for controlling the flow of a heating medium to the heat exchanger, pneumatic means including a pneumatic device so connected with said heat exchanger as to be responsive to a failure of air from said blower for preventing closing of said value as long as said failure of air exists.

3,226,025
ELECTRICALLY DRIVEN THERMOSTATICALLY CONTROLLED HEAT REGULATING MECHANISM FOR AUTOMOTIVE VEHICLES
David R. Ferris, Cadillac, Mich., assignor to Kysor Industrial Corporation, Cadillac, Mich.
Filed Feb. 21, 1963, Ser. No. 260,204
9 Claims. (Cl. 236—35)



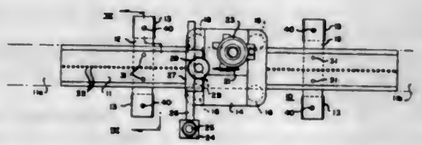
6. Temperature control mechanism for an internal combustion engine having a radiator and coolant chamber connected to said radiator comprising,
- a shutter assembly having louver slats pivoted to swing between open and shut relation to said radiator,
- a drive connection connected to swing said slats simultaneously,
- a connecting rod pivotally connected to said drive connection and extending to a crankshaft mounted on said assembly and parallel to the pivot axes of said slats,
- a gear train in a case and having a ratio in excess of 800 to 1 connected to drive said crankshaft,
- an electric motor connected to turn the high speed end of said gear train,
- a cam operated switch mounted in the case of said gear train adjacent said crankshaft,
- a cam driven with said gear train positioned to actuate said switch at angularly rotated positions of said crankshaft when said slats are in full open and closed positions,
- said switch having contacts which alternately and simultaneously make a first circuit and break a second circuit,
- a switch housing having a switch therein and being engaged through a wall of said coolant chamber,
- a thermally responsive element on said switch housing positioned in said coolant chamber and having a plunger extended into said switch housing upon increase of temperature to a predetermined minimum,
- a first spring urging said plunger to retracted position in said thermally responsive element,
- a switch operating element positioned to actuate said switch in said housing,
- and a second spring positioned in thrust transmitting relation between said plunger and said switch operating element,
- said switch in said housing having alternatively and simultaneously make and break contacts therein with a common energized terminal,
- said first and second circuits of said first cam operated switch being connected to energize said motor and being connected separately to the make and break contacts of said switch in said switch housing.

3,226,026
THERMOSTATICALLY CONTROLLED VALVE FOR A STEAM TRAP
Ulrich Domm and Werner Föller, Frankenthal, and Rudolf Egelhofer, Münchweiler, Pfalz, Germany, assignors to Klein, Schanzlin & Becker Aktiengesellschaft, Frankenthal, Pfalz, Germany
Filed Apr. 27, 1964, Ser. No. 362,748
Claims priority, application Germany, Apr. 27, 1963, K 49,597
17 Claims. (Cl. 236—59)



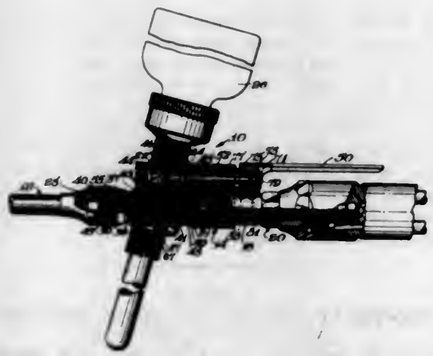
1. In a thermostatically controlled valve for a steam trap having a valve seat and a valve body to be moved against the pressure of the fluid flowing to the valve seat in sealing engagement with the latter, in combination, a stationary abutment member upstream of said valve seat; a movable abutment member upstream of said valve seat, spaced from said stationary abutment member and connected to said valve body; and a column of superposed elements located between said abutment members in the path of fluid flowing to said valve seat and engaging with opposite ends thereof said abutment members, respectively, said superposed elements of said column including a plurality of pairs of bimetal members curving in opposite directions during increase of the temperature of the fluid flowing to said valve seat, and at least one spring member constructed to engage one of the other members at least at two spaced contact points, said column expanding during rise of the temperature of the fluid flowing to said valve seat to move at a predetermined temperature said valve body in engagement with said valve seat and to flex during further rise of the temperature said spring member to an increasing extent so as to change the spacing of said contact points in response to changes of the temperature of the fluid, whereby the stiffness of said spring member and the pressure at which said valve body is pressed against said valve seat is changed in response to temperature changes of the fluid.

3,226,027
MAGNETICALLY HELD TRACK AND THE LIKE
Harold Edward Cable, Thornburg Borough, and Herbert E. Cable, Mount Lebanon Township, Allegheny County, Pa., assignors to Weld Tooling Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 29, 1963, Ser. No. 269,069
19 Claims. (Cl. 238—1)



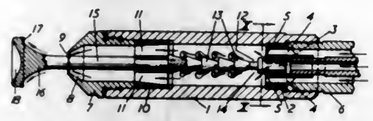
1. A magnetically held track and the like, comprising, in combination, a generally longitudinally extending rail, magnet holding means having an opening and connected to said rail for holding said rail against a work surface in spaced relation thereto and therealong, said opening having one end fashioned in the form of an annular spherical seat, a member associated with said magnet holding means and having an annular spherical surface in universal engagement with said seat, a fastener having a stem having its transverse dimension narrower than the transverse dimension of said opening, a magnet positioned on the underside of said opening in spaced relation to the lower end thereof, said stem projecting downwardly through said opening and fixed to said magnet to hold said annular spherical surface adjacent said seat, and means surrounding said stem above said magnet and below the top of said fastener, to hold said annular spherical surface against said seat, whereby said magnet is swivelly mounted relative to said track and the like.

3,226,028
FLAME-SPRAYING TORCH
Donald C. Schilling, Fairview Park, Ohio, assignor to Eutectic Welding Alloys Corporation, a corporation of New York
Filed July 26, 1963, Ser. No. 297,844
16 Claims. (Cl. 239—1)



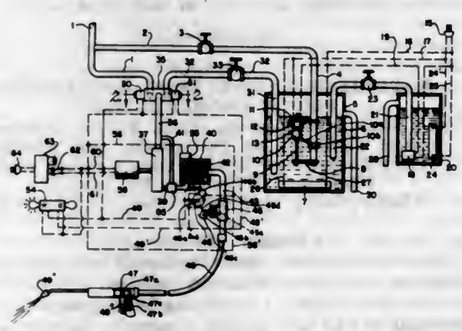
1. A flame-spraying torch comprising a body, a tip section disposed in front of said body, separate longitudinal passageways in said body for separately conducting a pressurized combustible and a pressurized combustion supporting gas partially through said body, a mixing chamber in said body, said passageway for said pressurized combustible gas joining said mixing chamber, a discharge passageway extending from said mixing chamber through the front of said body and said tip section for discharging gases from said mixing chamber, a powder supplying passageway extending through said body into communication with said passageway for pressurized combustion supporting gas at an intersection therewith, said separate longitudinal passageways having means for facilitating maintenance of an efficient flame when the supplied pressure of combustion supporting gas is greater than the supplied pressure of said combustible gas, and an intermediate passageway connecting said intersection with said mixing chamber and conducting said greater supplied pressure of pressurized combustion supporting gas from said intersection to said mixing chamber whereby said powder supplying passageway is isolated from said mixing chamber to prevent said combustible gas from flowing backwardly into said powder supplying passageway from said mixing chamber and accordingly minimizing flash back.

3,226,029
PRODUCTION OF AEROSOLS AND THE LIKE AND APPARATUS THEREFOR
John Edward Goodman, Rawdon, and Bryan Bagnall Fordham, Wakefield, England, assignors to Ultrasonics Limited, Otley, England, and to Peabody Limited, London, England, respectively
Filed Jan. 23, 1964, Ser. No. 339,731
Claims priority, application Great Britain, Jan. 23, 1963, 2,851/63
5 Claims. (Cl. 239—4)



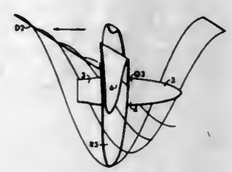
1. A method of producing intimate mixtures of liquids and gases in aerosol form comprising the steps of:
(a) introducing a liquid under pressure at the end of an elongated atomizer housing which is provided with interior axially located frusto-conical surfaces which divert the liquid and produce along the longitudinal extent the effects of cavitation in the liquid to form a series of liquid vortices in the free space bounded by said surfaces and thereby break up the liquid into small globules;
(b) introducing a gas into the same end of the housing as said liquid and mixing along the axial length of said housing said gas with said globules of liquid to form a preliminary mixture of air and liquid globules, applying a higher pressure to said gas than to said liquid to provide a first atomizing step in forming the liquid-gas mixture; and,
(c) subjecting said mixture to the jet action of sound waves in a sonic zone at the outlet of said housing to further disintegrate and atomize the liquid-gas mixture.

3,226,030
SPRAY APPARATUS HAVING PRESSURE RESPONSIVE SELECTOR VALVE MEANS
Anthony M. Rossi, 5043 W. Oakdale, Chicago, Ill.
Filed May 13, 1964, Ser. No. 366,948
17 Claims. (Cl. 239—135)



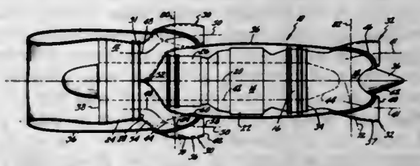
1. A vehicle washing apparatus comprising a source of cleaning solution and a source of rinse water, a selector valve means communicating with each source and having first position supplying rinse water and a second position supplying cleaning solution to a vehicle, a manually operated wash discharge means having open and close flow positions and being provided for selectively receiving the rinse water and the cleaning solution, and means for selectively placing said selector valve means in said first and second positions and comprising switch means being responsive to changes in pressure in operating the discharge means from open to close positions, said switch means having a connection with said selector valve for operation thereof and a fluid pressure connection with said discharge means and operative thereby.

3,226,031
INDUCTION PROPELLER
Raymond Prunty Holland, Jr., 1702 W. 3rd St., Roswell, N. Mex.
Filed Oct. 31, 1962, Ser. No. 234,508
10 Claims. (Cl. 170—159)



1. In a screw propeller, a blade of pronounced forwardly oblique helical form having substantially constant helical pitch, a root end on said blade, the radial generatrix of said blade having pronounced forward rake, said blade being sweptback markedly along its generating helix thereby situating the tip end of said blade on one position of the radial generatrix side-rearwardly along the helix from another position of the radial generatrix on said root of said blade, such that the forward rake of said generatrix is much greater than the forward rake of said blade.

3,226,032
THRUST DEFLECTION DEVICE
Alexander Kurti, West Hartford, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Dec. 24, 1962, Ser. No. 246,773
4 Claims. (Cl. 239—265.25)



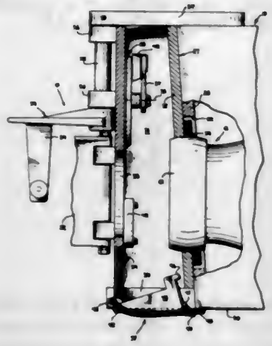
1. A jet propulsion engine which produces thrust by discharging energized gas to atmosphere and having forward and rearward ends and a main case of circular cross-section and concentric about a longitudinal axis, forward and vertical thrust generating means comprising ducts of oval shaped cross-section communicating with said case on each side thereof to receive energized gas therefrom and extending rearwardly from each side thereof defining an exhaust outlet of oval shaped cross-section with a substantially vertically extending major axis and lying in a vertical plane perpendicular to said case avis, each duct including separate forward and rearward sections rotatably joined in a circular joint, said circular joint being so positioned that said duct rearward section may rotate about the joint axis from a first position wherein said outlet faces rearwardly, and then through intermediate positions wherein said major axis remains in substantially the same vertical plane, and to a second position wherein said outlet faces downwardly.

3,226,033

JET BOAT REVERSE MOVEMENT ARRANGEMENT

Richard L. Cochran, Indianapolis, Ind., assignor to The Buehler Corporation, Indianapolis, Ind., a corporation of Indiana

Filed Oct. 1, 1962, Ser. No. 227,249
6 Claims. (Cl. 239—265.27)



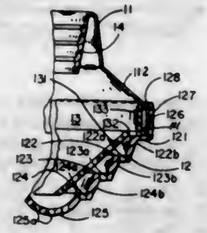
1. A control system for jet propelled watercraft comprising a generally straight conduit mounted on the craft extending and opening rearwardly thereof, means for pumping water through said conduit to exhaust from said opening, said conduit being constricted at the opening thereof for forming the water into a jet, a housing secured to the conduit and covering the opening thereof, said housing having a flat rearward wall generally perpendicular to said conduit, said rearward wall having a circular aperture therethrough positioned in registry with said jet, a flat circular disc gate received within said housing in perpendicular relation to said conduit and having a diameter which is greater than said circular aperture, a first arm rotatably connected at one end to said gate at the axis of the circular configuration thereof, said arm extending upwardly from said gate and being vertically reciprocal to move said gate to positions covering and uncovering said aperture, a further arm rotatably connected at one end to the other end of said first arm, said further arm being rotatably mounted at its other end on said craft, means secured to said further arm at its other end for rotation thereof to raise and lower said gate to positions covering and uncovering said aperture, inwardly and downwardly tapering guide means fixed to said rearward wall and positioned within said housing and arranged to guide said gate into said aperture covering position, said housing having only one further water outlet in addition to said aperture, said further outlet opening downwardly, a deflector pivotally mounted on said housing at the rearward edge of said further outlet and covering said further outlet, said deflector being pivotal between a first position wherein said deflector closes off said further outlet and a second position wherein said deflector extends forwardly and downwardly from the conduit below said further outlet for guiding water beneath the craft, said deflector when in said second position being so located that forward movement of the craft tends to cause water supporting the craft to be guided into said further outlet by said deflector, a spring fixed with relation to said conduit and bearing against said deflector urging it toward said first position, a hook-shaped member fixed to said deflector, limit members fixed with relation to said conduit and positioned for engagement by said hook-shaped member when in said second position for limiting said deflector against movement downwardly past said second position.

3,226,034

SOAPING ATTACHMENT FOR A FAUCET

Phillip Helman, Brighton, Boston, Mass., assignor to Myron Snyder, Inc., Boston, Mass., a corporation of Massachusetts

Filed Jan. 20, 1964, Ser. No. 338,895
1 Claim. (Cl. 239—316)



A soaping attachment for a faucet, comprising a housing formed of an upper and a lower section having mating portions for removably uniting the two sections together, the top portion of said upper section having resilient means for removably uniting it to a faucet, the circumambient dimension of said housing at the area of said mating portions being substantially greater than at the area of said top portion, said lower section being formed with a series of stepped segments of decreasing circumambient dimension proceeding downwardly from said area of said mating portions, each said segment including a generally vertical wall and a generally horizontal wall, said horizontal walls being perforated and said vertical walls being unperforated, and a perforated, soap retainer generally tapered in a downwardly direction and generally conforming to the contour of said lower section, position in and spaced from said walls of said lower section, said retainer having a generally horizontal flange resting on one of said horizontal walls of said lower section and being unsecured to said upper section.

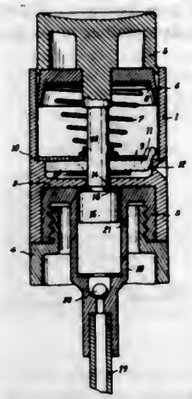
3,226,035

VAPORIZER HAVING FIRST AND SECOND PISTON CONSTRUCTION

Sonia Boris, nee Jokelson, Paris, France, assignor to Societe Technique de Pulverisation (par abreviation STEP), Boulogne-sur-Seine, France, a French company

Filed Mar. 23, 1964, Ser. No. 353,973
Claims priority, application France, May 3, 1963, 933,544
5 Claims. (Cl. 239—361)

1. A vaporizer for vaporizing liquids comprising a cylinder, a first piston manually actuated for movement within said cylinder, a vaporizing jet in pneumatic communication with said cylinder, a pumping chamber, a second piston, said second piston being within said pumping chamber, a rod, said rod connecting said first piston with said second piston so that both of said pistons move in unison when said first piston is actuated, spring means, said spring means biasing said first and second pistons toward a rest position, a channel, said channel extending from said pumping chamber to place said chamber in communication with said vaporizing jet and positioned so that when in said rest position said second piston covers said channel so that said pumping chamber is sealed off from said vaporizing jet, a plunger tube extending into said liquid to conduct liquid to said pumping chamber, and a valve, said valve positioned between said plunger tube and said pumping chamber to permit said liquid to



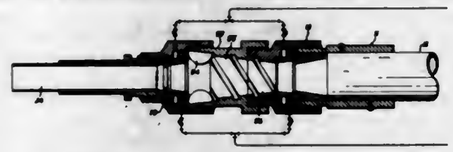
enter said pumping chamber and to prevent said liquid from leaving said pumping chamber through said plunger tube.

3,226,036

NOZZLE FOR GUNNING REFRACTORY MATERIAL

Chester N. Grahn, Concord, Calif., assignor to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware

Filed Feb. 5, 1963, Ser. No. 256,414
4 Claims. (Cl. 239—400)



1. In a nozzle device for gunning fluent, cementitious refractory material to a furnace lining: a tubular means for conducting a rapid flow of said refractory material to said device; a primary water and air injection means; a secondary water and air injection means; a turbulence-inducing means disposed between said primary and said secondary injection means, said turbulence-inducing means comprising a tubular device having an interior cross-section tapering outwardly in the direction of flow of the material and having a continuous spiral projection on its inner surface, and an annular baffle element disposed adjacent the outlet of said tubular device and integral with the internal surface thereof to provide a zone of restricted flow at the outlet and of said tube and to induce turbulent flow therethrough; and an outlet means for said device; all of said means being coaxially arranged in series with each other.

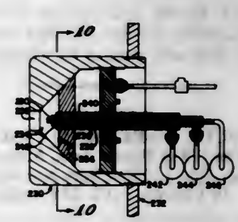
3,226,037

ASPIRATING NOZZLE

Albert Biber, Verona, Orvis A. Davis, Sr., Gibsonia, and Bruce R. Walsh, Pittsburgh, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

Filed Dec. 11, 1963, Ser. No. 329,809
6 Claims. (Cl. 239—405)

1. An aspirating nozzle comprising an enclosed swirl chamber having a substantially circular cross section, a nozzle axial discharge opening at the forward end of said swirl chamber the narrowest portion of which constitutes a discharge orifice, swirling means at the rear of said swirl chamber, a plurality of concentric tubular ducts extending axially from the rear of said swirl chamber each terminating with a tubular duct axial opening at an intermediate axial position in said swirl chamber between said swirling means and said discharge orifice, the diameter of said discharge orifice being larger than the internal diameter of the outermost of said tubular ducts, the outer surface of said tubular ducts having a cylindrical configuration, said nozzle being free of means for imparting swirling to fluid flowing within said tubular ducts, said swirl chamber wall surface converging substantially conically from said swirling means disposed to the rear of the axial terminus of each of said tubular ducts to said discharge orifice, said swirl chamber having rear enclosure means extending between the exterior of the outer-



most of said tubular ducts and said conical wall surface so that said swirl chamber is substantially completely enclosed at the rear thereof, said swirling means comprising swirling passageway means having swirling opening means at the rear of said swirl chamber, said swirling passageway means extending through not more than a minor proportion of the surface of the rear wall of said swirl chamber, said swirling passageway means opening into said swirl chamber only at said conical swirl chamber wall surface laterally remote from said tubular ducts and rearwardly with respect to the axial terminus of each of said tubular ducts, said swirling passageway means opening into said swirl chamber in both a forwardly and substantially tangential direction with respect to said conical swirl chamber wall surface adapted for the admission to said swirl chamber of a swirling pressurized gas in both a forwardly and substantially tangential direction with respect to said conical swirl chamber wall surface.

3,226,038

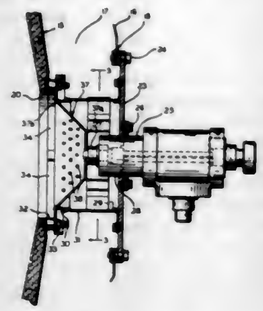
COMBUSTOR FOR A STEAM GENERATOR

Robert T. Brady, Elmhurst, Michael J. McInerney, Highland Park, and Joseph L. Czyl, Harvey, Ill., assignors to Vapor Corporation, Chicago, Ill., a corporation of Delaware

Continuation of application Ser. No. 278,329, May 6, 1963. This application Apr. 20, 1965, Ser. No. 456,597
4 Claims. (Cl. 239—405)

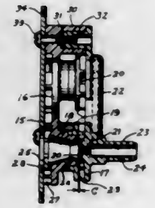
1. In a combustor having a fire pot with a combustion throat, a burner assembly for the combustion throat comprising, a mounting plate spaced from said throat and having an opening therethrough, a burner nozzle unit mounted on said plate and projecting through said opening toward and coaxially of said combustion throat, a cylindrical air register extending between said mounting plate and said fire pot and in coaxial alignment with said throat and said burner nozzle unit and terminating just short of said fire pot to define first air passage means between the area about said air register and said throat, means defining second air passage means between said area about said air register and the interior thereof for permitting air to enter the air register behind the discharge end of said burner nozzle unit, perforated frusto-conical shell

having its small end in substantial coaxial alignment with the discharge end of the burner nozzle unit and its larger



end terminating at the end of the cylindrical register positioned adjacent to the fire pot, and means for supplying air to said first and second air passage means.

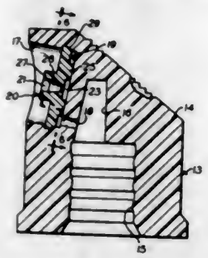
3,226,039
LIQUID DISPERSING NOZZLE
Tracy B. Tyler, 7936 Byron Ave., Miami Beach, Fla.
Filed Apr. 2, 1964, Ser. No. 356,792
19 Claims. (Cl. 239—406)



1. In a liquid dispersion nozzle, a Venturi tube having an inlet terminus and an outlet terminus, the opening through the tube varying in size being smallest near the inlet terminus and largest at the outlet terminus, a Venturi liquid supply spout disposed at the tube inlet terminus, an element affixed adjacent to and spaced some distance from the tube outlet terminus, an aperture in said element substantially axially aligned with and larger than the tube outlet largest opening, a plurality of relatively thin fins angularly spaced around the tube outlet terminus, the fins axially spanning between and adjoining said element and the tube outlet terminus, the fins so directed tangentially relative to the tube axis that a sraight line extended from and coincident with the side of the fins which faces toward said axis passes outside the periphery of the tube outlet largest opening.

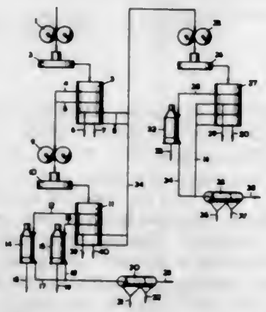
3,226,040
AEROSOL DISPENSER BUTTON
Joseph Briechle, New Canaan, Conn., and Owen F. Van Brocklin, Baldwin, N.Y., assignors to Scovill Manufacturing Company, Waterbury, Conn., a corporation of Connecticut
Filed June 9, 1964, Ser. No. 373,791
7 Claims. (Cl. 239—496)

1. An aerosol dispenser button comprising a body member having a first socket adapted to communicate with the discharge opening of a receptacle containing fluent material under super-atmospheric pressure to be discharged upon operation of a check valve which normally closes said opening, a second socket, a duct providing fluid communication between said first and second sockets, a disc-like member securely mounted in said second socket and having a central discharge opening therethrough, the inner face of said disc-like member having an annular groove, a central socket and a plurality of slots extending from said central socket to said annular groove, said annular groove and slots being so oriented in relation to the duct in said body member as to insure flow of fluent



material from the duct through all of the slots extending from the central socket and means on the outer face of the disc-like member bearing a definite relation to the slots in the inner face for engagement by feed means for presenting said disc-like member to said second socket to insure such oriented relation to the duct when the disc-like member is mounted within said second socket.

3,226,041
PROCESS AND APPARATUS FOR GRINDING CEREAL GRAINS
Hermann Grunmann, Heiloo, Netherlands, assignor to Lavasto S.A., Geneva, Switzerland
Filed Sept. 19, 1963, Ser. No. 310,031
Claims priority, application Netherlands, Sept. 27, 1962, 283,721
7 Claims. (Cl. 241—9)



2. A process for grinding cereal grains and like shell covered fruits and separating the shells from the endosperm comprising the steps of

passing the grains between at least one pair of rollers having a smooth peripheral surface,

rotating said rollers at approximately the same peripheral speed,

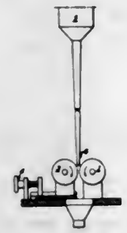
compressing said grains between said rollers into substantially flat bodies consisting of shell components and endosperm particles of the desired granular size of the end product, and

conducting said shell components and said endosperm particles through separator means for separating said shell components from said endosperm particles.

5. Apparatus for milling cereal grains and like shell covered fruits comprising at least one pair of pressing rollers having a smooth peripheral surface and rotatable at approximately the same peripheral speed.

said rollers being adjusted to provide between the pair of rollers a gap having a width which will cause the rollers to compress the grain sufficiently to reduce the endosperm to a desired particle size, break the grain shell into fragments of larger size than said endosperm, and compact at least a portion of said deformed endosperm and said fragmented shell into a substantially flat body, said width being substantially smaller than the smallest dimension of the grains.

3,226,042
METHOD OF AND APPARATUS FOR GRINDING HARD MATERIALS
Tadeusz W. Adamski, ul. Nowolipki 14, and Bohdan Kalinowski, ul. Karmelicka 15, both of Warsaw, Poland
Filed Aug. 9, 1962, Ser. No. 215,977
Claims priority, application Poland, Aug. 26, 1961, 97,221
11 Claims. (Cl. 241—30)



1. A method of grinding granular material between a pair of spaced rollers which rotate at the same speed, said method comprising introducing the granular material between the rollers at a speed equal to the peripheral velocity of the rollers and at a rate which is up to and inclusive of the throughput capacity of the rollers which is a function of the spacing between the rollers, the granular material being introduced between the rollers for being ground thereby in the form of a flat stream having a thickness corresponding approximately to the largest grain size of the granular material to be ground and a length corresponding to the length of the rollers.

7. Apparatus for grinding granular material comprising a pair of spaced grinding rollers, means rotating said rollers at the same speed, said rollers having a throughput capacity which is a function of the spacing of the rollers, the diameter of the rollers and the speed of rotation of the rollers, means introducing the granular material between the rollers for being ground thereby at a linear speed equal to the peripheral velocity of the rollers and at a rate up to and inclusive of the throughput capacity of the rollers and means for restricting the passage of the granular material to the rollers in the form of a flat stream having a thickness corresponding approximately to the grain size of the granular material to be ground and a length up to the length of the rollers.

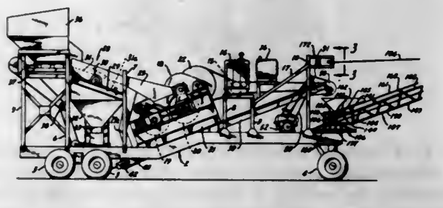
3,226,043
CRUSHING APPARATUS
Arvid N. Bowman, Downers Grove, Ill., assignor to Goodman Manufacturing Company, Chicago, Ill., a corporation of Illinois
Filed Apr. 15, 1963, Ser. No. 279,692
10 Claims. (Cl. 241—101)

10. In a machine for continuously processing and incrementally discharging processing agglomerate materials such as rock, coal or the like with minimum spillage, said machine having a frame, means carried by the frame for emitting a continous stream of processed, agglomerate material, and conveyor means extending from said continous stream emitting means, said conveyor means including at least a discharge conveyor, the improvement comprising:

vertically spaced, independent upper and lower pivotal members journaled on said frame for swinging movement about the same vertical axis;

said discharge conveyor having its receiving end supported by the lower pivotal member;

said discharge conveyor having its discharge end supported by the upper pivotal member through a cable

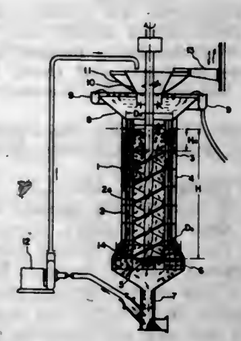


connected between said discharge end and said upper pivotal member;

whereby said conveyor is horizontally swingable with said cable and said pivotal means to shift the discharge end of the conveyor from one position to another at the same level,

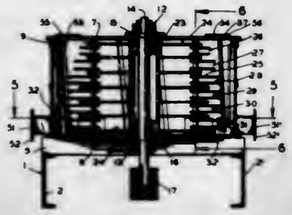
said discharge conveyor further having its receiving end positioned to receive the continuous stream of processed material in all relative positions of the conveyor and the frame.

3,226,044
GRINDING MILL
Yukio Matsubayashi and Ryokichi Sato, Ichikawa, Chiba-ken, Japan, assignors to Niiso Seiko Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan
Filed Oct. 24, 1962, Ser. No. 233,501
Claims priority, application Japan, Oct. 27, 1961, 36/38,517, 36/38,518, 36/38,519, 36/38,520
8 Claims. (Cl. 241—172)



1. A grinding mill comprising an outer shell having ribs extending inwardly about its internal surface a screw mounted for rotation within said shell, grinding media packed tightly into said shell, said grinding media being composed of particles sufficiently small to lodge between said ribs and to pass downwardly between said ribs and the outer extremities of said screw.

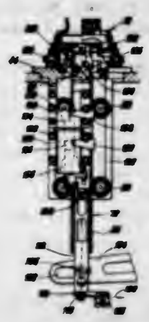
3,226,045
GRINDERS
Harry J. Shelton, Jr., Ladue, Mo., and Leo Freeman, Baton Rouge, La., assignors to Gruendler Crusher and Pulverizer Co., St. Louis, Mo., a corporation of Missouri
Filed Apr. 23, 1962, Ser. No. 189,411
7 Claims. (Cl. 241—188)



5. A hammermill comprising a horizontal cage having a substantially smooth interior arcuate face which is substantially the surface or revolution of a straight line about an axial line, said cage also having a bottom wall provided with a substantially horizontal upwardly presented surface, a vertical shaft operatively mounted on and extending axially through the cage in concentric relation therewith and along said axial line, a plurality of horizontal disks rigidly mounted concentrically on the shaft in axially spaced relation along the portion thereof which is within the cage, the lowermost disk being provided with downwardly projecting sweeper-flanges having downwardly presented edges located in close proximity to the upwardly presented surface of the bottom wall of the cage so as to contact and sweep away fine material deposited on said bottom wall, a plurality of hammers mounted around and projecting radially outwardly from the periphery of the disks, the outer ends of the hammers being located in inwardly spaced relation to the interior face of the cage, and axially extending breaker elements mounted on the interior face of the cage in axially extending peripherally-spaced zones in the space between the cage and the outer ends of the hammers, each of said breaker elements extending for a substantial distance axially along the interior face of the cage and bridging a plurality of hammers.

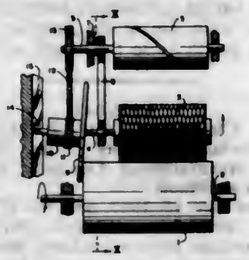
3,226,046
DEVICE FOR WINDING AN ANNULAR ARTICLE HAVING INWARDLY DIRECTED SLOTS
Hans Dröll and Willi Muskulus, Bergen-Enkheim, Germany, assignors to Balzer and Droll, Schnitt- und Werkzeugbau, Bergen-Enkheim, Germany, a German firm
Filed July 17, 1962, Ser. No. 210,480
Claims priority, application Germany, July 21, 1961, B 63,349
3 Claims. (Cl. 242—1.1)

2. Apparatus for mechanically winding slotted stator sheet stacks for electrical machines, comprising means to mount a stator sheet stack for turning movement about the central axis thereof, a carrier mounted for movement along such axis, at least one wire guiding member, means mounting the member on the carrier for movement away from and towards such axis, and operating means operatively connecting the stack mounting means, the carrier and the member, said operating means including means for withdrawing the member towards the axis and moving the carrier axially through the stack mounting means while the stack mounting means is stationary in such a position that the member passes through one of the slots, and means for moving the member away from the axis after it has passed the stack mounting means, means for then turning the stack mounting means in one direction by a predetermined amount while the member is stationary, means for then withdrawing the member axially towards the axis and moving the carrier back through the stack mounting means in the opposite direction to move the member through another of the slots while the stack mounting means remains stationary and means for then turning the stack mounting means in the opposite direction by a predetermined amount while the member remains stationary, said stack mounting means comprising a ring, and a plurality of spaced guide fingers removably mounted on each face of the ring and extending axially therefrom, said guide fingers being located in the areas between the slots of an article carried by said ring, said operating means moving the members further from the axis than said fingers, all said guide fingers being substantially identical and substantially identically positioned with respect



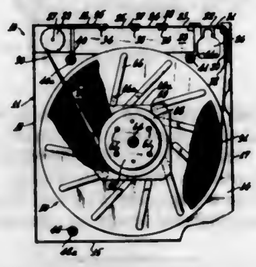
to the ring and being rigidly held in position during winding, a guide having a substantially circular guide surface having one end slightly closer to the axis of the ring than the other end, means fixedly mounting said guide at one side of the ring radially outside the path of turning of the ends of the fingers and axially closer to the ring than such ends, for engagement with threads during turning of the ring from one slot to another, said fingers having outwardly directed flat sections at their inner ends engaging the opposite faces of the stack and angular portions extending from each such face towards the other face along the outer periphery of the stack, the angular portions of the fingers on one faces of the stack interlocking with the angular portion of the fingers on the other face of the stack.

3,226,047
TRAVERSING DRIVE APPARATUS
Pieter K. Noordemeer, Ede, Netherlands, assignor to American Enka Corporation, Enka, N.C., a corporation of Delaware
Filed Feb. 26, 1964, Ser. No. 347,570
Claims priority, application Netherlands, Mar. 7, 1963, 289,942
9 Claims. (Cl. 242—18)



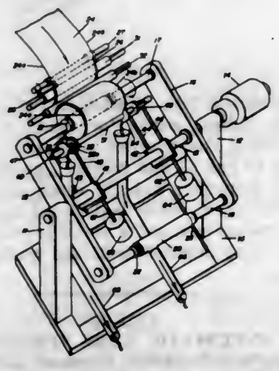
2. Apparatus for winding roller driven cross-wound yarn packages comprising a grooved traverse drum, a yarn package supporting spindle, a driving roller for imparting rotary motion to a yarn package on said spindle, a supporting frame, and means for driving said traverse drum from said driving roller, said means comprising a disc mounted on one end of said spindle, and drive means connecting said disc with said grooved traverse drum, with said disc being driven by direct frictional contact with one end of said driving roller.

3,226,048
ENDLESS MAGNETIC TAPE CARTRIDGE
Henry A. Schwartz, Valley Stream, N.Y., assignor, by mesne assignments, to Viking of Minneapolis, Inc., Minneapolis, Minn., a corporation of Minnesota
Filed Jan. 30, 1961, Ser. No. 85,725
4 Claims. (Cl. 242—55.19)



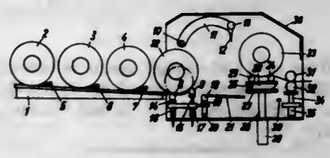
3. An endless magnetic tape cartridge comprising:
a box;
a reel rotatably mounted in said box;
a hub ring mounted on said reel and adapted to rotate independently thereof;
a flange radially extending from said hub ring and adapted to rotate therewith, wherein said flange is characterized by an outer edge of varying radial distance from the center of the hub ring.

3,226,049
METHOD FOR FORMING MILL ROLLS OF SHEETED MATERIALS
Herbert O. Corbett, Bridgeport, Conn., assignor to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia
Original application Mar. 21, 1962, Ser. No. 181,245. Divided and this application Feb. 26, 1965, Ser. No. 435,620
3 Claims. (Cl. 242—56.3)



1. A method for forming a mill roll of a sheet material web, wherein said web is wound on a hollow, substantially rigid core, comprising winding said web on a core having a length slightly less than the width of said web, inducing a longitudinal and lateral tension in said web as wound upon said core whereby to draw the longitudinal edge portion of said web over the ends of said core and over wound layers of said web thereon substantially radially inward of said core and wound layers, and trimming said edge portions from each said web layer substantially at a point in the circumference of said core and of the wound roll not less than about 180° from the first point of contact with said circumference.

3,226,050
UNWINDING DEVICE FOR BAND-SHAPED ROLLED GOODS
Georg Engel, Essen, Germany, assignor to Beteiligungs- und Patentverwaltungsgesellschaft mit Beschraenkter Haftung, Essen, Germany, a corporation of Germany
Filed Oct. 8, 1962, Ser. No. 229,084
Claims priority, application Germany, Oct. 12, 1961, B 64,351
9 Claims. (Cl. 242—78.8)

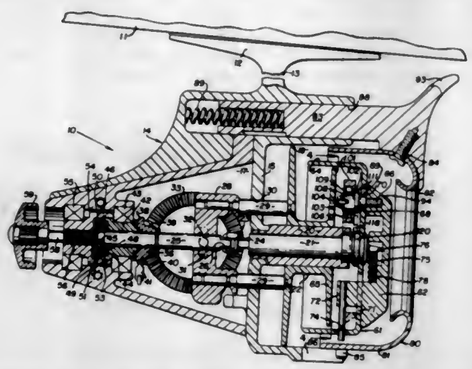


1. An unwinding device for band-shaped rolled goods, particularly for single-way- and cold-rolling mills and working trains, comprising
a first working station and a second working station disposed substantially horizontally adjacent each other,
each of said working stations being adapted to support a reel therein,
said first working station including a reel opener and opening said reel supported in said first working station near its bottom and removing the band from the bottom of said reel substantially horizontally, to be fed to a rolling mill, and
said band of said reel supported at said first working station being fed below and extending at least partly parallel to the band unwinding from the reel supported at said second working station,
a driving apparatus disposed downstream after said second working station, so that upon run-out of said band in said second working station the start of the band of the reel supported in said first working station is joined with the end of the band of the reel supported in said second working station and is fed to a rolling mill in a continuous manner.

3,226,051
LINE GUIDE CONTROL FOR A SPINNING REEL
Thomas F. Sarah, Akron, Ohio, assignor to Pflueger Corporation, Akron, Ohio, a corporation of Ohio
Filed Mar. 4, 1964, Ser. No. 349,369
9 Claims. (Cl. 242—84.21)

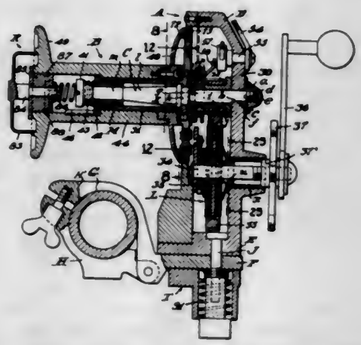
1. In a spinning reel having a housing, normally non-rotatable line spool, a cup-shaped carrier adjacent said spool and fixed to a selectively rotatable shaft, a pick-up pin slidably mounted on said carrier extendible radially outwardly of said carrier and retractable with respect thereto, biasing means normally extending said pick-up pin radially outwardly of said carrier, an actuating means for retracting said pick-up pin within said carrier, latch means for retaining said pick-up pin in retracted position and selectively releasing said pick-up pin, comprising, a lock drum mounted on said carrier to be slidable with said pick-up pin and independently rotatable, said lock drum having an annular periphery with a relieved portion, a blocking means fixed to said housing means to rotate

said lock drum until said annular periphery engages said blocking means when said pick-up pin is retracted to maintain said pick-up pin in retracted position, and means



separate from said last named means selectively to drive said lock drum until said relieved portion is disposed opposite said blocking means to permit extension of said pick-up pin.

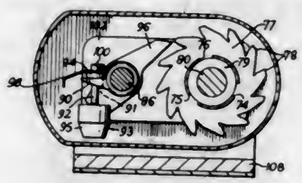
3,226,052
FISHING REEL
William S. King, 6532 Day St., Tujunga, Calif.
Filed Apr. 22, 1963, Ser. No. 274,495
2 Claims. (Cl. 242—84.54)



1. In a fishing reel, a fixed spindle, a revoluble sleeve on said spindle, a clutch on said spindle adapted to positively engage said sleeve, a line spool encompassing said sleeve having screw threaded connection with one end thereof, a flange on the other end of said sleeve having a slot adapted to be engaged by said clutch, a lug on an end of said spool engageable in said slot to thereby hold said spool against rotation relative to said sleeve, and means for driving said clutch to rotate said spool through said sleeve.

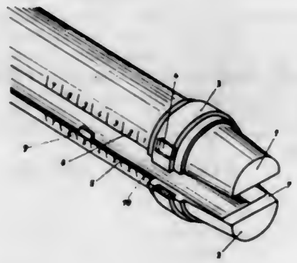
3,226,053
MEANS FOR DISPENSING AND LOCKING A SAFETY STRAP
John William Ledward Petty, Haywards Heath, England, assignor to Norris Brothers Limited, Haywards Heath, England, a British company
Filed Oct. 14, 1963, Ser. No. 316,031
Claims priority, application Great Britain, Oct. 15, 1962, 38,999/62; May 18, 1963, 19,872/63
5 Claims. (Cl. 242—107.4)

1. An apparatus for dispensing and locking a safety belt, comprising a frame, first and second spaced parallel shafts mounted in said frame, a rotatable drum mounted on said first shaft upon which said safety belt is adapted to be mounted, a plurality of ratchet teeth mounted on one end of said drum, pawl means pivotally mounted on the second shaft operable to engage said teeth but normally disengaged therefrom, means for adjusting the position of the pawl means relative to the teeth, actuating means operating said pawl means, said actuating means



including an inertia operated weight, arm means mounted on said second shaft normally substantially vertically suspending said weight for pivotal movement, said weight moving by inertia to operatively engage and pivot the pawl means into engagement with said ratchet teeth, and means for securing said frame in operative position on a base.

3,226,054
PNEUMATIC TUBE CARRIER WITH MAGNETIC DESTINATION CODING
Dieter Zimmermann, Berlin-Zehlendorf, and Hans-Joachim Peter, Berlin-Wilmersdorf, Germany, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Aug. 20, 1963, Ser. No. 305,904
Claims priority, application Germany, Aug. 23, 1962, St 19,629
13 Claims. (Cl. 243—16)

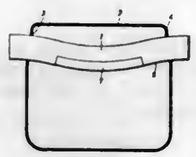


1. A pneumatic tube dispatch carrier comprising first and second halves, means for rigidly connecting said halves to form a closed carrier, a permanent magnet rigidly attached to one of said halves, a groove in each said half which cooperates with the other along mating portions of said halves when said closed carrier is formed to form a passageway, and a movable permanent magnet capable of being disposed in desired positions along said passageway.

3,226,055
PNEUMATIC TUBE STATIONS
Kurt Suhr, Berlin-Neukolln, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed May 21, 1963, Ser. No. 281,878
Claims priority, application Germany, July 26, 1962, St 19,527

1. A pneumatic tube station for receiving carriers conveyed in either direction, for dispatching carriers in either direction, and for throughgoing passage of carriers in a forwarding tube system, comprising:

a forwarding tube for the reception and discharge of carriers, said tube having first and second portions which present, respectively, descending and ascending pathways, and a third portion interposed between said first and second portions having an opening along its lower wall portion, said opening being of a size to permit passage therethrough of said carriers;

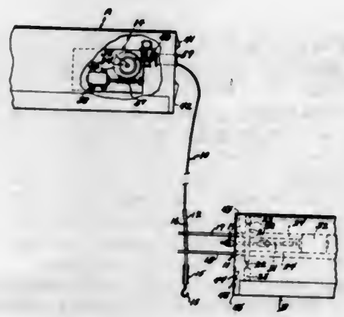


a cover for sealing said opening to present a continuous passage;

means for moving said cover into and out of operative relationship with said opening; and

a housing enclosing said third portion.

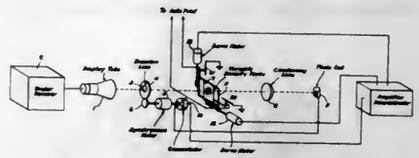
3,226,056
MULTIPLE SPAN AIRCRAFT
Raymond P. Holland, Jr., 421 W. College Blvd., Roswell, N. Mex.
Filed July 12, 1950, Ser. No. 173,438
12 Claims. (Cl. 244—2)



11. A multiple aircraft comprising a plurality of individual aircraft, each capable of independent flight, a retractable traction member in the wing tip of one aircraft and connecting means in the wing tip of another aircraft, said traction member and connecting means cooperating together to draw the aircraft together in a wing tip to wing tip relation whereby the induced drag of each of the individual aircraft is reduced.

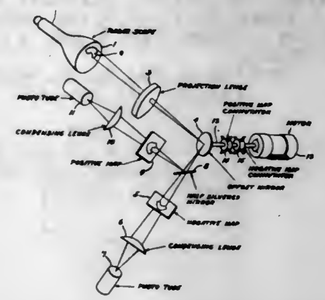
3,226,057
AUTOMATIC CONTROL SYSTEM FOR NAVIGATING A VEHICLE TOWARD AN ISOLATED REFERENCE POINT
Robert G. Wilson, 46 North Ave., Tallmadge, Ohio
Filed May 21, 1951, Ser. No. 227,511
10 Claims. (Cl. 244—14)

7. In an apparatus for navigating aircraft and the like toward an isolated reference point, means carried by the aircraft for producing continuously an image of the reference point on a contrasting background, said means indicating the relative position and movement of the aircraft and reference point, a plate changing uniformly in density radially from a substantially central point, said plate being of opposite contrast to the image, said image and plate being superimposed, means associated with the plate re-



sponsive to the displacement error between the reference point of the image and the central point on the plate for effecting substantial match therebetween, and means responsive to the positioning of the plate in alignment with the image for controlling the flight path of the aircraft.

3,226,058
DOUBLE MAP NAVIGATIONAL CONTROL SYSTEM FOR AIRCRAFT
Carl A. Meneley, 2340 19th St., Cuyahoga Falls, Ohio
Filed June 30, 1951, Ser. No. 234,602
10 Claims. (Cl. 244—14)

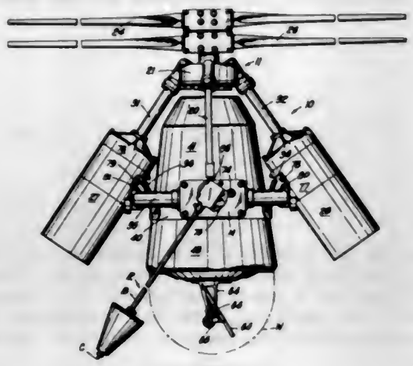


10. Automatic terrain recognition and navigation apparatus for an aircraft body or the like including means for producing substantially continuously a pair of images of the terrain over which the body is passing, a previously prepared negative map transparency of the terrain, a previously prepared positive map transparency of the terrain and separately positioned from the negative map transparency, means for superimposing one image over the negative map transparency and one image over the positive map transparency, the image and the transparency as superimposed having substantially the same scale and orientation, means for effecting a scanning movement between each transparency and its image, means responsive to substantially a match between each transparency and its image, and means for effecting relative repositioning movement between each transparency and its image.

3,226,059
TETHERED AIRBORNE OBSERVATION DEVICE
Patrick James Paterson, 1075 Pere Marquette, Quebec, Quebec, Canada, Raigo Alas, 2435 Chemin Ste. Foy, Apt. 2, Quebec, Quebec, Canada; and John Noxon Leavitt, West Flamboro Post Office, Ontario, Canada
Filed Apr. 27, 1964, Ser. No. 362,571
13 Claims. (Cl. 244—17.17)

1. An airborne observation device comprising a rotary wing airframe; anchoring means for in-flight tethering of

the airframe; a gyroscopically stabilised platform; a camera system on said platform; means for pendulously mounting said platform in the airframe with three degrees



of movement relative thereto; and means for sensing changes in, and for correcting, airframe attitude relative to the stabilised platform.

3,226,060

CONTROLLED EXCESS MATERIAL BALLOON

James A. Winker, Sioux Falls, S. Dak., assignor to Raven Industries Inc., Sioux Falls, S. Dak., a corporation of South Dakota

Filed Feb. 28, 1964, Ser. No. 348,109
5 Claims. (Cl. 244—31)



1. A balloon structure comprising in combination,
a balloon envelope formed of lightweight flexible material,
a plurality of vertical folds in the envelope with the facing layers of material of each fold joined by a separable bond which has an increasing strength from the exposed to the inner edge of the fold so that the folds will progressively and uniformly separate with respect to each other due to the increase in volume of lifting gas within the envelope,
and means for supporting a payload on the balloon envelope.

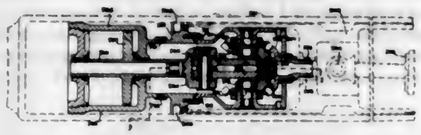
3,226,061

STEERABLE UNDERCARRIAGE ASSEMBLIES

George Herbert Dowty and Clifford Wilfrid Tinson, Cheltenham, England, assignors to Dowty Technical Developments Limited, Brockhampton Park, near Andoversford, England, a British company

Filed June 28, 1962, Ser. No. 206,021
Claims priority, application Great Britain, July 6, 1961, 24,419/61
8 Claims. (Cl. 244—50)

1. A steerable undercarriage assembly, suitable for an aircraft, including a tubular supporting leg, a fluid-pressure-operated device located within the leg and capable of producing linear movement of a part of the device along the leg, a connecting rod pivotally connected at one end to the said part of the fluid-pressure-operated device, a member connectable to a wheel and rotatable about the longitudinal axis of the leg to steer the wheel, and gear means to which the other end of the connecting rod is pivotally connected and which is connected to the member



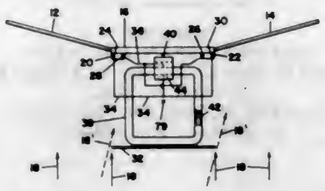
to translate linear movement of the said part into rotary movement of the member and to translate continuous rotation of the member in the same direction into reciprocation of said part.

3,226,062

OSCILLATION DAMPING SYSTEM

Louis K. Davis, Phoenixville, Pa., assignor to General Electric Company, a corporation of New York

Filed June 18, 1964, Ser. No. 376,119
9 Claims. (Cl. 244—93)



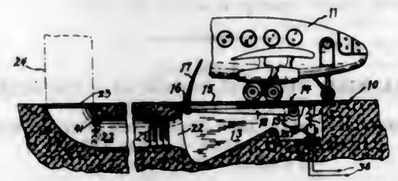
1. A vehicle self-orienting and self-damping, in free flight about an axis passing through the vehicle and with respect to a source of radiation, comprising:
radiation-receiving means which, when the vehicle is in or near its neutral or stable attitude toward the said source of radiation, produce from reception of said radiation a resultant force whose center of pressure lies on the side of the center of mass of the said vehicle opposite the said source of radiation and aligned with the said center of masses and the stable direction of the said source of radiation;
angular momentum storage means comprising:
a mass restrained for circulatory motion about the said axis and
reversible drive means for circulating the said mass in either direction about the said axis at various speeds responsively to energy inputs;
radiant energy conversion means comprising a plurality of components to severally receive said radiant energy and convert it into other form of energy and connected to apply said other form of energy to cause the said mass of said angular momentum storage means to be driven in a direction determined by the identity of the said component and at a speed determined by the rate of reception of said radiant energy by the said component;
shade means located generally to intercept radiant energy from the said source to the said radiant energy conversion means when the said vehicle is in its neutral or stable attitude toward the said source, and to permit, when the vehicle is slightly displaced, by rotation around the said axis, from the said neutral or stable attitude, selective illumination of components of the said plurality which are connected to drive the mass of the said angular momentum storage means in the direction of the said rotation around the said axis.

3,226,063

JET AND ROCKET ENGINE BLAST AND SOUND SUPPRESSING MEANS

Eleanor I. Wagner, 72765 Beavertail St., Palm Desert, Calif.

Substituted for abandoned application Ser. No. 198,326, May 28, 1962. This application July 14, 1964, Ser. No. 384,574
8 Claims. (Cl. 244—114)



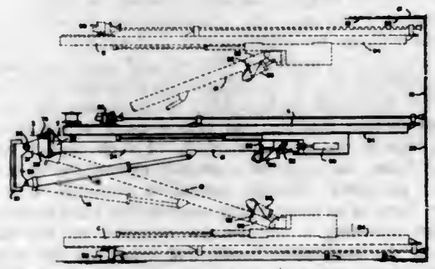
3. In a hot gas blast and sound wave suppressing means for aircraft having a plurality of jet or rocket engines with jets operating in a horizontal plane parallel with an airport area, the combination of an airport area having a plurality of subsurface chambers, blast intercepting means for directing the exhaust of a jet engine into each of said subsurface chambers, an independent subterranean tunnel leading from each of said chambers to a point remote from said blast intercepting means through which the blast from the jet engine will be discharged from said subsurface chambers, and a laterally extending tunnel forming a manifold conduit to which each of said independent subterranean tunnels are connected for exhausting the hot gases from said chambers at a common point remote from said aircraft.

3,226,064

ADJUSTABLE MOUNTING FOR ROCK DRILLS

Charles T. Thompson, Claremont, N.H., assignor to Joy Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Aug. 12, 1963, Ser. No. 301,366
5 Claims. (Cl. 248—16)



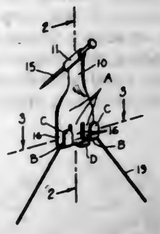
1. A drill mounting comprising; an elongated jib means, elongated boom means longer than said jib means rotatable about a longitudinal axis of said boom means supported by and substantially parallel to said jib means, selectively operable power means drivingly connected to said boom means for so rotating said boom means, fluid actuated locking means comprising clutch means rigidly secured to one end of said boom means and coaxially rotatable therewith and anchor means mounted at one end of said jib means coaxial with said clutch means and engageable therewith by axial movement of said boom means toward said anchor means to lock said boom means in any position of rotation and axially movable away from said anchor means to unlock said boom means and allow such rotation thereof, and drill mounting means secured to the end of said boom means remote from said locking means.

3,226,065

PICTURE HOOK

Sterling L. Smith, Altamont Road, Paris Mountain, Greenville, S.C.

Filed Apr. 20, 1964, Ser. No. 361,160
5 Claims. (Cl. 248—32)



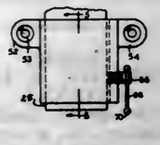
1. A picture hook for positively positioning picture wire and suspending same from a wall to maintain a picture level including, a bracket having a flat portion adapted to be suspended adjacent a wall, a pair of spaced outwardly extending flat portions fixed to the lower portion of the bracket, an upturned flat portion fixed to the free ends of the outwardly extending flat portions, a flat resilient outwardly extending portion fixed to the lower portion of the bracket intermediate the first mentioned outwardly extending flat portions and spaced therefrom on each side thereof, a nail receiving element engaging the wall carried by the upper portion of the bracket, and a nail carried by said element engaging the wall to position the bracket in fixed relation to the wall.

3,226,066

BOW SOCKETS

Jacob Folb, 351 William St., Geneva, N.Y.

Filed May 19, 1964, Ser. No. 368,568
1 Claim. (Cl. 248—40)



A bow socket comprising a body portion having a bow-receiving aperture of rectangular cross section extending therethrough from top to bottom, and integral attachment lugs lying in a common plane and extending laterally and oppositely from the body portion adjacent the upper end and to one side thereof, the wall of said aperture being substantially thicker laterally at one end only thereof, and having threaded therein a clamp screw disposed on an axis transverse of the aperture and lying in a plane parallel with the plane of said lugs, said aperture from top to bottom being of substantially uniform cross section, and inclining away from the plane of said lugs.

3,226,067

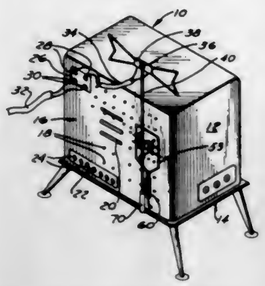
BRACKET SUPPORT FOR A UHF TELEVISION ANTENNA

Frank J. Klaucnik, Chicago, Ill., assignor to Hi-Lo Manufacturing Corp., Chicago, Ill., a corporation of Illinois

Filed Apr. 14, 1964, Ser. No. 359,564
3 Claims. (Cl. 248—43)

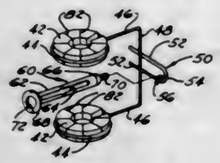
1. A bracket support by means of which a television antenna mast may be supported in a vertical position from the rear panel of a television receiver, said bracket support comprising a closed loop of rod stock, upper and lower spaced apart horizontally extending rods extending

across said loop and having their ends welded thereto, a vertically extending rod extending between said horizontally extending rods and welded thereto, the upper end of said vertically extending rod being formed with a forwardly extending downwardly facing hook thereon adapted for projection through an opening in said rear panel, a tension spring having its upper end secured to the lower end region of said loop and provided at its lower end with an upwardly facing hook adapted, after elongation of the spring, for projection through a second opening in said rear panel whereby the intervening portions of the panel between said openings will be clamped



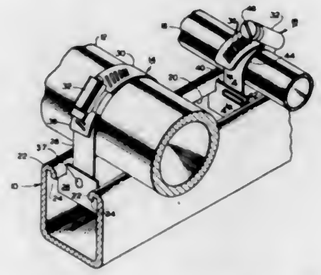
between said hooks and the loop supported in a vertical plane from the panel, a C-shaped support formed from a length of rod stock, having its bight portion extending vertically and welded to said horizontally extending rods, and presenting rearwardly extending parallel arms, the distal ends of said arms being formed with circular loops, a friction ring secured within each circular loop, the two friction rings being coaxial for projection of the mast therethrough with a sliding fit, said friction rings being adapted to exert a centripetal gripping force on said mast of sufficient magnitude that the mast is self-supporting in any position of elevation thereof but of insufficient magnitude to prevent manipulation of the mast.

3,226,068
BRACKET SUPPORT FOR A UHF TELEVISION ANTENNA
Frank J. Klancnik, Chicago, Ill., assignor to Hi-Lo Manufacturing Corp., Chicago, Ill., a corporation of Illinois
Filed Apr. 14, 1964, Ser. No. 359,565
2 Claims. (Cl. 248—43)



1. A bracket support by means of which a television antenna mast may be supported in a vertical position from the rear panel of a television receiver, said bracket support comprising two generally C-shaped lengths of rod stock, one of which constitutes an attachment frame and the other of which constitutes a mast-supporting frame, each frame including horizontally disposed parallel arms and a connecting bight portion, the outer ends of the attachment frame being welded to the bight portion of the mast-supporting frame with the general planes of the two frames extending vertically and at a right angle to each other, the attachment frame and the limited extent of the bight portion of the mast-supporting frame which it subtends constituting an attachment opening designed for reception therethrough of a headed fastening device by means of which the attachment frame may be secured to said rear panel, a friction ring mounted on the distal end of each parallel arm of said mast-supporting frame, the two friction rings being coaxial for projection of the mast therethrough with a sliding fit, said friction rings being adapted to exert a centripetal gripping force on said mast of sufficient magnitude that the mast is self-supporting in any position of elevation thereof but of insufficient magnitude to prevent manipulation of the mast.

3,226,069
HANGER FOR CYLINDRICAL CONDUITS AND THE LIKE
Leonard O. Clarke, 2204 Maple Lane, Eureka, Calif.
Filed Feb. 3, 1964, Ser. No. 342,081
4 Claims. (Cl. 248—73)



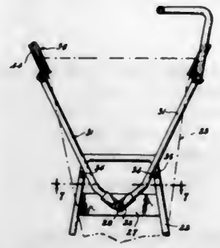
1. Apparatus for securing a cylindrical conduit or the like fixedly against a support having two spaced apart, inturned flanges defining an elongated slot therebetween, comprising: a pair of anchors insertable longitudinally of such slot and each sized for permitting turning into an operative holding position to extend laterally of a slot, one anchor positionable on each side of such conduit, each anchor having two ears laterally spaced apart a distance to permit engagement of each ear with one such inturned flange; a shoulder inwards of each ear and extending from such slot proximate to the side of an inturned flange for ensuring that said anchor is centered in such slot to maintain each of said ears in engaging association with one of such flanges irrespective of longitudinal forces on such conduit; each anchor having secured thereto mediate said ears a band bendably conformable to the outer periphery of such conduit, each band from the respective anchor extendable over the outer periphery of such conduit to converge with the other band in an overlapping relationship, band-tightening means including a worm-screw mounted on the inside one of the overlapped bands; and means on the outside band cooperable with said worm-screw for contracting said bands to urge such conduit against such flanges, said worm-screw being provided at each end thereof with hand-tool receiving means facilitating rotation of said worm-screw from either end thereof.

3,226,070
REFUSE-BAG SUPPORT
Robert A. Kurlander, Nutley, N.J., assignor to Gilman Paper Company, New York, N.Y., a corporation of New Hampshire
Filed Aug. 13, 1963, Ser. No. 301,797
3 Claims. (Cl. 248—97)

1. A refuse-bag holder comprising a support, a pair of facing wings upstanding from said support, mounting means mounting said wings for swinging movement of the upper wing regions toward and away from each other, said wings having their lower regions open, and securing

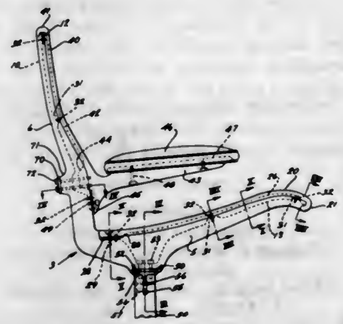
means carried by the upper wing regions, whereby a bag is adapted to be secured at its mouth by said securing means for suspension through the lower wing regions and having its mouth closed and opened by swinging movement of said wings, said mounting means comprising pivot means located for swinging movement of an upper wing region over dead center upon movement between closed and open positions for self-retention in said positions.

2. A refuse-bag holder comprising a support, a pair of facing inverted generally U-shaped wing members upstanding from said support, mounting means pivotally mounting at least one wing member for swinging movement of its bight region toward and away from the bight region of the other wing member, and detachable se-



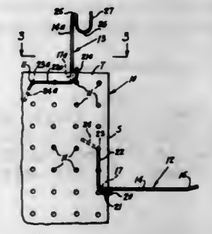
curement means carried by the bight regions of said wing members for releasably holding the mouth of a bag, whereby a bag is adapted to be secured at its mouth by said securement means for suspension through said wing members and having its mouth open and closed by swing ing movement of said wing members, said securement means comprising a plurality of friction-cam clips releasably engageable with the mouth of a bag, said clips each comprising a generally U-shaped resilient part having one leg connected to the bight region of a respective wing member, and a cam rotatably carried by the bight region of the respective wing member and configured for movement upon rotation into and out of frictional engagement with the other leg of said resilient part.

3,226,071
SEATING
Charles Eames, Venice, and Robert L. Staples, Manhattan Beach, Calif., assignors to Herman Miller, Inc., Zeeland, Mich., a corporation of Michigan
Original application Oct. 2, 1961, Ser. No. 142,070, now Patent No. 3,114,575, dated Dec. 17, 1963. Divided and this application Sept. 20, 1963, Ser. No. 310,228
1 Claim. (Cl. 248—163)



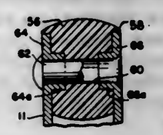
A base in combination with an article of furniture comprising: a pair of upstanding supporting legs; the upper end of each of said legs being bifurcated to form a vertical slot having an upstanding arm on each side; a T-shaped bar having a horizontal flange and a vertical flange; said horizontal flange of said bar seated on the tops of said arms; said vertical flange seated in said slot in close fitting relationship to said arms; fastener means extending through said vertical flange and engaging both of said arms and clamping said arms tightly about said vertical flange when said fastener means is tightened; an article of furniture supported on said horizontal flange of said bar; and detachable mounting means extending from said article of furniture through said horizontal flange and securing said arms of said supporting legs.

3,226,072
ADJUSTABLE SUPPORT ELEMENT
Bertil E. Johnson, 1715 15th St., Sacramento, Calif.
Filed Dec. 14, 1964, Ser. No. 418,195
6 Claims. (Cl. 248—223)



1. A support element comprising an elongated support having a first offset portion comprising a longitudinal extension of said support and a second oppositely offset portion parallel to said first offset portion, said first and second offset portions being adapted to extend on opposite sides of a normally vertical flat base member, an extension at the end of one of said offset portions in substantially right angled relation to said support adapted to extend in flush relation to one side of the base member, an inturned portion at the free extremity of said extension adapted to engage in an opening in the flat base member, and a third offset portion at the end of said inturned portion adapted to extend in flush relation to the other side of said flat base member.

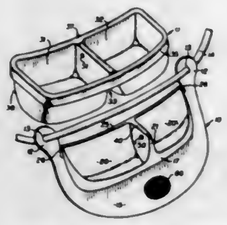
3,226,073
EQUIPOISED LAMP STRUCTURE
Jacob Jacobsen and Jens C. Krogsrud, Oslo, Norway, assignors to Jac. Jacobsen AIS, Oslo, Norway, a corporation of Norway
Filed Dec. 26, 1963, Ser. No. 333,356
7 Claims. (Cl. 248—280)



1. In an equipoised lamp mechanism which includes a linkage assembly comprising first and second parallelogram linkages and an intermediate frame unit pivotally interconnecting the linkages in end-to-end relationship and a base frame unit pivotally connected to the other end of one of said linkages and a top frame unit pivotally connected to the other end of the other of said linkages and a lamp unit mounted upon said top frame unit; a pair of spring assemblies one of which is connected at one end to said base frame unit and at the other end to the

adjacent parallelogram linkage, the other of said spring assemblies being connected at one end to said intermediate frame unit and at the other end to the other of said parallelogram linkages, each of said spring assemblies comprising a pair of parallel extensible springs, said base frame unit comprising a sheet metal structure including two parallel side plate portions which form the top of the base frame unit and each of which has a slot in its upper end into which the end of one of said springs is connected, the connection between the springs forming the other of said spring assemblies and the other of said parallelogram linkages comprising a bracket having a central portion which snugly engages a linkage arm and two oppositely extending portions to which the respective ends of the springs are hooked, and wherein one of said linkages includes a tubular arm which is substantially square in cross-section and has an end structure formed by a solid plastic plug snugly received in the open end of the arm with a pivot bore therethrough and punched holes in the tube walls in alignment with said pivot bore, and wherein said construction includes a rivet extending through said pivot bore and providing the pivotal connection with said arm end.

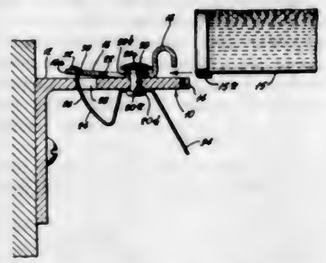
3,226,074
FEEDING AND LIKE TRAY ASSEMBLY
Herbert A. Coe, 4320 Teesdale St., Philadelphia, Pa.
Filed July 24, 1964, Ser. No. 385,019
4 Claims. (Cl. 248—311)



1. A tray assembly of the character described comprising a relatively thin, molded plastic base member adapted to be positioned against the chest and beneath the chin of a user, said base member comprising a substantially flat portion and a protruding boss portion, said boss portion being inwardly and upwardly curved from the front face thereof and having an upwardly tapered bracket formed integrally therewith, an upstanding flange along the top of said boss; and a relatively thin, molded plastic tray for ready attachment to said base, said tray being dished to provide at least two compartments with tapered walls therebetween which define an inverted V-shaped space of a size and shape to receive and retain the tapered bracket on the base member, the rear surfaces of the dished compartments being complementally curved snugly to engage the curved surfaces of the boss, and a downwardly and outwardly turned flange along the rear edge of the tray adapted to fit over and engage the flange on the base member.

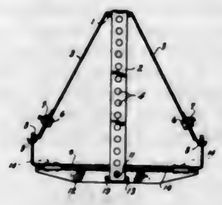
3,226,075
ARTICLE HOLDER
Evan L. Hopkins and Ross E. Hopkins, both of Emporia, Kans., assignors to Hopkins Manufacturing Corp., Inc., Emporia, Kans., a corporation of Kansas
Filed Dec. 6, 1963, Ser. No. 328,575
5 Claims. (Cl. 248—313)

1. A holder comprising a base member having an edge portion adapted to engage a container, said base member adapted to be mounted on support means, an arm slidably mounted on said base member, spring means secured to said base member, said spring means being connected to one end of said arm, a hook on the free end of said arm, said hook being urged by said spring means to grip the



rim of a container against said edge portion for supporting a container in suspended relation therefrom, and said spring means having one end thereof in position to engage a container to maintain the container in a substantially upright position.

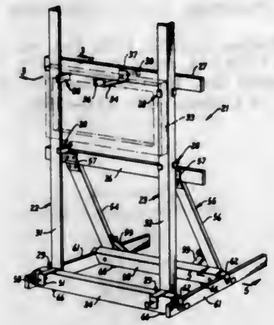
3,226,076
SUSPENSION DEVICE FOR CABLE TROUGHING OF PERFORATED SHEET METAL
Ernst Spühler, Aarburg, Aargau, Switzerland, assignor to H. Heer & Cie, Canton Solothurn, Switzerland, a Swiss firm
Filed Apr. 13, 1964, Ser. No. 359,298
Claims priority, application Switzerland, Apr. 19, 1963, 4,918/63
3 Claims. (Cl. 248—327)



1. A suspension device for cable troughing of perforated sheet metal comprising a supporting and fixing plate, two metal tapes that cross each other over the said plate, series of holes in said tapes along their entire length, hooks at the ends of a first of said tapes and arranged transversely to the longitudinal direction of the cable troughing, said hooks being adjustable with respect to the tape and cooperating with perforations in the side walls of the troughing, the ends of the second of said tapes running parallel to the longitudinal direction of the troughing traversing perforations in the bottom of the troughing, a cross pin in one pair of the holes in this tape, a crossbeam arranged under the cable troughing and supported by said cross beam and stops provided on the crossbeam at both sides of the ends of said pin.

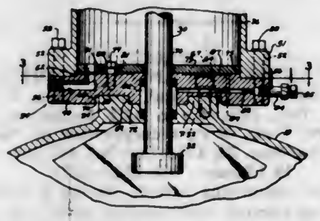
3,226,077
EXPANDABLE EASEL
Duncan C. Killen, 2521 Durant Ave., Berkeley, Calif.
Filed June 27, 1963, Ser. No. 291,042
12 Claims. (Cl. 248—448)

1. An easel comprising a standard containing two generally upright members, a first horizontal member adapted to be held at the lower end of said generally upright members, a first pair of clamps for tightly holding said first horizontal member at the lower ends of said upright members with the distance between the first clamps and the lower ends of said upright members being adjustable, a second horizontal member adapted to be held at an intermediate position on said generally upright members, a second pair of clamps for tightly holding said second horizontal member at the desired intermediate position on said upright members with the horizontal distance between the second clamps being adjustable, a brace member hingedly attached to said second hori-



zontal member; said brace including a foot member, a prop member extending between the second horizontal member and the foot member, a base member extending between the foot member and the first horizontal member, and an adjustable clamp for adjustably securing said base member to firmly hold said brace at a desired angle relative to said standard, and clamping means for holding work material in position on the front face of said generally upright standard.

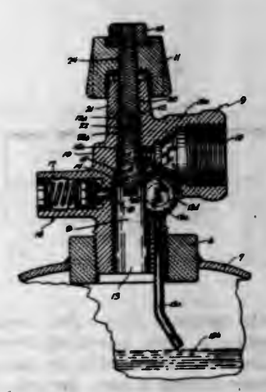
3,226,078
GATE VALVE
Clifford E. Anderson, Houston, Tex., assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed Sept. 27, 1963, Ser. No. 312,188
14 Claims. (Cl. 251—62)



13. In a gate valve having a body with a fluid passage extending therethrough, said body having a gate chamber terminating in a generally circular head having a plurality of spaced openings arranged in a circle, a gate movable back and forth in the gate chamber to close and open said passage, and a piston operator mounted on said head and operatively connected to the gate for moving the gate back and forth, said piston operator including a cylinder having an outwardly extending flange on one end thereof forming a rim with an outer diameter substantially greater than the diameter of said head, the improvement comprising: an adapter plate mounted on said head between the head and said cylinder and forming an end for the cylinder, said adapter plate being generally disclike in shape with a diameter substantially equal to the outside diameter of said rim and having a plurality of spaced openings

extending completely through said plate and arranged in a circle in axial alignment with the spaced openings on said head, said aligned spaced openings having at least a portion thereof within an area defined by an axial extension of the inner periphery of the cylinder, a circumferential raised portion on one face of the adapter plate fitting within the cylinder to position the cylinder relative to the adapter plate, and the opposite face of said adapter plate having a circumferential groove receiving said head in interfitting relation whereby said adapter plate is aligned accurately relative to said head, a generally circular sealing plate disposed within said cylinder and establishing a fluid tight seal therewith to prevent fluid within the cylinder from coming into contact with said spaced openings.

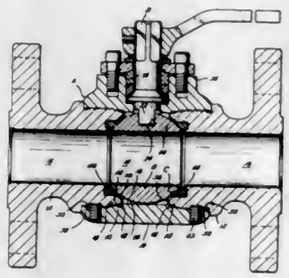
3,226,079
SWIVEL RING VALVE
Harry N. Shaw, Lake Forest, and Herbert G. Hanson, Arlington Heights, Ill., assignors to The Bastian-Blessing Company, Chicago, Ill., a corporation of Illinois
Filed Apr. 3, 1963, Ser. No. 270,298
2 Claims. (Cl. 251—218)



1. A control valve comprising a housing having a fluid flow passage therethrough defining a surface of revolution defining a valve port with a tapering valve seat facing the inlet end of the passage, said passage including a large cylindrical inlet portion between said inlet end and said valve seat, a cylindrical outlet portion of a diameter the same as the outlet of said valve seat, and a terminal bore portion having a cylindrical sealing surface and a threaded portion, a valve stem extending through said valve port having a head portion within said large cylindrical inlet portion and a threaded portion rotatably engaging the first mentioned threaded portion for relative axial movement and a stem portion received within said sealing surface having an annular groove therein, a ring seal in said groove slidably engaging said sealing surface, said stem and ring seal being received into place in said passage solely through said inlet end, an outlet conduit means opening into said cylindrical outlet portion adjacent to said valve seat, a connecting passage in said housing having an opening into said large cylindrical inlet portion adjacent to said valve seat at a point opposite said valve stem head portion, said valve stem head portion having oppositely tapering surfaces on the inlet and outlet sides thereof defining therebetween one wall of an annular venturi throat in conjunction with said valve seat and said large cylindrical inlet portion, said outlet tapering surface having a circumferential groove with spaced side walls diverging radially outwardly with the side wall remote from the valve seat the widest being essentially normal to the axes of the valve stem, a sealing ring swivelly

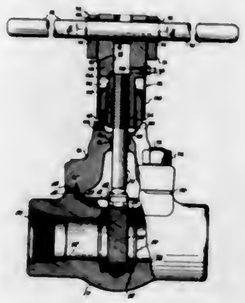
mounted in the groove, said sealing ring comprising a flexible, resilient plastic of low co-efficient of friction having an axial contoured sealing surface which rotatably mates with said widest wall of said groove in sealing relationship when closed and a tapering surface of revolution mating with the taper of the valve seat in non-rotating, leak-proof sealing relationship between the inlet and outlet ports under valve closing pressures, said valve head and sealing element being disposed within said valve seat taper to form therewith and with said large cylindrical inlet portion a venturi passage when said sealing element is away from said contact, said valve stem head portion extending beyond said connecting passage opening when the sealing element is fully open.

3,226,080
BALL VALVE SEAT
William E. Lowrey, Houston, Tex., assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed May 17, 1965, Ser. No. 459,519
5 Claims. (Cl. 251—309)



1. A rotatable spherical plug valve comprised of a valve body having a bore extending therethrough; a spherical valve member positioned in the bore, said spherical valve member having a port, the axis of which is alignable with the axis of the bore in the open position of the valve; an aperture in the valve body; a stem having an inner end engaged with the valve member and an axially outer end which extends through said aperture in the body; means forming a seal between said aperture and said stem; detachably connected end members extending into each end of the body bore, each end member having means which limits entry of the end member into the body a predetermined amount, each end member having a passage with which the port in the valve member can be aligned to form the run of the valve and an axially inner end having a portion taperingly diverging axially outward from the passage, an annular groove in the taperingly diverging portion of the axial inner end; each annular groove having inner and outer cylindrical walls disposed in coaxial relation with the respective passage and having an end wall disposed in substantially normal relation with the cylindrical walls; an annular seat member of deformable material positioned in each of said grooves, each seat member being of a lesser radial thickness than the radial thickness of its groove so that in the uncompressed condition there is substantial clearance between the seat member and groove along the entire length of both the inner and outer circumferences of the groove, each seat member having a portion extending beyond the surface of said taperingly diverging portion terminating in a tapered surface to oppose the spherical surface of the valve member, each end member extending into the body bore an amount sufficient to force the seat members into intimate sealing contact with the spherical surface of the valve member upon assembly thereby deforming the seat members a limited amount so that the seat members do not completely fill the groove either during assembly or operation within rated pressure, whereby said seat members act as a columnar spring against the spherical valve member.

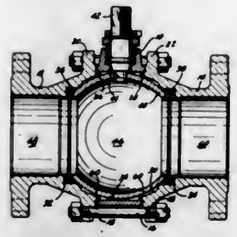
3,226,081
LUBRICATING SYSTEM FOR VALVE ACTUATOR
Bertram J. Milleville, East Longmeadow, Mass., assignor, by mesne assignments, to Rockwell Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania
Original application Aug. 18, 1953, Ser. No. 374,909, now Patent No. 3,071,343, dated Jan. 1, 1963. Divided and this application Oct. 10, 1962, Ser. No. 229,694
6 Claims. (Cl. 251—355)



5. A lubricating system for a rising stem type valve, having a valve housing and a bonnet on said housing, the combination of a threaded valve stem passing through said bonnet, a screw stem threaded to engage said valve stem and providing closed upper and lower lubricant chambers, channel means connecting said chambers for passage of lubricant therethrough, and means to rotate said screw stem to raise and lower said valve stem, such movement enlarging one closed chamber and contracting the other and vice versa to transfer lubricant from one lubricant chamber to the other.

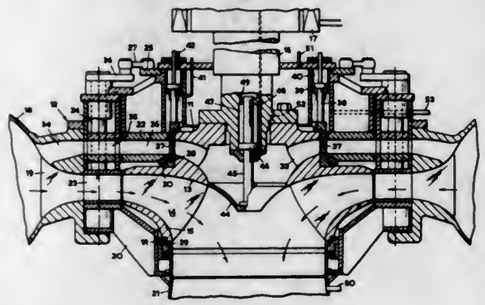
3,226,082
JOINT CONNECTION AND SEAL THEREFOR
Ronald A. Gulick, Sugar Land, and William E. Lowrey, Houston, Tex., assignors to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed Mar. 22, 1965, Ser. No. 441,767
10 Claims. (Cl. 251—367)

1. A valve comprising a body having a central bore and having an internal frusto-conical surface at each end thereof, a pair of end members each having an annular rim being slightly smaller than said bore establishing a clearance therebetween, said rim entering the bore and having a radial flange disposed generally normal to the annular rim which contacts the end of the housing to limit the amount of entry of the annular rim into said bore, means for moving the end members linearly along a common axis to bring the radial flange and the end of the housing into intimate sealing contact, an annular pocket of generally triangular cross section defined at each end of the body by cooperation of the frusto-conical surface of the body with the rim and the radial flange of each end member, a deformable sealing ring of initially square cross section disposed within each of the pockets, each of said frusto-conical surfaces initially contacting an outer circumferential corner of the sealing ring and deforming the seal ring to a generally triangular cross sectional shape as the end members are moved linearly into assembly with the body, thereby establishing seals between the body and end members which are adapted upon an increase in pressure within the valve which is in communication with said seal through said clearance to cause



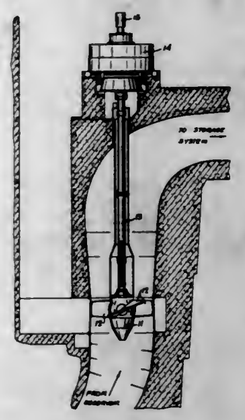
an increase in the compression of said seal, each of the sealing rings having a maximum cross-sectional area less than the minimum cross-sectional area of the respective pocket and a minimum lineal length so that the frusto-conical surface in assembled condition will compress the lineal length of the sealing ring at least ten percent.

3,226,083
REVERSIBLE PUMP TURBINES
Michael Braikevitch and James Gavin Warnock, Netherton, England, assignors to The English Electric Company Limited, London, England, a British company
Filed Oct. 29, 1963, Ser. No. 319,773
Claims priority, application Great Britain, Apr. 5, 1961, 12,185/61
8 Claims. (Cl. 253—26)



1. A reversible pump turbine comprising a runner having a hub and vanes mounted thereon and defining working fluid passages, stator structure co-operating with said runner and including an inlet/delivery casing, a draft tube, and passage means between said inlet/delivery casing and said working fluid passages, said runner and stator structure operating as a turbine when the runner is driven in one direction of rotation by the flow of working fluid through the working fluid passages from the inlet/delivery casing to the draft tube, and operating as a pump when rotation of said runner in the other direction causes the flow of working fluid through the working fluid passages from the draft tube to the inlet/delivery casing, blading means on said runner, and means selectively to supply working fluids to said blading means to drive said runner in said other direction.

3,226,084
ADJUSTABLE BLADE PROPELLER TYPE PUMPS AND PUMP TURBINES
Feodor Kanger, Cote St. Luc, Quebec, Canada, assignor to Dominion Engineering Works Limited, Montreal, Quebec, Canada
Filed Sept. 16, 1964, Ser. No. 396,974
1 Claim. (Cl. 253—31)

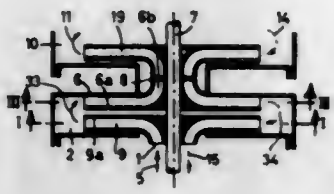


A hydro-electric power generation installation including an adjustable blade propeller type pump or pump turbine and a motor generator wherein no wicket gates are provided and wherein the blade angle of the pump turbine is set in accordance with hydraulic conditions comprising, a rotating assembly including a hollow shaft, a hub casing rigidly secured to one end of said shaft and comprising a fluid reservoir, rotor blades journalled in said hub casing for rotation about axes radial to said casing, a servo-motor disposed within said casing, said servo-motor including a piston operatively connected to said blades to control and adjust the angular positions thereof, a pump disposed within said casing, means for driving said pump, an axially movable control valve disposed within said casing, the inlet of said pump communicating with fluid in said fluid reservoir and the outlet thereof communicating with said control valve, said control valve adapted to direct said fluid under pressure from said pump to one side of said piston to rotate said blades in one direction and to the other side of said piston to rotate said blades in the opposite direction, a control rod extending through said hollow shaft and connected to said control valve, said pump together with said drive means for said pump and said control valve being axially aligned, and control valve positioning means located at the other end of said hollow shaft and above the motor generator and operatively connected to said control rod, said control valve positioning means functioning in response to a command to move said control valve and to thereby rotate said blades to a selected angular position, said control valve positioning means comprising a screw jack, the control rod having screw threads thereon and adapted to be moved vertically to move the control valve in accordance with predetermined data of hydraulic characteristics and operating conditions.

3,226,085
ROTARY TURBINE
Herbert Bachl, Turkenstrasse 40/II, Munich, Germany
Filed Oct. 1, 1962, Ser. No. 227,477
3 Claims. (Cl. 253—164)

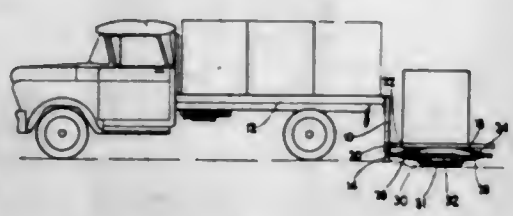
1. A rotary turbomachine having a plurality of stages wherein the working medium flows through the first rotor stage successively in a continuous spiral downstream direc-

tion first axially, then radially and then tangentially relative to the rotational axis of the machine, and wherein the working medium then flows through a vaneless collecting chamber and stator in the same spiral downstream direction, the fluid leaving said vaneless collecting chamber and entering said stator tangentially, said fluid then being deflected radially and axially into a central opening of the next downstream rotor, respective stages of said machine having a stator and rotor with an intervening vaneless collecting chamber, said rotor having channel forming means defining a radial flow channel portion of guiding the medium approximately radially in the range near the rotational axis of said rotor, and defining a tangential flow channel tangent to a circle centered on said rotational axis



for guiding the medium in the range of the outer diameter of said rotor, said channel forming means having a central axial opening communicating with said radial flow channel portion, said channel forming means further defining a tangential peripheral opening communicating with said intervening collecting chamber, said stator communicating with said intervening collecting chamber through said tangential peripheral opening, said stator having channel forming means shaped to continue the fluid flow from said collecting chamber in a continuous spiral downstream direction, said stator channel forming means defining a first outer tangential flow portion followed by an inner radial flow portion and terminating in a central opening communicating with a next successive stage.

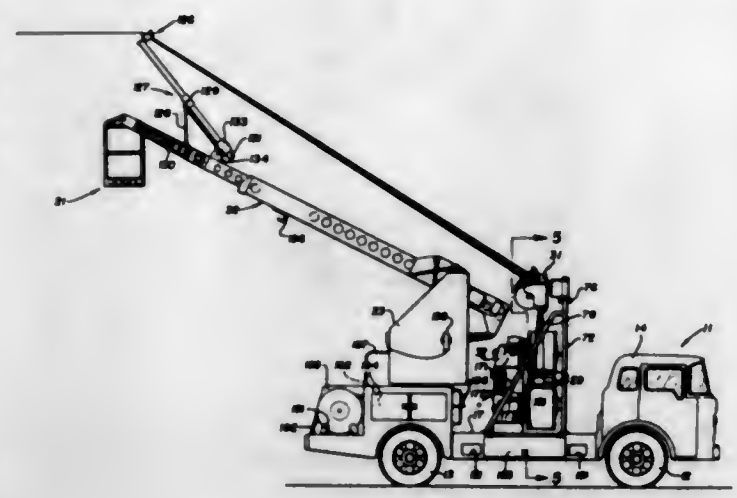
3,226,086
POWER LIFT FOR TRUCKS
Daniel C. Lavieri, New Hartford Road, Winsted, Conn., and Benjamin Z. Gordon, 22 Fernbell Lane, West Hartford, Conn.
Filed Jan. 8, 1964, Ser. No. 336,516
8 Claims. (Cl. 254—93)



1. A power actuated lift for trucks comprising,
a ground supported vertically positioned frame attached to and extending below the rear of a truck body,
load carrying means pivotally and slidably mounted on said frame on opposite sides of said truck and extending rearwardly thereof,
and power actuating means for simultaneously raising and lowering said load carrying means.

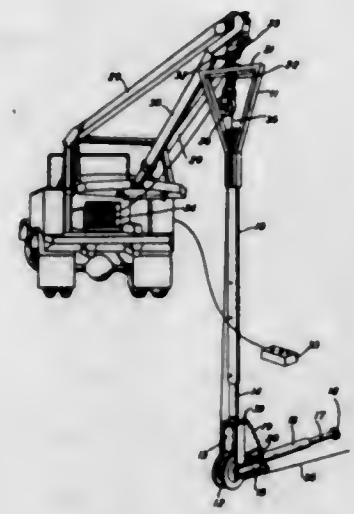
3,226,087
MULTIPLE CONDUCTOR STRINGING APPARATUS
Jay M. Eitel, Los Altos, Calif., assignor to Telsta Corp., San Carlos, Calif., a corporation of California
Filed Mar. 6, 1961, Ser. No. 93,684
23 Claims. (Cl. 254—134.3)

1. In a multiple conductor stringing apparatus, a vehicle of the type having a frame, a boom structure mounted on the frame, said boom structure including means for rotating the outer end of the boom structure about a vertical axis, swinging the same about a horizontal axis and moving the same toward and away from the vehicle, a plurality of conductor carrying reels rotatably and removably mounted on the frame at a stationary location between said vertical axis and the front end of



the vehicle, means mounted on the frame and in the vicinity of the conductor carrying reels for simultaneously guiding a plurality of the conductors as they are payed from the reels as the vehicle is advanced, and means mounted on the boom structure for guiding the plurality of conductors as they are payed out over the boom structure.

3,226,088
APPARATUS FOR PULLING CABLE THROUGH UNDERGROUND CONDUIT
Henry J. Habighorst, Phoenix, Ariz., assignor to American Telephone and Telegraph Company, New York, N.Y., a corporation of New York
Filed July 16, 1963, Ser. No. 295,404
12 Claims. (Cl. 254—134.3)

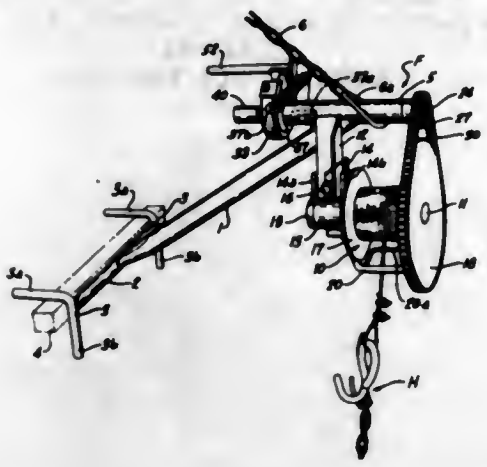


1. A frame for placing cable in underground conduit comprising: an extendable shaft having a sheave on one end and a yoke on the other, said yoke being triangular in shape and formed from two arms extending from the shaft in a Y shape and being joined at their extended ends by a bar, mounting means rotatably and pendulously attaching said frame to a support, and a pulley rotatably and pendulously attached to said frame by the same means attaching said frame to said support.

3,226,089
PORTABLE WINCH DRUM HOIST

Paul Patz, Pound, Wis.

Filed Feb. 24, 1964, Ser. No. 346,776
3 Claims. (Cl. 254—145)



1. A compact and portable hoist comprising, a main frame having a pair of laterally spaced angle brackets secured at one end and adapted to set on and abut against a horizontal support, said frame extending upwardly and outwardly from said brackets, a tension member fixed to the other end of said frame and extending therefrom to partially support the hoist, a drive shaft rotatably mounted on the other end of said frame and extending normally to said horizontal support, a drum shaft rotatably mounted on and adjacent said other end of said frame, a winding drum fixed to said drum shaft, a driving connection between said shafts, means for adjusting the distance of said drum shaft relative to said drive shaft for adjusting said driving connection, said frame having means for mounting an electric drill on said frame whereby said drill is located generally over said one end of said frame, and means forming a quick detachable driving connection between said drill and said drive shaft.

3,226,090
MATERIALS HANDLING ARRANGEMENT

Wilmer J. E. Sauerbrey, Towson, Md., assignor to Aircraft Armaments, Inc., Cockeysville, Md., a corporation of Maryland

Filed June 18, 1963, Ser. No. 288,699
7 Claims. (Cl. 254—190)

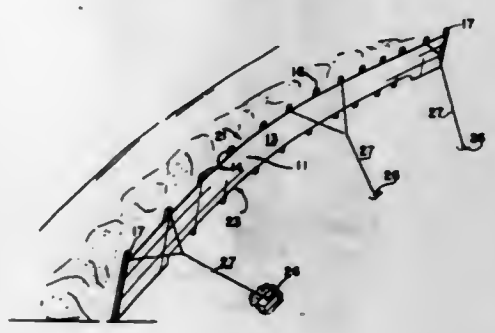


2. A cable hoist arrangement comprising a supporting frame, a cable drum carried by said frame and having a helical cable receiving groove formed thereon, a drive motor for said drum, and a cable guide carried solely by said drum and being free to movably rotate about the axis of said drum, said cable guide having a main body portion encircling said drum and a plurality of circumferentially spaced groove-riding rollers mounted on said main body portion and riding in said groove for combined anti-friction support of said cable guide on said drum and lateral positioning and stability of said cable guide within said groove, and tangential and lateral cable engaging and guiding means on said main body portion substantially tangentially disposed away from a point of departure and arrival of the cable from and onto said drum for guiding said cable both tangentially and laterally as it moves onto and from said drum and rotationally following movement of said cable guide assemblies about said drum as a function of tangential direction of cable pull.

3,226,091
WIND BREAK

Victor N. Root, Wheat Ridge, Colo.
(5830 E. 16th Ave., Denver, Colo. 80220)

Filed Feb. 14, 1963, Ser. No. 259,479
2 Claims. (Cl. 256—12.5)



1. A windbreak fence for the collection of air entrained loose blown materials through control of the air and wind stream flow patterns of prevailing winds comprising a plurality of spaced apart support posts disposed longitudinally along an arc of curvature that is concave with respect to the direction of prevailing wind travel, said posts further having the top free ends inclined forwardly into the direction of prevailing winds, and a closed wall face fixed on said posts with at least a portion of the lower edge of said wall face being in position above the supporting ground to provide a gap for the passage of wind beneath said wall face and along the ground surface, said concave and forwardly inclined disposition for the posts and wall face providing an increased flow of air toward the central portions of said fence and downwardly through the gap at the lower edge of said wall face to in part balance the wind stream flow across the top and bottom edges of said wall face whereby said wall face acts in the manner of a flat plate surface disposed transversely to the direction of air flow to create eddy currents behind said wall face reducing the loose material carrying capacity of the wind stream flow and resulting in the accumulation of deposits of said loose materials downstream from said windbreak.

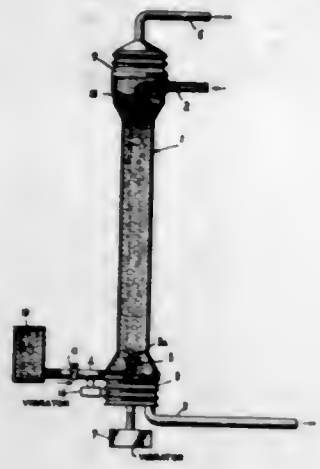
3,226,092
SPRAY-TYPE PROCESSING COLUMNS WITH PULSED CONTINUOUS PHASE

Geoffroy Graham, 10 Cours de la Liberation, Grenoble, Isere, France; Jacques Hure, 20 bis Rue la Fontaine, Fontenay-aux-Roses, France; and Rose Saint-James, 9 Rue du General Niox, Paris 16, France

Filed Apr. 26, 1963, Ser. No. 276,039
Claims priority, application France, May 9, 1962, 896,912, Patent 1,330,250
5 Claims. (Cl. 259—2)

1. A spray-type pulsed column for liquid-liquid processing with pulsation of the continuous phase to provide for maximum transfer between the dispersed phase and the continuous phase, comprising: a vertical processing column; means located adjacent one end of said column for introducing continuous phase liquid into said column at a predetermined rate and pressure; means located adjacent the other end of said column for withdrawing said continuous phase liquid from said column at a predetermined rate to maintain said column of continuous phase

liquid under a predetermined pressure; an injector disposed in said column adjacent said other end of said column for introducing at a predetermined rate, uniform-sized droplets of a liquid in the dispersed phase into said continuous phase liquid; means for supplying said liquid to be dispersed to said injector at a pressure between at least as great as and slightly greater than said predetermined pressure of said column; means located adjacent said one end of said column for withdrawing said dispersed



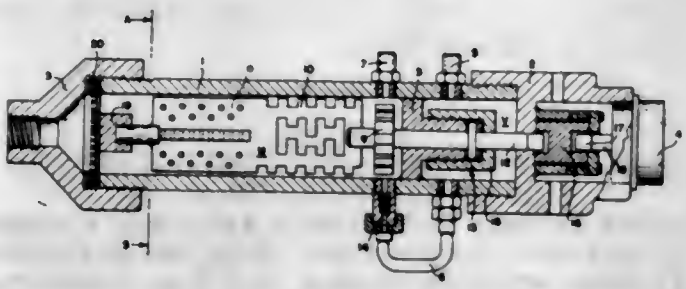
phase from said column; vibrator means connected to said other end of said column for pulsing the liquid in said column, said vibrator being vibrated at substantially the resonant frequency of said droplets and at substantially the maximum amplitude which said droplets are capable of withstanding without disintegrating; and an elastic member forming a closure for said one end of said column, said elastic member being expanded and contracted by the pulsed phases of the liquid in said column and in harmony therewith.

3,226,093

MIXING APPARATUS FOR MULTI COMPONENT RESIN

Walter Gugel, Kamen, Westphalia, and Max Gerhardt, Cologne-Zollstock (Rhine), Germany, assignors to General Mills, Inc., a corporation of Delaware

Filed Nov. 23, 1962, Ser. No. 239,644
Claims priority, application Germany, Dec. 8, 1961, Sch 30,684
1 Claim. (Cl. 259—7)



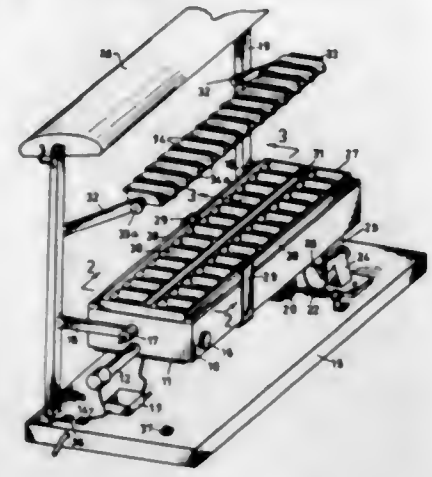
An apparatus for mixing multi-component resins and for injecting the resins into openings which comprises, a mixing chamber having an outlet, means mounted in said chamber for mixing at least two components of a hardenable resin product under pressure, a power means mounted outside said chamber for driving said means for mixing, a drive shaft interconnecting said power means and said means for mixing, a forechamber mounted at the entrance of said shaft to said chamber, and passage means interconnecting said chamber and said forechamber by a path extending between the exteriors of said chamber and said forechamber to direct one of said components past said entrance and said shaft prior to introduction into said chamber.

3,226,094

WARMING AND SHAKING APPARATUS

Joel Margolis, Camperdown, New South Wales, Australia, assignor to The Royal Alexandra Hospital for Children, New South Wales, Australia, a body corporate of New South Wales

Filed July 13, 1964, Ser. No. 382,317
Claims priority, application Australia, Aug. 1, 1963, 33,743/63
2 Claims. (Cl. 259—13)



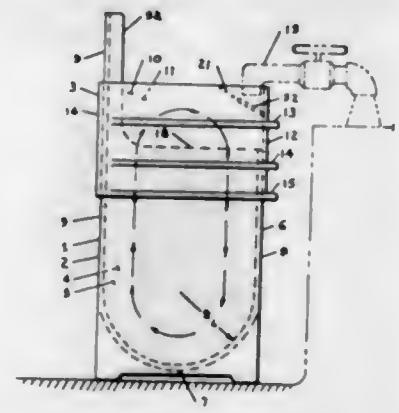
1. Apparatus for simultaneously warming and shaking a number of samples consisting of at least one tray divided into a plurality of separate liquid holding compartments, and a warming device, means detachably to secure said tray to said warming device, and means to move said warming device repeatedly so as to effect a gentle shaking action of the contents of the compartments in the tray, together with a device formed of a die casting comprising a plurality of transverse compartments each of which is open at each end and each having a plastic liner therein.

3,226,095

FRUIT AND VEGETABLE WASHING DEVICE WITH VERTICAL CIRCULATIVE FLOW AND EXTENDABLE BODY

Charles W. Ranson, 7906 Agnew Ave., Los Angeles 45, Calif.

Filed Dec. 8, 1964, Ser. No. 416,829
6 Claims. (Cl. 259—18)



1. A washing device including two side walls extending longitudinally and vertically and spaced apart, a lateral wall extending between said side walls to provide a bottom wall and two opposite end walls and connecting with said side walls in unitary relation, and the inner surface of said bottom wall and the inner surface of at least one of said end walls substantially faired to provide a substantially curved inner surface at the region of juncture, and said walls terminating upwardly at an intermediate elevation generally except at least one wall portion which extends upwardly to a relatively high elevation generally, and a vertical extension portion, said extension portion including two walls extending vertically and

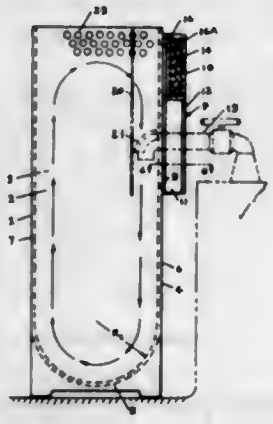
spaced apart, and a wall extending between said two spaced vertically extending walls and connecting therewith in unitary relation, and said washing device and said extension portion operatively associated in a telescoping-like manner, and said upwardly extending wall portion of said washing device normally located opposite to said wall extending between said two spaced walls of said vertical extension portion, and said extension portion substantially excluding a structurally continuous wall opposite to said wall extending in unitary relation between said two spaced vertically extending walls.

3,226,096

FRUIT AND VEGETABLE WASHING DEVICE WITH VERTICAL CIRCULATIVE FLOW AND FAUCET ADAPTER

Charles W. Ranson, 7906 Agnew Ave., Los Angeles 45, Calif.

Filed Dec. 21, 1964, Ser. No. 420,075
6 Claims. (Cl. 259—18)



1. A washing device including two side walls extending longitudinally and vertically and spaced apart, a lateral wall extending between said side walls to provide a bottom wall and two opposite end walls and connecting with said side walls in unitary relation, and the inner surface of said bottom wall and the inner surface of at least one of said end walls substantially faired to provide a substantially curved inner surface at the region of juncture, and an opening upwardly in at least one of said walls, and said opening covered by at least one elastically resilient closure portion having at least one free vertical edge to provide for insertion into said device of a faucet nozzle in a substantially leak resistant manner, and said closure portion comprising many horizontally disposed bristle-like elements, and means for supporting said closure portion with respect to said device.

3,226,097

MIXER

Michael Mark Vayda, Jr., Arlington, Charles B. Darley and William Paul Jensen, Springfield, and Roland T. Talton, Jr., Falls Church, Va., assignors to Atlantic Research Corporation, Fairfax, Va., a corporation of Virginia

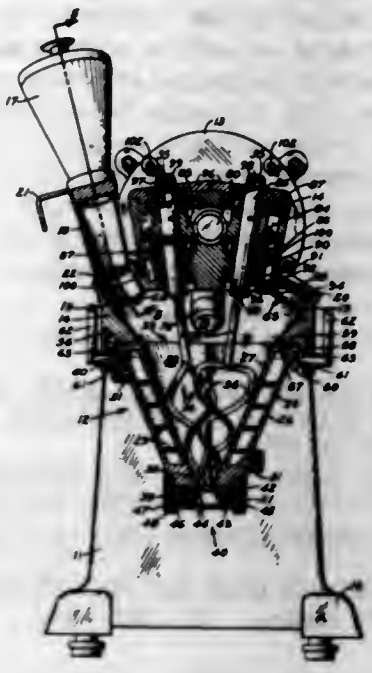
Filed Sept. 13, 1963, Ser. No. 308,764
16 Claims. (Cl. 259—41)

5. Mixing apparatus comprising

(a) a receptacle having a substantially vertical axis and having an interior surface throughout its length in the shape of the nonoverlapping peripheral portions of at least two intersecting cones, the base of each of said cones being displaced upwardly with respect to the apex of each of said cones, the longitudinal axis of each of said cones being inclined with respect to the axis of said receptacle at an angle such that said axes of said cones intersect below the bases of said cones, said cones being truncated to provide a single discharge port at the bottom of said receptacle,

(b) valve means positioned at said port for controlling communication within and without said receptacle through said port, and

(c) a plurality of interdigitating mixing blades, at least one mixing blade being rotatably mounted in each



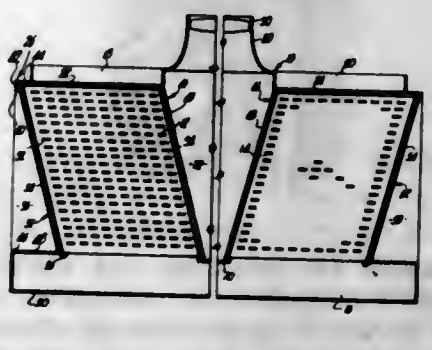
of said cones, each of said mixing blades generating a substantially conical surface during rotation thereof which intersects the conical surface generated by each other of said blades, the apex of said conical surface being adjacent to said port.

3,226,098

INLET STRUCTURE FOR COOLING TOWERS

Howard A. Shryock, Shawnee Mission, Kans., assignor to The Marley Company, Kansas City, Mo., a corporation of Delaware

Filed Aug. 21, 1961, Ser. No. 132,932
16 Claims. (Cl. 261—24)



1. A cooling tower comprising:

a casing having an air inlet and an air outlet spaced therefrom;

a fill assembly within the casing between said air inlet and the air outlet;

hot water distribution means overlying the fill assembly;

a cold water basin disposed in underlying relationship to said fill assembly;

fan means on the casing operable to force air through the fill assembly from said air inlet to the air outlet; and

a cellular wall member on the casing within said casing in full spanning relationship to said air inlet and provided with a pair of spaced, opposed major faces, said wall member being constructed of elongated, corrugated strips of material interconnected at zones causing the strips to define a multiplicity of individual, elongated, generally parallel, open end cells of greater longitudinal length than transverse width with the open ends of the cells lying in the planes

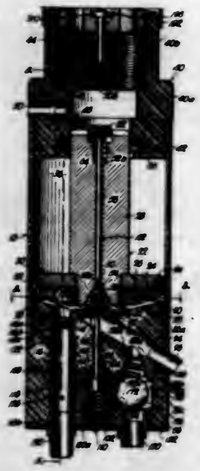
of respective major faces of the wall member, the distance between said major faces of the wall member being substantially less than the width and length dimensions of the wall member, said strips being located at an angle transversely of the wall member causing the longitudinal axes of the cells to be inclined with respect to the horizontal in a direction disposing the open ends of the cells facing away from the fill assembly to be located above the opposite ends of respective cells, the angle of inclination of each of the cells being sufficient to dispose the strips in the path of travel of water splashing from the interior of the casing toward the air inlet but without producing a substantial pressure drop in the air passing through the cells of said wall member.

3,226,099

APPARATUS FOR PREPARING AND DISCHARGING WATER HAVING CONTROLLED AMOUNTS OF CARBONATION

Stewart L. Black, Independence, and Theodore L. Hanson and Billie G. Nail, Kansas City, Mo., assignors to The Vendo Company, Kansas City, Mo., a corporation of Missouri

Filed May 7, 1962, Ser. No. 192,764
11 Claims. (Cl. 261—35)



11. Apparatus for preparing and discharging water having controlled amounts of carbonation comprising:

structure having a liquid receiving chamber therein;

shiftable means in the chamber dividing the latter into a pair of separate compartments and initially located in a first position at one end of the path of travel thereof, the effective volume of one of the compartments being decreased and the effective volume of the other compartment being increased as the shiftable means is shifted toward a second position at the opposite end of its path of travel;

means connected to said structure for supplying uncarbonated water to said one compartment only as the shiftable means is shifted from said second position toward the first position of the same;

means on the structure externally of the chamber defining a liquid conduit communicating said one compartment with the other compartment;

carbon dioxide delivery means connected to said conduit means adjacent the other compartment for supplying pressurized carbon dioxide to said other compartment under a pressure to shift the shiftable means;

control means disposed on said carbon dioxide delivery means and selectively operable to release carbon dioxide into said conduit means for mixture with water therein, the effective surface area of said shiftable means facing said one compartment being less than the corresponding effective surface area thereof facing the other compartment whereby said one compartment normally contains a supply of uncarbonated water and upon operation of the selectively operable means disposed on said carbon dioxide delivery means to release said pressurized carbon dioxide into said other compartment via the conduit means and thereby effect shifting of the shiftable means toward said second position thereof, the water in said one compartment is displaced therefrom by said shiftable means and forced into said other compartment via said conduit means for mixing with the carbon dioxide, said structure being provided with liquid bypass means therein communicating said other compartment with the conduit defining means;

selectively operable control means in said bypass means for permitting selective control of liquid flow therethrough; and

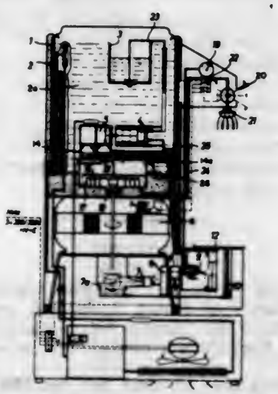
means for discharging carbonated water from said other compartment after displacement of a preselected amount of water from said one compartment into the other compartment whereby the shiftable means is then caused to return to the initial position thereof by the refilling of the one compartment with uncarbonated water.

3,226,100

APPARATUS FOR PRODUCING WHIPPED CREAM

Ernst Bänziger, Grenzstrasse 1,
St. Margrethen, Switzerland

Filed June 14, 1963, Ser. No. 288,044
Claims priority, application Germany, June 18, 1962, B 67,715
4 Claims. (Cl. 261—140)



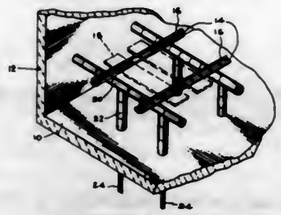
1. An apparatus for producing whipped cream, comprising a mixing chamber for mixing cream and air, an outlet line leading from said mixing chamber, a control valve near the end of said outlet line remote from said chamber, a cream supply line and an air supply line leading to said chamber, a cream feed pump associated with said cream supply line, an air feed pump associated with said air supply line, means for cooling at least said cream supply line and said chamber by means of ice water, a cream inlet valve in said cream supply line, and a float in said chamber for closing said cream inlet valve when raised to an elevated position in said chamber.

3,226,101

INSULATED FURNACE MEMBERS

Joseph K. Balaz, Chicago, and Richard A. Kelly, Thornton, Ill., assignors to Flinn & Dreffein Engineering Co., Chicago, Ill., a corporation of Illinois

Filed Oct. 21, 1963, Ser. No. 317,502
5 Claims. (Cl. 263—6)



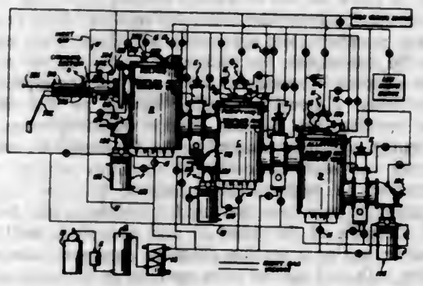
1. In a furnace construction for use in the heating of metal stock wherein supports are provided upon which said stock is adapted to rest, said supports comprising tubular members whereby coolant can be passed therethrough and wherein said members include vertical and horizontal members with the horizontal members being provided with upstanding rail portions which define the bed of the furnace for supporting the stock to be heated, the improvement in means for protecting said supports from the heat of the furnace comprising a layer of insulating material disposed immediately over the outer surface of said supports, and a plurality of blocks of refractory material overlying said layer of insulating material whereby the refractory material is directly exposed to the heat of the furnace, said insulating material and said refractory blocks extending around said horizontal support members into close fitting relationship with the opposite sides of said rail portions while the upper surface of said rail portions remain exposed for contact with said stock, and wherein said insulating layer comprises sheets of fibrous material disposed in a plurality of thicknesses over said supports, said blocks each comprising segments of a generally circular configuration, and including annular guide track means, said track means defining laterally extending flanges and being rigidly attached to said members at spaced apart intervals thereon, each of said guide tracks extending partially around said members, and recesses defined by said blocks adapted to receive said laterally extending flanges whereby said blocks can be held in place on said members.

3,226,102

CONTINUOUS VACUUM AND INERT GAS APPARATUS FOR TREATING AND PROCESSING TITANIUM AND OTHER METALS

George A. Pagonis, Santa Clara, Calif., assignor to Light Metals Research Laboratory, Inc., San Jose, Calif.

Filed Jan. 18, 1963, Ser. No. 252,481
23 Claims. (Cl. 266—34)



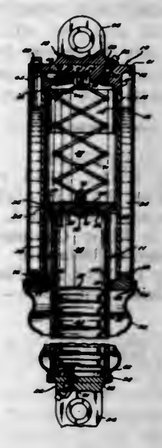
7. A continuous apparatus for the melting and treatment of metals, comprising a series of inter-connected refractory-lined crucibles providing a closed system, each crucible defining a treating zone, the first of said crucibles in the series having a discharge conduit arranged to discharge molten metal into the next crucible of the series and the last crucible of the series having a discharge conduit arranged to discharge molten metal into a mold; means in each discharge conduit for selectively isolating the treating zone of each crucible from the next adjacent zone; at least one of said crucibles having a vacuum feed chamber connected thereto for surface-degasifying and discharging solid materials into said crucible, said vacuum feed chamber having means for preheating said solid materials; at least one of said crucibles having means for introducing inert gas into the molten metal therein and for withdrawing inert gas and vaporized materials therefrom; and the closed system being provided with means for maintaining an inert gas atmosphere throughout.

3,226,103

FLUID SPRING AND SHOCK ABSORBER

Harold F. McNenny, 11820 Edgewater Drive, Lakewood, Ohio

Filed Oct. 29, 1963, Ser. No. 319,818
7 Claims. (Cl. 267—64)



1. A fluid spring comprising a pair of telescoping assemblies cooperating to define a cavity the volume of which is changed by telescoping movement of said assemblies, a fluid under pressure in said cavity urging said members in a direction causing an increase in volume of said cavity, pumping means powered by relative movement of said assemblies to pump fluid under pressure into said cavity, said pumping means having a pumping efficiency which increases with increasing velocity of relative movement between said assemblies and which decreases with increased pressure in said cavity, bleed means operable by movement of said assemblies in said direction beyond a predetermined relative position to release fluid from said cavity only when the pressure in said cavity exceeds a predetermined minimum pressure.

3,226,104

UNIVERSAL CLAMPING DEVICE

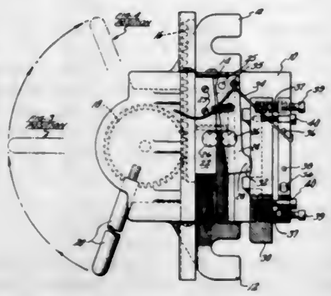
Raymond G. Preisser, Farmington, Conn. (R.F.D., Forestville, Conn.)

Continuation of application Ser. No. 265,012, Mar. 11, 1963. This application Nov. 9, 1964, Ser. No. 409,772
6 Claims. (Cl. 269—227)

1. A clamping device for work pieces being operated on in a machine tool, comprising

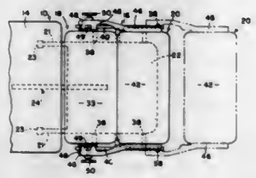
a body member adapted for attachment to the table of

a machine tool and having a guideway therein,
a slide movable along said guideway,
mechanical means to actuate said slide,
work clamping jaws on said slide, one of said jaws being fixed to the slide and the other pivotally mounted thereon for swinging movement toward and from the fixed jaw,



and a generally longitudinally extending cam on said body member having a cam surface engaging said pivotally mounted jaw member during its movement to slightly pivot said jaw, whereby said pivotally mounted jaw may be moved from its work piece receiving position to a work piece clamping position during a portion of the movement of said slide.

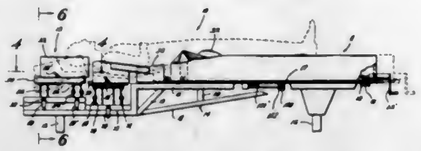
3,226,105
SELF-STORING KNEE REST FOR MEDICAL EXAMINATION TABLE AND THE LIKE
Egon R. Weickgenannt and John A. Maher, Rochester, N.Y., assignors to Ritter Company, Inc., Rochester, N.Y., a corporation of Delaware
Filed July 11, 1962, Ser. No. 209,173
9 Claims. (Cl. 269—324)



6. In a medical examination table construction or the like, having a seat rest section, an improvement comprising,
(a) a partial leg rest section,
(b) means for articulating said partial leg rest section relative to said seat rest section,
(c) a knee rest section,
(d) means for telescoping said knee rest section on said partial leg rest section to form a variable length leg rest section, and
(e) said telescoping means including means for mounting said knee rest section substantially laterally on said partial leg rest section.

3,226,106
ADJUSTMENT TABLES
Merle E. Johnson, 1417 Carlisle, and Edwin F. Ustynik, Box 90, both of Roseaberg, Tex.
Filed May 13, 1963, Ser. No. 279,836
3 Claims. (Cl. 269—325)

1. An adjustment table comprising, a portion to receive and support the lower torso of a patient, a separate portion to receive and support the shoulders and chest of a patient, a separate portion to receive and support the head of a patient, means to vertically adjust said shoulder support independently of said head and torso support, means to vertically adjust said head support independently of said shoulder and torso support, and spring means normally holding said head and shoulder



supports in predetermined longitudinal position relative to said torso support but yieldable whereby said head and shoulder supports may each move longitudinally independently of each other and relative to said torso support.

3,226,107
SHEET FEEDING METHOD AND APPARATUS
Alfred J. Staines, Shaker Heights, Ohio, assignor to Harris-Intertype Corporation, Cleveland, Ohio, a corporation of Delaware
Filed June 26, 1963, Ser. No. 290,841
10 Claims. (Cl. 271—27)

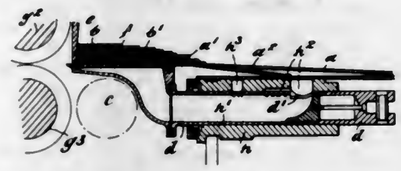


1. A sheet feeding method for feeding the topmost sheet of a pile from the pile comprising the steps of raising the rear end portion of the topmost sheet of the pile to separate the rear portion of the sheet from the pile, directing a stream of floating air under said topmost sheet and toward the forward end thereof while the rear portion of the sheet is separated from the pile, engaging the rear end portion of the sheet by forwarding suction members, feeding said sheet forwardly of said pile by moving said forwarding suction members in a forward direction after the stream of floating air is initiated, maintaining the rear portion of the sheet clear of the pile as it is moved forwardly, engaging the forward end of the sheet after the forward end of the sheet has been fed forwardly of the pile to a predetermined location by movement of said forwarding suction members for feeding away from the pile, and terminating the flow of said floating air toward said forward end of the sheet before the forward end of the sheet is moved by said forwarding suction members 8% of the total forwarding movement of the sheet by said forwarding suction members.

8. A valve for use in a sheet feeding apparatus having a cam shaft supporting cams for moving sheet gripping sucker members, and separating and floating air nozzles and for connecting the sucker members and air nozzles with a source of suction and a supply of air, respectively, comprising, a housing member having air and suction inlet openings and air and suction outlet openings, said air outlet openings adapted to be connected to said air nozzles and said suction outlet openings adapted to be connected to said sucker members, a rotor member mounted on said cam shaft and rotatable in said housing and rotatable at the speed of said cam shaft, said rotor member having a suction chamber constantly communicating with said suction inlet opening so that said suction chamber constantly has a suction applied thereto, means providing a passageway in said rotor communicating said suction chamber with said suction outlet openings upon

rotation of said rotor, said rotor member also including an air chamber constantly communicating with said air inlet opening, and means providing a passageway in said rotor for communicating said air chamber with said air outlet openings during a portion of the rotation of said rotor chamber.

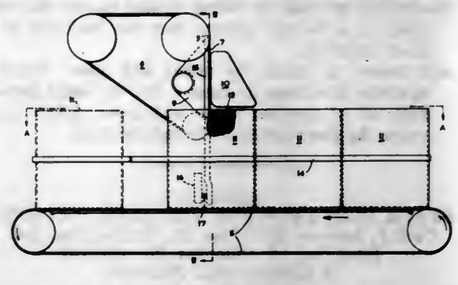
3,226,108
SUCTION FEED MECHANISM FOR CORRUGATED AND LIKE CARDBOARD
Thomas Desmond Bishop, Solihull, England, assignor to The Deritend Engineering Company Limited, Birmingham, England, a British company
Filed Oct. 29, 1962, Ser. No. 233,663
Claims priority, application Great Britain, Nov. 11, 1961, 40,446/61
1 Claim. (Cl. 271—32)



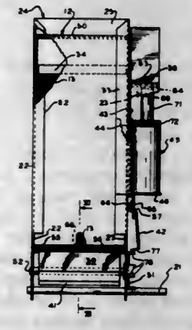
Mechanism for feeding corrugated cardboard blanks comprising, in combination, a support for holding a stack of blanks, a gate for preventing forward movement of blanks above the lowermost blank in the stack, a suction box for gripping by suction the underside of the lowermost blank, means for moving the suction box forward from a starting position beneath the stack at a speed that increases gradually to a maximum value and remains at such maximum value for a finite period, a first valve which connects the suction box to a vacuum line to cause it to grip the lowermost blank while the suction box is moving forward at increasing speed, a pair of feed rolls which are driven continuously at a peripheral speed equal to the maximum linear speed of the suction box and which are so located as to engage the lowermost blank immediately after the suction box attains its maximum linear speed, a valve-operating member operatively connected to the suction box to close the first valve immediately after the feed rolls engage the lowermost blank, and a second valve operatively connected to the suction box to admit atmospheric air to the suction box immediately after the feed rolls engage the lowermost blank, said second valve being effective to release the lowermost blank from the suction box while the suction box is still traveling at its maximum speed.

3,226,109
DOCUMENT PROCESSING MACHINES
Stanley Howard Adcock Thompson, Stoke Bishop, Bristol, and George James Samuel Moult, Staple Hill, Bristol, England, assignors to Parnall & Sons Limited, Birmingham, England, a British company
Filed Oct. 8, 1962, Ser. No. 228,942
Claims priority, application Great Britain, Oct. 17, 1961, 37,102/61
14 Claims. (Cl. 271—34)

1. A document processing machine comprising conveyor belt means having a generally horizontal run, an open-sided magazine on and carried by said conveyor run and adapted to hold a series of vertically disposed and horizontally stacked documents, said magazine having aligned front and rear wall apertures extending from said open side, and document abstracting means disposed in the path of movement of said magazine apertures so that as the magazine is moved in one direction by the conveyor means the leading stacked document is engaged by the abstracting means and is thereby fed out of the magazine.

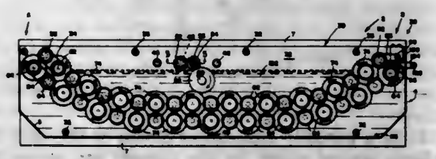


3,226,110
LEAF DISPENSER
John P. Greene, Mountain Lakes, N.J., assignor to Parachem Corporation, North Newark, N.J., a corporation of New Jersey
Filed Nov. 8, 1963, Ser. No. 323,282
23 Claims. (Cl. 271—41)



19. Feeding means for a stack of leaves in a leaf dispenser comprising a turnable supporting shaft journaled about a generally horizontal axis under said stack, four resilient bendable vanes equally spaced around, movable with and extending outward from, said shaft, means for turning said shaft to feed one leaf at a time from the bottom of said stack, and a time-delay device connected to said turning means so that, upon actuation thereof and then releasing, said turning means returns only slowly to normal position.

3,226,111
MACHINE FOR PASSING SHEET MATERIAL THROUGH A LIQUID
James B. Ellis, Cornwell Heights, Pa., assignor, by mesne assignments, to Klondex Incorporated, Rochester, N.Y., a corporation of New York
Filed Feb. 26, 1964, Ser. No. 347,540
11 Claims. (Cl. 271—51)



1. A machine for passing sheet material through a liquid comprising:
a tank for containing a liquid,

rotation of said rotor, said rotor member also including an air chamber constantly communicating with said air inlet opening, and means providing a passageway in said rotor for communicating said air chamber with said air outlet openings during a portion of the rotation of said rotor chamber.

3,226,108

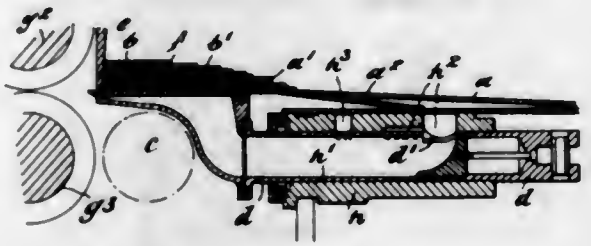
SUCTION FEED MECHANISM FOR CORRUGATED AND LIKE CARDBOARD

Thomas Desmond Bishop, Solihull, England, assignor to The Deritend Engineering Company Limited, Birmingham, England, a British company

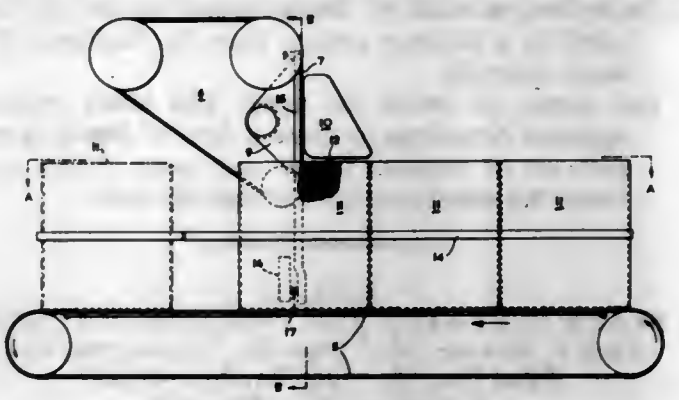
Filed Oct. 29, 1962, Ser. No. 233,663

Claims priority, application Great Britain, Nov. 11, 1961, 40,446/61

1 Claim. (Cl. 271—32)



Mechanism for feeding corrugated cardboard blanks comprising, in combination, a support for holding a stack of blanks, a gate for preventing forward movement of blanks above the lowermost blank in the stack, a suction box for gripping by suction the underside of the lowermost blank, means for moving the suction box forward from a starting position beneath the stack at a speed that increases gradually to a maximum value and remains at the path of movement of said magazine apertures so that as the magazine is moved in one direction by the con-



veyor means the leading stacked document is engaged by the abstracting means and is thereby fed out of the magazine.

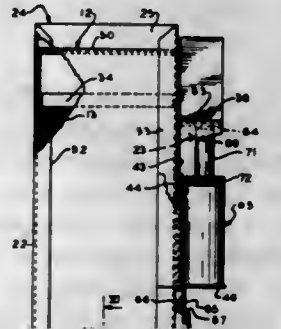
3,226,110

LEAF DISPENSER

John P. Greene, Mountain Lakes, N.J., assignor to Parachem Corporation, North Newark, N.J., a corporation of New Jersey

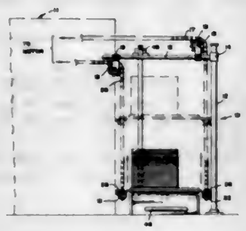
Filed Nov. 8, 1963, Ser. No. 323,202

23 Claims. (Cl. 271—41)



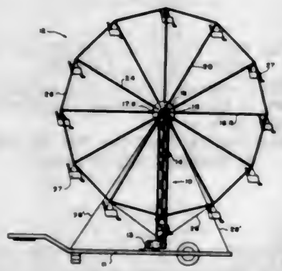
a plurality of sets of spaced opposed upper and lower rollers mounted for rotation in the tank,
the rollers of each set being closely spaced but separated by a distance greater than the thickness of the sheet material,
and means to rotate the upper and lower rollers in opposite directions to cause a flow of liquid between each set of opposed upper and lower rollers to advance the sheet material through the tank.

3,226,112
STACK ELEVATOR FOR PRINTING MACHINE
Cecil P. Knever, 3815 Pope St., Washington, D.C.
Filed Oct. 15, 1964, Ser. No. 404,137
6 Claims. (Cl. 271—62)



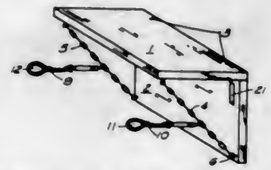
1. A stack elevator mechanism for elevating a stack of sheets to a sheet feeding position for a printing machine comprising a frame for supporting said elevator mechanism, said frame having thereon sprocket wheels engaging sprocket chains, a generally U-shaped member secured to said sprocket chain for engaging a pallet to be elevated, a pallet having supporting ears at the ends thereof, a pallet loading supporting surface comprising a movable surface, crank and linkage means for effecting movement of said movable surface so as to enable said U-shaped members to be lowered to a position below said supporting ears when said pallet is to be elevated from a pallet loading position to a sheet feeding position.

3,226,113
COLLAPSIBLE WHEEL STRUCTURE FOR ROTARY AMUSEMENT DEVICES
Charles H. Mercer, Box 105, R.D. 3, Canfield, Ohio; Glenn A. Wolford, R.D. 3, Canfield, Ohio; and David E. Copeland, 4230 Woodmere Drive, Austintown, Ohio
Filed Nov. 19, 1963, Ser. No. 324,805
2 Claims. (Cl. 272—29)



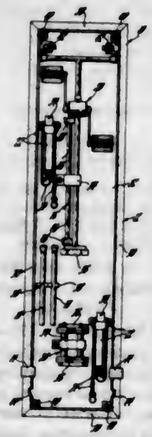
1. In a portable amusement device of the kind having a large spoked wheel for the support and movement of patrons, the combination of a shaft, a first hub disk mounted on said shaft, a plurality of radially outward extending spokes secured at their inner ends to said first disk and constituting but one segment of the circumferential extent of the wheel, a second hub disk mounted on said shaft in side-by-side relation to said first hub disk and slideable on said shaft toward and away from said first disk, means to detachably secure said disks together and to restrain relative rotation therebetween, and a second group of radially outward extending spokes secured at their inner ends to said second disk and constituting another segment of the circumferential extent of the wheel, the arrangement being such that upon detachment of said disks from each other and separation thereof said disks may be rotated relative to each other and the spokes of said second group brought into laterally nested relation with the first mentioned plurality of spokes.

3,226,114
TRAINING DEVICE FOR SWIMMERS
John L. Swider, 1909 S. Brophy Ave., Park Ridge, Ill.
Filed Apr. 8, 1963, Ser. No. 271,293
6 Claims. (Cl. 272—57)



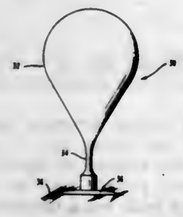
3. A swim exercising and training device comprising a horizontal member, a vertical member attached perpendicular to said horizontal member, chain means connected between said members to form a hypotenuse of a triangle comprising said members and said chain, strap means, loop means terminating said strap means, said strap means connected to said chain means whereby when said loops are placed around the legs of a swimmer his motion causes the device to assume an attitude wherein the horizontal member is parallel to the surface of the water and said vertical member faces the direction of motion.

3,226,115
COMPACT GYMNASIUM
Richard S. Underhill, Battle Creek, Mich., assignor, by mesne assignments, to Battle Creek Equipment Co., Battle Creek, Mich., a corporation of Michigan
Filed May 28, 1962, Ser. No. 198,133
5 Claims. (Cl. 272—58)



4. A compact gymnasium comprising, in combination, an exercise platform including a body support surface and substantially continuous side wall means projecting therefrom and forming with the opposite surface thereof a recessed housing, a plurality of items of exercise equipment including multi-purpose gym bar means, at least a pair of leg means for one end of said exercise platform and cycling means, and means detachably supporting said items within said housing; said multi-purpose gym bar means including relatively reciprocably adjustable bar members respectively removably engageable with opposite vertical frame members of a doorway to removably support said gym bar means at selectively vertically adjustable positions therebetween; a pair of notch means in opposed portions of said side wall means adjacent one end of said exercise platform, said notch means being engageable with said gym bar means in selected positions thereof to vary the angular inclination of said exercise platform; said leg means being removably mountable adjacent the other end of said platform and cooperable with said gym bar means in a predetermined selected position thereof in engagement with said notch means to level said exercise platform; said cycling means comprising a single tubular body member including pedal means rotatably mounted thereon, a seating member extending perpendicularly of said body member at the upper end thereof, and a single tubular support member extending perpendicularly of said body member at the lower end thereof, said body member being removably wedgeable within a doorway at an angle thereto with said seating member abuttingly engaging said gym bar means in a predetermined selected position thereof within said doorway and said support member engaging the floor adjacent said doorway, whereby operation of said pedal means by a person sitting adjacent said doorway further wedges said body member between said gym bar means and the floor.

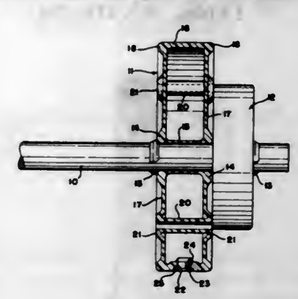
3,226,116
PUNCHING BAG
Harold P. Klingler, 418 Buttonwood St., Delanco, N.J.
Filed July 24, 1963, Ser. No. 297,367
1 Claim. (Cl. 272—78)



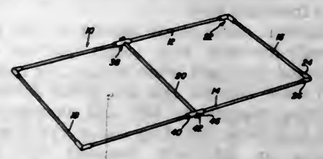
A punching bag comprising a single integral member formed in one piece of resilient material and including a main inflatable body, a vacuum element adapted to be attached to a surface, and means connected between said main body element and said vacuum element whereby the bag can be continuously volleyed by punching, said means including a relatively short flexible element connected between said main body element and said vacuum element, said flexible element being shorter in length than said main inflatable body element.

3,226,117
BAR BELL DISK WEIGHT CONSTRUCTION
Mercer D. Walklet, Akron, Ohio, assignor to Hamlin Products, Inc., Akron, Ohio, a corporation of Ohio
Filed Apr. 15, 1963, Ser. No. 272,984
2 Claims. (Cl. 272—84)

1. An integral hollow bar bell weight structure of molded resilient plastic material having a hub provided with an axial bore for fitting a bar, an outer cylindrical wall, spaced parallel side walls connecting said hub and said cylindrical wall, a plurality of circumferentially spaced hollow reinforcing posts connecting said side walls and integral therewith, a filling hole in one of said walls for charging fluid material into said structure, and a plug resiliently fitting said hole and having an inner retaining flange.

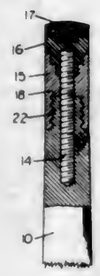


3,226,118
COLLAPSIBLE BOUNDARY FRAME FOR GAMES
George J. Nehl, Lindstrom, Minn., assignor of one-fourth to Earl Bergquist and one-fourth to Charles L. Goble and Elizabeth A. Goble, joint tenants
Filed Apr. 22, 1963, Ser. No. 274,618
1 Claim. (Cl. 273—1)



A boundary frame for playing games and the like comprising a generally rectangular peripheral frame enclosing a playing area, said frame including parallel spaced side rails and parallel spaced end rails interconnecting the ends of the side rails, and a transverse center member extending between the side rails and disposed in parallel equally spaced relation to the end rails, means detachably interconnecting the ends of the side rails and the ends of the end rails, and means detachably interconnecting the ends of the center rail and the center portion of the side rails thereby forming a collapsible frame which may be disconnected and collapsed for purposes of storage, transport or the like, said connecting means between the ends of the side rails and the ends of the end rail including an L-shaped tubular sleeve having perpendicularly arranged terminal portions for telescopingly receiving one end of the side rail and an adjacent end of the end rail for retaining the side rails and the end rails in perpendicular relation, said L-shaped sleeve being permanently connected to said side rail and the other of said rails being loosely telescoped therein, said side rail being sectional, a tubular sleeve at the center of the side rail for joining adjacent ends thereof together, one section of the side rail and the sleeve having alignable apertures therein for receiving a bolt projecting axially from the center rail thereby interconnecting the center rail, sleeve and apertured section of the side rail for retaining them in assembled condition, the other section of the side rail being telescopically fixedly received within the other end portion of the sleeve.

3,226,119
BILLIARD CUE WITH READILY REPLACEABLE TIP
Claudius Paton Foy, 2710 Lafayette Blvd., Norfolk, Va.
Filed Oct. 25, 1963, Ser. No. 319,070
1 Claim. (Cl. 273—70)



A billiard cue with a readily replaceable tip, comprising in combination

a wooden cue having a body portion and a reduced tenon portion extending coaxially from one end of said body portion to define an annular stop shoulder lying in a plane normal to the axis of said body, said tenon portion being externally threaded, said cue containing an internally threaded bore extending axially through said tenon portion and partially into said body portion;

an externally-threaded metal rod threadably mounted at one end in and extending substantially the length of said bore, said rod at its other end extending axially from said bore;

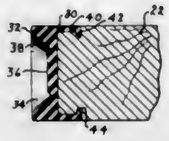
a cylindrical metal sleeve having at one end an internally-threaded first socket portion threadably mounted upon said tenon portion, the end surface of said sleeve adjacent said first socket portion being in abutting engagement with said annular stop shoulder, said sleeve including also a central portion containing an internally threaded bore threadably mounted upon said rod, one end wall surface of said central portion being in abutting engagement with the end surface of said tenon portion, said sleeve containing at its other end a cylindrical second socket portion, the free extremity of said rod extending axially, at least partially within said second socket portion, the screw threads of said rod and tenon having a different pitch, respectively;

a cylindrical tip-carrying member having at one end a cylindrical extension of a configuration corresponding to that of said second socket portion, the adjacent end surfaces of said sleeve and said tip-carrying member and the adjacent end surfaces of said cylindrical extension and the central portion of said sleeve being in contiguous abutting engagement, said cylindrical extension containing an internally threaded bore threadably mounted on the free extremity of said rod, the other end of said tip-carrying member containing a central cylindrical socket;

a cue tip having at one end a cylindrical extension extending axially into, and having dimensions corresponding to those of, said cylindrical socket, the adjacent end surfaces of said cue tip and said tip-carrying member and the adjacent end surfaces of said cylindrical extension and said cylindrical socket being contiguous, respectively, the external surfaces of said sleeve, tip-carrying member and cue tip forming a continuous uniform extension of the outer surface of the body portion of said cue;

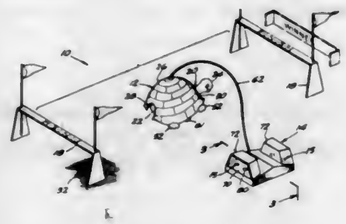
and adhesive means securing together the contiguous surfaces of said cue tip and said tip-carrying member.

3,226,120
BALL STRIKING HEAD
John E. Borah, 815 Mishawaka Ave., Mishawaka, Ind.
Filed May 3, 1963, Ser. No. 277,875
7 Claims. (Cl. 273—83)



7. A croquet mallet comprising a head, a handle attached to said head near the center thereof and extending laterally therefrom, an end on said head of resilient material, said end having a body with a recess in the external face, a protruding ball-striking member on said body in the center of said face, and an annular rib on the external face of said end near the periphery thereof.

3,226,121
ELECTRICAL GUESSING GAME HAVING CONTROL MEANS FOR SELECTIVELY CAUSING ACTION OF ACTION OBJECT MEANS
Adolph E. Goldfarb, 7427 Varna St., North Hollywood, Calif.
Filed June 10, 1963, Ser. No. 286,609
7 Claims. (Cl. 273—86)



2. Apparatus for the play of a competitive game by at least two players, said apparatus comprising:

(a) a frame,

(b) a pair of control actuating parts each movably mounted on said frame; one of said control actuating parts being adapted for operation by one of the two competing players, each of said movable control actuating parts being movable into at least two different operative positions,

(c) action of object means capable of providing at least two different actions, said action object means including motor means for providing said actions by moving said object means over a supporting surface,

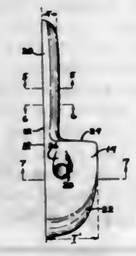
(d) means operatively connecting said motor means to said movable control actuating parts for imparting movement to said object means when both of said parts are in an operative position, said control actuating parts, connecting means, and motor means being so constructed and arranged that more than one movement may be imparted to said action object means for a given operative position of one of said movable control actuating parts dependent upon the operative position of the other of said movable parts, and more than one movement may be imparted to said object means for a given operative position of said other of said movable control actuating parts dependent upon the operative position of said one of said movable control actuating parts.

3,226,122
LETTER SELECTING DEVICE FOR USE IN WORD BUILDING GAME
Forrest E. Rogers, 758 El Paso, Derby, Kans.
Filed Mar. 1, 1962, Ser. No. 176,549
1 Claim. (Cl. 273—142)



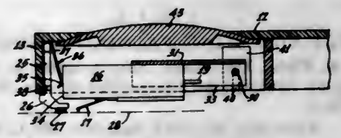
An educational toy comprising, a circular, generally flat base member having an upstanding peripheral rim, a generally conical hollow shell disposed above the base and having its central apex uppermost, a vertically extending hub within the shell and fixed to the shell to depend from the apex of the latter, a plurality of angularly spaced vanes within the hollow shell fixed to and radially extending from the hub and fixed to the shell, an upstanding pin fixed to the center of the base, said hub having a blind bore therein rotatably receiving the pin whereby the hollow shell is rotatably supported in spaced relation above the base, said hollow shell having its outer periphery received with closely spaced free running clearance within the upstanding rim, with the rim and the hollow shell having upper surfaces that approximate smooth continuations of each other, a plurality of upstanding finger grips on the shell that are angularly spaced and extend radially outward from adjacent the apex of the shell, said finger grips being in alignment with and constituting continuations of said vanes above the shell, said shell, hub, vanes, and finger grips being integral and of plastic, and cooperating alphabet letter indicia and selector means spaced about the annular extents of the rim and the peripheral margin of the shell for selecting and indicating individual letters of the alphabet on the basis of the angular resting position of the shell with respect to the base.

3,226,123
BALANCED GOLF CLUB HEAD INCLUDING FLAT ALIGNMENT SHOULDER BETWEEN REDUCED TOE AND THICKENED HEEL
Harry G. Roraback, 4105 Madison Ave., Bridgeport, Conn.
Filed Oct. 12, 1962, Ser. No. 230,154
1 Claim. (Cl. 273—164)



A club head for a golf putting club comprising: an elongated body; a flat face on the body for striking a golf ball; a reduced portion of the body extending along the entire toe portion of the club head; a flat shoulder formed on the body intermediate the length thereof and extending in a plane that is transverse to the plane of said face, the length of said shoulder being substantially greater than the thickness of said reduced portion; an enlarged portion of the body extending along the entire heel end of the club head; said shoulder disposed intermediate said portions; and a collar arranged to receive a golf club shaft and dispose it to extend on an axis that intersects with the center of gravity of the body.

3,226,124
DAMPENED SUSPENSION SYSTEMS FOR STEREOPHONIC PHONOGRAPH PICKUPS
Ronald P. Peterson, Indianapolis, Ind., assignor to Radio Corporation of America, a corporation of Delaware
Filed Apr. 2, 1963, Ser. No. 269,980
6 Claims. (Cl. 274—24)



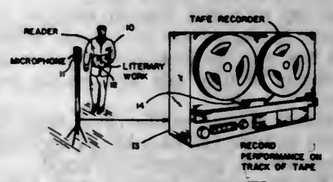
1. In a phonograph record player having a turntable and a pivoted tone-arm laterally moveable at a free end in substantially fixed spaced relation to the playing surface of a record on said turntable,

the combination with a stereophonic pickup device connected with the free end of the tone-arm for lateral movement therewith and having a stylus for engaging the sound groove of said record, of

means in said tone-arm providing an inner pivot to which said pickup device is connected for independent vertical movement toward and away from the record surface at the stylus, and

means connected with the tone-arm in spaced relation to said pivot and frictionally engaging a surface of said pickup device substantially normal to the plane of said record surface for equalizing with relatively-low contact pressure the damping of the pickup device against vertical and lateral movement in response to stylus movement in said sound groove.

3,226,125
INCREASED INFORMATION STORAGE ON RECORDS
Edward H. Uecke, Los Angeles, Calif., assignor to Capitol Records, Inc., Hollywood, Calif., a corporation of California
Filed Mar. 1, 1962, Ser. No. 176,544
1 Claim. (Cl. 274—46)



The method of recording information on a single face of a sound recording disc comprising the steps of:

recording a continuous performance on one track on a magnetic tape;

cutting the tape in half creating thereby a first half containing the beginning of the performance and a second half containing the completion of the performance;

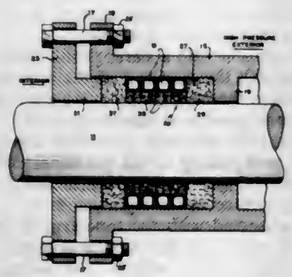
re-recording said completion of said performance from said second half of said tape onto the remaining track of said first half of said tape thereby providing a tape recording containing on the first track thereof the beginning of a performance and on the parallel second track thereof the completion of said performance in such fashion that both said beginning and said completion could be reproduced simultaneously; and

re-recording said tape containing both said beginning and said completion of said recording onto a stereophonic disc in such fashion that said beginning track thereon and said completion track thereon are in adjacent sides of the stereophonic groove created by said stereophonic recording to form thereby a master disc recording.

3,226,126
SELF-ADJUSTING PACKING ASSEMBLY

Robert B. Plate, Timonium, Md., assignor to the United States of America as represented by the Secretary of the Navy

Filed Jan. 30, 1963, Ser. No. 255,130
4 Claims. (Cl. 277—125)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A self-adjusting packing assembly for sealing a submarine propeller shaft adapted to be mounted in a stern tube having an annular inwardly extending shoulder thereon defining a stuffing box within said stern tube surrounding a portion of said propeller shaft, said packing assembly comprising:

a first annular packing member carried within said stuffing box and abutting said annular shoulder on said stern tube;

the inner periphery of said first annular packing member being in intimate contact with the outer periphery of said propeller shaft and the outer periphery of said annular packing member engaging the inner periphery of said stuffing box;

a plurality of hollow annular members arranged coaxially in side-by-side relationship within said stuffing box with the innermost of said hollow annular members abutting said first annular packing member;

said hollow annular members each being made of a resilient material and each being completely filled with a substantially incompressible liquid;

said hollow annular members each being separately and individually sealed and thereby being fluid-tight;

said hollow annular members having outside and inside diameters of a size such that the outer peripheries thereof engage the inner periphery of said stuffing box and the inner peripheries thereof define a space between the inner peripheries and the periphery of said shaft;

a pair of packing rings carried in the space between the inner periphery of each of said hollow annular members and the periphery of said shaft;

said packing rings arranged coaxially within said space in side-by-side relationship and tightly fitting the periphery of said shaft and the inner periphery of each of said hollow annular members;

a second annular packing member carried within said stuffing box and abutting the outermost of said coaxially arranged hollow annular members;

the inner periphery of said second packing member being in intimate contact with the periphery of said propeller shaft and the outer periphery thereof engaging the inner periphery of said stuffing box; and

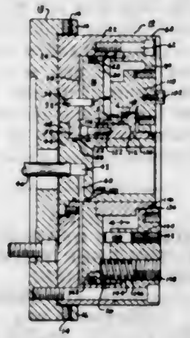
an adjustable gland member bearing on said second annular packing member for applying a compressive force on said annular packing members, said packing rings and said hollow annular members within said stuffing box to thereby effect a seal between the inner peripheries of said packing rings and the periphery of said shaft;

said liquid in said hollow annular members undergoing compression and redistribution within said hollow annular members upon misalignment of said shaft within said stern tube and thereby being operable to exert a pressure on said packing members and packing rings in areas other than the area of misalignment of said shaft to adjust the configurations of said packing members and packing rings relative to said shaft to maintain a constant sealing engagement between the inner peripheries of said packing members and packing rings and the periphery of said misaligned shaft.

3,226,127
CHUCK

Oliver T. Sarber, 1211 Strong Ave., Elkhart, Ind.

Filed Oct. 7, 1963, Ser. No. 314,271
6 Claims. (Cl. 279—4)



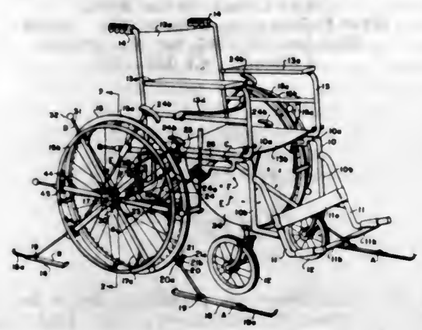
6. A chuck comprising a body with an end member and cylidnrical side walls forming a fluid cylinder, a piston in said cylinder forming a pressure chamber between the piston and said end member, a jaw assembly mounted on said body and secured to the edge of said side walls, said jaw assembly having a ring-shaped outer portion and a plurality of equally spaced jaw elements attached to and extending radially inwardly from said outer portion, a bar-like member on said piston for engaging the adjacent surface of said jaw element, an extension on said piston, and a bar-like member on said extension for engaging an opposed surface on said jaw elements.

3,226,128
STAIR CLIMBING CHAIR

Robert C. Grier, Jr., 303 W. Prentiss Ave., Greenville, S.C.

Filed Sept. 9, 1963, Ser. No. 307,430
3 Claims. (Cl. 280—5.2)

1. In a wheel chair having a frame and seat supported by a pair of spaced wheel assemblies with hubs carried by shafts, means for ascending and descending a stairway including, support means positioned forwardly of said frame adjustable to the angle of the stairway to be ascended or descended, support means positioned rearwardly of said frame adjustable to the angle of the stairway to be ascended or descended, a plurality of gripping means spaced circumferentially about the hub of said wheel chair and extending radially beyond the wheels of said chair while ascending a stairway, said plurality of gripping means rotating rearwardly responsive to an upward and rearward force being applied successively to forwardly extending gripping means by an occupant of said chair, said rearwardly extending gripping means successively contacting the steps to lift the chair up said

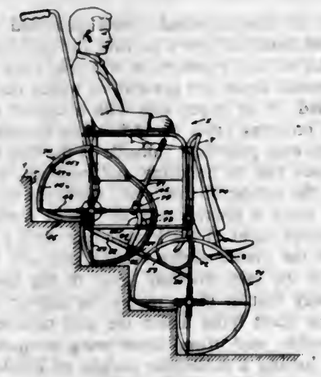


steps as the occupant successively pulls upward and rearward on the forwardly extending gripping means, a locking means for limiting forward movement of the gripping means which would permit the chair to slide down the stairway when a gripping means is released prior to engaging the next gripping means, and means limiting forward movement of the gripping means when descending the stairway to predetermined increments of movement.

3,226,129
VEHICLE AND DEFORMABLE WHEEL THEREFOR

Robert W. McKinley, 1104 Rosemont Drive, Security, Colo.

Filed Nov. 4, 1963, Ser. No. 321,006
7 Claims. (Cl. 280—5.2)



3. An occupant controlled and propelled vehicle comprising in combination;

a vehicle frame;

seat means supported by the frame;

a pair of spaced apart drive wheels rotatably attached to opposing sides of the vehicle frame, said wheels each including;

an articulated rim having a plurality of arc shaped rim sections interjoined at their ends and forming a deformable circle;

a pair of mutually perpendicular diametric struts pivotally attached to the rim at diametrically opposed points;

a pair of mutually perpendicular sleeves in which the said two struts are slidably disposed, said sleeves being rigidly interconnected at their longitudinal midpoints;

a hub attached to one of said sleeves;

locking means mounted on said sleeves for interconnecting the sleeves and struts to prevent relative movement therebetween;

a pair of rotatable casters;

swivel means attaching said casters to the front of the vehicle frame;

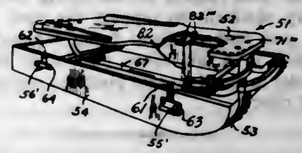
a pair of opposed stabilizing wheels; and

extensible strut means attached to the front portion of the vehicle frame and rotatably carrying the stabilizing wheels.

3,226,130
COASTING VEHICLE STEERED BY TILTABLE RIDER SUPPORTING MEANS

Francis P. Smith, Irvington, Calif.
(2620 Shane Drive, Richmond, Calif.)

Filed Oct. 31, 1962, Ser. No. 234,291
2 Claims. (Cl. 280—22)



1. In a coaster vehicle adapted for its free coasting movement upon and along a supporting surface and providing a bed for directly supporting a rider, a planar and rigid chassis member depending from and rockably supporting said vehicle bed for a lateral tilting of the body on the chassis member with respect to an axis longitudinal of the bed, means yieldingly biasing said chassis member toward a normal perpendicular relation of its plane to said bed, a running gear providing laterally spaced cross-bars upon which the chassis member is supported, at least one of said cross-bars being pivotally related to the chassis member for movement in a plane parallel to said longitudinal axis, means cooperative between the bed and the pivoted said cross-bar whereby a turning movement of the pivoted said cross-bar with relation to the longitudinal axis of the vehicle will result when a tilting movement of the bed about said axis is imparted to the bed by the rider, and laterally spaced runners carried by and beneath a unitary base structure which directly supports the cross-bars for a steering turning of the pivoted cross-bar, corresponding straight rearward portions of said runners being fixedly related to said runner base structures in mutually parallel relation while the forward end portions of said runners are flexibly free and are laterally deflectable with respect to the fixed portions thereof and are terminally connected with the opposite ends of said pivoted cross-bar whereby a steering rocking of the pivoted cross-bar is operative to laterally and correspondingly deflect the runner portions connected to the latter cross-bar.

3,226,131
SKI SLED

Frank M. Clelaw, 5389 Briarcliff Knoll, Birmingham, Mich.

Filed May 20, 1963, Ser. No. 281,463
4 Claims. (Cl. 280—22)

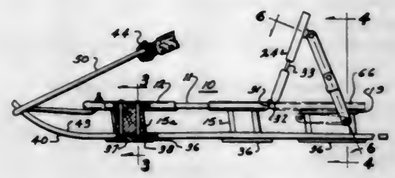
1. In a sled for coasting, including a forward primary platform for carrying a rider thereon,

a pair of sled runner members equidistantly disposed beneath said platform located parallel lengthwise to

each other, with the trailing ends thereof extending aft of said forward platform,

a seat back carried adjacent and rearwardly of said primary platform hinged to lie horizontal in lowered position level with the primary platform to form a long generally flat contiguous platform in response with said primary platform for prone coasting by the rider thereof,

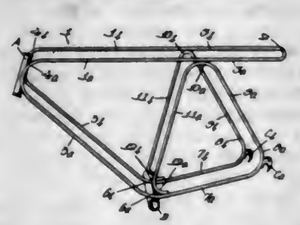
an auxiliary foot platform means supported fixedly on



said trailing runners immediately aft and directly beneath said seat back to support said seat back in said horizontal position when said seat back is lowered,

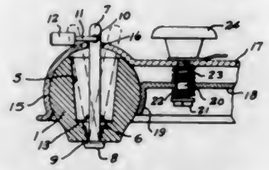
and means to secure said seat back in an angular raised position with respect to the riding surface of said primary platform to support the back of a sitting rider, said foot platform being exposed when said seat back is in said raised position to permit a second rider to stand on said platform rearwardly of the sitting rider.

3,226,132
FRAME OF A BICYCLE
Yuko Otani, 1850 4-chome Ogumachi, Arakawa-ku, Tokyo, Japan
Filed July 16, 1963, Ser. No. 295,494
Claims priority, application Japan, Nov. 21, 1962, 37/50,948; Feb. 14, 1963, 38/5,998
4 Claims. (Cl. 280—281)



1. A bicycle frame member comprising a single continuous length of rigid tubing, said tubing having a U-bend formed therein at the midpoint of its length, said tubing extending forwardly of said frame and comprising two spaced parallel horizontal reaches which form the legs of said U-bend, said tubing having two spaced parallel front bends formed therein at the forward ends of said horizontal reaches, said tubing extending downwardly and rearwardly from said front bends in two spaced parallel first oblique reaches, said tubing having two spaced parallel lower bends formed therein at the lower ends of said first oblique reaches, said tubing extending rearwardly from said lower bends in two spaced parallel rear reaches to a location spaced beneath said horizontal reaches, said tubing having two spaced parallel rear bends formed therein at the rear ends of said rear reaches, said tubing extending upwardly and forwardly from said rear bends in two spaced parallel second oblique reaches to locations adjacent to said horizontal reaches and situated forwardly of said U-bend, said tubing having two spaced parallel upper bends formed therein at the upper ends of said second oblique reaches, said tubing extending forwardly and downwardly from said upper bends in two spaced parallel third oblique reaches to positions adjacent to said lower bends, the ends of said tubing being located at the lower ends of said third oblique reaches and the ends of said tubing being secured to laterally spaced portions thereof at said lower bends.

3,226,133
TRAILER HITCH LOCKING DEVICE
Steve Geresy, Taylor, Mich.
(1115 Holden Ave., Orlando, Fla. 32809)
Filed June 26, 1962, Ser. No. 205,258
4 Claims. (Cl. 280—507)



1. An unauthorized use preventing device for trailer hitches comprising in combination a trailer hitch having a spherical end with an open bottom and a top opening, a ball detachably mounted in said hitch end and having a bore therethrough, a pin extending through said hitch top opening into said ball bore and means for locking said pin to said ball.

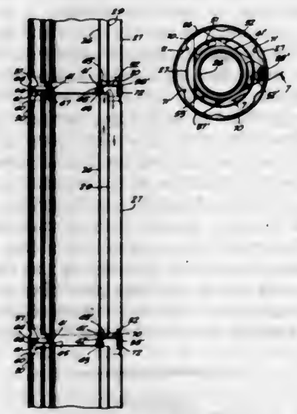
3,226,134
SETS OF REPRODUCTION TRANSFER SHEETS
Edgar Breidthardt, Dusseldorf, Germany, assignor to Firma Ancar A.G., Aarau, Aargau, Switzerland
Filed Dec. 10, 1962, Ser. No. 243,466
Claims priority, application Germany, Dec. 14, 1961, R 31,693
7 Claims. (Cl. 282—28)



1. Set of superimposed sheets provided with colour layers and transfer layers serving for multiple reproduction under writing pressure, in which at least two directly superimposed sheets are present, of which the lower sheet is provided on its upper side with a colour layer, which carries a covering layer comprising an organic polymeric film containing polyvinyl chloride as the film forming material made fast to handling and rubbing, and contrasting with the colour of this layer, while the directly superimposed sheet is provided on its side in contact with the said covering layer of the lower sheet with a lifting layer which at the places under writing pressure lifts off and holds fast the said covering layer of the lower sheet in such a way that at these places the colour layer, which covers the sheet lying under the said covering layer becomes visible, said lifting layer being comprised of polyethylene having a molecular weight of 2000–5000 and a melting point of 90–110° C.

3,226,135
TRIPLE WALLED VENT PIPE
Saul Epstein, 2332 Nottingham Ave., Los Angeles 27, Calif.
Filed Oct. 31, 1962, Ser. No. 234,489
4 Claims. (Cl. 285—41)

1. A triple wall vent pipe section, comprising, in combination: an inner pipe; an outer pipe disposed about said inner pipe and spaced therefrom, the opposite ends of said inner and outer pipes having means thereon for making joints with mating means provided on the ends of the inner and outer pipes of other like constructed sections; an intermediate pipe disposed between and spaced from said inner and outer pipes, said intermediate pipe being shorter than said inner and outer pipes and having its opposite ends spaced inwardly from the corresponding ends of said inner and outer pipes so that when said section is assembled in flow relationship with other like constructed sections also having intermediate pipes, the confronting ends of the intermediate pipes of the assembled sections will be spaced apart; and spacer means at each end of said intermediate pipe for holding all three of said pipes in spaced relationship, each of said spacer means comprising: a generally equilateral triangular plate extending transversely of said section between said inner and outer pipes and having a central opening therein, the sides of said generally triangular plate passing radially inwardly of the inner periphery of the intermediate pipe and radially



outwardly of the inner pipe, whereby fluid flow communication is established between said inner and outer pipes and a through flow path is established through said inner pipe independent of and unmixed with fluid flow between said inner and outer pipe; ring-like means carried by said plate about said central opening and engaging the wall of said inner pipe for connecting said plate thereto; means on each corner of said plate engaged with said outer pipe for connecting said plate thereto; and axially extending spacing means on said plate outwardly of said central opening in engagement with the associated end of said intermediate pipe to provide for fluid flow between the said spaces defined by said inner pipe, the cross-sectional areas of the inner flow space between said inner pipe and said intermediate pipe, and of the outer flow space between said intermediate pipe and said outer pipe, both being substantially greater than the areas of the portions of said generally triangular plate extending transversely across said inner and outer flow spaces, whereby to provide communication between said inner and outer flow spaces of said section.

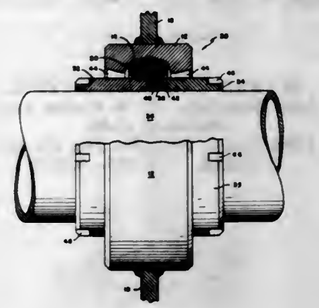
3,226,136
BULKHEAD PIPE SUPPORT
John R. Braden, Annapolis, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed Dec. 26, 1963, Ser. No. 333,771
1 Claim. (Cl. 285—158)
(Granted under Title 35, U.S. Code (1952), sec. 266)

Fluid sealing and vibration attenuating means for use between a pipe and the peripheral wall of an aperture in a bulkhead through which the pipe extends, comprising:

an annular housing having an outer surface adapted to be welded to the peripheral wall of an aperture in a bulkhead, and an inner surface having a circular channel therein which is substantially U-shaped in cross-section, said housing comprising a single element;

a resilient sealing ring disposed in said circular channel, extending radially inwardly from said channel, and having its inner edge spaced inwardly of the innermost surfaces of said housing;

two cylindrical sleeves secured to one another at their



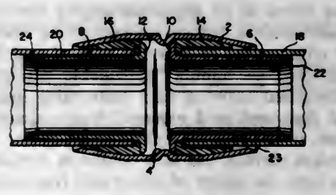
ends, coaxially disposed within said resilient sealing ring;

the outer diameter of said sleeves being slightly greater than the inner diameter of said resilient sealing ring, whereby said sealing ring is lightly compressed radially between said sleeves and said annular housing;

a pipe coaxially encased by said sleeves; and

a metallic sealing ring disposed between said sleeves and said pipe to provide a high pressure, fluid tight seal therebetween.

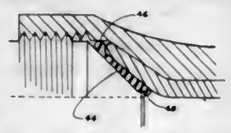
3,226,137
FIRE-HOSE MENDER
Otto A. Trnka, Rte. 3, Box 217, Sangerties, N.Y.
Filed Apr. 16, 1962, Ser. No. 187,541
3 Claims. (Cl. 285—113)



1. A hose mender for flexible hoses having a hollow main body section, the interior wall of which tapers from a maximum diameter substantially at its midsection to a minimum diameter at each end, a tubular hose-entering chamber at each end of said main body section, each chamber containing a rigid movable cylindrical sleeve having a radially outwardly extending rim at that end of said sleeve which is closer to the midsection of said hollow body section, the outer diameter of said rim being greater than the minimum diameter of the opening in said chamber, said sleeve extending beyond the edge of said tapered body section when said rim is at its maximum inward position in said main body section, an elastomeric annular sealing member, wedge-shaped in cross-section, interposed between said sleeve and said main body section, said sealing member being urged against the tapered surface of said main body section when said rim is moved away from the center of said main body section, said seal-

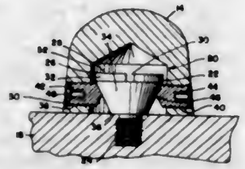
ing member having a radially inwardly protruding lip sealingly positioned adjacent said rim and extending into contact with said cylindrical sleeve, an inserted hose extending between said sealing member and said cylindrical sleeve, the end of the hose abutting said protruding lip so as to provide a seal against the flow of water through said sleeve, said sealing member extending substantially to the end of the tapered portion of said hose-entering chamber, and a radially inwardly extending travel-limiting means of lesser diameter than the outer diameter of said rim disposed within the midsection of said hollow main body section to limit axial inward movement of said sleeve.

3,226,138
FLARED END TUBE FITTING
John Dean Ellis, 702 W. Colton Ave., Redlands, Calif.
Filed Dec. 7, 1961, Ser. No. 157,642
3 Claims. (Cl. 285—332.3)



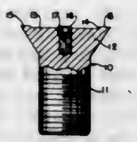
1. In combination, a tubular fluid connection comprising a fitting body having an end portion comprising an external, substantially right circular, frusto-conical surface; said end portion terminating with a substantially cylindrical extension joining the smaller end of said frusto-conical surface and being coaxial therewith; a fluid passageway in said fitting body coaxial with said frusto-conical surface and said cylindrical extension; a tube spaced from but adjacent to said fitting and having a passageway coaxial with and of substantially the same diameter as the fluid passageway through said fitting body thereby to provide an uninterrupted flow path for the fluid through the fluid connection; said tube including an outwardly flared end portion defining interior and exterior coniform end faces with at least said interior end face being flared at an angle converging toward said external frusto-conical surface on said fitting body; at least the inner edge corner of said end face of said flared tube being rounded; an annular extrudable resilient sealing gasket interposed between said converging interior coniform end face and said external frusto-conical surface; said gasket, in the free state, having an extent along said frusto-conical surface and said coniform surface substantially less than the extent of either said frusto-conical surface or said coniform surface; a coupling sleeve slidably encircling said tube and in threaded engagement with said fitting body; said sleeve including an inner cylindrical surface and a coniform surface in mating engagement with said exterior coniform end face on said tubing thereby to exert an axial force on said tube and compress said sealing gasket between said converging interior coniform end face and said external frusto-conical surface; said end face of said flared tube terminating radially inward of said cylindrical surface to provide therewith a gasket extrusion cavity; said gasket in its uncompressed state being radially spaced inwardly of said sleeve; said compressed sealing gasket extending over substantially the entire surface of said frusto-conical surface and said cylindrical extension and having portions thereof extending around said flared end portion of said tube and into said cavity and around the end of said cylindrical extension thereby to prevent any metal contact between said tube and said fitting body.

3,226,139
BRACKET HOLD-DOWN DEVICE
Nelson J. Ivins, Spring Lake, Mich., assignor to The Bastian-Blessing Company, Chicago, Ill., a corporation of Illinois
Original application May 8, 1961, Ser. No. 108,351, now Patent No. 3,152,818, dated Oct. 13, 1964. Divided and this application July 23, 1964, Ser. No. 392,365
4 Claims. (Cl. 287—20)



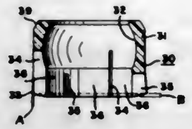
1. An internal hold-down device for releasably securing a bracket to a base surface comprising a stud member threadably secured to the base surface, a head portion on said stud providing an upper surface and an outer surface about the periphery and extending downwardly at right angles from the upper surface thereof, a bearing surface integrally formed on the lower portion of said head portion parallel to said upper surface, an inwardly tapered surface extending from the lower edge of said outer surface to said bearing surface, a circular recess formed in the under surface of the bracket to receive the head portion of the stud member, said circular recess having an inside diameter greater than the outside diameter of said head portion of the stud and a pair of locking screw members threadably mounted in the side walls of the bracket, said screw members providing tapered ends for mating engagement with the tapered holding surface of said stud member for securing the bracket to said base member.

3,226,140
STUD ELEMENT
Henry E. Voegeli, Cheshire, Conn., assignor to The American Brass Company, a corporation of Connecticut
Filed Oct. 18, 1962, Ser. No. 231,494
1 Claim. (Cl. 287—20.2)



A stud element for attachment to a member comprising:
(a) a body portion,
(b) a head portion on one end of said body portion having a larger diameter than the body portion,
(c) a substantially flat end surface on said head portion,
(d) a recess formed substantially axially into said head portion and opening at substantially the center of said end surface,
(e) a solder deposit contained within said recess,
(f) a plurality of raised contact portions integral with said flat end surface on said body head portion and extending axially therefrom and spaced from each other, and
(g) flats defined on said raised portions which lie substantially in one plane so as to permit the raised portions to abut flushly against a member and define a space between the end portion and the member, the relationship between the size of the recess and the solder contained therein and the axial extent of the contact portions being such that upon heating solder flowing into said space, will be retained in said space and will contact and solidify a sealing engagement with said member.

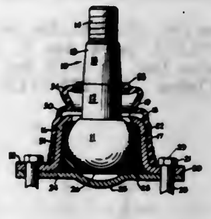
3,226,141
BALL JOINT SEAT ASSEMBLY
Leo S. Sullivan, Jr., Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 22, 1962, Ser. No. 232,165
2 Claims. (Cl. 287—87)



1. A ball joint seat assembly, comprising, a stud having a curved substantially segmental spherical head portion, a cover means centrally embossed so as to be complementary to said curved head portion, a housing portion receiving said stud and having a substantially cylindrical cavity therein that terminates in a reduced end opening through which said stud projects away from said cover means, said cover means carried by the housing end portion opposite said reduced opening, and a combination preloading and wear compensating low-friction resilient bearing liner seat portion in said cavity between said reduced end opening and said cover means, said liner including an annular body having a curved substantially segmental spherical inner periphery at one end engaging said curved head as well as an outer periphery at the other end which has an initially radially outwardly flared peripheral end portion prior to assembly, and also a plurality of different sized slits defining segments between said slits which extend longitudinally with said radially outwardly flared peripheral end portion, the flared outer periphery of said end portion prior to completion of joint assembly extending at an angle of substantially 5° outwardly from the outer periphery of said annular body so as to provide an outer diameter on the end portion of the liner greater than the inner diameter of the cylindrical cavity, one end of the liner adjacent the flared periphery initially extending at an angle of substantially 10° downwardly away from the axis of the cylindrical cavity from a reference plane that is perpendicular to the axis of the bearing liner and cylindrical cavity, said liner having a complementary telescopic fit into the cylindrical cavity with said outwardly flared peripheral end portion being forced therein during assembly, such that inward preload occurs due to displaced confinement of the 5° and 10° angular portions of said liner end engaged in assembly by said cylindrical cavity of said body portion and said cover means respectively assembled thereto.

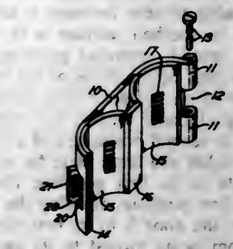
3,226,142
BALL JOINT ASSEMBLY
Edward J. Herbenar, Detroit, Mich., assignor to Thompson Ramo Wooldridge Inc., Cleveland, Ohio, a corporation of Ohio
Filed Jan. 10, 1963, Ser. No. 250,614
2 Claims. (Cl. 287—87)

1. A ball joint assembly comprising:
a cup-shaped housing having a stud-receiving aperture defined by a radially inturned annular wall portion at one end of said housing and having a radially extending annular housing flange at the other open end of said housing,
a headed ball stud having a substantially spherical head end within said housing with the shank thereof freely projecting through said aperture,
a substantially cylindrical self-lubricating synthetic plastic bearing member located between said ball and housing in conforming lateral surface contact with said head end and with said housing inner wall and in endwise contact with said inturned annular wall portion to fill the lateral space between said head end and said housing,
the end of said bearing member away from said annular wall contacting portion having an annular recess therein defining a flexible substantially axially extending annular flange radially inwardly of the outer periphery of said bearing member,



an O-ring of elastomeric material extending into said annular recess and being of sufficient cross-section to project therefrom in the free state, and
a closure member secured to the open end of said housing to said annular housing flange and closing said open end of said housing,
said closure member engaging and exerting a compressive force upon said O-ring to deform the same in said annular recess and to radially constrict the annular flange of said bearing member into conforming surface contact with said substantially spherical head, the end of said constricted bearing annular flange resting adjacent a surface of the closure member to be in a position to derive support therefrom and thereby urging said head end and bearing member toward said radially inturned annular wall portion.

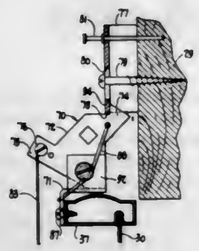
3,226,143
APPARATUS FOR MULTIPLE COMPLETION WELLS
Joseph W. Daughtrey, Beaumont, Tex., assignor to Gulf Oil Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 22, 1961, Ser. No. 133,131
2 Claims. (Cl. 287—111)



1. A collar for positioning and securing together a plurality of strings of tubing for cementing in a well comprising a plurality of components pivotally attached end to end in a series to form a string of components having two free ends; the number of said components comprising the collar being equal to the number of tubing strings secured

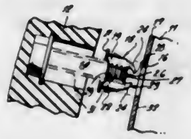
thereby; each component including an inner member having two juxtapositioned arcuate elements adapted to partially encircle tubing strings and a rigid outer member fitting over and secured to the outer surface of each of the arcuate elements, said outer member having a substantially straight central portion tangent to the arcuate elements; serrated gripping means extending inwardly from the inner surfaces of the arcuate elements; and locking means engaging the free ends of the string of components for drawing the free ends of the string of components together to tighten the components around the tubing strings.

3,226,144
OVERHEAD DOOR LATCH
Ralph D. Lomaz, South Euclid, Ohio, assignor to The Pacific Coast Company, Bedford, Ohio, a corporation of Delaware
Original application Dec. 19, 1962, Ser. No. 245,890, now Patent No. 3,176,757, dated Apr. 6, 1965. Divided and this application Dec. 19, 1963, Ser. No. 331,859
2 Claims. (Cl. 292—113)



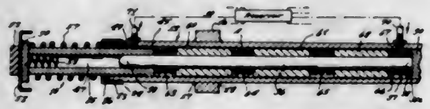
1. In combination with a rolling overhead door of the type having a plurality of articulated panel sections mounted on a guide track inclined relative to the frame of the door opening of a building, a latch, comprising, a compressible member mounted on the lower edge of the bottom panel section of the door and normally acting to maintain the door in a first, closed position, said compressible member being compressible in response to downward pressure to permit the door to move downward to a second, closed position; a bracket member mounted on the top of the door, a latch plate member, having a tooth portion, pivotally mounted on the bracket and free to tilt in a backward and forward direction relative to the door opening frame; a latch catch member mounted on the door opening frame in the vertical travel path of the latch plate tooth when the plate is tilted forward, the latch plate being tiltable between a first, extended, position, wherein its toothed portion is in the plane of the catch, and a second, retracted position, wherein its toothed portion is clear of the plane of the catch; a rotatable handle mounted on the door face, connected to the latch plate through linkage means, for manually tilting the latch plate to its second position; and a spring mounted between the bracket and latch plate for normally biasing the latch plate to its first position; the latch plate tooth being in its first position, abutting the bottom edge of the catch when the door is in its first closed position, and prevented from being moved to its second position by the catch, whereby the door is prevented from rising; the latch plate tooth being spaced downwardly of the latch catch when the door is in its second closed position, wherein the latch plate tooth is free to be manually tilted against the biasing action of the spring to its second position, clear of the latch catch, in which position it is free to travel upwardly of the catch to permit the door to be raised.

3,226,145
RESILIENT COVERED BUMPER GUARD
Ira Goldberg, New York, N.Y., assignor to East Coast Auto Specialties Co., New York, N.Y.
Filed May 28, 1964, Ser. No. 370,964
3 Claims. (Cl. 293—65)



1. The combination of a bumper guard, an elastomeric shock absorber mounted on said bumper guard, and connecting means for firmly securing said shock absorber in said mounted position on said bumper guard: said elastomeric shock absorber having plural threaded mounting members formed integral therewith and extending from one side thereof; said bumper guard having openings for receiving said threaded mounting members therethrough for mounting said shock absorber thereon; and said connecting means comprising a plurality of radially contractible mounting members which are each positioned in one of said bumper guard openings, each said mounting member being of a springy split tubular construction and being radially contractible in circumference for insertion into its corresponding bumper guard opening, each said mounting member when in position within a bumper guard opening having circumferentially spaced gripping means thereon in a contracted position within a thread of a threadable member to prevent the disassembly of said shock absorber from said bumper guard and having stop projections extendings radially beyond the periphery of said bumper guard opening on the underside surface of said bumper guard, said stop projections being firmly seated against said underside surface of said bumper guard under the urgency of expansion of said elastomeric shock absorber to prevent rattling of said threaded members and cooperating mounting members within said bumper guard openings.

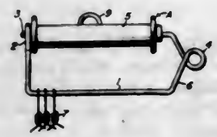
3,226,146
FLUID SHOCK ABSORBING BUMPER
William F. Behr, Asbury Park, N.J.
(32—30 70th St., Jackson Heights, Queens 1, N.Y.)
Filed Apr. 18, 1963, Ser. No. 273,863
4 Claims. (Cl. 293—30)



1. A vehicle bumper structure comprising:
(a) an elongated tubular housing,
(b) bracket means for mounting said housing on a vehicle chassis part,
(c) an abutment partition fixedly secured within said housing to define, at one side thereof, a cylinder having a closed inner end,
(d) an axial guide rod within said cylinder fixedly secured at its innermost end to said abutment partition,
(e) a combined piston and piston rod within the outer end portion of said cylinder slidably mounted on the outermost end portion of said guide rod and defining with said cylinder an annular chamber,
(f) a bumper bar,

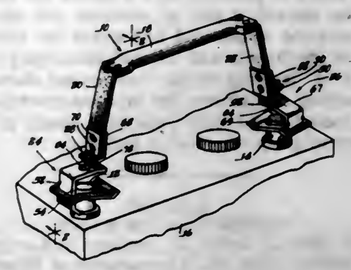
(g) an attachment plate secured to the outer end of said piston rod including fastening means for securing said plate to said bumper bar,
(h) a sealing cap on the end of the housing opposite said abutment partition through which cap said piston rod extends,
(i) a plurality of axially spaced floating pistons slidably positioned on said guide rod and each said floating piston being so dimensioned as to provide a slight clearance with the cylinder wall and with the endmost floating pistons spaced respectively from said combined piston and piston rod and said abutment partition,
(j) a compression coil spring arranged between adjacent floating pistons and surrounding said guide rod,
(k) a compression coil spring similarly arranged respectively between the endmost floating pistons and said combined piston and piston rod and said abutment partition,
(l) a compression coil spring surrounding said piston rod between the bumper bar and said sealing cap,
(m) a reservoir containing hydraulic fluid.
(n) separate conduits each connecting respectively said annular chamber and the space between the innermost floating piston and abutment partition to said reservoir whereby to provide an hydraulic shock absorbing system operative under impact on said bumper bar to cause fluid to flow from the space between the innermost floating piston and said abutment partition into said reservoir and from said reservoir into said annular chamber, and the clearance between said floating pistons and cylinder wall providing a metering effect of the fluid towards the annular chamber as the floating pistons move toward the abutment partition.

3,226,147
CLOTHES HANGER LOADER, CARRIER, AND UNLOADER
Johnny Howard Marshall, Miami, Fla., assignor of one-half to A. I. Collins, Miami, Fla.
Filed July 7, 1961, Ser. No. 122,570
2 Claims. (Cl. 294—15)



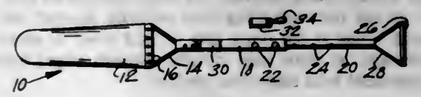
1. The combination of a clothes hanger bar and a clothes hanger remover comprising a single strand of wire having two end portions and bent in such a manner as to form a first and second rectangle one of which is perpendicular to the other, said rectangles having a common side between them on which is mounted a hand grip, one of said end portions forming a side of said first rectangle and fixedly secured to said common side while the other of said end portions forming a side of said second rectangle and releasably secured to the common side, said second rectangle having one side including a spring means for biasing said other end portion away from said common side, and a hook eyelet formed by said wire in a side of said first rectangle opposite said common side and lying in a plane parallel to the plane of said second rectangle and in a plane perpendicular to the plane of said first rectangle.

3,226,148
BATTERY CARRIER
Joseph A. Wiora, Rte. 2, Box 33, Almond, Wis.
Filed June 3, 1964, Ser. No. 372,419
5 Claims. (Cl. 294—16)



1. A device for carrying articles such as batteries, and the like, having a plurality of spaced upstanding projections, comprising handle means including flexible elements providing opposite end portions thereof, gripper means associated with each of said flexible elements and adapted to grip said projections of the article, means connecting each of said gripper means with its associated flexible element for pivotal movement about generally upstanding axes for enabling the gripper means to turn relative to said flexible element and to be arranged in a variety of positions for application to said projection, each of said connecting means comprising a generally upstanding pin member connected to its associated flexible element and extending through an opening in its associated gripper means, each of said pin members having an enlarged head portion engaging beneath its associated gripper means for retaining the gripper means, and each of said gripper means having transverse dimensions substantially greater than transverse dimensions of the associated pin member for enabling the gripper means to pivot about axes extending generally transversely of the pin members as well as about generally upstanding axes.

3,226,149
SPADE, SHOVEL AND SPADING FORK
Otis S. McJohnson, Pasadena, Tex., assignor of fifty percent to Leonard Hill, Pasadena, Tex.
Filed Apr. 14, 1964, Ser. No. 359,651
2 Claims. (Cl. 294—50)



1. A hand tool comprising in combination a spade member and a handle therefor, a central footrest carried by said spade member adapted for a workman's foot to apply pressure along a central axis of the tool, a foot guard member carried by said spade member for encompassing the workman's foot to prevent it from slipping, a pair of telescoping sleeves carried by said tool for adjusting the length of said handle, a mud scraper of generally rectangular configuration carried by one of said sleeves adapted for removing mud from the workman's shoes or from a blade portion of said tool, said spade member being secured to said footrest, said footrest encompassing said foot guard member above said footrest to prevent the workman's shoe from slipping from said footrest, said footrest being internal of said foot guard member to allow pressure to be direct when urging said spade member into soil, said foot guard member having

a hollow extension, said extension receiving a hollow end of a first sleeve which telescopically receives a second smaller diameter sleeve to provide handle means for said tool, rectangular pocket means secured to said sleeve on said first sleeve, said pocket means receiving said scraper which is provided with a handle for ease in manipulation thereof, a pair of mounted and spaced apart screws received within said first sleeve for adjusting the length of the handle and of said telescoping sleeves, a plurality of openings within said second sleeve threadedly receiving said screws, and an open extension secured to said second sleeve with a pivotable handle grip for the workman to grasp when using said tool.

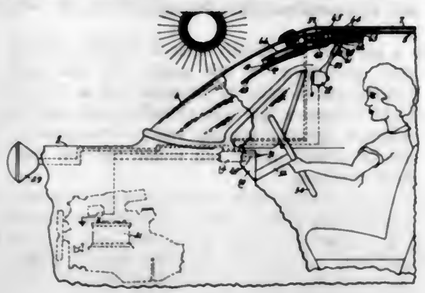
3,226,150
REFRIGERATOR PANEL
Alfred B. Meuzer, Joliet, Ill., assignor to Kemlite Corporation, Joliet, Ill., a corporation of Illinois
Filed Mar. 29, 1963, Ser. No. 268,866
7 Claims. (Cl. 296—24)



3. A panel comprising a single sheet of structural material having a substantially flat outer surface, spaced holes in said sheet which are disposed substantially uniformly over the surface of said sheet, hollow knobs which are shell-like in character having their outer surfaces generally in the form of segments of spheres, the outer walls of said knobs extending outwardly and downwardly and ending in circular bottom edges which engage said outer surface, said knobs having stems which extend centrally of the knobs and through said holes, said stems having portions which extend beyond the inner surface of said sheet, and means for expanding said portions against the edges of said holes at the inner side of said sheet to secure said knobs and to draw said circular bottom edges into tight engagement with said outer surface.

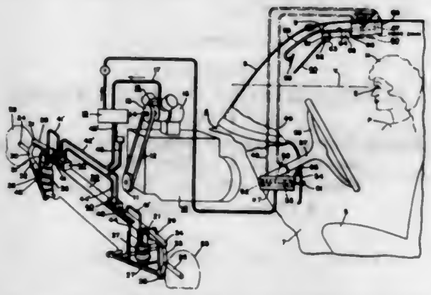
3,226,151
ELECTRICALLY-OPERABLE VISOR SYSTEMS
Albert H. Reuther, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed July 31, 1963, Ser. No. 299,044
20 Claims. (Cl. 296—97)

1. In combination on a vehicle having a sprung mass including a body with a roof portion and an unsprung mass including a spring means therebetween adjacent to a load-carrying compartment, a switching means mounted on said sprung mass and having a pair of contacts with circuit connections thereto as well as a switch arm movable therebetween, an articulated linkage interconnecting said unsprung mass and said switch arm so that change in clearance height due to change in compartment loading can effect switch arm movement, a motor means supported by the roof portion adjacent to a windshield area and also having structural circuit connection thereto electrically energizable in response to predetermined contact engagement by said switch arm, and a visor means mechanically



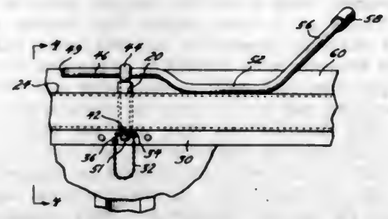
driven by said motor means into various positioning in a range between retraction out of line of vision as well as into vision-shielding location in accordance with change of angulation of bright light through the windshield due to change in vehicle loading.

3,226,152
FLUID-ACTUATED VISOR SYSTEMS
Albert H. Reuther, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed July 31, 1963, Ser. No. 299,045
19 Claims. (Cl. 296—97)
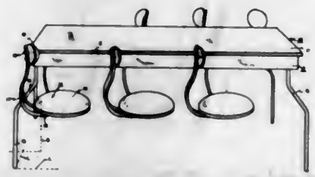


7. On a motorized vehicle including an unsprung mass and a sprung mass between which predetermined clearance height is maintained, a motor driven compressor means, a single high pressure storage tank means, supplied with pressurized gaseous medium, a bellows-type air spring means located between said sprung and unsprung masses, height control valve means operable to control supply and exhaust of said pressurized gaseous medium to and from said air spring means, the improvement which comprises, a further valve control means located to be accessible within a passenger compartment of the vehicle and having conduit connection to said same high pressure storage tank means, and a fluid-actuated visor means carried along one side of an upper edging of a vehicle windshield means as well as having fluid conduit interconnection to said further valve control means to effect movement of said fluid actuated visor means into various positioning in a range between retraction as well as selectively into glare-shielding location as to a particular vehicle direction, said fluid-actuated visor means structurally including a segmental gear means in engagement with a rack portion of a rod of a reciprocable piston in a fluid actuator that effects pivotal movement of said visor means between retraction and glare-shielding locations.

3,226,153
TWO-POSITION REMOVABLE ROOF BOW
William C. Haid, Philadelphia, Pa., assignor to Strick Trailers, a Division of Fruehauf Corporation, Fairless Hills, Pa., a corporation of Michigan
Filed Sept. 24, 1964, Ser. No. 398,990
9 Claims. (Cl. 296—104)



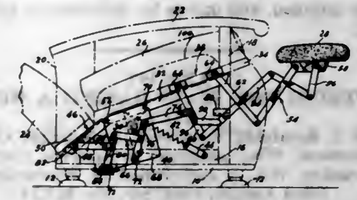
1. In a trailer body having transversely spaced side walls, removable roof bows to connect said side walls at their upper ends and adapted to support a cover, each roof bow comprising a substantially U-shaped member having main legs including end portions lying in a common plane and a web connecting said main legs opposite said end portions and extending in a plane above said common plane, and auxiliary legs depending from said end portions of said main legs and spaced from the free ends thereof, said main and auxiliary legs being adapted for selective attachment to said side walls to provide two height positions of said roof bows.

3,226,154
SUSPENDED SEATING FOR TABLES
Carling D. Allen, Circleville, Utah
Filed June 29, 1964, Ser. No. 378,506
9 Claims. (Cl. 297—142)



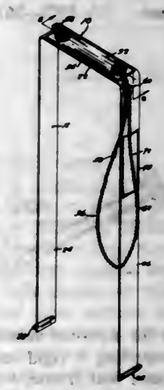
1. A table and suspended seating construction including, in combination, a table top; spaced leg means fixedly disposed with respect to and depending from said table top for supporting said table top; plural, spaced suspension arms each having an upwardly directed vertical portion and an outwardly extending horizontal portion; plural journaling means fixedly disposed in spaced relationship underneath said table top and secured thereto for journaling said upwardly directed vertical portions of respective ones of said suspension arms to said table top; and plural seat means secured to said outwardly extending, horizontal portions of respective ones of said suspension arms, and wherein said construction includes said channel members secured to and beneath said table top, each of said channel members including a lower flange, and each of the lower flanges of said channel members being provided with spaced apertures, each of said journaling means comprising a cylindrical member secured to and axially extending above a respective one of said apertures, a cylindrical sleeve journaled within said cylindrical member, means for fixing the longitudinal disposition of said sleeve within said cylindrical member for journal movement therewith, and means for securing the upwardly directed vertical portion of a respective one of said suspension arms to said journal sleeve.

3,226,155
COMBINATION ROCKING AND RECLINING CHAIR
Grover C. Whiteford, Main and Chapel Sts., Delta, Pa.
Filed July 1, 1964, Ser. No. 379,603
7 Claims. (Cl. 297—85)



1. A combination rocking and reclining chair comprising in combination, a base arranged to rest stationarily on a floor surface, support means rigid with and extending upward from opposite sides of said base, a seat frame, rigid brackets extending downward from opposite sides of said seat frame, means pivotally connecting the lower ends of said brackets to said support means for pivotal rocking movement of said seat frame relative to said support means and about an axis appreciably below said seat means, said support means extending to a level above said seat frame and engageable by the hands of the occupant, an auxiliary frame pivotally connected to and supported by the rear end of said seat frame, a chair back connected at its lower end to said auxiliary frame to render said back pivotally connected solely to said seat frame for limited movement between substantially vertical and rearwardly inclined positions relative to said seat frame, a footrest, interconnected linkage means movably supported solely by said seat frame and connected to said footrest for movable support thereof between a retracted position substantially beneath said seat frame to an extended horizontal position forwardly of said seat frame, and additional linkage interconnecting said auxiliary frame and linkage means and operable to position said footrest as desired incident to pivotally moving said chair back relative to said seat frame, said seat frame and chair back and foot rest supported thereby being rockable as a unit relative to said base about the pivot means for said chair seat in all positions of said back and footrest relative to said seat frame.

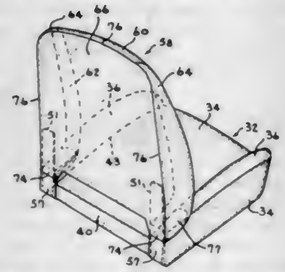
3,226,156
HAT HOLDERS
Gunther L. Hamlin, 1623 S. Homan Ave., Chicago, Ill.
Filed Dec. 18, 1964, Ser. No. 419,545
10 Claims. (Cl. 297—191)



1. A hat holder comprising an elongated closed pocket having a top wall, said top wall being formed with a pair of longitudinally spaced holes, a continuous chain

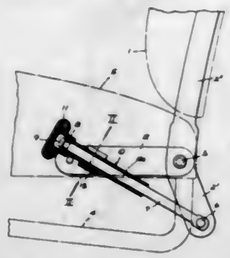
longer than the pocket, said chain having an intermediate portion lying along and enclosed in the pocket, said chain having first and second hat-holding loop forming end portions extending out of the pocket holes from the opposite ends of said intermediate portion of the chain with one of which at a time the crown of a hat is adapted to be supportably engaged, and means for securing the pocket to a support.

3,226,157
COVERING FOR SEATS HAVING A HINGED BACK
Edward J. Reinfeldt, Brookfield, and Arthur O. Radke, Wauwatosa, Wis., assignors to Bostrom Corporation, Milwaukee, Wis., a corporation of Wisconsin
Filed Apr. 30, 1964, Ser. No. 363,747
6 Claims. (Cl. 297—219)



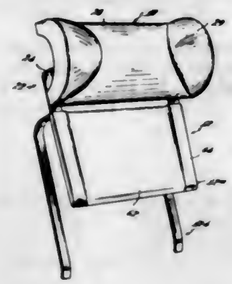
1. A cover for a seat of the type having a back member pivotally secured to a seat member by a hinge assembly thereby rendering the inclination of the back member variable between a generally upstanding position and a forward position, comprising; a seat cover section adapted to enclose the seat member, a back cover section adapted to enclose the back member, said seat cover section having upwardly extending boot means enclosing the hinge assembly, said back cover section having downwardly extending boot means also enclosing the hinge assembly and being in telescopic engagement with said first mentioned boot means.

3,226,158
DEVICE FOR ADJUSTING THE BACK REST OF A SEAT
Werner Strien, Stuttgart-Weilimdorf, and Jörg Resag, Stuttgart-Degerloch, Germany, assignors, by mesne assignments, to Recaro A.G., Glarus, Switzerland, a corporation of Switzerland
Filed Sept. 4, 1963, Ser. No. 306,544
Claims priority, application Germany, Sept. 27, 1962, St 19,763
8 Claims. (Cl. 297—361)



1. A seat especially for a motor vehicle having an adjustable back rest comprising a rigid seat frame, a seat portion supported by said seat frame, a back rest having a rigid back frame, said back frame comprising two levers, pivot means for pivotally connecting said levers to said seat frame, one of said levers having two arms, a draw rod pivotally connected to the free end of one of the arms of said two-armed lever, a pair of interengaging threaded elements having self-locking screw threads, one of said elements forming a tubular spindle surrounding the free part of said draw rod and having screw threads on its surface and being rotatable about the axis of said draw rod but immovable axially relative thereto, and other element being a shell-like member provided with screw threads on its inner surface thus forming a nut segment and being mounted on said seat frame, said two threaded elements being adapted to be engaged with and disengaged from each other so that, when said elements are disengaged said draw rod may be moved substantially in its axial direction free from said nut segment for coarsely adjusting the inclination of said back rest relative to said seat, and when said elements are engaged, said spindle may be turned about its axis in said nut segment in one or the opposite direction for finely adjusting the inclination of said back rest and for locking said back rest in the adjusted position by means of said self-locking screw threads.

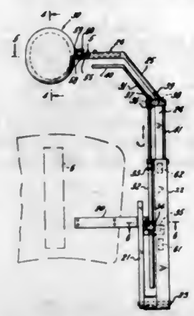
3,226,159
HEAD AND NECK REST FOR AUTOMOBILE SEAT BACKS
Kenneth W. Binding, Winchester, Mass., assignor to Market Forge Company, Everett, Mass., a corporation of Massachusetts
Filed Mar. 10, 1965, Ser. No. 438,594
10 Claims. (Cl. 297—397)



1. A head and neck rest comprising transversely spaced supports having parts adapted to have contact with the front and back sides of a seat back frictionally to hold the supports erect, a flexible part secured between said supports, said flexible part being adapted to have contact with the front side of the seat back between said parts and being operable by rearward pressure of the occupant to increase the security of said supports, an elongate yieldable cushion substantially crescent-shaped in cross-section, means supporting the cushion between said supports solely at its ends so that the portion of the cushion intermediate the ends is displaceable rearwardly relative to the supported ends without contact with a fixed part of the structure, said means being adjustable upwardly and downwardly on said supports relative to the top of the seat back and angularly forwardly and rearwardly about a horizontal axis parallel to the lower edge of the cushion relative to the top of the seat back.

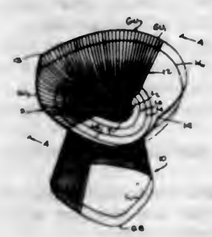
3,226,160
OPERATING CHAIR HEAD REST
Richard W. Page, 307 Quaker Road, Chappaqua, N.Y.
Filed Aug. 14, 1963, Ser. No. 302,039
4 Claims. (Cl. 297—410)

1. A head rest for dental and other operating chairs comprising a concave, oval head rest element having a rigid backing member and resilient facing adapted to engage and support the patient's head over an area extending substantially the entire width and height of the backing member, the said head rest element being at least about five inches wide and seven inches long, and means for supporting the said backing member in head supporting relation to the chair, the last said means comprising a support



member and means for positioning the support member adjustably in a fore and aft direction and a direction upwardly and downwardly of the chair back, and means mounting the backing member to the said support member for pivoting about an axis substantially at right angles to the two said directions.

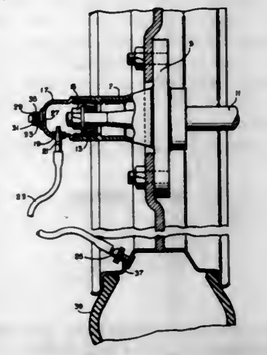
3,226,161
WIRE GRID FURNITURE FRAME
Warren Platner, North Haven, Conn., assignor to Knoll Associates, Inc., New York, N.Y., a corporation of New York
Continuation of application Ser. No. 235,688, Nov. 6, 1962. This application Oct. 22, 1964, Ser. No. 407,613
5 Claims. (Cl. 297—449)



1. A wire chair comprising a grid network constituted by a cycloid array of spaced wires extending in the warp direction, a first continuous gunnel interconnected to the lower extremities of said warp wires, and a second continuous gunnel interconnected to the upper extremities of said warp wires, said warp wires converging from said first gunnel to form a truncated conical base terminating in a throat, at which point the wires are curved outwardly and upwardly to form a seat and a back whose profiles are defined by said second gunnel, the first gunnel of said base resting on a floor surface to provide a stable support for said chair.

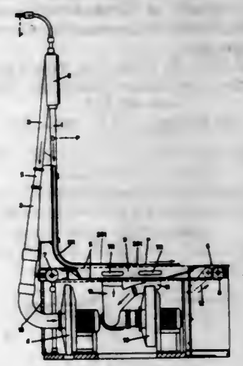
3,226,162
WATERPROOF SEALING MEANS
Eugene C. Eberle, El Cajon, Calif., assignor of one-half to Jack Britton Stevens
Filed July 20, 1964, Ser. No. 383,742
3 Claims. (Cl. 301—108)

3. In combination, fluidproof sealing means for vehicle wheel hubs and wheel bearings comprising: a wheel having a hub, a hub cap covering the end of said hub, bearings within said hub, a reservoir on said wheel containing air under pressure greater than atmospheric pressure, a conduit connecting said reservoir to the interior of said hub, valve means operable to release said air from said reservoir into said conduit and into contact with said bearings,



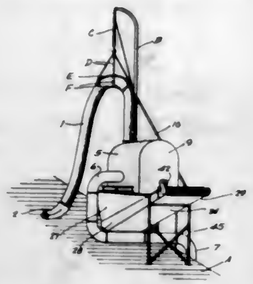
second valve means automatically allowing said air under pressure to be partially released from said hub and bearings whereby fluid other than said air under pressure and outside of said hub is prevented from coming into contact with said bearings.

3,226,163
CIGARETTE PACK CONVEYING MECHANISM
Goffredo Gamberini, Bologna, Italy, assignor, by mesne assignments, to American Machine & Foundry Company, a corporation of New Jersey
Filed Oct. 30, 1963, Ser. No. 320,190
Claims priority, application Italy, Nov. 26, 1962, 23,541/62
4 Claims. (Cl. 302—2)



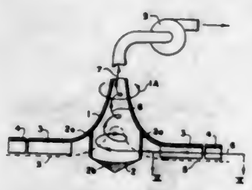
1. In a pneumatic conveyor for packages of cigarettes or the like having a conveyor duct section disposed in a predetermined plane, a discharge device for delivering said packages to a receiving station in a plane perpendicular to said predetermined plane, said device comprising a terminal duct section adjoining and disposed at substantially right angles to said conveyor duct section, said terminal duct section having one wall open at least in part along the length thereof, an air permeable endless movable conveyor belt located in said opening and delimiting said terminal duct section, and means applying suction through said belt whereby said package may be positively conveyed from said conveyor duct section.

3,226,164
AIR-FLO UNLOADER
Wallace N. Merrick, 825 W. Jefferson St., Harlingen, Tex.
Filed Mar. 12, 1964, Ser. No. 351,289
4 Claims. (Cl. 302—14)



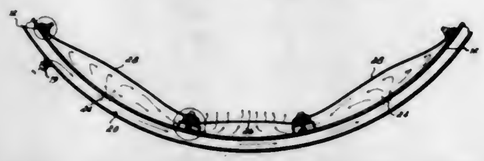
1. An article conveyor comprising an open bottom housing, a wall extending across and within said housing, a bottom extending from one end of said housing to said wall leaving an opening in the bottom of said housing between the other end thereof and said wall, driven suction producing means mounted on said bottom and connected to and through said wall for drawing air therethrough, a flexible hose connected to said housing between said wall and the other end of said housing, an open top tank having said housing mounted thereon, means for supplying a liquid to said tank up to and closing off said housing bottom opening and a driven endless belt mounted in said tank and extending from beneath said housing bottom opening to and beyond said tank open top.

3,226,165
METHOD AND APPARATUS FOR HANDLING PULVERULENT MATERIAL
Karl-Heinz Oehlrich and Karl Rudolf Schmidt, Erlangen, Germany, assignors to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany
Filed Mar. 2, 1964, Ser. No. 348,363
Claims priority, application Germany, Dec. 31, 1958, S 61,211
19 Claims. (Cl. 302—17)



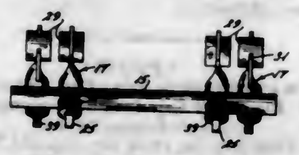
1. Apparatus for handling and conveying solid particle material by entrainment in fluid, comprising a conduit vessel forming a fluid-flow space and having an inlet and an outlet for the passage of fluid through said space to define therein a primary flow and a primary-flow axis for the fluid, means for producing in said fluid within said vessel a pressure difference between said inlet and outlet, agitating means for imparting to the primary flow in said space a circulatory motion about said axis, means for imparting to said agitating means a direction of agitating action substantially tangential to the primary flow and inclined toward said primary-flow axis so that said agitating means superimpose upon said primary flow in said space a rotational secondary flow forming in said space a sink and a source spaced from each other along said primary flow axis, whereby fluid-entrained solid particles are caused to concentrate along the primary flow direction on helical travel paths, due to fluid-internal relative forces, and collector means spaced from and connected to said outlet for accumulation of the solid particle material conveyed.

3,226,166
PNEUMATIC APPARATUS FOR HANDLING PULVERULENT MATERIALS
William A. Bertolini, Cincinnati, Ohio, and Daniel G. Davison, Springfield, Mo., assignors to Pullman Incorporated, Chicago, Ill., a corporation of Delaware
Filed June 9, 1964, Ser. No. 373,691
10 Claims. (Cl. 302—52)



1. A pneumatic handling device for a container for a tank type trailer comprising,
an air pervious air slide extending along the bottom of said container,
at least two air impervious slope sheets extending along opposite edges of said air slide,
a plurality of rubber gaskets, said slope sheet having its peripheral edges wrapped about said rubber gasket,
means secured to the bottom of said container having upper planar surfaces for receiving said air slide and slope sheets,
studs engaging said receiving means and extending thereabove,
passageway means below said upper surfaces providing a flow path for air from under said slope sheet to the under surface of said air slide,
the adjacent longitudinal edges of said air slide and slope sheets being overlapped and resting on said upper planar surfaces,
said overlapped edges having holes through which said studs pass,
a bar engaging said studs and resting on said overlapped edges,
nuts engaging said studs and tightened so that said overlapped edges are clamped between said bars and said receiving means,
means air tightly clamping the remaining edges of each slope sheet to said container, and
means air tightly clamping the remaining edges of said air slide to said container.

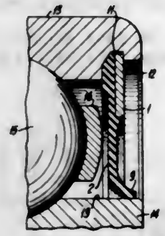
3,226,167
WEIGHING SCALE BEARING STRUCTURE
Harlan A. Hadley, P.O. Box 147, Burlington, Vt.
Filed Mar. 21, 1963, Ser. No. 266,944
3 Claims. (Cl. 308—2)



3. A knife-edge bearing for weighing scales comprising a trough-shaped fulcrum stand provided with apertures therein, a plurality of independently supported bearings

arranged in spaced pairs, the bearings of each pair being oppositely inclined and cooperating to form a V-bearing, a rockably mounted holder for each bearing including a bearing-supporting upper portion, an intermediate twisted portion, a base, and a stem, said stem extending through a respective one of the apertures in said fulcrum stand, a resilient bushing surrounding the lower end of each stem and positioning the bottom edge of each base with respect to the fulcrum stand.

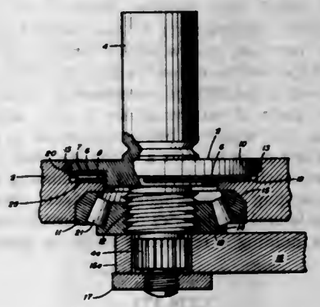
3,226,168
COMPOSITE SEAL CONSTRUCTION FOR ANTIFRICTION BEARINGS
Frederick W. Recknagel, Verbank, N.Y., assignor to The Federal Bearings Co., Inc., Poughkeepsie, N.Y., a corporation of New York
Filed Jan. 18, 1963, Ser. No. 252,470
2 Claims. (Cl. 308—187.1)



2. An antifriction bearing comprising an inner annular race ring concentrically located within an outer annular race ring which define an annular chamber therebetween containing a complement of rolling elements, one of said race rings having a peripheral groove spaced on each side of said rolling elements, the other of said race rings having a land opposite each of said peripheral grooves, and a seal mounted on each side of said rolling elements comprising a continuous metal washer to the inner side of which is concentrically bonded a radial portion of an annular sealing disc of resilient elastomeric material, said disc having a stepped thickened outer radial portion at said bonded radial portion which terminates into a circular bead slightly beyond the periphery of the washer, the radial portion of the disc opposite the bonded radial portion being thinner than the stepped thickened portion and extending radially inward of said bonded portion and terminating into a circular lip, said metal washer with its bonded annular disc being flexed flat so that its peripheral edge fits firmly into the peripheral groove with the circular bead of the elastomeric disc deformed into the bottom of the groove so as to cushion the peripheral edge of said washer, the freely extending portion of the sealing disc being in flexing engagement with the land of the opposite race ring.

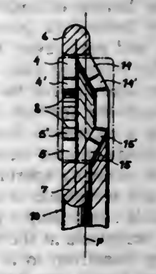
3,226,169
COMPACT, HIGH LOAD, ANTI-FRICTION BEARING ASSEMBLY
Richard F. Housel, Clarksville, and Irvin C. Henschen, Silver Spring, Md., assignors to the United States of America as represented by the Secretary of the Navy
Filed Feb. 26, 1965, Ser. No. 435,753
1 Claim. (Cl. 308—219)
(Granted under Title 35, U.S. Code (1952), sec. 266)

A compact anti-friction bearing assembly comprising
a shaft having an integral radial annular flange thereon, said shaft also having a first threaded portion thereon adjacent said flange, a splined portion adjacent said threaded portion and a second threaded portion adjacent said splined portion,
a housing having an opening therethrough in which said shaft is adapted to be rotatably mounted, said housing having a radially extending surface facing said flange and a surface adjacent to the periphery of said flange,
a needle thrust bearing assembly disposed between said flange and said radially extending surface,
a tapered roller bearing assembly disposed between said housing and said shaft, said tapered roller bearing assembly having an outer race fixedly secured in said housing and an inner race adjustably mounted on said shaft, said inner race having internal threads therein cooperating with the first threaded portion of said shaft, whereby the distance between said tapered



roller bearing assembly and said needle thrust bearing assembly may be varied to preload the entire assembly,
means to impart rotative torque to said shaft, said means comprising an actuator arm having a splined opening at one end thereof engaging the splined portion of said shaft,
a nut threadedly engaged with said second threaded portion of said shaft and biasing said actuator arm into engagement with said inner race to lock said inner race in its adjusted position, and
an O-ring seal supported in said housing surface adjacent the periphery of said flange, and sealingly engaged with said flange.

3,226,170
THRUST BEARING AND METHOD OF MAKING SAME
Gerhard Neese, Grossdornberg uber Bielefeld, Germany, assignor to Durkoppwerke Aktiengesellschaft, Bielefeld, Germany, a corporation of Germany
Filed Oct. 11, 1963, Ser. No. 315,657
9 Claims. (Cl. 308—235)



1. A roller cage for a thrust bearing, comprising a ring-shaped body of sheet material composed of integrally connected annular portions including:
a pair of concentric flange portions disposed in a first plane transverse to the axis of said body;

a flat central portion disposed in a second transverse plane spaced from said first plane by a distance less than the diameter of a roller of a set of rollers to be accommodated by the cage, said central portion having a width less than the length of said rollers;

a first intermediate portion extending inclinedly between said planes and interconnecting the inner peripheries of said central portion and of the inner one of said concentric flange portions;

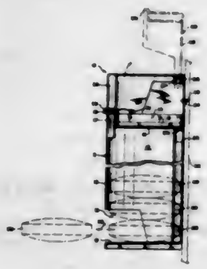
and a second intermediate portion extending inclinedly between said planes and interconnecting the outer peripheries of said central portion and of the outer one of said concentric flange portions, thereby defining a generally trapezoidal profile for said body;

said body being provided with an array of angularly spaced radial slots forming windows of generally rectangular configuration in said central and intermediate portions, said windows conforming substantially to the outline of said rollers, and further forming cutouts in said flange portions registering with respective parts of said windows in said intermediate portions, said windows being constricted at said central portion so as to have a width less than the roller diameter, each of said cutouts terminating in a pair of converging roller-engaging edges co-operating with the lateral boundaries of the constricted window part for holding a respective roller in place.

3,226,171
DISPENSER

William A. Fitzgerald, Jr., Western Springs, and Kenji Yoshizumi, Chicago, Ill., assignors, by direct and mesne assignments, to General Foods Corporation, White Plains, N.Y., a corporation of Delaware

Continuation of application Ser. No. 17,681, Mar. 25, 1960. This application Feb. 26, 1963, Ser. No. 262,287
3 Claims. (Cl. 312—42)

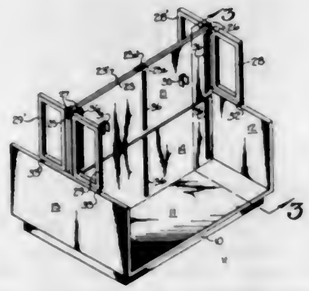


1. A dispenser for household articles and the like, comprising a housing having extending therewithin an elongated passageway formed to permit the transit of articles therethrough, said passageway terminating at one end in an aperture for receiving said articles and at its other end in a further aperture for the discharge of said articles, said article-receiving aperture being bounded by a rim of said housing, a receptacle for retaining at least one of said articles, means on said receptacle for holding said receptacle at said receiving aperture, means on said housing for holding said receptacle at said aperture, said means on said receptacle comprising a plurality of spaced flanges joined to said receptacle at the top edge of a wall thereof and extending therefrom to a position in which they overlie and contact said rim when said receptacle is at article-receiving position, said means on said housing including a plurality of spaced seat members joined to said housing and extending therefrom into said passageway to a location at which they contact and support said receptacle at the article receiving position but permit passage of articles by said seat members when said receptacle is removed from the article receiving position, said flanges and seat members cooperating to jointly support the receptacle at the article receiving position, and a cover movably mounted between open position in which it permits access to said receptacle at article-receiving position and closed position in which it abuts said flange and overlies said receptacle, said cover having a substantially planar surface integral therewith and disposed to abut said flange in close position, said cover in closed position being spaced from said rim at regions thereof adjacent said flange to provide an opening between said rim and said planar surface for ingress and egress of air to and from said article in said receptacle.

3,226,172
CONVERTIBLE MERCHANDISE DISPLAY FIXTURE

John A. M. Bateman, New York, N.Y., assignor to Fieldcrest Mills, Inc., Spray, N.C., a corporation of Delaware

Filed Sept. 30, 1963, Ser. No. 312,604
3 Claims. (Cl. 312—140.1)



1. A merchandise display fixture adapted to be easily arranged for use either as a table-top counter or as a gondola, said merchandise display fixture comprising

(a) a main frame having a pair of opposite open sides, said main frame further having

(1) a bottom,

(2) a pair of rigid spaced apart end members connected to and extending upwardly from said bottom, said end members terminating in upper edges,

(3) a vertical center panel extending between said end members and along the central portion of said bottom, and

(4) shelf support means provided on opposite sides of said center panel,

(b) a pair of similar table-top members extending between said end members and being hingedly connected at their adjacent edges to said main frame, and adjacent the upper edge of said center panel, said table-top members being selectively movable to a substantially horizontal side-by-side position to arrange the display fixture as a table-top counter having open opposite sides, and said table-top members being selectively movable to a vertical back-to-back position extending above said end members in substantial alignment above said center panel to arrange the display fixture as a gondola,

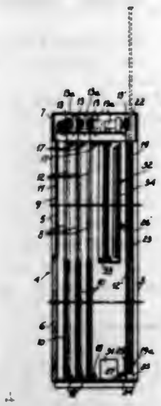
(c) shelf support means carried by the underside of each of said table-top members and being adapted to receive shelves for displaying merchandise thereon when the fixture is arranged as a gondola, and

(d) means cooperating with said frame and said table-top members for selectively maintaining said table-top members in the horizontal and vertical positions.

3,226,173
CASE FOR ELECTROMECHANICALLY SHIFTABLE REPRESENTATION

Giovanni Bettuzzi, Via Trieste 76, Parma, Italy

Filed June 1, 1964, Ser. No. 371,851
Claims priority, application Italy, June 5, 1963, 11,645
3 Claims. (Cl. 312—223)

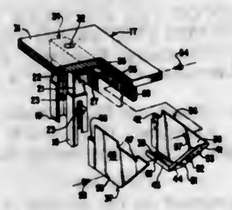


1. A cabinet case for representation panels having two spaced lateral sides, a top side and a bottom side, comprising a box-like body having a top wall, a front wall and a window in said front wall below said top wall, a parapet portion of said front wall below said window, a plurality of juxtaposed vertically movable representation panels within said box-like body below said top wall, guide means for vertically guiding said panels, electromotor driving means for vertically shifting said panels in an upper position thereof below said top wall in front of said window and in a lower position thereof below said window, said parapet portion having a height adapted to conceal said panels when in said lower position thereof, and said window having an area adapted to expose to sight the representation of said panels when in said upper position, a projection screen panel juxtaposed with respect to said representation panels, a slot in said top wall allowing the passage of said projection screen panel through said top wall, further guide means for said projection screen panels for vertically guiding thereof, further electro-motor driving means for vertically guiding said projection screen panel in an upper position thereof above said top wall and in a lower position thereof below said top wall and switch means for controlling the actuation of the panels.

3,226,174
SEWING MACHINE STANDS WITH ELECTRIC SWITCH BOX

Franklin W. Mohney, Anderson, S.C., assignor to The Singer Company, a corporation of New Jersey

Filed Feb. 27, 1963, Ser. No. 261,271
6 Claims. (Cl. 312—253)

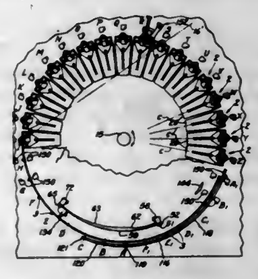


3. In combination a sewing machine stand having a metallic leg member, and a metallic top rail member supported by said metallic leg member; and a metallic switch box having an open side, a first metallic part forming a portion of said switch box, a second metallic part forming a portion of said switch box, means securing said first and second switch box parts to said members in such position that the open side of said metallic switch box is closed by one of said members, and means securing said first switch box part to said second switch box part.

3,226,175
ELECTRIC LAMP MAKING APPARATUS

Arthur P. Russell, South Euclid, and Edward F. Grgetic, Richmond Heights, Ohio, assignors to General Electric Company, a corporation of New York

Filed Sept. 3, 1963, Ser. No. 306,037
9 Claims. (Cl. 316—31)



1. Lamp sealing apparatus comprising a head for supporting an assembly of a lamp mount, a glass bulb and a glass exhaust tube in position for sealing together into a unitary structure, said head comprising support means, bulb holder means mounted on said support means for holding the bulb with an open end thereof facing downwardly, a main slide vertically slidable on said support means, subslide vertically slidable on said main slide, exhaust tube holder means comprising a pair of cooperating jaw arms pivotally mounted on said main slide for holding an exhaust tube in a vertical position beneath said bulb, said jaw arms being spring-biased so as to be normally pivoted to their closed tube-holding position, jaw arm opening means operatively associated with said jaw arms for pivotally opening the latter, a mount holder comprising a pair of cooperating jaw means mounted on said main slide for holding a lamp mount in a position beneath said bulb, one of said jaw means being movably mounted on said main slide for movement toward and away from the other one of said jaw means and the said subslide being connected to said movable jaw means to effect the said movement thereof on vertical sliding movement of the subslide relative to the main slide, spring means biasing said subslide upwardly relative to said main slide to move said movable jaw means to its closed mount-holding position, said subslide engaging with and actuating said jaw arm opening means on downward movement of the subslide relative to the main slide to thereby effect the pivotal opening of said tube-holding jaw arms, control means operatively associated with said subslide to control the upward movement of said subslide relative to said main slide by said spring means, and elevating means operatively associated with the main slide to effect vertical sliding movement thereof on said support means and elevate the exhaust tube and lamp mount into the said open end of the bulb so as to position them in sealing relation thereto.

CHEMICAL

3,226,176
CELLULOSE, WOOL, SILK AND LEATHER FIBERS FAST-DYED WITH CHLOROTRIAZINE CONTAINING REACTIVE DYESTUFFS

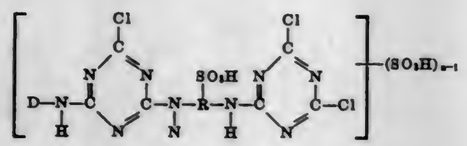
Peter Hindermann, Basel, Hans Peter Kolliker, Munchenstein, Basel-Land, Jurg Amman, Basel, and André Pugin, Riehen, near Basel, Switzerland, assignors to J. R. Geigy A.-G., Basel, Switzerland

No Drawing. Original application Apr. 29, 1960, Ser. No. 25,549, now Patent No. 3,149,100, dated Sept. 15, 1964. Divided and this application July 16, 1964, Ser. No. 383,209

Claims priority, application Switzerland, Apr. 30, 1959, 72,771/59

7 Claims. (Cl. 8—10)

1. The reaction product of a fiber selected from the group consisting of cellulose, wool, silk and leather with a dye of the formula



wherein D represents a member selected from the group consisting of 4-phenylazo-phenyl, 4-naphthylazo-phenyl, 3 - (o - hydroxynaphthylazo) - phenyl, 4 - (o - hydroxynaphthylazo) - phenyl, 3 - (1' - phenyl - 5' - hydroxypyrazolyl - 4' - azo) - phenyl, o - α - phenylazohydroxynaphthyl, 3 - (1' - aminoanthraquinonyl - 4' - amino) phenyl, 4 - (1' - aminoanthraquinonyl - 4' - amino) phenyl and 4 - (1' - aminoanthraquinonyl - 5' - amino) diphenylyl-4'-radicals, R represents a divalent organic radical selected from the group consisting of 1.4-phenylene and 1.3-phenylene radicals, and *n* is a positive whole number of at least 2 and at most 6.

3,226,177
PROCESS FOR THE DYEING OF POLYOLEFIN FIBROUS MATERIALS

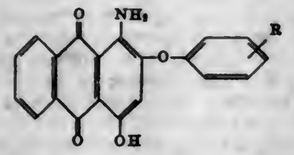
Yutaka Hosoda and Juichi Shimatani, Tokyo, and Koji Sakuma, Matsudo-shi, Chiba-ken, Japan, assignors to Mitsui Kagaku Kogyo Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan

No Drawing. Filed Nov. 26, 1962, Ser. No. 240,140

Claims priority, application Japan, Dec. 2, 1961, 36/43,896; July 24, 1962, 37/31,225, 37/31,226

3 Claims. (Cl. 8—39)

1. A process for the dyeing of polyolefin fibrous material which comprises dyeing polyolefin fibrous material with an anthraquinone disperse dye having the formula:



wherein R is a member selected from the group consisting of —C_6H_{13}(iso) and cyclohexyl.

3,226,178
PROCESS FOR DYEING AND AFTERTREATING POLYETHYLENE OXIDE MODIFIED NYLON FIBERS

Isaac Fletcher Walker, Hockessin, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Oct. 31, 1962, Ser. No. 234,551

6 Claims. (Cl. 8—55)

1. A process comprising the steps of: immersing a textile article comprised of PEO-modified nylon fibers in a dye bath containing an acid dyestuff; boiling said bath to dye the article; and boiling the dyed article in an aqueous bath containing at least about 1% OWY of the sodium salt of an unsaturated long chain alcohol sulfate and at least about 1% OWY of a water-soluble cupric salt, said aqueous bath having a pH of less than about 8.5.

3,226,179
PAPERMAKER'S FELT, WOVEN FABRICS AND FIBERS OF WOOL MODIFIED WITH AN ALDEHYDE - 4,4 - BIS(4 - HYDROXY PHENYL) PENTANOIC ACID REACTION PRODUCT AND THE PRODUCTION THEREOF

Arthur E. Manasian, Newfane, and George Lehner, Rensselaer, N.Y., assignors to Huyck Corporation, Stamford, Conn., a corporation of New York

No Drawing. Filed Oct. 1, 1962, Ser. No. 227,540

17 Claims. (Cl. 8—127.6)

1. A process for treating keratin fibers comprising immersing keratin fibers in an aqueous solution of 4,4-bis-(4-hydroxy phenyl) pentanoic acid and an aldehyde selected from the class consisting of formaldehyde, acetaldehyde, benzaldehyde and propionaldehyde, and drying said keratin fibers, whereby the chemical and physical properties of the keratin fibers are improved without changing the color of said fibers.

3,226,180
PROCESS OF CONDITIONING METAL SURFACES AND COMPOSITIONS THEREFOR

Joseph T. Irwin, Lakewood, Ohio, assignor to Cowles Chemical Company, Cleveland, Ohio, a corporation of Ohio

No Drawing. Continuation of application Ser. No. 817,982, June 4, 1959. This application Mar. 6, 1964, Ser. No. 350,093

17 Claims. (Cl. 21—2.5)

2. A process of pickling a steel in an acid pickling bath from the group consisting of a sulfuric acid pickling bath and a hydrochloric acid pickling bath which comprises adding to such a bath an organic inhibitor known as an anti-corrosive agent in acidic media, in corrosion-inhibiting amounts, and forming also in said bath elemental colloidal sulfur which is liberated in situ in said bath.

3,226,181
COMPOSITION OF THE FORMULA $P_4N_2Cl_{14}$ AND PROCESS FOR PREPARING THE SAME

Margot Becke, Heidelberg, Germany, assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia

No Drawing. Filed July 11, 1962, Ser. No. 209,267

4 Claims. (Cl. 23—14)

1. A composition of matter having the formula

$P_4N_2Cl_{14}$

said $P_4N_2Cl_{14}$ prepared by the process of claim 2.

2. Process for preparing $P_4N_2Cl_{14}$ comprising heating P_3NCl_{12} with NH_4Cl in a molar ratio of from about 1.9:1 to 2.5:1 in an inert solvent at a temperature of 80 to 180° C. and separating $P_4N_2Cl_{14}$ from the resultant mixture.

3,226,182
PURIFICATION OF CRUDE CYANOGEN CHLORIDE

Joseph Francis Martino, Hillside, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Aug. 7, 1962, Ser. No. 215,257

6 Claims. (Cl. 23—14)

6. In the process of purifying cyanogen chloride gas contaminated with varying amounts of HCN and chlorine, the improvement which comprises contacting said raw gas with an aqueous slurry maintained at a pH between about 4.8 and 5.3, containing at least about one-half mole of ferrous sulfate and one mole of calcium carbonate, per mole of HCN in the impure gas; and thereafter recovering the purified cyanogen chloride gas substantially free of HCN and chlorine impurities.

3,226,183
PREPARATION OF MONOCRYSTALS OF RARE EARTH MANGANITES

Erwin Félix Bertaut, 29 Rue Andre Rivoire, Grenoble, France, and Francis Forrat, 2 Rue Eugene Plisson, Marcoussis, France

No Drawing. Filed June 8, 1962, Ser. No. 200,918

Claims priority, application France, June 12, 1961, 864,585

12 Claims. (Cl. 23—58)

1. A method of preparing rare earth manganite monocrystals, which comprises dissolving a mixture of a rare earth oxide and manganese oxide in molten bismuth oxide, supersaturating the solution by slow evaporation of the bismuth oxide and then separating the rate earth manganite monocrystals formed therein.

3,226,184
MANUFACTURE OF SOLID AMMONIUM PHOSPHATES

Isaac Allan Brownlie and George Andrew Wemyss, Edinburgh, Scotland, assignors to Scottish Agricultural Industries Limited, Edinburgh, Scotland, a corporation of Great Britain

No Drawing. Filed Aug. 17, 1962, Ser. No. 217,539

Claims priority, application Great Britain, Sept. 8, 1961, 23,399/61

12 Claims. (Cl. 23—107)

1. A process for the production of a solid product comprising ammonium phosphate of N:P atomic ratio 0.95 to 1.6, said product consisting of an intimate mixture of solid particles and saturated aqueous solution of soluble ingredients wherein the proportion of solution is less than that at which there is substantial separation of liquid from the product under a pressure of 6 p.s.i.g, said process comprising adding phosphoric acid and ammonia to an aqueous slurry of ammonium phosphate of flowable consistency at the temperature of working and having an N:P atomic ratio of between 1.2 and 1.8 in such proportions as to form more slurry of substantially the same composition and of flowable consistency, removing from the aqueous slurry of ammonium phosphate an amount substantially equivalent to that produced by the addition of the phosphoric acid and ammonia and mixing the amount removed with a second flowable material capable of ammoniation by it and in such proportions that the ammonium phosphate of the resulting product has a pre-determined and lower N:P atomic ratio than that of the original aqueous slurry of ammonium phosphate and is solid at ambient temperatures, said mixing being carried out under such conditions as to effect agitation and forward transport involving repeated exposure of fresh surfaces of the resulting mixture.

3,226,185
METHOD OF PREPARING AN ALKALI METAL DITHIONITE

Joseph A. Gyan and Thomas P. Whaley, Baton Rouge, La., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Nov. 9, 1961, Ser. No. 151,196

6 Claims. (Cl. 23—116)

1. A process for the preparation of an alkali metal dithionite which comprises the step consisting of effecting contact between solid alkali metal borohydride and sulfur dioxide at a temperature in the range of from about —70° C. to about 70° C. and in a substantially anhydrous, essentially oxygen-free atmosphere.

3,226,186
METHOD OF OBTAINING PURE ALUMINUM AMMONIUM ALUM

Stanislaw Bretsznajder, Janusz Porowski, and Jan Lis, Warsaw, Poland, assignors to Instytut Chemii Ogolnej, Warsaw, Poland

No Drawing. Filed July 3, 1962, Ser. No. 207,378

Claims priority, application Poland, July 14, 1961, P 96,951

3 Claims. (Cl. 23—118)

1. A method for the preparation of substantially pure aluminum ammonium alum which comprises treating an aqueous solution of technical grade aluminum ammonium alum, which contains in addition to undesirable metal compound impurities at least 0.003% by weight of SiO_2 based on the weight of the solution, with ammonium sulfide in an amount not less than the theoretical amount necessary for the precipitation of the metal compounds, said treatment causing the precipitation and coagulation of the metal compound impurities, separating the precipitated and coagulated suspension from the solution, and crystallizing the substantially pure aluminum ammonium alum from the solution.

3,226,187
METHOD OF OBTAINING INSOLUBLE BASIC ALUMINUM AMMONIUM ALUM

Stanislaw Bretsznajder, Wieslaw Kawecki, Janusz Porowski, and Jan Lis, Warsaw, Poland, assignors to Instytut Chemii Ogolnej, Warsaw, Poland

No Drawing. Filed July 3, 1962, Ser. No. 207,379

Claims priority, application Poland, July 14, 1961, P 96,952

1 Claim. (Cl. 23—118)

In the process for producing insoluble basic aluminum ammonium alum $(NH_4)_2SO_4 \cdot 3Al_2(OH)_6SO_4$ from raw materials containing in addition to aluminum, a substantial amount of silica, which process comprises:

(A) decomposing the said raw material by treating with a solution which is a mixture of (1) sulphuric acid, (2) the lye obtained from the crystallization of the alum prior to hydrolysis, and (3) the lye obtained from the hydrolysis of the crystallized alum;

(B) separating the insoluble matter from the decomposition product to obtain a solution;

(C) crystallizing the aluminum ammonium alum from the solution; and

(D) hydrolyzing a solution of the thus obtained crystallized aluminum ammonium alum to obtain insoluble basic aluminum ammonium alum; the improvement which comprises adding sulphuric acid to the solution utilized to decompose the raw material and adding ammonia to the solution of aluminum ammonium alum at a time between the start of the hydrolysis of the aluminum ammonium alum and the completion of said hydrolysis, the amounts of the sulphuric acid and ammonia added being in an amount at least equivalent to the amount re-

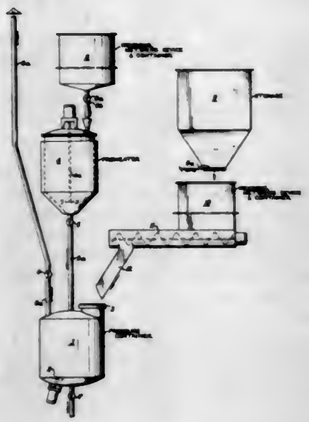
moved from the reaction system through the removal of the insoluble basic aluminum ammonium alum.

3,226,188

PROCESS FOR THE PRODUCTION OF ALUMINUM SULFATE MELT

Hermann Rüter, Ludwigshafen (Rhine), and Egon Cherdron and Fritz Fässle, Limburgerhof, Pfalz, Germany, assignors to Gebruder Giulini G.m.b.H., a German corporation

Filed Oct. 10, 1961, Ser. No. 144,117
Claims priority, application Germany, Oct. 29, 1960, G 30,819
6 Claims. (Cl. 23—123)



1. Process for the production of aluminum sulfate melt having a content of from about 14 to 20% by weight of Al_2O_3 by the reaction under pressure of aluminum hydroxide with sulfuric acid having a concentration corresponding to the desired Al_2O_3 content in the produced aluminum sulfate melt which comprises combining sulfuric acid, which has a concentration corresponding to such desired Al_2O_3 content in the aluminum sulfate melt to be produced, at a temperature of between about 30 and 50 degrees C. with aluminum hydroxide in a reaction zone over a period of from about 30 to 120 seconds, intensively completely intermixing the aluminum hydroxide with the sulfuric acid immediately after said combining for a period of about 60 to 300 seconds until the exothermic reaction is initiated, and thereafter carrying out the reaction of the mixture of aluminum hydroxide and sulfuric acid in said reaction zone under autogenous pressure while maintaining the temperature of the reaction mixture within the range of from about 150 to 200 degrees C. and continuing the intensive intermixing, the intensive intermixing being continued throughout the reaction and being carried out for a period of about at least 10 and at most 60 minutes.

3,226,189

METHOD OF PREPARING SILICA-FREE ALUMINUM SULPHATE SOLUTION

Stanislaw Bretsznajder, Warsaw, Poland, assignor to Instytut Chemii Ogolnej, Warsaw, Poland

No Drawing. Filed July 3, 1962, Ser. No. 207,377
Claims priority, application Poland, July 14, 1961, P 96,950
2 Claims. (Cl. 23—123)

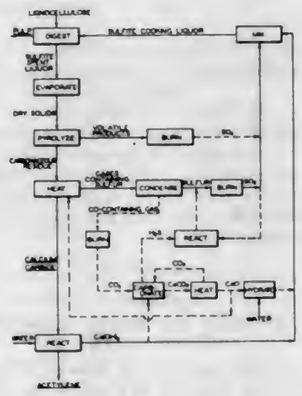
1. A method of preparing a solution of aluminum sulphate free from silica which comprises digesting a member selected from the group consisting of non-calcined clays and aluminosilicates by treating with sulphuric acid at a temperature higher than the normal boiling point of the solution, characterized by carrying out the reaction with a sulphuric acid solution containing combined ammonia in the form of ammonium sulfate in a range of from about 0.1% based on the solution weight to about 0.4%, and, following digestion separating the insoluble residue from the solution.

3,226,190

RECOVERY PROCESS FOR CALCIUM-BASE SULFITE SPENT LIQUOR

Alan S. Rosenfeld, Portland, Oreg., assignor to Crown Zellerbach Corporation, San Francisco, Calif., a corporation of Nevada

Filed Sept. 5, 1961, Ser. No. 136,053
5 Claims. (Cl. 23—131)



1. In a cyclic process for regenerating fresh calcium-base sulfite cooking liquor from calcium-base sulfite spent liquor obtained from the calcium-base sulfite pulping process wherein the calcium compounds in said spent liquor are converted into calcium hydroxide, said calcium hydroxide being subsequently reacted with sulfur dioxide to produce said fresh cooking liquor for use in a succeeding pulping cycle, the improvement in the conversion of said calcium compounds into calcium hydroxide comprising:

evaporating said calcium-base sulfite spent liquor to produce substantially dry solids;

pyrolyzing the resulting dry solids at a temperature between about 700° C. to 1200° C. to release volatile products therefrom and to produce a solid carbonaceous residue comprising sulfur compounds, calcium compounds, and carbon, said pyrolysis being conducted for a time to produce said carbon in an amount that is at least equivalent to that stoichiometrically required to convert all of the calcium compounds to calcium carbide;

heating said carbonaceous residue in a reducing atmosphere at a temperature between about 2500° C. and 2900° C. to form calcium carbide and a gaseous mixture comprising vaporized elemental sulfur and carbon monoxide;

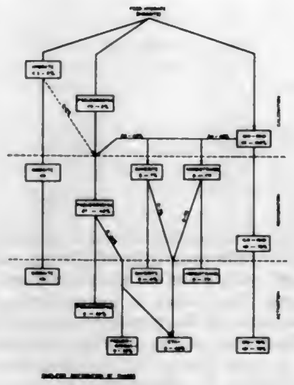
and reacting said calcium carbide with water to produce acetylene and calcium hydroxide, whereby said acetylene is recovered as a product and said calcium hydroxide is employed in producing said fresh calcium-base sulfite cooking liquor for use in said succeeding pulping cycle.

3,226,191

METHOD OF PRODUCING ACTIVE ALUMINA AND THE RESULTING PRODUCT

Harry E. Osment and Robert L. Jones, Baton Rouge, La., assignors to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware

Filed Mar. 15, 1965, Ser. No. 439,616
8 Claims. (Cl. 23—141)



1. A method of producing active alumina granules with high adsorption capacity comprising:

(a) selectively calcining gibbsite alumina trihydrate to obtain a transition and amorphous alumina comprising in excess of about 95% chi-rho alumina, up to about 3% pseudoboehmite alumina and not more than about 2% gibbsite alumina and capable of at least partial rehydration;

(b) agglomerating the selectively calcined alumina by mixing with water to produce granules of desired configuration;

(c) curing the granules by immersion in water at a temperature in the range of 140°–212° F. for a period of time to partially rehydrate the alumina to produce a transition material comprising from about 46 to about 76% chi-rho alumina, from about 27 to about 42% pseudoboehmite alumina, from about 2 to about 7% bayerite alumina, with not more than traces of gibbsite alumina and not more than traces of nordstrandite alumina;

(d) activating the alumina granules by heating at a temperature in the range of 350°–850° F. to obtain a transition alumina comprising from about 46 to about 76% chi-rho alumina, from about 9 to about 32% pseudoboehmite alumina, not more than about 40% eta alumina, not more than about 33% pseudo-gamma alumina and not more than traces of gibbsite alumina.

8. An active alumina with high adsorption capacity comprising:

(a) from about 46 to about 76% chi-rho alumina;

(b) from about 9 to about 32% pseudoboehmite alumina;

(c) not more than about 40% eta alumina;

(d) not more than about 33% pseudo-gamma alumina;

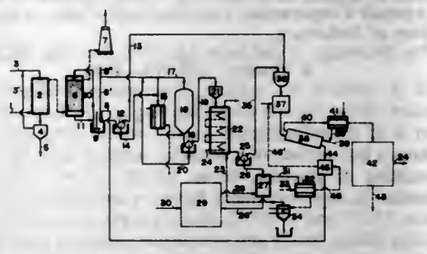
(e) and not more than traces of gibbsite alumina.

3,226,192

PROCESS OF TREATING WASTE GAS CONTAINING SULFUR OXIDE

Masumi Atsukawa and Kazuhiro Matsumoto, Hiroshima, and Hiroyuki Murokawa, Aza-gun, Hiroshima Prefecture, Japan, assignors to Mitsubishi Shipbuilding & Engineering Company, Limited, Tokyo, Japan

Filed Feb. 25, 1963, Ser. No. 260,441
Claims priority, application Japan, Feb. 28, 1962, 37/7,281
10 Claims. (Cl. 23—167)



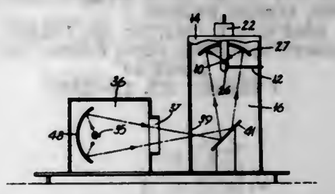
1. A process of treating a gas containing oxides of sulfur with manganese oxide, comprising the steps of preparing an aqueous suspension of manganese oxide having its concentration sufficient to maintain the fluidity of the aqueous suspension, contacting the gas with the aqueous suspension of manganese oxide to absorb the oxides of sulfur contained in the gas into the manganese oxide to thereby produce manganese sulfate, reacting the thus produced manganese sulfate in liquid phase with hydrogen chloride to convert the manganese sulfate to sulfuric acid and crystalline manganous chloride, and oxidation decomposing the manganous chloride with a combustion gas containing excess free oxygen to produce chlorine and manganese oxide, the last-mentioned manganese oxide being used to prepare the aqueous suspension thereof.

3,226,193

METHOD FOR GROWING CRYSTALS

Richard T. Dolloff, Parma, Ohio, assignor to Union Carbide Corporation, a corporation of New York

Filed June 21, 1962, Ser. No. 204,116
12 Claims. (Cl. 23—191)



1. A method for growing a crystal from materials having melting points up to about 4000° C., which method comprises providing crystal support means in an enclosed chamber and at the image spot of a mirror, supplying said mirror with energy from a radiant energy source, thereby concentrating heat substantially solely to said image spot of said mirror, feeding growth material into said chamber and on said support means, thereby growing a crystal from said growth material, and cooling said crystal.

9. A method for producing crystalline titanium nitride, which method comprises placing a crystal-growth-promoting material on a crystal support means in an enclosed chamber and at the image spot of a mirror, introducing a nitrogenous atmosphere into said chamber, feeding powdered titanium on the surface of said growth-promoting material, supplying said mirror with energy from a

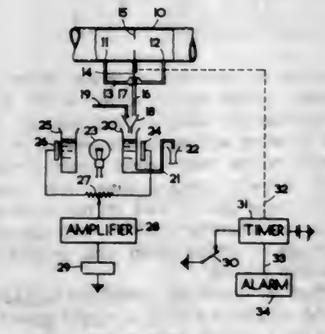
radiant energy source, thereby concentrating heat substantially solely to said image spot of said mirror and thereby reacting said titanium with said nitrogenous atmosphere and growing a crystal therefrom, and cooling said crystal.

3,226,194
PROCESS FOR PRODUCING SILICON NITRIDE AND A PRODUCT THEREOF
Urban E. Kuntz, East Hartford, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
No Drawing. Filed Sept. 10, 1962, Ser. No. 222,662
6 Claims. (Cl. 23—191)

5. A method for making structural members of nonporous silicon nitride corresponding to the formula Si_3N_4 that is of crystallographic density which comprises establishing a hot surface of a member selected from the group consisting of graphite, boron nitride, silicon nitride and alumina in an environment having a temperature between about 1200° and 1900° C., feeding a gaseous mixture comprising silicon halide and anhydrous ammonia over the hot surface, the combined partial pressure of the silicon halide and anhydrous ammonia in the gaseous mixture being less than about 300 mm. of mercury absolute and the mole percent of ammonia based on the recited reactant gases being between about 50 and 85 percent, continuing feeding said gaseous mixture over the hot surface until a deposit of nonporous silicon nitride has been produced; and then separating the silicon nitride deposit from said surface.

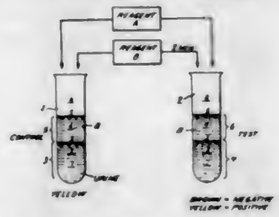
6. As a new article of manufacture, a structural member of silicon nitride corresponding to the formula Si_3N_4 and made by the process of claim 5, said structural member being capable of being ground and polished and capable of withstanding immersion in 85% aqueous potassium hydroxide solution at 500° F., said structural member being translucent, and having a density substantially equal to the crystallographic density of silicon nitride, Si_3N_4.

3,226,195
TESTING FOR THE PRESENCE OR ABSENCE OF A REAGENT IN LIQUORS
John Winfrith de Lisle Nichols, Altrincham, and Colin Ramsay McGowan, Thornhill, Egremont, Cumberland, England, assignors to United Kingdom Atomic Energy Authority, London, England
Filed Aug. 1, 1961, Ser. No. 128,452
Claims priority, application Great Britain, Aug. 2, 1960, 26,808/60
7 Claims. (Cl. 23—230)



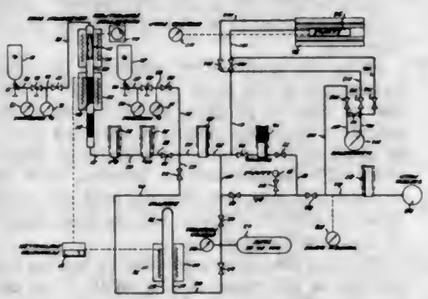
1. A method of determining the presence of a substance in a fluid comprising the steps of withdrawing a small quantity of fluid from a larger quantity of said fluid, mixing said small quantity of fluid with a continuously flowing testing fluid containing a test reagent reactable with said substance to cause a detectable chemical reaction, detecting said chemical reaction, repeating the foregoing sequence of steps of withdrawing, mixing, and detecting at time intervals, regulating the duration of said time intervals by the intensity of said detectable chemical reaction, said time intervals being longer for more intense reactions.

3,226,196
METHOD OF TESTING URINE FOR PREGNANCY
Joseph R. La Vietes, 518 Beach 139th St., Belle Harbor, N.Y.
Filed Nov. 22, 1961, Ser. No. 154,121
9 Claims. (Cl. 23—230)



1. A method of testing female urine to determine pregnancy which consists essentially of placing said urine in a test container, adding thereto a small amount of dinitrophenylhydrazine, the mixture so formed being acid introducing an indicator in the container adapted to respond by change of color to acidity of urine, allowing the urine to stand for at least about two minutes, then rendering the mixture alkaline by introducing aqueous alkali, and noting the color in the mixture.

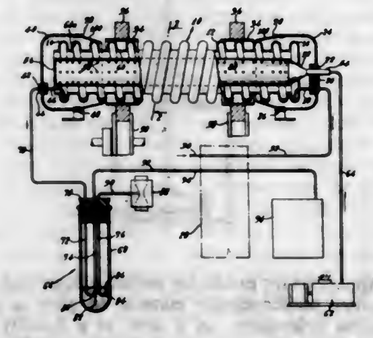
3,226,197
METHOD AND APPARATUS FOR DETERMINING C_{14}
James E. Lewis, Louisville, Ky., assignor, by mesne assignments, to The Martin Sweets Company, Inc., Louisville, Ky., a corporation of Kentucky
Filed July 13, 1962, Ser. No. 209,708
19 Claims. (Cl. 23—230)



1. The method of determining the C_{14} content of a combustible carbon containing sample which comprises,
burning said sample in excess oxygen in a closed system, contacting the products of air combustion with heated CuO, said CuO oxidizing any CO which is present in said products of combustion,
passing said products of combustion through a filter comprising finely divided MnO_2 and granular silica gel, said filter thereby removing at least a part of the water vapor and nitrogen present in said products of combustion, absorbing substantially all sulfurous gases present and maintaining a positive pressure on said sample,

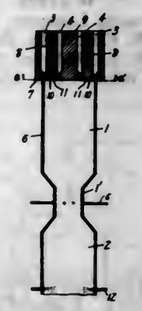
separating remaining water vapor from said products of combustion by passing said products through a first cold trap cooled to a temperature below the freezing point of water but at which CO_2 does not solidify,
separating the CO_2 from the major portion of excess O_2 in a second cold trap chilled to a temperature at which CO_2 solidifies but at which O_2 remains gaseous,
distilling said CO_2 from said second cold trap into a third cold trap, said third trap being cooled with liquid N_2,
drawing off remaining O_2 through a vacuum system,
distilling said CO_2 from said third trap into a tank, admitting dead H_2 to said tank in sufficient quantity for complete conversion of said CO_2 in said tank to CH_4,
quantitatively converting said CO_2 into CH_4 by passing said CO_2–H_2 mixture from said tank in contact with ruthenium at an elevated temperature,
removing the water which is formed during said conversion,
passing the CH_4 back to said third cold trap, said third trap being cooled with liquid N_2, a major portion of said CH_4 being retained in said third trap,
passing the remainder of said CH_4 to a fourth cold trap, said fourth trap being cooled with liquid N_2 and containing activated charcoal, the remainder of said CH_4 being absorbed on said charcoal in said fourth trap, drawing off remaining H_2 through a vacuum system,
and distilling the CH_4 from said third and fourth traps into a proportional counter for determination of the C_{14} content of said CH_4.

3,226,198
METHOD AND APPARATUS FOR TREATING GASES
Andres Ferrari, Scarsdale, N.Y., assignor to Technicon Instruments Corporation, Chauncey, N.Y., a corporation of New York
Filed Oct. 18, 1962, Ser. No. 231,537
18 Claims. (Cl. 23—232)



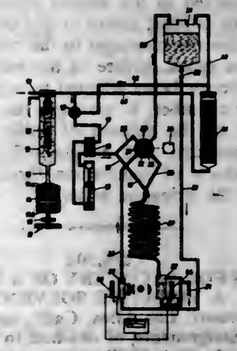
17. A method of determining the concentration of a constituent in a gas comprising: continuously conveying a liquid reagent as a stream along a path from and between an inlet and an outlet; continuously raising liquid reagent out of the stream along the path to form a film of liquid; directing and contacting the gas against the film of liquid; continuously returning the raised, gas contacted liquid to the stream; withdrawing at least a portion of the stream containing the gas contacted liquid as a stream of liquid and continuously analyzing this stream for the concentration of a gas constituent-reagent reaction product.

3,226,199
APPARATUS FOR THE FLAME DECOMPOSITION OF HYDROCARBONS AND APPARATUS THEREFOR
Masayuki Yano, Teruo Yasui, and Takashi Ueno, Kurashiki, Japan, assignors to Kurashiki Rayon Company Limited, Kurashiki, Japan, a corporation of Japan
Filed Oct. 2, 1961, Ser. No. 142,251
Claims priority, application Japan, Oct. 27, 1960, 35/42,742
1 Claim. (Cl. 23—252)



An apparatus for the flame decomposition of hydrocarbons, which comprises a combustion chamber for receiving oxygen containing gas and fuel, at least one set of concentric annular nozzles for separate introduction of said oxygen and fuel, said nozzles opening directly into said combustion chamber and forming with each other an angle of 40 to 90°, a reaction chamber communicating with said combustion chamber, and an inlet portion for the raw material hydrocarbons provided between said two chambers and having a diameter smaller than that of the said combustion and reaction chamber, said nozzles being formed by a stationary cylindrical outer wall member and movable members to adjust independently the width of each of the nozzle openings.

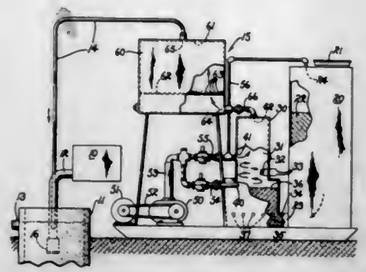
3,226,200
APPARATUS FOR GAS ANALYSIS
Hans Fuhrmann, Hamburg-Langenhorn, Germany, assignor to Messrs. Bran & Lübbe, Hamburg, Germany
Filed May 28, 1962, Ser. No. 198,211
Claims priority, application Germany, June 10, 1961, B 62,859
6 Claims. (Cl. 23—254)



1. In an automatic analyzer for measuring traces of gas, a source of constant pressure gas, an absorption vessel, means for continuously supplying constant pressure

gas to the absorption vessel, and means for intermittently supplying predetermined volumes of liquid reaction components to the absorption chamber, wherein the source of constant pressure comprises a bottle of constant volume, a conduit extending into the bottle connecting a source of variable pressure with the bottle, and a chamber of variable volume connected to the bottle.

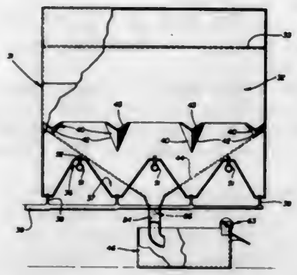
3,226,201
APPARATUS FOR TREATING IRRIGATION WATER
Darrell R. Harmon, Lemoore, Calif., assignor to William W. Cornforth, Reedley, Calif.
Filed Feb. 7, 1963, Ser. No. 257,375
2 Claims. (Cl. 23—262)



1. An apparatus for treating irrigation water comprising a combustion chamber having upper and lower end portions; a substantially hermetically sealed supply hopper having upper and lower end portions mounted adjacent to the combustion chamber and adapted to receive flowable powdered sulfur; a sulfur conduit interconnecting the lower end portions of the hopper and the chamber for gravitational flow of sulfur from the hopper to the chamber whereby the sulfur forms a substantially U-shaped column having opposite ends in the chamber and the hopper; a catalytic tank disposed above the combustion chamber containing a catalytic bed of ferric oxide and aluminum oxide and connected to the upper end portion of the chamber at a position below the bed; a gas conduit having an intake end connected to the catalytic tank above the catalytic bed and an extended end; a gas diffuser mounted on the extended end of the gas conduit and adapted to be immersed in irrigation water to diffuse the gas in said water; an air compressor; a conduit connected to the compressor and to the chamber above the surface of the sulfur therein and having a branch connected to the hopper above the surface of the sulfur in the hopper; means in said conduit to regulate air supply to the chamber and to the hopper; and means for igniting the upper surface of the sulfur in the chamber, the compressor being adapted to supply air for combustion to the chamber, to maintain the air pressures on opposite ends of the column of sulfur under substantially equal pressure, and having sufficient pressure to force the products of combustion through the catalytic tank and into the irrigation water.

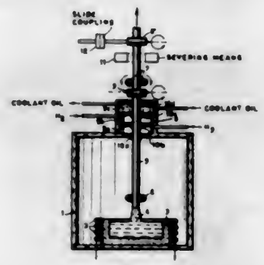
3,226,202
APPARATUS FOR RECOVERY OF A SOLUTE FROM A VOLATILE SOLVENT
Adrian Nagelvoort, Los Altos, Calif., assignor, by direct and mesne assignments, of one-half to Complex, Incorporated, Menlo Park, Calif., a corporation of California
Filed Aug. 21, 1962, Ser. No. 218,241
1 Claim. (Cl. 23—267)

A recovery apparatus comprising an enclosed vessel, means forming an open reservoir within the vessel to provide a liquid bath therein, means providing a flow of said liquid continuously into the reservoir to fill and overflow same, said means being disposed to introduce said liquid into the reservoir near the bottom of same, means disposed and arranged to inject a solution composed of a solvent and material to be separated, into said reservoir at a point above said first named means to be entrained by said flow of liquid at a point well below



the surface of the bath, means for receiving the overflow from said reservoir, and means for recovering said material from said overflow, said reservoir including a bottom formed to include ridges and valleys, said flow of liquid being introduced into said reservoir via said valleys and said solution entering via the tops of said ridges, the sides of said ridges thereby serving to carry said liquid toward the entering solution.

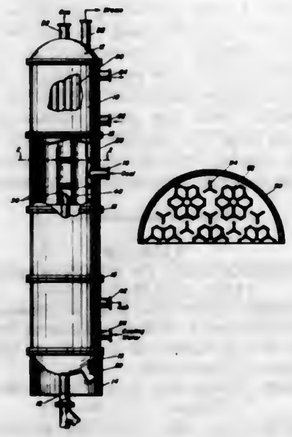
3,226,203
APPARATUS FOR PREPARING SEMICONDUCTOR RODS
Theodor Rummel, Munich, Germany, assignor to Siemens & Halske Aktiengesellschaft, Berlin, Germany, a corporation of Germany
Filed Dec. 6, 1963, Ser. No. 328,636
Claims priority, application Germany, Dec. 10, 1962, S 82,779
15 Claims. (Cl. 23—273)



1. Apparatus for producing semiconductor rods by causing molten semiconductor material to grow in preferred crystalline orientation on a seed at a locality of high temperature and removing the resulting solidified rod to a locality of lower temperature, comprising a processing vessel, heatable crystal-forming means in said vessel, a guide mounted in said vessel in spaced relation to said crystal-forming means and engageable with the solidified crystal rod being produced to guide the rod for displacement in the axial direction away from said crystal-forming means, a sealing device mounted on the vessel wall in coaxial alignment with said guide and spaced therefrom in said direction, said sealing device having cooling means and a plurality of axially spaced elastic sealing members coaxially surrounding the rod-displacement axis, said sealing members being sealingly contactable with the rod passing through said device to the outside of said vessel,

and rod drive means mounted outside said vessel and drivingly engageable with the rod for pulling the longitudinally growing crystal rod through said guide and said sealing device.

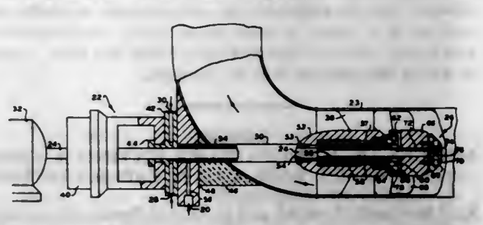
3,226,204
BAFFLED REACTOR
Harold H. Stotler, Westfield, N.J., George B. Farkas, Jackson Heights, N.Y., and Percival Cleveland Keith, Peapack, N.J., assignors to Hydrocarbon Research, Inc., New York, N.Y., a corporation of New Jersey
Filed Jan. 4, 1962, Ser. No. 164,306
7 Claims. (Cl. 23—284)



1. A reactor for a fluidized high temperature reaction between a gas and a bed of solids which comprises an elongated vertical cylindrical chamber having a fluid bed with a height of from five to fifty feet, said chamber having a support for said bed, means to introduce the solids above said support, means to introduce a gasiform stream substantially uniformly upwardly through said bed at a velocity to fluidize the particles of said bed, and means to maintain a substantially uniform fluidity to said bed including at least one vertically extending baffle member, said member having a plurality of continuous laterally extended blade portions extending throughout the reaction zone, said blade portions having a minimum horizontal surface with reference to the length and width thereof whereby the solids are free to move vertically and laterally with respect to said baffle member, said blade portions extending substantially radially from the baffle member and being of substantially Y shaped with the line of attachment of one blade portion to the baffle member being spaced from the line of attachment of the adjacent blade portion to avoid any sharp corners, the tips of adjacent Y portions being stabilized with respect to each other, said blade portions tending to maintain the uniformity of flow of the gas stream through the reactor, and means to remove the gas stream from the upper part of the reactor.

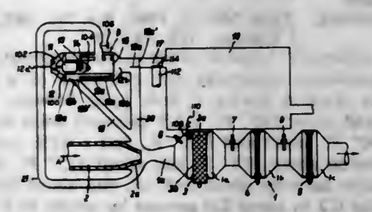
3,226,205
REACTOR IMPELLER WITH FEED INLET ALONG SHAFT
Raymond G. Robling, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Oct. 3, 1960, Ser. No. 59,991
4 Claims. (Cl. 23—288)

1. Apparatus comprising in combination:
(a) a polymerazation vessel comprising an elongated cylindrical section having inlet means for fluid feed, an inlet for a mixture of catalyst and liquid diluent, and outlet means for polymer, and a curved section adjacent said cylindrical section;
(b) an impeller shaft coaxial with said cylindrical section extending thru the wall of said curved section thru an outboard bearing fixed on said wall and sealed therewith;
(c) an impeller on the inner end of said shaft spaced substantially from said wall and provided with a hub having a skirt extending over the forward end of the housing of (d) toward said wall, said impeller being constructed to drive liquid reactant and polymer over said skirt;
(d) a separate inboard bearing on said shaft adjacent said hub enclosed within and supported by a housing and providing a first annular passageway therethru coaxial with said shaft, said housing being supported from the wall of the vessel of (a);



(e) a separate sleeve around said shaft extending from said inboard bearing into said outboard bearing providing a second annular passageway coaxial with said shaft and joining said first annular passageway, said sleeve and the housing of (d) substantially completely covering said shaft between said wall and said impeller;
(f) a passageway extending outwardly from the innermost end of said first annular passageway into said vessel, the terminal portion thereof passing rearwardly along said skirt; and
(g) an inlet to said second annular passageway thru said outboard bearing for introducing polymerizable monomer as flushing fluid to flush said inboard bearing to prevent polymer deposition between said hub and said inboard bearing.

3,226,206
EXHAUST GAS SYSTEM
Alfred Hettich, Esslingen (Neckar), Siegfried Kofink, Zell (Neckar), and Herbert Martin, Esslingen (Neckar), Germany, assignors to J. Eberspacher, Esslingen (Neckar), Germany, a German firm
Filed June 26, 1962, Ser. No. 205,453
Claims priority, application Germany, June 28, 1961, E 21,303
10 Claims. (Cl. 23—288)



1. A device for purifying unburned exhaust gases generated by an internal combustion engine and the like comprising an exhaust gas supply line, an ejector formed in the exhaust supply line including a converging nozzle section and a diverging discharge section arranged in coaxial alignment therewith, a catalyst conduit connected to

the divergent section of said ejector and having a catalyst therein disposed thereacross to lie in the stream of gases passing therethrough, a heater having means for burning fuel and air for generating high temperature gases, first conduit means connecting said heater to said exhaust line between the converging and diverging sections of said nozzle at a location to effect sucking of said high temperature gases into the exhaust line by the passage of exhaust gases through said nozzle converging section into said nozzle diverging section, second conduit means for delivering air to said exhaust line, first and second valve means respectively controlling a flow of high temperature gases through said first conduit means and flow of air through said second conduit means; and temperature responsive means effective to sense the temperature adjacent said catalyst, and controlling operation of said first and second valve means to regulate the relative quantities of said high temperature gases and said air flowing to said exhaust line to maintain the temperature adjacent said catalyst at a value at least equal to the temperature at which said catalyst becomes active and less than a value at which the catalyst will be damaged.

3,226,207

ARTICLE OF MANUFACTURE HAVING A CHROMIUM ALLOY BASE AND A VAPOR DIFFUSED ALUMINIZED SURFACE

Karl Bungardt, Krefeld, and Gottfried Becker, Dusseldorf, Germany, assignors to Howe Sound Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 15, 1961, Ser. No. 159,741
1 Claim. (Cl. 29—197)

An article of manufacture adapted to withstand surface corrosion at temperatures as high as 1200° C. having a base of a chromium alloy consisting essentially of 5–35% by weight of chromium with the remainder of the alloy selected from the group consisting essentially of up to 80% by weight nickel, up to 80% by weight cobalt, up to 5% by weight molybdenum, up to 10% by weight tungsten, up to 3% by weight vanadium, up to 5% by weight titanium, up to 5% by weight tantalum, up to 5% by weight niobium, up to 8% by weight aluminum, up to 2% by weight silicon, up to 2% by weight manganese, up to 0.5% by weight boron, up to 0.5% by weight zirconium, and up to 50% by weight iron, said article having a vapor diffused aluminized portion formed by vapor diffusion at a temperature above 1000° C. in the surface of said base to a depth of about 10 microns and having a surface roughness less than 98 micro-inches.

3,226,208

LIGHTER FLUID FOR BARBECUE BRIQUET IGNITION

Albert J. Mueller, Johnson City, Tenn., and Lowell E. Wills, Chicago, Ill., assignors to Great Lakes Carbon Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 2, 1964, Ser. No. 408,368
9 Claims. (Cl. 44—7)

1. A uniformly blended combustible composition of matter consisting essentially of: 100 parts of a liquid petroleum fraction having a flash point between about 110° F. and about 145° F., a 5% recovery point between about 300° F. and about 375° F., and a 95% recovery point between about 375° F. and about 675° F., and an aniline point between about 145° F. and about 190° F.; from about 0.2 to about 2.0 percent by weight of a thickening agent selected from the group consisting of aluminum stearate, calcium stearate, aluminum palmitate and aluminum octoate; and from about 0.001% to about 0.3% by weight of a surface active agent which assists in bringing and maintaining the viscosity of said blended composition between about 30 and about 500 centipoises at 30° C.

3,226,209

GASOLINE FUEL COMPOSITION

Shirl E. Cook and Hymin Shapiro, Baton Rouge, La., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Apr. 13, 1964, Ser. No. 359,471
6 Claims. (Cl. 44—69)

1. A halogen scavenger-free leaded gasoline composition of enhanced engine inductibility characteristics essentially consisting of:

gasoline; an alkyllead antiknock agent present in the gasoline in amount equivalent from about 1 to about 5 grams of elemental lead per gallon; a mixture of different fused ring aromatic hydrocarbons having boiling points at atmospheric pressure of at least about 180° C. and containing up to about 20 carbon atoms in the molecule, said mixture being present in amount equivalent to from about 5 to about 30 parts by weight per each 100 parts by weight of said agent; and a triaryl phosphate ester in which the aryl groups are selected from the group consisting of phenyl, tolyl, and xylyl, the phosphorus content of the composition ranging from about 0.2 to about 0.6 theory based on the lead content of the composition.

3,226,210

MICROBIOCIDES IN HYDROCARBON FUEL COMPOSITIONS

James N. Baptist, Clarksville, Paul R. Steyermark, Silver Spring, and Preston L. Veltman, Severna Park, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Filed Mar. 5, 1963, Ser. No. 263,077
7 Claims. (Cl. 44—66)

1. A hydrocarbon fuel stabilized against undesired microorganism growth, which comprises a liquid hydrocarbon boiling between —200 and 400° C., and from about 10 parts per billion to about 10 parts per million by weight of a silver compound dissolved therein, said silver compound being characterized by possessing a solubility in said hydrocarbon and in water of at least 10 parts per billion, and selected from the group consisting of silver carboxylates of monomeric monocarboxylic acids, silver sulfonates, silver dithiocarbamates, silver sulfates, silver phosphates, and silver acetylides.

3,226,211

INHIBITING GROWTH OF MICROORGANISMS IN FUEL COMPOSITIONS

John F. Deffner, McKees Rocks, and Elizabeth L. Farerl, Pittsburgh, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed May 29, 1962, Ser. No. 198,457
8 Claims. (Cl. 44—70)

1. A fuel composition, comprising a major amount of a liquid hydrocarbon fuel oil to which has been added about 0.01 to 0.05 percent by weight of an alkylidene diacylate, where the alkylidene and acylate radicals each contain 1 to 4 carbon atoms.

3,226,212

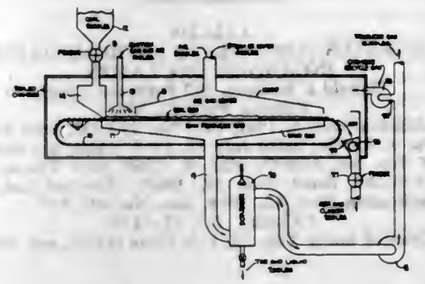
APPARATUS FOR THE PRODUCTION OF COMBUSTIBLE GASES FROM SOLID CARBONACEOUS MATERIALS

Thomas E. Ban, Cleveland Heights, Ohio, assignor, by mesne assignments, to McDowell-Wellman Engineering Company

Filed Jan. 2, 1962, Ser. No. 163,502
2 Claims. (Cl. 48—63)

2. A system for forming and recovering a gas rich in carbon monoxide, and hydrogen, and residual solids from a solid granular carbonaceous fuel which comprises:

(a) a plurality of aligned pallets mounted on an elongated horizontally disposed endless conveyor;
(b) means at one extremity of said conveyor for distributing said granular fuel to substantially uniform depth to form a fuel burden on said pallets;
(c) means, above said fuel burden on said pallets and adjacent to said means for distributing, for igniting said fuel burden;
(d) separate means including a hood in juxtaposed relation to said aligned pallets on said conveyor and including means for supplying air in combination with steam to said ignited fuel burden;



(e) means for passing said steam containing gas down through said fuel burden on said conveyor to effect a water gas reaction therewith and yield a producer gas rich in carbon monoxide and hydrogen, and to entrain normally liquid components derived from said fuel;
(f) separate means below said conveyor for isolating said liquid components from said producer gas;
(g) means connected to said separate means (f) for recovering said liquid depleted producer gas;
(h) means for recovering residual solids from the other extremity of said conveyor; and
(i) sealed chamber means for enclosing said ignition means, conveyor and hood and isolating them from the ambient atmosphere.

3,226,213

FUEL GAS COMPOSITION

Rodney A. Nelson and Robert W. Belitt, Jr., Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Nov. 23, 1962, Ser. No. 239,828
19 Claims. (Cl. 48—197)

1. A composition of matter consisting essentially of a mixture of from about 48 to about 75 mole percent of a first component selected from the group consisting of methylacetylene, propadiene and mixtures thereof, from about 11 to about 38 mole percent of a second component selected from the group consisting of propane, propylene and mixtures thereof, and from about 2 to about 14 mole percent of a third component selected from at least one member of the group consisting of saturated and ethylenically unsaturated hydrocarbons containing four carbon atoms.

3,226,214

EPOXY RESIN ABRASIVE STRUCTURES AND METHOD THEREFOR

Rupert S. Daniels, Union, and Bruce P. Barth, Bound Brook, N.J., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Nov. 3, 1960, Ser. No. 66,945
17 Claims. (Cl. 51—298)

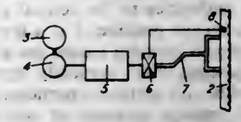
1. An abrasive composition comprising abrasive grains wetted with a liquid, curable epoxy resin composition comprising a polycarboxylic acid anhydride and a member selected from the group consisting of 4-vinylcyclohexene dioxide, bis(2,3-epoxycyclopentyl)ether and dicyclopentadiene dioxide, and a powdered solid, curable epoxy resin of a polycarboxylic acid anhydride and dicyclopentadiene dioxide.

3,226,215

METHOD OF PRODUCING TOUGHENED GLASS

John Reginald Beattie, Maghull, near Liverpool, and Kenneth Jack Blackler Wolfe, Bakall Common, England, assignors to Pilkington Brothers Limited, Liverpool, England, a corporation of Great Britain

Filed Apr. 17, 1961, Ser. No. 103,313
Claims priority, application Great Britain, Apr. 20, 1960, 13,904/60
11 Claims. (Cl. 65—29)



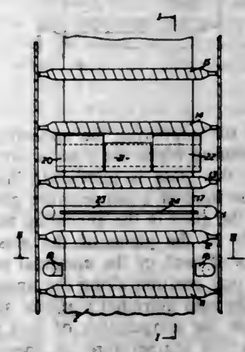
1. The method of toughening at least a part of a glass article which comprises heating the glass article above the relaxation temperature of the glass, exposing the heated glass article to the quenching action of a gaseous chilling medium directed at a surface of the glass article until said surface is chilled to a controlled temperature not substantially greater than the relaxation temperature of the glass, sensing the temperature of said glass surface while it is being chilled by said chilling medium, and as soon as the glass surface has been chilled to said controlled temperature stopping the delivery of the gaseous chilling medium in response to the temperature sensing of said glass surface to obtain a toughened glass article having a prescribed particle count.

3,226,216

METHOD OF AND APPARATUS FOR ANNEALING SHEET GLASS

George Huntley Oxley, St. Helens, and Edmund Sydney Littler, Widnes, England, assignors to Pilkington Brothers Limited, Liverpool, England, a company of Great Britain

Filed Aug. 8, 1962, Ser. No. 215,605
Claims priority, application Great Britain, Aug. 18, 1961, 29,962/61
10 Claims. (Cl. 65—95)



1. A process for improving the annealing of flat glass in ribbon form during which the glass is advanced through a lehr wherein the glass is annealed, characterized by raising the temperature of the marginal portions of the glass ribbon, including both surfaces of the said marginal portions, from a temperature substantially be-

low the temperature of the corresponding central portion of the ribbon to a temperature near to the temperature of the corresponding central portion of the ribbon and to a temperature above the strain point of the glass, while the temperature of the corresponding central portion of the ribbon is above the strain point of the glass, until the glass in the central portion cools to near the strain point, and then allowing the glass in both the marginal and central portions while the temperatures of the marginal and central portions are near to each other to cool substantially at the same time below the strain point.

9. An apparatus including a vertical lehr for annealing sheet glass in ribbon form, the lehr comprising rolls for guiding the ribbon through the lehr, means for blowing a gaseous heating fluid in the vicinity of the marginal portions of the ribbon and in a direction to cause said fluid to come in contact with both surfaces of said marginal portions in preference to the central portion of the ribbon, and baffle means positioned at a level in the lehr above the level of said blowing means for preventing the passage of the gaseous fluid vertically upwards in the lehr in contact with said marginal portions and for confining the vertical passage upwards of said gaseous fluid for exclusive contact of said gaseous fluids with both surfaces of the central portion of the glass ribbon.

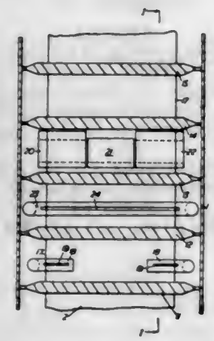
7. An apparatus including a vertical lehr for annealing sheet glass in ribbon form, the lehr comprising rolls for guiding the glass ribbon through the lehr, blowing means for blowing gaseous fluid in a direction transversely of the plane of the glass ribbon and directly against both surfaces of the two marginal portions of the glass ribbon, and baffle means positioned at a level in the lehr above the level of said blowing means for preventing the passage of the gaseous fluid vertically upwards in the lehr in contact with the said marginal portions and for confining the vertical passage upwards of said gaseous fluid to contact with the central portion of the glass ribbon.

3,226,217

METHOD AND APPARATUS FOR THE MANUFACTURE OF SHEET GLASS

George Huntley Oxley, St. Helens, and Edmund Sydney Littler, Widnes, England, assignors to Pilkington Brothers Limited, Liverpool, England, a company of Great Britain

Filed Aug. 8, 1962, Ser. No. 215,715
Claims priority, application Great Britain, Aug. 18, 1961, 29,961/61
9 Claims. (Cl. 65—95)



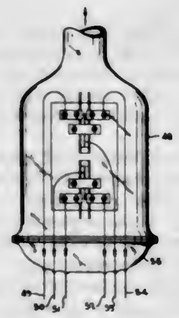
1. A process for improving the annealing of flat glass in ribbon form during which the glass is advanced through a lehr wherein the glass is annealed, characterized by directing gaseous fluid at a temperature greater than the temperature of the glass in the annealing zone in a direction transversely of the plane of the glass ribbon and against the faces of each of the marginal portions of the glass ribbon at one position along the annealing zone to impart heat to the said marginal portions, said fluid being sufficient to raise the temperature of said marginal portions nearer to the temperature of the corresponding central portion of the ribbon, and to maintain the marginal portions of the glass ribbon at a temperature above the strain point of the glass until the glass in the central portion cools to near the strain point, and then allowing the glass in both the marginal and central portions to cool below the strain point.

3,226,218

APPARATUS FOR MAKING MICROMINIATURE INCANDESCENT LAMPS

Donald J. Belknap, 302 Patterson Court, Takoma Park 12, Md.

Application Mar. 6, 1962, Ser. No. 193,030, now Patent No. 3,193,906, dated July 13, 1965, which is a division of Ser. No. 12,877, Mar. 4, 1960, now Patent No. 3,040,204, dated June 19, 1962. Divided and this application Nov. 12, 1964, Ser. No. 417,529
1 Claim. (Cl. 65—139)
(Granted under Title 35, U.S. Code (1952), sec. 266)



Apparatus for making microminiature incandescent lamps having a substantially cylindrical, hermetically self-sealed glass envelope, a pair of axial lead wires, one lead wire extending into one end of said envelope and the other lead wire extending into the other end of said envelope, and a filament connected between said lead wires within said envelope, said apparatus comprising:

(a) a jig adapted to be placed in a bell jar which is to be evacuated, said jig comprising:
  (1) a base,
  (2) first and second axially aligned heating cylinders,
  (3) first and second pairs of heating cylinder leads rigidly attached to said first and second heating cylinders, respectively, said heating cylinder leads providing mechanical support for and electrical connection to said heating cylinders,
  (4) first and second heating cylinder lead supports fixedly mounted to said base and providing a securable sliding support for said first and second pairs of heating cylinder leads, respectively, thereby permitting said heating cylinders to be positioned over the ends of a glass envelope to be sealed, and
  (5) first and second lamp lead supports fixedly mounted to said base and providing a clamping support for said pair of lamp lead wires in axial alignment,

(b) a heating circuit comprising:
  (1) an adjustable autotransformer having a winding and a sliding contact, and
  (2) a slidewire rheostat having a winding and a sliding contact, said rheostat winding being connected at one end to one end of said autotransformer winding and at the other end to said autotransformer sliding contact, one end of said rheostat winding being electrically connected to one of the leads of said first pair of heating cylinder leads and the other end of said rheostat winding being electrically connected to one of the leads of said second pair of heating cylinder leads, the remaining leads of said heating cylinder leads being electrically connected to said rheostat sliding contact, whereby the ends of a glass envelope to be sealed may be sequentially sealed by first positioning said rheostat sliding contact at one end of said rheostat winding and then positioning said rheostat sliding contact at the other end of said rheostat winding, and

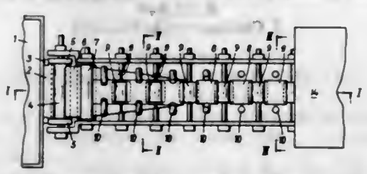
(c) a monitoring circuit comprising:
  (1) a milliammeter, a variable resistor and a source of direct current voltage connected in series with said filament, and
  (2) a voltmeter connected in shunt with said filament, whereby a change in the voltage and current in said monitoring circuit as shown by said voltmeter and said milliammeter provides an indication of the completion of the seal of said glass envelope.

3,226,219

DEVICE FOR THE FABRICATION OF U-SHAPED PROFILES OF GLASS IN A CONTINUOUS ROLLING PROCEDURE

Fridolin Jamnik, Vienna, Austria, assignor to Moosbrunner Glasfabriks-Aktiengesellschaft, Vienna, Austria

Filed June 22, 1961, Ser. No. 118,904
Claims priority, application Austria, June 14, 1961, A 4,624/61
15 Claims. (Cl. 65—170)



1. An apparatus for the manufacture of U-shaped vitreous products which consist of a median section and of two flanges laterally adjacent to and making substantially right angles with the median section, comprising means for continuously advancing a band of molten vitreous material in a predetermined direction; supporting means having a center portion in a plane for supporting the median section of said band from one side of the latter and a plurality of side portions on opposite sides of said center portion for supporting the edge portions of said band, said side portions on each side being inclined to said plane and the inclination of said side portions successively increasing in said direction; and a plurality of independent straight cylindrical shaping rollers arranged along opposite sides of said center portion, said shaping rollers having respective axes extending respectively in planes normal to said direction and parallel to the respective inclined side portions, said shaping rollers engaging said edge portions at the other side of said band and cooperating with said side portions of the supporting means for gradually deflecting said edge portions during advancing of said band to an increasingly greater extent until the edge portions form the flanges of said U-shaped vitreous product.

3,226,220

DEVICE FOR THE PROTECTION OF BARRIERS IN GLASS FURNACES

Emile Plumat, Gilly, Belgium, assignor to S. A. Glaverbel, Brussels, Belgium, a company of Belgium

Filed June 22, 1962, Ser. No. 204,494
Claims priority, application Belgium, Sept. 6, 1961, 484,409, Patent 607,898
4 Claims. (Cl. 65—342)



1. In a glass furnace, a barrier comprising a transverse wall having a submerged portion with an outer facing surface exposed to the action of the currents of molten glass, and means for protecting an intermediate submerged portion of such facing surface from the moving glass in the bath including partition means composed of material resistant to attack by the moving molten glass, said partition means including a portion wholly submerged in said glass bath and extending outwardly from said barrier facing surface forming with said submerged intermediate portion of such facing surface on the associated side of said wall a compartment for containing molten glass, said portion of said partition means providing a barrier against entry of currents of molten glass into the compartment area defined by said portion of said partition means and said intermediate surface portion, and creating in such compartment area a zone of stagnant molten glass capable of protecting such intermediate surface portion against the currents of molten glass in the bath.

3,226,221

INHIBITING TOBACCO SUCKER GROWTH

Howard A. Hageman, Southbury, and John A. Riddell, Hamden, Conn., assignors to United States Rubber Company, New York, N.Y., a corporation of New Jersey

No Drawing. Filed Jan. 28, 1963, Ser. No. 254,427
3 Claims. (Cl. 71—2.7)

1. The method of inhibiting sucker growth on tobacco plants which comprises treating tobacco plants with an amount effective to inhibit the growth of suckers on said plants of material selected from the group consisting of alkylenedinitramines in which the alkylene has 2 to 10 carbon atoms, alkali salts of alkylenedinitramines in which the alkylene has 2 to 10 carbon atoms, N-methylol alkylenedinitramines in which the alkylene has 2 to 10 carbon atoms, N,N'-dinitroalkyleneureas in which the alkylene has 2 to 10 carbon atoms, and N,N'-dicarbalkoxyalkylenedinitramines in which the alkyl groups in the dicarbalkoxy have 1 to 10 carbon atoms and the alkylene has 2 to 10 carbon atoms.

3,226,222

HIGH NITROGEN REACTION PRODUCTS OF NH_3-P_2O_5 AND PROCESS THEREFOR

Charles H. Hibbitts, Chesterfield County, and James E. Sensing, Jr., Hopewell, Va., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Aug. 27, 1962, Ser. No. 219,714
6 Claims. (Cl. 71—29)

1. A process for reacting ammonia with phosphorus pentoxide to obtain a product having a nitrogen content between about 25 and 30% by weight and a nitrogen to

phosphorus weight ratio between 0.85:1 and 1:1 and, the final product being soluble in water at temperatures as low as about −15° C. to form solutions of at least 49% by weight concentration, which process comprises:

in a first stage, forming a completely water soluble intermediate ammonia-phosphorus pentoxide reaction product having a nitrogen content of about 15% by weight, in an expanded form occupying about 3 to 10 fold the volume originally occupied by the phosphorus pentoxide, said intermediate exepanded product being obtained by:

(1) adding gaseous ammonia to phosphorus pentoxide suspended in a vigorously agitated liquid hydrocarbon, the ammonia being maintained at pressures not above about 1 atmosphere over the reaction mixture and the reaction temperature being maintained in the range between about 85° C. and about 150° C.;

(2) feeding the ammonia into the reaction mixture at rates not exceeding about 5 parts by weight of ammonia per 1000 parts by weight of phosphorus pentoxide present, per minute; and

(3) maintaining said conditions of agitation, pressure, temperature and ammonia feed rates until at least about 22 parts by weight of ammonia have been absorbed in the reaction mixture per 100 parts by weight of phosphorus pentoxide present;

thereafter maintaining temperatures in the range of about 50° C. —150° C.; and

in a second stage, at latest when about 37 parts by weight of ammonia have been absorbed per 100 parts by weight of phosphorus pentoxide present:

(1) bringing the ammonia pressure over the reaction mixture to at least about 2 atmospheres absolute;

(2) continuing agitation of the suspension in the liquid hydrocarbon;

(3) feeding ammonia to the reaction mixture under these second stage conditions of pressure and temperature until the total ammonia in the reaction mixture is at least about 45 parts by weight per 100 parts by weight of phosphorus pentoxide present; and

separating the resulting product from the liquid hydrocarbon.

3. A solid, white, hygroscopic, free flowing product in particulate form said product containing compounds of hydrogen, nitrogen, phosphorus and oxygen and being further characterized by:

(1) a total nitrogen content of 25–30% by weight of the final product, of which about 50–70% is ammoniacal;

(2) a weight ratio of nitrogen:phosphorus in the range of about 0.85:1 to about 1:1; and

(3) the ingredients of said hydrogen, nitrogen, phosphorus, and oxygen compounds being so chosen that an aqueous solution of said compounds is weakly basic at −15° C.

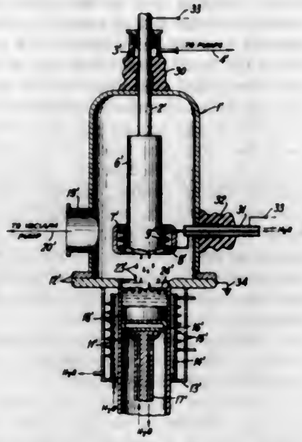
3,226,223

METHOD AND APPARATUS FOR MELTING METALS BY INDUCTIVE HEATING AND ELECTRON BOMBARDMENT

Adrien Bussard, La Celle St. Cloud, France, and Helmut Gruber and Herbert Stephan, Hanau am Main, Germany, assignors to W. C. Heraeus G.m.b.H., Hanau am Main, Germany, a corporation of Germany

Filed Apr. 20, 1961, Ser. No. 104,329
Claims priority, application Germany, May 21, 1960, H 39,496
13 Claims. (Cl. 75—10)

1. A method of melting consumable electrodes in a high vacuum to refine and degas the same comprising the steps of continuously feeding and melting the lower end of a consumable electrode by heating the same by induction and collecting the resultant molten metal drops in a cold crucible, to form an ingot and simultaneously heating said metal collected in said crucible to form an



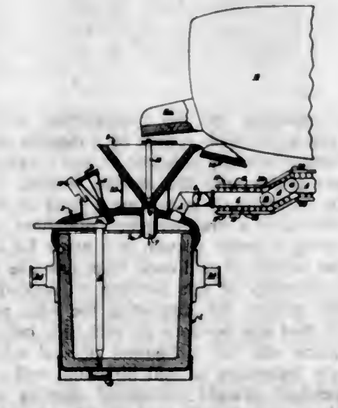
ingot, said crucible being in connection with a positive potential, by subjecting its free surface to an electron bombardment, said electron bombardment being conducted intermediate said consumable electrode and said crucible.

3,226,224

PROCESS FOR VACUUM DEGASIFICATION OF METAL

Adolf Sickbert, Wattenscheid-Eppendorf, Germany, assignor to Bochumer Verein für Gusstahlfabrikation A.G., Bochum, Germany, a corporation of Germany

Filed May 29, 1962, Ser. No. 200,599
Claims priority, application Germany, June 9, 1961, B 62,840
7 Claims. (Cl. 75—49)



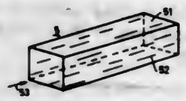
1. Process for the vacuum degassing of metal which comprises melting the metal in a furnace under substantially atmospheric pressure; directly passing a contiguous stream of the molten meltal downwardly from the furnace into a container open to the atmosphere and surrounding the inlet opening of a vacuum chamber maintained at an absolute pressure below 100 mm. Hg and through said inlet opening into the vacuum chamber, maintaining the flow rates of molten metal from the furnace to the container, and through the inlet opening into the vacuum chamber in relation to each other to maintain a pool of molten metal with an upper surface open to the atmosphere in said container to seal the inlet opening, thereby preventing loss of vacuum in the chamber; separating slag entrained in the molten metal from the surface from said molten metal in the container by flotation upward to said surface open to the atmosphere, passing a molten metal stream through said inlet opening, dividing said stream into a spray of droplets as it passes into the vacuum chamber; and removing said separated slag from the surface of the molten metal pool so that the metal introduced into the vacuum chamber is substantially slag-free.

3,226,225

ELECTRONIC SEMICONDUCTOR MEMBERS AND METHOD OF THEIR MANUFACTURE

Herbert Weiss and Manfred Wilhelm, Nurnberg, Germany, assignors to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany

Filed Apr. 17, 1963, Ser. No. 273,776
Claims priority, application Germany, July 31, 1962, S 80,682
14 Claims. (Cl. 75—134)



1. A semiconductor member, comprising a crystalline body of homogeneous semiconductor material and a spacial matrix of discrete inclusions embedded in said material and being formed of substance selected from the group consisting of metals and metal compounds having higher conductance than said semiconductor material, said inclusions having anisotropic geometrical shapes substantially oriented parallel to one another and having fractionally small dimensions compared with the smallest dimension of said body.

3,226,226

Sn-Pb-In-Zn SOLDERS FOR GOLD AND GOLD ALLOYS

Japnell D. Braun, Lewisburg, Ohio, assignor to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Sept. 3, 1963, Ser. No. 306,333
4 Claims. (Cl. 75—175)

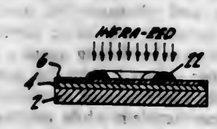
1. A solder consisting of an alloy consisting essentially of from 23–30 parts of lead, 51–54 parts of tin, 15–25 parts of indium and 0.1–1.0 part of zinc.

3,226,227

METHOD OF PRODUCING A SOLVENT-RESISTANT PATTERN USING DEVELOPED ELECTROSTATIC IMAGE FORMATION TECHNIQUES

Nikolaus E. Wolff, Princeton, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed Sept. 2, 1960, Ser. No. 53,783
7 Claims. (Cl. 96—1)



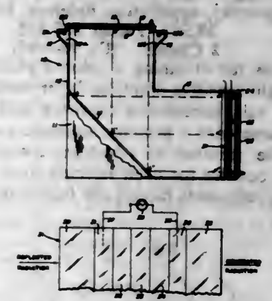
1. A method of forming a resinous pattern of predetermined configuration on a substrate comprising: forming on said substrate a coating of a solvent soluble polymer resin capable of further reaction which renders it substantially insoluble in said solvent by a cross-linking action initiated by a certain temperature increase, depositing on certain areas of said coating a fusible material which is a substantially better absorber of infra-red energy than said resin, directing sufficient infra-red energy to said certain areas so that only the coating at said areas is subject to said certain temperature increase, and, after sufficient further reaction forming an insoluble resin has occured in said certain areas, removing those parts of said resin coating not subject to said temperature increase.

3,226,228

METHOD AND APPARATUS FOR PRODUCING A CONTROLLED PATTERN OF ULTRAVIOLET RADIATION FROM THAT AT HIGHER WAVE LENGTHS

Victor R. Deitz, Washington, D.C., assignor to William Siekind, Takoma Park, Md.

Filed Jan. 11, 1963, Ser. No. 250,843
11 Claims. (Cl. 96—27)



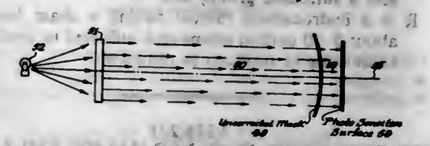
1. The method of exposing a diazo-sensitized sheet to produce a positive copy from an original print on the sensitized sheet comprising the steps of reflecting visible light from the original print, directing the visible light to an electroluminescent radiation frequency converter, converting the visible light to ultra-violet radiation as it passes through the radiation converter and directing the ultra-violet radiation onto said diazo-sensitized sheet to reproduce the original print on the diazo-sensitized sheet.

3,226,229

PHOTOGRAPHIC METHOD OF MANUFACTURING APERTURE CORRECTION SCREENS USED IN COLOR IMAGE REPRODUCERS

Sam H. Kaplan, Chicago, Ill., assignor to Zenith Radio Corporation, a corporation of Delaware

Original application Jan. 23, 1958, Ser. No. 710,639, now Patent No. 2,947,899, dated Aug. 2, 1960. Divided and this application Nov. 16, 1959, Ser. No. 853,355
2 Claims. (Cl. 96—35)



1. The method of making an aperture mask for a shadow-mask type of cathode-ray tube having a multiplicity of apertures and in which the apertures have a radial foreshortening as a function of their radial spacing from the center of the mask, which method comprises the following steps:

applying a radiation sensitive coating to a planar mask blank;

projecting an image of a planar aperture mask having a multiplicity of circular apertures of the same radius arranged in a regular pattern;

focusing said image centrally upon said coated blank through an image forming system including a lens for effecting radial foreshortening of said image as a function of radial spacing from the center of said blank to form a latent image on said coated blank;

developing said latent image and producing apertures in said mask blank corresponding to the apertures of said developed image.

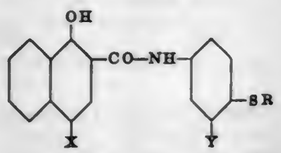
3,226,230

LIGHT-SENSITIVE EMULSIONS CONTAINING NON-MIGRATORY N-SUBSTITUTED 1-HYDROXY-2-NAPHTHAMIDE COLOR COUPLERS

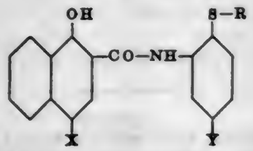
Raphael Karel Van Poucke, Mechlin, and Hector Alfons Van Den Eynde and Arthur Henri De Cat, Mortsel-Antwerp, Belgium, assignors to Gevaert Photo-Producten N.V., Mortsel, Belgium, a Belgian company

No Drawing. Filed Oct. 31, 1960, Ser. No. 65,883
Claims priority, application Belgium, Feb. 12, 1960, 39,565, Patent 587,525
2 Claims. (Cl. 96—55)

1. Process for obtaining a colored photographic image in a red light-sensitive emulsion layer containing a reducible silver salt, comprising exposing said layer and developing same with a primary aromatic amino developing agent in the presence of 1-hydroxy-2-naphthoic acid anilide color coupler for cyan selected from the group consisting of compounds having the formulae:



and



wherein

X is selected from the group consisting of a bromine atom and chlorine atom,

Y represents a member selected from the group consisting of a hydrogen atom, a sulfonic acid group and a sulfonate group, and

R is a hydrocarbon radical having a chain length of about 5–20 carbon atoms and sufficient to render said color coupler resistant to diffusion.

3,226,231

FOG REDUCTION IN SILVER HALIDE EMULSIONS WITH 3-MERCAPTOBENZOIC ACID

Fritz Dersch and Charles A. Clark, Binghamton, N.Y., assignors to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed May 16, 1963, Ser. No. 281,053
10 Claims. (Cl. 96—61)

1. A light-sensitive silver halide emulsion containing as an antifogging and stabilizing agent 3-mercaptobenzoic acid.

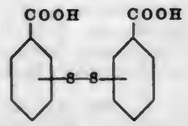
3,226,232

FOG REDUCTION IN SILVER HALIDE EMULSIONS WITH A DIPHENYLDISULFIDE DICARBOXYLIC ACID

Fritz Dersch and Charles A. Clark, Binghamton, N.Y., assignors to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed May 16, 1963, Ser. No. 281,054
19 Claims. (Cl. 96—61)

1. A light-sensitive silver halide emulsion containing as an antifogging and stabilizing agent a compound of the following general formula:



wherein the disulfide radical occupies one of the positions ortho, meta and para to the carboxyl group in each of the benzene rings.

3,226,233

PHOTOSENSITIVE COMPOSITIONS CONTAINING LEUCOCYANIDES OF TRIPHENYLMETHANE DYES

Meyer S. Agruss, Chicago, Ill., assignor to Miehle-Goss-Dexter, Incorporated, Chicago, Ill., a corporation of Delaware

No Drawing. Filed June 13, 1960, Ser. No. 35,447
10 Claims. (Cl. 96—82)

5. Photosensitive sheet material comprising sheet stock carrying a leucocyanide of a triphenylmethane dye, an activator for said leucocyanide which renders said leucocyanide sensitive to ultraviolet light, and an inorganic metallic salt phosphor, said phosphor being selected from that group of phosphors which, when subjected to ultraviolet light of wave length below 4000 angstrom units, emits light having a different and greater wave length mainly in the range up to 4000 angstrom units, said phosphor being present in an amount of the order of 1 to 5 mg. per square inch of said sheet material.

3,226,234

HARDENING PHOTOGRAPHIC LAYERS CONTAINING PROTEINS

Wolfgang Himmelmann, Cologne-Flittard, Hans Ulrich, Leverkusen, and Heinz Meckl, Cologne-Flittard, Germany, assignors to Agfa Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Oct. 19, 1962, Ser. No. 231,819
Claims priority, application Germany, Oct. 28, 1961, A 38,697
7 Claims. (Cl. 96—111)

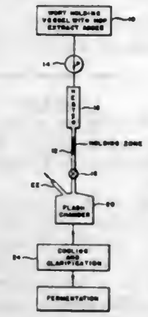
1. A process for hardening photographic light-sensitive protein layers and photographic auxiliary protein layers comprising forming a mixture containing photographic protein and as a hardening agent a water-soluble bisulfite of a member selected from the group consisting of polyacrolein and copolymers of acrolein containing at least 50 mol. percent acrolein while maintaining the pH of the mixture between 4 and 6, casting said mixture on a support at a pH of between 4 and 6 and subsequently raising the pH of the cast mixture to above 7 whereby hardening is effected.

3,226,235

METHOD OF HEATING WORT

Alan G. Williamson, Pepper Pike, Ohio, assignor to Canadian Breweries Limited, Toronto, Ontario, Canada

Filed Aug. 22, 1963, Ser. No. 303,765
1 Claim. (Cl. 99—52)



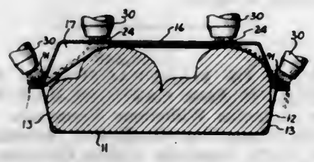
A method of continuously treating wort to achieve volatile boil off and hop conversion, comprising the steps of continuously mixing a stream of wort and a liquid unconverted hop extract, heating the said stream to a temperature of about 300° F. by heat exchange to the wort from a heat source exterior of the said stream of wort, continuing said stream at said temperature of about 300° F. for about thirty seconds to achieve a predetermined degree of conversion of alpha-acids to isohumulons, and evaporating unwanted volatiles from the wort by flashing to atmosphere.

3,226,236

METHOD OF FORMING A FOOD PACKAGE

Berthold L. Weller, Deerfield, Ill., assignor to Kitchens of Sara Lee, Inc., Chicago, Ill., a corporation of Maryland

Filed Mar. 12, 1964, Ser. No. 351,329
5 Claims. (Cl. 99—171)



1. A method of packaging a food product comprising: the steps of placing the product within a pan;

placing a heat shrinkable flexible sheet over the product so that the outer periphery of said sheet overhangs the outer periphery of said pan;

placing a cover over the flexible sheet; connecting together the outer peripheries of said pan, sheet and cover;

hermetically sealing the outer periphery of the sheet to the outer periphery of the pan; and

heat shrinking the sheet so that it engages the upper surface of the product under tension to urge the product downwardly against the pan and to conform approximately to the contour of said product upper surface.

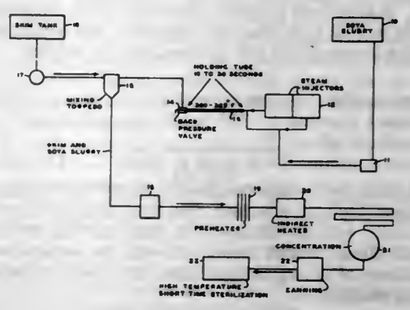
3,226,237

FOOD HEAT TREATMENT PROCESS

Peter J. Magnino, Madison, Wis., assignor to Pet Milk Company, St. Louis, Mo., a corporation of Delaware

Filed July 23, 1962, Ser. No. 211,718
9 Claims. (Cl. 99—215)

1. A method of preparing a liquid composition including a major proportion of a first fluid food product comprising an aqueous milk solids suspenson and a minor proportion of a second food product high in spore forming organisms, said second food product being selected from the group consisting of soya flour, cocoa, and mixtures thereof, consisting essentially of the steps of slurrying said second food product with water in a concentration of up to 15% by weight of solids, heating said slurry including said second food product to about 300–325° F. for about 10–30 seconds, and rapidly mixing said hot slurry with said first fluid food product to rapidly cool said slurry and to produce an intimately mixed composition having said second food product suspended therein.



3,226,238

SEALING OR LEAKSTOP MATERIAL ADAPTED FOR USE IN RADIATORS AND THE LIKE

James W. Wilkinson, Hastings, Mich., assignor to Hastings Manufacturing Company, Hastings, Mich.

Filed Oct. 4, 1963, Ser. No. 313,989
5 Claims. (Cl. 106—33)

1. A water dispersible leak aperture closing material for radiators and the like consisting substantially of a mixture of approximately ⅛ to ⅜ oz. of irregular leather fragments of varying shapes and of a length within the range of .025 to .400 of an inch, approximately 7 oz. of soluble oil, and approximately 8 oz. of water, the water acting to thin the slurry-like mixture of leather particles and oil to facilitate the pouring thereof.

3,226,239

CONFECTIONERS' MOLDING STARCH

Thomas J. Schoch, La Grange, Ill., and John A. Korth, Wilton, Conn., assignors to Corn Products Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed June 4, 1963, Ser. No. 285,242
6 Claims. (Cl. 106—38.5)

1. A confectioners' molding starch consisting of powdered starch in admixture with from about 0.1% to about 0.25% of a member of the group consisting of triesters of citric acid with aliphatic monohydric alcohols containing 2 to 4 carbon atoms and the monoacetyl derivatives of such triesters.

3,226,240

CALCIUM ALUMINATE CEMENT COMPOSITION

Michael S. Crowley, Chicago Heights, Ill., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana

Filed Jan. 28, 1963, Ser. No. 254,143
6 Claims. (Cl. 106—64)

1. The calcium aluminate cement composition consisting essentially of (A) a mixture of from about 10 to about 30 weight percent pure calcium aluminate cement, and from about 70 to about 90 weight percent refractory aggregate; (B) from about 0.1 to about 2 weight percent, based on mixture (A), of predominantly kaolinitic clay; and (C) from about 0.05 to about 3 weight percent, based on said clay, of an anionic wetting agent.

3,226,241
ALUMINA REFRACTORIES

Eldon D. Miller, Jr., Bridgeville, Pa., assignor to Harbison-Walker Refractories Company, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed Oct. 15, 1962, Ser. No. 230,709
12 Claims. (Cl. 106—65)

2. A fired high alumina refractory body prepared from a size graded high alumina refractory mix having the following composition (all percentages by weight):

	Percent
Fused mullite (—4 mesh to fines)	30 to 10
Calcined alumina (—325 mesh)	3 to 30
Volatilized silica	1 to 10
Tabular alumina (—4 mesh to fines)	The remainder

said fired body mineralogically characterized by a high alumina skeletal structure, the interstices which are substantially entirely filled with a dense mullite matrix having small and highly dispersed voids, the skeletal network made up of contiguous particles of tabular alumina and fused mullite.

3,226,242
HIGH STRENGTH CEMENTITIOUS PRODUCTS AND A PROCESS FOR THEIR PRODUCTION

Eric Huettemann, 4520 Clinton St., Buffalo, N.Y.

Filed June 19, 1963, Ser. No. 289,098
8 Claims. (Cl. 106—98)

1. A process for the production of high density high strength molded concrete products from a mixture containing Portland cement, lime, and sand all finely divided as well as aggregate and water, the steps which comprise:

(a) preparing a binder of lime, cement and sand each of which comminuted to a powder that will enable all but from 5% to 15% to pass through a 4900 mesh screen, the binder containing by weight 4% to 32% cement, 8% to 36% lime CaO making a total of 40% CaO plus cement and the remainder sand powder:

(b) adding water to and mixing it into the binder in sufficient amounts to give a viscous to plastic consistency:

(c) mixing one part by weight of the binder to 2 to 4 parts by weight of aggregate:

(d) molding, vibrating, and tamping at high pressures, the mixture of binder with aggregate to result in a product having:

x. a density of from 2.0 to 2.4 g./c.c. and on final curing

y. shrinkages less than 0.1 mm. per meter; and

(e) demolding and curing the resulting product mixture under steam pressure to a product having a compressive strength of at least 1000 kg. per sq. cm.

3,226,243
PLASTERING COMPOSITION

Martin Levin, Philadelphia, Pa., assignor, by mesne assignments, to Joseph A. Ritter, Narberth, Pa.

No Drawing. Filed Oct. 19, 1962, Ser. No. 231,849
9 Claims. (Cl. 106—109)

1. A plastering composition to be mixed with water consisting essentially of about 80 to 125 parts by weight of industrial sand; 40 to 60 parts by weight of hydrated finishing lime; 8 to 14 parts by weight of Keene's white cement; and 1/16 to 1/4 part by weight of Florida zircon.

3,226,244
PROCESS FOR MAKING HIGH COLOR CARBON BLACK PIGMENTS

Merrill E. Jordan, Walpole, and John F. Hardy, Andover, Mass., assignors to Cabot Corporation, Boston, Mass., a corporation of Delaware

No Drawing. Filed Dec. 15, 1961, Ser. No. 159,786
8 Claims. (Cl. 106—307)

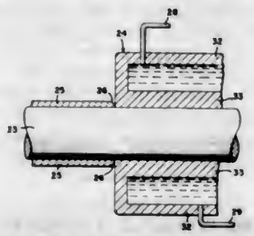
1. A process for producing pigments comprising treating a carbon black having an average electron microscope particle diameter of at least about 15 millimicrons and a porosity below about 200 with molecular oxygen at elevated temperatures to produce an intermediate product having a porosity between about 220 and 400, reacting an aqueous slurry of the said intermediate product with an oxidizing agent chosen from the group consisting of nitric acids and nitric oxides to increase the volatile content of said intermediate product by at least 40% and heating the so produced pigment until substantially dry.

3,226,245
COATING METHOD AND APPARATUS

Conrad J. Dettling and Robert C. Ramsay, Reading, Pa., assignors to The Polymer Corporation, a corporation of Pennsylvania

Filed Feb. 5, 1958, Ser. No. 713,332
18 Claims. (Cl. 117—21)

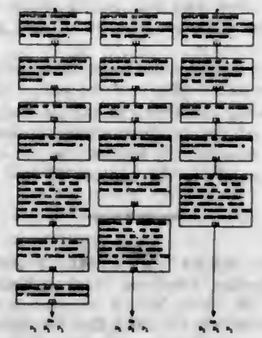
8. A method for applying a coating to a limited portion of the surface of an article comprising the steps of heating the article to a temperature above the melting temperature of a pulverulent coating material, engaging said article with a holding device which covers and encloses all portions of the article on which a coating is not desired, immersing the article in the pulverulent coating material so that the coating material in proximity to the article surface sinters and fuses into a complete coating, and during the immersion maintaining the holding device at a temperature below the sintering temperature of the coating material.



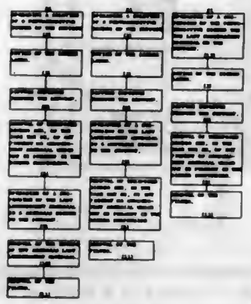
3,226,246
METHOD OF MANUFACTURING DISPLAY SCREENS FOR CATHODE-RAY TUBES

Gerardus Antonius Wilhelmus Vermeulen and Jacobus Cornelis Gravesteijn, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed June 9, 1961, Ser. No. 116,166
Claims priority, application Netherlands, Aug. 6, 1960, 254,649
10 Claims. (Cl. 117—33.5)



1. A method of manufacturing a display screen for a cathode ray tube comprising the steps of placing over a transparent support having selected areas thereof covered with a luminescent material a filter material relatively opaque to radiation which is transmitted through the support, covering the support with a photosensitive hardenable binder, exposing the binder through the support to radiation which is capable of hardening the binder in areas free of luminescent material, removing the unexposed binder covering the luminescent material, and depositing on the hardened binder a luminescent material which when excited by electrons emits light different in spectral distribution than that of said first mentioned luminescent material.

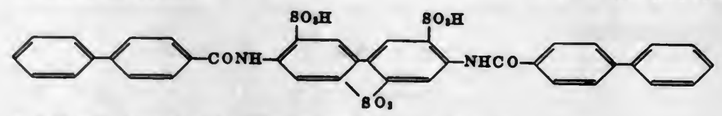


3,226,247
RED SHADE BRIGHTENER AND CELLULOSE BRIGHTENING METHOD

Warren Schumann Forster, Basking Ridge, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed June 26, 1963, Ser. No. 290,632
2 Claims. (Cl. 117—33.5)

1. A compound selected from the group consisting of an acid of the formula:



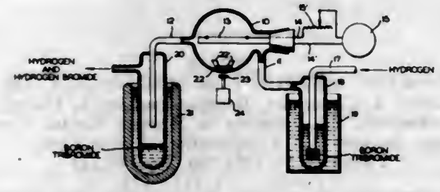
and a salt thereof with bases having a K_b of at least 10^{-11}.

2. The method of imparting a whiter appearance to cellulose, which comprises treating cellulose with an aqueous solution of a compound of claim 1.

3,226,248
METHOD OF PRODUCING REFRACTORY MONOCRYSTALLINE BORON STRUCTURES

Claude P. Talley, Chesterfield County, Va., assignor to Texaco Experiment Incorporated, Richmond, Va., a corporation of Virginia

Filed Mar. 14, 1962, Ser. No. 179,570
5 Claims. (Cl. 117—93.3)



3. The method of producing monocrystalline boron structures which comprises passing a mixture of a boron halide and hydrogen in contact with a heated elongated filamentary substrate other than boron maintained at a temperature in the range from about 1100° K. to somewhat above 1600° K. but below the melting points of boron and the substrate to obtain a massive deposit of boron on the substrate, continuing such deposition of boron until a rod consisting of a preponderant amount of boron on the filamentary substrate is formed, subjecting the rod thus obtained to localized heating by electron bombardment to a temperature above the melting point of the boron to form a local zone of molten boron extending transversely across the rod and advancing the localized zone of molten boron longitudinally along the rod to segregate the material of the filamentary substrate in an end portion of the rod.

3,226,249
METHOD OF PROVIDING LIGHT DIFFUSING COATINGS ON QUARTZ AND QUARTZ OBJECTS PROVIDED WITH SUCH COATINGS

Henricus Antonius Van Bakel and Paul Bernard Tonny Hubertina Spreuwenberg, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Sept. 11, 1961, Ser. No. 137,142
Claims priority, application Netherlands, Oct. 24, 1960, 257,187
2 Claims. (Cl. 117—119.6)

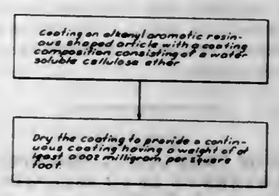


1. A method of providing an adherent light-diffusing coating on a transparent quartz substrate comprising the steps, applying to the substrate a coating material consisting of about 15 to 95% by weight of TiO_2 and the balance Al_2O_3, and sintering the thus applied coating at a temperature of about 1000° to 1500° C. for a sufficient time to form an adherent layer of said coating material on said substrate.

3,226,250
ANTI-FOGGING TREATMENT FOR FILM AND COATED PRODUCTS

Fred J. Reithel, Freeland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Jan. 11, 1962, Ser. No. 165,659
4 Claims. (Cl. 117—138.8)



1. A coated alkenyl aromatic resinous hydrophobic shaped article resistant to fogging, said article having a coating on at least one surface thereof, said coating consisting of a continuous film of a water-soluble methyl cellulose at a coating weight of at least 0.002 milligram per square foot the methyl cellulose being soluble in water under the conditions of use.

3,226,251
METHOD OF MANUFACTURING FILTER ELEMENTS

James A. Norton, Flint, and Robert E. Holloway, Durand, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

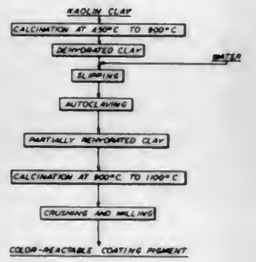
No Drawing. Filed May 4, 1961, Ser. No. 107,665
3 Claims. (Cl. 117—155)

1. In a process for making paper filter elements the steps comprising impregnating the filter paper with a homogeneous liquid composition containing about 100 parts by weight of resole, about 20 to 28 parts by weight of a thermoplastic lignin-type substantially petroleum hydrocarbon-insoluble resinous material derived from wood and containing both methoxyl and hydroxyl groups, and about 17 to 20 parts by weight of water and drying the impregnated filter paper at a relatively low temperature to evaporate most of the volatile constituents.

3,226,252
COLOR-REACTABLE INORGANIC ADSORBENT PIGMENT AND SENSITIZED SHEET MATERIAL COATED THEREWITH

Glen A. Hemstock, East Brunswick, N.J., assignor to Minerals & Chemicals Philipp Corporation, Menlo Park, N.J., a corporation of Maryland

Filed Jan. 17, 1962, Ser. No. 166,912
5 Claims. (Cl. 117—155)



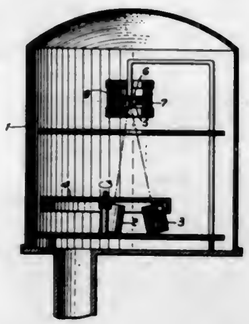
5. Paper having a sensitized color-reactable surface coating comprising pigment particles, the major portion of which are white particles of an amorphous aluminum silicate of the approximate formula $Al_2O_3 \cdot 2SiO_2$, said silicate having a B.E.T. surface area within the range of about 50 to about 100 sq. m./gm. and having been obtained by hydrothermally rehydrating metakaolin at superatmospheric pressure to obtain an amorphous aluminum silicate of the approximate formula $Al_2O_3 \cdot 2SiO_2 \cdot (1.4–1.7)\ H_2O$ and having a B.E.T. surface area of at least about 120 sq. m./gm., and calcining said rehydrated metakaolin at a temperature within the range of 900° C. to 1100° C. for a time sufficient to remove substantially all of the water of hydration therefrom.

3,226,253
METHOD OF PRODUCING PHOTOSENSITIVE LAYERS OF LEAD SELENIDE

Heinrich Gobrecht, Berlin-Schlachtensee, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed Aug. 3, 1961, Ser. No. 129,133
Claims priority, application Germany, Aug. 23, 1960, St 16,834
7 Claims. (Cl. 117—201)

1. The method of producing photosensitive layers of lead selenide comprising the steps of disposing a base within a vacuum chamber, evaporating lead selenide and pure selenium within said chamber, said lead selenide being evaporated at a higher temperature than said

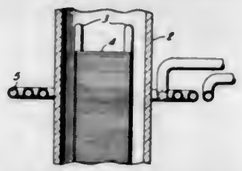


selenium, and heating the base to such a temperature that pure lead selenide is formed in a layer on said base and the excess of said selenium is evaporated away.

3,226,254
METHOD OF PRODUCING ELECTRONIC SEMICONDUCTOR DEVICES BY PRECIPITATION OF MONOCRYSTALLINE SEMICONDUCTOR SUBSTANCES FROM A GASEOUS COMPOUND

Konrad Reuschel, Pretzfeld, Upper Franconia, Germany, assignor to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany

Filed June 6, 1962, Ser. No. 200,525
Claims priority, application Germany, June 9, 1961, S 74,266
2 Claims. (Cl. 117—201)



1. The method of producing electronic semiconductor devices having a monocrystalline body with zones of respectively different conductance, by precipitation of semiconductor substance from the gaseous phase onto a semiconducting carrier crystal, which comprises placing a plurality of plate-shaped carrier crystals in alternating succession with spacer members of the same semiconductor substance upon each other to form a rod-shaped stack, subjecting the stack to a flow of gas containing a gaseous compound of the semiconductor substance to be precipitated mixed with a gaseous reaction agent, and simultaneously heating the stack to pyrolytic temperature to coat the carrier crystals with precipitating semiconductor substance.

3,226,255
MASKING METHOD FOR SEMICONDUCTOR

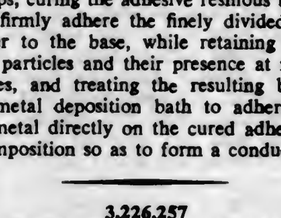
Theodore A. Cleniewicz, Reading, and Ira L. Custman, Jenkintown, Pa., assignors to Western Electric Company, Incorporated, a corporation of New York

Filed Oct. 31, 1961, Ser. No. 149,121
5 Claims. (Cl. 117—212)

1. The method of masking a relatively flat-surfaced semiconductive body with wax to enable selective etching thereof, which comprises the steps of:

(a) placing a mask having an array of apertures in intimate contact with the flat surface of the body, each aperture defining a region which is not to be etched;

(b) placing a wax film, having a perimeter at least coextensive with that of the array of apertures, over and in intimate contact with the mask; and



(c) forcing the wax film and the body relatively together with sufficient force to extrude the wax through the mask apertures and into adhering contact with the body.

3,226,256
METHOD OF MAKING PRINTED CIRCUITS

Frederick W. Schneble, Jr., 29 Hill Drive, Oyster Bay, N.Y., and Rudolph J. Zeblisky, 41 Glenwood Drive, Hauppague, N.Y.

Filed Jan. 2, 1963, Ser. No. 249,063
9 Claims. (Cl. 117—212)



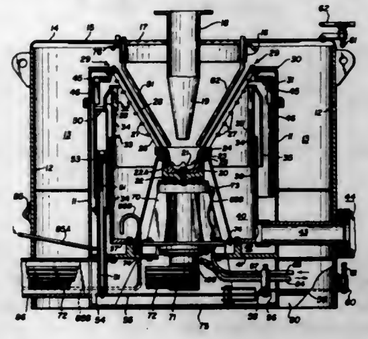
1. A process for forming printed circuits which comprises providing an insulating base having surface portions consisting essentially of an adhesive resinous bonding composition having dispersed therein at numerous individual sites solid, finely divided, discrete particles of a catalytic agent selected from the group consisting of titanium, aluminum, copper, iron, cobalt, zinc, titanium oxide, copper oxide and mixtures of the foregoing, said resinous bonding composition further comprising, in combination, a thermosetting resin and a flexible adhesive resin, the flexible adhesive resin having appended thereto a polar group which is a member selected from the group consisting of nitrile, epoxide, acetal, chloride and hydroxyl groups, curing the adhesive resinous bonding composition to firmly adhere the finely divided particles of said member to the base, while retaining the discreteness of the particles and their presence at numerous individual sites, and treating the resulting base with an electroless metal deposition bath to adherently deposit electroless metal directly on the cured adhesive resinous bonding composition so as to form a conducting pattern.

3,226,257
CONTINUOUS CENTRIFUGAL APPARATUS

Clarence R. Steele and Frank B. Price, Denver, Colo., assignors, by mesne assignments, to American Factors Associates, Limited, Honolulu, Hawaii, a corporation of Delaware

Filed Oct. 9, 1961, Ser. No. 143,892
14 Claims. (Cl. 127—19)

1. In continuous centrifugal apparatus having spaced inner and outer housings forming a chamber for centrifuged sugar therebetween, a substantially frusto-conical centrifuge basket mounted for high speed rotation within the inner housing, an inlet for viscous sugar solution to be treated, and a peripheral discharge passage from the basket to the sugar chamber, the improvement comprising adjustable partitioning means within the inner housing, said partitioning means including a lower portion dividing the inner housing and an upper portion with inner and outer walls telescoping over said lower portion, said walls terminating together at their upper ends in close proximity to the exterior surface of the centrifugal basket

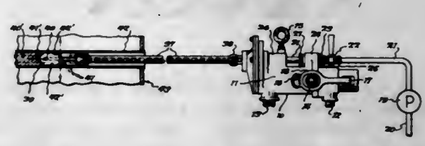


to make a selective cut in the separated liquids discharging through the basket, conduit means at each side of the partitioning means for separately conducting the separated liquid fractions from the apparatus, and means exteriorly of the outer housing for adjusting the upper portion of the partitioning means and thereby change said selective cut.

3,226,258
METHOD FOR REMOVING INCRUSTATIONS

Charles H. Heist, East Aurora, N.Y., assignor to C. H. Heist Ohio Corporation, Buffalo, N.Y., a corporation of New York

Filed Sept. 25, 1963, Ser. No. 311,414
1 Claim. (Cl. 134—8)



A method of removing extremely hard incrusted foreign matter from the inside surface of a tube comprising the steps of effecting a drilling action through said tube to disengage said foreign matter therefrom and simultaneously projecting fluid axially of the direction of said drilling in the area of said drilling, said fluid being under a pressure of approximately 3,000 pounds per square inch to thereby effect an erosion of said foreign matter and provide an action wherein said eroding cooperates with and complements said drilling to facilitate the removal of said foreign matter by acting simultaneously on the same portions of said extremely hard incrusted foreign matter in concert with said drilling, by loosening foreign matter which is subsequently removed by said drilling and by removing foreign matter which remains on the inside of said tube after said drilling.

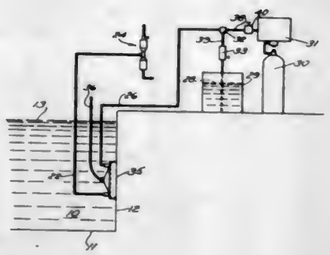
3,226,259
METHOD FOR CLEANING A SUBMERGED SURFACE

Henry N. Armbrust, 13 Melrose St., Jamestown, R.I.

Filed Apr. 19, 1962, Ser. No. 188,674
2 Claims. (Cl. 134—21)

1. The method of treating a submerged surface with a liquid which comprises positioning a wall spaced from the area of the surface to be treated and sealing the wall adjacent its periphery to the surface to prevent the flow

of liquid beneath said wall, extracting the submerging liquid from the sealed area providing a partial vacuum therein, and then conducting a treating chemical solution



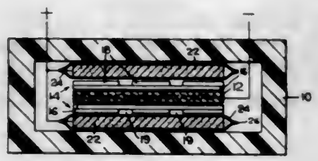
to the sealed area and to said vacuum and then extracting the chemical solution from the sealed area and then positioning the wall over a different area of the submerged surface and repeating the operation.

3,226,260

RECHARGEABLE ALKALINE CELL

George R. Drengler, North Olmsted, Ohio, assignor to Union Carbide Corporation, a corporation of New York

Filed Mar. 1, 1963, Ser. No. 262,149
17 Claims. (Cl. 136—30)



1. A rechargeable cell comprising a sealed cell container and in said container an alkaline electrolyte, a porous zinc negative electrode, a porous separator having one of its sides against said negative electrode, said separator having conduit means therein positioned away from the side against said negative electrode for permitting the entry of gas, and positioned against said separator on its side opposite said negative electrode a reversible, porous positive electrode; said alkaline electrolyte being substantially held in the pores of said separator and positive and negative electrodes.

3,226,261

FUEL CELL ELECTRODES

Jeremy Forten, New York, and Richard J. Roethlein, Richmond Hill, N.Y., assignors to Leesona Corporation, Cranston, R.I., a corporation of Massachusetts

No Drawing. Filed Nov. 8, 1961, Ser. No. 150,901
2 Claims. (Cl. 136—86)

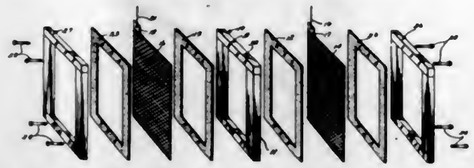
1. A fuel cell for the generation of electricity directly from a fuel and oxidant comprising an electrolyte, an oxidizing electrode, a fuel electrode, said electrodes being in contact with said electrolyte, and means for providing fuel cell reactants to said electrodes, at least one of said electrodes comprising a structure having elemental lithium uniformly dispersed in a host metal in at least its surface and coated with a thin film of platinum black, said host metal being a member of the group consisting of Group I*b* and Group VIII metals of the Mendelyeev's Periodic Table and said lithium being present in an amount of from 10–200 micrograms per square centimeter of surface area of said host metal.

3,226,262

BIO-ELECTRODE ASSEMBLY FOR GENERATING ELECTRICITY

Gilson H. Rohrback, Whittier, and Thaddeus M. Donigulan, Anaheim, Calif., assignors, by mesne assignments, to TRW Inc., a corporation of Ohio

Filed Dec. 4, 1961, Ser. No. 157,610
5 Claims. (Cl. 136—86)



1. A bio-electrode assembly comprising a pair of spaced hollow frame members, one of said members having an inlet port extending therethrough for introducing liquid electrolyte and a nutrient into the hollow interior thereof, and a porous electrode confined between said pair of hollow frame members in sealed relation along its periphery, said electrode being composed of a metal receptive to micro-organism growth and having attached thereto a colony of micro-organisms thereon capable of promoting a half cell reaction at said electrode, whereby said electrolyte and nutrient flowing into said hollow interior of said one frame member are delivered through said porous electrode and out through the hollow interior of the other of said frame members.

3,226,263

FUEL CELL ELECTRODES

Harry Godfrey Oswin, Elmsford, N.Y., assignor to Leesona Corporation, Cranston, R.I., a corporation of Massachusetts

Filed July 20, 1960, Ser. No. 44,103
4 Claims. (Cl. 136—120)



1. The method of making an electrode for a fuel cell comprising the steps of (1) coating metal particles having a random particle size of from 0.5 micron to ⅛ inch in diameter with a thermo-setting resin, (2) suspending said coated metal powder in a fluid body to obtain a separation of the metal particles of said metal powder, said fluid body being of sufficient height to permit sedimentation of smaller particles upon larger particles, and said fluid body having a density less than the density of said metal powder, (3) sedimenting said coated metal particles through said fluid, (4) collecting the particles on a receiving plate, (5) removing the fluid from the particles, (6) heating said coated particles sufficient to melt said thermo-setting resin, (7) cooling said particles to obtain bonding of said particles, (8) shaping said particles, and (9) heating at a temperature sufficient to carbonize said thermo-setting resin and sinter said metal particles.

3,226,264

METHOD OF IMPROVING LITHIATED NICKEL OXIDE FUEL CELL ELECTRODES

A. David Joseph, South Windsor, and John A. Petrusha, Windsor Locks, Conn., assignors, by mesne assignments, to Leesona Corporation, Cranston, R.I., a corporation of Massachusetts

Filed Apr. 18, 1962, Ser. No. 188,579
2 Claims. (Cl. 136—120)

2. The method of preparing an improved fuel cell electrode comprising the steps of forming a porous nickel

structure, treating said structure in a lithium solution, sintering in an atmosphere of oxygen, and thereafter heat treating the structure in an inert atmosphere at a temperature of from about 850 to 1500° F. for a period of from about 15 minutes to about 2 hours.

3,226,265

METHOD FOR PRODUCING A SEMICONDUCTOR DEVICE WITH A MONOCRYSTALLINE SEMICONDUCTOR BODY

Konrad Reuschel and Wolfgang Keller, Pretzfeld, Upper Franconia, Germany, assignors to Siemens-Schuckertwerke Aktiengesellschaft, Erlangen, Germany, a corporation of Germany

Filed Mar. 28, 1962, Ser. No. 183,106
Claims priority, application Germany, Mar. 30, 1961, S 73,259
1 Claim. (Cl. 148—1.5)



The method of producing an electronic semiconductor device, which comprises providing a monocrystalline silicon dislocation-free semiconductor body having a p-n junction therein and a planar surface with an orientation selected from those of (110), (112) and (100), contacting said surface with an antimony doped gold foil, heating under pressure to cause the foil to alloy to the semiconductor body, whereby spreading of alloying material is prevented.

3,226,266

METHOD OF MAKING PERMANENT MAGNETS

John J. Jesmont, Spotswood, and Samuel Weimersheimer, Rockaway, N.J., assignors to U.S. Magnet & Alloy Corporation, Bloomfield, N.J., a corporation of Delaware

Filed Feb. 7, 1962, Ser. No. 171,641
4 Claims. (Cl. 148—3)

1. The method of making single-phase unidirectionally columnar grained magnets comprising: introducing into one end of mold chambers opening at the other end on a chill plate a ferrous alloy containing about 6.0 to 11.0 percent by weight aluminum, 12.0 to 20.0 percent by weight nickel, 16.0 to 30.0 percent by weight cobalt, up to 7.0 percent by weight copper, 0.15 to 0.50 percent by weight titanium, 0.15 to 0.50 percent by weight columbium, and the remainder being substantially all iron with minor impurities; chilling said ferrous alloy substantially through said chill plate to form magnet bodies of the desired configuration with unidirectionally columnar grains; magnetically stressing said magnet bodies by soaking at a temperature of about 1650 to 1700° F. for about fifteen to twenty minutes and cooling in a magnetic field parallel to the principal grain direction to a temperature of about 1200° F. in a period of about ten to fifteen minutes; coercive aging said magnet bodies at a temperature of about 1100 to 1150° F. for three to ten hours and thereafter at a temperature of about 1025 to 1100° F. for ten to twenty-four hours to precipitate intermetallic compounds in the matrix; and cooling to room temperature.

3,226,267

HIGH STRENGTH ALUMINUM ALLOY EXTRUSION PROCESS AND PRODUCT

George S. Foerster, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Mar. 26, 1962, Ser. No. 182,651
7 Claims. (Cl. 148—11.5)

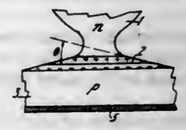
1. A process for preparing high strength aluminum alloy extrusions which comprises: (1) providing an aluminum alloy consisting essentially of from about 0.5 to about 10 weight percent magnesium and from about 1 to about 15 weight percent silicon, balance aluminum, the weight ratio of silicon to magnesium in said alloy being at least 0.58, (2) extruding the aluminum alloy thereby to produce a high strength aluminum extrusion.

3,226,268

SEMICONDUCTOR STRUCTURES FOR MICROWAVE PARAMETRIC AMPLIFIERS

Maurice G. Bernard, 56 Avenue Victor Cresson, Issy-les-Moulineaux, France

Filed Mar. 2, 1964, Ser. No. 348,534
Claims priority, application France, Mar. 11, 1959, 789,076, Patent 1,228,285
3 Claims. (Cl. 148—33.2)



1. A nonlinear capacitance diode for microwave parametric amplifiers comprising a semiconductor body, said body being in the form of elongated generally biconical body portion, said body portion having first and second substantially circular terminal faces, said biconical body having first and second truncated conical sections joined in inverted relation at a reduced cross-sectional throat which consitututes a part of restricted section, said first and second truncated conical sections and faces providing first and second conductivity regions respectively said regions being of opposite conductivity type with a substantially planar junction separating said types, said junction being located in a right cross-section of one of said truncated sections offset from the minimum part of the reduced cross-section of said throat and the lines of revolution of the lower truncated section which meet with the plane of said junction at an angle of 1 to 10 degrees, and the impurity gradient across said junction being of 10^{19} to 10^{21} atoms per cm.^{3} per cm. whereby the ratio of the maximum capacitance of said junction to its minimum capacitance is thereby adjusted to its optimum value.

3,226,269

MONOCRYSTALLINE ELONGATE POLYHEDRAL SEMICONDUCTOR MATERIAL

John E. Allegretti, East Brunswick, N.J., Heinrich Gutsche, St. Louis, Mo., and William J. McAleer, Ambler, Pa., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

Original application Aug. 24, 1960, Ser. No. 53,575, now Patent No. 3,172,791, dated Mar. 9, 1965. Divided and this application May 12, 1964, Ser. No. 365,925
3 Claims. (Cl. 148—33.5)

1. An essentially monocrystalline elongate polyhedral semiconductor body

(a) having a finite length along a longitudinal axis of a central generally rod-shaped cylindrical core of said monocrystalline semiconductor material and a polyhedral form on a section perpendicularly transverse to the longitudinal axis,

(b) with the longitudinal axis of said core crytallographically oriented with respect to the mono-crystalline structure of the core so that the plane perpendicularly transverse to the axis has low Miller indices, with two of such indices each being the integer one, and with the sum of the integers of all three of such indices, disregarding any negative signs, not exceeding four,

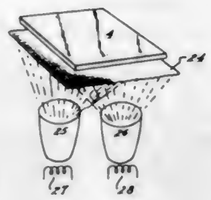
(c) having a plurality of first planar surfaces each essentially parallel to the longitudinal axis of the core, with at least the principal surface of such first planar surfaces disposed around such longitudinal axis at a substantially equal distance therefrom measured along lines perpendicular to the respective planar surfaces,
(d) with each of said first planar surfaces being the outer surface of a layer of a substantially uniform thickness of monocrystalline semiconductor material of a first electrical conductivity, beneath which, and separated therefrom by a planar transition region of substantially uniform thickness, is an inner body of the semiconductor material in monocrystalline form, having a second electrical conductivity which is different from that of said first electrical conductivity,
(e) with the outer surface of said inner body having second planar surfaces parallel to, and uniformly spaced inward from, the respective first planar surfaces,
(f) with the inner surfaces of said inner body being essentially a cylindrical annulus and monocrystallographically bonded to the outer surface of said core, and
(g) with the outer surfaces of said inner body monocrystallographically bonded to the layer having the first planar surfaces,
(h) said planar surfaces being vapor deposited.

3,226,270
METHOD OF CRUCIBLE-FREE PRODUCTION OF GALLIUM ARSENIDE RODS FROM ALKYL GALLIUMS AND ARSENIC COMPOUNDS AT LOW TEMPERATURES
Walter Miederer, Nurnberg, Günther Ziegler, Erlangen, and Richard Dötzer, Nurnberg, Germany, assignors to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany
Filed Sept. 24, 1963, Ser. No. 311,161
Claims priority, application Germany, Sept. 25, 1962, S 81,640
2 Claims. (Cl. 148—174)

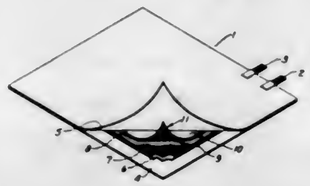
1. The method of crucible-free production of gallium arsenide rods, which comprises heating a gallium-arsenide core rod in an enclosed reaction vessel of quartz material by passing electric current lengthwise through the rod, maintaining the rod at a temperature between 100 and 600° C.; blowing into the vessel and into contact with the heated rod a gas mixture of hydrogen, triethyl gallium and arsenic trichloride at a flow rate of 0.5 to 50 liters per hour, whereby the triethyl gallium and arsenic trichloride are thermally dissociated and gallium arsenide is precipitated upon the core rod and doping the precipitating layer of GaAs by introducing a doping agent selected from the group consisting of alkyl-zinc, alkyl-cadmium, alkyl-selenium and alkyl-tellurium into the reaction vessel concomitantly with the reaction compounds.

3,226,271
SEMI-CONDUCTIVE FILMS AND METHOD OF PRODUCING THEM
Frances B. Hugle and William B. Hugle, Thousand Oaks, Calif., assignors to D. H. Baldwin Company, a corporation of Ohio
Original application Mar. 29, 1956, Ser. No. 574,804, now Patent No. 2,994,621, dated Aug. 1, 1961. Divided and this application July 31, 1961, Ser. No. 128,223
7 Claims. (Cl. 148—186)

1. A method of making a composite semi-conductive film on a substrate, which comprises sequentially exposing a surface of the substrate to vapors of n and p type material through the meshes of a screen from separate sources of the n and p type material spaced from each other in a plane, substantially parallel to the substrate surface, whereby the films so formed are characterized by alternating areas of different composition, and subjecting the composite so formed to a heat treatment.



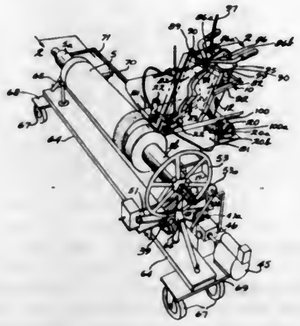
3,226,272
ELECTROLUMINESCENT LAMP MANUFACTURE
Herbert W. Longfellow, Cincinnati, Ohio, assignor to General Electric Company, a corporation of New York
Filed Sept. 13, 1961, Ser. No. 137,924
7 Claims. (Cl. 156—67)



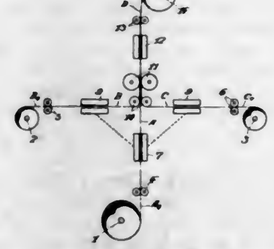
1. In the manufacture of an electroluminescent cell comprising a layer of electroluminescent phosphor sandwiched between a pair of electrode layers at least one of which is light-transmitting, the method which comprises the steps of preliminarily forming a self-supporting, tough, flexible and light-transmitting electrically conductive sheet, which can be readily handled and cut to size without fracturing, by applying a sheet of extremely fragile electrically conductive glass paper comprised of electrically conductive glass fibers to a face of a flexible thermoplastic sheet and laminating the said sheets together under pressure and heat so that the said conductive glass paper is partly embedded in the said face of the plastic sheet but sufficiently exposed thereat to render the said face electrically conductive, and then affixing to the said conductive face of the plastic sheet a layer of electroluminescent phosphor and an overlayer of electrically conductive material.

3,226,273
METHOD AND APPARATUS FOR MAKING REINFORCED PLASTIC TUBING
Richard M. Becker, Willoughby, Ohio, assignor, by mesne assignments, to Ibis Enterprises Limited, Hamilton, Bermuda, a body corporate of Bermuda
Filed Oct. 13, 1960, Ser. No. 62,464
6 Claims. (Cl. 156—195)

1. A method of making a relatively thin walled hollow tube on a cylinder and of providing a new outer surface for a cylinder, the method comprising the steps of rotating said cylinder, moving a carriage longitudinally thereof, feeding an impregnatable belt from said carriage toward the cylinder for pressive wrapping thereof, applying impregnating flowable plastic material between said belt and said cylinder, permanently wrapping said cylinder with the impregnatable belt to provide an outer layer on said cylinder, placing said belt in tension during said wrapping, and hardening said plastic material to form around said cylinder a solid outer shell having an inner portion of hardened plastic and an outer portion of said impregnated belt.

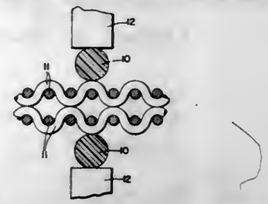


3,226,274
METHOD OF MANUFACTURING ELECTRODES OF VARIABLE CONDENSER
Tomoyuki Kohno, Tokyo, Japan, assignor to Mitsumi Denki Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan
Filed Sept. 25, 1961, Ser. No. 140,499
Claims priority, application Japan, Oct. 3, 1960, 35/41,171
5 Claims. (Cl. 156—252)



1. The method of forming a metal plate of predetermined configuration with both sides covered by insulation except for a predetermined area which is exposed, said method comprising the steps of:
punching a first series of guide holes along an edge portion of a metal strip;
punching a second series of guide holes along an edge portion of each of two separate strips of plastic film with the same pitch as said first-named series of guide holes;
punching a third series of holes in at least one of said strips of film with the same pitch as said guide holes, the holes of said third series being located to produce said predetermined area of each metal plate which is to be exposed;
maintaining all of said guide holes in register;
adhering each of said strips of film to one side of said metal strip to form a composite strip consisting of said metal strip sandwiched between said strips of film with said guide holes in register; and
punching said metal plate from said composite strip.

3,226,275
METHOD OF INTERLOCKING THE YARNS OF KNITTED OR WOVEN FABRIC
Edward M. Kiess, State College, Pa., assignor to The Singer Company, a corporation of New Jersey
Filed Nov. 2, 1961, Ser. No. 149,735
1 Claim. (Cl. 156—306)



A method of interlocking the yarns of knitted or woven fabric in a controlled perimetric pattern comprising placing a thermoplastic monofilament in the desired pattern on the surface of said fabric, and applying heat and pressure to said monofilament to cause flow and fusion of said monofilament through the interstices between the fabric yarns and subsequent encapsulation of said yarns in a region controlled by the placement and size of the monofilament.

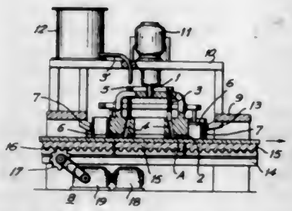
3,226,276
METHOD OF BONDING CORD TO RUBBER WITH A PHENOL-ALDEHYDE BLOCKED POLYISOCYANATE
Grover W. Rye, Cuyahoga Falls, Arnold H. Bridge, Mogadore, and Fred J. Kovac, Akron, Ohio, assignors to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
No Drawing. Filed May 1, 1962, Ser. No. 191,423
4 Claims. (Cl. 156—335)

1. A method of forming a laminate of
a rubber selected from at least one of the group consisting of
natural rubber, and
a sulfur-vulcanizable synthetic rubbery diene polymer, and
a reinforcing cord made from materials selected from the group consisting of
regenerated cellulose,
a polyamide and
a polyester which comprises forming a layer of a resin on said cord by heating at a temperature above about 350° F.,
a mixture on said cord of a phenolic/aldehydic deficient resin reaction product of a polyisocyanate,
the aldehydic component being present in an amount of from 0.25 to less than 1.0 mole per mole of phenolic component,
a rubber latex
a phenol and
an aldehyde
the phenol being present in said mixture in excess of the amount needed to react completely with the aldehyde,
adding a mixture of
a phenol and
an aldehyde to said rubber
the aldehyde being present in the rubber in an amount sufficient to react with the phenol to form a resin in said rubber and to react with said resin layer on said cord,
embedding the resin-coated-cord in said rubber and
heating said rubber to cause vulcanization thereof and the formation of a resin in said rubber and the reaction of said aldehyde in said rubber with said resin on said cord to thereby secure said resin on said cord to said resin in said rubber.

3,226,277
MACHINE FOR CHEMICALLY POLISHING GLASS

Masaharu Masuda, Hideo Kita, and Ryuzo Fujita, all of Amagasaki, Japan, assignors to Nippon Sheet Glass Co. Ltd., Osaka, Japan, a corporation of Japan

Filed Oct. 23, 1962, Ser. No. 232,408
Claims priority, application Japan, Nov. 27, 1961, 36/59,068
4 Claims. (Cl. 156—345)

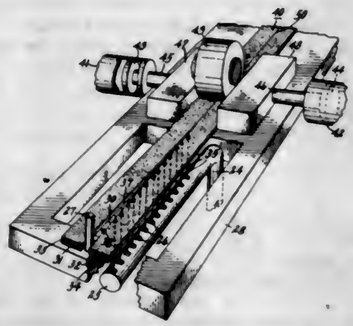


1. A device for polishing plate glass using a reactive chemical solution such as hydrofluoric acid, fluorides, or bifluorides, said device comprising, in combination, at least one polishing disc having a circular periphery; an upright shaft; means for rotating said shaft; said disc being connected to said shaft for rotation thereby; means for supplying chemical solution through said disc to the surface of the plate glass contacted by the under surface of said disc and within the periphery of the disc; and generally vertically oriented flexible baffle plates supported by said shaft and extending generally radially outwardly from the periphery of said disc with lower substantially rectilinear edges in continuous contact with the surfaces of the glass, said baffle plates being revolved by said shaft through an annular path concentric with said disc to sweep used solution from the surface of the plate glass polished by said disc.

3,226,278
APPARATUS FOR MANUFACTURING VEHICLE WIRING HARNESSES

Robert O. Scofield, Sr., and Richard M. Hess, both of Warren, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Sept. 28, 1961, Ser. No. 141,519
1 Claim. (Cl. 156—497)

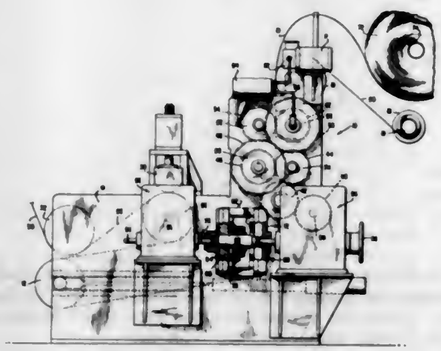


In an apparatus for the manufacture of a wiring harness means including plural flat conductors each having rectangularly shaped thermoplastic insulation in substantially coplanar relationship and united in edge-to-edge relationship by being passed in contact with a heated fluid pressure stream, the improvement which comprises a relatively flat surface base member for supporting at least two moving coplanar flat insulated conductors and including an elongated aperture extending through said base surface, a fluid pressure jet means including orifices arranged in longitudinal alignment and directing fluid pressure upwardly through said aperture along the underside of the plural insulated conductors to be joined at their edges, a non-heated dividing projection extending upwardly from one end of said base member surface and longitudinally aligned with orifices of said jet means for transversely separating the conductors between adjacent narrow edges of thermoplastic insulating material, said dividing means engaging the thermoplastic insulation between the edges of the coplanar flat conductors defining a space therebetween prior to contact with the heated fluid stream of said jet means, means including a pair of parallel side portions and a roller intermediate said side portions and above said surface located at the other end of said base surface and longitudinally aligned with both said projection and said jet means for simultaneously applying lateral pressure to the coplanar flat insulated conductors and urging the flat conductors into a parallel and coplanar position causing a butt-juncture entirely of thermoplastic insulating material from that heated by said jet means along the insulation edges, and a temperature control means for regulating the heat from said jet means to cause the insulation to become a plastic condition short of melting flow and to fuse against each other along the butt-juncture when moved at a substantially uniform rate.

3,226,279
BUTT SPLICER CONTROL

Claude V. Allen, Newburgh, N.Y., assignor to The Inta-Roto Machine Company, Inc., Richmond, Va., a corporation of Virginia

Filed Dec. 14, 1962, Ser. No. 244,671
8 Claims. (Cl. 156—505)

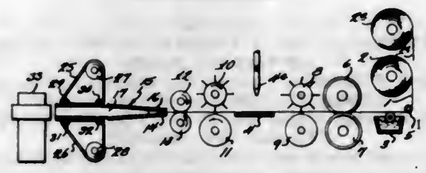


1. A machine for automatically butt splicing moving webs comprising a pair of draw rolls for continuously advancing a web, a pair of cutting rolls positioned ahead of said draw rolls for supporting the lead end of a new web for transversely severing an old web while simultaneously advancing the new web in butting relation to the line of severance, vacuum means for retaining the severed web portion against one of said cutting rolls and preventing its advancement, said vacuum means including a vacuum pump and conduits connecting said pump to said one of said pair of cutting rolls, a pair of taping rolls interposed between said draw rolls and cutting rolls for applying tape over the butt joint between said webs as said webs are being continuously advanced, means for driving said cutting and taping rolls in unison, said drive clutch and brake, and an electric control circuit for said driving means, said control circuit including means for energizing said vacuum pump in series with a start switch, means for energizing said clutch and denergizing said brake in series with a splice switch, means for energizing said brake and deenergizing said clutch including a switch operated by one of said cutting and taping rolls, and interlocking means including a reset switch connected to said means for energizing the vacuum pump and clutch for actuating said cutting rolls only when said vacuum means is energized first and said start, splice and reset ing means including an electromagnetically operated switches are closed in a predetermined sequence.

3,226,280
APPARATUS FOR PRODUCING AN ENDLESS FILTER STRING

Paul Adolf Muller, Triesenberg 389, Liechtenstein

Original application Apr. 28, 1955, Ser. No. 504,647, now Patent No. 3,161,557, dated Dec. 15, 1964. Divided and this application Apr. 24, 1964, Ser. No. 362,438
5 Claims. (Cl. 156—510)



1. Apparatus for simultaneously longitudinally corrugating and laterally stretching paper strip material of a predetermined initial width preparatory to laterally gathering and shaping the same into a generally cylindrical string adapted to be cut into plugs for use as filters for filter-tip cigarettes, comprising: a pair of rollers of rigid material mounted on parallel axes, each of said rollers being provided with alternating circumferential ridges and grooves with said rollers being arranged in nested proximity so that the ridges on one roller extend into the grooves in the other roller so as to longitudinally corrugate paper strip material passed between said rollers, the ridges on at least one of said rollers having a cross-sectional contour which provides at least one relatively sharp edge engageable with the paper strip material so as to substantially prevent transverse gathering thereof and thus substantially maintain the initial width of the paper strip material in its passage between said rollers, whereby the paper strip material is stretched laterally and a large portion of its fibers accordingly pulled apart.

3,226,281
FASTENER SETTING MACHINE

Michael J. Carpinella, Waterbury, Conn., assignor to Scovill Manufacturing Company, Waterbury, Conn., a corporation of Connecticut

Filed Jan. 22, 1963, Ser. No. 253,188
6 Claims. (Cl. 156—513)

1. In a fastener setting machine, a lower unit comprising

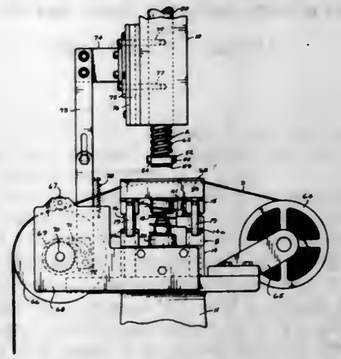
(a) a stationary combined fastener member setting die and blanking punch wherein the setting die portion is recessed slightly below the top surface of the blanking punch;

(b) a pair of fastener-holding fingers normally projecting vertically upwardly through and above the top surface of said blanking punch;

(c) light spring means for supporting said fingers whereby they may be pressed downwardly to said top surface of the blanking punch;

(d) said blanking punch also having a depending skirt portion of substantially the same outer diameter as said blanking punch;

(e) an electrical heating element mounted inside said skirt portion;



(f) a stationary supporting post extending upwardly through said heating element;

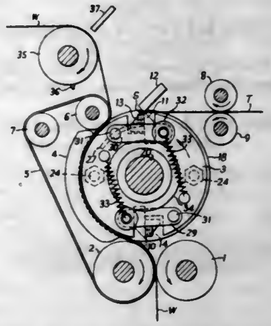
(g) a spring-loaded pad having a strip guideway therein; and

(h) a blanking die fixed in said pad in vertical alignment with said blanking punch.

3,226,282
FEEDING OF WEBS OF MATERIAL

Donald Richard Patrick Jackson, Deptford, London, England, assignor to The Molins Organisation Limited, a British company

Filed June 5, 1962, Ser. No. 200,245
Claims priority, application Great Britain, June 14, 1961, 21,434/61; Feb. 22, 1962, 6,983/62
14 Claims. (Cl. 156—519)

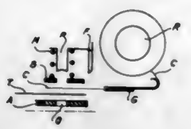


1. Mechanism for producing a tear strip and applying it to a web of wrapper material, in which a tear strip is severed from a web of tear strip material by cutting the latter transversely of its length, said mechanism comprising a rotatable member, a transfer member carried by said rotatable member and having a surface provided with suction ports, means to feed the said web of tear strip material so that its leading end extends over said surface, means to sever from said web a strip of the web extending over said surface, means to apply suction to said ports to hold the said strip to said surface, means to feed a web of wrapping material past said rotatable member, means to move the said transfer means outwardly of the said rotatable member toward the said web of wrapping material to press the said strip against the said wrapping material, and means operative thereafter to cut off suction from the said ports.

3,226,283
SYSTEM FOR SIMULTANEOUSLY PERFORATING AND RE-ENFORCING THE HOLE SO MADE IN SHEET MATERIAL FOR FILING PURPOSES

Roberto Prieto Villalon, 56 Isaac Peral St., Madrid, Spain

Filed June 11, 1962, Ser. No. 201,617
Claims priority, application Spain, June 20, 1961, 268,421
9 Claims. (Cl. 156—522)

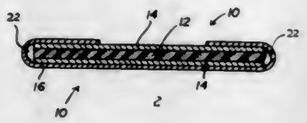


1. A device for simultaneously perforating and reinforcing an aperture in sheet material comprising a fixed platform having a hole for supporting a sheet, means for feeding a strip of reinforcing adhesive tape to a predetermined position above said sheet over said hole, means for pressing said adhesive tape against said sheet to apply said tape to said sheet, a punch for perforating said sheet cooperating with said hole, means normally urging said punch to initial position away from said sheet, a cutter connected to said punch for cutting off a length of said tape when said punch is depressed, means for supplying said adhesive tape cooperating with said punch and cutter, means for extracting an additional length of tape from said supplying means when said adhesive tape and said sheet are pressed together, said cutter cutting said strip of tape adjacent the border of said sheet when said punch is depressed to perforate said tape and sheet whereby said means for feeding a strip of reinforcing adhesive tape feeds, said additional length of tape above said hole when said punch and cutting means are withdrawn by said means normally urging said punch to initial position.

3,226,284
WALL BOARD HAVING COMPRESSIBLE EDGE STRUCTURE

Rolando T. Curtis, Greenwich, Conn., assignor to V-W Corporation, Stamford, Conn., a corporation of Connecticut

Filed Nov. 1, 1961, Ser. No. 149,271
2 Claims. (Cl. 161—44)

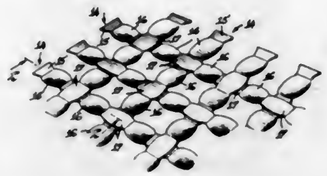


1. A wall board comprising a substantially flat core which has elongated substantially straight edges and includes core material which is at least semi-rigid, flexible sheet facing material covering at least one of the sides of said core and extending laterally beyond said edges and around said edges to the other side of said core and enclosing said edges and leaving sufficient free space between the edges of said core and the flexible sheet material extending therearound to promote compressibility of said flexible sheet material enclosing said edges in directions transverse to the directions of elongation of said edges, and adhesive means securing said flexible sheet material with said one of said sides and securing to the other of said sides the portions of said flexible sheet material which extend around said core edges to said other side of said core.

3,226,285
MODIFIED PLASTIC TUBING

Michael J. Iovenko, New York, N.Y., assignor of fifty percent to Alexander Mencher, Forest Hills, N.Y.

Filed Jan. 4, 1962, Ser. No. 165,062
4 Claims. (Cl. 161—72)



1. A weave comprising intersecting individual strands formed from individual lengths of modified flexible, expandible and resilient thermoplastic tubing having fluid containing sections and flattened and heat-sealed sections, the intersections being at said flattened and heat-sealed sections.

3,226,286
DEHYDRATED MICA PRODUCTS AND METHOD OF MAKING SAME

Edward W. Scheuer, Chicago, Ill., assignor to The Budd Company, a corporation of Pennsylvania

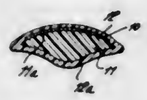
No Drawing. Filed Nov. 7, 1961, Ser. No. 150,667
7 Claims. (Cl. 161—171)

1. A composite mica product comprising substantially uniformly translucent, silvery white, metallic colored, dehydrated mica splittings having a thickness of from about 0.0005 to about 0.001 inch and a laminar structure with capillaries substantially uniformly distributed between adjacent laminae within said splittings and a binder binding said splittings together, said binder being distributed through the capillaries of said splittings.

3,226,287
COMPOSITE STRIP

Jesse P. Shanok and Victor Shanok, both of 863 65th St., Brooklyn 20, N.Y.

Filed Sept. 15, 1960, Ser. No. 56,245
3 Claims. (Cl. 161—175)



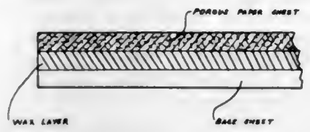
1. An improved composite decorative strip comprising in combination, a soft, resilient core in supporting contact with a metal foil member, the said core and foil member being provided with a smooth transparent outer casing, completely enclosing said core and the said outer casing being permanently deformable, whereby the composite decorative strip assumes a permanent set.

3,226,288
HEAT-SENSITIVE COPYING SHEET

Daniel Smith, Riverdale, and Edward C. Otto, Brooklyn, N.Y., Donald J. Lazzarini, North Bergen, N.J., and John F. McHugh, Brooklyn, N.Y., assignors to Interchemical Corporation, New York, N.Y., a corporation of Ohio

Filed Jan. 24, 1962, Ser. No. 168,534
19 Claims. (Cl. 161—229)

1. A thermosensitive copying sheet which includes a base sheet coated with a layer comprising a normally solid organic composition which melts to a low viscosity fluid at a melting point from 60° to 150° C., said layer having laminated thereto an upper sheet of paper having an opacity of at least 60% and a porosity such that a maximum time of 16 seconds is required for the passage of 100 cc. of air through an area of one square inch of the upper sheet as determined by ASTM D726-58, Method A.



11. The thermosensitive copying sheet defined in claim 1, wherein said organic composition is a polyamide resin.

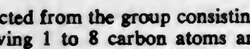
12. The thermosensitive copying sheet defined in claim 11, wherein said poyamide is the polymerization product of ethylene diamine with the reaction product of acrylic acid and tung oil fatty acid.

3,226,289
METHOD AND COMPOSITIONS FOR CHEMOSTERILIZATION OF INSECTS

Hilary F. Goonewardene, Moorestown, N.J., assignor, by mesne assignments, to Rohm & Haas Pharma G.m.b.H., Darmstadt, Germany, a German corporation

No Drawing. Filed Dec. 28, 1964, Ser. No. 421,691
7 Claims. (Cl. 167—22)

1. A method of causing sexual sterility in female insects which comprises treating the insect with an effective amount of an N-alkyl-2-methylacrylamide compound having the following general structural formula:



wherein R is selected from the group consisting of straight chain groups having 1 to 8 carbon atoms and branched chain alkyl groups having 1 to 8 carbon atoms.

3,226,290
MIXED FUNGICIDE PREPARATION

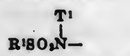
Gustave K. Kohn, Berkeley, Calif., assignor to Chevron Research Company, a corporation of Delaware

No Drawing. Filed June 1, 1962, Ser. No. 199,237
4 Claims. (Cl. 167—33)

1. A method for preparing a fungitoxic product having fungitoxic activity greater than the sum total of its components,

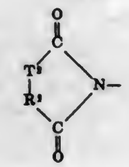
which comprises dissolving in an aqueous medium a salt of at least one acidic nitrogen compound of the formula A—M wherein M is a member of the group consisting of alkali and alkaline earth metals and A is a member selected from the class of nitrogen-containing groups consisting of:

(1)



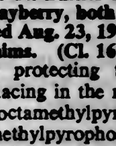
wherein R^1 is a substituent of not more than 8 carbons and is selected from the group consisting of alkyl and aryl hydrocarbon and T^1 is a substituent of not more than 8 carbons and is selected from the group consisting of hydrogen, alkyl and aryl hydrocarbon;

(2)



wherein R^2—T^2 is selected from the group consisting of —$(CH_2)_2$—, —$(CH_2)_3$—, —H_2C—NH— and —$(CH_3)_2C$—NH—; and

(3)



wherein R^3—T^3 is a monocyclic hydrocarbon group containing a ring of 5 to 6 carbons and a total of not more than 8 carbons;

adding to said aqueous medium at a temperature in the range of from —15° to 50° C., with vigorous agitation, at least one organic sulfur compound of the formula

$$Z_lX_3C_m(S)_nX$$

wherein Z is selected from the group consisting of hydrogen and halogen of atomic number 17 to 35, and X is halogen of atomic number 17 to 35, with the proviso that at least one X is bonded to the carbon bonded to sulfur, $l=2(m-1)$, m is of from 1 to 2 and n is of from 1 to 2; and with the further proviso that at least two different species of said organic sulfur compound are added when only one species of said acidic nitrogen compound salt is dissolved in said aqueous medium and at least two different species of said acidic nitrogen compound salt are dissolved in said aqueous medium when only one species of said organic sulfur compound is used in the preparation; thereby forming at least one group of the formulae

$$[A(S)_nY\cdot A'(S)_nY]$$

and

$$[A(S)_nY\cdot A(S)_nY']$$

wherein A and A' are different members selected from the class consisting of nitrogen-containing groups of Formulas 1, 2 and 3 as previously defined, n is as previously defined, and Y and Y' are different polyhaloalkyl groups of the formula $Z_lX_3C_m$ wherein Z, X, l and m are as previously defined.

3,226,291
METHOD FOR PROTECTING GROWING PLANTS AGAINST ANIMAL DAMAGE

John H. Rediske, 120 N. Berner Drive, and William H. Lawrence, 3802 Mayberry, both of Centralia, Wash.

No Drawing. Filed Aug. 23, 1962, Ser. No. 218,833
6 Claims. (Cl. 167—46)

5. A method for protecting tree seedlings against animal damage by placing in the root zone of said seedlings a reservoir of octamethylpyrophosphoramide sufficient for said octamethylpyrophosphoramide to be absorbed and translocated throughout said tree in an amount between about 400 parts per million and about 2000 parts per million of the green plant weight.

3,226,292
BIS(TRIPROPYLTIN) OXIDE ANTHELMINTIC COMPOSITION AND METHOD OF USING SAME

Robert John Shaver, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Apr. 18, 1962, Ser. No. 188,527
4 Claims. (Cl. 167—53)

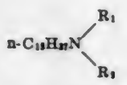
1. In the practice of animal husbandry, the method which comprises administering orally to a warm-blooded animal infested with worms a chemotherapeutic dose of bis(tripropyltin) oxide.

3,226,293
OCTADECYL AMINE ANTHELMINTIC COMPOSITIONS AND THERAPY

Joseph J. Ursprung, Kalamazoo, Mich., assignor to Chas. Pfizer & Co. Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 21, 1961, Ser. No. 161,311
7 Claims. (Cl. 167—55)

1. A process for treating helminthic infestations of man and animals which comprises orally administering to the helminth infected host a therapeutically effective amount of an amine selected from the group consisting of those having the formula



wherein R_1 and R_2 are selected from the class consisting of hydrogen, methyl and ethyl and the pharmaceutically acceptable acid addition salts thereof, together with a pharmaceutically acceptable carrier.

3,226,294
ANTIDEPRESSANT COMPOSITION AND METHOD OF USING SAME

Carl E. Nelson, Lansdale, Pa., assignor to Merck & Co. Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Apr. 30, 1963, Ser. No. 277,019
7 Claims. (Cl. 167—55)

1. A pharmaceutical composition having at least two components which complementarily antagonize an opposing pharmacologic tendency of the other comprising in prophylactic combination 25 mg. of 5-(3-dimethyl aminopropylidine)-dibenzyl[a,d][1,4]cycloheptadiene and 0.5 mg. of 1-phenyl-2-amino propane and a non-toxic pharmaceutically acceptable carrier.

3,226,295
METHOD OF MAKING CETYL ALCOHOL EMULSIONS

Carlos C. Goetz, Luiz-Bivar 36–5E, Lisbon, Portugal, and Paul C. Goetz, 83–A Ionia Terrace, East Paterson, N.J.

No Drawing. Filed Feb. 8, 1960, Ser. No. 7,103
2 Claims. (Cl. 167—63)

1. In a process of producing an aqueous emulsion consisting of cetyl alcohol with water, said alcohol being of particle size of between 1.5 microns to 0.1, the steps of emulsifying the said alcohol in hot water with an emulsifying agent, rapidly cooling the emulsion to near freezing, filtering the same and washing the filter residue until all emulsifying agent is removed.

3,226,296
ATTENUATED HOG CHOLERA VIRUS VACCINE AND METHOD OF PRODUCING SAME

William H. Boynton, deceased, late of Berkeley, Calif., by Ethel C. Boynton, widow and executrix, Berkeley, Calif., assignor to Cutter Laboratories, Inc., Berkeley, Calif., a corporation of Delaware

No Drawing. Filed Apr. 5, 1963, Ser. No. 270,986
4 Claims. (Cl. 167—80)

1. An attenuated hog cholera vaccine containing an attenuated hog cholera virus capable, by growth, of invoking the production of antibodies and the development of a specific resistance to and a durable immunity against hog cholera without the appearance of the usual symptoms of the disease and which eliminates the disadvantages attendant to using either inactivated virus vaccines or virulent virus in combination with an anti-serum, produced by a method wherein the desired attenuation is effected by serial passage propagation of virulent hog cholera virus through a number of succeeding passages in succeeding portions of an artificial culture media containing living hog tissue, free from hog cholera immune fractions, thereby attenuating the virus culture beyond the measurable degree of attenuation which occurs anywhere from the 15th to the 33rd passage to the point where animal tests, made against controls in the usual manner, prove that portions thereof can serve as vaccines for producing a durable immunity, said point, which is usually found in passages 49 to 157, being characteristically found by animal tests which show the blood and spleen tissues of hogs previously inoculated with such a modified virus culture effectively serve to immunize hogs, conclusively proving that (1) the virus did not increase in virulence due to the consecutive passage through two pigs; and that (2) the blood and spleen tissues collected from pigs inoculated with the modified virus contain the modified virus.

3,226,297
DENTIFRICE COMPOSITIONS COMPRISING POLYMETHYL METHACRYLATE ABRASIVES

Bo Thuresson af Ekenstam, Bofors, Bror Holger Fredrik von Fleandt, Upplands-Vasby, and Allan Richard Benjamin Furendal, Bofors, Sweden, assignors to Aktiebolaget Bofors, Bofors, Sweden, a corporation of Sweden

No Drawing. Filed Apr. 5, 1962, Ser. No. 185,226
Claims priority, application Sweden, Mar. 31, 1954, 3,008/54
3 Claims. (Cl. 167—93)

1. A toothpaste comprising approximately equal amounts of a vehicular material conventionally used in toothpastes and polymethyl methacrylate having a particle size of 0.2 to 3 microns.

3,226,298
PROCESS FOR MAKING HIGH PURITY RADIOACTIVE IODINE-131

Wayne J. Gemmill, Milford, Pa., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Oct. 24, 1963, Ser. No. 318,531
4 Claims. (Cl. 176—10)

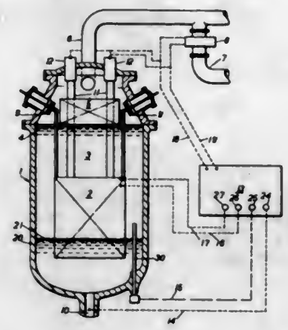
1. A method of producing radioactive iodine-131 which comprises the steps of
(1) heating tellurium dioxide at a temperature of from about 550° C. to 600° C. for at least one hour
(2) irradiating the tellurium dioxide with thermal neutrons and
(3) separating the radioactive iodine-131 formed from the residual tellurium dioxide by distillation.

3,226,299
METHOD AND APPARATUS FOR RENDERING SUBCRITICAL A BOILING WATER NUCLEAR REACTOR

Stanley Hackney, Fearnhead, near Warrington, England, assignor to United Kingdom Atomic Energy Authority, London, England

Filed Dec. 10, 1962, Ser. No. 243,564
Claims priority, application Great Britain, Dec. 20, 1961, 45,610/61
2 Claims. (Cl. 176—20)

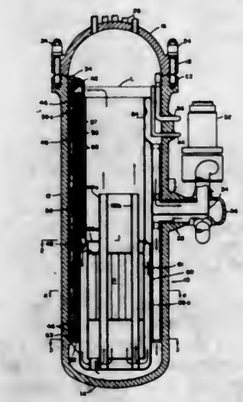
1. A method of rendering subcritical a boiling water nuclear reactor having pressurized water interposed as an intermediate heat transfer medium between fuel elements and the boiling water reactor coolant subject to a lesser degree of pressurization, said method comprising the steps of releasing reactor coolant pressure to a degree rendering the reactor subcritical and then arresting the pressure release to leave a pool of reactor coolant of a depth such that the heat transfer medium continues in heat exchange relationship with said pool.



3,226,300
UNIFIED MODULAR REACTOR PLANT

Paul C. Zmola, Royce J. Rickert, and William S. Flinn, Bloomfield, Conn., assignors to the United States of America as represented by the United States Atomic Energy Commission

Filed Dec. 9, 1963, Ser. No. 329,330
3 Claims. (Cl. 176—29)

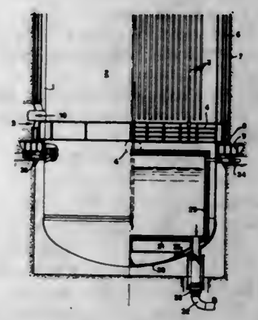


1. A nuclear fission reactor comprising a pressure vessel, a core of fissionable fuel assemblies mounted within said pressure vessel, said assemblies consiting of stationary fuel assemblies and movable fuel assemblies, each of said movable fuel assemblies consisting of a lower section containing fuel elements extending the length of said core and an upper section containing a neutron absorbing material, all of the movable neutron absorbing material of said reactor being contained within the upper sections of said fuel assemblies, each of said movable fuel assemblies being movable between an upper operating position wherein said lower section is located within said core and the upper section extends above said core to permit power operation of said reactor and a lower shut down position wherein said lower section extends below said core and the upper section is within said core to prevent operation of said reactor, said core being divided into outer and inner zones of U_{235} enrichment, the enrichment ratio is between the outer zone and inner zone being about 1.6, steam generating means located within said vessel occupying an annular space surrounding said core for receiving secondary water coolant and producing superheated steam, and means for pumping primary water coolant and moderator into said vessel and forming a self-pressurized steam space in the upper region of said vessel, said primary coolant being circulated in two passes through said core and through said steam generating means to transfer heat of fission from said core to said secondary water coolant, said primary coolant making its first pass through the outer enrichment zone and its second pass through the inner enrichment zone, thereby tending to flatten the power distribution across said core, said reactor during normal operation having each of said movable fuel assemblies in its upper operating position, said reactor thereby operating normally without the presence of control rods in the core.

3,226,301
HETEROGENEOUS NUCLEAR REACTOR LIQUID MODERATED AND COOLED

Jean A. Bernard, Olginasio (Varese), Italy, Joachim Bunge, Brussels, Linkebeek, Belgium, and Jacques Dufresne, Varese, Sergio Finzi, Masnago (Varese), and Giuseppe Volta, Ispra (Varese), Italy, assignors to European Atomic Energy Community-Euratom, Brussels, Belgium

Filed Oct. 2, 1963, Ser. No. 313,217
5 Claims. (Cl. 176—52)



1. In a liquid moderated and cooled heterogeneous nuclear reactor, the combination comprising:
(a) a tank;
(b) a heat insulating shield in said tank dividing the said tank into an upper heavy water compartment and a lower collector compartment for a heat carrying fluid;
(c) a hollow completely closed heat insulated collector mounted in said collector compartment in spaced relationship therewith; said collector being partially filled with a heat carrying fluid;
(d) a plurality of reactor channels, vertically mounted in said tank; each channel having an inner power tube and an outer calender tube coaxial with and spaced from the power tube; both said tubes extending through said heat insulating shield and the wall of said collector and having their ends immersed in said heat-carrying fluid;
(e) means to deliver gas under pressure in the space between said tank and said collector and maintain the pressure in said space between that of the heat-carrying fluid at the outlet of said tubes and that of said fluid in the collector, and
(f) inlet and outlet means for said gas on said tubes interconnecting the space between the tank and the collector and the space above the liquid in the collector.

3,226,302

PRODUCTION OF BETA-CAROTENE

Alex Ciegler, Peoria, Ill., assignor to the United States of America as represented by the Secretary of Agriculture

No Drawing. Filed May 15, 1963, Ser. No. 280,755
7 Claims. (Cl. 195—28)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. A method of greatly improving the production of beta-carotene by the mixed mating strains of *Blakeslea trispora* in a beta-carotene-producing fermentation medium, comprising adding to the medium at the beginning of the fermentation a member selected from the group consisting of (a) from 1 to 2 percent by weight, based on the medium, of dry pentane-hexane extracted, fat-free mycelia of an organism selected from the group consisting of *Blakeslea trispora, Aspergillus clavatus, Aspergillus niger, Rhizopus acetoinus, Mucor fansseni, Rhizopus chinensis, Blakeslea circirans, Choanephora infudibulifera, Choanephora cucurbitarum, Rhodotorula glutinus, Rhodotorula rubra, Rhodoturula sannei,* and *Saccharomyces cerevissiae,* and (b) a concentrate of the entire aqueous extract of said fat-free mycelia containing the water-solubles from 1 gm. of said fat-free mycelia, and fermenting the resulting culture medium under aerobic conditions and at 28° C. for 6 days.

3,226,303

5α-HYDROXYLATION OF A-NOR-5α-STEROIDS

Allen I. Laskin, Somerset, Samuel C. Pan, Metuchen, and Frank L. Weisenborn, Somerset, N.J., assignors to Olin Mathieson Chemical Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Original application Jan. 31, 1963, Ser. No. 255,180. Divided and this application Mar. 31, 1965, Ser. No. 449,673
5 Claims. (Cl. 195—51)

1. A method of converting a compound selected from the group consisting of a steroid of the A-nor-5α-androstane series and the A-nor-5α-pregnane series, saturated in both the A and B rings and containing a 5α-hydrogen substituent to a 5α-hydroxyl derivative, which comprises subjecting said steroid to the action of enzymes of *Cokeromyces recurvatus,* under oxidizing conditions, and recovering the 5α-hydroxy steroid formed.

3,226,304

HIGH PURITY STREPTOKINASE AND PROCESS FOR PREPARING SAME

Pentti Kasper Siiteri, Hillsdale, N.J., and Richard Douglas Mills, Pearl River, N.Y., assignors to American Cyanamid Company, New York, N.Y., a corporation of Maine

Filed Oct. 24, 1960, Ser. No. 64,655
4 Claims. (Cl. 195—62)

1. High purity streptokinase effective for the treatment of thrombosis comprising a substance having

(a) a molecular weight of about 47,000, a sedimentation rate constant ($S_{20,w}$ value) of about 3.0×10^{-13}, a diffusion constant ($D_{20,w}$ value) of about 6.20×10^{-7} and an electro-phoretic mobility (μ) of about 4.19×10^{-5} $cm.^2sec.^{-1}volt^{-1}$, the preceding physical constants being measured in phosphate buffer of pH 7.5 and an ionic strength of 0.15,

(b) the empirical formula $C_{2104}H_{3301}N_{580}O_{660}S_5$,

(c) the respective carbon-hydrogen-nitrogen percentage analysis of 54.00–9.21–17.36,

(d) the carbon to nitrogen (C/N) ratio of 3.11,

(e) infra-red absorption bands (KBr disk) in microns at 3.03; 3.24; 3.37; 6.05; 6.5; 6.9; 7.18 and 8.10 and

(f) ultra-violet absorption maxima at 276 mμ (0.1 N HCl) with an

$$E^{1\%}_{1cm.}$$

value of 8.0 and at 290 mμ (0.1 N NaOH) with an

$$E^{1\%}_{1cm.}$$

value of 11.0;

displaying after subjection to controlled digestion by proteolytic enzymes a two-dimensional chromatographic and electrophoretic peptide pattern as in FIGURE 5; and displaying after subjection to complete hydrolysis a quantitative amino acid composition, expressed in terms of the percent nitrogen contributed by the individual amino acid residues of the total protein nitrogen, consisting of the following values: lysine, 11.03; histidine, 4.65; arginine, 13.79; aspartic acid, 11.55; threonine, 5.00; serine, 3.62; glutamic acid, 7.76; proline, 3.79; glycine, 3.62; alanine, 4.14; cysteine, 0.17; valine, 3.96; methionine, 0.69; isoleucine, 3.97; leucine, 6.90; tyrosine, 3.62; phenylalanine, 2.41; tryptophane, 0.35; amide ammonia, 8.97; said streptokinase being physiologically suitable for intravenous administration to human beings in an hourly dosage rate per person of at least about 50,000 S.K. units.

2. A process for preparing the product of claim 1 comprising the steps of adsorbing crude streptokinase on a cellulose amine anion exchanger chromatographic column, desorbing purified streptokinase therefrom by means of elution, adsorbing said purified streptokinase on a second cellulose amine anion exchanger chromatographic column, desorbing further purified streptokinase from said second column by means of elution, said preceding steps taking place in the presence of a phosphate buffer system having a pH value of not less than about 5.8 and not more than about 8.5, a temperature of not less than 0° C. and not more than 10° C. and a molarity of not less than about 0.005 and not more than about 0.1, and recovering said further purified streptokinase by conventional means.

3,226,305

BIOLOGICAL TRANSFORMATION OF 1,3,10,11,12-PENTAHYDROXYNAPHTHACENE - 2 - CARBOXAMIDES TO TETRACYCLINE ANTIBIOTICS

Jerry Robert Daniel McCormick, Spring Valley, N.Y., Newell Oscar Sjolander, Saddle River, N.J., and Sylvia Jennie Johnson, Pearl River, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Jan. 8, 1965, Ser. No. 424,205
20 Claims. (Cl. 195—80)

1. A process for the 6,12a-dihydroxylation of a 1,3,10,11,12-pentahydroxynaphthacene - 2 - carboxamide which comprises adding the 1,3,10,11,12 - pentahydroxynaphthacene-2-carboxamide to an aqueous nutrient medium, aerobically fermenting the aqueous nutrient medium with a strain of a tetracyclines-producing species of the genus Streptomyces, and continuing the fermentation until the 1,3,10,11,12-pentahydroxynaphthacene - 2 - carboxamide is substantially converted to the corresponding tetracycline.

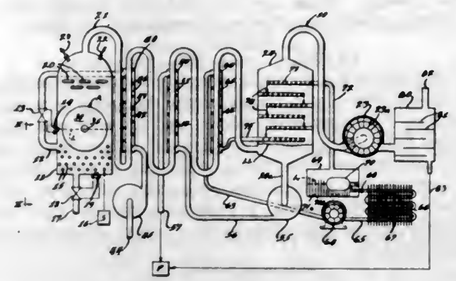
3,226,306

ROTARY FILM DISTILLATION AND GAS REFRIGERANT CONDENSING APPARATUS

Johann Karl Hausner, Chicago, Ill., assignor to Hausner Enterprises, Inc., Chicago, Ill., a corporation of Illinois

Filed Oct. 2, 1961, Ser. No. 142,093
5 Claims. (Cl. 202—177)

1. Apparatus for separating solvent from an impure form thereof containing a normally solid material, which comprises an evaporation chamber, liquid level control means for maintaining a liquid level of said impure form therein, heating means for said chamber for evaporating said solvent from said impure form, gas pressure reducing means connected to the interior of said chamber above the liquid level, condenser means connected with said chamber for recovering solvent evaporated therein, first and second heat exchangers mounted in series receiving evaporated solvent from said evaporation chamber and connected to said condenser means, a refrigerant gas system including a compressor for converting the gas to liquid, a separation chamber connected to the discharge of said compressor, means for maintaining a liquid refrigerant level therein, and means feeding gas from said separation chamber through said condenser means and then through said second heat exchanger and back to the compressor, return means receiving condensed



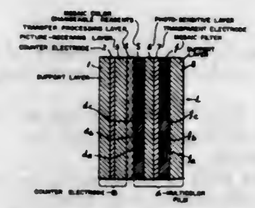
solvent from said condenser means and passing the same through said first heat exchanger to cool evaporated solvent passing therethrough, and thin substantially rigid structural elements presenting substantial surface areas for contacting liquid and thereby adapted to function as evaporation aids mounted in said chamber for movement thereof through a cycle back and forth above and below said liquid level, said heat exchangers being disposed between said evaporation chamber and said condenser means and each of said heat exchangers having a first and a second pass separated by a fluid flow barrier therein with the evaporated solvent being passed through the first pass of each and the refrigerant gas being passed through the second pass of each of such heat exchangers.

3,226,307

MULTICOLOR PICTURE FILM

Shin-ichi Tokumoto, Chiyoda-ku, Tokyo, Japan, assignor to Sony Corporation, a corporation of Japan

Filed Jan. 5, 1961, Ser. No. 80,803
Claims priority, application Japan, Jan. 5, 1960, 35/143
19 Claims. (Cl. 204—2)



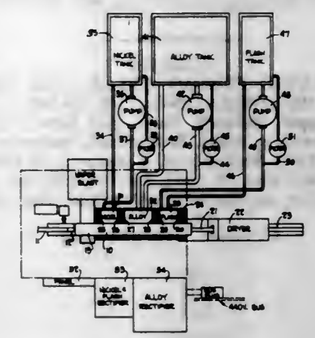
1. A multicolor picture film comprising; a layer containing color changeable reagents for at least two different colors with which a visible image is formed electrolytically by the passage of an electric current, said color changeable reagents being coextensive and arranged in the form of mosaic in a current passable state without one lying upon another; a mosaic color filter for color separation wherein a color corresponds to that of said color changeable reagents, a protective layer usable as an electrode for an electric current corresponding to an objective image to be reproduced, and means for providing said electric current.

3,226,308

ELECTROCHEMICAL TREATING METHOD AND APPARATUS

Harry Pochapsky and Wayne A. Kruper, Willowick, Ohio, assignors to Clevite Corporation, a corporation of Ohio

Filed June 15, 1961, Ser. No. 117,457
17 Claims. (Cl. 204—26)



1. A method of electrochemical treatment of the concave surface of electrically conductive semi-cylindrical articles which comprises the steps of moving a continuous column of such articles relative to an electrode and having the concave surface of such articles in predetermined spaced exposed relation to said electrode, supplying an electrolyte to the space between said articles and said electrode, causing said electrolyte to fill said space and to flow under turbulent flow conditions in said space, maintaining the convex surface of said articles substantially free of electrolyte by confining said electrolyte to the space between the concave surface of the work piece and the electrode, and passing a direct current between the articles and said electrode through said electrolyte.

14. In an apparatus for the continuous electroplating of an electrically conductive work piece having a predetermined geometric configuration having outer and inner surfaces, a washing section comprising an elongated table section, a tunnel member having a groove therein complementary to the geometric configuration of the outer surface of said work piece and adapted to confront said surface, a core member having a surface complementary to the geometric configuration of said inner surface and adapted to confront said surface, said tunnel member and said core member being in superimposed relation and defining a space therebetween adapted to receive said work piece, means in said tunnel member for supplying wash fluid to said outer surface, means in said core member for supplying wash fluid to said inner surface, means for confining the wash fluid within the surface confronting portions of said tunnel member and said core member, respectively, and means for exhausting spent wash fluid from said washing section.

16. In an apparatus for the continuous electroplating of an electrically conductive work piece, a consumable anode having a geometric configuration of a segment of a hollow cylinder and having a corrodible end and a free end, a cradle adapted to support said anode, means coacting with said cradle to permit angular movement of said anode therein, and means coacting with the free end of said anode for angularly moving said anode.

3,226,309

METHOD OF ELECTRO-DEPOSITION OF A PALLADIUM-SILVER ALLOY

James E. Oxley, New York, N.Y., assignor to Leesona Corporation, Cranston, R.I., a corporation of Massachusetts

No Drawing. Filed Jan. 10, 1962, Ser. No. 165,293
5 Claims. (Cl. 204—39)

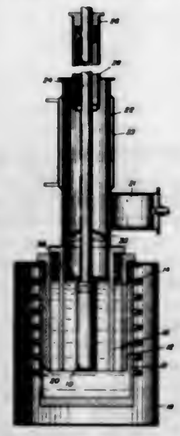
1. The method of electro-depositing a palladium-silver alloy onto an article comprising the steps of (1) dispersing palladium and silver ions in a molten alkali halide bath, (2) immersing the article to be coated in the solution, said article to be coated being the cathode and (3) passing an electrical current from an anode to said cathode through the solution and plating out said alloy.

3,226,310

ELECTROLYTIC FUSION CELLS AND METHOD OF OPERATING THE SAME

Walter Koeppel, Reinach, Basel, and Edwin Meier and Erich Schweizer, Basel, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a company of Switzerland

Filed Dec. 18, 1961, Ser. No. 159,966
Claims priority, application Switzerland, Dec. 19, 1960, 14,164/60
5 Claims. (Cl. 204—64)



1. A cell for fusion electrolysis comprising an annular anode, a cathode centrally positioned within said anode, and a cathode-supporting device, said supporting device being mounted for vertical movement and extending vertically from said cathode, housing means surrounding said supporting device, said housing means being capable of receiving the cathode when the supporting device is upwardly withdrawn, said supporting device serving as a current supply lead to said cathode and having incorporated therein a cooling system employing a circulating fluid coolant, said cathode having the form of a hollow cylindrical element and being releasably joined to the said cathode-supporting device by a joint having such a configuration as to reduce heat transfer from the cathode to the supporting device.

3,226,311

PROCESS OF PRODUCING CALCIUM BY ELECTROLYSIS

Jacques Van Diest, Uccle-Brussels, Belgium, assignor to Solvay & Cie, Uccle-Brussels, Belgium

No Drawing. Filed May 28, 1963, Ser. No. 283,694
Claims priority, application Belgium, May 13, 1959, 458,486
7 Claims. (Cl. 204—69)

1. A process for the production of calcium metal by electrolysis of a bath of fused chlorides at a temperature lower than the melting point of calcium, which comprises subjecting to electrolysis a bath comprising 20 to 80 mol percent of calcium chloride, 5 to 45 mol percent of strontium chloride, 5 to 35 mol percent of barium chloride and 0 to 35 mol percent of potassium chloride, said electrolysis being carried out at a temperature between 650 and 750° C.

3,226,312

PROCESSES FOR THE MANUFACTURE OF NATURAL AND SYNTHETIC RUBBERS REINFORCED WITH FILLERS

Alphonse Lamm and Gusta Lamm, both of 10 Rue des Tournelles, Chatenay-Malabry, Seine, France

No Drawing. Filed Apr. 10, 1961, Ser. No. 101,682
Claims priority, application France, Apr. 26, 1960, 825,362
14 Claims. (Cl. 204—154)

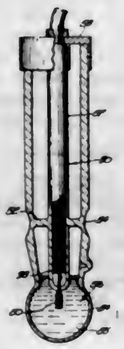
1. A process for manufacturing rubber from constituents comprising a latex selected from the group consisting of natural and synthetic rubbers and at least one filler selected from the group consisting of carbon black and silica, said process comprising subjecting at least one of said consistuents to high energy ionizing radiation, mixing said constituents into a composite mixture and subsequently drying said mixture to thereby obtain a solid rubber product.

3,226,313

GLASS ELECTRODE AND METHOD OF MAKING THE SAME

John H. Riseman, Cambridge, Mass., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York

Filed July 31, 1964, Ser. No. 386,661
13 Claims. (Cl. 204—195)



1. A glass electrode for measurement of ionic concentration in a test fluid, said electrode comprising, in combination:

a first tubular body of glass having an ion-sensitive membrane occluding one extremity so as to form a chamber thereat;

a second tubular body of glass having one end thereof glass sealed, said second body being disposed within said first body with said one end adjacent said chamber;

said second body including an integral surrounding glass collar adjacent said one end and extending substantially perpendicularly from said second body into fused contact with the interior wall of said first body at a portion thereof adjacent said extremity so as to seal said chamber;

an electrically conductive wire disposed in said second body and having an end portion thereof extending through said sealed end into said chamber;

the portion of said lead within the said second body being surrounded by an electric shield encased within said second body; and

an electrolytic material disposed within said chamber and forming an electrical contact between said membrane and the unshielded portion of said lead.

3,226,314

SACRIFICIAL ZINC ANODE

John R. Wellington and William L. MacLean Phillips, Trail, British Columbia, Canada, assignors to The Consolidated Mining and Smelting Company of Canada Limited, Montreal, Quebec, Canada, a corporation of Canada

No Drawing. Filed Aug. 9, 1962, Ser. No. 215,795
8 Claims. (Cl. 204—197)

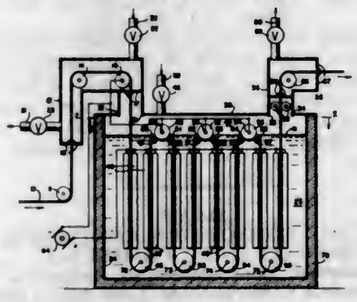
1. A sacrificial anode which comprises a zinc anode body bonded to a zinc alloy core cathodic to and embedded in the zinc anode body, said zinc alloy core consisting of zinc and 0.03% to 4% by weight of one member selected from the group consisting of iron, nickel and cobalt.

3,226,315

CONTINUOUS ELECTROPLATING APPARATUS

Edwin J. Smith, Steubenville, Ohio, and Michael G. Vucich and Lowell W. Austin, Weirton, W. Va., assignors to National Steel Corporation, a corporation of Delaware

Filed Nov. 29, 1960, Ser. No. 72,421
8 Claims. (Cl. 204—206)



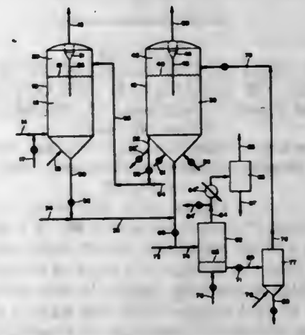
1. Apparatus for electroplating a coating metal on metal strip comprising vessel means, the vessel means being adapted to be filled to a predetermined level with an electrolyte for electroplating the coating metal, means including a series of rolls for passing metal strip through the vessel means along a predetermined path which is below the said electrolyte level, the series of rolls including a first electrical contact roll rotatably mounted in the vessel means to rotate around a substantially horizontal axis, the series of rolls also including second and third rolls rotatably mounted in the vessel means in spaced relationship and contiguous to said first contact roll, the spaced second and third rolls being mounted below the horizontal axis of the first contact roll and on opposite sides of a vertical plane passing through the horizontal axis of the first contact roll, the lower peripheral surface of the first contact roll being below the said electrolyte level and the upper peripheral surfaces of the second and third rolls, the first contact roll and the second and third rolls being constructed and arranged in such a manner that the strip may be threaded over the peripheral surfaces of the second and third rolls and under the peripheral surface of the first contact roll whereby the strip may be maintained immersed in the electrolyte in effective electrical contact with the peripheral surface of said first contact roll and the first contact roll may be shielded from stray electrical currents, anode means mounted in the vessel means below the said electrolyte level, and means for passing an electrolyzing electric current between the anode means and the first contact roll.

3,226,316

COKING OF HYDROCARBONS WITH THE REMOVAL OF METALLIC CONTAMINANTS FROM THE COKE

William Joseph Metrailer and John Frederick Moser, Jr., Baton Rouge, La., assignors to Esso Research and Engineering Company, a corporation of Delaware

Filed June 5, 1962, Ser. No. 200,118
22 Claims. (Cl. 208—46)



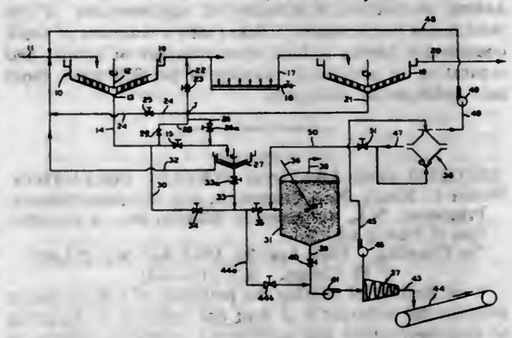
5. In a method of coking heavy petroleum oils to produce coke containing metal impurities and lower boiling hydrocarbons wherein the oil is cracked in a coking reaction zone and coke particles are partially burned in a burner zone and recycled to said coking reaction zone to supply the heat of cracking, the improvement which comprises withdrawing a portion of the coke particles from said reactor zone and passing them to a separate confined treating zone, introducing a halogen-containing material and a gas containing free oxygen into said separate confined treating zone to burn at least a portion of the coke particles in the presence of halogen-containing material and to form volatile metal halide compounds and recovering, as a product, coke particles with a reduced metal impurity content.

3,226,317

ANAEROBIC DIGESTION OF WASTE SLUDGES

Orris E. Albertson, Norwalk, Conn., assignor to Dorr-Oliver Incorporated, Stamford, Conn., a corporation of Delaware

Filed Aug. 15, 1962, Ser. No. 217,041
23 Claims. (Cl. 210—6)



18. The method of treating putrescible waste sludges derived from a clarification treatment to effect the anaerobic digestion thereof, which comprises maintaining a

body of sludge undergoing digestion; feeding raw sludge to said body of digesting sludge; withdrawing partially digested sludge from the body of digesting sludge containing a mixture of non-digestible solids and undigested gasifiable matter; subjecting the withdrawn sludge to centrifugal separation treatment such as to effect the separation of the sludge into a dilute overflow fraction substantially containing said undigested gasifiable matter, and a concentrated fraction substantially containing said non-digestible sludge solids; wasting said concentrated non-digestible solids fraction; separating from said dilute overflow fraction a significant portion of the liquid in a treatment separate from said clarification treatment; and introducing the undigested matter of said overflow fraction into said body of digesting sludge.

3,226,318

SEWAGE TREATMENT PROCESS WITH CONSOLIDATING OF SEPARATED SEWAGE SLUDGE

Josef Schick, Gewannweg 29, Obersdorf uber Siegen, Germany

No Drawing. Filed Nov. 21, 1962, Ser. No. 239,321
Claims priority, application Germany, Nov. 22, 1961, S 76,789
1 Claim. (Cl. 210—10)

In a sewage treatment process in which a sewage sludge containing sewage solids and about 60% water has been separated from the sewage, the steps of consolidating said sewage sludge comprising adding to said sludge consisting essentially of said sewage solids and water a substance selected from the group consisting of water-soluble polymerizable monomers and catalysts for said monomers and water-soluble condensable monomers and curing agents for said monomers and polymerizing or condensing said monomers to lock the solids and water constituents of the sludge into the resulting polymerization or condensation product and produce a permanently consolidated sludge.

3,226,319

PROCESS OF CONSOLIDATING A VOLUMINOUS, LOW SOLIDS CONTENT SLUDGE

Josef Schick, Gewannweg 29, Obersdorf uber Siegen, Germany

No Drawing. Filed Mar. 25, 1963, Ser. No. 268,513
16 Claims. (Cl. 210—52)

1. A process of consolidating a voluminous, low-solids-content sludge which is distributed throughout a quantity of waste water comprising adding a first quantity of agglomerants to said waste water, adding weighting agents to said waste water to cause the agglomerants and weighting agents to become associated with the solids in said sludge and to increase the specific weight of said solids and cause them to precipitate and settle as solid flakes, decanting a first quantity of purified water from the flakes, adding an additional quantity of agglomerants to the solid flakes to convert said flakes into a sediment of thick consistency having a high concentration of solids, and separating an additional quantity of purified water from said sediment by decanting.

3,226,320

METHOD FOR ABATING STREAM POLLUTION

Walter C. Meuly, New Brunswick, and Abraham Seidner, Princeton, N.J., assignors to Rhodia, Inc., a corporation of New York

No Drawing. Filed Apr. 22, 1963, Ser. No. 274,822
11 Claims. (Cl. 210—63)

1. A method of abating the pollution of a fluid stream wherein the pollutant is at least one member of the group of hydrogen sulfide and mercaptans, comprising adding to said polluted stream a chelate of a polyvalent metal with a substance selected from the group consisting of acetyl acetone, cyclopentadiene, ethylene diamine tetracetic acid, N-hydroxyethyl ethylene diamine, triacetic acid, gluconic acid, tartaric acid, and citric acid, the proportion by weight of said chelate of the polyvalent metal to said pollutant being in the ratio between 1:20 and 1:150, and simultaneously contacting said polluted stream with oxygen in amount in excess of said pollutant.

3,226,321

SOLIDS HAVING IMPROVED ELECTRICAL CONDUCTIVITY

John P. McDermott, San Diego, Calif., assignor to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Dec. 17, 1962, Ser. No. 244,874
7 Claims. (Cl. 252—8.8)

1. A solid synthetic hydrophobic non-conductive material selected from the group consisting of fiber and cloth containing on its surface a minor amount sufficient to promote electrical conductivity of said material of an organic ammonium phytate consisting of a negatively charged phytate anion and 1 to 12 positively charged ammonium base cations wherein each of said cations consists of an ammonium nitrogen atom and 1 to 4 organic radicals bonded to said nitrogen atom by carbon-to-nitrogen bond, each of said organic radicals containing 1 to 30 carbon atoms.

3,226,322

LIQUID HYDROCARBON COMPOSITION AND ADDITIVES THEREFOR

Glenn Fuller, Berkeley, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 28, 1961, Ser. No. 162,924
7 Claims. (Cl. 252—32.7)

1. A mineral lubricating oil composition consisting essentially of a major amount of mineral lubricating oil and from about 0.5% to about 5% of a 2,3-dithiamethyl phosphono compound selected from the group consisting of C_{10-18} alkyl 2,3-dithiamethyl phosphonic acid and an alkylamine salt of C_{10-18} alkyl 2,3-dithiamethyl phosphonic acid.

3,226,323

LUBRICANT COMPOSITION CONTAINING A HALOALKANOIC COMPOUND

John R. Stemniski, Swampscott, Mass., assignor to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Apr. 30, 1963, Ser. No. 277,024
6 Claims. (Cl. 252—33.6)

1. A lubricant composition comprising a major amount of a polyphenyl ether base fluid and a haloalkanoic acid compound of the formula $(Hal—R—COO)_y—X$ where Hal—R is a perhalogenated saturated aliphatic carbon chain of from one to six carbon atoms in which each of the carbon atom substituents is a halogen atom having an atomic weight below 40, X is a cation selected from the class consisting of hydrogen and heavy metal cations, and y is equal to the valence of X, said haloalkanoic acid compound being present in said composition in an amount sufficient to improve a lubricity property of said polyphenyl ether fluid selected from the group consisting of wear resistance and load-carrying ability.

3,226,324

LUBRICANT COMPOSITION CONTAINING PHENOTHIAZINE AND DIPYRIDYLAMINE

Daniel B. Eickemeyer, Park Forest, Ill., assignor to Sinclair Research, Inc., Wilmington, Del., a corporation of Delaware

No Drawing. Filed Feb. 19, 1962, Ser. No. 174,251
10 Claims. (Cl. 252—47.5)

1. A lubricant composition consisting essentially of an ester-based synthetic fluid of lubricating viscosity, about 0.01 to 5% by weight of phenothiazine and about 0.01 to 5% by weight of dipyridylamine and sufficient to retard oxidation of said ester based synthetic fluid at temperatures in excess of 400° F., said ester based fluid being an ester of an alkanol of 4 to 12 carbon atoms and an alkane carboxylic acid of 4 to 12 carbon atoms.

3,226,325

LUBRICANT COMPOSITION CONTAINING A HALOPHENOL

Glenn R. Wilson, Cambridge, Mass., assignor to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Apr. 30, 1963, Ser. No. 277,025
7 Claims. (Cl. 252—54)

1. A lubricant composition comprising a major amount of a polyphenyl ether base fluid and a halogenated compound composed of an aromatic hydrocarbon nucleus having as aromatic ring carbon atom substituents at least one hydroxyl group and more than one halogen atom, in an amount sufficient to improve lubricity properties and high temperature oxidative degradation resistance of the said base fluid.

3,226,326

LUBRICATING COMPOSITION

Lyman E. Lorensen, Orinda, and James W. Beardmore, Oakland, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Jan. 28, 1963, Ser. No. 254,469
23 Claims. (Cl. 252—57)

1. A lubricating oil composition comprising a major amount of lubricating oil and from about 0.1% to about 10% of a detergent-dispersant oil-soluble copolymer of a mixture of (1) C_{32-50} straight-chain alkyl methacrylate and (2) a methacrylate ester of methacrylic acid and an alcohol of a highly branched-chain polyolefin having a molecular weight of from around 800 to about 1,500, the ratio of the monomers (1) and (2) varying from 40–60% to 60–40% respectively and the copolymer having a molecular weight of from about 50,000 to about 2,000,000.

3. A lubricating oil composition comprising a major amount of lubricating oil and from about 0.1% to about 10% of a detergent-dispersant oil-soluble copolymer of a mixture of (1) C_{24-44} straight-chain alkyl methacrylate and (2) a methacrylate ester of methacrylic acid and a highly branched-chain alcohol derived from a mixture of polyisobutylene-poly-α-methyl styrene having a molecular weight of from about 800 to about 1,500, the ratio of the monomers (1) and (2) varying from 40–60% to 60–40% respectively and the copolymer having a molecular weight of from about 100,000 to about 850,000.

3,226,327

FERRITE COMPOSITIONS AND METHOD OF MANUFACTURE

Frank R. Monforte, Passaic Township, Morris County, and Frank J. Schnettler, Morristown, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed July 31, 1962, Ser. No. 213,639
7 Claims. (Cl. 252—62.5)

1. A method of making a rectangular hysteresis loop ferrite composition comprising the steps of slurrying with water, drying, and calcining a mixture comprising components equivalent to 5 to 60 mol percent manganese oxide, 8 to 50 mol perecnt magnesium oxide, 25 to 50 mol percent ferric oxide, and containing from 0.075 to 0.30 percent calcium by weight of the mixture added as a soluble salt having a solubility with respect to calcium of at least one gram of calcium per 100 cc. of water, shaping the resultant material under pressure into the desired configuration, and firing the shaped material at a temperature of from 1200° C. to 1350° C., the said soluble salt being of such nature as to yield calcium oxide during the said method.

7. Product produced by the method of claim 1.

3,226,328

METHOD FOR MAKING LITHIUM NICKEL FERRITE HAVING A SUBSTANTIALLY RECTANGULAR HYSTERESIS LOOP

Cornelis Jacobus Esveldt, Ringenier Fluks, and Hans Peter Peloschek, Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Jan. 4, 1963, Ser. No. 249,339
Claims priority, application Netherlands, Jan. 5, 1962, 273,242
4 Claims. (Cl. 252—62.5)

1. A method of manufacturing a ferromagnetic body having a substantially rectangular hysteresis loop comprising the steps, forming a finely-divided mixture of about 2 to 20 mol percent of Li_2O, about 0.5 to 45 mol percent NiO, about 50 to 85 mol percent Fe_2O_3, up to 3 mol percent of ZnO, and up to 8 mol percent of CuO, compacting said mixture into a body, heating said body to a temperature of about 1200° to 1400° C. in an atmosphere substantially free of water-vapor containing at least as much oxygen by volume as air, cooling said body from said heating temperature to a temperature of about 100° to 600° C. below the heating temperature at a rate of not more than 30° C. per minute, and quenching said body from the temperature to which it was cooled.

2. A method of manufacturing a ferromagnetic body having a substantially rectangular hysteresis loop comprising the steps, forming a finely-divided mixture of about 2 to 20 mol percent of Li_2O, about 0.5 to 45 mol percent NiO, about 50 to 85 mol percent Fe_2O_3, up to 3 mol percent of ZnO, and up to 8 mol percent of CuO, compacting said mixture into a body, heating said body to a temperature of about 1200° to 1400° C. in an atmosphere substantially free of water-vapor containing at least as much oxygen by volume as air, cooling said body from said heating temperature to a temperature which is 100° to 600° C. lower than said heating temperature at a rate which is greater than 30° C. per minute maintaining said body at said latter temperature for at least five minutes, and quenching said body from said latter temperature.

3,226,329

GERMICIDAL CLEANSING COMPOSITION

Francis S. Kilmer MacMillan, Colerain Township, Hamilton County, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

No Drawing. Filed Sept. 14, 1961, Ser. No. 137,994
5 Claims. (Cl. 252—107)

1. A germicidal cleansing composition having improved antibacterial properties due to a potentiating effect by a C_{18}-branched chain soap anionic potentiator upon a soap matrix and a germicidal agent, said composition consisting essentially of:

(1) from about 50% to about 90% of a fatty acid soap matrix consisting of tallow and coconut fatty acid soap wherein the ratio of tallow to coconut fatty acid soap is from about 90:10 to about 10:90, the cation of said soap being selected from the group consisting of sodium and potassium;

(2) from about 10 to about 50% of an anionic potentiator consisting of C_{18}-branched chain soap having the formula $MOOCHCCH_3C_{12}H_{25}$ wherein M is selected from the group consisting of sodium and potassium, the ratio of said fatty acid soap matrix to said anionic potentiator being from about 1:1 to about 10:1; and

(3) a germicidal agent selected from the group consisting of bis-(2-hydroxy-3,5,6-trichlorophenyl)methane, bis-(2-hydroxy-5-chlorophenyl)methane, 2,2'-

dihydroxy-3,3',5,5'-tetrachlorodiphenyl sulfide, neomycin palmitate, neomycin benzylidine, and mixtures thereof,

the ratio of said fatty acid soap matrix plus said anionic potentiator to said germicidal agent being from about 50:1 to about 500:1.

3,226,330

DETERGENT BAR

Raymond Michael Anstett, Hazlet, N.J., assignor to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Jan. 7, 1960, Ser. No. 920
4 Claims. (Cl. 252—117)

1. A milled and plodded detergent bar consisting essentially of 8 to 20% alkali metal selected from the group consisting of sodium and potassium salt of substantially saturated higher fatty glyceryl sulfuric acid compound, said sulfuric acid compound being a member selected from the group consisting of sulfate and sulfonate compounds, in which the higher fatty group is of 8 to 18 carbon atoms; 3 to 10% alkali metal salt of higher acyl amide of an amino lower aliphatic sulfonic acid of 2 to 4 carbon atoms, said acyl group containing from 12 to 18 carbon atoms and the alkali metal salt is selected from the group consisting of sodium and potassium salts thereof; 45 to 65% soluble alkali metal soap selected from the group consisting of sodium and potassium soap with a major proportion thereof being sodium soap, more than 65% of the soap fatty acid content being saturated fatty acids, and having a predominant amount, over 75%, of the soap fatty acid of 12 to 18 carbon atoms, of which fatty acids 25 to 60% is of 12 to 14 carbon atoms and 75 to 40% is of 16 to 18 carbon atoms; 2 to 10% alkali stable starch; 6 to 16% moisture; and having less than 7% total content of alkali metal sulfate and alkali metal chloride.

3,226,331

OIL-SOLUBLE LIQUID DETERGENT COMPOSITIONS

Robert C. Taylor, King of Prussia, and Elizabeth J. Meehan, Fort Washington, Pa., assignors to The Atlantic Refining Company, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed July 3, 1962, Ser. No. 207,403
6 Claims. (Cl. 252—153)

1. An oil-soluble liquid detergent composition consisting essentially of from about 50 weight percent to 60 weight percent of a mixture of an anionic surface-active agent and a nonionic surface-active agent, the remainder of the composition consisting of a solvent for said mixture of surface-active agents, said mixture of surface-active agents consisting of from about 50 weight percent to 75 weight percent of an aqueous solution of triethanolamine C_{10}–C_{18} alkyl benzene sulfonate of about 60 weight percent concentration and from about 25 weight percent to 50 weight percent of the condensation product of 1 mole of octyl phenol with 1 mole of ethylene oxide, said solvent consisting of from about 80 weight percent to 100 weight percent of hydrocarbons boiling in the range of 175° F. to 600° F., and from about 20 weight percent to 0 weight percent of tetrahydrofurfuryl alcohol.

3,226,332

PRODUCTION OF POTASSIUM PERMANGANATE ACTIVATED ALUMINA COMPOSITE

Robert C. Lincoln, Orinda, Calif., and Harry E. Osment, Baton Rouge, La., assignors to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware

No Drawing. Filed Jan. 14, 1965, Ser. No. 425,620
4 Claims. (Cl. 252—184)

1. A method of producing a composite consisting essentially of potassium permanganate substantially uniformly distributed throughout a nodular support of activated alumina, said method comprising calcining an alumina trihydrate to produce an alumina having a loss on ignition of from 1% to 15% by weight and being capable of partial rehydration, combining said calcined alumina with an aqueous solution of potassium permanganate in an amount sufficient to form a coherent mass and of a concentration which will provide from 0.5% to 10% MnO_4^- based on the dry weight of the mass, forming agglomerates of said alumina and said aqueous solution, curing the agglomerates to effect partial rehydration of the activated alumina, and drying the partially rehydrated agglomerates to remove uncombined water therefrom.

3,226,333

TITANIUM AND TIN ACTIVATED MAGNESIUM BORATE LUMINESCENT MATERIAL

Peter Whitten Ranby and David Richard Palowkar, London, England, assignors to Thorn Electrical Industries Limited, London, England, a British company

No Drawing. Filed June 14, 1962, Ser. No. 202,368
Claims priority, application Great Britain, June 16, 1961, 21,910/61
3 Claims. (Cl. 252—301.4)

1. A luminescent material consisting essentially of a magnesium borate containing titanium and containing significant quantities of tin and sufficient to produce enhanced blue, red and green emission when compared to a magnesium borate matrix activated by titanium alone, wherein the amounts of magnesium, titanium and boron present expressed as their oxides, are from 50 to 85 parts by weight of magnesium oxide, from 5 to 40 parts by weight of titanium dioxide, and from 2 to 27 parts by weight of boric oxide, to a total of 100 parts by weight, and the amount of tin present expressed as stannic oxide is not more than 100 parts by weight.

3,226,334

METHOD OF PRODUCING PHOSPHORS

Jyusaku Machida, Shinjuku-ku, Tokyo-to, Naoki Hagiwara, Ota-ku, Tokyo-to, Tomoo Yamada, Kawasaki-shi, Masao Isago, Toshima-ku, Tokyo-to, and Nobuyuki Sugishita, Kawasaki-shi, Japan, assignors to Hitachi Ranpu Kabushiki Kaisha, Tokyo-to, Japan, a joint-stock company of Japan

Filed Feb. 10, 1964, Ser. No. 343,809
Claims priority, application Japan, Dec. 30, 1960, 35/51,713
5 Claims. (Cl. 252—301.4)

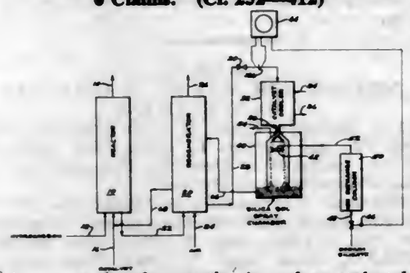
1. In a method of synthesizing a halophosphate phosphor by calcining a mixture which includes at least one alkaline earth metal compound selected from the group which consists of oxides and salts which are converted to oxides during calcination, the steps which comprise substituting in said mixture before calcining about 2 mol percent to about 10 mol percent of an alkaline earth metal bromide for about 2 mol percent to about 10 mol percent respectively, of said alkaline earth metal compound based on the total quantity of said alkaline earth metal compound required in said mixture for the synthesis of said phosphor, and calcining the resultant mixture at a temperature above the melting point of said bromide, whereby said bromide is decomposed and converted into an alkaline earth metal oxide.

3,226,335

REACTIVATION OF CATALYSTS BY IMPREGNATION OF SILICA

William H. Humes, Allison Park, and Meredith M. Stewart, Pittsburgh, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

Filed Sept. 26, 1962, Ser. No. 226,268
6 Claims. (Cl. 252—412)



1. A process for the reactivation of a catalyst having a microporous structure comprising impregnating silica upon said catalyst from a substantially sodium-free aqueous silica sol solution having a pH in the range between about 1 and about 3.5, said impregnation occurring while said silica sol solution is in an unstable state tending to set to a gel but prior to appreciable gel formation.

3,226,336

COMPOSITION AND PROCESS FOR PREPARING A THREE-COMPONENT POLYMERIZATION SYSTEM

Albert Schrage, East Orange, N.J., and Emory J. Pless, Brooklyn, N.Y., assignors to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware

No Drawing. Filed May 8, 1963, Ser. No. 279,016
9 Claims. (Cl. 252—429)

1. A polymerization catalyst comprising the product formed by admixing (1) a $Ti(OR)_4$, wherein R is an alkyl group containing from 1 to 10 carbon atoms, with the prereaction of (2) a crystalline titanium trichloride cocrystallized with aluminum chloride and (3) an aluminum compound selected from the group consisting of aluminum trialkyl, dialkyl aluminum monochloride and dialkyl aluminum monohydride, the molar ratio of components (1), (2) and (3) in the final catalyst product being 0.25 to 1:1:1 to 8 respectively.

3,226,337

PROCESS FOR PRODUCING A CATALYST FOR THE OXIDATION OF OLEFINS AND DIOLEFINS TO UNSATURATED DICARBOXYLIC ACIDS

Wilhelm Riemenschneider, Ulrich Pintschovius, and Otto Probst, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Dec. 12, 1961, Ser. No. 158,864
Claims priority, application Germany, Dec. 24, 1960, F 32,841
4 Claims. (Cl. 252—435)

1. The method of making a catalyst for the oxidation of an olefin having four carbon atoms in a straight chain to an olefinically unsaturated aliphatic dicarboxylic acid, which method comprises reacting vanadium pentoxide with aqueous phosphoric acid, while maintaining temperatures below 200° C., in amounts corresponding to a weight ratio of vanadium pentoxide to phosphorus pentoxide between 1:0.5 and 1:4 in said catalyst, and then combining the reaction product with a solid inert carrier material selected from the group consisting of kieselguhr, porcelain, silica gel, pumice, aluminum oxide, titanium dioxide, zirconium dioxide, and silicon carbide.

3,226,338

VANADIUM PENTOXIDE POTASSIUM PYROSULFATE CATALYST AND METHOD OF PREPARATION THEREOF

Harry Lister Riley, Worksop, and Andrzej Romanski, Sheffield, England, assignors to United Coke and Chemicals Company Ltd.

Filed Jan. 3, 1961, Ser. No. 79,971
Claims priority, application Great Britain July 3, 1959, 22,973/59
8 Claims. (Cl. 252—440)

1. A method in which a catalyst suitable for use in the production of phthalic anhydride is produced comprising introducing solid particles of a glass of vanadium pentoxide and potassium pyrosulphate having a molar ratio of $K_2O:V_2O_5$ between 1.0 and 6.0 into a fluidised bed of particles of silica gel having a pore size of from 40 to about 60 A., said bed having a temperature between 350 and 400° C., said glass amounting to from 1 to 35% by weight of the total mass of particles, and said bed being maintained fluidised until the glass melts and is taken up by the silica gel.

3,226,339

PROCESS FOR PREPARING A PLATINUM METAL-CRYSTALLINE ZEOLITE CATALYST

Vincent J. Frilette, Erlton, N.J., and Russell W. Maatman, Oxford, Miss., assignors to Socony Mobil Oil Company, Inc., a corporation of New York

No Drawing. Filed Nov. 17, 1958, Ser. No. 774,143
10 Claims. (Cl. 252—455)

1. A method for preparing a platinum metal-containing catalyst which comprises contacting a crystalline aluminosilicate zeolite initially free of platinum metal and having rigid three dimensional networks characterized by uniform interstitial dimensions, sufficiently large to permit introduction by ion exchange of a platinum metal-containing ion, with a solution of an ionizable platinum metal compound and an ionizable non-platinum metal mineral acid salt for a sufficient period of time to effect uniform distribution on the crystalline zeolite of a platinum metal-containing ion derived from said solution, drying the resulting composite and activating the same by thermally treating at a temperature in the approximate range of 250° F. to 1100° F. to effect at least partial conversion of said platinum metal-containing ion to a catalytically active state.

3,226,340

CATALYST COMPOSITIONS COMPRISING ALUMINA WITH AN INNER LAMINA OF METAL OXIDE AND AN OUTERMOST LAMINA OF COPPER OXIDE

Ruth E. Stephens, Detroit, Daniel A. Hirschler, Jr., Birmingham, and Frances W. Lamb, Detroit, Mich., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Mar. 30, 1961, Ser. No. 99,381
6 Claims. (Cl. 252—465)

1. A laminated catalyst composition consisting essentially of a major portion of transitional alumina having an initial lamina deposited thereon of from about 0.5 to from the group consisting of the First Transition Series of the Periodic Table and the Lanthanide Series of Elements, and as the outermost lamina from about 0.5 to 25 percent by weight of copper in an oxide form.

3,226,341

METHOD OF PREPARING A CATALYST COMPOSITION CONSISTING OF LITHIUM IN A HOST METAL OF EITHER GROUP IB OR VIII

Harry G. Oswin, Chauncey, Jeremy Forten, New York, and Harry C. Lieb, Rockville Centre, N.Y., assignors to Leesona Corporation, Cranston, R.I., a corporation of Massachusetts

No Drawing. Filed Nov. 8, 1961, Ser. No. 150,903
5 Claims. (Cl. 252—474)

1. The method of making a lithiated catalytic material comprising the steps of (1) depositing elemental lithium onto a host metal, (2) heating the metal-lithium system of step 1 to a temperature of from above about 250° C. but below the melting point of the host metal, and (3) cooling the material, said host metal being a member selected from the group consisting of Group Ib and VIII metals of the Mendeleev's Periodic Table.

3,226,342

SPARK PLUG AND SEAL THEREFOR

Patrick N. Kesten, Davison, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Nov. 9, 1962, Ser. No. 236,505
4 Claims. (Cl. 252—503)

1. A sealing composition for forming an electrically conductive hermetic seal in a ceramic insulator, said hermetic seal being capable of operating hermetically at temperatures up to 1400° F., said composition consisting essentially of about 45% to 55% by weight copper powder, about 9 to 10% by weight powdered carbon black and the remainder a mixture of two borosilicate glasses, one of said borosilicate glasses constituting about 60% to 70% by weight of the total glass content and consisting substantially of 75% to 85% by weight SiO_2 and 10% to 15% by weight B_2O_3 and the other of said borosilicate glasses consisting substantially of 60% to 70% by weight SiO_2 and about 20 to 25% by weight B_2O_3.

3,226,343

PROCESS OF RECOVERY OF POLYETHYLENE FROM CELLULOSIC FIBERS

Philip H. Rhodes, Cincinnati, Ohio, assignor to Champion Papers Inc., Hamilton, Ohio, a corporation of Ohio

Filed Apr. 26, 1962, Ser. No. 190,351
11 Claims. (Cl. 260—2.3)

1. Method for recovery of polyethylene from a water wet mixture of water-insoluble materials containing a major weight proportion of polyethylene and a minor weight proportion of cellulosic pulp fibers, said weight proportions being on a dry basis, which comprises: blending said water wet mixture with a polyethylene solvent having a boiling point in the range of 70° to 130° C., the weight ratio of polyethylene in said mixture to the solvent being at least about 3.0:100, subjecting said blend to a temperature no less than about 65° C. to thereby dissolve the polyethylene, separating the solvent and polyethylene solute from the fibers, and thereafter recovering the polyethylene therefrom, the said solvent being water-immiscible and predominately alkanes, a major weight proportion of which are C_7 to C_8.

3,226,344

POLYURETHANE FOAM FORMING COMPOSITIONS

Seymour S. Schwartz and Norman Bilow, Los Angeles, Calif., assignors to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

No Drawing. Filed June 26, 1962, Ser. No. 205,232
5 Claims. (Cl. 260—2.5)

1. A polyurethane foam-forming composition consisting essentially of about one equivalent weight of 3,3'-dimethoxy 4,4'-biphenylene diisocyanate, about .5 equivalent weight of p,p'-bis-(β-hydroxyethoxy)-2,2-diphenylpropane, about .5 equivalent weight of trimethylolpropane, about 2.5% of a surfactant and about .1% of a catalyst the percentage of said surfactant and said catalyst being by weight of the total of said composition, said composition being prepared by mixing and partially reacting the ingredients of the composition, and cooling the partially reacted mixed and substantially stable composition.

3,226,345

METHOD FOR MAKING A CELLULAR POLYURETHANE

James H. Saunders, Upper St. Clair Township, Bridgeville, Pa., and Herbert L. Heiss, New Martinsville, W. Va., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Continuation of application Ser. No. 791,034, Feb. 4, 1959, which is a division of application Ser. No. 373,036, Aug. 7, 1953, now Patent No. 3,102,875, dated Sept. 3, 1963. This application Dec. 3, 1962, Ser. No. 241,530
9 Claims. (Cl. 260—2.5)

1. A method for making a cellular polyurethane which comprises reacting a member selected from the group consisting of castor oil and a polyalkylene ether polyhydric alcohol with an organic polyisocyanate under substantially anhydrous conditions and curing the reaction product with a catalytic amount of a catalyst which causes pore formation in the cured product, said catalyst being selected from the class consisting of an alkali metal oxide, lead oxide, an alkali metal hydroxide, calcium hydroxide and a quaternary ammonium compound having a hydroxyl group.

3,226,346

EXPANDABLE COMPOSITION COMPRISING A THERMOPLASTIC RESIN AND A UREA-FORMALDEHYDE-HYDROGEN PEROXIDE REACTION PRODUCT AND PROCESS OF FOAMING SAME

Louis L. Wood, Clarksville, Md., assignor to W. R. Grace & Co., a corporation of Connecticut

No Drawing. Filed Dec. 17, 1962, Ser. No. 244,953
5 Claims. (Cl. 260—2.5)

1. A thermally expandable resin composition which comprises a thermoplastic resin having a softening point of below about 180° C., and from about 0.5 to about 20% by weight of a urea-formaldehyde-hydrogen peroxide reaction product blowing agent, said reaction product being characterized by the following characteristics: (1) an empirical formula $C_3H_8N_2O_3$; (2) a decomposition-melting point of 200° C.; and (3) a white crystalline appearance.

3,226,347

PROCESS FOR THE PREPARING OF THIXOTROPIC GELLED RESINS, PRODUCTS RESULTING THEREFROM, AND APPLICATIONS THEREOF

René Jacquier, Lyons, France, assignor to Resines et Vernis Artificiels, Paris, France, a French body corporate

No Drawing. Filed Jan. 12, 1961, Ser. No. 82,153
Claims priority, application France, Jan. 16, 1960, 815,860, Patent 1,254,962
16 Claims. (Cl. 260—22)

1. The process for the preparation of thixotropic gelled resins which comprises the heating of a mixture consisting essentially of at least one neutral ester of allyl alcohol selected from the group consisting of the esters of saturated monocarboxylic acids, esters of unsaturated monocarboxylic acids having a single olefinic double bond, esters of saturated dicarboxylic acids, and esters of aromatic carboxylic acids, and at least one oily constituent selected from the group consisting of natural drying oils, natural semi-drying oils and oleoglycerophthalic resins, said heating being at a temperature in the range from 250° to 280° C. and for a period in the range from 10 to 30 hours until a reversible thixotropic gel is obtained.

3,226,348

NOVEL ALKYD RESINS MODIFIED WITH TRIS-(HYDROXYMETHYL)AMINOMETHANE

Robert F. Purcell and Lowell D. Pals, both of Terre Haute, Ind., assignors to Commercial Solvents Corporation, New York, N.Y., a corporation of Maryland

No Drawing. Filed Jan. 25, 1961, Ser. No. 84,771
15 Claims. (Cl. 260—22)

1. A process for the preparation of alkyd resins which comprises first reacting phthalic anhydride with a compound selected from the group consisting of monoglycerides of higher fatty acids, pentaerythritol esters of higher fatty acids and their mixtures; and when the acid number of the reaction product is in the range of about 20 to about 60 reacting tris(hydroxymethyl)aminomethane with the said first reaction product.

3,226,349

ETHYLENE-ALPHA OLEFIN POLYMER LATICES

Neville Leverne Cull, Baker, La., assignor to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Nov. 6, 1961, Ser. No. 150,126
12 Claims. (Cl. 260—29.6)

1. A method for preparing a stable copolymer latex, said copolymer having been prepared by copolymerizing ethylene and an alpha-olefin in the presence of an inert liquid organic solvent and an aluminum dihydrocarbon halide-vanadium oxyhalide catalyst formed in situ in the inert liquid organic solvent and recovering a 2–10 wt. percent solution of the copolymer in the inert liquid organic solvent, comprising the steps of:

(1) emulsifying each 100 parts by weight of the copolymer in said solution with 50 to 100 parts by weight of an aqueous system containing:

(a) 1 to 5 parts by weight of an anionic emulsifier, based on the copolymer, said anionic emulsifier having the general formula

$$R(OCH_2CH_2)_nOSO_3X$$

where R is a radical chosen from the group consisting of alkyl, alkaryl and other cyclic, n is 4 to 10 and X is chosen from the group consisting of monovalent metals and ammonium,

(b) 1 to 4 parts by weight of a nonionic emulsifier, based on the copolymer, said nonionic emulsifier having the general formula

$$R(OCH_2CH_2)_nOH$$

where R is chosen from the group consisting of alkyl, aryl, alkaryl and other cyclic, and n is 4 to 10, and

(c) 0.25 to 2 parts by weight, based on the copolymer, of sodium dihydrogen phosphate;

(2) stripping off said inert organic liquid solvent; and

(3) recovering a stable copolymer latex containing 30 to 50 wt. percent solids.

3,226,350

PREPARATION OF HIGH SOLIDS VINYL CHLORIDE POLYMER LATEX

Edwin Studly Smith, Cuyahoga Falls, and James E. Sell, Akron, Ohio, assignors to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Filed July 23, 1962, Ser. No. 211,888
7 Claims. (Cl. 260—29.6)

1. The method of effecting the aqueous emulsion polymerization of polymerizable organic monomers containing a single olefinic double bond and comprising primarily vinyl chloride, which comprises polymerizing a portion of the total polymerizable monomers to be converted to polymer in the presence of a surfactant for dispersing said monomers in water and an initiator of polymerization of said monomers, the weight ratio of said surfactant to said monomers ranging from 0.1 to 5 parts per 100 parts of total monomers present throughout the remainder of the polymerization reaction adding additional surfactant and additional polymerizable monomers to said polymerization reaction at least in the same ratio and not greater than 1.25 times the ratio of surfactant to monomer added immediately prior to the present addition to produce a constantly increasing ratio of amount of surfactant to polymer surface so as to bring about the formation of new polymer particles and the continued growth of the polymer particles formed during the initial polymerization reaction and recovering the latex containing at least about 61% solids.

3,226,351

POLYETHYLENE OF IMPROVED CLARITY

Frank X. Werber, Rockville, and Razmic S. Gregorian, Silver Spring, Md., assignors to W. R. Grace & Co., a corporation of Connecticut

No Drawing. Filed Dec. 10, 1962, Ser. No. 243,589
19 Claims. (Cl. 260—29.6)

2. A composition of matter useful in the production of processable polyethylene of improved clarity consisting essentially of (A) linear polyethylene having a density in the range 0.940 to 0.980 (B) 0.001 to 1.0% by weight of said polyethylene of an aluminum-containing additive of the formula

$$Al(OR)_{3-n}Cl_n$$

wherein R is a member of the group consisting of hydrogen and an alkyl, said alkyl containing 1 to 16 carbon atoms and n is an integer from 0 to 1 and (C) water in an amount equal to 1 to 300% by weight of said polyethylene.

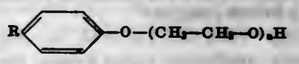
3,226,352

ETHYLENE POLYMERIZATION IN NONIONIC EMULSION SYSTEMS

Arthur F. Helin and Gerald J. Mantell, Kansas City, Mo., assignors to Gulf Oil Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Continuation of application Ser. No. 44,862, July 25, 1960. This application Dec. 24, 1964, Ser. No. 421,100
6 Claims. (Cl. 260—29.6)

1. The method of preparing a stable aqueous emulsion of polyethylene in one step comprising polymerizing ethylene in an aqueous medium containing dissolved therein a water soluble persulfate polymerization initiator and an emulsifying agent consisting essentially of a non-ionic compound of the formula



wherein R represents an alkyl group having 8 to 9 carbon atoms and wherein n is an average number of from 7 to 15, said resulting emulsion comprising:

(a) a continuous aqueous phase;

(b) said non-ionic compound and

(c) a plurality of polyethylene particles, at least a portion of the polyethylene in said particles being modified by chemical combination with said non-ionic compound.

3,226,353

COLOR CONCENTRATES OF GRAFT COPOLYMERS OF METHYL METHACRYLATE AND 2-HYDROXYMETHYL-5-NORBORNENE

Loy S. Engle, Harrington Park, N.J., assignor to Interchemical Corporation, New York, N.Y., a corporation of Ohio

No Drawing. Original application Dec. 18, 1961, Ser. No. 160,701. Divided and this application June 11, 1963, Ser. No. 293,553

5 Claims. (Cl. 260—29.8)

1. A color concentrate composition consisting essentially of pigment dispersed in a vehicle comprising (A) a graft copolymer made by the addition polymerization of methyl methacrylate in the presence of 2-hydroxymethyl-5-norbornene homopolymer and (B) a diester of 2-hydroxymethyl-5-norbornene and a dicarboxylic acid selected from the group consisting of adipic, azelaic and sebacic acids, said pigment constituting from 10 to 80% of the composition weight and said diester constituting from 10 to 50% of the vehicle weight.

3,226,354

ADHESIVE PRODUCTS OF POLYISOCYANATES AND POLYISOTHIOCYANATES

Herbert L. Heiss, Cider Run, New Martinsville, W. Va., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Continuation of application Ser. No. 373,035, Aug. 7, 1953. This application Sept. 28, 1959, Ser. No. 842,593

21 Claims. (Cl. 260—31.2)

1. As a new composition of matter, an adhesive composition of greatly accelerated curing rate comprising a solution in an organic solvent boiling below about 200° C. at atmospheric pressure of an organic material obtained by reacting a compound of the general formula: $R(NCX)_n$ wherein R is an organic radical free from functional groups other than —NCX groups, X is selected from the group consisting of oxygen and sulfur, and *n* is an integer having a value of at least 2, with an organic compound having as the only groups reactive with an —NCX group at least two groups selected from the group consisting of hydroxyl, carboxyl, primary amino, secondary amino and mercapto groups, said solution containing from about 0.001 percent to about 5 percent by weight of a catalyst selected from the group consisting of the oxides and hydroxides of alkali and alkaline earth metals; the oxides of zinc and lead; the alkali metal salts of substituted phenols; and the uncomplexed quaternary ammonium compounds.

3,226,355

FLAME RESISTANT COMPOSITIONS CONTAINING CHLOROSULFONATED POLYETHYLENE, EPOXY RESIN, AND PHOSPHONITRILIC CHLORIDE

George Singleton and John Alexander Ross, Leyland, England, assignors to BTR Industries Limited, London, England, a British company

No Drawing. Filed Oct. 18, 1961, Ser. No. 146,000

Claims priority, application Great Britain, Oct. 24, 1960, 36,426/60

4 Claims. (Cl. 260—41)

1. An elastomeric heat-resistant composition consisting essentially of chlorosulfonated polyethylene, phosphonitrilic chloride polymer and epoxy resin in which the proportion by weight of the phosphonitrilic chloride polymer to the chlorosulfonated polyethylene is between 1:1 and 1:10 and the proportion by weight of epoxy resin is in the range of 10% to 30% of the weight of the chlorosulfonated polyethylene.

3,226,356

CROSSLINKING PROCESS

Clifton L. Kehr, Ednor, and James L. Guthrie, Laurel, Md., assignors to W. R. Grace & Co., a corporation of Connecticut

Filed Oct. 24, 1962, Ser. No. 232,771

8 Claims. (Cl. 260—41)

1. A curable composition consisting essentially of 100 parts by weight of a polymeric material containing at least 50 mole percent of a polymer derived from an α-olefin, said polymeric material being selected from the group consisting of polyethylene, polypropylene, ethylene-butylene copolymer, chlorosulfonated polyethylene, ethylene, ethylene-vinyl acetate copolymer and ethylene-propylenediene terpolymer, 0.1 to 30 parts/100 parts of said polymeric material by weight of a curing agent of the general formula:



wherein R is a member of the group consisting of benzoate and an aliphatic acyloxy group containing 1 to 20 carbon atoms and 0.005 to 1.0 part/100 parts of said polymeric material by weight of a Lewis acid selected from the group consisting of $FeCl_3$, ferric acetylacetonate, $AlCl_3$, $ZnCl_2$ and $SnCl_4 \cdot 5H_2O$.

3,226,357

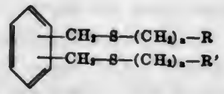
POLYOLEFINS STABILIZED WITH DERIVATIVES OF XYLYLENE THIOETHERS

Harry Braus, Springdale, and Fred D. Wans, Cincinnati, Ohio, assignors to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Sept. 11, 1962, Ser. No. 222,943

2 Claims. (Cl. 260—45.85)

1. A polymer of aliphatic monoolefin having from 2 to 6 carbon atoms per molecule stabilized against molecular degradation under conditions of elevated temperature and mechanical working with from 0.001 to 5.0 parts by weight per 100 parts of polymers of a compound having the formula:



wherein *n* is an integer from 1 to 4, and R and R' are the same and are selected from the group consisting of —O—CO—R" and —COOR", wherein R" is an aliphatic radical having from 10 to 22 carbon atoms.

3,226,358

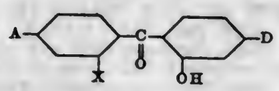
ULTRAVIOLET LIGHT-ABSORBING EPOXY RESINS AND CONTAINERS COATED THEREWITH

Robert M. Smith and Frederick C. Haigh, Toledo, Ohio, assignors to Owens-Illinois, Inc., a corporation of Ohio

No Drawing. Filed Nov. 10, 1960, Ser. No. 68,363

5 Claims. (Cl. 260—45.95)

1. An ultraviolet light-absorbing reaction product of an epoxy resin with an organic amine curing agent for said epoxy resin in the presence of 0.01 to 10 weight percent of a hydroxybenzophenone based on the weight of said epoxy resin wherein said hydroxybenzophenone has the formula:



where

A is H, —OH, or —OR
X is H or —OH and
D is —OH or —OR

where R is an alkyl group having from one to eight carbon atoms, the reaction being effected by intimately admixing said epoxy resin, said amine curing agent and said hydroxybenzophenone and allowing reaction to take place.

3,226,359

HYDROCHLORINATION OF POLYISOPRENE IN PRESENCE OF PHENOLS

George W. Ferner, Cuyahoga Falls, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Filed Mar. 19, 1962, Ser. No. 180,836

10 Claims. (Cl. 260—45.95)

1. The process of making a hydrochloride derivative of a polyisoprene rubber which comprises subjecting a solution of polyisoprene rubber containing at least 51% of cis-1,4-polyisoprene and having admixed therein an effective amount of a phenolic compound containing one and not more than two benzene rings for stabilizing said derivative against degradation by heat and light, the phenolic compound containing on the benzene ring in addition to the hydroxyl, at least 2 and not more than 3 substituents selected from the group consisting of methoxy, alkyl having from 1 to 8 carbon atoms, benzyl, phenyl, cyclohexyl and alkyl substituted phenyl, wherein not more than one of the same substituents is present on the benzene ring other than alkyl and benzyl substituents, to the hydrochlorinating effect of gaseous hydrogen chloride.

3,226,360

PROCESS OF PREPARING LINEAR COPOLYESTERS OF PHOSPHORIC ACID

Anthony Arthur Brierly Browne and John Mather, Harrogate, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Apr. 11, 1960, Ser. No. 22,080

Claims priority, application Great Britain, May 12, 1959, 16,270

6 Claims. (Cl. 260—47)

1. A process for the preparation of linear film- and fiber-forming copolyesters which comprises

reacting (1) a bis ester of a dicarboxylic acid and a diol with (2) the ester groups of a metal (diaryl phosphate),

and thereafter polycondensing the products of this reaction whereby said linear film- and fiber-forming copolyester is produced having a minor amount of metal phosphate radicals as units of the resulting polymeric chain,

said metal phosphate radicals representing not more than 10 percent of the total units in said copolyester,

and wherein the metal is selected from the group consisting of alkali and alkaline earth metals.

3,226,361

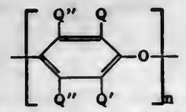
FUNCTIONAL AROMATIC SUBSTITUENTS IN POLYPHENYLENE OXIDES

Willem F. H. Borman, Lee, Mass., assignor to General Electric Company, a corporation of New York

No Drawing. Filed Nov. 29, 1961, Ser. No. 155,826

10 Claims. (Cl. 260—47)

1. A resin having a repeating structural unit of the formula:



wherein the oxygen atom of one unit is connected to the benzene nucleus of the adjoining unit, *n* is a positive integer and is at least 100, Q is a monovalent substituent selected from the group consisting of hydrogen, aliphatic hydrocarbon radicals free of a tertiary α-carbon atom, aliphatic halohydrocarbon radicals having at least two carbon atoms and being free of a tertiary α-carbon atom; Q' is a monovalent substituent which is the same as Q and in addition halogen, arylhydrocarbon radicals, haloarylhydrocarbon radicals alkoxy radicals having at least two carbon atoms and being free of an aliphatic tertiary α-carbon atom, and haloalkoxy radicals having at least two carbon atoms and being free of an aliphatic tertiary α-carbon atom; and Q'' is the same as Q' and in addition nitro, amino, diazo, nitrile, carboxyl, quaternary ammonium, PX_2, AsX_2 (in which X is halogen), PO_3H_2, PO_2H_2, AsO_2H_2 and AsO_3H_2, there being at least one member selected from the group consisting of nitro, amino, diazo, nitrile, carboxyl, quaternary ammonium, PX_2, AsX_2, in which X is halogen, PO_3H_2, PO_2H_2, AsO_3H_2 and AsO_2H_2 present in a substantial portion of the units.

3,226,362

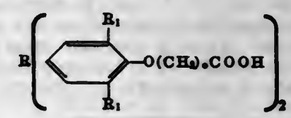
POLYAMIDES FROM ALICYCLIC BISPHENYLENEOXYDICARBOXYLIC ACIDS

Winston J. Jackson, Jr., and John R. Caldwell, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

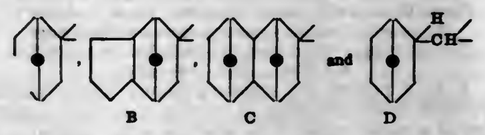
No Drawing. Filed May 9, 1962, Ser. No. 193,593

9 Claims. (Cl. 260—47)

1. A resinous polycarbonamide of equimolar proportions of (A) a dicarboxylic acid having at least 4 carbon atoms, of which from 50 to 100 mole percent is a bisphenyleneoxydicarboxylic acid having the structural formula:



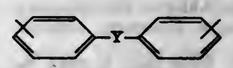
wherein R is a substituent selected from the group of bridged rings consisting of



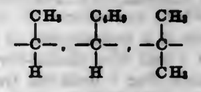
and wherein R_1 is as substituent selected from the group consisting of hydrogen, chlorine, and straight and branched chain alkyl groups containing from 1 to 4 carbon atoms and *n* is 1 to 6, and (B) an organic diamine represented by the general formula:

$$NH_2—X—NH_2$$

wherein X is a substituent selected from the group consisting of divalent, straight chain and branched chain alkylene and ether alkylene groups of 2–20 carbon atoms, a cycloalkylene group selected from the group consisting of cyclohexylene and cyclohexylbismethylene groups, a substituent selected from the group consisting of phenylene, tolylene, xylylene, biphenylene and the group having the structure:



wherein Y is a substituent selected from the group consisting of phenyl, $—CH_2—$, $—CH_2CH_2—$,



$—SO_2—$, —O—, and $—OCH_2CH_2O—$.

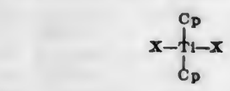
3,226,363

ORGANO-METALLIC POLYMERIC CONDENSATION PRODUCTS AND METHOD OF PREPARATION

Sydney Arthur Giddings, New Canaan, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed July 10, 1962, Ser. No. 209,295
25 Claims. (Cl. 260—47)

1. A polymeric condensation product of (1) a compound represented by the general formula



wherein Cp represents a radical selected from the group consisting of cyclopentadienyl and the lower alkyl-substituted cyclopentadienyl radicals and X represents a halogen having an atomic number greater than 9 and (2) difunctional reactant material represented by the general formula

R—Z—R

wherein Z represents a divalent radical selected from the group consisting of divalent hydrocarbon radicals, divalent halohydrocarbon radicals, the diphenyl silanyl radical, any unsaturation in said divalent radicals being solely of the double bond type, and the bisphenylene sulfonyl radical, and each R represents a member of the group consisting of —OH, —SH, —COOH and —OM, —SM and —COOM where M represents a salt-forming cation, the reactants of (1) and (2) being employed in approximately equal molar proportions and the reaction between (1) and (2) being conducted in an inert liquid medium in the presence of a hydrogen halide acceptor where R in (2) is —OH, —SH or —COOH.

3,226,364

TWO-PART CATALYST SYSTEM IN PROCESS FOR PREPARING ONE STAGE PHENOLIC RESINS

Frank Stanton O'Connell, Holyoke, Mass., assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed June 21, 1961, Ser. No. 118,538
6 Claims. (Cl. 260—57)

1. In a process for preparing liquid, water-dilutable phenolic resins consisting of reacting a mixture consisting of a molar excess of an aldehyde with a phenol at a pH of 7.0–11.5 and a temperature of 20–100° C., the improvement which comprises conducting the reaction in the presence of a catalyst mixture consisting of 0.012–0.25 mol of an inorganic base and 0.005–0.25 mol of an organic base per mol of the phenol; said inorganic base being selected from the group consisting of alkali metal and alkaline earth metal carbonates, hydroxides, and oxides; said organic base being selected from the group consisting of primary, secondary and tertiary aliphatic amines.

3,226,365

PROCESS FOR PRODUCING LIQUID NOVOLAK TYPE PHENOL-FORMALDEHYDE RESIN COMPOSITIONS

Iwao Yamamoto, Aki-gun, Hiroshima-ken, Japan, assignor to Toyo Kogyo Company Limited, Hiroshima-ken, Japan

No Drawing. Filed Dec. 4, 1961, Ser. No. 157,011
Claims priority, application Japan, Dec. 10, 1960, 35/49,001
2 Claims. (Cl. 260—57)

1. A process which comprises (a) condensing phenol with formaldehyde at a temperature of less than 80° C., at a pH of about 1 and at a phenol-formaldehyde initial molar ratio of more than 1 until the free phenol content of resultant condensate admixture is from 10 to 14 percent by weight; (b) adjusting the pH of the resultant condensate admixture to a pH of from 5 to 7; (c) adding to said condensate admixture with a pH of from 5 to 7 sufficient formaldehyde to react with the free phenol and from 0.2 to 0.8 part by weight of hexamethylenetetramine per 100 parts by weight of initial phenol; (d) maintaining the product of step c at a temperature of about 80° C. for about 2 hours, whereby a liquid resin product having a free phenol content of from 8 to 11 percent by weight is obtained, the resin of the liquid resin product being an A-stage Novolak resin having a combined nitrogen content of from 0.05 to 0.3 percent by weight; (e) water-washing the liquid resin product to reduce the free phenol content thereof to from 5 to 7 percent by weight based on total solids; (f) dehydrating the water-washed liquid resin to a water content of less than 7 percent by weight, whereby a liquid A-stage Novolak resin having a viscosity at 50° C. of from 20,000 to 50,000 centipoises is obtained; and (g) adding solvent to the A-stage Novolak resin to reduce its viscosity to from 1,000 to 5,000 centipoises at 25° C., whereby there is obtained a liquid phenol-formaldehyde/solvent composition having a viscosity of from 1,000 to 5,000 centipoises at 25° C., a resin solids content of from 65 to 75 percent by weight, a free phenol content of from 3 to 5 percent by weight and a water content of less than 5 percent by weight, the liquid resin being an A-stage Novolak resin having from 0.05 to 0.3 percent by weight of combined nitrogen.

3,226,366

PROCESS FOR PREPARING POLYOXYMETHYLENES WHICH ARE STABLE TO THE ACTION OF HEAT

Silvio Bezzi and Guido Gallazzo, Padova, and Alberto Bandel, Venice, Italy, assignors to Montecatini Società Generale per l'Industria Mineraria e Chimica, a corporation of Italy

No Drawing. Filed Mar. 27, 1962, Ser. No. 182,964
Claims priority, application Italy, Mar. 30, 1961, 5,626/61
5 Claims. (Cl. 260—67)

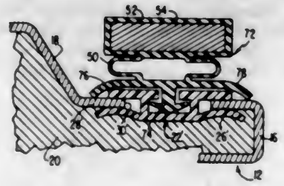
1. A method of stabilizing a polyoxymethylene dihydroxide against heat, this method comprising acetylating said polyoxymethylene dihydroxide with an acetylating agent selected from the group consisting of methyleneglycol diacetate and mixtures of methyleneglycol diacetate with a polyoxymethylene diacetate wherein the number of oxymethylene groups is greater than 1 and lower than 10, said acetylation being carried out at a temperature of from about 170° to 210° C. for a time not exceeding about 3 hours, the weight ratio of polymer to acetylating agent being from about 1:5 to 1:15.

3,226,367

GASKET ASSEMBLY FOR REFRIGERATOR DOOR AND THE LIKE

Angelo Monti, Chicago, Ill., assignor to Jarrow Products, Inc., Chicago, Ill., a corporation of Illinois

Filed Feb. 21, 1964, Ser. No. 346,431
11 Claims. (Cl. 20—69)



1. In a gasket and retainer assembly for use upon a refrigerator door and the like wherein the door has pan and shell portions assembled to define a slot between the edges thereof and thereafter the door is adapted to have foam insulation material foamed in situ in the interior of the door, the gasket and retainer assembly including an elongate flexible gasket and an elongate rigid retainer, said gasket and retainer having cooperable tongue and groove means for releasably coupling one to the other; the herein invention which comprises, said retainer having an anchor formation integral therewith and extending through the slot into the interior of the door, said anchor formation including a pair of oppositely facing arms extending toward said retainer to define, with said retainer, a pair of oppositely opening channels for accommodating said slot defining edges of the pan and shell, said arms each having the free ends thereof spaced from the pan and shell in the installed condition thereof to enable the foam to extend around said free ends positively to lock the pan, shell and retainer in assembly.

3,226,368

PROCESS OF PREPARING POLYESTERURETHANES CONTAINING CARBODIIMIDE GROUPS

Artur Reischl, Leverkusen, and Hans Holtschmidt and Peter Fischer, Cologne-Stammheim, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed Feb. 23, 1962, Ser. No. 175,276
Claims priority, application Germany, Feb. 27, 1961, F 33,297
6 Claims. (Cl. 260—75)

1. A method for preparing polyesterurethanes which comprises reacting in the presence of a phosphorous containing catalyst which promotes the formation of carbodiimide groups by reaction of NCO groups an excess of an organic polyisocyanate with an hydroxyl terminated polyester prepared by the process which comprises reacting a polyhydric alcohol with a polycarboxylic acid.

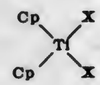
3,226,369

PROCESS OF PREPARING TITANOXANE POLYMERS

Sydney Arthur Giddings, Darien, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Aug. 5, 1963, Ser. No. 300,070
10 Claims. (Cl. 260—80)

1. The method of preparing a synthetic polymer which comprises contacting, with an anhydrous oxygen-containing gas, a compound represented by the general formula



wherein each Cp represents a radical selected from the group consisting of cyclopentadienyl and lower alkyl-substituted cyclopentadienyl radicals and each X represents a halogen selected from the group consisting of chlorine and bromine, said compound being present, together with zinc particles, in an inert, anhydrous, liquid, reaction medium; and continuing to contact the reaction mass with the said oxygen-containing gas until the optimum amount of polymer has been formed.

3,226,370

GRANULAR POLYMERIZATION IN AQUEOUS EMULSION OF NORMALLY CRYSTALLINE VINYLIDENE CHLORIDE

Frank M. Poindexter, Breckenridge, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed June 25, 1962, Ser. No. 205,108
8 Claims. (Cl. 260—80.5)

1. A process for production of normally crystalline vinylidene chloride polymer in discrete particulate form which comprises free radical polymerization of a polymerizable material containing at least about 70 weight percent of vinylidene chloride with any remainder being selected from the group consisting of vinyl chloride, acrylonitrile, acrylic acid, methyl acrylate, ethyl acrylate, methyl methacrylate and mixtures thereof in an aqueous emulsion containing (1) a peroxygen compound, (2) a ferric salt of an inorganic acid in amount having an iron content corresponding to at least about 0.002 weight percent of the combined weight of the polymerizable material, (3) a mineral acid in amount sufficient to give the polymerization mixture a pH value between about 1.5 and 3, and (4) a dialkyl ester of sodium sulfosuccinic acid wherein each alkyl group contains from 4 to 8 carbon atoms, in amounts of at least about 1.5 weight percent based on the combined weight of the polymerizable mixture.

3,226,371

REGULATION OF BUTADIENE-ACRYLONITRILE POLYMERIZATION USING A MIXTURE OF DECYL AND UNDECYL SECONDARY AND TERTIARY MERCAPTANS

Benjamin S. Garvey, Jr., Strafford Village, Harry E. Albert, Lafayette Hill, and Alfred C. Whitton, Norristown, Pa., assignors to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed July 17, 1961, Ser. No. 124,319
5 Claims. (Cl. 260—82.7)

1. In the process of copolymerizing an acrylonitrile and a butadiene in an aqueous emulsion system to produce a nitrile rubber the improvement which comprises modifying said polymerization with from about 0.2 to about 0.6 part per one hundred parts of monomers of a mercaptan modifier comprising a mixture of decyl and undecyl mercaptans in a weight ratio of 10:90 to 90:10, said decyl and undecyl mercaptans consisting essentially of secondary and tertiary mercaptans.

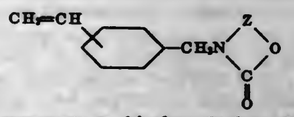
3,226,372

NOVEL HETEROCYCLIC COMPOUNDS AND POLYMERS

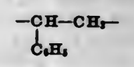
William F. Tousignant and Richard C. Sovish, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed June 2, 1961, Ser. No. 114,310
9 Claims. (Cl. 260—85.5)

6. Polymeric compositions comprising in polymeric, chemically combined form at least one compound having the formula



wherein Z represents a bivalent hydrocarbon radical selected from the group consisting of $-CH_2CH_2-$, $-CH_2CH_2CH_2-$, $-CH_2CH_2CH_2CH_2-$, $-CH_2CH_2CH_2CH_2CH_2-$, $-CH_2CH_2CH_2CH_2CH_2CH_2-$ and



3,226,373

OIL-SOLUBLE COPOLYMERS OF ACRYLIC ACID ESTERS AND QUATERNARY AMMONIUM SALTS OF ACRYLIC ACIDS

Elizabeth L. Fareri and John P. Pellegrini, Jr., Pittsburgh, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed Dec. 28, 1959, Ser. No. 862,056
11 Claims. (Cl. 260—86.1)

1. An oil-soluble copolymer having a molecular weight within the range of about 2,000 to about 500,000 obtained by copolymerizing in the presence of a free-radical catalyst (a) a monomeric alkyl ester of an acid selected from the group consisting of acrylic and methacrylic acids, and whose alkyl ester substituent contains 8 to 18 carbon atoms, and (b) a monomeric quaternary ammonium salt of an acid selected from the group consisting of acrylic and methacrylic acids, one of whose covalent N-bonds is attached to a member selected from the group consisting of monovalent aliphatic hydrocarbon radicals containing 8 to 18 carbon atoms, two other of whose covalent N-bonds are attached to members selected from the group consisting of monovalent aliphatic hydrocarbon radicals containing 1 to 18 carbon atoms, and aralkyl radicals containing 7 to 23 carbon atoms, and whose remaining covalent N-bond is attached to an alkyl radical containing 1 to 4 carbon atoms, said monomeric quaternary ammonium salt and said monomeric alkyl ester being copolymerized when both monomers are in the presence of each other at the same time in a weight ratio in the range of about 0.03:1 to 1:1.

3,226,374

COPOLYMER OF ETHYLENE AND VINYL ALKYL ETHER

Wayne G. White, South Charleston, and Richard A. Walther, St. Albans, W. Va., assignors to Union Carbide Corporation, a corporation of New York

Filed June 15, 1960, Ser. No. 36,250
1 Claim. (Cl. 260—88.1)

A process for producing solid copolymers of ethylene and vinyl ethyl ether having improved optical properties, which comprises copolymerizing a mixture of ethylene and vinyl ethyl ether at a temperature of from about 90° C. to about 350° C. under a pressure of at least 15,000 p.s.i. in the presence of from about 0.001 to about 5 mole percent, based on the total amount of polymerizable monomers charged of oxygen as the catalyst; the concentration of vinyl ethyl ether in the mixture being from about 1 to 3.5 moles per 100 moles of ethylene.

3,226,375

METHOD OF EMULSION POLYMERIZATION

Gerald G. Greth, Wilmington, and Joseph E. Wilson, Newark, Del., assignors to Atlas Chemical Industries, Inc., Wilmington, Del., a corporation of Delaware

No Drawing. Filed July 11, 1961, Ser. No. 123,108
9 Claims. (Cl. 260—89.1)

1. In an emulsion polymerization process comprising polymerizing a vinyl monomer in an aqueous medium containing a vinyl monomer selected from the group consisting of vinyl acetate and styrene, water and a free radical polymerization catalyst, the improvement which comprises incorporating in the aqueous medium an anionic emulsifier consisting essentially of a lower alkylamine salt of an alkyl aryl sulfonic acid and a nonionic emulsifier consisting essentially of polyoxyethylene compound, said emulsifiers having a combined HLB value ranging from about 7 to about 20 and said anionic emulsifier plus nonionic emulsifier amounting to from about 0.5 to about 5 weight percent of the aqueous medium.

3,226,376

EMULSION POLYMERIZATION OF BUTADIENE HYDROCARBONS BY MEANS OF A DIVALENT COBALT SALT OF BETA-DIKETONES

Homer P. Smith, Little Falls, N.J., assignor to United States Rubber Company, New York, N.Y., a corporation of New Jersey

No Drawing. Filed Jan. 18, 1962, Ser. No. 167,158
12 Claims. (Cl. 260—94.3)

1. The method which comprises polymerizing 100 parts by weight of a material selected from the group consisting of 1,3-butadiene hydrocarbons and mixtures of 1,3-butadiene hydrocarbons with styrene in aqueous emulsion at temperatures ranging from 0° C. to 50° C. in the presence of from 0.5 to 50 millimoles of divalent cobalt salts of beta-diketones having the structure ROC—CH_2—COR' in which R and R' are selected from the group consisting of saturated aliphatic and aromatic hydrocarbon radicals.

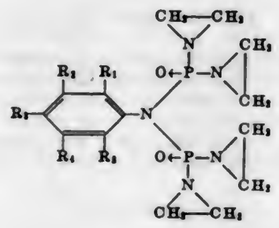
3,226,377

NOVEL BIS(N,N'-DIETHYLENEPHOSPHORAMIDES)

Doris Ruth Seeger, Ridgewood, and Andrew Stephen Tomcufcik, Old Tappan, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Sept. 17, 1964, Ser. No. 397,317
20 Claims. (Cl. 260—152)

1. A compound of the formula:



wherein R_1, R_2, R_4 and R_5 are each selected from the group consisting of hydrogen, halogen and lower alkoxy and R_3 is selected from the group consisting of hydrogen, halogen, lower alkyl, lower alkoxy, cyano, nitro, trifluoromethyl, phenylazo and p-phenyliminobis[bis(1-aziridinyl)-phosphine oxide].

3,226,378

PROCESS FOR THE PURIFICATION OF NATURAL GUMS

Robert O. Wilson, Demarest, N.J., assignor to Thomas J. Lipton, Inc., Hoboken, N.J., a corporation of Delaware

Filed Apr. 5, 1962, Ser. No. 185,327
10 Claims. (Cl. 260—209)

10. A process which comprises:

(a) placing a dry powdered natural gum selected from the group consisting of gum tragacanth, gum arabic, karaya, acacia, alginates, Irish moss, mesquite gum, damson gum, slippery elm mucilage, flaxseed mucilage, mannoglactans and glucomannans with an unacceptable standard plate count value and an acceptable starting viscosity in a layer in a chamber; and

(b) heating said layer at a temperature between about 160° and 190° F. and a relative humidity between about 50 and 85% to provide a powered product therefrom with an acceptable standard plate count value and with an acceptable viscosity level.

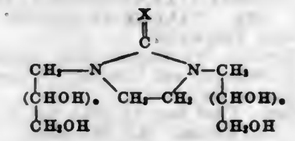
3,226,379

NOVEL 1,3-BIS(POLYHYDROXYALKYL)-2-IMIDAZOLIDINONES AND 1,3-BIS(POLYHYDROXYALKYL)-IMIDAZOLIDINE-2-THIONES

Paul R. Steyermark, Silver Spring, Md., assignor to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Filed Jan. 14, 1964, Ser. No. 337,545
3 Claims. (Cl. 260—211)

1. A compound of the formula



wherein *n* has a value of 4, and X is selected from the group consisting of oxygen and sulphur.

3,226,380

POLYHYDROXY MATERIALS CONTAINING ION-EXCHANGE GROUPS AND NON-IONIC SUBSTITUENTS AND THEIR METHOD OF PREPARATION

Colin Sutherland Knight, Maidstone, Kent, England, assignor to W. & R. Balston Limited, Maidstone, England, a British company

No Drawing. Filed Nov. 13, 1961, Ser. No. 152,079
Claims priority, application Great Britain, Nov. 18, 1960, 39,746
10 Claims. (Cl. 260—212)

5. A method of preparing a water insoluble derivative of a polyhydroxy material selected from the group consisting of cellulose, polyvinyl alcohol and starch, containing a cellulose, polyvinyl alcohol and starch, containing ion-exchange groups, which method comprises introducing into a polyhydroxy material ion-exchange groups which render the product capable of undertaking reversible exchange of ions in aqueous solution, mixing with the polyhydroxy material a monofunctional reagent, capable of substituting for the hydroxyl groups of the material nonionic substituent groups which are attached to the polyhydroxy material by one linkage only, and of thereby inducing selective interaction effects between the thus modified matrix and an exchanging ion, effecting said substitution reaction between said polyhydroxy material and said reagent and recovering the resulting product, thereby producing a material whose ion-exchange properties are substantially different from those of a corresponding ion-exchange material having no non-ionic substituent groups.

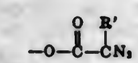
3,226,381

POLY (α-DIAZOALKANOATES)

David S. Breslow and Harold M. Spurlin, Wilmington, Del., assignors to Hercules Powder Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed July 6, 1964, Ser. No. 380,687
15 Claims. (Cl. 260—239)

1. A poly(α-diazoalkanoate) ester of a polyhydric alcohol selected from the group consisting of alkanepolyols containing 3 to 18 carbon atoms and 2 to 4 hydroxyl groups, diethylene glycol, triethylene glycol, thiodiglycol, cyclohexylene diols, phenylene diols and phenylene dimethylene diols, said α-diazoalkanoate group having the formula



where R' is selected from the group consisting of hydrogen, alkyl radicals containing 1 to 2 carbon atoms, phenyl, and —COOZ where Z is an alkyl group containing 1 to 2 carbon atoms or phenyl.

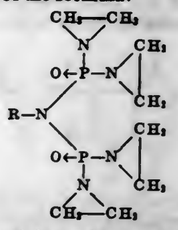
3,226,382

NOVEL BIS(N,N'-DIETHYLENEPHOSPHORAMIDES)

Doris Ruth Seeger, Ridgewood, and Andrew Stephen Tomcufcik, Old Tappan, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Sept. 17, 1964, Ser. No. 397,318
7 Claims. (Cl. 260—239)

1. A compound of the formula:



wherein R is selected from the group consisting of lower alkyl, lower alkenyl, lower cycloalkyl and phenyl lower alkyl.

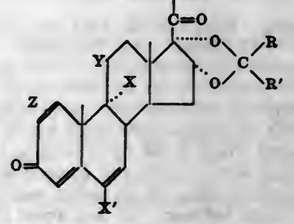
3,226,383

21-DESOXY-16,17-CYCLIC ACETALS

Howard J. Ringold and Carl Djerassi, Mexico City, Mexico, assignors, by mesne assignments, to Syntex Corporation, a corporation of Panama

No Drawing. Filed Apr. 28, 1960, Ser. No. 25,236
Claims priority, application Mexico, May 18, 1959, 54,598, 54,599
19 Claims. (Cl. 260—239.55)

1. A compound of the following formula:



wherein Z is selected from the group consisting of a double bond between C–1 and C–2 and a saturated linkage between C–1 and C–2; X and X' are each selected from the group consisting of fluorine and chlorine; Y is selected from the group consisting of keto and β-hydroxy; and R and R' are each selected from the group consisting of hydrogen and a hydrocarbon radical containing up to 8 carbon atoms.

3,226,384

CEPHALOSPORIN C_A DERIVATIVES

Edward Penley Abraham and Guy Geoffrey Frederick Newton, Oxford, and Clifford William Hale, Clevedon, Somerset, England, assignors to National Research Development Corporation, London, England, a British corporation

Filed Jan. 25, 1963, Ser. No. 254,558
26 Claims. (Cl. 260—239.75)

1. A compound selected from the group consisting of Cephalosporin C_A (tertiary base) wherein the base is a heterocyclic, weak, tertiary base having a cyclic structure containing at least one nitrogen heteroatom, linked to CH_2 via a nitrogen heteroatom, pharmaceutically acceptable non-toxic salts thereof with organic and inorganic acids, and pharmaceutically acceptable non-toxic alkali and alkaline earth metal salts of said base.

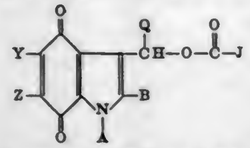
16. The compound Cephalosporin C_A (sulphadiazine) wherein the sulphadiazine is linked to CH_2 via a nitrogen heteroatom.

3,226,385
SUBSTITUTED 3-(α-ACYLOXY-LOWER ALKYL)-4,7-INDOLOQUINONES

George Rodger Allen, Jr., Old Tappan, N.J., and John Frank Poletto, Nanuet, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Oct. 11, 1963, Ser. No. 315,695
8 Claims. (Cl. 260—240)

1. A member of the class consisting of 3-(α-acyloxy-lower alkyl)-4,7-indoloquinones of the formula:



wherein A is lower alkyl; B, Q and Z are each selected from the group consisting of hydrogen and lower alkyl; Y is selected from the group consisting of hydrogen, chlorine, bromine and lower alkoxy; and J is selected from the group consisting of lower alkyl, lower cycloalkyl of from 5 to 6 carbon atoms, phenyl, phenyl lower alkyl, α-lower alkanoyloxy phenyl lower alkyl, phenoxymethyl, 2-furyl, lower alkenyl and phenyl lower alkenyl.

4. 1-ethyl-3-hydroxymethyl-5-methoxy-2,6-dimethyl-4,7-dioxoindole cinnamoate.

3,226,386
HYDROGENOLYSIS OF TRICHLOROMETHYL-SUBSTITUTED COMPOUNDS

Ehrenfried H. Kober, Hamden, Conn., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia

No Drawing. Filed July 20, 1962, Ser. No. 211,413
17 Claims. (Cl. 260—248)

1. The process of substituting a hydrogen atom for one chlorine atom in each trichloromethyl group in a trichloromethyl-substituted organic compound, which comprises reacting an organic compound having at least one trichloromethyl group in the alpha position to an electronegative group with a sulfhydryl compound in the presence of a tertiary amine at an initial reaction temperature in the range between —25 and about 20° C.

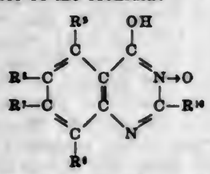
16. The process for preparing 2,4,6-tris-dichloromethyl-s-triazine which comprises reacting 2,4,6-tris-trichloromethyl-s-triazine with triethylamine and n-butyl mercaptan at an initial reaction temperature in the range between about —25 and about 20° C.

3,226,387
4-HYDROXY-QUINAZOLINE-3-OXIDES

Geoffrey Tattersall Newbold, Saffron Walden, and Helen Pauline Tippett, Cambridge, England, assignors to Fisons Pest Control Limited, Harston, Cambridgeshire, England, a British company

No Drawing. Filed Nov. 21, 1961, Ser. No. 154,043
Claims priority, application Great Britain, Dec. 1, 1960, 41,248/60; Jan. 14, 1961, 1,646/61
23 Claims. (Cl. 260—251)

1. A member selected from the group consisting of heterocyclic oxides of the formula:



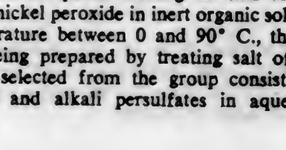
the sodium, potassium, ammonium, calcium and copper salts thereof, esters thereof with lower alkanoic acids and hydrochloride salt of the latter, wherein each of R^6, R^7, R^8 and R^9 is a member selected from the group consisting of H, alkyl of 1 to 8 carbon atoms, alkoxy of 1 to 8 carbon atoms, Cl, I and NO_2, and R^{10} is a member selected from the group consisting of H and alkyl of 1 to 8 carbon atoms, and when R^6, R^7, R^8, R^9 and all H, R^{10} is alkyl of 2 to 8 carbon atoms.

3,226,388
9-DICYANOMETHYLENENITROFLUORENES AND THE CHARGE-TRANSFER COMPOUNDS THEREOF

Harris D. Hartzler, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Aug. 13, 1962, Ser. No. 216,325
13 Claims. (Cl. 260—268)

1. A nitrofluorene compound selected from the class consisting of (I) 9-dicyanomethylenenitrofluorene compounds of the formula



wherein m and n are integers from 0 to 2 inclusive with the proviso that the sum of m plus n is from 1 to 4 inclusive and with the proviso that when more than one nitro substituent is present on either ring, said substituents are not on adjacent ring carbons, and (II) charge-transfer compounds of the above defined 9-dicyanomethylenenitrofluorene compounds with Lewis bases.

10. The 1/1diazobicyclooctane/9-dicyanomethylene-2,4,7-trinitrofluorene complex.

3,226,389
11,11,12,12-TETRACYANO-NAPHTHO-2,6-QUINODIMETHAN AND ITS ANION-RADICAL SALTS

Walter H. Hertler, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Jan. 4, 1962, Ser. No. 164,379
10 Claims. (Cl. 260—283)

1. 11,11,12,12-tetracyanonaphtho-2,6-quinodimethan.

8. The salt charge-transfer compound of the formula

$$[\text{N-n-propylquinolinium}^+]_2[\text{TNAP}^-]_2[\text{TNAP}^\circ]$$

wherein TNAP is the 11,11,12,12-tetracyanonaphtho-2,6-quinodimethan moiety; $^-$ indicates a negative ionic charge and · an electron; and $^\circ$ indicates the combined neutral TNAP species.

3,226,390
OXIDATION WITH NICKEL PEROXIDE

Kunio Nakagawa, Nishinomiya-shi, Hyogo, and Takamori Konaka, Amagasaki-shi, Hyogo, Japan, assignors to Shionogi & Co., Ltd., Osaka, Japan

No Drawing. Filed Aug. 23, 1962, Ser. No. 218,825
Claims priority, application Japan, Aug. 25, 1961, 36/30,817
5 Claims. (Cl. 260—285)

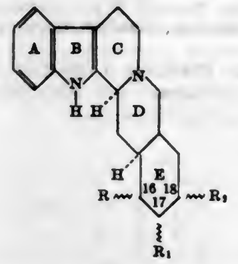
1. A process for the oxidation of unsaturated alcohol selected from the group consisting of allylic alcohols and benzylic alcohols to give the corresponding carbonyl compound, which comprises treating the said unsaturated alcohol with nickel peroxide in inert organic solvent medium at a temperature between 0 and 90° C., the said nickel peroxide being prepared by treating salt of nickel with a member selected from the group consisting of alkali hypohalites and alkali persulfates in aqueous alkaline medium.

3,226,391
RING E SUBSTITUTED YOHIMBANES

Jay D. Albright, Nanuet, Lester A. Mitscher, Spring Valley, and Leon Goldman, Nanuet, N.Y., assignors to American Cyanamid Company, New York, N.Y., a corporation of Maine

No Drawing. Filed Mar. 27, 1961, Ser. No. 98,312
6 Claims. (Cl. 260—287)

1. A compound selected from the group consisting of ring E substituted yohimbanes of the formula:



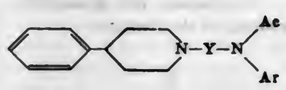
wherein R is selected from the group consisting of hydrogen, keto and lower alkoxyoxalyl, R_1 is selected from the group consisting of keto, carboxyl, lower alkoxycarbonyl and lower alkoxyoxalyl, and R_2 is selected from the group consisting of hydrogen, carboxyl, lower alkoxycarbonyl and lower alkoxyoxalyl, with the proviso that one substituent only is keto and one substituent only is hydrogen; and the non-toxic pharmaceutically acceptable metal enolates and acid addition salts thereof.

3,226,392
1-[N-ARYL-N-ACYLAMINOALKYL]-4-ARYL-1,2,3,6-TETRAHYDROPYRIDINES, THE CORRESPONDING PIPERIDINES AND THEIR SALTS

Philip M. Carabateas, East Greenbush, N.Y., assignor to Sterling Drug Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 7, 1960, Ser. No. 12,910
17 Claims. (Cl. 260—293.4)

12. An acid-addition salt of the 1-[(N-aryl-N-acylamino)-alkyl]-4-phenylpiperidine having in free base form the structural formula



where Y represents polycarbon-lower-alkylene, Ac represents lower-alkanoyl and Ar represents monocarbocyclic-aryl having six ring-carbon atoms.

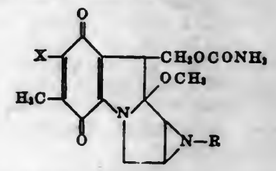
16. A composition of matter selected from the group consisting of 1-[N-Ar-N-Ac-amino-polycarbon-lower-alkyl]-4-Ar'-piperidines and acid-addition and lower-alkyl, alkenyl, and aralkyl quaternary ammonium salts thereof, wherein Ar is an aromatic radical of from one to two rings selected from the class consisting of Ar', biphenylyl, pyridyl, pyrimidyl, furyl, thiazolyl, oxazolyl, thiazinyl and thienyl; Ar' is aryl selected from the class consisting of naphthyl, phenyl, and phenyl substituted with from one to three substituents selected from the groups consisting of lower alkyl, lower-alkoxy, lower-alkylmercapto, lower-alkylsulfonyl, halo, lower-alkylamino, di-(lower-alkyl)-amino, nitro, amino, AcNH-, trifluoromethyl, phenoxy, benzyloxy, hydroxy, phenyl-mercapto benzyl and 4-methoxyphenoxy; and Ac is a carboxylic acyl group of from two to seven carbon atoms, inclusive, selected from the class consisting of alkanoyl, alkenoyl, alkoxyalkanoyl and carboxyalkanoyl.

3,226,393
N-SUBSTITUTED DERIVATIVES OF MITOMYCIN A AND MITOMYCIN C

Walter Edward Meyer and James Burns Patrick, Suffern, and John Halley Mowat, Pearl River, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

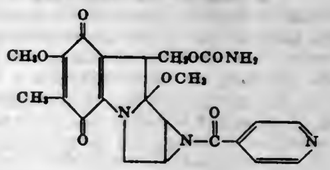
No Drawing. Filed June 7, 1962, Ser. No. 200,631
12 Claims. (Cl. 260—295)

1. A compound of the formula:



wherein X is selected from the group consisting of lower alkoxy and amino; and R is selected from the group consisting of lower alkanoyl, phenyl lower alkyl, phenacyl, halo-phenacyl, benzoyl, halo-benzoyl, pyridylcarbonyl, phenylcarbamoyl, halo-phenylcarbamoyl, benzene-sulfonyl, halo-benzenesulfonyl and lower carboalkoxy.

6. The compound of the formula:

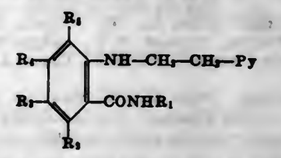


3,226,394
PYRIDYLETHYLATED ANTHRANILAMIDES AND DERIVATIVES THEREOF

Edgar S. Schipper, Clifton, N.J., assignor to Shulton, Inc., Clifton, N.J., a corporation of New Jersey

No Drawing. Filed June 16, 1964, Ser. No. 375,658
18 Claims. (Cl. 260—295)

1. A compound selected from the class consisting of pyridylethylated anthranilamides and acid addition salts thereof; said anthranilamides having the formula:



in which Py is a pyridyl radical; R_1 is selected from the group consisting of hydrogen and monovalent lower hydrocarbon radicals; and R_2, R_3, R_4 and R_5 are members selected from the class consisting of hydrogen, lower alkoxy, and the nitro group and halogens.

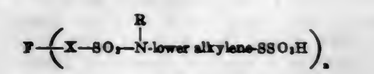
3,226,395
WATER-INSOLUBLE PHTHALOCYANINE DYESTUFFS AND PROCESS FOR THEIR MANUFACTURE

Kurt Schimmelschmidt, Frankfurt am Main, Hermann Hoffmann, Bad Homburg, Edwin Baier, Hofheim, Taunus, and Hans Ulmer, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a company of Germany

No Drawing. Filed Oct. 3, 1961, Ser. No. 142,515
Claims priority, application Germany, Oct. 4, 1960, F 32,259; Aug. 25, 1961, F 34,770
7 Claims. (Cl. 260—314.5)

7. A water-insoluble dyestuff prepared by reacting, at a temperature between about 40° C. and 110° C., a water-

soluble dyestuff selected from the group consisting of dyestuffs of the formula



and the alkali-metal and ammonium salts thereof, wherein F represents a member selected from the group consisting of copper phthalocyanine and nickel phthalocyanine, X represents a member selected from the group consisting of a direct linkage and phenylene, R represents a member selected from the group consisting of hydrogen and lower alkyl, and *n* represents a number from 2 to 4, in an aqueous solution with a non-oxidizing acid selected from the group consisting of inorganic acids, organic acids and mixtures thereof.

3,226,396

PROCESS FOR PREPARING AMINOINDOLE COMPOUNDS

Herbert E. Johnson, South Charleston, W. Va., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Dec. 4, 1962, Ser. No. 242,058

8 Claims. (Cl. 260—319)

1. Process for preparing aminoindole compound having the amino group at one of the ring positions of the benzenoid moiety, and where the remaining ring positions of the indole structure are substituted with a member selected from the group consisting of hydrogen, carboxyl, and alkyl of up to and including 10 carbon atoms which process comprises reacting, at a temperature of from 10 to 180° C., a corresponding nitroindoline compound with molecular hydrogen in non-acidic aqueous medium in the contacting presence of a nickel-containing metal catalyst selected from the group consisting of elemental nickel, Raney nickel and nickel aluminum alloy, such catalyst being present in catalytically significant amounts from about 5 to about 400 percent by weight based on nitroindoline starting material.

3,226,397

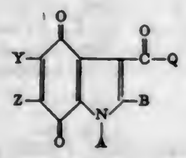
3-FORMYL- AND 3-LOWER ALKANOYL-4,-7-INDOLOQUINONES

George Rodger Allen, Jr., Old Tappan, N.J., and John Frank Poletto, Nanuet, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Aug. 7, 1964, Ser. No. 388,279

12 Claims. (Cl. 260—319)

1. A member of the class consisting of compounds of the formula:



wherein A is selected from the group consisting of hydrogen, lower alkyl, ω-(halo)lower alkyl, ω-(lower alkylthio) lower alkyl, ω-(hydroxy)lower alkyl, ω-(tetrahydropyranyloxy)lower alkyl, ω-(azido)lower alkyl and ω-(mercapto)lower alkyl; B is selected from the group consisting of hydrogen, lower alkyl, hydroxmethyl, tetrahydropyranyloxymethyl, lower alkoxycarbonyl and carboxamido; Q is selected from the group consisting of hydrogen and lower alkyl; Y is selected from the group consisting of hydrogen, hydroxy, lower alkoxy, halogen, lower alkyl, lower alkylthio, lower alkylamino, phenylthio and p-(lower alkyl)phenylthio; and Z is selected from the group consisting of hydrogen, lower alkyl, amino, bromine, lower alkoxy, lower alkylamino, phenylthio and p-(lower alkyl)phenylthio.

3,226,398

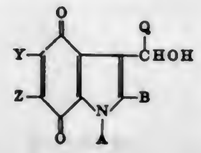
SUBSTITUTED 4-(α-HYDROXY-LOWER ALKYL)-4,7-INDOLOQUINONES

George Rodger Allen, Jr., Old Tappan, N.J., and John Frank Poletto, Nanuet, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Aug. 7, 1964, Ser. No. 388,280

12 Claims. (Cl. 260—319)

1. A compound of the formula:



wherein A is selected from the group consisting of hydrogen, lower alkyl, ω-(halo)lower alkyl, ω-(lower alkylthio) lower alkyl, ω - (tetrahydropyranyloxy)lower alkyl, ω-(azido)loweralkyl and ω-(mercapto)lower alkyl; B is selected from the group consisting of hydrogen, lower alkyl, tetrahydropyranyloxymethyl, lower alkoxycarbonyl and carboxamido; Q is selected from the group consisting of hydrogen and lower alkyl; Y is selected from the group consisting of hydrogen, lower alkoxy, halogen, lower alkyl and lower alkylthio; and Z is selected from the group consisting of hydrogen, lower alkyl, bromine and lower alkoxy.

3,226,399

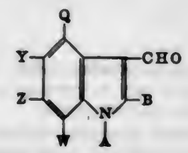
SUBSTITUTED 3-FORMYLINDOLES

George Rodger Allen, Jr., Old Tappan, N.J., William Alan Remers, Pearl River, N.Y., and Martin Joseph Weiss, Oradell, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Aug. 7, 1964, Ser. No. 388,281

12 Claims. (Cl. 260—319)

1. A compound of the formula:



wherein A is selected from the group consisting of hydrogen, lower alkyl, ω-(hydroxy)lower alkyl, ω-(lower alkylsulfonyloxy)lower alkyl, ω-(halo)lower alkyl, ω-(azido) lower alkyl, ω-(thiocyano)lower alkyl, ω-(lower alkanoyloxy)lower alkyl and ω-(lower alkylthio)lower alkyl; B is selected from the group consisting of hydrogen, lower alkyl, lower alkoxycarbonyl, carboxy, carboxamido, lower alkanoyloxymethyl and hydroxymethyl; Q is selected from the group consisting of nitro, amino, hydroxy and lower alkanoyloxy; Y is selected from the group consisting of hydrogen, hydroxy, lower alkyl and lower alkoxy; Z is selected from the group consisting of hydrogen and lower alkyl; and W is selected from the group consisting of hydrogen, hydroxy and lower alkanoyloxy; with the proviso that when Q is nitro, then Y is lower alkoxy.

3,226,400

METHOD FOR THE MANUFACTURE OF PERCHLORODIPHENYLENE DIOXIDE

Josef Kaupp and Helmut Klug, Gersthofen, near Augsburg, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed June 20, 1960, Ser. No. 37,114

Claims priority, application Germany, June 27, 1959, F 28,796

9 Claims. (Cl. 260—340.3)

1. A method for the manufacture of perchlorodiphenylene dioxide which comprises pyrolyzing a mixture of (1) a member of the group consisting of pentachlorophenol, an alkali metal salt of pentachlorophenol and mixtures thereof, and (2) a member of the group consisting of the hexachlorocyclohexanedienones, the octachlorocyclohexenones and mixtures thereof at a temperature in the range of 150 and 300° C.

3,226,401

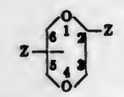
ETHYLENICALLY UNSATURATED MONOEPOXY COMPOUNDS

Samuel W. Tinsley, South Charleston, W. Va., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed May 14, 1962, Ser. No. 194,653

15 Claims. (Cl. 260—340.6)

1. An ethylenically unsaturated monoepoxy dioxane of the formula:



wherein the Z variables are of the group consisting of the following pairs:

(a) vic-epoxyalkoxy having up to 18 carbon atoms in which the vic-epoxy group is at least one carbon atom removed from the oxy group thereof, and alkenyloxy having up to 18 carbon atoms and in which the ethylenic group is at least one carbon atom removed from the oxy group thereof;

(b) vic-epoxycycloalkoxy having from 5 to 7 carbon atoms in the cycloaliphatic nucleus and in which the vic-epoxy group is at least one carbon atom removed from the oxy group thereof, and cycloalkenyloxy having from 5 to 7 carbon atoms in the cycloaliphatic nucleus and in which the ethylenic group is at least one carbon atom removed from the oxy group thereof;

(c) vic-epoxycycloalkylalkoxy having from 5 to 7 carbon atoms in the cycloalphatic nucleus and from 1 to 6 carbon atoms in the alkoxy moiety thereof, and cycloalkenylalkoxy having from 5 to 7 carbon atoms in the cycloaliphatic nucleus and from 1 to 6 carbon atoms in the alkoxy moiety thereof;

(d) 3-oxatricyclo[3.2.1.$0^{2,4}$]oct-6-oxy, and bicyclo [2.2.1]hept-2-en-5-oxy;

(e) 3-oxatricyclo[3.2.1.$0^{2,4}$]oct-6-ylalkoxy having from 1 to 6 carbon atoms in the alkoxy moiety thereof, and bicyclo[2.2.1.]hept-2-en-5-ylalkoxy having from 1 to 6 carbon atoms in the alkoxy moiety thereof;

(f) 4-oxatetracyclo[6.2.1.$0^{2,7}$.$0^{3,5}$]undec-9-oxy, and tricyclo[5.2.1.$0^{2,6}$]dec-3-en-8-oxy;

(g) 4 - oxatetracyclo[6.2.1.$0^{2,7}$.$0^{3,5}$]undec-9-oxyalkoxy having from 2 to 6 carbon atoms in the alkoxy moiety thereof, and tricyclo[5.2.1.$0^{2,6}$]dec-3-en-8-oxyalkoxy having from 2 to 6 carbon atoms in the alkoxy moiety thereof;

(h) 10 - oxapentacyclo[6.3.1.1.^{3,6}.$0^{2,7}$.$0^{9,11}$]tridec - 4-oxy, and tetracyclo[6.2.1.1.^{3,6}.$0^{2,7}$]dodec-9-en-4-oxy;

(i) 10 - oxapentacyclo[6.3.1.1.^{3,6}.$0^{2,7}$.$0^{9,11}$]tridec - 4-oxyalkoxy having from 2 to 6 carbon atoms in the alkoxy moiety thereof, and tetracyclo[6.2.1.1.^{3,6}.$0^{2,7}$] dodec-9-en-4-oxyalkoxy having from 2 to 6 carbon atoms in the alkoxy moiety thereof; and

(j) 10 - oxapentacyclo[6.3.1.1.^{3,6}.$0^{2,7}$.$0^{9,11}$]tridec-4 - ylalkoxy having from 1 to 6 carbon atoms in the alkoxy moiety thereof, and tetracyclo[6.2.1.1.^{3,6}.$0^{2,7}$] dodec-9-en-4-ylalkoxy having from 1 to 6 carbon atoms in the alkoxy moiety thereof; with the proviso that the Z variables cannot be bonded to the carbon atom in the six position of the 1,4-dioxane nucleus.

3,226,402

2-SUBSTITUTED BENZOFURAN COMPOUNDS AND PROCESS OF MAKING AND USING SAME

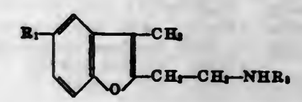
Wolfgang Schoetensack, Constance, Guenther Hallmann, Limbergerhof, Pfalz, and Karl Haegele, Hilzingen, Kreis Constance, Germany, assignors to BYK-Gulden-Lomberg Chemische Fabrik G.m.b.H., Constance, Germany, a corporation of Germany

No Drawing. Filed Nov. 2, 1962, Ser. No. 235,151

Claims priority, application Germany, Nov. 3, 1961, B 64,657

9 Claims. (Cl. 260—346.2)

9. A 2-substituted benzofuran compound selected from the group consisting of a 2-(β-amino ethyl) benzofuran compound of the formula



wherein

R_1 indicates a member selected from the group consisting of methoxy and benzyloxy and

R_2 indicates a member selected from the group consisting of hydrogen, acetyl, and carbethoxy, and its pharmaceutically acceptable acid addition salts.

3,226,403

DIESTERAMIDE PLASTICIZERS

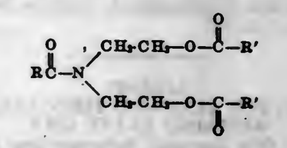
Frank C. Magne, Robert R. Mod, and Evald L. Skau, New Orleans, La., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Original application Oct. 24, 1961, Ser. No. 147,377, now Patent No. 3,179,615, dated Apr. 20, 1965. Divided and this application Jan. 22, 1963, Ser. No. 263,367

5 Claims. (Cl. 260—348)

(Granted under Title 35, U.S. Code (1952), sec. 266)

1. A compound represented by the formula



wherein R is a monounsaturated alkenyl group of from 11 to 21 carbon atoms containing at least one epoxy group and R′ is methyl.

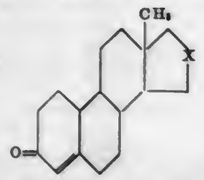
2. N-bis(2-acetoxyethyl)epoxyoleamide.

3,226,404
ESTER 4-EN-3-ONE AND 16-OXYGENATED DERIVATIVES THEREOF

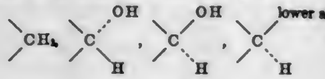
Karl Jollvette Sax, West Nyack, and Robert Henry Blank and Chester Eric Holmlund, Pearl River, N.Y., and Ralph Henry Evans, Jr., Rivervale, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Jan. 24, 1964, Ser. No. 339,851
6 Claims. (Cl. 260—397.4)

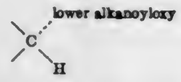
1. A steroid of the formula:



wherein X is selected from the group consisting of



and



radicals.

3,226,405
17α-ALLYL-2-ANDROSTENE-17β-OL ACETATE

Max N. Huffman, P.O. Box 1982, Colorado Springs, Colo.

No Drawing. Filed Feb. 12, 1962, Ser. No. 172,801
The portion of the term of the patent subsequent to Aug. 14, 1978, has been disclaimed
1 Claim. (Cl. 260—397.5)

17α-allyl-2-androsten-17β-ol acetate.

3,226,406
WAX ESTER SUBSTITUTE FOR JOJOBA OIL FROM THE SEED OF *LIMNANTHES DOUGLASII*

Thomas K. Miwa and Ivan A. Wolff, Peoria, Ill., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Filed Jan. 3, 1963, Ser. No. 249,300
1 Claim. (Cl. 260—410.9)
(Granted under Title 35, U.S. Code (1952), sec. 266)

A liquid wax ester product produced by the method comprising:

(a) solvent extracting the glyceride oil present in ground seed of *Limnanthes douglasii;*
(b) removing the solvent;
(c) separately preparing the mixed constituent fatty acids by saponification and the mixed corresponding fatty alcohols from separate portions of the said glyceride oil by reduction; and
(d) reacting 1.10 mole equivalent of said constituent fatty acids with 1.00 mole equivalent of said fatty alcohols in the presence of 100 and 0.015 mole equivalents, respectively, of xylene and p-toluenesulfonic acid monohydrate to form the desired liquid wax ester product.

3,226,407
PROCESS FOR ACID AND THEN ALKALINE REFINING FATTY OILS

Lars Olof Bergman, Sallerupsvägen 11, Malmo C, Sweden

Filed Oct. 22, 1962, Ser. No. 232,146
14 Claims. (Cl. 260—424)

1. In a process for refining crude fatty oil wherein said oil is degummed with acid, neutralized with aqueous alkali solution and subsequently treated with acid, the improvement wherein

(1) said degumming is effected under reduced pressure with orthophosphoric acid and
(2) said neutralization is effected by passing the degummed oil up through alkaline aqueous solution, said oil being fed into said solution in a plurality of separate streams and rising through the solution due solely to the buoyancy forces existing between the oil and aqueous solution, said streams, while in contact with said solution, breaking at their upper ends into droplets of 0.3 to 3 mm. in diameter, said droplets then continuing to rise through said solution to form an oil layer thereon, whereby the oil is intimately contacted with the alkali solution to neutralize fatty acids therein while concomitantly avoiding substantial saponification and emulsification.

3,226,408
PREPARATION OF TETRAMETHYLLEAD AND CATALYST THEREFOR

Francis M. Beaird, Jr., and Paul Kobetz, Baton Rouge, La., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed June 6, 1963, Ser. No. 285,855
13 Claims. (Cl. 260—437)

1. The process of manufacture of tetramethyllead comprising reacting sodium lead alloy with a methyl chloride in the presence of a catalyst system provided by adding an aluminum catalyst and an ether compound in catalytic proportions, said ether compound having only one ethereal oxygen and containing a total of at least four carbon atoms, at least two carbon atoms being in each radical attached to the ethereal oxygen, and each of such radicals being selected from the group consisting of cycloalkylene, alkyl, aryl, vinyl and allyl, said aluminum catalyst being selected from the group consisting of (1) aluminum, (2) aluminum trichloride and (3) hydrocarbon aluminum catalysts having from 1 to 3 hydrocarbon radicals and having the radicals being selected from the group consisting of hydrocarbon, chlorine, hydrogen and mixtures thereof.

3,226,409
TETRAALKYLLEAD PROCESS

Francis M. Beaird, Jr., and Paul Kobetz, Baton Rouge, La., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Oct. 22, 1963, Ser. No. 318,081
6 Claims. (Cl. 260—437)

1. The process of manufacture of tetramethyllead comprising reacting sodium lead alloy with methyl chloride and in the presence of a catalyst including

(a) an alkyl aluminum compound selected from the group of consisting of aluminum trialkyls, and alkyl aluminum chlorides and
(b) an alkyl ether polyethylene glycol alcoholate of an element selected from the group consisting of sodium, lithium, potassium, magnesium, calcium, and boron, said polyethylene glycol having from one to five ethylene groups.

3,226,410
CONTINUOUS METHOD OF PREPARING AROMATIC ISOCYANATES

Bedrich V. Hettich, Darien, Conn., and Harold K. Latourette, Pennington, N.J., assignors to FMC Corporation, New York, N.Y., a corporation of Delaware

Filed July 20, 1962, Ser. No. 211,362
6 Claims. (Cl. 260—453)

1. A continuous method of preparing aromatic isocyanates by reacting in an inert organic solvent phosgene and an amine from the group consisting of aromatic primary mono-, di- and polyamines which process comprises:

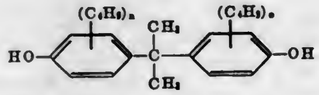
(a) continuously flowing a stream of phosgene in the liquid phase through a tubular reactor under superatmospheric pressure;
(b) continuously introducing a stream of said amine in solution in said organic solvent into said stream of phosgene under a pressure at least equal to that in the tubular reactor to disperse the amine solution upon its introduction into the tubular reactor throughout the flowing stream of phosgene;
(c) introducing said streams in amounts such that the resultant mixture contains at least 1 mol of phosgene and not exceeding about 12 mols of phosgene per mol of amine introduced into admixture with the phosgene and so as to effect forward flow in said tubular reactor of said amine solution, phosgene and the reaction products, thus minimizing back mixing thereof in said tubular reactor;
(d) conducting the introduction of said solution and the flow of the resultant mixture through said tubular reactor so that the said flow takes place at a Reynolds number of at least 2,100, while maintaining the temperature of the resultant mixture in said tubular reactor at not exceeding about 90° C. to produce an intermediate reaction product containing aromatic isocyanate;
(e) continuously introducing the intermediate reaction product produced in said tubular reactor into a second reaction zone maintained at a temperature of from 110° to 135° C. and maintaining the intermediate reaction product therein until the reaction has gone to substantial completion to form the desired isocyanate reaction product; and
(f) continuously removing from said second reaction zone a liquid stream of reaction mixture consisting essentially of the organic solvent and the aromatic isocyanate reaction product and a vapor stream consisting essentially of unreacted phosgene, solvent and hydrochloric acid.

3,226,411
ISOCYANATES STABILIZED WITH POLYBUTYLATED 4,4'-ISOPROPYLIDENE BISPHENOL

Eric Smith, New Haven, Conn., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia

No Drawing. Filed Mar. 20, 1963, Ser. No. 266,478
6 Claims. (Cl. 260—453)

1. An organic isocyanate containing a stabilizing proportion of a polybutylated 4,4'-isopropylidene bisphenol having the formula



wherein *n* is a number between 1 and 4.

3,226,412
STABILIZATION OF ORGANIC ISOCYANATES WITH DIPHENYL CARBAZIDE

Eric Smith, New Haven, Conn., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia

No Drawing. Filed Mar. 20, 1963, Ser. No. 266,479
6 Claims. (Cl. 260—453)

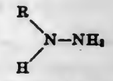
1. An organic isocyanate containing a stabilizing proportion of diphenyl carbazide.

3,226,413
STABILIZATION OF ORGANIC ISOCYANATES WITH HYDRAZINE COMPOUNDS

Eric Smith, New Haven, Conn., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia

No Drawing. Filed Mar. 20, 1963, Ser. No. 266,480
12 Claims. (Cl. 260—453)

1. An organic isocyanate containing a stabilizing proportion of a substituted hydrazine selected from the group consisting of substituted hydrazines having the formula



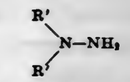
where R is selected from the group consisting of alkyl radicals containing between 1 and 10 carbon atoms,



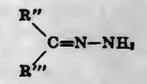
and



where Ph is a phenyl group; dialkyl substituted hydrazines of the formula



where R' is an alkyl radical containing between 1 and 10 carbon atoms; and hydrazones of the formula



where R'' is selected from the group consisting of an alkyl radical and phenyl radical and R''' is selected from the group consisting of hydrogen, and alkyl radical, and phenyl radical, the total number of carbon atoms in R'' and R''' being between 1 and 20.

3,226,414
ORGANIC ISOCYANATES STABILIZED WITH DINITROGEN COMPOUNDS

Eric Smith, New Haven, Conn., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia

No Drawing. Filed Mar. 20, 1963, Ser. No. 266,481
10 Claims. (Cl. 260—453)

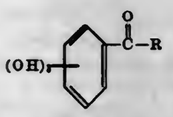
1. An organic isocyanate containing a stabilizing proportion of a dinitrogen compound selected from the group consisting of cyanamide, methyl cyanamide, imidazole, and methyl imidazole.

3,226,415
STABILIZED ORGANIC ISOCYANATES

Eric Smith, New Haven, Conn., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia

No Drawing. Filed Apr. 22, 1963, Ser. No. 274,799
14 Claims. (Cl. 260—453)

1. An organic isocyante containing a stabilizing proportion of a trihydroxy-substituted benzoyl compound of the formula



where R is selected from the group consisting of an alkyl radical containing between 1 and 6 carbon atoms, and an alkoxy radical containing between 1 and 6 carbon atoms.

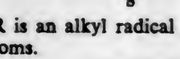
3,226,416

CYANOETHYL ALKYLXANTHATE ESTERS

Norbert M. Bikales, Livingston, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Nov. 30, 1962, Ser. No. 241,144
5 Claims. (Cl. 260—455)

1. The cyanoethylxanthate of the following formula:



wherein R is an alkyl radical having from three to eight carbon atoms.

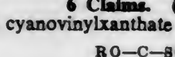
3,226,417

2-CYANOVINYL ALKYLXANTHATES

Norbert M. Bikales, Livingston, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Dec. 10, 1962, Ser. No. 243,615
6 Claims. (Cl. 260—455)

1. A cyanovinylxanthate of the following formula:



wherein R is a member selected from the group consisting of alkyl radicals having up to twelve carbon atoms and lower aralkyl radicals of less than three rings.

3,226,418

PREPARATION OF TRIFLUOROMETHYL FLUOROFORMATE AND BISTRIFLUOROMETHYL CARBONATE

Burton Carl Anderson, Graylyn Crest, Wilmington, and Gerhard Robert Morlock, Silver Springs, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Dec. 1, 1961, Ser. No. 156,520
1 Claim. (Cl. 260—463)

The process of preparing a compound selected from the group consisting of trifluoromethyl fluoroformate and bistrifluoromethyl carbonate, said process comprising contacting carbonyl fluoride with 0.01–20 weight percent anionic catalyst selected from the group consisting of dimethyl formamide, N-methylformanilide, trimethylamine, piperidine, betaine, potassium phthalimide, sodium methoxide, n-butyl lithium, sodium benzoate, lead acetate, potassium acetate, cesium fluoride, and activated carbon at −50 to −110° C. and from 1 to 5000 atmospheres pressure, removing said catalysts and isolating the product from the remaining mixture.

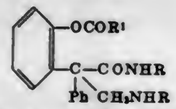
3,226,419

SUBSTITUTED β-ALKYL AND β-CYCLOALKYL-AMINOPROPIONAMIDES

Harold Elmer Zaugg, Lake Forest, Robert William De Net, Waukegan, and Raymond John Michaels, Jr., Mundelein, Ill., assignors to Abbott Laboratories, North Chicago, Ill., a corporation of Illinois

No Drawing. Filed Dec. 18, 1963, Ser. No. 331,366
4 Claims. (Cl. 260—463)

1. A member of the group consisting of a compound of the formula



and therapeutically acceptable, acid-addition salts thereof wherein Ph is phenyl, each R is a member of the group consisting of loweralkyl of from 1 to 4 carbon atoms and cycloalkyl of from 3 to 6 carbon atoms, and R^1 is a member of the group consisting of loweralkyl of from 1 to 4 carbon atoms and loweralkoxy of from 1 to 4 carbon atoms.

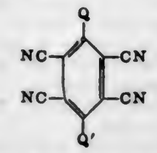
3,226,420

1,4-DISUBSTITUTED-2,3,5,6-TETRACYANO BENZENE COMPOUNDS AND PROCESS FOR PREPARATION THEREOF

Owen Wright Webster, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Feb. 14, 1963, Ser. No. 258,619
6 Claims. (Cl. 260—465)

1. Compound of the formula



wherein Q and Q′ each is selected from the group consisting of —Cl and —NH_2.

3,226,421

CATALYTIC PROCESS FOR THE PREPARATION OF NITRILES

Nicola Giordano, Giorgio Caporali, and Natale Ferlazzo, Milan, Italy, assignors, by mesne assignments, to Edison, Milan, Italy, a corporation of Italy

No Drawing. Filed July 11, 1962, Ser. No. 209,219
Claims priority, application Italy, July 14, 1961, 13,163/61, Patent 682,880
3 Claims. (Cl. 260—465.3)

1. Process for converting an olefin selected from the group consisting of propylene and isobutylene to acrylonitrile and methacrylonitrile respectively, comprising contacting a mixture of the olefin, from 0.3 to 2 moles of ammonia and from 0.5 to 2.5 moles of elemental oxygen per mole of olefin in the gaseous phase at a temperature of 300° to 600° C. and for a contact time of 0.05–20 seconds with a heteropolycompound corresponding to the formula:

$$Te_xMe'_yMo_xO_q$$

wherein

Me′ is a member selected from the group consisting of cerium, lanthanum and thorium; and

x is a number in the range from 20 to 1800;

y is a number in the range from 1 to 100;

z is a number in the range from 40 to 2400; and

q is a number in the range from 140 to 12,900.

3,226,422

PROCESS FOR PREPARING UNSATURATED NITRILES

Kurt Sennewald and Wilhelm Vogt, Knapsack, near Cologne, Joachim Kandler, Bruhl, near Cologne, Rolf Sommerfeld, Stetten, Remstal, and Günter Sorbe, Bruhl, near Cologne, Germany, assignors to Knapsack-Griesheim Aktiengesellschaft, Knapsack, near Cologne, Germany, a corporation of Germany

Filed Apr. 15, 1964, Ser. No. 361,931
Claims priority, application Germany, Dec. 7, 1960, K 42,334
5 Claims. (Cl. 260—465.3)

1. In a one-stage process for the manufacture of a compound selected from the group consisting of acrylonitrile and methacrylonitrile by reacting an olefin selected from the group consisting of propylene and isobutylene, respectively, with a gas mixture of ammonia and a member selected from the group consisting of air and oxygen at about 300° C. to 500° C. under a pressure of about 0.3 to 10 absolute atmospheres on catalysts applied to a carrier selected from the group consisting of silicic acid, pulverized pumice, kieselguhr, aluminum oxide, silicon carbide and mixtures thereof, and with a residence time on the catalyst between 0.2 and 50 seconds, the improvement of carrying out said reaction on said catalyst consisting

of Fe_2O_3, Bi_2O_3, MoO_3 and P_2O_5, with an atomic proportion of the oxide forming elements of

$$Fe_{0.1-3.0}Bi_{0.5-1.5}Mo_{0.5-2.0}P_{0.05-0.5}$$

the catalyst applied to the carrier forming grains having a diameter of about 0.01 to 1.0 millimeter, the quantity of said carrier material amounting to about 30 to 95% by weight of the finisbed catalyst, and said gas mixture containing 1.5 to 2.5 mols of oxygen, 1.0 to 1.5 mols of ammonia and 0 to 20 mols of water in the form of steam per mol of said olefin.

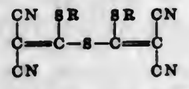
3,226,423

MERCAPTODICYANOVINYL SULFIDES

Robert D. Vest, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed June 20, 1962, Ser. No. 203,740
10 Claims. (Cl. 260—465.5)

1. A mercaptodicyanovinyl sulfide having the formula:



wherein R is selected from the group consisting of a metal ion, hydrocabon of 1 to 12 carbon atoms, and $R^1_mH_{4-m}N^+$, wherein R1 is alkyl of 1 to 6 carbon atoms, and m is an integer from 0 to 4.

3,226,424

PROCESS FOR PREPARING 2-LOWER ALKOXY-1,1-DICYANOETHYLENE AND 2-AMINO-1,1-DICYANOETHYLENE

Lester Mischa Jampolsky, Upper Montclair, N.J., Joseph Klee, Basel, Switzerland, and Benjamin Pecherer, Montclair, and John Thomas Plati, Rutherford, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corpotion of New Jersey

No Drawing. Filed Oct. 3, 1962, Ser. No. 227,994
2 Claims. (Cl. 260—465.5)

1. A process for the preparation of 2-amino-1,1-dicyanoethylene consisting essentially of reacting 2-X-1,1-dicyanoethylene, wherein X is selected from the group consisting of bromo and chloro, with alcoholic ammonia wherein the alcoholic component of said alcoholic ammonia is a lower alkanol, at a temperature below that at which the ammonia is substantially volatilized.

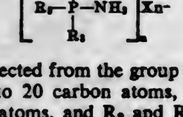
3,226,425

ORGANO-PHOSPHORUS COMPOUNDS

Wayne T. Barrett, Malvern, Pa., assignor to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Filed June 30, 1964, Ser. No. 379,378
3 Claims. (Cl. 260—465.8)

1. Compounds of the formula



wherein R_1 is selected from the group consisting of cyanoalkyl having 1 to 20 carbon atoms, and alkenyl having 3 to 20 carbon atoms, and R_2 and R_3 are selected from the group consisting of alkyl having 1 to 20 carbon atoms, phenyl, cyanoalkyl having 1 to 20 carbon atoms, and alkenyl having 3 to 20 carbon atoms; and X is selected from the group consisting of chloride, bromide, iodide, fluoride, hexafluorophosphate, perchlorate, anthraquinone-beta-sulfonate, nitroprusside, periodate, picrate, hexachloroplatinate and ferricyanate.

3,226,426

4-HYDROXY-2-BUTYNYL CARBAMATES

Thomas R. Hopkins, Overland Park, and Paul D. Strickler, Kansas City, Kans., assignors, by mesne assignments, to Gulf Oil Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed June 5, 1962, Ser. No. 200,053
1 Claim. (Cl. 260—471)

4-hydroxy-2-butynyl N-(3-chlorophenyl)carbamate.

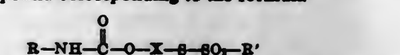
3,226,427

CARBAMATE THIOSULFONATES

Joseph E. Dunbar, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Oct. 28, 1963, Ser. No. 319,553
6 Claims. (Cl. 260—471)

1. A compound corresponding to the formula



wherein R and R′ each, independently, represent a member of the group consisting of lower alkyl, phenyl, lower alkylphenyl, halophenyl, and lower alkyl halophenyl and X is selected from the group consisting of methylene, ethylene and trimethylene wherein halo represents a member of the group consisting of chlorine, bromine and iodine.

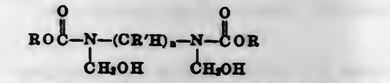
3,226,428

BISCARBAMATE-FORMALDEHYDE ADDUCTS

Sidney L. Vail, Clifford M. Moran, and John D. Reid, New Orleans, La., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Original application July 19, 1962, Ser. No. 211,141, now Patent No. 3,160,469, dated Dec. 8, 1964. Divided and this application July 15, 1963, Ser. No. 338,542
1 Claim. (Cl. 260—482)
(Granted under Title 35, U.S. Code (1952), sec. 266)

A compound having the formula:



wherein n is an integer of one to four, R is an alkyl group of from 1 to 4 carbon atoms, and R′ is a member of the group consisting of H and an alkyl group of from 1 to 4 carbon atoms.

3,226,429

BORON COMPOUNDS AND METHOD FOR MAKING THE SAME

Daniel Grafstein, Morristown, and Joseph J. Dvorak, Rockaway, N.J., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

Filed Mar. 20, 1961, Ser. No. 97,098
15 Claims. (Cl. 260—485)

1. As new compositions of matter, neocarborane and carbon-substituted derivatives thereof selected from the group consisting of alkyl, hydroxyalkyl, carboxyl, carboxy ester, carboxyl chloride and carboxamide derivatives.

3,226,430

SULFONATION OF CYCLOHEXYLAMINE WITH SO_3

Madhukar V. Mhatre, Bareilly, Uttar Pradesh, India, assignor to Abbott Laboratories, North Chicago, Ill., a corporation of Illinois

Filed Apr. 7, 1964, Ser. No. 359,546
9 Claims. (Cl. 260—501)

1. The process of making cyclohexylamine cyclohexylsulfamate, comprising the step of

contacting dry cyclohexylamine with dry sulfur tri-

oxide vapors in such a manner that at least 10 mole parts of cyclohexylamine contact 1 mole part of sulfur trioxide in a zone of turbulence, at a temperature above 70° C.

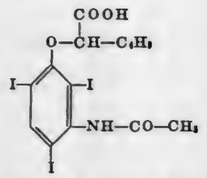
3,226,431

X-RAY CONTRAST AGENT

Ernst Felder and Davide Pitré, Milan, Italy, assignors to Bracco Industria Chimica S.p.A., Milan, Italy

No Drawing. Filed May 17, 1961, Ser. No. 110,647
Claims priority, application Germany, June 21, 1960, B 58,278
3 Claims. (Cl. 260—519)

1. A compound selected from the group consisting of the compound of the formula



the sodium salt, and the N-methyl glucamine salt thereof.

3,226,432

HYDROGENATION OF CHLOROVINYLBORANES

Benjamin F. Clark, Hamden, and John F. Haller, Mount Carmel, Conn., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia

Filed Jan. 28, 1959, Ser. No. 789,742
6 Claims. (Cl. 260—543)

1. A method for converting chlorovinyl groups of chlorovinylboranes to alkyl groups which comprises hydrogenating a chlorovinylborane of the class

$$(ClCH{=}CH)_a(R)_bBCl_{[3-(a+b)]}$$

where R is an alkyl radical containing from 1 to 5 carbon atoms, *a* is an integer from 1 to 3, *b* is an integer from 0 to 2, and the sum of *a* plus *b* is not over 3, with molecular hydrogen at a temperature of from 20° to 160° C. and at a pressure of from 0 p.s.i.g. to 50 p.s.i.g. while the reactants are in contact with a palladium catalyst.

3,226,433

MAKING METHANESULFONYL CHLORIDE

Clifton F. Bennett and David W. Goheen, Camas, Wash., assignors to Crown-Zellerbach Corporation, San Francisco, Calif., a corporation of Nevada

No Drawing. Filed Jan. 2, 1962, Ser. No. 163,916
6 Claims. (Cl. 260—543)

1. The process of making methanesulfonyl chloride which comprises

(a) forming a reaction mixture comprising a chloromethyl methyl sulfide, water and chlorine the water and chlorine being present in at least about the stoichiometric amounts, but in insufficient amounts to result, respectively, in the substantial hydrolytic degradation and chlorination of the methanesulfonyl chloride product,

(b) reacting the chloromethyl methyl sulfide with the water and chlorine at a temperature of from −20° C. to +25° C., thereby converting the chloromethyl methyl sulfide to methanesulfonyl chloride and

(c) separating the methanesulfonyl chloride from the reaction mixture.

3,226,434

PREPARATION OF NEUTRAL 6-DEMETHYL-7-CHLOROTETRACYCLINE

Panayota Bitha, New York, N.Y., and Neil Edward Rigler, Ridgewood, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Dec. 4, 1962, Ser. No. 242,087
4 Claims. (Cl. 260—559)

1. In the process of converting 6-demethyl-7-chlorotetracycline hydrochloride to 6-demethyl-7-chlorotetracycline neutral, the improvement which comprises contacting an aqueous suspension of 6-demethyl-7-chlorotetracycline hydrochloride with a solution of a liquid mixture of amines of the formula:

$$C_nH_{2n+3}N$$

wherein *n* is an integer from 12 to 26 in an inert water immiscible organic solvent, whereupon 6-demethyl-7-chlorotetracycline neutral is obtained.

3,226,435

NOVEL 7,11a-DIHALOTETRACYCLINES AND THE PROCESS OF PREPARING THEM

Jerry Robert Daniel McCormick, Spring Valley, Robert Winterbottom, New City, and Panayota Bitha, New York, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Dec. 26, 1962, Ser. No. 247,266
6 Claims. (Cl. 260—559)

1. The process for the 5a(11a)-dehydrohalogenation of a 7,11a-dihalotetracycline which comprises heating said 7,11a-dihalotetracycline in a reaction-inert solvent at a temperature of from about 50° C. to about 100° C.

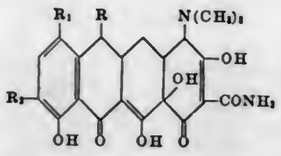
3,226,436

7- AND 9-ALKYLAMINO-6-DEOXYTETRACYCLINE

Joseph Petisi, Nanuet, N.Y., and James Howard Boothe, Montvale, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Continuation of applications Ser. No. 147,137, Oct. 24, 1961, and Ser. No. 161,412, Dec. 22, 1961, now Patent No. 3,148,212, dated Sept. 8, 1964. This application May 17, 1963, Ser. No. 281,349
5 Claims. (Cl. 260—559)

1. A compound of the group consisting of tetracyclines of the formula:



wherein R is selected from the group consisting of hydrogen and methyl, and R_1 and R_2 are each selected from the group consisting of hydrogen, and mono(lower alkyl)-amino with the proviso that R_1 and R_2 cannot both be hydrogen; and the non-toxic acid-addition salts thereof.

3,226,437

N,N'-BISOLELYLOXAMIDE

Harry D. Anspon, Kansas City, Mo., and Roger P. Cahoy, Merriam, Kans., assignors, by mesne assignments, to Gulf Oil Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed Sept. 5, 1961, Ser. No. 135,773
1 Claim. (Cl. 260—561)

N,N¹-bisolelyloxamide.

3,226,438

METHOD FOR THE PREPARATION OF TRIAMINOGUANIDINE

Phyllis D. Oja, Walnut Creek, Calif., and Gordon E. Hartzell, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Feb. 1, 1960, Ser. No. 6,059
6 Claims. (Cl. 260—564)

1. A process for the preparation of triaminoguanidine, which comprises contacting an aqueous solution of an acid salt of triaminoguanidine with a strongly basic quaternary-ammonium anion exchange resin in the hydroxyl form to convert the acid salt in the solution to triaminoguanidine, concentrating the so-formed aqueous solution of triaminoguanidine in the substantial absence of oxygen until the concentration of the triaminoguanidine is at least two molar in the concentrated solution, adding to the concentrated solution at least 2 volumes of an organic solvent in which water is soluble, said organic solvent being substantially a nonsolvent for triaminoguanidine for each volume of said concentrated solution, said addition being carried out in the substantial absence of oxygen, crystallizing the triaminoguanidine in the resulting mixture, separating the crystallized triaminoguanidine from the resulting mixture, and drying the crystallized triaminoguanidine to remove essentially all of the water and organic nonsolvent for triaminoguanidine from the product.

3,226,439

POLYHALOGENATED ALKYL IMINES AND HYDRAZONES AND METHOD OF PREPARATION

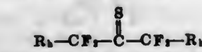
William J. Middleton, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Jan. 10, 1963, Ser. No. 250,501
14 Claims. (Cl. 260—566)

1. A compound of the formula:

wherein R is of the group consisting of hydrogen, amino and alkyl of up to 18 carbons; and R_h and R_h' are selected from the group consisting of halogen of atomic number 9–17 and haloalkyl of up to 6 carbons selected from the group consisting of perfluoroalkyl, chloroperfluoroalkyl and ω-hydroperfluoroalkyl.

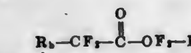
6. A process of preparing polyhaloalkylidene imines in which all halogens are of atomic number 9–17 which comprises (A) contacting and reacting, at a temperature in the range −50° C. to 0° C., hydrazoic acid with a polyhalothioketone of the formula:



wherein R_h and R_h' are selected from the group consisting of halogen of atomic number 9–17 and haloalkyl of up to 6 carbons selected from the group consisting of perfluoroalkyl, chloroperfluoroalkyl and ω-hydroperfluoroalkyl; and (B) warming the resultant reaction mixture to a temperature in the range 20° C. to 100° C.

9. A process of preparing polyhaloalkylidene imines and N-alkyl polyhaloalkylidene imines which comprises

(A) initially preparing an amino, hydroxy-substituted polyhaloalkane by reacting, at a temperature maintained between −50° C. and 10° C., a ketone of the formula

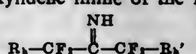


wherein each of R_h and R_h' is of the group consisting of fluorine, chlorine and haloalkyl of up to 6 carbons selected from the group consisting of perfluoroalkyl, chloroperfluoroalkyl and ω-hydroperfluoroalkyl, with a compound of the formula RHN_2, wherein R is of the group consisting of hydrogen and alkyl of up to 18 carbons; and

(B) warming a mixture of the amino, hydroxy-substituted polyhaloalkane prepared in step (A), a dehydrating agent of the group consisting of phosphorous oxychloride and phosphorous pentoxide and an acid acceptor of the group consisting of sodium carbonate and pyridine to its reflux temperature.

13. A process of preparing polyhaloalkylhydrazones which comprises:

(a) initially preparing an amino, hydraza-substituted polyhaloalkane by reacting, at a temperature maintained between −50° C. and 10° C., hydrazine with a polyhaloalkylidene imine of the formula



wherein each of R_h and R_h' is of the group consisting of halogen of atomic number 9–17 and haloalkyl of up to six carbons selected from the group consisting of perfluoroalkyl, chloroperfloroalkyl and ω-hydroperfluoroalkyl; and

(b) heating a mixture of a deaminating agent of the group consisting of phosphorous oxychloride and phosphorous pentoxide and the amino, hydrazino-substituted polyhaloalkane from step (a) to a temperature of 90° to 250° C.

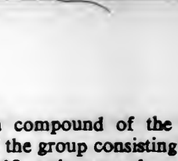
3,226,440

BETA-LOWERALKOXY-TRIFLUOROMETHYL-PHENETHYLAMINES

Melville Sahyun, 102 E. Pueblo St., Santa Barbara, John A. Faust, Solvang, and Nikolaus R. Hansl, Santa Barbara, Calif.; said Faust and said Hansl assignors to said Sahyun

No Drawing. Filed June 7, 1963, Ser. No. 286,165
11 Claims. (Cl. 260—570.6)

1. A compound of the formula



wherein A is alkylene of one to eight carbon atoms forming a methylene bridge and Am is selected from the group consisting of di-lower-alkylamino, pyrrolidino, 2-methyl and 3-methylpyrrolidino, piperidino, 2-, 3- and 4-methylpiperidino, morpholino, di-beta-hydroxyethyl-amino, beta-hydroxyethyl-methylamino, beta-hydroxylethyl-ethylamino, beta-hydroxyethyl-benzylamino, benzyl-lower-alkylamino and dibenzylamino, corresponding compounds bearing on the benzyl group at one of the 2, 3, 4 and alpha positions a substituent from the group consisting of lower-alkyl, lower-alkoxy, halo, nitro, phenyl and sulfato, and corresponding compounds bearing an additional group on the $—CF_3$ substituted benzene ring selected from the group consisting of lower-alkyl, halo, hydroxy and nitro.

3,226,441

2-DECARBOXAMIDO-2-ACETYL-TETRACYCLINE DERIVATIVES AND PROCESS

Max W. Miller, North Stonington, Conn., assignor to Chas. Pfizer & Co., Inc., Brooklyn, N.Y., a corporation of Delaware

Filed July 28, 1961, Ser. No. 127,593
The portion of the term of the patent subsequent to Feb. 20, 1979, has been disclaimed and dedicated to the Public
9 Claims. (Cl. 260—571)

1. A compound selected from the group consisting of 2-acetyl-2-decarboxamidotetracycline, 2-acetyl-2-decar-

boxamido-7-chlortetracycline, and the acid and basic salts of said substances.

8. A process for co-producing 2-acetyl-2-decarboxamidotetracycline and 2-acetyl-2-decarboxamido-7-chlortetracycline which comprises cultivating the microorganism *S. aureofaciens*, ATCC 13749, in an aqueous nutrient medium containing carbonhydrate, nitrogen and inorganic salts, under submerged aerobic conditions, until substantial antimicrobial activity is imparted to said medium.

3,226,442
PREPARATION OF PRIMARY AMINES FROM 1-NITRO-OLEFINS

Giovanni A. Bonetti, Wilmington, Del., Chester B. De Savigny, Rancho Cordova, Calif., and Conrad Michalski, Media, Pa., assignors to The Atlantic Refining Company, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Sept. 19, 1962, Ser. No. 224,837
10 Claims. (Cl. 260—583)

1. A method for preparing a saturated aliphatic primary amine which comprises catalytically hydrogenating a 1-nitro-olefin having the general formula

$$R—CH=CH—NO_2$$

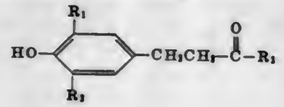
wherein R is an alkyl radical containing from 1 to 24 carbon atoms in the presence of a solvent-water mixture selected from the group consisting of ethanol-water and dioxane-water wherein the water is present in said mixture in an amount ranging from 5 to 50 volume percent, said hydrogenation being carried out at a temperature in the range of from 20° C. to 100° C. under a pressure in the range of from about 25 p.s.i.g. to about 80 p.s.i.g. of hydrogen and thereafter separating and recovering the saturated aliphatic primary amine.

3,226,443
CARBONYL COMPOUNDS CONTAINING A HINDERED PHENOL GROUP

Eric A. Meier, Jackson Heights, and Martin Dexter, White Plains, N.Y., assignors to Geigy Chemical Corporation, Greenburgh, N.Y., a corporation of Delaware

No Drawing. Original application Jan. 5, 1962, Ser. No. 164,619. Divided and this application Apr. 12, 1963, Ser. No. 276,686
3 Claims. (Cl. 260—590)

1. A compound of the formula:



wherein

R_1 is a member selected from the group consisting of secondary and tertiary lower alkyl groups,
R_2 is lower alkyl, and
R_3 is alkyl.

3,226,444
PROCESS FOR THE MANUFACTURE OF PURE FORMALDEHYDE

Edgar Fischer and Hans Dieter Hermann, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany

Filed May 14, 1963, Ser. No. 280,313
Claims priority, application Germany, Dec. 19, 1958, F 27,317; Dec. 27, 1958, F 27,380
10 Claims. (Cl. 260—606)

1. In the process for manufacturing formaldehyde by thermally decomposing a hemi-formal of formaldehyde and an alcohol melting below 100° C. and boiling above 100° C. and recovering gaseous formaldehyde from the vapor mixture resulting from said decomposition, the improvement which comprises contacting said vapor mixture, prior to recovering formaldehyde therefrom, with an auxiliary liquid conducted in countercurrent flow to said vapor mixture, said liquid being a hydrocarbon having a boiling point lower than the boiling point of the alcohol freed by decomposition of said hemi-formal and between



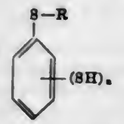
about 80° C. and about 180° C., forming no azoetrope with said alcohol, and being selected from the group consisting essentially of aliphatic hydrocarbons, cycloaliphatic hydrocarbons, and alkyl substituted cycloaliphatic hydrocarbons, whereby the alcohol and the other by-products are removed from said vapor mixture, and highly pure formaldehyde remains.

3,226,445
ALKYLTHIOBENZENEPOLYTHIOLS

Walter Reifschneider, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed June 27, 1962, Ser. No. 205,505
4 Claims. (Cl. 260—609)

1. A compound of the formula



wherein R represents an alkyl group being of from 1 to 24, inclusive, carbon atoms and n is an integer from 2 to 3, inclusive, the sum of the integer n and the number of carbon atoms in R being at least 3.

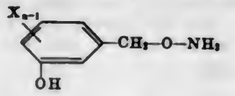
3,226,446
HYDROXYBENZYLOXY-AMINE DERIVATIVES

David John Drain, Welwyn Garden City, Haydn Windsor Richard Williams, Digswell, Welwyn, and John Gordon Bernard Howes, Bengeo, Hertford, England, assignors to T. J. Smith & Nephew Limited, Kingston-upon-Hull, England, a British company

No Drawing. Filed Oct. 31, 1961, Ser. No. 149,829
Claims priority, application Great Britain, Nov. 3, 1960, 37,758/60; Oct. 10, 1961, 36,267/61
11 Claims. (Cl. 260—621)

1. A hydroxylamine derivative of the general formula:

(I)



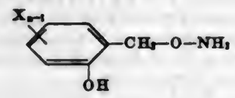
wherein

X represents a halogen atom, and
n represents a positive integer from 1 to 4.

2. An acid-addition salt of a hydroxylamine derivative as claimed in claim 1.

8. The process for the preparation of a hydroxylamine derivative of the general formula:

(I)

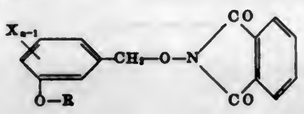


wherein

X represents a halogen atom, and
n represents a positive integer from 1 to 4.

which comprises reacting at least two molecular proportions of hydrazine with a benzyloxyphthalimide of the general formula:

(II)



wherein

X and n have the values given above, and
R represents an acyl radical selected from the group which consists of alkylcarbonyl and arylcarbonyl radicals.

3,226,447
DIRECTED NUCLEAR SUBSTITUTION-CHLORINATION OF AROMATIC HYDROCARBONS AND HALOGENATED AROMATIC HYDROCARBONS

George Herbert Bing and Roman Abraham Krieger, Sydney, New South Wales, Australia, assignors to Union Carbide Australia, Ltd., a limited company of Australia

No Drawing. Filed Dec. 22, 1960, Ser. No. 77,532
13 Claims. (Cl. 260—650)

1. An improved process for the production of nuclearly chlorinated benzene and toluene comprising contacting, in the liquid phase, a starting material selected from the group consisting of benzene, chlorinated benzenes containing up to 3 chlorine atoms and toluene, with at least one mole of chlorine per mole of starting material in the presence of a chlorination catalyst selected from the group consisting of iron, aluminum, antimony and halides thereof, to which has been added from 0.02 to 5 per centum, based on starting material, of a co-catalyst consisting of an organic sulfur compound characterized by divalent sulfur and selected from the group consisting of propyl mercaptan, mercapto-aliphatic carboxylic acids, aliphatic thiocarboxylic acids, alkyl sulfides, alkyl disulfides, aryl sulfides, aryl disulfides, perchloromethylmercaptan, tetrahydrothiophene, and dixanthogen, and thereafter separating said chlorinated products from the reaction mixture.

3,226,448
PREPARATION OF FLUORINE COMPOUNDS

Joseph Gordon, Morristown, Henry R. Nychka, Randolph Township, Morris County, and Cyril Woolf, Morristown, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Dec. 20, 1962, Ser. No. 245,961
10 Claims. (Cl. 260—650)

1. The process for preparing an aromatic fluoride which comprises introducing into a reaction zone (1) a gas-phase aromatic halide starting material, said aromatic halide containing at least one aromatically bound halogen atom having an atomic number of 17 to 35, and containing at least one aromatically bound hydrogen atom on each ring, said aromatic halide being selected from the group consisting of those aromatic halides in which the aromatic radical is a further unsubstituted aromatic hydrocarbon, and derivatives of the same in which nuclear hydrogen atoms in excess of one on each aromatic ring are replaced by substituents selected solely from the group consisting of alkyl, cycloalkyl, lower alkoxy, fluoro, carboxy, hydroxy, nitro and sulfo, and (2) a gas-phase fluorinating agent selected from the group consisting of NOF, NOF·3HF, NOF·6HF, and mixtures thereof; heating said starting material and said fluorinating agent in said zone to temperatures substantially in the range of 250–600° C. and while in the presence of CoF_2 catalyst, to effect fluorination of a substantial amount of said starting material, and discharging from said zone reaction products comprising aromatic fluoride containing more fluorine than said starting material.

3,226,449
PROCESS FOR PREPARING PERFLUOROALKYL IODIDES

Wesley Alva Blanchard, Newcastle, and Judson Cyrus Rhode, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed June 6, 1962, Ser. No. 200,299
2 Claims. (Cl. 260—653.1)

1. A process for preparing perfluoroalkyl iodides containing from six to twelve carbon atoms which process comprises reacting tetrafluoroethylene with a perfluoroalkyl iodide selected from the group consisting of perfluoroethyl iodide and mixtures of perfluoroethyl iodide and n-perfluorobutyl iodide in the presence of an organic free radical generating catalyst at a temperature from about 80° C. to 170° C. and under a pressure from about 225 p.s.i. to about 700 p.s.i., said tetrafluoroethylene and a portion of the free radical generating catalyst being injected gradually during the reaction to said perfluoroalkyl iodide containing a portion of said free radical generating catalyst until from about 0.25 to about 1.2 moles of tetrafluoroethylene per mole of perfluoroalkyl iodide and from about 0.25% to 0.9% by weight of free radical generating catalyst per total weight of reaction mixture have been added, and recovering from the reaction mixture products having the structure $(F(CF_2)_mI$, wherein m is from six to twelve.

3,226,450
PROCESS FOR THE PRODUCTION OF ARYL MAGNESIUM CHLORIDES

Manfred Blazejak, Duesseldorf, and Rudolf Stroh, Leverkusen-Bayerwerk, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Aug. 8, 1962, Ser. No. 215,501
Claims priority, application Germany, Sept. 21, 1961, F 34,965
9 Claims. (Cl. 260—665)

1. A process for the preparation of aryl magnesium chlorides which comprises contacting magnesium with an aryl chloride in the present of 0.1 to 5% by weight calculated on the magnesium of an organo aluminum compound selected from the group consisting of aluminum alkyl and aluminum alkyl halide, at a temperature within the range of from 30° C. to about 250° C.

3,226,451
UNSATURATED POLYESTER RESIN RESULTING FROM THE COPOLYMERIZATION OF AN UNSATURATED POLYESTER AND A POLYALLYL ETHER, AND PROCESS FOR PREPARING SAME

Robert Béhar, Boulogne-sur-Seine, and André Daniel Cahn, Marcel Dublen, and Robert Antoine Marie Aussedat, Paris, France, assignors to Societe Francaise Duco, Paris, France, a French body corporate

No Drawing. Filed Jan. 8, 1963, Ser. No. 250,000
Claims priority, application Great Britain, May 1, 1959, 14,922/59
8 Claims. (Cl. 260—861)

1. Process for preparing an unsaturated polyester resin hardening readily in air at room temperature, compris-

ing heating a mixture of a polyallyl ether of a polyglycerol and at least one acidic reactant selected from the group consisting of polycarboxylic acids and anhydrides thereof and at least one polyhydric alcohol reactant, one at least of these reactants being ethylenically unsaturated, so as to obtain an unsaturated polyester, said polyallyl ether of a polyglycerol having the following formula:

$$CH_2{=}CH{-}CH_2OCH_2{-}\underset{\displaystyle OCH_2{-}CH{=}CH_2}{\underset{|}{CH}}{-}CH_2{-}(OCH_2{-}\underset{\displaystyle OCH_2{-}CH{=}CH_2}{\underset{|}{CH}}{-}CH_2)_m{-}OCH_2{-}CH{=}CH_2$$

in which *m* is an integer from 1 to 4, thereby obtaining a copolymerization between the polyallyl ether and the unsaturated polyester.

3,226,452

ALPHA-PINENE MODIFIED POLYESTER RESINS

Anthony R. Manyak, Pompton Plains, and Thaddeus J. Czarnomski, Scotch Plains, N.J., assignors, by mesne assignments, to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Filed Dec. 12, 1962, Ser. No. 244,219
3 Claims. (Cl. 260—871)

1. A polymerizable composition comprising:
(1) a polyester resin consisting essentially of a Diels-Alder reaction product of alpha-pinene and a polyester resin comprised of a glycol and an alpha-beta ethylenically unsaturated dicarboxylic acid in which resin the proportion of alpha-pinene ranges from 1/20 to 19/20 mole for each mole of alpha-beta ethylenically unsaturated acid constituent of the polyester, the said reaction product containing double bonds attributable to alpha-beta ethylenically unsaturated acid groups not reacted with alpha-pinene, and,
(2) a vinyl monomer selected from the group consisting of styrene, vinyl toluene, alpha methyl styrene, vinyl acetate, butyl acrylate, methyl methacrylate, vinyl naphthalene, diallyl phthalate, and mixtures thereof.

3,226,453

METHOD OF PREPARING BLENDS OF POLYSTYRENE, BUTADIENE ELASTOMER AND GRAFT COPOLYMER OF STYRENE ON SAID ELASTOMER

Vernon W. Arnold, Hammond, Ind., and Don E. Pickart, Wappingers Falls, N.Y., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana

No Drawing. Filed June 7, 1963, Ser. No. 286,158
3 Claims. (Cl. 260—876)

1. In a process for preparing styrene polymer resins of high impact strength comprising a substantially homogeneous mixture of (a) a polystyrene resin, (b) an elastomeric polymer, of butadiene and styrene containing at least 50% by weight of butadiene and (c) a graft copolymer, of 10 to 80 weight percent styrene upon said elastomeric polymer, the improvement which comprises the steps of admixing an aqueous latex of said elastomeric polymer and an aqueous latex of said graft copolymer with an inert hydrocarbon solution of polystyrene, dehydrating the resulting mixture by azeotropic distillation of the water accompanying the latices together with a portion of the hydrocarbon solvent, removing the remainder of the hydrocarbon solvent by heating the dehydrated mixture at a temperature between about 100° C. and 250° C. at subatmospheric pressure and recovering the styrene polymer resin so prepared.

3,226,454

POLYETHYLENE COMPOSITION CONTAINING CROSS-LINKED POLYETHYLENE GRAFT COPOLYMER AND PROCESS THEREFOR

Nelson S. Marans and Razmic S. Gregorian, Silver Spring, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Filed May 20, 1964, Ser. No. 369,003
4 Claims. (Cl. 260—876)

1. A composition consisting of uncrosslinked polyethylene having a density in the range 0.91 to 0.97 g./cc. and a minor amount, between 0.1 to 20% by weight of said polyethylene of a thermoset additive consisting of polyethylene having a density of 0.91 to 0.97 crosslinked with polyvinyl acetate.

3,226,455

POLYPROPYLENE OF IMPROVED DYEABILITY CONTAINING ETHYLENE-VINYL ALCOHOL COPOLYMERS OR DERIVATIVES THEREOF

Kanji Matsubayashi, Takeshi Inoue, Yasuo Yoshimura, and Kiyoshi Fujii, Kurashiki, Japan, assignors to Kurashiki Rayon Company Limited, Kurashiki, Japan, a corporation of Japan

No Drawing. Filed Feb. 12, 1962, Ser. No. 172,761
Claims priority, application Japan, Feb. 13, 1961, 36/4,069
8 Claims. (Cl. 260—897)

1. In the manufacture of shaped polypropylene articles of improved dyeability the steps which comprise preparing a mixture comprising 99 to 70 percent by weight of polypropylene and 1 to 30 percent by weight of a polymer selected from the group consisting of a copolymer, which consists of 14.5 to 50 mol percent of a member selected from ethylene and propylene, and 85.5 to 50 mol percent of vinyl alcohol; an acetalization product between said copolymer and aldehyde under acidic conditions; and a urethanization product between said copolymer and urea, and shaping said mixture to a shaped article.

3,226,456

METHOD OF PRODUCING HIGH DENSITY CERAMIC ARTICLES

Eugene I. Ryshkewitch, Ridgewood, Adolf J. Strott, Clifton, and Donald L. Utz, Pompton Lakes, N.J., assignors to National Beryllia Corp., Haskell, N.J., a corporation of New Jersey

No Drawing. Filed Mar. 27, 1963, Ser. No. 268,475
7 Claims. (Cl. 264—.5)

1. A method for producing high density ceramic articles of high purity which comprises intimately mixing a metal oxide selected from the group consisting of alumina, beryllia, magnesia, thoria, and zirconia, with between about 0.02 and 0.1% by weight of a finely divided metal which is the same as the metallic element in said oxide, said finely divided metal consisting essentially of particles of a size between about 1 and 40 microns, and shaping said mixture at a temperature which reaches a maximum of about 1825° C., and a molding pressure of about 200 kg./cm.² to form a product having a purity of 99%, a density greater than about 99% of the theoretical value for the respective metal oixde, and a free metal content less than 0.1%.

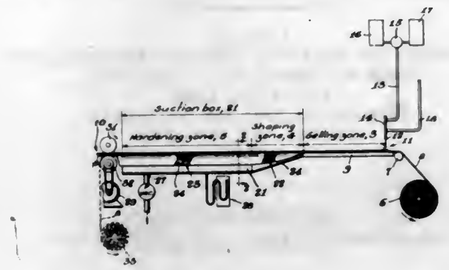
3,226,457

METHOD AND APPARATUS FOR CONTINUOUSLY FORMING PLASTIC ARTICLES

Hubert S. Smith, Jr., Essexville, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Mar. 23, 1961, Ser. No. 97,915
7 Claims. (Cl. 264—90)

1. A process for manufacturing lineal, open-shaped articles of solid plastics, which process comprises the steps of (1) depositing a layer of a liquid, in situ plastic-forming resin charge on the upper surface of a moving, flat, flexible carrier strip, (2) maintaining the plastic-carrier combination in an essentially planar shape until the plastic layer has achieved a gel stage of cure, (3) passing the gelled plastic-carrier combination lineally over a perforated, rigid final shape form lying in and integral with the top of an enclosed suction box, said final shape form having a transversely non-rectilinear constant profile-forming surface longitudinally defined by parallel straight line elements and adapted to slidably engage the



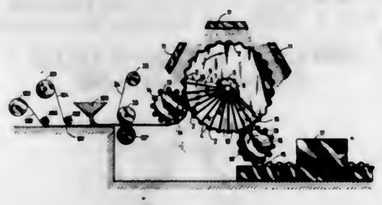
under-surface of the carrier strip, the perforations in the final shape form communicating with the interior of the suction box which is connected to evacuating means, (4) applying a pressure differential across the plastic-carrier combination and perforated final shape form by reducing the pressure in the suction box whereby the moving plastic-carrier combination is caused to conform to the contour of the constant profile-forming surface of the final shape form, and (5) maintaining said pressure differential until the plastic layer is sufficiently cured to provide a lineal, open-shaped article of a solid plastic.

3,226,458

METHOD AND APPARATUS FOR CONTINUOUSLY PRODUCING MOLDED ARTICLES AND SECTIONAL SHEETS OF PLASTICS

Roderich Gräff, Burgberg-Villingen, Black Forest, and Ludwig Thoma and Karl Johann Reichl, Welden, Germany, assignors to Deutsche Tafelglas Aktiengesellschaft Detag, Bavaria, Germany

Filed Dec. 28, 1961, Ser. No. 162,902
Claims priority, application Germany, Dec. 30, 1960, D 35,071
2 Claims. (Cl. 264—90)



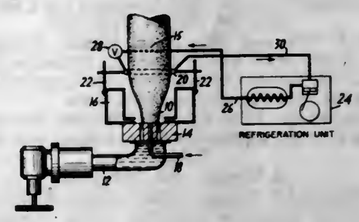
1. A method of continuously making transversely corrugated sheets from a laminate consisting of a layer of fiber-reinforced, liquid state, heat-hardenable resin wrapped by a film, comprising the steps of: advancing the laminate to a rotating drum the surface of which is contoured corresponding to the corrugations to be formed in said laminate, laying said laminate against the said corrugations of said drum, drawing said laminate conformingly against said drum by internal vacuum, applying heat to the laminate, while the latter is kept conformingly against said drum solely by vacuum, until the laminate is partially cured to an extent such as to be dimensionally stable, removing said partially cured laminate from said drum and thereafter completely curing and hardening said partially cured laminate by applying heat thereto.

3,226,459

QUENCHING OF POLYOLEFIN FILM

Donatas Tijunelis, Chicago, Ill., assignor to Union Carbide Corporation, a corporation of New York

Filed Oct. 3, 1962, Ser. No. 228,039
8 Claims. (Cl. 264—95)



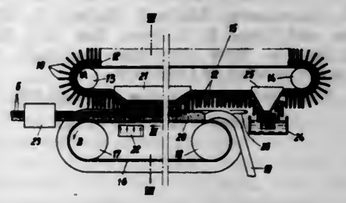
1. A process for producing a polyolefin film having improved optical properties comprising:
(a) extruding an olefin polymer through an extrusion die so as to form a film thereof;
(b) passing the extruded film over a solid cooling surface located between said extrusion die and the frost line of said film;
(c) maintaining the dew point of the atmosphere surrounding said solid cooling surface at at least 0° C. by supplying humid air to the region around said solid cooling surface; and
(d) providing lubrication between said film and said cooling surface by maintaining said cooling surface at a temperature below the dew point of the surrounding atmosphere so that moisture condenses on said surface from said atmosphere.

3,226,460

METHOD FOR PRODUCING MATERIALS OF HONEYCOMB STRUCTURE

Hans-Joachim Dietzsch, Chemin de Bonne Esperance 10, Lausanne, Switzerland

Filed Apr. 12, 1962, Ser. No. 187,104
Claims priority, application Germany, Apr. 14, 1961, D 35,848; Oct. 13, 1961, D 37,230
10 Claims. (Cl. 264—165)



1. A method of forming an elongated substantially rigid structure formed with closely spaced parallel bores therethrough in a continuous process comprising the steps of moving a soft hardenable material in one direction; moving a plurality of combs having each a plurality of substantially parallel pins closely spaced from each other in a direction transverse to the one direction in said one direction and individually relative to each other and to said material while maintaining the pins of adjacent combs parallel to each other and to the axes of the bores to be formed in such a manner that free end portions of said pins become embedded in said material; moving subsequently thereto said material and said combs in said one direction while maintaining the

position of said combs relative to the material and while the latter hardens about the pins of said combs; and withdrawing each comb individually in direction of the axes of its pins and parallel to the axes of the bores thus formed from the hardened material to form a substantially rigid structure with closely spaced parallel bores therethrough, whereby the material about said bores will not be damaged during the withdrawal of the pins therefrom.

3,226,461

MANUFACTURE OF REGENERATED CELLULOSE FIBERS FROM VISCOSE

Harold F. Wise and Elias Klein, Mobile, Donald S. Nelson, Eight Mile, and William C. Richardson, Mobile, Ala., assignors to Courtaulds North America, Inc., New York, N.Y., a corporation of Alabama

No Drawing. Filed Feb. 25, 1963, Ser. No. 260,847
Claims priority, application Great Britain, Feb. 27, 1962, 7,563/62
1 Claim. (Cl. 264—189)

A process for making viscose rayon filamentary material which comprises extruding viscose having a cellulose content between about 5 and about 9 percent, a caustic soda to cellulose ratio of from 0.6 to 1.5, a γ number of at least 80 and a ball fall viscosity of at least 100 seconds, the cellulose in said viscose having an average degree of polymerization of at laest 300, into an aqueous coagulating bath containing sulfuric acid in a proportion related to the caustic content of the viscose by the expression

$$[\text{acid}]=(0.77[\text{NaOH}]+0.92)\pm 0.5$$

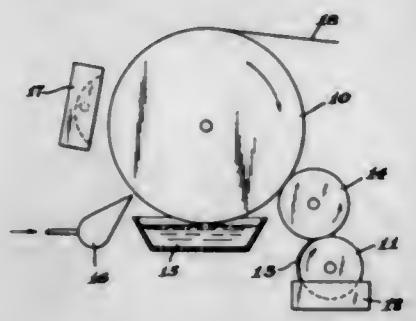
where [acid] is the concentration of sulfuric acid in the bath in weight percent and [NaOH] is the concentration of NaOH in the viscose in weight percent, said bath also containing 6 to 15 percent sodium sulfate, 0 to 1 percent zinc sulfate and 0.5 to 1.5 percent formaldehyde, and having a temperature of between 10° C. and 50° C., to form filaments; maintaining the filaments in said coagulating bath between ⅓ second and 9 seconds, stretching the filaments while in contact with a dilute aqueous acid liquor at a temperature above 90° C. and thereby increasing the length of the filaments by from 150 percent to 280 percent and cutting the stretched filaments to form staple only after their γ number has fallen to below 10.

3,226,462

PROCESS FOR PRODUCING MICROPOROUS FILMS

Floyd E. Romesberg, Midland, Robert J. Mathieson, Rhodes, and Lloyd E. Lefevre, Bay City, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Oct. 12, 1961, Ser. No. 144,573
5 Claims. (Cl. 264—216)



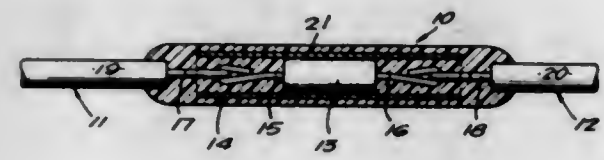
1. A process for preparing microporous films comprising the steps of (1) wetting a non-porous deposition base with a liquid consisting essentially of an aqueous solution of an electrolyte coagulant, (2) contacting the wetted deposition base with a latex, prepared by the emulsion polymerization of from 90 to 99 percent by weight of vinylidene chloride and correspondingly from 10 to 1 percent by weight of a comonomer selected from the class consisting of acrylonitrile and lower alkyl acrylate having from 1 to 4 carbon atoms in the alkyl group containing from 20 to 50 percent by weight of copolymer solids and predominantly in the amorphous state, (3) removing excess latex from said deposition base, (4) washing the so-formed coagulum, and (5) drying said coagulum at a temperature below the fusion point of the copolymer.

3,226,463

METHODS OF MAKING CIRCUIT COMPONENTS

Joseph M. Wallace, 5617 Corryne Place, Culver City, Calif.

Filed Apr. 10, 1961, Ser. No. 101,695
1 Claim. (Cl. 264—272)



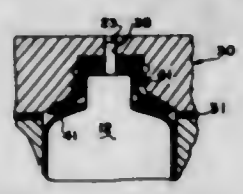
The method of forming a circuit element having first and second longitudinally extending bare wire leads into an encapsulated component for connection in an electrical circuit, which method comprises the steps of electrically connecting a flexible bare wire end of an insulated conductor to the end of one of the bare wire leads from the circuit element, electrically connecting a flexible bare wire end of a second insulated conductor lead to the end of the other bare wire lead from the circuit element, placing a rigid dielectric sleeve around said circuit element, placing said element, said sleeve, and said bare wire ends in a mold with the sleeve projecting beyond both ends of the circuit element and surrounding the bare wire ends and the electrical connection formed thereon with the leads holding the element in spaced relationship in a mold and the element in turn holding the sleeve in the mold in spaced relationship to the surfaces thereof, while injecting a liquid plastic material under pressure into said mold to flow into and around said sleeve and in a manner to cure the liquid plastic material in a solid state.

3,226,464

METHOD FOR MAKING PLASTIC CONTAINERS

Robert W. Saumsiegle, 10 Preston Road, Lexington, Mass., and Fred E. Wiley, 498 Converse St., Longmeadow, Mass.

Filed Sept. 11, 1961, Ser. No. 137,310
16 Claims. (Cl. 264—325)



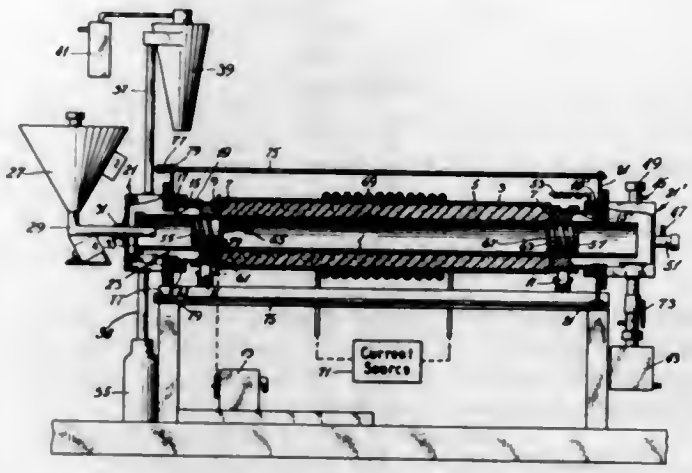
1. A method of forming a circumferential end portion of a hollow plastic cylinder of thermoplastic material to desired configuration comprising: longitudinally crushing the said end portion into a plurality of folds and wrinkles while supporting interiorly and exteriorly at least a part of the remainder of said cylinder; and thereafter molding said crushed end portion into the desired configuration under the influence of heat and pressure applied only to the crushed end portion.

ELECTRICAL

3,226,465
HIGH-TEMPERATURE KILN

James H. Downing, Clarence, N.Y., Ernest L. Koerner, Bridgeton, Mo., and James E. Wells III, Kenmore, N.Y., assignors to Union Carbide Corporation, a corporation of New York

Filed May 31, 1963, Ser. No. 284,519
4 Claims. (Cl. 13—27)

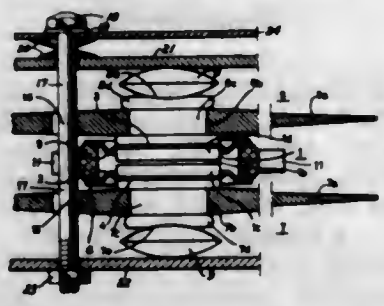


1. A rotary kiln comprising a first inner graphite tube adapted to contain a charge of solid material having a charge inlet end and an outlet end; a second outer tube of non-conductive material arranged concentric with and spaced from the first tube and in fixed relation therewith, the space between the first and second tubes being closed and substantially filled with amorphous carbon; means communicating with said graphite tube in a substantially gas-tight connection for introducing charge material into said graphite tube at the inlet end thereof substantially without the admission of air to the graphite tube; means for withdrawing gases from the graphite tube at its inlet end; means for recovering solid material from the graphite tube at its outlet end substantially without the admission of air to the graphite tube; means for axially rotating the graphite tube; and means for electrically heating the graphite tube.

3,226,466
SEMICONDUCTOR DEVICES WITH COOLING PLATES

Heinz Martin, Munich, Germany, assignor to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany

Filed Feb. 5, 1963, Ser. No. 256,438
Claims priority, application Germany, Feb. 10, 1962, S 77,980
8 Claims. (Cl. 174—15)

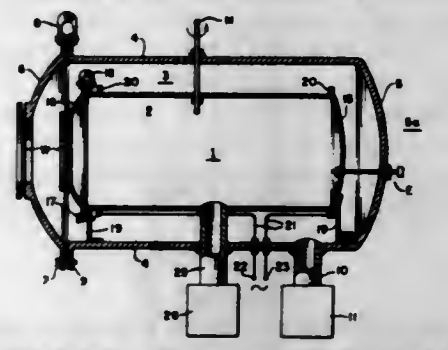


1. A semiconductor device, comprising a semiconductor member having a flat crystalline body of semiconductor material with two reinforcing plates alloy-bonded to the respective faces of said body and consisting of metal whose thermal coefficient of expansion is similar to that of said semiconductor material; a housing having an insulating ring surrounding said semiconductor member and having top and bottom covers of metal peripherally and gas-tightly joined to said ring on axially opposite sides thereof respectively and in face-to-face contact with said respective reinforcing plates; two cooling structures each located on opposite sides of said housing; and means for pressing said cooling structures in heat conductive contact with said respective covers, each of said cooling structures comprising a cooling plate having a middle portion in face-to-face engagement with one of said respective covers and two lateral portions extending away from said middle portion in diametrically opposite relation to said semiconductor member and protruding beyond said semiconductor member for exposure to heat dissipating coolant, each said cooling plate having its largest thickness in said middle portion and having in each of said lateral portions a cross-sectional shape tapering in the direction from said middle portion toward the protruding end.

3,226,467
DOUBLE-WALLED ULTRA-HIGH VACUUM VESSEL DEFINING A WORK CHAMBER

Gerhard Kienel, Hanau (Main), and Friedrich Eleßner, Langenselbold, near Hanau (Main), Germany, assignors to W. C. Heraeus G.m.b.H., Hanau (Main), Germany, a firm of Germany

Filed Sept. 27, 1961, Ser. No. 141,053
Claims priority, application Germany, Sept. 28, 1960, H 36,080, Patent 1,829,431, H 36,083, Patent 1,829,478; Sept. 29, 1960, H 36,084, Patent 1,829,479
11 Claims. (Cl. 174—18)

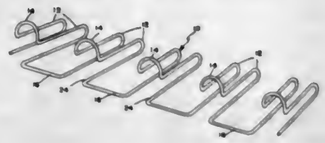


1. In an ultra-high vacuum vessel for reactions and the like in a gas free area having an outer wall housing adapted to resist the outer atmospheric pressure, an inner wall defining an interior work chamber and spaced from said outer wall, said outer and inner walls defining a protective chamber surrounding said work chamber, independent conduit means for separately connecting said work chamber and said protective chamber to at least one pump unit for evacuating said work chamber to an ultra-high vacuum and said protective chamber to a high vacuum, said outer and inner walls having respective apertures substantially in alignment with each other, said apertures being of substantially the same area, means extending through at least one pair of said aligned apertures in said walls for transmitting energy from the outside into said work chamber, and mechanical sealing means for sealing said energy transmitting means relative to said outer wall, means extending through said inner wall aperture spaced from the aperture wall and extending substantially on each side of the inner wall, said energy-transmitting means extending through said last named means in the aperture in said inner wall in a manner so as to leave a free narrow gap connecting said work and protective chambers, said gap having a considerable length and forming a diffusion gap for substantially sealing said work chamber relative to said protective chamber.

3,226,468
MULTIPLE CONDUIT SPACING AND CLIPPING APPARATUS

Timothy E. Patton, 1190 Concord, El Cajon, Calif., and Paul A. Cushman, 6791 Alama Way, San Diego, Calif.

Filed May 20, 1963, Ser. No. 281,517
3 Claims. (Cl. 174—49)

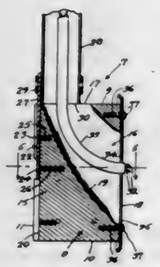


1. In combination, a strap-like structural support;
a linear element of electrical conductor and conduit type;
a plurality of clips, each clip having means resiliently engaging said structural support;
means integral with the first mentioned means resiliently gripping said linear element; and
connecting means interconnecting said clips, said connecting means being bendable to adjust the spacing between said clips, all said means being unitary and continuous in structure.

3,226,469
LOW VOLTAGE OUTLET WITH A CONDUIT CLAMPING DEVICE

James P. Majors, 12304 Dalewood Drive, Silver Spring, Md.

Filed Aug. 27, 1963, Ser. No. 304,808
1 Claim. (Cl. 174—65)

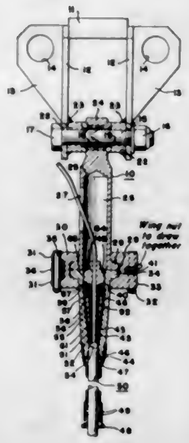


A low voltage outlet comprising an elongated block having a front face and an end face disposed at substantially a right angle to said front face, said block forming a receptacle and having a passage formed therein, said passage having a first end opening through said end face and a second end opening through said front face, said passage including an inner surface extending between remote portions of said passage ends and disposed at an incline relative to said end face and said front face, a wire conduit, and means supported by said receptacle and detachably secured to said conduit for positioning an end of the conduit in registration with said first passage end and disposed to open toward said inclined passage surface and with a part of the conduit bore forming a smooth continuation of an end of said inclined surface whereby wiring entering said passage through said second passage end will be deflected by said inclined surface toward said first passage end and into said conduit end in registration therewith, said means comprising a post detachably secured to said receptacle and having a part extending beyond said end face, and a clamp detachably embracing said part and a portion of the conduit, said block including a rear face having a longitudinally extending groove in which a portion of said post is received.

3,226,470
LOAD BEARING CONNECTOR

Charles J. Bryant, Santa Barbara, Calif., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Jan. 8, 1964, Ser. No. 336,592
2 Claims. (Cl. 174—79)



1. A load bearing connector assembly for passage of a central conducting means having two concentric layers of shield wiring thereon, comprising, a yoke means for attachment to a support mounting, a sleeve and pivotal bushing portion carried by said yoke means, a tubular body portion having one end thereof journaled by said sleeve and bushing portion as well as having a lateral opening through which the conducting means passes an outwardly flared end on said tubular body portion in a location remote from said journaling end, a separable clamp means which forms internal recessing that receives said flared end, a housing means having an outwardly flanged ending which fits said clamp means recessing in complementary relation to said flared end of said tubular body portion, internal first and second telescoping tapered sleeve portions for flaring shield wiring outwardly as fitted complementary to each other and axially into alignment with said housing means in a location to one side of said tubular body portion, ring means to engage ending of shield wiring in abutment against said telescoping tapered sleeve portions in a location radially within confines of said housing means, and fastening means to force said tapered sleeve portions to interact with said housing means and that maintain assembled relationship thereof.

3,226,471
INSULATED SPLICER CAP

Stephen N. Buchanan, Westmoreland Hills, Md. (5141 Massachusetts Ave. NW., Washington, D.C.), and Walter S. Pawl, 10480 Powder Mill Road, Adelphi, Md.

Filed Aug. 10, 1962, Ser. No. 216,244
4 Claims. (Cl. 174—87)

1. An electrical connection comprising a wire splicer cap which comprises a flattened tubular member of flexible insulating material closed at one end, a strip of ductile conductive material bent into a sleeve element positioned around the inside surface of said tubular member, said sleeve element having a plurality of substantially parallel slits therein which are spaced from each other, and a plurality of wires to be connected having bared ends extending into the sleeve element within the insulating tubular member in a direction substantially parallel to

the axis of said sleeve, said cap and the wires being sharply bent along a line across the width of said cap and transverse to the axis of said sleeve and the length of said wires, a concentrated high unit pressure electrical

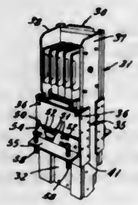


contact existing between the wires and the conductive sleeve element and the edges of the material of the sleeve at said slits biting into the wires and securely mechanically and electrically connecting the wires.

3,226,472
ADJUSTABLE RISER DUCT FLOOR SUPPORT

Gardner E. Barnstead, Garden City, Donald F. Letosky, Detroit, and Donald E. Missett, Warren, Mich., assignors to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Aug. 21, 1962, Ser. No. 218,397
9 Claims. (Cl. 174—100)



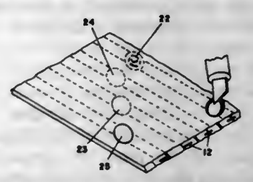
2. The combination comprising a bus duct section and support means therefor; said section including an elongated housing and a plurality of bus bars disposed therein, extending parallel to the longitudinal axis of the housing, and insulated from each other; said support means including a first member, means securing said member to a first side of said housing with a portion of said first member extending outwardly at right angles to said first side, and adjusting means mounted on said portion and extending parallel to said longitudinal axis; said means securing said first member to said first side of said housing comprising another member interposed between said first member and said housing; means for selectively positioning said first member on said another member at any one of a plurality of predetermined locations; said another member being of a U-shape with a web and an arm at each end of said web; said web extending across said first side and said arms extending opposite other sides of said housing adjacent to said first side.

3,226,473
ENCAPSULATED CONDUCTIVE PATHS WITH READILY REMOVABLE INSULATION

Victor F. Dahlgren, Chelmsford, Mass., assignor to Sanders Associates, Inc., Nashua, N.H., a corporation of Delaware

Filed Mar. 4, 1963, Ser. No. 263,380
5 Claims. (Cl. 174—117)

1. A flexible circuit of conductive paths laminated between sheets of thermoplastic material wherein pre-selected portions of said conductive paths are recessed and thereby unbonded to the plastic material thereover, the thermoplastic material over but not bonded to said recessed portions being readily removed to thereby expose

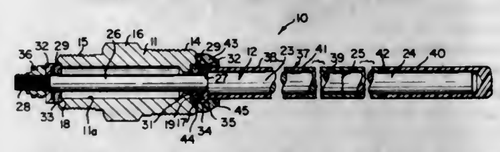


said recessed portions for electrical connection to external circuits and components.

3,226,474
CAPACITANCE PROBE ASSEMBLY

Lawrence T. Garnett, Fullerton, and Ralph L. Schroeder, Jr., Monrovia, Calif., assignors to Robertshaw Controls Company, a corporation of Delaware

Filed Jan. 28, 1963, Ser. No. 254,379
7 Claims. (Cl. 174—151)

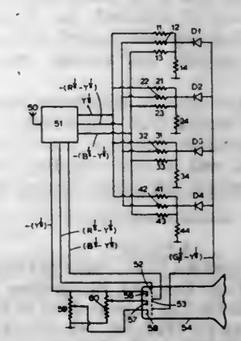


1. A capacitance probe assembly or the like comprising a probe rod, a hollow gland body telescopically receiving an intermediate part of said probe rod whereby said probe rod extends beyond the opposite ends of said gland body, a pair of insulators carried by said probe rod and radially and axially engaging said gland body, said insulators electrically insulating said probe rod from said gland body and mechanically constraining said probe rod, a pair of thrust washers disposed respectively against said insulators, and means imposing an axial force on said washers to place said insulators into axial engagement with said gland body, said washers being undercut adjacent said insulators to minimize tensile loads on said insulators.

3,226,475
FUNCTION GENERATORS ESPECIALLY FOR COLOUR TELEVISION RECEIVERS

William Spencer Percival, London, England, assignor to Electric & Musical Industries Limited, Hayes, England, a company of Great Britain

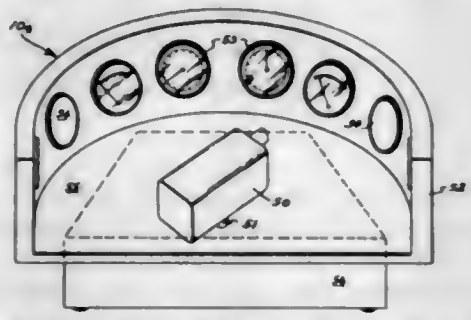
Filed July 2, 1962, Ser. No. 206,963
Claims priority, application Great Britain, July 6, 1961, 24,498/61
18 Claims. (Cl. 178—5.4)



1. Colour television apparatus comprising means for setting up three signal components which together represent a coloured picture, a plurality of networks, each hav-

ing input terminals to which at least the lower frequencies of respective ones of said singal components are applied and each network being arranged to produce a respective output signal which represents a different approximation to a non-linear function of the signal components applied thereto, a series of one way devices each connected from the output of a respective network to a common point so as to set up at said common point the one of said output signals which lies at an extreme of the range of values of said output signals at the time, the signal set up at said common point being the best available approximation to said non-linear function among said output signals and means for utilising at least the lower frequencies of the signal set up at said common point together with at least two of said three signal components which together represent the coloured picture.

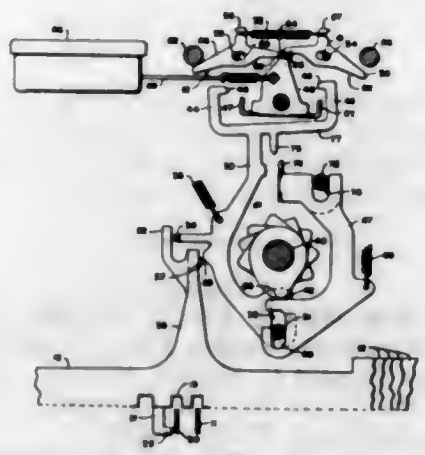
3,226,476
TELEVISION SCANNING DEVICE FOR PROVIDING REMOTE MOTOR INDICATION
Roy H. Tyler, 1410 Dallas St., Wellington, Tex.
Filed Mar. 16, 1964, Ser. No. 352,048
3 Claims. (Cl. 178—6)



1. A remote weather information monitoring device for visually reproducing for remote observation a series of data producing instruments, said device comprising:
a vertically upright mounting board having a semi-circular shape;
a base member for supporting said mounting board;
a series of instrument dials attached in a fixed predetermined spaced apart relationship on said mounting board;
an upright oscillating shaft extending upwardly from said base member located horizontally a substantially equal distance from each of said instrument dials on said mounting board;
a television camera supported on said shaft and directed toward said mounting board;
a motor mounted on said base member;
and an oscillating gear drive means interconnecting said motor and said shaft for continuously turning said shaft back and forth on partial revolution cycles;
the said oscillating gear drive means including a pinion on the lower end of said shaft and an annular gear having a toothed segment meshed with said pinion;
a second gear opposite said annular gear driven by said motor;
an arm pivoted eccentrically at each end to said annular gear and said second gear, respectively;
whereby said television camera is caused to reversibly scan from one end of said mounting board to the other at a constant rate while viewing said dials.

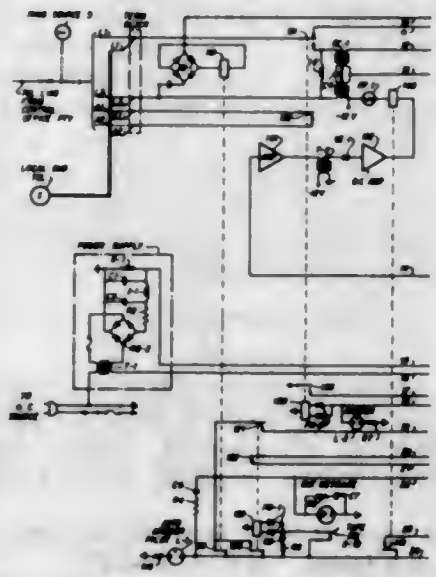
3,226,477
CODE GENERATING MECHANISM
Robert E. Arko, Mount Prospect, Ill., assignor to Teletype Corporation, Skokie, Ill., a corporation of Delaware
Filed June 24, 1963, Ser. No. 289,920
9 Claims. (Cl. 178—17)

1. In a keyboard mechanism for generating permutational code combinations divided into first and second groups which groups differ from each other in that an element in one level of the code combinations of one group is the reverse of that in the same level of the other group,
(a) a plurality of signal key means selectively operable to control generation of code combinations, a portion of said signal key means being identified with and capable of controlling the generation of code combinations in both said first group and said second group,
(b) a plurality of code bar means operable by said signal key means to generate elements of the code combinations of both said first and second groups,



(c) control means operable to cause one of said code bar means to reverse the condition of the element generated thereby when a signal key means is operated while the control means is operative, and
(d) parity generating means for generating parity check element in the code combinations of the first group of code combinations to maintain the total of the elements in parity and operable upon actuation of said control means to generate a check element in the code combinations of said second group of code combinations to maintain the total of these elements in parity.

3,226,478
AUTOMATIC TELEPHONE ANSWERING AND MESSAGE RECORDING SYSTEM
Charles M. Martin, Pewaukee, Robert O. Myers, Waukesha, and Kenneth C. Le Gros, Emil E. Evans, and Edward A. Marheine, Milwaukee, Wis., assignors, by mesne assignments, to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware
Filed Dec. 16, 1960, Ser. No. 76,311
5 Claims. (Cl. 179—6)



1. In a device for automatically answering and recording messages on calls extended to an unattended telephone station; a telephone line connected in multiple to said

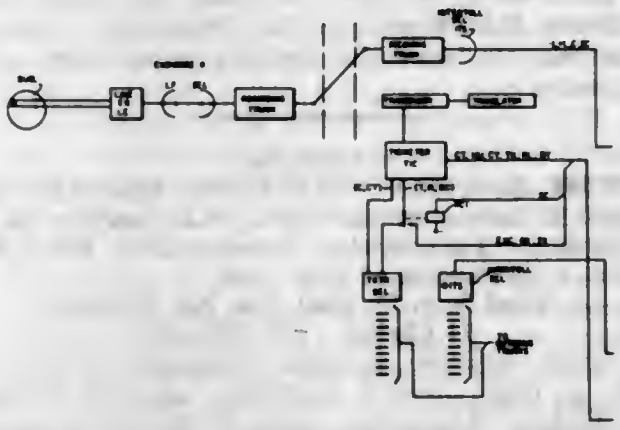
device and to said unattended station; a calling station having access to said line; a first recording medium having an outgoing message followed by a special signal recorded thereon; an out-message motor for driving said first medium; a ringing current source; means for applying said ringing current source to said telephone line in response to the extension of a call from said calling station to said device; means including out-message reproducing means operated in response to receipt of said ringing current for energizing said out-message motor to drive said first medium and reproduce both said recorded outgoing message and said special signal for transmission over said telephone line to said calling station to inform said calling station by means of said outgoing message to commence an incoming message subsequent to the termination of said special signal; means in said device connected in multiple to said out-message reproducing means for amplifying and rectifying only said special signal; a second recording medium; an in-message motor for driving said second medium; in-message recording means; a normally open energizing circuit to said in-message motor; special signal responding means operated in response to receipt of only said rectified special signal for a predetermined period of time; control means operated in response to said operation of said special signal responding means; means operated by said control means for maintaining itself operated, for disconnecting said out-message reproducing means from said telephone line, for connecting said in-message recording means thereto and for completing said circuit to energize said in-message motor; said second medium thereafter driven by said in-message motor to record an incoming message from said calling station thereon; a forward motor and a rewind motor, each arranged to provide specific driving control of said second recording medium; a play relay connected in multiple to said energizing circuit of said in-message motor and operated simultaneously therewith in response to the completion of said energizing circuit; a normally incomplete series circuit to said forward and said rewind motors; and means operated in response to said operation of said play relay for completing said series circuit to energize said forward and said rewind motors, whereby said energized motors exert a constant takeup and back pressure on said second recording medium during the time said second medium is driven by said in-message motor.

3,226,479

TANDEM TOLL ADAPTER CIRCUIT

Willard A. Rust, Park Ridge, Ill., assignor to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware

Filed Dec. 28, 1962, Ser. No. 248,047
4 Claims. (Cl. 179—7)



1. In an automatic toll ticketing telephone system serving subscribers in a plurality of interconnected exchanges, call extending circuits, and trunk lines interconnecting said exchanges, a first exchange having a recording trunk equipment operated to ticket inter-exchange calls and a calling subscriber station including outpulsing means operated to control said call extending means to access said recording trunk equipment and extend an originating call; a second exchange with toll ticketing equipment including, a ticketer, and routing means for controlling the extension of a call comprising a translator, a sender and a ticketer selector, at least one of said trunk lines connecting said first exchange recording trunk and said second exchange;

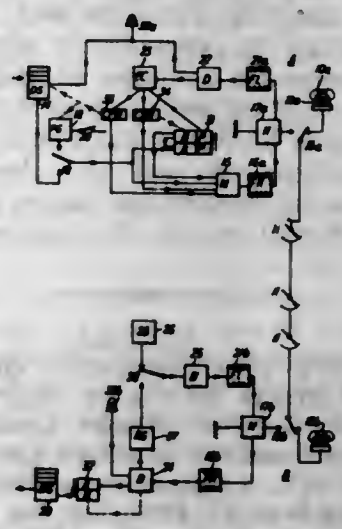
an adapter circuit in said exchange, said one trunk line terminating at said second exchange in said adapter circuit, a ticketer access means in said adapter, an intertoll selector connected to said adapter circuit, and a transfer relay, said ticketer access means and said transfer relay operated upon seizure of said adapter circuit from said recording trunk equipment, said transfer relay's contacts connected to transfer said ticketer's outgoing transmission and control leads from said ticketer selector to said intertoll selector via said adapter circuit, said adapter circuit connected to said second exchange ticketer; said ticketer, translator and sender combination operated by said first station's outpulsing means to further outpulse to said intertoll selector and a selected outgoing trunk via said transfer relay contacts, first relay means operated upon completion of outpulsing to release said transfer relay to reconnect said ticketer to said ticketer selector, other means thereafter operated to release said second exchange ticketer, whereby said second exchange ticketer is prevented from completing a ticketing operation.

3,226,480

DUPLEX DATA TRANSMISSION SYSTEM UTILIZING A TELEPHONE CHANNEL

Esmond Philip Goodwin Wright, Victor John Terry, and William Francis Sidney Chittleburgh, all of London, England, assignors to International Standard Electric Corporation, New York, N.Y.

Filed Jan. 23, 1961, Ser. No. 84,073
Claims priority, application Great Britain, Jan. 21, 1960, 2,178/60
11 Claims. (Cl. 179—15)



1. Apparatus for intelligence transmission comprising:

a single communication channel of limited frequency bandwidth;

first and second terminal equipment coupled to opposite ends of said channel for simultaneous intelligence transmission in both directions over said channel; and

means disposed in each of said terminal equipments to divide the bandwidth of said channels into two sub-channels of unequal bandwidth, one of said sub-channels being allocated for transmission in one di-

rection over said channel and the other of said sub-channels being allocated for transmission in the opposite direction over said channel;

said first terminal equipment including first transmitting means coupled to said one of said sub-channels for transmitting message intelligence;

said second terminal equipment including second transmitting means coupled to said other of said sub-channels for transmitting supervisory intelligence;

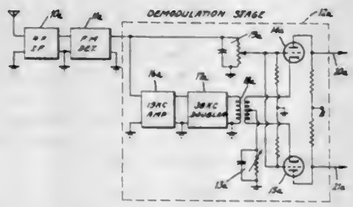
said terminal equipment including means for checking said message intelligence for errors occurring in transmission in response to said message intelligence and said supervisory intelligence.

3,226,481

F.M. SUM AND DIFFERENCE STEREO RECEIVER HAVING COMPENSATION MEANS

Harry H. Wilson, Jr., Philadelphia, and Abram Hopengarten, Lafayette Hills, Pa., assignors to Philco Corporation, Philadelphia, Pa., a corporation of Delaware

Filed Sept. 7, 1962, Ser. No. 222,066
1 Claim. (Cl. 179—15)



A stereophonic radio receiver adapted to receive a composite signal having a sum component, a difference component consisting of amplitude modulation of a suppressed subcarrier, and a phase reference signal, said receiver comprising a demodulation stage including a pair of switching triodes, means for supplying said composite signal to the grids of said triodes, a transformer having a primary winding and a center-tapped secondary winding, means responsive to said phase reference signal for supplying a sampling signal to said primary winding, means connecting the extremities of said secondary winding to the respective cathodes of said triodes, a filter connected between the center tap of said secondary winding and a point of fixed potential, said filter having greater transfer impedance for said sum component than for said difference component, and means for deriving from the anodes of said triodes the two stereophonic audio signals.

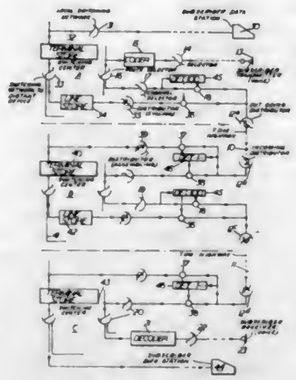
3,226,482

SELECTIVE TRANSMISSION OF PRIORITY CODED MESSAGE SIGNALS

Esmond Philip Goodwin Wright, London, England, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed Sept. 21, 1961, Ser. No. 139,701
Claims priority, application Great Britain, Sept. 23, 1960, 32,785/60
10 Claims. (Cl. 179—15)

1. A time division multiplex system comprising a plurality of channels defined by recurring time slots, a plurality of sources of intelligence signals having either high or low priority status, means responsive to said sources for providing pulse signal samples modulated according to said intelligence and coded according to the priority of the signal source, means responsive to said priority signals for developing a criteria signal which rises or falls to represent the general level of priority status of the samples being presented for transmission, means for normally assigning said channels to the transmission of the high priority samples, and means responsive to the fall of said



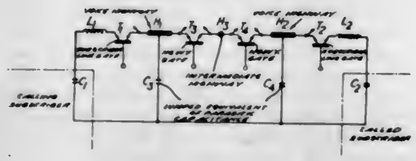
criteria signal below a critical level for assigning said channels to the transmission of said low-priority samples.

3,226,483

RESONANT TRANSFER TIME DIVISION MULTIPLEX SYSTEM USING TRANSISTOR GATING CIRCUITS

Hans H. Adelaar, Antwerp, Belgium, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed Nov. 10, 1961, Ser. No. 151,562
Claims priority, application Netherlands, Dec. 1, 1960, 258,572
12 Claims. (Cl. 179—15)



1. A time division multiplex telephone system comprising a communication path including at least one voice highway, gate means connected to opposite ends of said highway, each of said gate means comprising a single transistor having a base electrode for control and emitter-collector electrodes for transmitting voice signals along said communication path, and means for selectively biasing the base electrodes of each of said transistors to switch said gate means "off" and "on," said last named means comprising D.C. loops extending from one of said gate means over the associated highway to the other of said gate means.

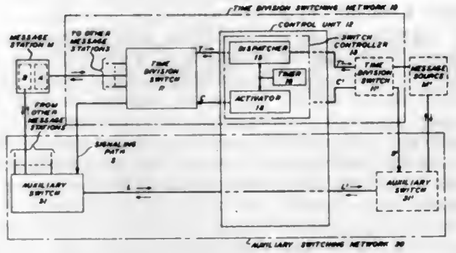
3,226,484

TIME DIVISION TELEPHONE SIGNALING

Dennis B. James, Bernardsville, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Nov. 17, 1961, Ser. No. 153,118
11 Claims. (Cl. 179—15)

1. Time division signaling apparatus which comprises a time division switching network having a first plurality of terminals, some of which are connected to sources of a first kind to which are assignable individual and recurrent time slot intervals; an auxiliary switching network having a control point and a second plurality of terminals connected to sources of a second kind, distinctive from the first; a signaling path interconnecting the control point of said auxiliary network with one terminal of said time division network; means for activating said signaling path during a preassigned



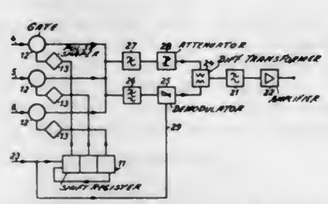
time slot; and means for dispatching a control signal over the activated path to said auxiliary network to switch therethrough one of the sources of said second kind.

3,226,485

DISTORTION COMPENSATION AT WIDE-BAND TRANSMISSION OVER A NUMBER OF EQUAL NARROW-BAND CHANNELS

Henry Scheftelowitz, Hagersten, Sweden, assignor to Telefonaktiebolaget L M Ericsson, Stockholm, Sweden, a corporation of Sweden

Filed Feb. 6, 1962, Ser. No. 171,508
Claims priority, application Sweden, Feb. 20, 1961, 1,749/61
3 Claims. (Cl. 179—15)



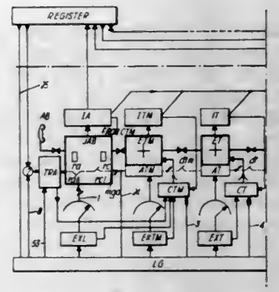
1. In a circuit system for compensating distortions of the signals transmitted in a time-division multiplex system including transmitting means and receiving means connected by several similar transmission channels and in which an input signal fed to the transmitting means and having a frequency band wider than the band width of each of said channels is time-divided and the pulses thus obtained are distributed upon said channels and in which the pulses received in the receiving means are scanned and combined to an output signal, in combination, a gating circuit having input and output for each channel, operating circuit means including a shift register and a pulse-formed network connected to said gating circuit for feeding control pulses to the same, the input of each gating circuit being connected to one of said channels and the output to a common point, an integrating means having an input and an output, the input of the integrating means being connected to said common point through two branch circuits, one of said branches including a low pass filter and attenuating means connected in series and the other of said branches including a band pass filter and demodulating means, said low pass filter passing a frequency band corresponding to the frequency band of said incoming signal and said band pass filter passing a frequency band corresponding to a side band of a harmonic side wave in said output signal and said demodulating means having a carrier frequency equal to the frequency of said harmonic wave, the output of said integrating means being connected to the output of said receiving means.

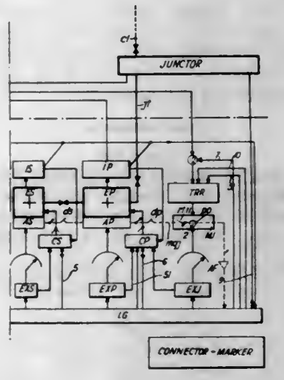
3,226,486

SELECTION SYSTEM

Henri Benmussa, Pierre Rene Louis Marty, and Stanislas Kobus, Paris, France, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

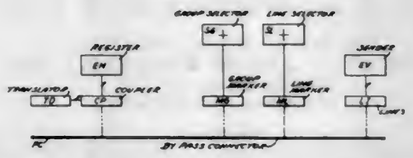
Filed Mar. 5, 1962, Ser. No. 177,551
Claims priority, application France, Mar. 3, 1961, 854,440, Patent 1,290,332
11 Claims. (Cl. 179—18)





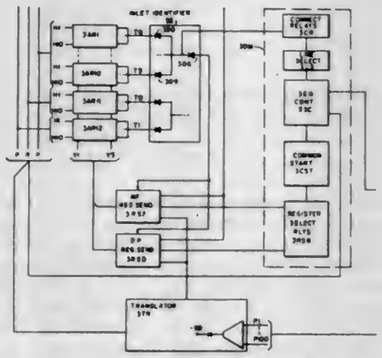
1. An automatic telephone switching system comprising a plurality of subscriber stations, line circuits associated with each of said stations, connection network means comprising a plurality of paths for linking calling ones of said subscriber stations to called ones of said subscriber stations, piloting network means comprising a plurality of selected paths extending between all of said stations, each of said selected paths being analogous to one of said plurality of paths, marking means included in said piloting network means operated responsive to directive signals from said calling stations for marking said calling line circuit and said called line circuit, means for transmitting first pilot signals from said marked calling line circuit toward said marked called line circuit and for sending second pilot signals from said marked called line circuit toward said marked calling line circuit through all available ones of said selection paths, selection means for progressively blocking a part of said available selection paths through said selection network, until a single selection path is selected, and means responsive to said selection of said one selected path for switching through said connection means to link said calling station to said called station over the path analogous to said selected selection path.

3,226,487
TELEPHONE SYSTEMS
Henri Benmussa, Meudon (Seine), France, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 5, 1962, Ser. No. 228,666
Claims priority, application France, Oct. 10, 1961, 875,500, Patent 1,313,802
5 Claims. (Cl. 179—18)



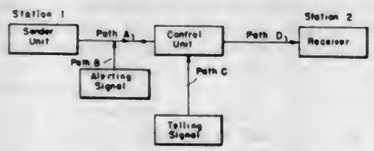
1. In an automatic telephone switching system for extending connections between calling and called lines and trunks served by said system, a plurality of switching stages, control equipment common to said lines, trunks and switching stages for receiving control data from said lines and trunks and for controlling said switching stages in accordance therewith, and connecting circuits having a plurality of time-division channels thereon extending between said common control equipment and said switching stages for transmitting the said control data to said stages on a time-division multiplex basis, scanner means for periodically and cyclically scanning the said common equipment for sampling the data received thereby for transmission over said channels at time intervals corresponding to said channels, means for advancing said scanning means step by step, and means for temporarily delaying each said advancement responsive to the said control equipment containing control data to be transmitted during the corresponding time interval.

3,226,488
DATA SWITCHING SYSTEM
Frank B. Sikorski, Des Plaines, and Kore K. Spellnes, Glen Ellyn, Ill., assignors to Automatic Electric Laboratories Inc., Northlake, Ill., a corporation of Delaware
Filed Dec. 12, 1962, Ser. No. 244,058
4 Claims. (Cl. 179—18)



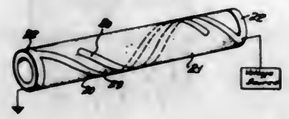
1. In a communication switching system, a plurality of lines including a calling and a called line, a line circuit terminating each said line, a first set of terminals, a second set of terminals, and a third set of terminals, each said line circuit having at least one line termination in said first and third sets of terminals, digital transmitting means at said calling line, a first plurality of switching stages arranged in tandem for selectively electrically connecting terminals of the first set with terminals of the second set, a second single stage coordinate array of relays, all of said stages comprising a plurality of two winding relays arranged in a coordinate array, a unidirectional device individual to each of said relays and connected in series with a first winding thereof, at the coordinate points of each of said arrays, means operated by said calling line circuit to apply a potential to the first winding of an ordinate group of relays in said second coordinate array of relays, other means comprising the connection of a group of said unidirectional devices to a terminal of a second serially poled unidirectional device, said second winding of each said relays connected in series with a normally open set of its own contacts, links interconnecting adjacent stages, a third switching stage between the second and third sets of terminals, a plurality of register-senders, means operated in response to said potential via said second unidirectional device in said second coordinate array of relays to allot an available one of said register-senders, for said register-sender to operate in response to said allotment to apply an opposite potential to said unidirectional device to operate an individual one of said relays of said second coordinate array of relays whereby said register-sender is uniquely connected through said calling line circuit for outpulsing, marker means controlled by said register-sender for applying a first marking potential to a selected terminal of the first set via said second coordinate array of relays and a second marking potential to a selected terminal of the second set which produces a potential difference in the forward direction of said devices between the two selected terminals through a series path including the first windings of one coordinate point relay of each of said stages and a third marking potential of the same polarity as the first marking potential to a selected terminal of the third set, which in conjunction with said second potential causes said relays via said first windings in the path between the selected terminals to operate and thereby establish a communication path, first means operated upon establishment of said communication path for completing a holding circuit in series through the second windings and said series contacts of the relays in the established path, other means effective subsequent to the eslablishment of the holding path for removing said marking potentials.

3,226,489
COMMUNICATIONS CONTROL SYSTEM
Russel J. Grambsch, Mosinee, Wis.
(7238 Barrett Road, West Chester, Ohio)
Filed Oct. 24, 1962, Ser. No. 232,725
7 Claims. (Cl. 179—89)



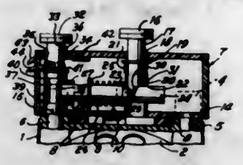
5. A telephone receiver comprising input lines, control means operable to disconnect said receiver from possible incoming ringing signals occurring on said input lines, recorder means operable to repetitively produce a pre-recorded message, said recorder means being normally disconnected from said input lines, means in said control means responsive to at least one of said ringing signals for connecting said recorder means to said input lines to transmit said repetitive pre-recorded message back toward the source of said ringing signals, means for automatically terminating said transmission after a predetermined number of repetitions of said message have occurred, means for counting the number of ringing signals which are intercepted at said control means, and switching means responsive to occurrence of a predetermined plurality of successive such ringing signals for connecting subsequent ringing signals to said receiver, said predetermined plurality of ringing signals being at least equal in number to said predetermined number of message repetitions.

3,226,490
PIEZOELECTRIC PHONOGRAPH PICKUP
Joseph W. Crownover, La Jolla, Calif., assignor of twenty-five percent to William W. Haefliger, San Marino, Calif.
Original application Dec. 27, 1957, Ser. No. 705,687, now Patent No. 3,035,126, dated May 15, 1962. Divided and this application Dec. 20, 1961, Ser. No. 160,730
6 Claims. (Cl. 179—100.41)



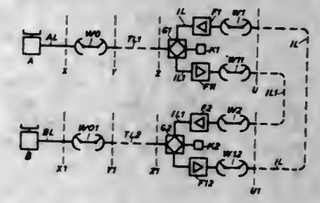
1. A phonograph pickup assembly, comprising a cylindrical body of electrostrictive ceramic material having a pair of spaced electrodes extending longitudinally thereon and spiraling about the axis thereof so that twisting of the body about said axis is accompanied by a voltage change across said electrodes, said electrodes being in the same curved plane defined by a surface of said body, and a phonograph needle support arranged for transmitting twist to said body in response to substantially all twist producing excursions of said needle upon a phonograph record.

3,226,491
TELEPHONE SWITCH CONTROL DEVICE
Harold G. Spangler, 1207 Haines Ave., Dallas, Tex.
Filed Dec. 4, 1961, Ser. No. 156,781
1 Claim. (Cl. 179—161)



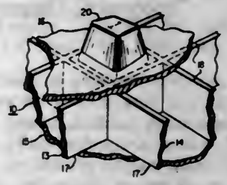
In a push button device arranged for attachment to a telephone instrument having a cradle with spaced spring urged switch buttons extending upwardly therein; a housing having spaced walls with passages therethrough; a first plunger movably extendable through one of the passages, and having an annular groove thereabout with an enlarged portion below the groove; one of said spring urged switch buttons being movably extendable through a passage in the lower wall of the housing and being engageable with the lower end of the first plunger; a transversely movable shaft disposed in the housing and having an end engageable in the groove; a second plunger movably extendable through one of the passages; contacting cam surfaces on the shaft and on the second plunger arranged to move the shaft out of engagement with the groove about the first plunger upon depressing the second plunger; spring means arranged about the shaft to urge the end of the shaft into engagement with the first plunger, whereby upon depressing the second plunger the end of the shaft will be moved out of engagement with the groove, and the spring urged switch button therebelow will move the first plunger upwardly to allow the outer surface of the enlarged portion thereon to engage the end of the shaft and prevent inward movement thereof; another passage through the lower wall of the housing arranged to receive the other switch button; and spring means arranged between the second plunger and the housing to urge the second plunger upwardly in the housing.

3,226,492
CIRCUIT ARRANGEMENT FOR TELEPHONE INSTRUMENTS
Wilfried Paul Martin Schütze, Hagersten, Sweden, assignor to Telefonaktiebolaget L M Ericsson, Stockholm, Sweden, a corporation of Sweden
Filed June 21, 1962, Ser. No. 204,154
Claims priority, application Sweden, June 30, 1961, 6,814/61
5 Claims. (Cl. 179—170)



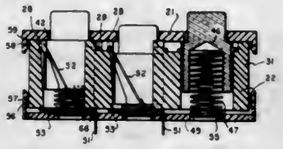
1. A telephone system comprising, in combination, a two-wire line, a four-wire line, a local exchange connected to said four-wire line, a telephone instrument connected to said exchange through said two-wire line, said instrument including a transmitter, a receiver and a speech transformer, and a corrective all-pass filter network including a capacitance and an inductance connected to said instrument to increase the attenuation thereof in respect to a signal received by the instrument from said four-wire line.

3,226,493
PUSH BUTTON CONTROL UNIT
William A. Reimer, Villa Park, Ill., assignor to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware
Filed Oct. 2, 1963, Ser. No. 313,214
3 Claims. (Cl. 200—5)



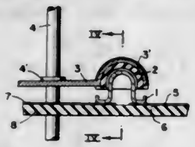
1. Apparatus for controlling signals to an electrical system comprising: a frame structure having a plurality of slats of insulating material having complementary slots therein which interlock at points of cross section to form the walls of rectangular shaped cells; a push button assembly received in each of said cells for longitudinal sliding movement and including a shank; means cooperating with one end of each said shank for containing the corresponding assembly within the respective cell; a restoring spring surrounding the shank at said end; finger button means at the other end of each said assembly, said finger button means including an insulator piece having lateral guide surfaces slidably movable along said cell walls; relatively movable contact springs carried by said slats and located within each said cell and actuated in response to the movement of the corresponding assembly; termination means; and circuit conductors printed in a predetermined pattern on said slats and extending from said contact springs to said termination means.

3,226,494
PUSH BUTTON ASSEMBLY
Joseph M. Hartz, Elmhurst, and Carl W. Vogel, Chicago, Ill., assignors to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware
Filed Oct. 3, 1963, Ser. No. 313,638
6 Claims. (Cl. 200—5)



4. A push button assembly comprising: a frame having a compartment formed therein; a push button received in said compartment for vertical sliding movement and having a cam portion formed on one side thereof; fixed contact means secured to said frame; a movable contact spring extending upwardly in said compartment on said side of said button and generally diagonally to the axis thereof, said spring being normally pretensioned against an upper surface of said cam portion so that upon depression of said button, said contact spring is permitted to move in a direction away from the axis of said button and into contacting relationship with said fixed contact means; and restoring means urging said button upward in said compartment.

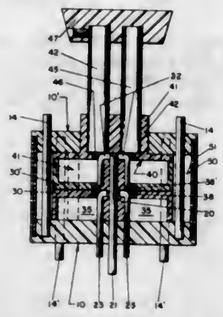
3,226,495
ROTARY SWITCH STRUCTURE WITH SADDLE-SHAPED INSULATOR AND TWO-LEGGED CONTACT BRUSH
Kouji Seki, Tokyo, Japan, assignor to Fujitsu Limited, Kawasaki, Japan, a corporation of Japan
Filed Oct. 2, 1963, Ser. No. 313,307
Claims priority, application Japan, Oct. 4, 1962, 37/58,059
7 Claims. (Cl. 200—11)



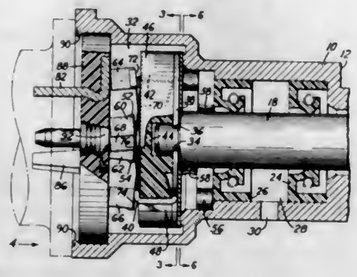
1. A rotary switch comprising an insulating base plate, a conducting circular ring printed on said base plate, a plurality of conducting contact means printed on said base plate and spaced circumferentially about said ring, a plurality of circuit means printed on said base plate, each of said circuit means connecting adjacent ones of said contact means and being arranged circumferentially about said ring, a shaft rotatably mounted on the base plate at the center of said ring, a movable contactor brush engaging said ring and engageable with successive ones of said contact means, a saddle-shaped insulator embracing said brush, resilient means rotatable with said shaft pressing said insulator and said brush against said base plate.

3,226,496
ROTARY ELECTRICAL SWITCH WITH IMPROVED SPRING CONTACT AND ROTOR STRUCTURE
Richard W. Seabury, Jr., Towaco, N.J., assignor to Radio Frequency Laboratories, Inc., Boonton, N.J., a corporation of New Jersey
Filed Sept. 15, 1964, Ser. No. 396,601
14 Claims. (Cl. 200—11)

1. In a multi-point rotary electrical switch of the class having a fixed common contact and a plurality of stationary contacts and wherein electrical continuity between the common contact and a selected one of the stationary contacts is established by means including a rotatable member, the improvement wherein the rotatable member is a cylindrical member having an axially-extending cavity formed therein, which cavity comprises laterally-extending portions communicating with an intermediate radial portion extending to the peripheral surface of the cylindrical member, and a plurality of wire springs disposed in the said cavity, each spring having an end formed into a loop in engagement with the said common contact and the other end formed into a loop which extends beyond the peripheral surface of the cylindrical member and into engagement with the selected stationary contact.

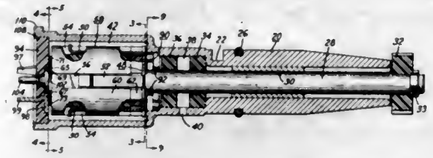


3,226,497
BRUSH HOLDER ASSEMBLY WITH CANTILEVER SPRING CONTACT MEANS
Frank J. Terkoski, Rochester, N.Y., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Feb. 19, 1962, Ser. No. 174,195
3 Claims. (Cl. 200—11)



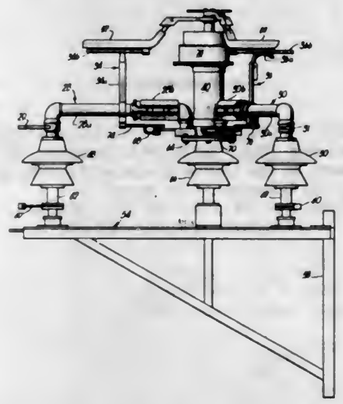
1. A brush holder assembly for an electric transmitter comprising a housing with a cup-shaped recess, a drive shaft journalled in the housing, a disc of insulating material disposed within said recess and having a pair of axially extending peripheral grooves, a drive plate connected to said drive shaft having a pair of tangs disposed in the grooves of said disc for imparting rotation thereto, a pair of cantilever springs, each cantilever spring having an inner end portion disposed in one of said peripheral grooves and retained therein by one of said tangs whereby said pair of cantilever springs are electrically interconnected by said drive plate, each cantilever spring carrying a brush at its outer end, and a unitary cantilever spring assembly attached to the front face of said disc having a plurality of cantilever spring arms, each of which carries a brush at its outer end.

3,226,498
BRUSH AND SEALING MEANS FOR AN ELECTRIC SPEEDOMETER ASSEMBLY
Keith H. Carpenter, Pittsford, and William E. Fritz and Frank J. Terkoski, Rochester, N.Y., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Feb. 19, 1962, Ser. No. 174,198
8 Claims. (Cl. 200—24)



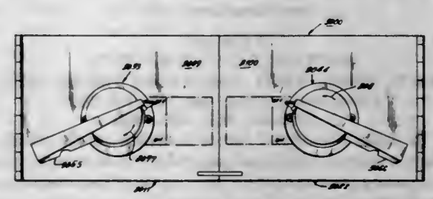
1. A brush drum assembly for an electric speedometer drive comprising, a cylindrical part of insulating material having a plurality of through holes substantially rectangular in cross-section having longitudinally extending arcuate ribs, a second part of insulating material having a plurality of longitudinally extending projections equal in number to the number of through holes in said cylindrical part, said projections extending into the through holes from one end of said cylindrical part, a brush disposed in each through hole of said cylindrical part and having substantial line contact with the side walls thereof, a coil spring disposed between the inner ends of each brush and each projection on a second brush part, and means maintaining the two parts in assembled relation.

3,226,499
LOAD BREAK SWITCH GEAR
Thomas E. Curtis, Centralia, Mo., and Marion A. Gebhardt, Cedar Rapids, Iowa, assignors to A. B. Chance Company, Centralia, Mo., a corporation of Missouri
Filed Dec. 3, 1962, Ser. No. 241,745
15 Claims. (Cl. 200—48)



1. Switch gear for interconnecting a plurality of electrical power transmission lines comprising:
- a main switch adapted to be operably interposed in each of said lines and each having a contact jaw and a switch blade movable out of engagement with the respective contact jaw;
- auxiliary switch means for each of said main switches, each auxiliary switch including an elongated, electrically conductive arm secured to and movable with the corresponding switch blade and an electrically conductive operating member;
- load interrupting switch structure having a pair of terminals and selectively operable means defining an electrically conductive path therethrough between said terminals and operable to open and close said conductive path;
- conductor means electrically connecting one of the terminals of said switch structure with each of said operating members and connecting the other terminal with each of said contact jaws,
- said operating members being coupled to said selectively operable means for effecting opening and closing of the conductive path through said switch structure upon movement of any of the operating members, a contact segment of each operating member normally being within a portion of the path of travel of the respective arm for moving the operating member in response to shifting of the switch blade of the corresponding main switch, each operating member clearing the respective arm and returning to substantially the initial disposition thereof prior to the switch blade of the corresponding main switch completing its path of travel during opening thereof, the operating members and respective arms having mutually cooperable, interengageable surfaces;
- means mounting the operating members for swinging movement in a direction away from corresponding arms in response to engagement of said surfaces during return motion of the switch blades whereby the operating members clear the arms during said return motion so that close tolerances between the relative locations of the arms and the operating members are not required; and
- means coupled with said switch blades for opening and closing a selected main switch, whereby during opening of a selected main switch the corresponding auxiliary switch is first closed by engagement of its arm and operating member, the shifted switch blade then moves out of engagement with its contact jaw and finally, the operating member effects opening of the conductive path through said switch structure.

3,226,500
UNIVERSAL UNITARY HANDLE FOR SWITCHES
Frank W. Kussy, Birmingham, Robert W. Thomas, St. Clair Shores, John B. Cataldo, Bloomfield Hills, and Andrew J. Kralik, Detroit, Mich., assignors to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Aug. 30, 1962, Ser. No. 220,356
14 Claims. (Cl. 200—50)



13. A panel board assembly including an enclosure having first and second doors hinged for opening and closing, first and second circuit interrupters disposed within said enclosure and positioned in alignment with and behind said first and said second doors, respectively; a first and a second rotary operating member extending forwardly from the first and second interrupters, respectively; a first and a second handle assembly mounted to said first and said second doors, respectively; when said doors are closed said first and second assemblies engaging said first and second rotary members, respectively, for operation of the latter to control opening and closing of said interrupters; both of said rotary members operating in a first direction to bring about opening of their respective interrupters and operating in a second direction, op-

posite to said first direction, for closing of said interrupters, said first and second handle assemblies having a first and second rotary handle means, respectively, mounted for movement in said first and said second directions; said first handle assembly including means for imparting rotation to said first rotary member in said first direction in response to rotation of said first handle means in said first direction, and said second handle assembly including means for imparting rotation to said second rotary member in said first direction in response to rotation of said second handle means in said second direction.

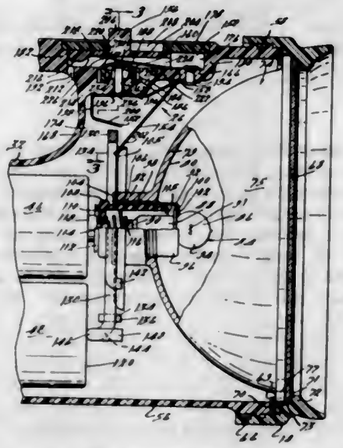
3,226,501
FINGER MOUNT ASSEMBLY FOR CONTROL SWITCH
Samuel Seserman, 76 Esmond St., Dorchester, Mass.
Filed Nov. 13, 1963, Ser. No. 323,346
7 Claims. (Cl. 200—52)



1. A finger grip switch comprising,
a generally arcuate block having an inner edge describing an arc of approximately 135° adapted to sit upon the upper side and back of the index finger of the hand of an operator,
a switch mounted in the block,
a ring secured to the inner edge of the block and adapted to surround the index finger adjacent its first joint,
a stem secured to the block adjacent one end of the inner edge and adapted to extend over the back of the middle finger, between the middle and third fingers, about the front of the third finger and terminating between the third and fourth fingers adjacent the first joints of the middle, third and fourth fingers,
and a switch actuator mounted on the block at the other end of the inner edge and adapted to be controlled by the thumb of the operator.

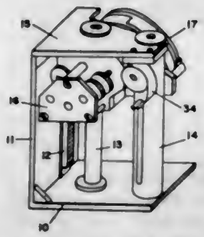
3,226,502
PORTABLE LAMP SWITCH
Otto W. Schotz, 14351 Ashton Road, Detroit, Mich.
Filed Jan. 3, 1964, Ser. No. 335,589
3 Claims. (Cl. 200—60)

1. In a portable hand lamp, a casing of electrical insulation material, first and second contact means inside of said casing for connection to a source of current adapted to be disposed inside of said casing for energizing a bulb arranged in circuit with said source and contact means, switch mechanism for electrically interconnecting said first and second contact means to complete said energizing circuit, an external pocket on said casing defined by a wall portion of said casing, a cover secured to said casing over said pocket and defining a chamber with said pocket for receiving at least a part of said switch mechanism, said cover having a slot therein, a through passage in said wall portion connecting said chamber with the inside of said casing, said switch mechanism comprising third and fourth contact means inside said casing and secured thereto in electrical circuit with each other, one of said third and fourth contact means being in electrical contact with one of said first and second contact means and the other of said third and fourth contact means confronting said passage and being operable for establishing an electrical circuit with the other of said first and second contact means from a normally non-circuit making relationship therewith, said switch mechanism further comprising operating means for said other of said third and fourth contact means, said operating means comprising an operating member having an operating portion within said chamber, an operating link in said passage and a cap over the chamber end of said passage forming a fluid seal between said chamber and the inside of said casing and including



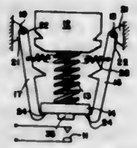
a movable portion for transmitting motion from said operating member to said other of said third and fourth contact means, said operating member having an operator operable projection extending through said cover slot and operable therein to position this operating member in a plurality of positions including a position in which it transmits movement to said other of said third and fourth contact means through said cap and operating link to move the same in circuit establishing relation with the other of said first and second contact means for completing the energizing circuit for said bulb.

3,226,503
UNIVERSAL INTEGRATING ACCELEROMETER
Michael Bracutt, Short Hills, N.J., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed Oct. 31, 1963, Ser. No. 320,589
5 Claims. (Cl. 200—61.45)



1. In an integrating accelerometer, the combination of
a supporting structure including a base,
a gear rack, mounted upright on said base,
a guide rod mounted upright on said base in spaced parallel relation to said gear rack,
a seismic mass including a step-up gear train, a flywheel, centrifugal switching mechanism carried by said flywheel and operable to complete a control circuit connection upon a predetermined rotational speed of said flywheel, said mechanism having centrifugally-movable magnetic means for establishing an operating threshold, said mass being mounted on and movable along said guide rod upon acceleration of said mass in a direction normal to said base and axially of said guide rod, said gear train having a low speed pinion in mesh with said rack and a high speed pinion rotatable with said flywheel to drive said flywheel at an angular velocity proportional to a desired acceleration rate and velocity,
means mounted on said base and including a spooled retracting spring for resiliently maintaining said mass in a zero position spaced from said base on said rod when the acceleration of said accelerometer is below a predetermined bias level and for resetting said mass to said zero position when said acceleration falls below said bias level, and
a brake shoe biased into engagement with said flywheel and releasable therefrom through contact with said last-named means upon movement of said mass from said zero position.

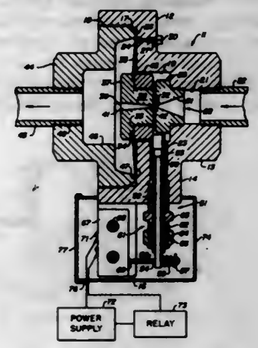
3,226,504
ACCELERATION-SENSITIVE SWITCH
Albert F. Gallistel, Wayzata, and Seth B. Lindsey, Minneapolis, Minn., assignors to General Mills, Inc., a corporation of Delaware
Filed Nov. 9, 1962, Ser. No. 236,584
15 Claims. (Cl. 200—61.53)



1. An acceleration responsive device for actuating terminal contacts which comprises engaging means for operating said contacts, means for restraining movement of said engaging means, a spring connected to said engaging means, and flexing means which moves in response to acceleration forces to compress said spring and for releasing said engaging means from said means for restraining, said flexing means compresses said spring as a result of acceleration forces.

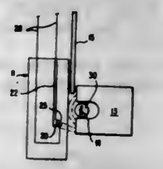
3,226,505
FLUID FLOW INTERLOCK
Luther R. Lucas, San Francisco, and Claire E. Miner, Berkeley, Calif., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed Nov. 9, 1962, Ser. No. 236,751
6 Claims. (Cl. 200—81.9)

1. An interlock device for detecting changes in a fluid flow comprising, in combination, a hollow housing having an inlet and an outlet for said flow, a resiliently flexible diaphragm mounted in said housing transverse to the path of said flow between said inlet and outlet and dividing said housing into two chambers, a venturi tube diffuser element transpierced through said diaphragm in a central portion thereof and secured thereto, said diffuser having a flow passage with a first opening facing said outlet and a relatively smaller opening facing said inlet, a venturi tube nozzle secured in said housing between said inlet and said diffuser and carrying fluid from said inlet towards said passage of said diffuser, said nozzle having an outlet which is directed into said small opening of said diffuser and spaced a small distance therefrom to transmit the reduced pressure in said diffuser to the upstream side of said diaphragm whereby said diaphragm is



caused to move counter to said flow upon an increase in the rate thereof, and means responsive to movement of said diaphragm for detecting said change in fluid flow.

3,226,506
MAGNETIC DEVICE FOR CIRCUIT CONTROL
Aldo Angrisani, Caripito, Estado Monagas, Venezuela (Calle el Mirador-Quinta Victoria, Prados del Este-Caracas, Venezuela)
Filed June 20, 1963, Ser. No. 289,372
5 Claims. (Cl. 200—87)

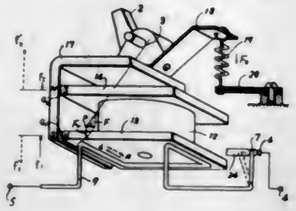


1. A circuit-controlling device comprising a switch actuatable to a first position by establishment of a first magnetic flux pattern and biased to a second position in the absence of magnetic flux, a permanent magnet adjacent to the switch in a relationship to establish said first magnetic flux pattern, a primary ferromagnetic input means comprising an element movable from a position of non-interference with said first flux pattern to a position wherein said flux pattern is broken and a second flux pattern is established, said second flux pattern being ineffective to move said switch, and a secondary ferromagnetic input means between the poles of the magnet movable from a position aligned with said second flux pattern to a position non-aligned with said pattern, said secondary input means having a size sufficient to hold said second flux pattern when in the aligned position but insufficient to interfere with said first flux pattern.

3,226,507
CIRCUIT BREAKER HAVING A PERMANENT MAGNET MADE OF CURIE POINT MATERIAL
Yasuo Kasahara, Tokyo, Japan, assignor to Shoichi Shimada, Tokyo, Japan
Filed Feb. 15, 1963, Ser. No. 258,761
Claims priority, application Japan, Apr. 9, 1962, 37/14,166
2 Claims. (Cl. 200—88)

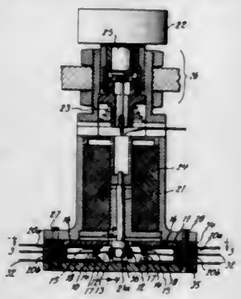
1. A circuit breaker comprising conductor means, switching means movable to complete a circuit through said conductor means in one position thereof and to interrupt a circuit through said conductor means in another position thereof, first means biasing said switching means

toward said one position, second means biasing said switching means toward said another position, said first biasing means including magnet means, said switching means including armature means normally attracted by said magnet means, and means responsive to overload current in said conductor means for reducing the biasing effect of said magnet means to the extent that the biasing effect of said second biasing means becomes greater than



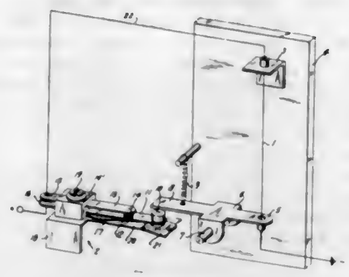
the biasing effect of said first biasing means under conditions of overload current thereby to move said switching means from said one position to said another position to interrupt said circuit, said reducing means comprisng means in said circuit for applyng the magnetic flux of short-circuit current to said armature means in a direction at least partially to counter the flux of said magnet means.

3,226,508
ELECTRICAL SWITCH DEVICE
A. Henry Morgan, Norwalk, Walter D. Uhl, Fairfield, and Henry R. Angel, Trumbull, Conn., assignors to Electronic Controls, Inc., Stamford, Conn., a corporation of Maryland
Filed Nov. 14, 1962, Ser. No. 237,625
19 Claims. (Cl. 200—104)



1. A switch comprising
a housing,
a plurality of essentially parallel resilient, switch contact support blades side-by-side within and supported by the housing and extending through the wall and into the housing in essentially coplanar relationship at one end of the housing so that they are electrically insulated from one another,
a rigid insulator actuator bar within the housing transverse to the blades within the general plane of the blades and having slot means receiving the other unsupported ends of the blades and movable out of the common plane of the blades to deflect the movable contacts, and
a plurality of fixed contacts opposed to individual contacts on the blades so that movement of the blades by the actuator will cause the movable contacts to move in unison between open and closed position with their opposed fixed contacts,
said housing closely enclosing the switch contacts, blades and actuator bar.

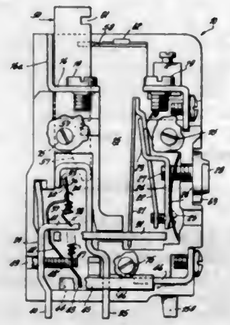
3,226,509
MAGNETIC TUMBLER SWITCH
Felix Müller, Schwenningen (Necker), Germany, assignor to Kienzle Apparate G.m.b.H., Villingen im Schwarzwald, Germany
Filed Mar. 19, 1962, Ser. No. 180,558
Claims priority, application Germany, Mar. 18, 1961, K 43,230
10 Claims. (Cl. 200—113)



1. A switch arrangement comprising, in combination, switch means including a resilient switch means movable in one direction from a circuit breaking position through an initial circuit closing position into a final circuit closing position and increasing its resilient tension during said movement in said one direction; control means including a control part movable in said one direction from a first control position in which said control part is adapted to engage said switch part when the latter is in said initial closing position thereof to a second control position in which said control part is adapted to engage said switch part when the latter is in said final circuit closing position thereof; a magnetic element secured to one of said parts and exerting a magnetic force on the other of said parts when said switch part is in said circuit breaking position and said control part is in said first control position thereof so as to move said switch part from said circuit breaking into said initial circuit closing position thereof wherein said two parts magnetically adhere to each other; and means for moving said control part from said first control position to said second control position thereof when said switch part has moved into said initial circuit closing position thereof so as to move said switch part magnetically attached to said control part into said final closing position thereof against the increasing resilient tension of said resilient switch part so that the resilient tension of said switch part is increased to such a degree that said switch part separates from said control part and moves rapidly to said switch breaking position when separating from said control part whereby arc formation is prevented.

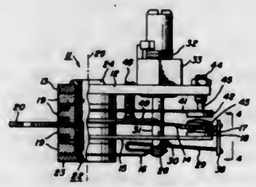
3,226,510
ELECTRIC OVERLOAD SWITCH WITH IMPROVED THERMAL ACTUATOR
Robert W. Thomas, St. Clair Shores, and Elwood T. Platz, Grosse Pointe Farms, Mich., assignors to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Sept. 20, 1962, Ser. No. 225,044
12 Claims. (Cl. 200—122)

1. An overload protective device comprising an electric heater, a bimetal extending along a portion of said heater and closely spaced with respect thereto, one end of said bimetal being movable with respect to said heater as a result of heat generated by electric current in said heater, support means to which the other of said bimetal is mounted, a spring means in engagement with said support means and urging said bimetal toward operative position relative to said heater, said support means comprising a main support and an auxiliary support, said other end being fixedly secured to said main support, adjusting means



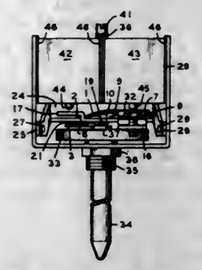
for moving said main support relative to said auxiliary support by causing bending of the latter.

3,226,511
LOW FRICTION SNAP-ACTING THERMOSTAT
Charles S. Mertler, Mansfield, Ohio, assignor to Stevens Manufacturing Company, Inc., a corporation of Ohio
Filed Dec. 31, 1962, Ser. No. 248,689
8 Claims. (Cl. 200—138)



1. A friction-free snap-acting thermostat comprising, in combination, a base,
a snap-acting over-center contact blade having a mounting portion carried on said base,
a first contact carried on said contact blade,
a second contact,
a second contact blade mounting said second contact on said base for cooperation with said snap acting first contact,
means including said second contact blade to substantially rigidly position said second contact,
means to bias said contact blade to an over-center position urging said contacts together,
a bimetal blade having a mounting portion and an outboard end,
a resilient arm carrying said bimetal blade mounting portion and having a portion fixed on said base,
a socket at the outboard end of said resilient arm,
said bimetal blade being doubled into a U-shape and the outboard end thereof extending outwardly beyond the outer end of said second contact blade,
adjustment means extending through apertures in said contact and bimetal blades and adjustable relative to said base to engage said socket in said resilient arm to adjust the position of said bimetal blade,
and an insulating link loosely and positively connected at the two ends thereof to the outboard ends of said snap-acting contact blade and said bimetal blade to move said contact blade in accordance with movement of said bimetal blade.

3,226,512
THERMOSTAT CONTROL WITH SEQUENTIALLY OPERATED SWITCHES
Henry J. Durst and John J. Theiss, St. Louis, Mo., assignors to Diatemp, Inc., St. Louis, Mo., a corporation of Missouri
Filed Feb. 24, 1964, Ser. No. 346,902
5 Claims. (Cl. 200—140)

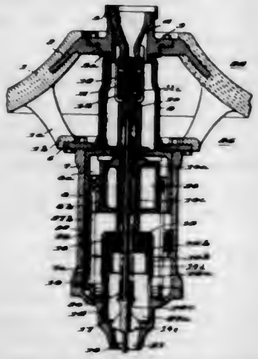


1. A double pole thermostat consisting of a housing having a pair of side walls and a bottom wall, two microswitches mounted between said side walls and having exposed actuating contacts,
a support bar mounted between said side walls and above said bottom wall,
a yoke assembly consisting of a yoke provided with two projecting arms pivoted upon pins projecting into said side walls,
a lever body integral with said yoke,
a hinge member mounted between said lever body and said yoke and integral with both,
a spring-mounted contact-actuating arm disposed diagonally across said lever body, having one end formed into a mounting fixed between said hinge member and said lever body and the other free end positioned to actuate the contact of one of said microswitches,
an L-shaped lever arm on said lever body to actuate the contact of the other of said microswitches, and
a diaphragm and tubing assembly mounted on one wall of said housing, said diaphragm movement controlling the position of said yoke assembly to actuate said microswitches in response to changes in temperature.

3,226,513
COMPRESSED GAS ACTUATED CIRCUIT BREAKER HAVING A DWELL PHASE IN THE OPENING STROKE OF THE MOVABLE CONTACT
Egbertus Frowein, Nussbaumen, Aargau, and Stanislas Ruffieux, Baden, Switzerland, assignors to Aktiengesellschaft Brown, Boveri & Cie., Baden, Switzerland, a joint-stock company
Filed Oct. 16, 1963, Ser. No. 316,570
Claims priority, application Switzerland, Oct. 19, 1962, 12,290/62
9 Claims. (Cl. 200—148)

1. In a compressed gas actuated circuit breaker having a closed gas circuit, the combination comprising means providing a high pressure chamber filled with an arc extinguishing gaseous medium such as SF_6, means providin a low pressure chamber separated from said high pressure chamber by a support insulator, a stationary contact member in the form of a nozzle mounted by said support insulator and through which the compressed gas can flow in passing from said high pressure chamber to said low pressure chamber for collection in the latter, a main drive cylinder mounted in said high pressure chamber, the wall of said cylinder being provided with an aperture placing the interior and exterior of said cylinder in communication with each other, a compressed gas actuated hollow drive piston mounted for sliding movement within said drive cylinder, the upper end of

said cylinder being open to admit compressed gas from said high pressure chamber to the upper side of said drive piston, a blast valve closing spring biasing said piston to the upper part of said cylinder, said drive piston including therein a guide cylinder which moves with the piston, an elongated movable contact member including an intermediate piston portion slidable within said guide cylinder and also actuatable downward by said drive piston, an upper portion extending through the upper end of said hollow drive piston for engagement with said nozzle contact member and a lower cylindrical portion having the dual function of a drive piston and a valve sleeve, a blast valve sleeve upstanding on the upper end of said hollow drive piston and surrounding said movable contact member, said blast valve sleeve being located within said high pressure chamber and being normally engaged with a seat closing off communication between said high pressure chamber and the junction between said normally closed stationary and movable conact members, a guide piece connected to the lower end of said main drive cylinder, said guide piece including an inlet serving to introduce high pressure gas into said main drive cylinder for flow through the wall aperture of the latter in order to fill said high pressure chamber with compressed gas at high pressure, and also alternatively to place the interior of said main drive cylinder in communication with a chamber at a lower pressure, said guide piece also including a stationary guide cylinder extending into said main drive cylinder and which serves to receive and slidably support said lower cylindrical portion of said movable contact member, said stationary guide cylinder including ports in the wall thereof controlled by downward movement of said lower cylindrical portion of said movable contact member to close off communication between the interior of said main drive cylinder and the inlet of said guide piece, a rod secured at one end to said movable contact member and extending downward through said guide piece, said rod being movable downwardly with said movable contact member and arranged to be locked in the down position, and a switching-in spring located within said movable contact member and which biases said member in the upward direction to engage said nozzle contact member, whereby upon establishment of a lower gas pressure within said main drive cylinder said hollow drive piston is actuated downwardly by the pressure differential to remove said blast valve sleeve from its seat and said movable contact member is likewise actuated downwardly, said movable contact member being caused to dwell temporarily at an optimum arc quenching position with respect to said stationary contact member from which it is disengaged, said lower cylindrical portion of said movable contact member at said dwell position then functioning as a valve sleeve to close off communication between the interior of said main drive cylinder and the inlet of said guide piece, said dwell position being thereafter maintained until the interior of said main drive cylinder refills with gas to a high pressure inflowing from said high pressure chamber through said wall aperture and which is then applied to the end wall of the lower cylindrical portion of said movable contact member causing said cylindrical portion to function as a drive piston and effect further downward movement of said movable contact member to its lowermost position, the refilling of said main drive cylinder also serving to permit said blast valve closing spring to move said main drive piston and said blast valve sleeve upwardly to reclose said blast valve.

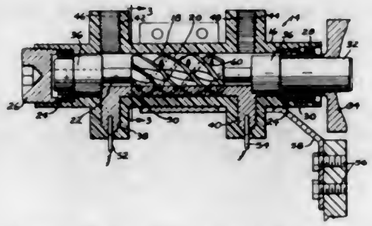


3,226,514

SCREW TYPE ZERO SPEED MERCURY SWITCH

Otto Hermann, Cincinnati, Ohio, assignor to The R. K. Le Blond Machine Tool Co., Cincinnati, Ohio, a corporation of Delaware

Filed Sept. 23, 1963, Ser. No. 310,599
7 Claims. (Cl. 200—152)



1. In a brushless zero speed switch; a stationary body having a horizontal bore therein, terminals arranged in axially spaced relation extending from outside said body into said bore and insulatingly supported by said body, a body of mercury in said bore normally electrically interconnecting said terminals, a rotor in said bore rotatably supported on the axis of the bore, said bore being sealed at its opposite ends to retain the mercury therein, said rotor having at least a portion between said terminals having flute means spiralling therealong in the longitudinal direction whereby the rotor will act as an impeller when rotating and pump the mercury axially toward one end of the bore and thereby interrupt the continuity of the body of mercury to break the circuit between said terminals, and means for rotating said rotor, said rotor and said bore being configurated to provide return passageways for said mercury, whereby when said rotor is rotated below a predetermined speed said mercury forms a unitary body establishing a conductive electrical path between said electrodes.

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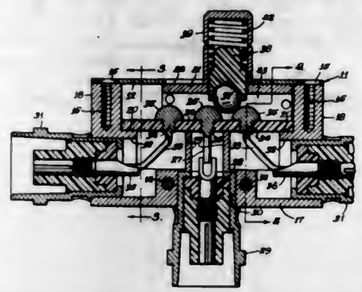
COAXIAL SWITCH

Carl W. Concelman, Danbury, Conn., assignor to Amphenol-Borg Electronics Corporation, Broadview, Ill., a corporation of Delaware

Filed Mar. 19, 1963, Ser. No. 266,284
1 Claim. (Cl. 200—153)

A switching device for interconnecting a selected pair of three coaxial radio frequency transmission lines comprising, in combination a switch housing consisting of integral conductive material throughout, and having an elongated base extending between a pair of upright ends, with a switching cavity located between the upright ends in a position generally parallel with the elongated base and with three terminal cavities each disposed between the switching cavity and the aforesaid elongated base, said terminal cavities being isolated from each other by conductive barrier walls formed therebetween and comprising integral parts of the aforesaid housing; said terminal cavities and the aforesaid switching cavity being separated

from each other by an insulating panel extending therebetween; three coaxial connectors each with a central contact extending into one of said terminal cavities, with one of said connectors having an outer tubular conductor connected directly to said elongated base of the aforesaid housing and each of the two remaining connectors having an outer tubular conductor directly connected to a respective upright end of said switch housing; three conductive contacts, each carried by the aforesaid insulating



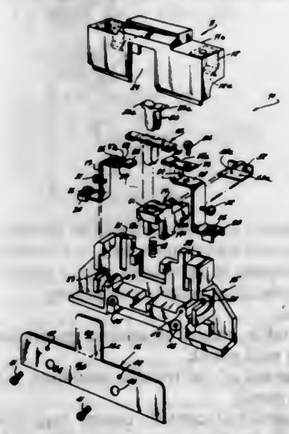
panel and projecting into the switching cavity, with a conductor extending from each of said contacts through one of said terminal cavities to the central conductor of one of said coaxial connectors; together with a conductive cover enclosing and shielding said switching cavity and terminal cavities; and shiftable switching means adapted to selectively interconnect a pair of the aforesaid contacts within the switching cavity, said switching member comprising a conductive ball mounted on a spring-urged insulating plunger shiftable within said switching cavity.

3,226,516

ADD-ON MAIN POLE UNIT FOR CONTACTORS

Frank W. Kusy, Birmingham, and Bernard Di Marco, Lincoln Park, Mich., assignors to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed July 1, 1963, Ser. No. 291,648
3 Claims. (Cl. 200—165)



1. In a contactor having a base, cooperating stationary and movable contacts, a movable carrier to which said movable contacts are mounted, means for moving said movable carrier between a first and second position in which said movable contacts are in and out of engagement with said stationary contacts, respectively, the improvement comprising an add-on main pole unit which includes:

a base assembly having first means for rigidly mounting said base assembly to the base of said contactor, said base assembly further including a pair of additional stationary contacts spaced apart therein;

a movable assembly having an additional movable contact operable into and out of engagement with said additional stationary contacts, said movable assembly further including an insulating member having a first and section and a spring biased between said first section and said additional movable contact for firmly biasing said additional movable contact into engagement with said additional stationary contacts when the movable carrier of said contactor moves said movable contacts into engagement with said stationary contacts, said first section of said insulating member and said spring residing between said additional stationary contacts;

and a cover including means for mounting said cover to said base assembly in position to form a chamber which encloses said additional stationary contacts and said additional movable contacts;

said second section of said insulating member extending beyond the confines of said chamber and including apertures therein for the reception of a fastening member which passes through said movable carrier of said contactor and into said second section for rigidly securing said second section to said carrier;

movement of said movable carrier of said contactor to its first position causing said additional movable contact to engage said additional stationary contacts, movement of said movable carrier to its second position causing said additional movable contact to disengage said additional stationary contacts, movement of said movable carrier to its second position being the only manner in which said additional movable contact may be disengaged from said additional stationary contacts.

3,226,517

ELECTRICAL CONTACT DEVICE

Horst Schreiner, Nurnberg, Germany, assignor to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, a corporation of Germany

Filed Sept. 24, 1962, Ser. No. 225,928
Claims priority, application Germany, Sept. 26, 1961, S 75,926
6 Claims. (Cl. 200—166)



1. An electrical contact device, comprising

a contact layer of material having a weldability less than that of iron; and

a welding layer of material having a weldability at least as good as that of iron, said contact layer and said welding layer forming an integral powder-metallurgical unit of integrally shaped and solidified structure, said welding layer material comprising one of a group consisting of nickel-copper, nickel powder, iron carbonyl, iron powder and silver copper.

3,226,518

SELECTING FINGER ARRANGEMENT INCLUDING DAMPING MEANS FOR USE IN CROSSBAR SWITCHES

Stanislas Kobus, Paris, France, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed June 25, 1963, Ser. No. 290,468
Claims priority, application France, July 5, 1962, 903,033
8 Claims. (Cl. 200—166)

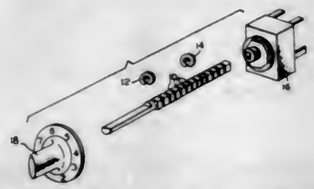
1. A selecting finger arrangement for crossbar switches having selecting bars, selecting wires associated with said

selecting bars, mounting assembly means for mounting said wires on the associated selecting bars, said mounting assembly means comprising plate means, means for attaching said plate means to said wires so that said plate means is integral to said wires at the extremities of said



wires that are proximate to said selecting bars, and means for pretensioning said mounting assembly means to cause said plate means to abut against said selecting bars whereby said mounting assembly means acts to dampen any vibrations in said wires.

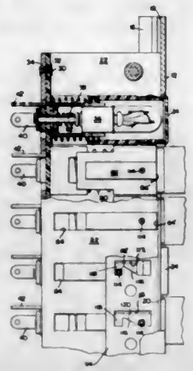
3,226,519
ELECTRICAL SWITCH ASSEMBLY AND SHAFT THEREFOR
Joe J. Garmendia, 1403 Hervey St., Boise, Idaho
Filed Mar. 13, 1964, Ser. No. 351,794
4 Claims. (Cl. 200—166)



4. An electrical switch assembly comprising:
(a) an elongated shaft,
(b) one end of said elongated shaft being contoured to receive a control knob,
(c) at least an intermediate portion of said shaft being divided into between six and twenty segments by circumferential grooves that are perpendicular to the axis of the shaft,
(d) a switch box mounted on said elongated shaft, and
(e) detachable retaining means that are mounted on said intermediate portion of said elongated shaft and which function to retain the switch box therebetween.

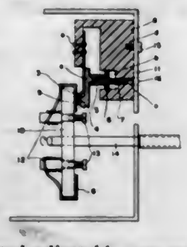
3,226,520
ILLUMINATED PUSH BUTTON SWITCH ASSEMBLY INCLUDING LATCHING MEANS
Walter F. Schuchard, Hingham, Mass., assignor to S. H. Couch Company, Inc., North Quincy, Mass., a corporation of Massachusetts
Filed Mar. 4, 1963, Ser. No. 262,588
13 Claims. (Cl. 200—167)

6. A switch assembly comprising
a panel,
means cooperating with the panel to form a housing,
a plurality of illuminated push button switch subassemblies carried by the housing and each comprising,
an insulating block in the housing,
a light socket mounted on the block,
a fixed contact disposed on the side of the socket and within the housing,
a body having a longitudinally extending axis and carrying a contact blade substantially in the plane of the fixed contact and movable between depressed and released positions, a spring surrounding the socket and urging the body to its released position wherein the contacts are in one condition,
latching means disposed outside the housing and engaging the body for holding the body in a depressed position upon restricted movement of the body along



its axis against the bias of the spring, and in which position the contacts are in another condition,
and a translucent cap forming part of the body and disposed outside the panel and over the socket for manually actuating the body and for covering a lamp in the socket.

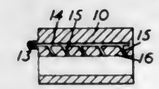
3,226,521
PANEL MOUNTED ADJUSTABLE PRESSURE ELECTRICAL CONTACT
Ryukichi Motegi, Kawasaki-shi, Japan, assignor to Fujitsu Limited, Kawasaki, Japan, a corporation of Japan
Filed July 11, 1963, Ser. No. 294,306
Claims priority, application Japan, July 12, 1962, 37/38,426
5 Claims. (Cl. 200—170)



1. A panel mounted adjustable pressure electrical contact for electrically contacting a rotatable electrical contact positioned in proximity with a panel, said adjustable pressure electrical contact comprising
a panel;
a rotatable electrical contact positioned in proximity with said panel;
base means of electrically insulating material affixed to said panel;
fixed electrical contact means supported by said base means in close proximity with said rotatable electrical contact;
helical spring means supported by said base means in contact at one end with said fixed electrical contact means, said spring means applying pressure to said fixed electrical contact in a direction toward said rotatable electrical contact thereby urging said fixed and rotatable contacts into electrical contact with each other; and
pressure adjusting means mounted in said base means

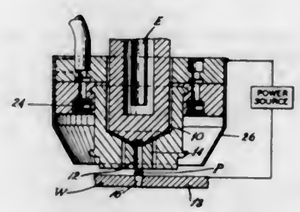
in contact with the other end of said spring means for adjusting the pressure applied by said spring means to said fixed electrical contact, said pressure adjusting means being positioned in close proximity with said panel and being operable at said panel.

3,226,522
WELDING OF ELECTRIC CABLES
Gordon Kenneth Duddridge and Anthony John Millard, Aldwych, London, England, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed June 28, 1963, Ser. No. 291,481
Claims priority, application Great Britain, July 20, 1962, 28,060/62
1 Claim. (Cl. 219—60)



Apparatus for manufacturing an electric cable comprising a block, said block comprising a central bore, an offset bore, passages connecting said offset bore to said central bore, means introducing a cable core into said central bore, means introducing a metal strip about said cable core within said central bore and folding said strip longitudinally about said core, means feeding an inert gas into said offset bore and through said passages into said folded metal strip and means for welding the edges of said metal strip by an inert gas shielded arc to form a continuous metal sheathed cable.

3,226,523
GAS ARC WELDING WITH ARGON-HYDROGEN MIXTURE
Stanley P. Filipski, Caldwell, Howard R. Miller, Clark, and Arthur J. Newman, North Plainfield, N.J., assignors to Union Carbide Corporation, a corporation of New York
Filed Dec. 28, 1962, Ser. No. 248,129
6 Claims. (Cl. 219—74)



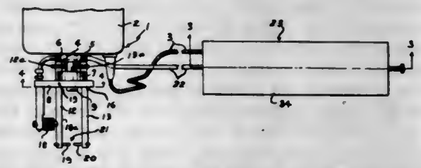
1. Method of gas arc welding of porosity free tight butt joints in metals containing constituents tending to form refractory oxides and a thickness of one eighth to one quarter of an inch in a single pass, which comprises maintaining a flow of gas consisting of argon containing a proportion inversely to the metal thickness of up to 15 percent hydrogen between an electrode and a workpiece of such metal, drawing an arc in said flow of gas between said electrode and said workpiece, directing and stabilizing a portion of the length of said arc by passing said arc and flow of gas through a constricted passageway to direct effluent plasma upon said workpiece, and pierce a small diameter hole in the workpiece, controlling the velocity and power level with respect to the workpiece and moving said arc at the proper speed to produce a keyhole effect and fuse the base metal ahead of the hole to flow around it and solidify to form a weld with a smooth underbead.

3,226,524
APPARATUS FOR FABRICATING HONEYCOMB MATERIAL
Roy L. Anspach, Fullerton, Calif., assignor to Aeronca Manufacturing Corporation
Filed June 8, 1962, Ser. No. 201,139
3 Claims. (Cl. 219—78)



1. In a honeycomb core fabricating machine, the combination of:
a horizontal bed plate for supporting a previously fabricated core section with the nodal areas of its cells at one edge thereof juxtaposed to the nodal areas of a pre-corrugated core strip to be welded thereto;
a carrier block disposed above said bed plate for vertical movement relative to said bed plate;
a first welding electrode carried by said block adapted to be inserted into one of said cells and engage the nodal area thereof juxtaposed to said core strip;
a second welding electrode disposed on said machine to traverse the core strip nodal area juxtaposed to the nodal area engaged by said first mentioned electrode;
first and second internal index fingers carried by said block and disposed to be inserted into cells disposed on the left and right hand sides of said one cell respectively, said first and second internal index fingers engaging nodal areas of said previously fabricated core section, the nodal areas engaged by said first and second index fingers and the nodal area engaged by said first electrode being substantially coplanar;
third and fourth index fingers carried by said block disposed to urge two of said core strip nodal areas into abutting relation with the aforementioned engaged nodal areas of said left and right cells respectively when said first mentioned electrode is inserted in said one cell, said third and fourth index fingers being shaped complementary with said core strip so that when said first electrode is inserted in said one cell they respectively engage the three core strip nodal areas immediately to the left and the three core strip nodal areas immediately to the right side of the nodal area traversed by said second electrode, whereby the cells immediately adjacent said electrodes are not engaged by internal fingers.
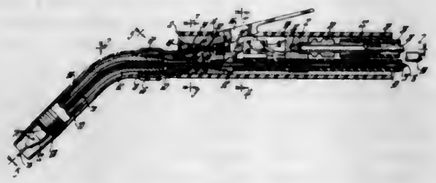
3,226,525
HYDROELECTRIC SPOT-WELDING DEVICE
Laurence W. Leckliter, St. Paul, Minn., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Air Force
Filed Mar. 31, 1964, Ser. No. 356,337
6 Claims. (Cl. 219—89)



1. A spot-welding device comprising a first support, a pair of spaced elongated substantially parallel electrode supports, carried by said first support, means pivoting one of said electrode supports on said first support for move-

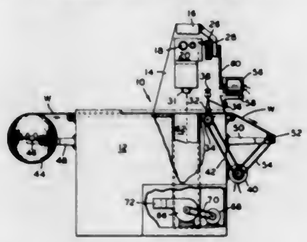
ment of one extremity thereof toward and away from an adjacent extremity of the other electrode support, an extensible resilient hydraulic bellows device connected to the pivoted electrode support and extensible for moving the said extremity thereof toward the extremity of the other electrode support, a pair of elongated spot-welding electrodes carried by the adjacent extremities of the electrode supports in equal angular relation toward each other and to the longitudinal axes of said elongated supports to receive the work to be spot welded between the adjacent ends thereof, a fixed resilient hydraulic actuating cylinder connected in communication with said extensible bellows device including a piston movable therein, first spring means for resiliently urging movement of said piston in said cylinder to displace hydraulic fluid from said cylinder into said bellows device for moving said pivoted electrode support extremity toward the extremity of the other electrode support to bring the adjacent extremities of the spot-welding electrodes into yieldable clamping contact with work to be spot welded when inserted between the electrodes, a pivoted treadle member, second spring means for raising said treadle member, means for connecting said treadle member to said piston for retracting said piston to compress the first mentioned spring means incident to the raising of said treadle member by the second spring means, for withdrawing hydraulic fluid from said bellows device to provide for separation of said electrode extremities and removal of the work from between the welding extremities thereof, an electrical spot-welding circuit connected to said elongated electrode supports, and microswitch means for closing said circuit, disposed in the path of depression of said treadle member for energizing said welding circuit upon predetermined depression of said treadle member.

3,226,526
WELDING GUN
Thomas W. Shearer, Jr., Auburn Heights, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 13, 1962, Ser. No. 244,359
1 Claim. (Cl. 219—130)



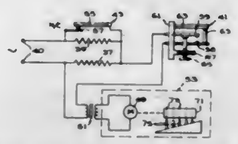
In apparatus for providing a gas shielded welding arc between a consumable electrode and a workpiece and including a source of power, electrode moving means, and a source of gas, a welding gun comprising, an elongated conductive handle portion, a conductive neck portion, means connecting one end of said handle portion with said neck portion, means connecting said power source to said handle portion, an electrode passage extending from the other end of said handle portion therethrough and through said connecting means to and centrally through said neck portion and including means for establishing contact with said electrode, a nozzle mounted on the distal end of said neck portion at the outlet of said electrode passage, a gas passage connected to said source of gas and extending from said other end of said handle portion substantially therethrough codirectionally with and spaced from said electrode passage, said gas passage including an offset portion providing space for reception of a control lever generally centrally of said handle portion, a control lever mounted within said space and including a pair of operating portions, a gas control valve interposed within said gas passage for controlling passage of said gas therethrough and being operable by one portion of said lever, second control means associated with said electrode moving means mounted on said body adjacent said lever and being operable by the other portion thereof, a cross passage connecting the downstream end of said gas passage with said electrode passage to continue passage of gas through said electrode passage to said nozzle, and a removable flow control element insertable through said connecting means into said cross passage for providing a predetermined rate of said gas flow to said nozzle upon operation of said valve.

3,226,527
APPARATUS FOR PERFORATING SHEET MATERIAL
William H. Harding, 5 Spring Hill Road, Westport, Conn.
Filed Oct. 23, 1963, Ser. No. 318,353
12 Claims. (Cl. 219—384)



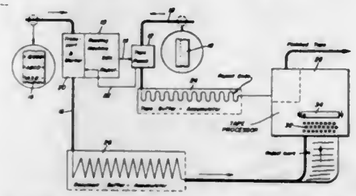
1. Apparatus for perforating material in the form of sheets and webs by the use of a laser beam comprising a support for the material along its edges and having an opening below the central section of the material to be perforated to dissipate unexpended energy from the perforating beam, a laser light source which is movable across the material, means for interrupting the light source to form a row of apertures in the material, and means for moving the material relative to the source after each pass of the light source over said material.

3,226,528
AUTOMATIC COOKING UTENSIL
John S. Martin, Severna Park, Md., assignor of twenty percent to William D. Stokes, Arlington County, Va.
Filed July 30, 1963, Ser. No. 298,732
7 Claims. (Cl. 219—441)



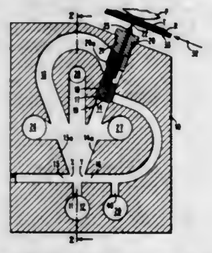
1. An electric cooking utensil comprising in combination: a container for material to be cooked, electric means for supplying heat to said container, electric power input terminals, first thermally responsive means connected in circuit with at least both said electric means and said input terminals and which is located in proximity with said container for response to normal heat values therefrom for causing said electric means to reduce the amount of heat supplied to said container at the termination of a period of time constituting a cooking cycle so as to thereafter merely keep said material warm, electric sound producing means having at least an off condition and an on condition, and second thermally responsive means connected in circuit with at least said sound producing means and said input terminals and which is also located in proximity with said container for response to normal heat values therefrom for causing said sound producing means go from one of its conditions to another of its conditions at approximately the time of said termination of said cooking cycle, where said second thermally responsive means is further responsive to reduction in heat from said container at a time subsequent to said termination of said cooking cycle for causing said sound producing means to go from said another condition to said one condition.

3,226,529
READING MACHINE SYSTEM WITH TAPE OUTPUT
Norman Hardy, Bethesda, Md., assignor, by mesne assignments, to Control Data Corporation, Minneapolis, Minn., a corporation of Minnesota
Filed Feb. 23, 1962, Ser. No. 175,098
10 Claims. (Cl. 235—61.11)



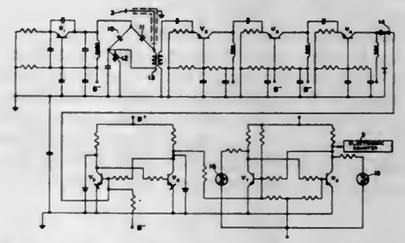
1. In a reading system having a reading machine for documents where the reading machine provides a reject signal upon failure to read a portion of the document, and where the machine marks the document to indicate the unread portion thereof, a document accumulator to buffer a part of the document, means fed from said accumulator to present the document for display, record-forming means operable to form a record of the information read from the document, means to code the record when said reject signal is provided by the reading machine, means responsive to the reject signal to advance the record in a manner to provide a blank space in the record adjacent to said code and means to examine said record and detect said code so that the corresponding marked portion of said document may be easily discovered and information corresponding to the unread portion of the document inserted in said blank space of the record.

3,226,530
FLUID CONTROLLED DEVICE
Bernard J. Greenblott, Binghamton, N.Y., and Robert A. Comparin, Zurich, Switzerland, assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed June 5, 1962, Ser. No. 200,227
17 Claims. (Cl. 235—61.11)



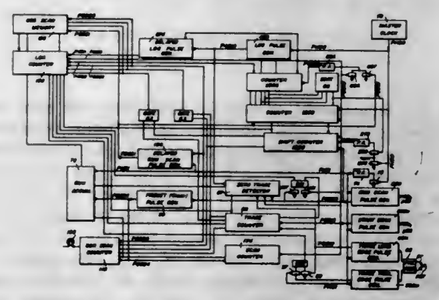
1. A fluid controlled device comprising
a displaceable member subject opposingly to pressures of fluid in one passage and another passage,
an inlet to convey pressure fluid for supply selectively to said passages,
a feedback communication via which pressure fluid can flow from said other passage to a point intermediate said inlet and other passage to effect cut off of supply of pressure fluid to said other passage and effect supply of pressure fluid to said one passage, and
a valve controlled by said member for establishing said communication whenever pressure fluid is supplied to said other passage,
whereby said member will remain only temporarily in communication-establishing position.

3,226,531
ELECTRONIC WIRE TURN COUNTER
George M. Mees, Newtown, and Kenneth C. Murch, Brookfield, Conn., assignors to NEWAL, Inc., a corporation of Massachusetts
Filed Apr. 30, 1963, Ser. No. 276,937
3 Claims. (Cl. 235—92)



1. A wire turn counter for a coil winding machine which comprises: a radio frequency oscillator; a capacitance balanced impedance bridge supplied by said oscillator; a single proximity probe forming one leg of said bridge and positioned adjacent the path of travel of a wire strand forming the turns to be counted to unbalance said bridge upon each approach of said strand and produce successive voltage amplitude signals across the output of said bridge, said signals having substantially the same frequency as the output of said oscillator; amplifier means connected to the output of said bridge to amplify said signals; and electronic counter means responsive to said signals.

3,226,532
COMPUTER APPARATUS FOR SCANNING A CHART RECORD AND DETERMINING A MATHEMATICAL RESULT THEREFROM
Edward Gordon, Durward F. Searcy, and Joe T. Cotten, Shreveport, La., assignors to United Gas Corporation, a corporation of Delaware
Filed May 9, 1962, Ser. No. 193,573
16 Claims. (Cl. 235—164)



2. Apparatus for solving the equation $Z=\sqrt{XY}$ where X and Y are represented by the leading edge of chart traces having measurable widths comprising a scanner having means for measuring values of traces on a chart and also of the width of the traces, a binary counter,

means for generating a signal representative of log X and a second signal representative of log Y—log X and signals representative of the log of the widths of X and Y, means for entering the first signal into the binary counter at a first entry point and for entering the second signal into the binary counter at the next lower entry point from said first entry point whereby said second signal value is halved in its addition to said first signal value in said counter and for entering said width signals into the binary counter at the second lower entry point from said first entry point whereby said width signal log values are quartered in their addition to said first signal value providing a sum representative of

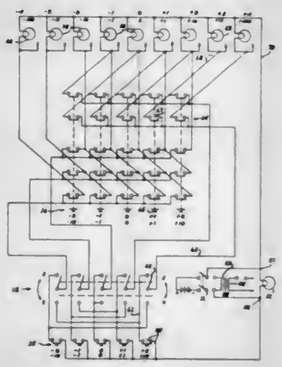
$$\log X+\frac{\log Y-\log X}{2}+\frac{\log (x \text{ width})+\log (Y \text{ width})}{4}$$

means for complementing said counter, an accumulator, means for connecting said electronic logarithmic generating means for entry of logarithmic signals into said complemented binary counter, means for generating linear signal simultaneously with the generation of said latter logarithmic signals and having a connection for entry of said linear signal into said accumulator, and means responsive to the return of said binary computer to zero by said latter logarithmic signal to stop entry of any more of the linear signal into said accumulator whereby the integral therein represents the antilog of

$$\frac{\log X+\log Y}{2} \text{ equal to } \sqrt{XY}$$

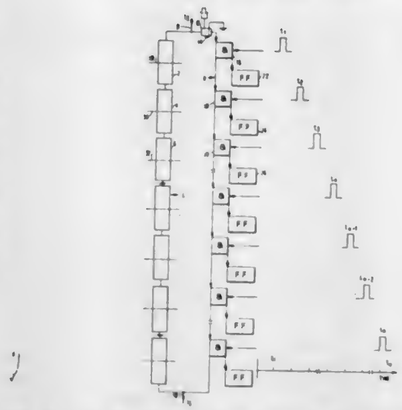
with correction for the width of the traces.

3,226,533
RADIX n ADDITION-SUBTRACTION TEACHING DEVICE
Ransom B. Beers, R.R. 1, Sidell, Ill.
Filed Sept. 12, 1963, Ser. No. 308,463
4 Claims. (Cl. 235—169)



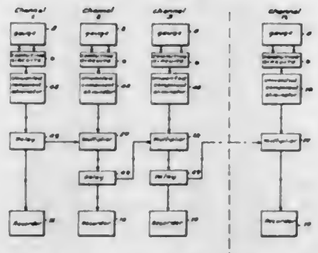
1. An educational device for indicating the sum and difference of two signed numbers when circuits representing said numbers are simultaneously energized comprising: a first group of switches each representing one of a linear series of signed numbers; a second group of switches each representing one of a linear series of signed numbers and each comprising a ganged plurality of switches; means connecting each switch of said first group of switches to a corresponding series of switches, each said corresponding series of switches comprising one switch from each ganged plurality of switches; a group of indicators each representing one of a linear series of signed numbers; means connecting each switch and each ganged plurality of switches to one of said indicators; and a group of electric power connected to said first group of switches and to said group of indicators for completing an electrical circuit when one of said first group and one of said second group of switches are simultaneously closed.

3,226,534
SUPERCONDUCTIVE ADDER AND CORRELATOR
William J. Fitzgerald, Walnut Creek, Calif., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 7, 1961, Ser. No. 157,636
7 Claims. (Cl. 235—173)



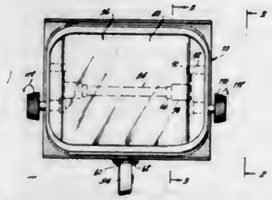
7. A circuit of the class described comprising two parallel superconductive paths and a current source therefor, a first path including a series of cryotrons and a second path including a series of AND circuits conditioned by current flowing in said second path, means for diverting all of the current from said source to flow only in said first path, means for driving any number of cryotrons to their resistive states so as to cause all the current in the first path to switch to the second path at a speed that is a function of the number of cryotrons driven to their resistive state; and, means for applying a series of time-distributed pulses to said AND circuits, whereby each AND circuit is actuated when the appearance of a time-distributed pulse thereat coincides with a minimum level reached by the current being switched from said first path to said second path.

3,226,535
PHASE DIFFERENCE MEANS FOR SEISMIC STUDIES
Andrew A. Thompson, Mt. Felix, Star Rte., Havre de Grace, Md.
Filed Dec. 13, 1961, Ser. No. 159,189
5 Claims. (Cl. 235—193)
(Granted under Title 35, U.S. Code (1952), sec. 266)



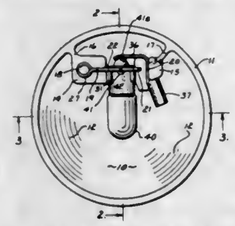
1. An apparatus for increasing the signal to noise ratio in acoustic exploration systems comprising the combination of a stress gauge, a velocity gauge, a first and second multiplier and an adder each having a first and second input terminal, a first divider having one input terminal, a second divider having a first and second input terminal, a constant voltage source, an integrator having input and output terminals, and a recorder each having one input terminal; whereas; the output of said velocity gauge and the output of said constant voltage source being applied to the first and second input terminals of said first multiplier, respectively; the output of said first multiplier and the output of said stress gauge being applied to the first and second input terminals of said adder; respectively; the output of said adder being applied to said first divider; the output of said first divider and the output of said constant voltage source being applied to the first and second input terminals of said second divider, respectively; the output of said first divider and said second divider being applied to the first and second input terminals of said second multiplier, respectively; the output of said second multiplier being applied to the input terminal of said integrator; and the output of said integrator being applied to the input terminal of said recorder.

3,226,536
LIGHTING FIXTURE
Leonard Atkin, Springfield, and Charles Roth, Scotch Plains, N.J., assignors to Stonco Electric Products Company, a corporation of New Jersey
Filed June 15, 1962, Ser. No. 202,917
7 Claims. (Cl. 240—3)



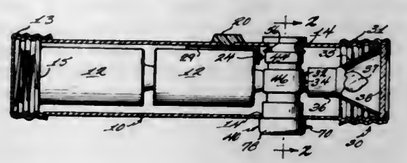
4. A light fixture comprising a housing provided with reflector means and a lens in spaced relation from said reflector means, means for mounting a lamp between said reflector means and said lens, said mounting means comprising a pair of laterally spaced mounting plates each provided with a socket adapted to receive one end of the lamp, said plates being mounted for pivotal movement for moving said sockets relative to said reflector means, and means accessible externally of said housing for pivoting said plates, one of said sockets being mounted for reciprocation transversely of its mounting plate.

3,226,537
VEHICLE LAMP
John R. Hanson, Warren, and Kenneth L. Johnson, Youngsville, Pa., assignors to Betts Machine Company, Warren, Pa., a corporation of Pennsylvania
Filed Apr. 17, 1963, Ser. No. 273,758
5 Claims. (Cl. 240—8.2)



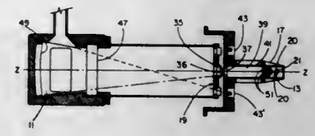
1. A lamp comprising a lens; a pair of spaced apart body means rigid with said lens and projecting from an inner surface of said lens; a first sheet metal contact having an integrally formed socket adjacent to one end thereof and a tubular receptacle formed at the other end thereof; a second sheet metal contact having a resilient arm portion at one end thereof and a tubular receptacle formed at the other end thereof; said body means being slotted in a direction generally at right angles to the plane of said lens to receive the tubular end portions of said contacts respectively; said contacts seated within said slots with said socket and said arm disposed in said space between said body means whereby a base of an electric light bulb disposed in said socket is contacted by said arm at the distal end of said base.

3,226,538
ILLUMINATING MEANS
Roberto L. Bustamante, 4a C.P. No. 40, Santa Ana, El Salvador
Filed Nov. 19, 1963, Ser. No. 324,810
8 Claims. (Cl. 240—10.67)



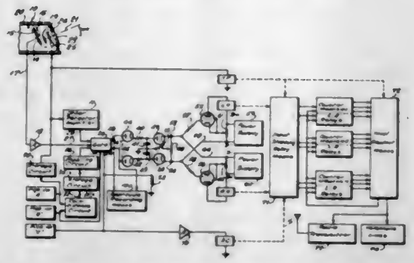
1. In a flashlight having a protective exterior casing, a source of electric power, switch means in electrical contact with said source of electric power, and a primary light source, the improvement comprising providing a secondary light source in an area of the protective exterior casing as a separable assembly provided with a protective casing of insulating material, first and second electrical contact means on said separable assembly, said first electrical contact means being insulated from said second electrical contact means, said first electrical contact means providing electrical connection between said source of electric power and said primary and secondary light sources, said second electrical contact means being in electrical contact with said secondary light source, and means adapting said electrical switch means to contact said electrical contact means and thereby complete the electrical circuit between said source of electric power and said secondary light source.

3,226,539
BUBBLE CHAMBER ILLUMINATION MEANS
Seymour Rosin, Massapequa Park, and Robert B. Palmer, Shoreham, N.Y., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed July 31, 1963, Ser. No. 299,130
5 Claims. (Cl. 240—41.3)



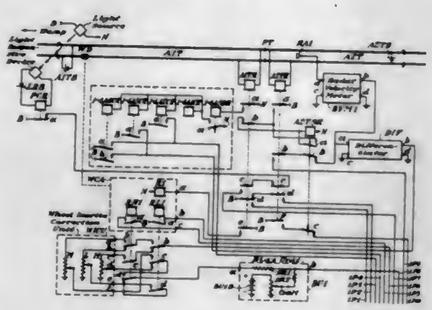
1. Illuminating apparatus for use with a bubble chamber, comprising extended lamps having central axes spaced in a plane, and a single cylindrical reflector for said lamps having a central, extended, mirror axis between said axes in said plane and a concave face towards the chamber that reflects the light from said lamps into a single source image with a high, effective light flux by source duplication for illuminating said chamber.

3,226,540
HOT BOX DETECTOR ALARM CIRCUIT
Joseph R. De Priest, Richmond, Va., assignor to Servo Electronic Switch and Signal Company, Hicksville, N.Y., a corporation of New York
Filed Oct. 24, 1961, Ser. No. 147,317
19 Claims. (Cl. 246—169)



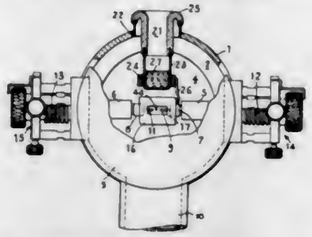
1. In combination with a circuit for detecting hot journal boxes on a train; means responsive to said detection for counting train axles between the hot journal box and the end of the train; a vocal output message generator for producing a plurality of verbal output signals including predetermined words and numbers; output message selection means, coupled between the output of said vocal output message generator and the output of said axle counter means, for selecting a time sequence of output words and numbers signifying the presence of abnormally hot journal box and the total number of axles between said abnormally hot journal box and one end of said train.

3,226,541
AUTOMATIC CONTROL SYSTEM FOR RAILWAY CLASSIFICATION YARDS
Emil F. Brinker, Blackridge, Pa., and David P. Fitzsimmons, deceased, late of Trafford, Pa., by Mildred E. Fitzsimmons, executrix, Trafford, Pa., assignors to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania
Filed Aug. 12, 1960, Ser. No. 49,379
6 Claims. (Cl. 246—182)



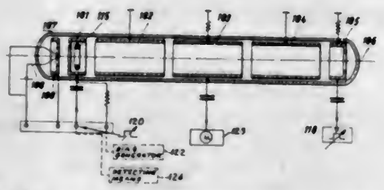
6. A car retarder control system for a master retarder located between a hump and at least one group retarder, comprising, in combination, measuring means for deriving signals in accordance with the speeds of cars approaching the master retarder, computing means adjusted in accordance with the predetermined performance of cars of maximum and minimum rolling resistance in said master retarder when said maximum rolling resistance car is not retarded and said minimum rolling resistance car is retarded sufficiently to travel from the hump to a selected point at the group retarder in the same time interval as the maximum rolling resistance car, said computing means controlled by said speed signals for computing the speed at which each car should leave the master retarder in order to travel between the hump and said selected point in the same interval as the maximum rolling resistance car, and means controlled by said computing means for actuating the master retarder to reduce the speed of each car to its computed leaving speed.

3,226,542
MASS SPECTROMETER ARC-TYPE ION SOURCE HAVING ELECTRODE COOLING MEANS
Robert Derek Craig, Bowdon, and Brian Noel Green, Manchester, England, assignors to Associated Electrical Industries Limited, London, England, a British company
Filed Dec. 10, 1962, Ser. No. 243,501
10 Claims. (Cl. 250—41.9)



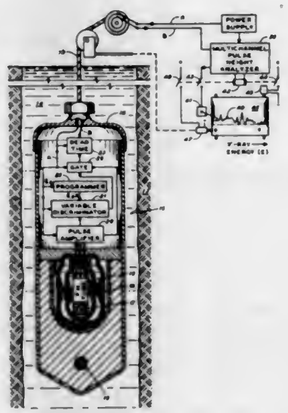
6. A mass spectrometer ion source comprising an evacuated chamber, two electrically insulating supports extending within said chamber and supporting respectively two electrodes, at least one of which is of the material to be analyzed, so that surfaces of the electrodes are located adjacent to each other and an electrical discharge may be produced between said two electrodes, a flask supported by said chamber extending within the chamber and insulated therefrom, a coolant fluid in the bottom of said flask, and heat conducting strip material interconnecting the lower end of said flask with at least one of said electrodes for conducting heat from said electrode to the flask of the coolant within the flask.

3,226,543
PULSED TIME OF FLIGHT MASS SPECTROMETERS
Friedhelm Melzner, Munich, Germany, assignor to Max-Planck-Gesellschaft zur Foerderung der Wissenschaften e.V., Goettingen, Germany
Filed Feb. 20, 1963, Ser. No. 259,890
Claims priority, application Germany, Feb. 22, 1962, M 51,908
9 Claims. (Cl. 250—41.9)



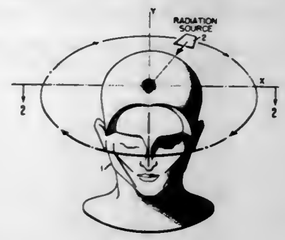
9. A mass-spectrometer operative in a pulse cycle and comprising, in combination: a vacuum-tight envelope; a set of apertured electrodes spaced along a common longitudinal axis within said envelope; an ion source for providing ions at one end of said axis; means for biassing at least one electrode intermediate between the ends of the electrode set to a given potential for providing an ion drift region; pulse generator means connected to a first electrode at said one end of the electrode set for biassing said first electrode, at least during certain portions of said cycle, to a potential which is more positive than that of said intermediate electrode for preventing ions from passing said first electrode; pulse generator means connected to a second electrode at the other end of said electrode set from said first electrode for periodically raising the potential of said second electrode to a value above said given potential to deflect selected ions back along the longitudinal axis of said spectrometer; said pulse generator means being arranged to alternately bias said first electrode and raise the potential of said second electrode and means for detecting those selected ions so deflected.

3,226,544
WELL BORE GAMMA-RAY SPECTRUM EQUALIZATION
Calvin M. Clark, Fullerton, Calif., assignor to Chevron Research Company, a corporation of Delaware
Filed Mar. 30, 1962, Ser. No. 183,858
9 Claims. (Cl. 250—71.5)



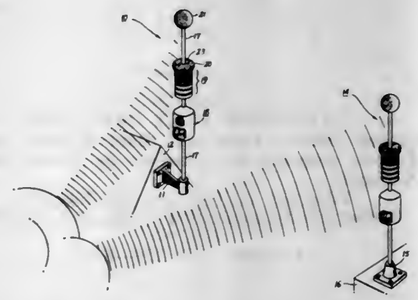
1. A method of emphasizing the high-energy portion of a gamma-ray spectrum without substantial increase in measuring time, when electrical pulses representing gamma rays are generated in a well bore, transmitted over a logging cable having limited information transmission characteristics, and recorded on a multichannel pulse-height analyzer at the earth's surface, which comprises
(a) generating in said well bore a plurality of electrical pulses, each pulse being proportional in height to the energy of a gamma ray detected in the well bore,
(b) in each spectrum to be recorded, selecting at random a first one of said plurality of electrical pulses for transmission to the pulse-height analyzer at the earth's surface, said first pulse having at least a predetermined minimum amplitude,
(c) rejecting all succeeding electrical pulses for a known time period following selection of said pulse, said time period being sufficient to permit said first pulse to be transmitted with minimum distortion,
(d) repetitively selecting at random another of said electrical pulses after the end of said time period, rejecting succeeding electrical pulses during each of said time periods, the number of repetitions being adequate to accumulate a statistically reliable sample of the amplitudes of all of said pulses for production of a pulse-height spectrum, and
(e) during each repetitive selection and transmission of one of said pulses, progressively increasing the minimum amplitude of the selected pulse for transmission to the multichannel analyzer whereby the higher energy pulses are emphasized in the recorded spectrum.

3,226,545
RADIATION DOSIMETER WITH A RADIOCHROMIC COUPLE SUSPENDED IN AN ESSENTIALLY ANHYDROUS SOLID TRANSLUCENT MATRIX
Majic S. Potsaid, Hanover, Mass., assignor to The Massachusetts General Hospital, Boston, Mass., a corporation of Massachusetts
Filed May 29, 1962, Ser. No. 198,607
13 Claims. (Cl. 250—83)



1. A radiation dosimeter, comprising a radiochromatic couple suspended in an essentially anhydrous solid translucent matrix of waxy hydrocarbon material.

3,226,546
NUCLEAR BLAST AND OVERPRESSURE DETECTION AND RECORDING SYSTEM
Daniel W. Furman, Stamford, Conn., assignor to Dunlap and Associates, Inc., Stamford, Conn.
Filed Dec. 3, 1962, Ser. No. 241,817
2 Claims. (Cl. 250—83)



1. A nuclear blast detection and recording device, comprising in combination:
(A) a blast elevation detector and recorder comprising
(1) a sphere made of material having low thermal conductivity and
(a) covered with a heat responsive material,
(2) a plurality of horizontal parallel circular lines inscribed around said sphere,
(B) a blast azimuth detector and recorder comprising
(1) a horizontal disk of heat responsive material
(a) having a compass rose inscribed thereon,
(C) a plurality of thermal pulse detection elements,
(1) each of said elements responsive to permanently change to record a different range of incident temperatures,
(D) a narrow vertical support
(1) joining said blast elevation detector and said blast azimuth detector and
(2) supporting said thermal pulse detection elements,
(3) said vertical support passing through the center of said azimuth detector compass rose,

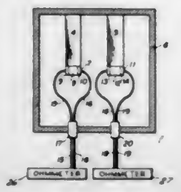
whereby the shadow of said support on said blast azimuth detector is imprinted thereon by the heat of a nuclear blast and said elevation detector sphere is discolored by heat to record the azimuth, elevation and temperature of a nuclear blast.

3,226,547

THERMAL NEUTRON FLUX MEASURING DEVICE USING TWO BORON THERMISTORS

Justin L. Bloom, Timonium, Md., assignor to Martin-Marietta Corporation, Baltimore, Md., a corporation of Maryland

Filed July 10, 1962, Ser. No. 208,768
10 Claims. (Cl. 250—83.1)



1. A thermal neutron flux measuring device comprising:

(a) a pair of boron thermistors, the first of said thermistors being composed of a substantially greater proportion of the isotope B^{10} than the second of said thermistors, thereby having a greater capability for absorbing thermal neutrons than said second thermistor; and

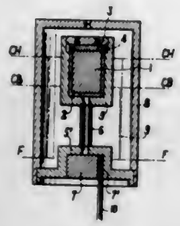
(b) means for determining the difference between the electrical resistances of said pair of boron thermistors, said difference being a measure of the thermal neutron flux to which said pair of thermistors is exposed.

3,226,548

NEUTRONIC FLUX DETECTOR

Raymond Hauser, Paris, and Henri Zyngier, Antony, France, assignors to Electricite de France (Service National)

Filed Oct. 16, 1962, Ser. No. 230,938
Claims priority, application France, Oct. 23, 1961, 876,792
4 Claims. (Cl. 250—83.1)



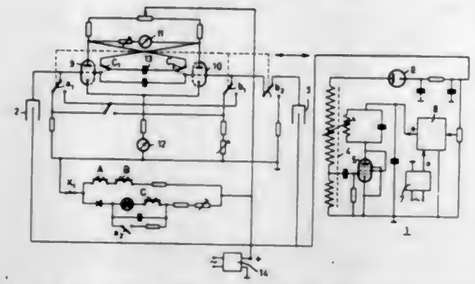
1. A neutron flux detector comprising: means defining first and second spaced cavities, said means being of a material having good thermal conductivity; said first cavity containing a pellet of material which gives off heat when exposed to neutron radiation, in proportion to the neutron flux density; said second cavity being in heat absorbing relation to the local ambient temperature; a thin-wall small diameter cylindrical tube extending between said cavities, said tube being of a material having low thermal conductivity; and a differential thermocouple arranged to detect the difference in temperature between said cavities.

3,226,549

MEASURING DEVICE FOR THE DISCONTINUOUS MEASUREMENT OF THE THICKNESS OF PREFERABLY SMALL WORK-PIECES BY MEANS OF β-RAYS

Karl Alexander Otto Heinze, Hamburg-Niendorf, and Gert Franz Heinz Bierkarre, Hamburg-Bergedorf, Germany, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Oct. 28, 1960, Ser. No. 65,640
Claims priority, application Germany, Nov. 26, 1959, P 23,960
5 Claims. (Cl. 250—83.6)



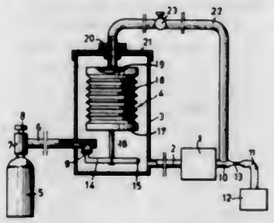
1. A thickness measuring device for discontinuous measurement of articles of relatively small thickness comprising a source of β-rays, β-ray detection means for obtaining a differential output indicative of the thickness of an article, and means to interpose articles to be measured successively between said β-ray source and said β-ray detection means, said β-ray detection means including a first proportional gas flow-counter tube adapted to produce a reference signal in response to β-radiation of given intensity, a second proportional gas flow counter positioned to produce a signal proportional to β-radiation traversing one of said articles, said first and second counters having gas flow resistances which differ by less than 20%, means to energize both said counters from a common source of potential, and means to introduce a gas having the same composition and rate of flow into both said counters, said counters each having a plurality of conductors positioned within a sensitive volume thereof whereby the volume is independent of the number of conductors.

3,226,550

GAS-FILLED RADIATION DETECTOR WITH CONTROLLED DENSITY OF GAS FILLING

Jan Louis Verster and Sjoerd Wytzes, Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company Inc., New York, N.Y., a corporation of Delaware

Filed Apr. 17, 1963, Ser. No. 273,787
Claims priority, application Netherlands, Apr. 19, 1962, 277,472
5 Claims. (Cl. 250—83.6)



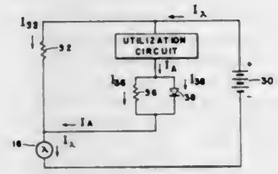
1. Apparatus for measuring ionizing radiation comprising a radiation-sensitive gas-filled measuring chamber having inlet and outlet apertures one of which has a constant cross-sectional area for flowing a gas through the measuring chamber, an adjustable regulating member for varying the cross-section of the other aperture, an enclosure containing a quantity of the same gas flowing through and which is at substantially the same temperature as the gas-filling of the measuring chamber, and means coupling the enclosure to the adjustable regulating member and responsive to a pressure difference between the gas-filling of the enclosure and the gas-filling of the measuring chamber for automatically adjusting the regulating member in response to variations in temperature of the gas in the enclosure whereby the rate of gas flow through the measuring chamber is altered and the density of the gas in the measuring chamber remains constant.

3,226,551

CURRENT SHAPING CIRCUIT FOR PHOTOSENSITIVE DEVICE

Rex. C. Campbell, Waynesboro, Va., assignor to General Electric Company, a corporation of New York

Filed Aug. 17, 1962, Ser. No. 217,598
3 Claims. (Cl. 250—206)



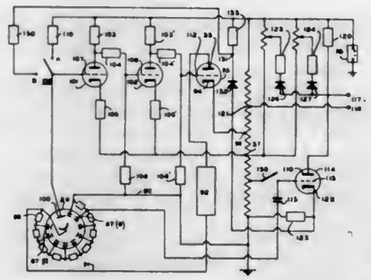
2. A current shaping circuit for modifying the linear or nonlinear current of an electrical device, comprising a power source for maintaining said linear or nonlinear current, a first resistor coupled with said electrical device and said power source to form a first series circuit, a second resistor and a rectifier in parallel combination, and a utilization circuit in series connection with said parallel combination, said power source and said electrical device to form a second series circuit.

3,226,552

PHOTOMULTIPLIER ZERO LEVEL CONTROL CIRCUIT

Monroe H. Sweet, deceased, late of Hillcrest, N.Y., by Russell P. Easton, executor, assignor to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

Filed Apr. 2, 1962, Ser. No. 184,474
4 Claims. (Cl. 250—207)



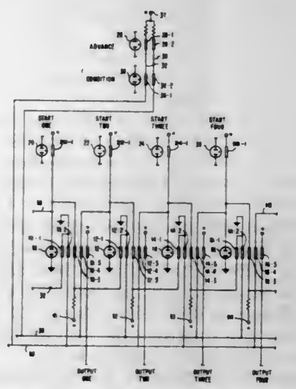
1. In a photometric circuit, the combination which comprises a photomultiplier tube having anode and cathode electrodes and a plurality of dynode elements, a source of energizing potential, a first feedback circuit including a first control tube in series between said dynode elements and said source, whereby the current conductivity of said tube determines the effective dynode potential, said potential representing the output of said photomultiplier tube, and an output circuit including an output vacuum tube responsive to said dynode potential, a second feedback circuit operable simultaneously with said first feedback circuit said second feedback circuit being connected between said output tube and said anode including a second control tube, the conductivity of which alters the effective anode potential of said photomultiplier tube, biasing means for adjusting the threshold of conductivity of said second control tube for conditions of maximum light flux impinging on the cathode of said photomultiplier tube, switching means initiating operation of said second control tube whereby, upon actuation of said switching means at said light flux level, the anode voltage of said photomultiplier tube becomes altered by the current conductivity of said second control tube inducing thereby activation of said first feedback circuit for establishment of quiescent equilibrium conditions of said multiplier tube at said light flux level.

3,226,553

PHOTOSENSITIVE MULTIPLE STATE CIRCUIT FOR COMPUTING AND DATA PROCESSING SYSTEMS

Rene H. Terlet, Ossining, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed July 24, 1961, Ser. No. 126,188
15 Claims. (Cl. 250—209)

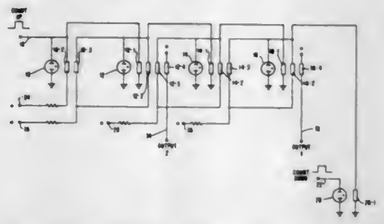


1. A multi-stable circuit comprising a plurality of storage devices including at least one storage device for each stable state; a starting device for energizing at least one said storage device in response to an individual start signal; means for connecting said starting device to said storage devices; a single voltage supply; at least two advance pulse lines for supplying advance pulse signals from said single voltage supply to said multi-stable circuit whenever an advance to a new stable state is required; means for connecting said single voltage supply to said advance pulse lines; each of said storage devices including a pick up switch element operably responsive to the energization of said storage device for energizing the next succeeding storage device; means for connecting said pick-up switch element to the next succeeding storage device and to an advance line other than the advance line connected to the preceding storage device; and each of said storage devices including switch elements for disabling the other advance lines.

3,226,554
CASCADE STORAGE APPARATUS

Rene H. Teriet, San Jose, Calif., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed July 18, 1962, Ser. No. 210,654
7 Claims. (Cl. 250—209)



1. A pulse signal storage system for storing successive pulse signals signifying different values of related information comprising:

(a) an individual pulse signal storage circuit for each value of such information,

(1) each of said pulse signal storage circuits comprising a plurality of cascade connected storage devices,

(i) the first of said devices including an input connection for receiving input signal pulses to be stored,

(ii) each of said storage devices comprising

(A) a latching circuit including a switch element connected to a power source for maintaining said device in an energized condition after a signal pulse is received,

(B) a pick-up switch element connected to energize the next following storage device,

(C) and each storage device after said first storage device including a disabling circuit comprising a switching device connected to disable a preceding storage device,

(b) the last said storage device of each of said pulse signal storage circuits including an additional disabling circuit comprising a switching device connected to disable each of the others of said last storage devices in said other pulse signal storage circuits so that only one of said last storage devices may remain energized on a static basis,

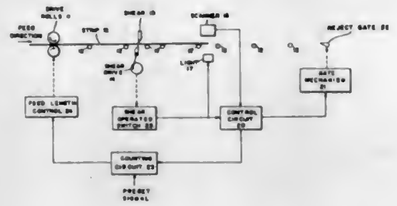
(c) and a signal removal device connected to all said last storage devices to disable all of said last storage devices of all of said pulse signal storage circuits in response to a removal pulse signal and thereby reduce the stored count in the single last storage device which is energized.

3,226,555
PHOTOSENSITIVE SYSTEM FOR INDICATING VARIATIONS IN A DIMENSION OF AN ARTICLE

Richard F. Miller, Naperville, Ill., assignor to General Electric Company, a corporation of New York

Filed Apr. 6, 1962, Ser. No. 185,612
11 Claims. (Cl. 250—223)

9. A system for indicating and varying the position of an edge of an article from a reference point at which an operation is performed on said article comprising first, second, third, and fourth radiant energy sensitive devices arranged in that order along a line and on both sides of a predetermined position of said article edge, a source of radiant energy, said source and said devices being positioned on opposite sides of said article so that energy from said source which reaches said devices is determined by said position of said article edge relative to said reference point, first means coupled to said devices for producing a first signal in response to the absence of energy from said source reaching said devices, second means coupled to said devices for producing a second signal in response to energy from said source reaching only said first device, third means coupled to said devices for producing a third signal in response to energy from said source reaching only said first and second devices, fourth means coupled to said devices for producing a fourth signal in response to energy

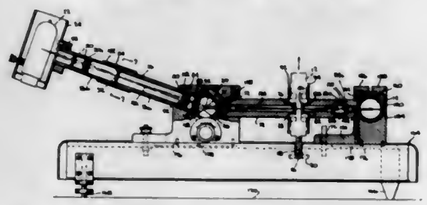


from said source reaching only said first, second, and third devices, fifth means coupled to said devices for producing a fifth signal in response to energy from said source reaching all of said devices, a counting circuit coupled to said means for making a first count of said first and second signals and for making a second count of said fourth and fifth signals and providing a net count indicative of the relative magnitudes of said first and second counts, and a utilization circuit coupled to said counting circuit for varying said reference point in response to said net count exceeding a predetermined magnitude.

3,226,556
PHOTOSENSITIVE LIQUID EXAMINING MEANS FOR ELECTROPHORESIS APPARATUS

Seymour Rosin, Massapequa Park, N.Y., assignor to Technicon Instruments Corporation, Chauncey, N.Y., a corporation of New York

Filed Apr. 16, 1962, Ser. No. 187,709
14 Claims. (Cl. 250—226)



1. In an electrophoresis apparatus for examining a liquid to determine the quantities of different substances present therein,

an electrophoesis cell in which a series of different substances in a liquid are arranged in vertically spaced layers, a source of radiant energy for emitting radiation in a range of different wave lengths,

a radiation passage tube positioned in the path of the radiation from said source for transmitting said radiation,

a radiation-refracting prism mounted for rotation about an axis which is horizontal to the longitudinal axis of said tube,

said prism having a pair of spaced confronting surfaces, one of said surfaces being in the path of the radiation transmitted through said tube for receiving said radiation for transmission through said prism and therefrom through said other surface,

said surfaces being at an angle with respect to each other and said one surface being at an angle with respect to the longitudinal axis of said tube so that said radiation from said prism is transmitted along different paths corresponding to the different wave lengths of said radiation, and radiation of a particular wave length is transmitted along a predetermined path which is perpendicular to said cell,

means positioned along said predetermined path for transmitting said radiation of said particular wave length only to said cell for the examination of the liquid therein by said radiation of said particular wave length, means for providing relative vertical movement between said cell and said radiation of said particular wavelength whereby said layers are examined by said last mentioned radiation seriatim,

means for rotating said prims about said horizontal axis to change the angular relationship between said one surface of said prism and said longitudinal axis of said tube so that radiation of a different wave length than said particular wave length is transmitted to said cell,

means for forming said radiation from said source into a relatively thin beam which extends laterally in a plane which is substantially parallel to said layers in said liquid,

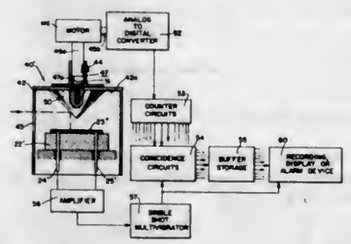
photo-electric means positioned to receive said radiation of predetermined wave length from said cell, and

means in the path of the radiation from said cell for focusing said radiation at a predetermined position on said photo-electric device.

3,226,557
PHOTOSENSITIVE SCANNER FOR DETECTING RADIATION FROM ANY AZIMUTHAL ANGLE

Robert M. Goodman, 200 E. Township Line Road, Elkins Park, Pa.

Filed Jan. 18, 1963, Ser. No. 252,344
14 Claims. (Cl. 250—236)



1. A system for scanning and detecting predetermined radiation comprising:

(a) sensing means responsive to said radiation,

(b) an optical means for directing light from any azimuthal angle onto said radiation-responsive means,

(c) means which moves about said radiation-responsive means and which includes a predetermined portion thereof which is opaque to said radiation, said radiation-responsive means producing a signal when said moving means is in a certain position with respect to an external source of said radiation,

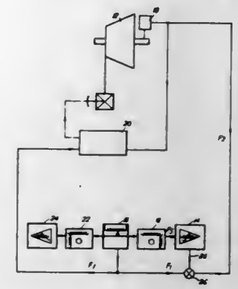
(d) means for continuously indexing the position of said moving means, and

(e) means for producing, in response to reception of said signal at any position of said moving means, output signals representative of the position of said external source at the time said signal occurs.

3,226,558
AUTOMATIC CONTROL SYSTEMS

Herbert Oswald Walker, West Hartlepool, England, assignor to Richardsons, Westgarth & Co. Limited, Northumberland, England

Filed Feb. 4, 1963, Ser. No. 255,774
Claims priority, application Great Britain, Feb. 5, 1962, 4,340/62
6 Claims. (Cl. 290—40)



1. Apparatus for controlling the operation of a steam turbine during start-up and in accordance with a desired program of increasing turbine shaft speed, comprising: an actual speed signal generator sensing actual turbine shaft speed and deriving a first variable signal representative thereof, a program speed signal generator and first drive means therefor, said program speed signal generator deriving a second variable signal that normally increases progressively during turbine start-up and is representative of the desired program speed at each time instant, comparator means receiving said first and second signals as inputs and deriving an error signal representative of the instantaneous difference between actual speed and program speed, a second drive means coupled to said program speed signal generator which second drive means is ordinarily inactive, and servo means responsive to said error signal and applying a driving signal to said second drive means whenever said error signal exceeds a predetermined limit value, said second drive means imparting drive to said program speed signal generator in opposite sense to said first drive means.

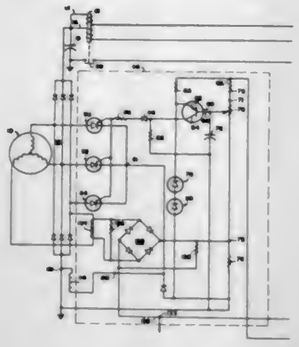
3,226,559
CONTROL SYSTEM FOR D.C. GENERATOR

Leon Klein, Waynesboro, Va., assignor to General Electric Company, a corporation of New York

Filed Jan. 30, 1962, Ser. No. 169,855
6 Claims. (Cl. 307—57)

1. In a parallel arrangement of a plurality of D.C. power sources including a main buss, each of the sources comprising a D.C. generator having a shunt field and output feeder means associated therewith for providing power to said buss, said feeder means comprising a pair of conductive lines; regulating means in combination with each of said D.C. sources, each of said regulating means comprising relay means having as operating windings thereon said lines, said lines being wound in opposite directions on said relay means whereby said relay means is energized in response to a fault in said feeder means, disabling means responsive to the energization of said relay means for disabling a power source in which said fault occurs, rectifier means in connected circuit with each of said feeder

means and said buss in a polarity to block current flow from said buss to said feeder means, means in circuit with said feeder means and said shunt field for supplying cur-



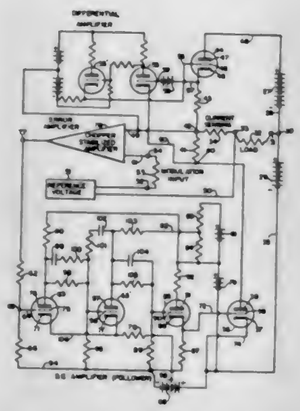
rent to said shunt field and means in circuit with said feeder means and responsive to an output of said generator for indicating the presence of said last-named output.

3,226,560

REGULATION CIRCUIT EMPLOYING MEANS TO MAINTAIN SUM OF CURRENTS IN TWO CONTROL DEVICES CONSTANT

Leo Staschover, Syosset, and Martin A. Weiner, Bronx, N.Y., assignors to North Hills Electronics, Inc., Glen Cove, N.Y., a corporation of New York

Filed Oct. 27, 1961, Ser. No. 148,244
11 Claims. (Cl. 307—60)



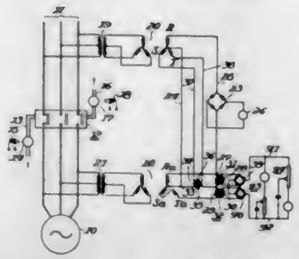
1. In a regulated current system the combination of, two voltage sources connected in series, at least two signal responsive control devices connected in series across said series connected voltage sources, load connecting means and a current sensing means connected in series between the junction between said voltage sources and the junction between said control devices, means for keeping the sum of the currents in said control devices substantially constant and load current control means including means for comparing the drop across said current sensing means with a reference voltage to provide an error signal and feed-back means including an amplifier coupled to one of said signal responsive control devices for maintaining said error signal substantially zero.

3,226,561

SYNCHRONIZING DEVICES BETWEEN ALTERNATING CURRENT SYSTEMS

Seiichi Taniai, Tsurumi-cho, Tsurumi-ku, Yokohama-shi, Japan, assignor to Tokyo Shibaura Denki Kabushiki Kaisha, Kawasaki-shi, Japan, a joint-stock company of Japan

Filed Aug. 21, 1961, Ser. No. 132,815
Claims priority, application Japan, Aug. 27, 1960, 35/36,033
2 Claims. (Cl. 307—87)



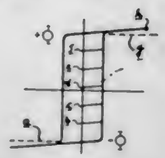
1. A synchronizing device for use to parallel two different alternating current systems connected to different sources, comprising, a circuit breaker adapted to interconnect said two alternating current circuits, means connected in operation to said two alternating current systems to derive from said two systems derived voltages the phases of which are perpendicular to each other when the phases of said systems coincide, means connected to receive said derived voltages to derive resultant voltages respectively corresponding to the vector sum and the vector difference of said derived voltages and including means to rectify said resultant voltages and develop a differential voltage corresponding to the difference between said resultant voltages, circuit means comprising differentiating and integrating circuits connected in parallel to receive said differential voltage, means included in each of said differentiating and integrating circuits cooperating to close said circuit breaker in response to current flow through said differentiating and integrating circuits when said differential voltage has a value greater than zero.

3,226,562

ADJUSTABLE HIGH COUNT MAGNETIC COUNTER

Carl Neitzert, Chatham Township, N.J., assignor to General Time Corporation, New York, N.Y., a corporation of Delaware

Original application Feb. 1, 1960, Ser. No. 9,155, now Patent No. 3,156,814, dated Nov. 10, 1964. Divided and this application July 24, 1963, Ser. No. 302,226
10 Claims. (Cl. 307—88)



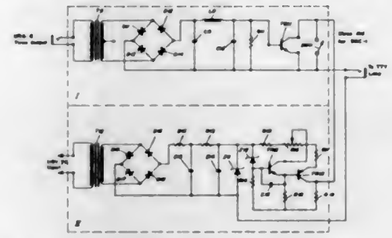
1. An adjustable high count magnetic counter comprising a plurality of magnetic devices, each having substantially square hysteresis loop characteristics, a multi-turn winding associated with each of said devices for biasing the associated device toward or away from magnetic saturation depending upon the direction of current flow therethrough, at least some of said windings having a plurality of taps for selecting the number of input signals which are required to drive said associated device into magnetic saturation, switch means for applying input signals to a selected one of said taps to drive said associated device to and beyond magnetic saturation responsive to the receipt of a preselected number of input signals, and means responsive to the last of said preselected number of input signals for applying said input signals across substantially all of the turns of one of said windings whereby said device functions as a fixed counter.

3,226,563

TELETYPE CURRENT SUPPLY SYSTEM

John C. Lovci, 5813 Brunswick St., Springfield, Va., and Allen A. Yurek, 6012 Merchant Road, Camp Springs, Md.

Filed Mar. 8, 1961, Ser. No. 94,406
4 Claims. (Cl. 307—88.5)
(Granted under Title 35, U.S. Code (1952), sec. 266)



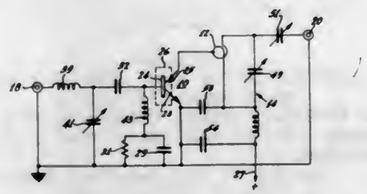
1. A signal conversion system comprising:
a tone signal input source;
a tone-to-direct current converter connected to the tone signal input source;
an impedance element receiving the output of the tone-to-direct current converter;
a solid state element connected to the impedance element to provide an electrical oscillation in response to the signal from the tone-to-direct current converter;
a transformer;
the primary of said transformer connected to the solid state element to receive the electrical oscillation;
a self regulated solid state power supply;
a switching means connected to the power supply and to the secondary of the transformer to provide a regulated output signal whenever electrical oscillation is present.

3,226,564

TRANSISTOR CIRCUITRY HAVING COMBINED HEAT DISSIPATING MEANS

Robert Minton, Plainfield, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed Nov. 15, 1961, Ser. No. 152,399
9 Claims. (Cl. 307—88.5)



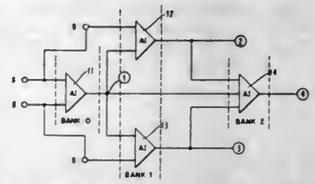
1. In an electronic circuit including a semiconductor device, an electrically conductive heat sink connected in heat transfer relation to said device, said heat sink being shaped to provide a frequency determining circuit element for said electronic circuit, and means for connecting said frequency determining circuit element in said electronic circuit.

3,226,565

LOGIC TREE COMPRISING NOR OR NAND LOGIC BLOCKS

John Earle, Wappingers Falls, N.Y., assignor to International Bnsiness Machines Corporation, New York, N.Y., a corporation of New York

Filed Mar. 28, 1961, Ser. No. 98,909
3 Claims. (Cl. 307—88.5)



1. A stroke-type function tree for n input variables comprising $n+1$ banks of similar stroke-type blocks sequentially ranked 0–n, with interconnections according to the following algorithm:

(a) Each bank x (except bank n) receives as inputs, to respective stroke-type blocks, specific sets of all possible sets of combinations of $(n-x)$ input variables;

(b) each stroke-type block which receives a set of inputs specified above in clause (a) also receives as inputs the outputs from all previous bank stroke-type blocks which have input sets including the same input variables;

(c) bank n stroke-type blocks receives as inputs the outputs from each stroke-type block of each previous bank of stroke-type blocks;

(d) the number C_x^n of stroke-type blocks in any given bank x for an n-input tree is a factorial function of n and x as follows:

$$C_x^n = \frac{n!}{(n-x)!x!}$$

(e) and the total number of stroke-type blocks in a complete tree is as follows:

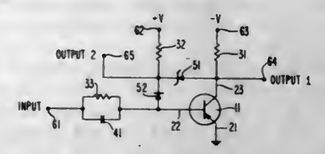
$$\sum_{x=0}^{x=n} \frac{n!}{(n-x)!x!} = 2^n$$

3,226,566

HIGH SPEED COMMON EMITTER SWITCH

William A. Lacher, North Wales, Pa., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

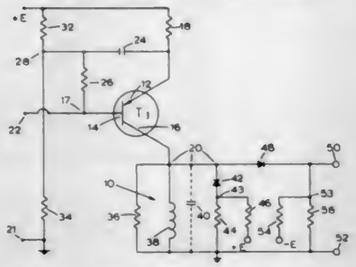
Filed Dec. 22, 1961, Ser. No. 161,505
13 Claims. (Cl. 307—88.5)



12. A continuously conducting transistor switching circuit having an input means to receive saturation-causing input pulses and at least two output means each having switched voltage levels which are independent of transistor gain characteristics, said switching circuit comprising a transistor amplifying means having input and output terminals, a constant voltage means connected to said output terminal, a normally closed unidirectionally conducting disconnect semiconductor means connected from said constant voltage means to said input terminal, said constant voltage means and said disconnect means being conductively connected to bias said transistor in its active conduction region in the absence of said saturation-causing input pulses and operatively responsive to their pres-

ence to disconnect said bias from the input terminal whereby said transistor amplifying means has an improved turn-on time permitting a rapid saturation.

3,226,567
ACTIVE TIME DELAY DEVICES
Richard W. Bradmiller and James A. Almond, Orange County, Fla., assignors to Martin-Marietta Corporation, Middle River, Md., a corporation of Maryland
Filed Feb. 5, 1962, Ser. No. 170,950
6 Claims. (Cl. 307—88.5)



1. An active delay device having a high input impedance and a low output impedance for providing an output signal which is delayed a predetermined period with respect to the input signal and has a predetermined width independent of the width of said input signal, said device comprising:

(a) a transistor having base, emitter and collector circuits and an output load resistor connected across said collector circuit;

(b) a reactive load connected to said collector circuit in parallel to said output load resistor;

(c) means for applying an input signal to the base of said transistor;

(d) means for biasing said transistor to class A operation so that energy is provided to said reactive load when said input signal is coupled to said base circuit so as to shock excite said reactive load and produce a voltage signal across said reactive load;

(e) said voltage signal having voltage excursions of one polarity and voltage excursions of another polarity;

(f) a first diode connected across said reactive load and being poled so as to pass said voltage excursions of one polarity and block said voltage excursions of another polarity;

(g) a second diode series connected between said reactive load and said output load resistor and being poled so as to block said voltage excursions of another polarity and pass said voltage excursions of on polarity; and

(h) said first diode being further adapted to pass said voltage excursions of one polarity when said input signal is coupled to said base circuit and, whereby said first diode will short said voltage excursions of one polarity only when said input signal is decoupled from said base circuit.

3,226,568
GATING MEANS FOR PASSING A PREDETERMINED NUMBER OF PULSES
Jan A. Samwel, Nijmegen, Netherlands, assignor, by mesne assignments, to Friden, Inc., San Leandro, Calif., a corporation of Delaware
Filed Mar. 16, 1962, Ser. No. 180,125
Claims priority, application Netherlands, Mar. 28, 1961, 262,910
6 Claims. (Cl. 307—88.5)

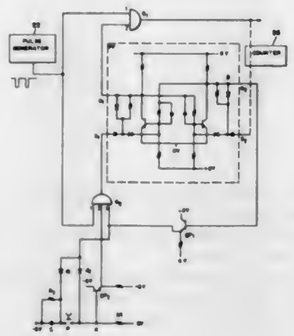
1. In combination in a control system for gating pulses,

(a) a pulse generator for generating a series of pulses, each beginning with a swing in the direction of one polarity and ending with a swing in the direction of the opposite polarity,

(b) a bistable flip-flop operable to "on" and "off" states alternately, said flip-flop having an "on" input drivable by a swing of an input signal toward said opposite polarity for operating said flip-flop to said "on" state, and a separate "off" input drivable by a swing of an input signal toward said opposite polarity for operating said flip-flop to said "off" condition, said flip-flop being so constructed and dimensioned that it is operable as aforesaid only in response to swings of input signals toward said opposite direction,

(c) a first gate connected between said generator and said "on" input of said flip-flop,

(d) a control signal means for applying a control signal to said first gate for enabling it for passing a



pulse to said "on" input of said flip-flop, whereby the trailing swing of said pulse during the enabled condition of said first gate operates said flip-flop to its "on" state,

(e) a second gate connected to the output of said generator,

(f) a counter connected between the output of said second gate and said "off" input of said flip-flop,

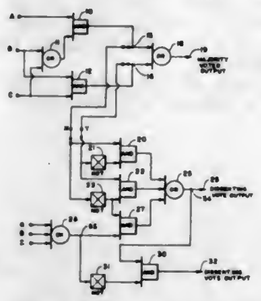
(g) means connecting an output of said flip-flop to said second gate for turning said second gate "on" during the "on" state of said flip-flop, whereby the trailing swing of a pulse from said generator passed by said second gate operates said flip-flop to its "off" state,

(h) whereby said flip-flop is operated for turning said first gate "on" and "off" only upon the occurrence of the trailing swings of pulses from said generator, so that said second gate passes only complete pulses.

3,226,569
FAILURE DETECTION CIRCUITS FOR REDUNDANT SYSTEMS
Dwight C. James, Littleton, Colo., assignor to Martin-Marietta Corporation, Baltimore, Md., a corporation of Maryland
Filed July 30, 1962, Ser. No. 213,381
9 Claims. (Cl. 307—88.5)

8. A dissenting vote indicator for use in conjunction with a majority voted circuit having a plurality of redundant input signals and at least first and second voted output signals comprising: first circuit means constructed and arranged for producing a first signal in response to the presence of said first voted output signal and the absence of said second voted output signal; second circuit means constructed and arranged for producing a second signal in

response to the absence of said first voted output signal and the presence of said second voted output signal; and third



circuit means for providing an output indicative of the presence of either one of said first or second signals.

3,226,570
SHORT PULSE ELIMINATOR DISCRIMINATOR UTILIZING FEED-BACK TO EFFECT DESIRED OUTPUT PULSES
Erik Rosenbaum, Baltimore, Md., assignor to The Bendix Corporation, Towson, Md., a corporation of Delaware
Filed Dec. 7, 1962, Ser. No. 242,960
3 Claims. (Cl. 307—88.5)

1. A short pulse eliminator circuit for preventing transmission of video pulses of shorter than a minimum desired duration, comprising

a delay line requiring a time equal to the minimum desired duration of said pulses for a pulse applied at the input thereof to be propagated its length,

an "and" gate including a pair of diodes biased for normal conduction,

means applying the output of said delay line to one of the diodes of said gate,

an amplifier arranged to provide an output of the same phase as an input thereto,

means applying the output of said amplifier to the other diode of said gate,

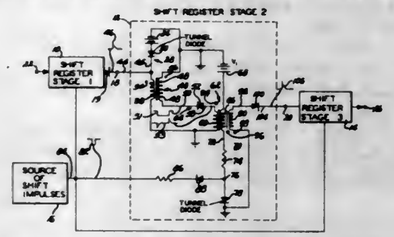
means simultaneously applying a video pulse to the input of said delay and to the input of said amplifier, said pulse being of such polarity as to render the diodes of said gate non-conductive upon application thereto,

means feeding back to the input of said amplifier a portion of the output of said gate, and

means in said feed-back means for blocking transmission by said feed-back means of spurious outputs from said gate resulting from the non-conduction of only one of said diodes.

3,226,571
TUNNEL DIODE SHIFT REGISTER
Alan R. Groendycke, Los Angeles, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed Feb. 1, 1963, Ser. No. 255,487
8 Claims. (Cl. 307—88.5)

2. A shift register combination responsive to input signals and timing signals being substantially coincident in time comprising a first series path including a first tunnel diode and first inductive means, said first tunnel diode responsive to an input signal to form an elongated pulse, differentiating means coupled to said first series path for forming a delayed pulse, a second series path coupled to said differentiating means and including a second tunnel diode responsive to said delayed pulse to be triggered to a first state, said second tunnel diode respond-



ing to the timing signal after said delayed pulse to be triggered to a second state to form an output signal, and output means coupled to said second series path to pass said output signal.

3,226,572
TRIGGER CIRCUITS
Akira Kuroda, Kawasaki-shi, Japan, assignor to Fujitsu Limited, Kawasaki, Japan, a corporation of Japan
Filed Feb. 20, 1963, Ser. No. 259,974
Claims priority, application Japan, Feb. 24, 1962, 37/7,163
8 Claims. (Cl. 307—88.5)

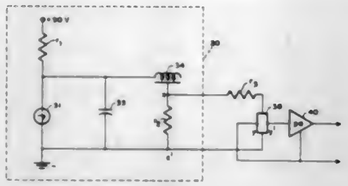
7. A trigger circuit for setting a flip-flop in response to clock pulses and a plurality of inputs and for resetting the flip-flop in response to the clock pulses, comprising a logic AND circuit including a plurality of diodes and means connecting said diodes to form a single output terminal for supplying set pulses to said flip-flop, each diode forming an input terminal for the respective inputs, one of said input terminals supplying a clock pulse to said AND circuit, a capacitor, a resistor, circuit means connecting said capacitor and said resistor in series between said one of said input terminals and said output terminal, and output means for deriving a trigger pulse from a common point in the connection between said capacitor and said resistor and for applying pulses to reset said flip-flop, said output means including a diode.

3,226,573
ELECTRICAL PULSE DELAY AND REGENERATOR CIRCUIT EMPLOYING FOUR-LAYER DIODE
Harry H. Wieder, Riverside, Calif., assignor to the United States of America as represented by the Secretary of the Navy
Original application Nov. 7, 1961, Ser. No. 150,846, now Patent No. 3,137,587, dated June 16, 1964. Divided and this application July 31, 1963, Ser. No. 303,462
5 Claims. (Cl. 307—88.5)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. A delay line operated pulsed generator circuit comprising:

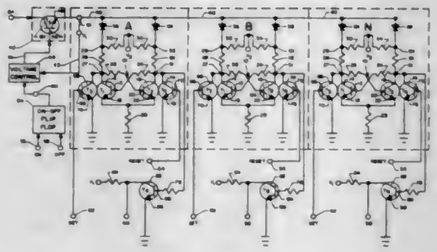
(a) a four-layer PNPN diode in series with a first

resistor connected across a pair of input terminals,
(b) a source of supply voltage connected to said input terminals,
(c) a discharge capacitor connected parallel with said PNPN diode,
(d) a delay line in series with a load resistor connected parallel with said capacitor,
(e) said load resistor also connected across a pair of output terminals,
(f) a supply voltage, from said source, larger than the breakdown voltage of said PNPN diode applied thereto causing said diode to break down to its low



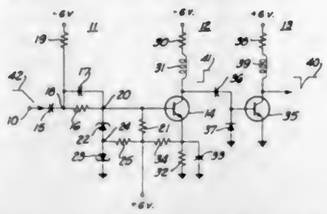
resistance state, in turn causing the discharge of said capacitor which presents a negative going step function to said delay line and producing a negative pulse across said load resistor and thus across said output terminals,
(g) said first resistor and said capacitor being chosen so that the sum of the conduction and displacement currents at some point during the discharge cycle of the capacitor are less than the sustaining current which keeps said PNPN diode in its low resistance state causing the diode to snap back to its nonconducting high resistance state ready for the process to repeat itself.

3,226,574
POWER SAVING STORAGE CIRCUIT EMPLOYING CONTROLLABLE POWER SOURCE
John T. Winkler, Orlando, Fla., assignor to Martin-Marietta Corporation, Middle River, Md., a corporation of Maryland
Filed Sept. 20, 1963, Ser. No. 310,253
15 Claims. (Cl. 307—88.5)



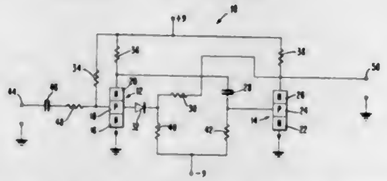
1. An electronic storage circuit having dual current mode characteristics for providing a low current mode during storage periods and a high current mode during operating periods, comprising:
(a) storage means for storing intelligence, said storage means having storage and operating periods;
(b) current flow resisting means connected to said storage means for placing said storage means in said low current mode; and
(c) switching means for effectively disconnecting said current flow resisting means from said storage means during said storage periods, thereby placing said storage means in said high current mode.

3,226,575
PULSE SHAPER CIRCUIT EMPLOYING OPPOSITELY POLED SERIES CONNECTED TUNNEL DIODES IN BASE CIRCUIT OF TRANSISTOR
La Var E. Whittle, Granada Hills, Calif., assignor to Pacific Industries, Inc., San Fernando, Calif., a corporation of California
Filed Sept. 30, 1963, Ser. No. 312,373
6 Claims. (Cl. 307—88.5)



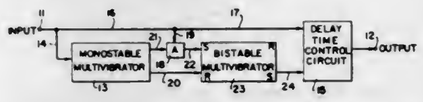
1. In a voltage wave shaping circuit for producing a sharp leading edge from a sloping voltage wave, the combination of:
a transistor amplifier;
an input terminal;
first circuit means for coupling said input terminal to the base of the transistor of said amplifier;
first and second tunnel diodes connected in series and opposing polarity between said first circuit means and a reference potential; and
bias means for biasing said transistor in the nonconducting condition and one of said tunnel diodes in the low voltage condition and biasing the other of said tunnel diodes in the high voltage condition, whereby a voltage wave at said input terminal on reaching a predetermined value switches said one tunnel diode to the high voltage condition and said other tunnel diode to the low voltage condition causing said transistor amplifier to turn on and generate a sharp edge voltage wave at the collector.

3,226,576
MONOSTABLE MULTIVIBRATOR UTILIZING UNIDIRECTIONAL DEVICE IN CROSS-COUPLING TO ISOLATE OUTPUT FROM INPUT DURING QUIESCENT CONDITION
Fred L. Rogers, Jr., Lexington, Ky., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Continuation of application Ser. No. 136,473, Sept. 7, 1961. This application Nov. 18, 1964, Ser. No. 415,846
4 Claims. (Cl. 307—88.5)



1. A circuit to produce an output pulse of predetermined time duration comprising:
a first active element having an input and an output, and connected to be normally in a first state of conduction,
means to connect a source of input pulses to the input of said first active element so that said first active element will be biased to a second state of conduction by each of said pulses,
a voltage divider circuit having a first voltage division branch with two terminals and a second voltage division branch with two terminals, one of said terminals of said first voltage division branch and one of said terminals of said second voltage division branch being electrically connected, the connection of said two voltage division branches defining a voltage division point and the terminals of said two voltage division branches electrically away from said connection defining a first end and a second end of said voltage divider circuit, said voltage division point being connected to the input of said first active element,
a second active element having an input and an output, the output of said second active element being connected to the said end of said voltage divider circuit terminating said first voltage division branch, said second active element being connected to normally conduct at one state of conduction and to conduct in a changed state of conduction in response to a signal at its input,
a unidirectional device connected in series circuit with said first voltage division branch between the output of said second active element and the input of said first active element, said unidirectional device being poled to be normally back biased and being normally back biased when said second active element is in its normal state of conduction,
a voltage source connected to the said end of said voltage divider circuit terminating said second voltage division branch poled to bias said first active element to said second state of conduction,
a circuit including an electrical energy storing element for establishing a time constant connecting the output of said first active element and the input of said second active element,
said first active element being connected to produce a signal when in said second state of conduction which will pass said circuit for establishing a time constant for a predetermined time substantially equal to said predetermined output pulse time duration to bias said second active element to a changed state of conduction at which the output of said second active element changes to a value at which a forward bias will be presented to said unidirectional device to positively bias said first active element against change in state of conduction.

3,226,577
PULSE SEPARATION SPACING CONTROL CIRCUIT
Yasuo Azuma and Toshiaki Emoto, Kawasaki, Japan, assignors to Fujitsu Limited, Kawasaki, Japan, a corporation of Japan
Filed Dec. 24, 1964, Ser. No. 421,121
Claims priority, application Japan, Dec. 28, 1963, 38/71,081
6 Claims. (Cl. 307—88.5)

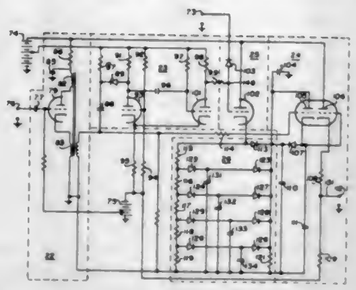


1. A pulse separation spacing control circuit, comprising
monostable multivibrator means having an operating time during which it is in a stable condition and a non-operating time during which it is non-operating, said monostable multivibrator means having an input for a series of spaced successive input pulses and an output;
bistable multivibrator means having a first operating time during which it is in a first stable state and a second operating time during which it is in a second stable state, and bistable multivibrator means having two inputs and an output, one of said inputs being connected to said monostable multivibrator;
gate means having a first input connected to the output of said monostable multivibrator means, a second input, and an output connected to the other input of said bistable multivibrator means, said gate means having a conductive condition to which it is switched when there is a signal in each of its first and second inputs at the same time and in which it conducts a signal from one of its inputs to its output and a non-conductive condition to which it is switched when there is not a signal in each of its first and second inputs at the same time and in which it prevents the transfer of a signal to its output;
delay time control circuit means having a first input for a first series of spaced-successive input pulses, a second input connected to the output of said bistable multivibrator means for a second series of spaced successive input pulses, an output, and delay means for delaying a pulse of said first series of input pulses for a first time and for delaying a pulse of said second series of input pulses for a second time different from said first time; and
pulse supply means for supplying a series of spaced successive input pulses to each of the input of said monostable multivibrator means, the second input of said gate means and to the first input of said delay time control circuit means whereby if the spacing between successive input pulses is greater than a minimum determined by the operating time of said monostable multivibrator means so that an input pulse is supplied by said pulse supply means after the next preceding input pulse during the non-operating time of said monostable multivibrator means said gate means is switched to its non-conductive condition and prevents the transmission of a signal to said bistable multivibrator means so that it is switched to its second stable state and no signal is supplied to the second input of said delay time control circuit means, an input pulse from said pulse supply means in the first input of said delay time control circuit means being provided in the output thereof after a delay of said first time so that said input pulse is spaced a first time interval from the next preceding pulse in said series of spaced successive input pulses, and if the spacing between successive input pulses is less than said minimum so that two successive input pulses are supplied by said pulse supply means during the operating time of said monostable multivibrator means said gate means is switched to its conductive condition and transmits a signal to said bistable multivibrator means so that it is switched to its first stable state and an input pulse is supplied to the second input of said delay time control circuit means, said input pulse being provided in the output thereof after a delay of said second time so that the said input pulse is spaced a second time interval from the next preceding pulse in said series of spaced successive input pulses.

3,226,578
WAVE SHAPING DIODE NETWORK
Phillip S. Bengston, Silver Spring, Md., assignor to the United States of America as represented by the Secretary of the Navy
Original application Mar. 4, 1960, Ser. No. 12,876. Divided and this application Aug. 31, 1964, Ser. No. 399,956
6 Claims. (Cl. 307—107)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. A wave shaping network comprising common, input, and output terminals, a voltage divider having a plurality of taps connected between said input and common terminals, a diode connected between said input and said

output terminals, a pair of series connected diodes connected between each of said taps and said output terminal,

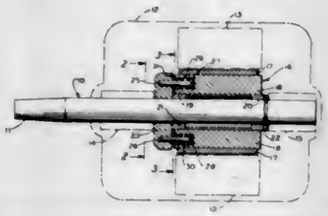


and a capacitor connected between said pair of diodes and said common terminal.

3,226,579
ALTERNATING CURRENT ELECTRIC MOTOR

Perry A. Bygdnes, Redwood City, Calif., assignor to Mach-Tronics, Inc., Mountain View, Calif., a corporation of California

Filed Aug. 5, 1963, Ser. No. 299,858
7 Claims. (Cl. 310—51)



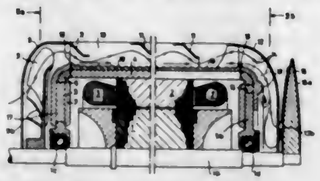
7. A synchronous motor comprising: a stator having exciting windings to produce a rotating electromagnetic field at a desired rotational speed and having speed variation components thereof during each cycle of rotation; an output shaft extending centrally within said stator; a rotor surrounding said output shaft and being capable of rotative movement relative therewith, said rotor including a non-magnetic arbor, and a hysteresis ring of magnetic material supported on said non-magnetic arbor; and a rotational coupler connected to the arbor of said rotor and to the output shaft to rotate the output shaft at a speed corresponding to the rotational speed of said rotor and to absorb the variations thereof during each cycle of rotation.

3,226,580
FLUID-COOLED ROTATING MACHINES, PARTICULARLY ELECTRIC MOTORS AND GENERATORS

Karl-Heinz Oehlrich and Aribert Fracke, Erlangen, Germany, assignors to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany

Filed July 27, 1961, Ser. No. 127,223
Claims priority, application Germany, Aug. 3, 1960, S 69,755
7 Claims. (Cl. 310—57)

1. A rotating electric machine comprising a housing having an enclosed machine space, heat-transfer bodies of good heat-conducting metal penetrating said housing and having heat-exchanging surfaces at the inside and at the outside of said housing to conduct heat from said enclosed space to the outside of said housing, gaseous-coolant supply means for passing a flow of coolant along said housing on the outside thereof, said heat-transfer bodies being mounted on the upstream side and downstream side respectively of said housing relative to the coolant flow, structure of good heat-conducting metal extending along said housing and conductively connecting said heat-transfer bodies on the upstream side with those on the downstream side, said structure being joined with said housing and located on the outside thereof to be exposed to the coolant flow, and a plurality of ring-shaped slot-nozzle means coaxially surrounding said housing with radial clearance and having a shape tapering in the coolant-flow direction for guiding the coolant toward said housing and

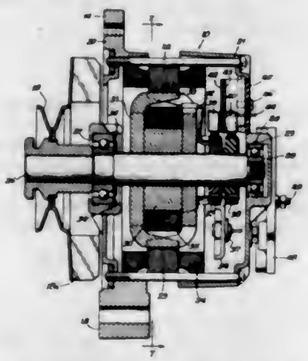


structure, said nozzle means being axially spaced from each other downstream of said coolant supply means ahead of the downstream end of the housing, and a hood member adjacent to and spaced from said latter end to form an interspace with said housing, said hood member having an annular air inlet opening for receiving the air flow and having a lateral opening for deflecting the flow axially inward and then out of said lateral opening, said bodies and said structure having protruding ridges transverse to the coolant flow direction and exposed to said flow to promote turbulence.

3,226,581
GENERATING SYSTEM

Franklin C. Brewster, Franklin Park, Charles L. Shano, Chicago, and Alfred G. Ocken, Jr., Franklin Park, Ill., assignors to Motorola, Inc., Chicago, Ill., a corporation of Illinois

Filed June 29, 1961, Ser. No. 120,547
20 Claims. (Cl. 310—59)



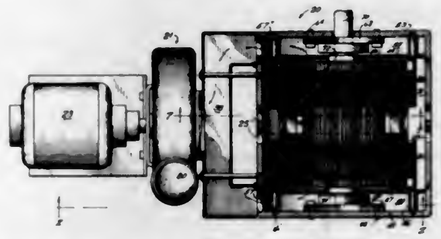
1. A direct current power supply unit for an automotive vehicle including in combination, a dynamo electric machine having a supporting frame, stator means and rotor means supported by said frame, said stator means including a laminated magnetic structure and winding means thereon, said rotor means including a magnetic structure having interleaved pole pieces and winding means thereon, means for applying direct current to said rotor winding means to provide a rotating magnetic field whereby alternating current is induced in said stator winding means, an output terminal, rectifier means connected between said stator winding means and said output terminal, said frame including heat conducting means for supporting said rectifier means, said pole pieces of said magnetic structure of said rotor means

being tapered from base portions to tip portions and having faces adjacent said stator magnetic structure which are slanted away from said stator structure adjacent the edges to reduce the noise produced by said machine.

3,226,582
ADJUSTABLE TORQUE INDUCTION MOTORS

Sterling Beckwith, Libertyville, Ill. (P.O. Box 752, Lake Forest, Ill.)

Filed Sept. 12, 1962, Ser. No. 223,194
6 Claims. (Cl. 310—59)

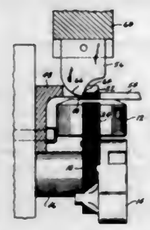


1. In an induction motor of the character described, a pair of axially alined stators spaced from each other, a pair of spaced rotor cores, one of said cores being positioned within each of said stators with an air gap therebetween, each core having a plurality of apertures axially therethrough, a plurality of conductor bars mounted in and extending across both of said cores to define a cylindrical cage therebetween, and fan means driven independently of said motor to draw air from between the stators into said cage and through the apertures in both said rotors in opposite directions and through both said air gaps to effect cooling of said motor.

3,226,583
METHOD AND MEANS FOR SECURING AN ARTICLE TO A LAMINATED CORE

George E. Espe, Springfield, Mass., assignor to R. E. Phelon Company, Incorporated, East Longmeadow, Mass., a corporation of Massachusetts

Filed July 31, 1961, Ser. No. 128,143
12 Claims. (Cl. 310—153)

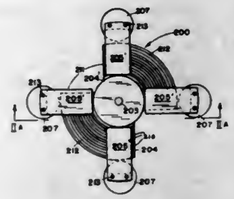


1. The combination comprising a core structure having a pole comprised of a plurality of laminations, a coil unit including an outer shell containing at least one coil winding potted therein and having an opening corresponding to the shape of said pole and fitted on said pole with said pole extending through said opening, and a tab cut from one of the end laminations of said pole and bent laterally outwardly therefrom so as to be directly engageable with said coil unit at the corresponding end of said coil unit to prevent the latter from moving axially in one direction on said pole beyond the location of said tab, said tab being otherwise unconnected with said coil unit so as to be incapable of restraining its movement in the opposite axial direction.

3,226,584
INDUCED-QUADRATURE FIELD SYNCHRONOUS MOTOR

Robert H. Pintell, New York, N.Y., assignor to Intron International, Inc., Bronx, N.Y., a corporation of New York

Filed June 10, 1960, Ser. No. 35,184
8 Claims. (Cl. 310—162)

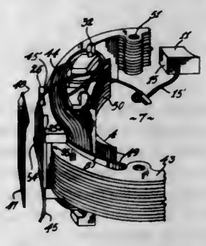


1. A motor comprising a stator and a rotor having a common axis, said stator including a plurality of pairs of diametrically opposite poles angularly spaced about said axis, said poles each including a generally L-shaped member of high-permeability sheet material having a first leg provided with winding means and a second leg presenting a broad face to said rotor, said rotor being essentially in the shape of a flat disc divided into generally flat, angularly spaced sectors with major portions lying in the same plane transverse to said axis, said sectors being separated by gaps of high magnetic reluctance and electric resistance, each of said sectors having at least an extremity of magnetically permeable material provided with a broad surface juxtaposable with said broad face of each of said poles in successive angular positions, the number of said sectors equaling the number of pole pairs, said sectors registering only with alternate poles in certain angular positions of said rotor.

3,226,585
DYNAMO-ELECTRIC MACHINE COIL RETAINING MEANS

Elverton O. Roe, Elyria, Ohio, assignor to General Industries Company, Elyria, Ohio, a corporation of Ohio

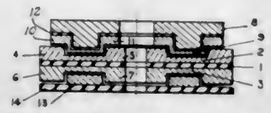
Filed June 26, 1962, Ser. No. 205,269
8 Claims. (Cl. 310—194)



6. A brush holder assembly for direct current motors comprising a pair of generally vertically disposed brush card supports, said supports adapted to be disposed, in substantial parallelism, at relatively opposite sides of the commutator, and each support comprising a vertical medial portion, substantially U-shaped opposite end portions, the uppermost of said U-shaped end portions being provided with a pair of upstanding spaced members, each member being provided with a notch, an integral centrally apertured brush support member encircling the said commutator having opposite end portions adapted to be wedgingly seated within said notches, a motor casing, the vertical portion of said supports being disposed adjacent the lateral wall of said casing, insulating ma-

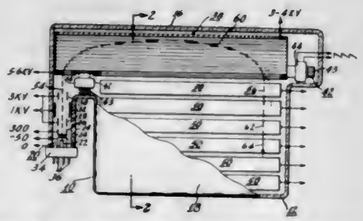
terial being interposed between each said vertical portion and the said lateral wall of said casing, the lowermost said U-shaped end portion of said support being seated upon the bottom wall of said casing.

3,226,586
AXIAL AIRGAP ROTARY MACHINES
Jacques Henry-Baudot, Antony, France, assignor to Printed Motors Inc., New York, N.Y.
Filed Jan. 21, 1960, Ser. No. 3,768
Claims priority, application France, Feb. 5, 1959, 786,046, Patent 1,226,508
3 Claims. (Cl. 310—254)



1. An axial airgap dynamo-electric machine comprising: a pair of disc-shaped stator members positioned parallel to each other to define an axial airgap therebetween, each of said stator members including on their opposing faces raised annular portions concentric with their axis and located substantially midway of their center and peripheral portions so that the airgap between said members is wider at the center and peripheral portions compared with the airgap between said annular portions; and a disc-shaped rotor positioned in said airgap having conductors which are substantially thicker at their inner and outer radial ends to substantially fill said airgap.

3,226,587
CATHODE RAY TUBE AND MAGNETIC DEFLECTION MEANS THEREFOR
Te Ning Chin, Princeton, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Jan. 28, 1960, Ser. No. 5,200
12 Claims. (Cl. 313—75)



12. A cathode ray tube comprising a substantially rectangular planar phosphor screen, a pair of electromagnet pole pieces defining a gap therebetween adjacent to said phosphor screen for providing in said gap a magnetic field of substantially uniform strength along a first direction parallel to the adjacent edge of said phosphor screen and of non-uniform strength along a second direction perpendicular to said adjacent edge, said pole pieces comprising alternate laminae of magnetic and nonmagnetic material with said laminae being perpendicular to said second direction, and an electron gun for projecting an electron beam into said gap.

3,226,588
ELECTROMAGNETIC DEFLECTION YOKE
William H. Barkow, Pennsauken, and Clifford C. Matthews, Merchantville, N.J., assignors to Radio Corporation of America, a corporation of Delaware
Filed July 9, 1962, Ser. No. 208,356
5 Claims. (Cl. 313—76)

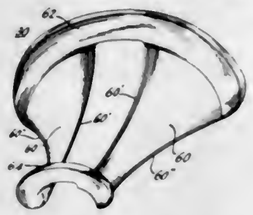
1. An electromagnetic deflection yoke for a cathode ray tube, said tube having a generally cylindrically neck portion and a flared bulb portion, comprising in combination:

a plurality of pairs of coil windings disposed about a central longitudinal axis of said yoke;

each coil winding having active conductor volumes comprising a plurality of wire conductors on each side of said winding, disposed generally longitudinally between a front and a rear of said winding and circumferentially about said central longitudinal axis, and having front and rear end conductors disposed transversely of said winding connecting said wire conductors of said active conductor volume;

the conductors of said coil windings being a greater distance from said central longitudinal axis at the front of said windings than at the rear and being generally shaped between rear and front to conform to the cylindrical neck and the bulb portions of said tube;

each of said coil windings having a window area de-

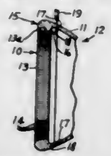


fined between said active conductor volumes and the front and rear end conductors;

each active conductor volume having an inner edge at said window area and an outer edge spaced away from said window area with the inner edges of said active conductor volumes being spaced from one another so that the angle defined by said inner edges and the central longitudinal axis in each transverse section of said yoke decreases from rear to front of said yoke; and

each active conductor volume having a distribution of said wire conductors such that at the rear of the winding the wire conductor are concentrated toward the outer edge and the distribution is shifted progressively toward a uniform distribution of said wire conductors between said inner and outer edges at the front of said winding, with the greatest change in distribution occuring near the front of said winding.

3,226,589
FIBER TYPE LIGHT TRANSFERRING DEVICES AND METHOD OF MAKING THE SAME
Richard F. Woodcock, South Woodstock, Conn., assignor to American Optical Company, Southbridge, Mass., a voluntary association of Massachusetts
Filed Mar. 24, 1960, Ser. No. 17,390
10 Claims. (Cl. 313—89)

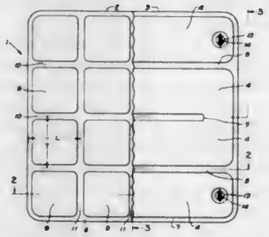


1. A face plate of the character described comprising a first member formed of a plurality of glass optical fibers secured together in hermetically sealed fused side-by-side relation so that corresponding opposite ends of said fibers cooperate to define respective light-receiving and light-emitting opposite faces, the edge of said first member being tapered convergently toward one of said faces and having a continuous substantially even surface, a second

glass member of rim-like configuration having a continuous substantially even surfaced inner tapered edge of approximately the same perimetric contour shape and degree of taper as said edge of said first member, said first and second members being mated with respective tapered edges thereof in side-by-side relation and interjoined by a fused hermetically sealed connection.

7. The method of making a device of the character described comprising providing a plate-like glass fiber part of preselected thickness and contour size and shape embodying a plurality of glass fibers in fused hermetically sealed side-by-side connected relation with each other, abrading the peripheral edge portion of said fiber part to produce a taper thereon and simultaneously forming said fiber part to a desired finished contour size and shape by said abrasion, selecting a glass rim part of a desired contour size and shape greater than that of said fiber part, abrading the inner edge portion of said rim part to a peripherally tapered contour size and shape substantially matching that of the abraded edge portion of said fiber part, assembling said parts with the respective abraded edge portions thereof in interfitting relation with each other and heating said assembled parts to a temperature sufficient to produce a fused hermetically sealed connection therebetween.

3,226,590
FLUORESCENT PANEL LAMP
Richard S. Christy, Willoughby, Ohio, assignor to General Electric Company, a corporation of New York
Filed Nov. 15, 1960, Ser. No. 69,314
3 Claims. (Cl. 313—109)



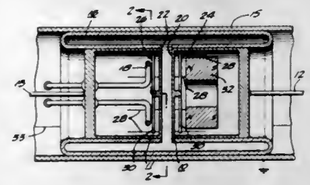
1. A fluorescent panel lamp comprising a vitreous envelope formed by a backplate and a faceplate sealed together along their margins, said backplate being formed with a labryrinthine groove of substantially constant width extending continuously throughout its area to provide a discharge channel, electrodes sealed into said lamp at the ends of said channel and an ionizable medium therein, a phosphor coating on said faceplate, said faceplate having relatively shallow outwardly convex embossments formed therein throughout its area, said embossments being of substantially the same width as the discharge channel formed by said groove and being disposed to overlie the discharge channel, said embossments having a ratio of depth of projection to width in the range of 1:4 to 1:10 and being of a length providing an orderly arrangement whereby to achieve a faceplate of improved strength and attractive appearance effectively camouflaging the bright path of the discharge in said channel.

3,226,591
HEAVY DUTY GAS TUBE WITH A MAGNETIC TRIGGER
Vernal Josephson, Palos Verdes Estates, Calif., assignor to The Aerospace Corporation, Los Angeles, Calif., a corporation of California
Filed June 6, 1962, Ser. No. 200,436
4 Claims. (Cl. 313—154)

4. A spark gap switch comprising:

a pair of electrically isolated electrodes having opposed surfaces supported in spaced apart relation;

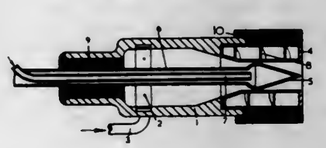
means maintaining a low pressure gaseous atmosphere between said surfaces, said pressure being such that the atmosphere is normally nonconductive in the presence of a high potential across said pair;



means for generating a magnetic trigger pulse field between said pair to ionize and breakdown said atmosphere; and

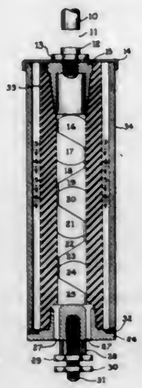
means producing a constant magnetic field inhibiting pinch effect on the current flow between said pair.

3,226,592
APPARATUS FOR PRODUCING A HIGH VELOCITY JET CONSISTING OF A PLASMA OF IONS AND ELECTRONS
Peter J. C. Gough, Barnoldswick, near Colne, and Kenneth Hall, Coventry, England, assignors to Bristol Siddeley Engines Limited, Bristol, England
Filed July 11, 1960, Ser. No. 41,835
Claims priority, application Great Britain, July 15, 1959, 24,273
7 Claims. (Cl. 313—230)



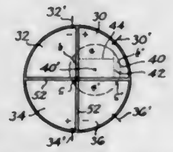
6. Apparatus for producing a high velocity jet consisting of a plasma of ions and electrons, the apparatus comprising a chamber, inlet means to said chamber for the introduction into the chamber of a working fluid and a pair of concentric electrodes together defining an annular convergent-divergent nozzle forming an outlet from the chamber, the nozzle having an upstream convergent portion, a downstream divergent portion and a throat therebetween, the flow through the nozzle being axial, the apparatus also comprising means whereby an electrical potential is applied across the electrodes to produce an arc extending therebetween radially at right angles to the longitudinal axis of the throat and capable of heating and ionising the working fluid, the inner electrode being the cathode and the outer electrode being the anode, an electrical coil positioned concentrically around the anode, means connected to said coil, whereby an electrical current is applied to the coil, thereby to produce a magnetic field which accelerates the charged particles forming the plasma as they pass through the nozzle, and a particle separator and accelerator positioned at the upstream end of the chamber and forming an inlet through which particles are introduced substantially axially into the chamber, the said particle separator and accelerator comprising a pair of open-ended, concentric, co-axial tubes, spaced apart radially from one another and each formed from a pack of alternately arranged electrically-conductive and insulating rings, and means for applying pulsating electrical potentials to each electrically-conductive ring of the tubes, the said pulsating electrical potentials increasing in magnitude in the direction of flow of the particles through the tubes and being changed in polarity at each successive pulse.

3,226,593
EXCESS-VOLTAGE PROTECTIVE DEVICE
Ralph R. Pittman, Pulaski, Ark.
(5324 Southwood Road, Little Rock, Ark.)
Filed Jan. 28, 1964, Ser. No. 340,649
4 Claims. (Cl. 313—231)



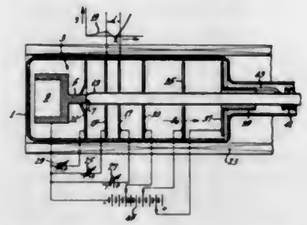
1. An excess-voltage protective device comprising:
a tubular structure of insulating material having associated therewith only two spaced conducting electrodes, said electrodes being disposed at the respective ends of said tubular structure,
at least one of said electrodes extending partway into said tubular structure to assure that sparkover between said electrodes will occur over a nonpredetermined path along and within said tubular structure, and
a filler of insulating material extending longitudinally between said electrodes within said tubular structure and partially filling the opening therein,
said filler including a plurality of cylindrical sections arranged in abutting end-to-end relationship,
the abutting ends of said sections being beveled to provide a plurality of angularly displaced, longitudinally extending, discontinuous lines of abutment along adjacent sections of said filler with the inner surface of said tubular structure which are circumferentially displaced about the axis of said tubular structure by an angle less than 180 degrees.

3,226,594
ELECTRON BEAM MULTIPLICATION TUBE
Joseph W. Griffith, 12335 SW. Faircrest, Beaverton, Oreg.
Filed July 8, 1960, Ser. No. 41,575
5 Claims. (Cl. 315—8.5)



1. In a multiplication tube having an electron gun adapted to provide a beam of electrons that is substantially symmetrical about x and y axes and an electron beam deflection system responsive to a pair of signals to be multiplied: an electron collecting target comprising spaced quadrants of electrically conductive material, the spacing between quadrants insulating the latter from each other, the target and beam being so proportioned that the beam is substantially larger in dimension than the spacing between target quadrants, and a coating of material characterized by a low ratio of secondary to primary electrons bonded to the target quadrants for minimizing emission of secondary electrons.

3,226,595
LOW NOISE ELECTRON GUN
Johannes Berghammer, Princeton, and Stanley Bloom, Plainfield, N.J., assignors to Radio Corporation of America, a corporation of Delaware
Filed Mar. 31, 1960, Ser. No. 19,079
1 Claim. (Cl. 315—16)

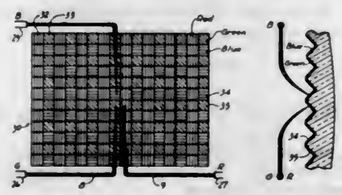


An electron gun for producing a low noise electron beam along a predetermined axis, for use in a given operating frequency range, comprising a cylindrical thermionic cathode having a circular electron emissive end surface coaxial with and normal to said axis, the peripheral portion of said end surface being sloped backward and outward from the central portion thereof and coated with emissive material, two annular accelerating electrodes coaxially disposed along said axis in spaced relation to each other and spaced substantially from said cathode, and means including at least one voltage source connected between said cathode and said accelerating electrodes for applying such low positive voltages to said electrodes relative to said cathode as to produce a low-velocity confined beam having a virtual cathode in the region between said accelerating electrodes and having a relative velocity spread

$$\sigma^2 > \frac{1}{1-\frac{\omega^2}{\omega_p^2}}$$

in said virtual cathode, where ω is any operating frequency in said range, ω_p is the plasma frequency and ω_p is greater than ω, said means including a third annular accelerating electrode coaxially surrounding said thermionic cathode, with the cathode protruding into the space between said first and third accelerating electrodes.

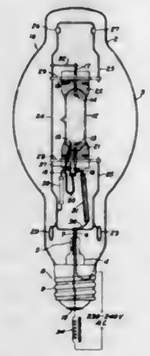
3,226,596
FLAT COLOR CATHODE RAY TUBE
Henry Kasperowicz, Clifton, N.J.
(3 Greenvale Ave., Wayne, N.J.)
Filed June 21, 1963, Ser. No. 289,543
16 Claims. (Cl. 315—21)



1. A thin flat color cathode-ray tube having a deflection system for deflecting a plurality of coplanar beams each in a direction to cause them to impinge a target surface in the tube in a normal direction thereto at some definable

position, the said thin flat tube comprising a target area having disposed thereon a geometric serrated phosphor pattern along one surface thereof to produce tri-colored images upon impact by the said coplanar beams as they traverse the said target area in accordance with the deflection system, and means in proximity to the target area for guiding the said beams in a direction to cause them to impinge the said phosphor pattern along one surface of the said target area at a location not inconsistent with the signal transmitted and to be reproduced.

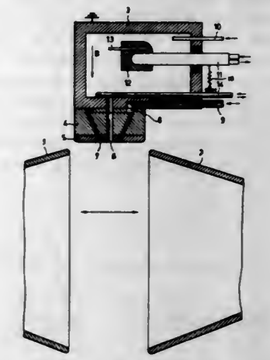
3,226,597
HIGH PRESSURE METAL VAPOR DISCHARGE LAMP
Alwin C. Green, Hiram, Ohio, assignor to General Electric Company, a corporation of New York
Filed Sept. 4, 1963, Ser. No. 306,476
5 Claims. (Cl. 315—60)



1. An electric discharge lamp comprising a vitreous outer jacket enclosing a quartz arc tube, said arc tube having a pair of main thermionic electrodes sealed therein at opposite ends and a starting electrode located adjacent one of said main electrodes sealed therein at one end, an ionizable filling within said arc tube comprising mercury, a metal halide, and an inert starting gas, means supporting said arc tube within said outer jacket and providing circuit connections to said main electrodes, means including a current limiting resistor within said outer jacket connecting said starting electrode to the main electrode at the opposite end of the arc tube, and a thermal switch actuated by the heat of said arc tube during normal operation and arranged to short-circuit the starting electrode to the adjacent main electrode when actuated.

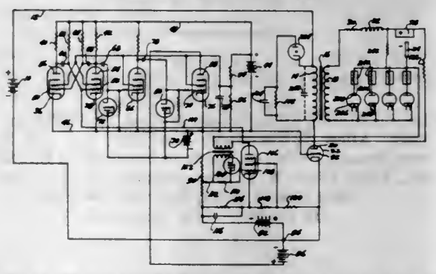
3,226,598
SOURCE OF IONS FOR USE IN SYNCHRO-CYCLOTRONS
Gerardus M. B. Van Nimwegen, Amsterdam, Netherlands, assignor to North American Philips Company Inc., New York, N.Y., a corporation of Delaware
Filed July 3, 1961, Ser. No. 121,716
Claims priority, application Netherlands, Sept. 14, 1960, 255,901
4 Claims. (Cl. 315—111)

1. A synchro-cyclotron comprising a metal chamber, means to introduce an ionizable medium into said chamber, a pair of D-shaped electrodes located on opposite sides of a given axis, an electrode on said given axis within and electrically insulated from said chamber, means to apply a negative potential to said electrode relative to the chamber, and a spout connected with said chamber extending between the D-shaped electrodes, said spout having a bore therein coaxial with said given axis and extending parallel to a magnetic field constituting a channel for the discharge of the ionizable medium in the chamber, said bore opening into an aperture constituting an anode for ions and electrons moving helically around the magnetic lines of force emanating from the spout and entering a high-frequency field between the



D-shaped electrodes, said spout having a plurality of channels lying on a conical surface having an axis coaxial with the bore and an apex lying just within the D-shaped electrodes for supplying about one-fourth to one-third of the ionizable medium being supplied through the spout.

3,226,599
HIGH FREQUENCY GAS RECTIFIER CIRCUIT
Robert S. Webb, Bloomfield Hills, Mich., assignor to Elox Corporation of Michigan, Troy, Mich., a corporation of Michigan
Filed July 5, 1960, Ser. No. 40,863
2 Claims. (Cl. 315—181)

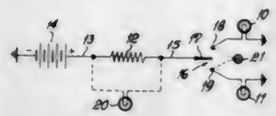


1. In an electrical discharge machining apparatus for machining a conductive workpiece by intermittent electrical discharge across a gap between an electrode and the workpiece in the presence of dielectric coolant, a power supply, a pulse transformer having its primary winding connected in series with an electronic switch operated at frequencies of at least 10 kilocycles and said supply, said pulse transformer having its secondary winding connected across said gap to provide machining pulses to said gap in phase with said switch, and at least one gas diode connected in series between said secondary winding and said gap.

3,226,600
ARRANGEMENT FOR PERIODICALLY CHANGING THE INTENSITY OF AN ELECTRIC CURRENT
Gotthold Zielasek, Stuttgart-Botnang, Germany, assignor to Robert Bosch G.m.b.H., Stuttgart, Germany
Filed June 12, 1962, Ser. No. 201,957
Claims priority, application Germany, June 16, 1961, B 62,920
12 Claims. (Cl. 315—209)

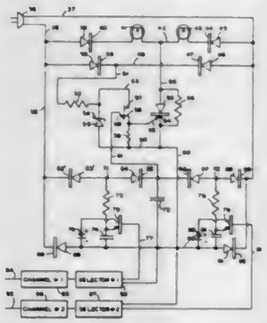
1. An arrangement for periodically changing the energization of blinker lights in an electric circuit of an auto-

motive vehicle, comprising, in combination, a source of electric current; at least two blinker lights each requiring a minimum amount of current for energization; and circuit means connecting said source and said blinker lights and including resistor means heatable by current flowing through said circuit means and having a temperature dependent resistance characteristic so chosen that the resistance of said resistor means changes abruptly at a predetermined temperature and that whenever during heating or cooling of said resistor means the latter assumes said predetermined temperature the current supplied therethrough to any one of said blinker lights changes abruptly between a value considerably below said minimum amount of current and a value at least equal



thereto, respectively, said circuit means further including switch means for alternatively connecting either one of said blinker lights in series with said resistor means, whereby every time when the resistor means is heated to a temperature substantially equal to said predetermined temperature the current is changed abruptly from one of said values to the other value so that the resistor means is permitted to cool, and when then the temperature of said resistor means decreases to a value below said predetermined temperature the current is changed from said other value to said one value thereof, so that the energization of that one of the blinker lights which is connected by said switch means with the resistor means is periodically changed between an amount sufficient to light it and an amount insufficient to light it.

3,226,601
LIGHT DISPLAY WITH SOUND SIGNAL CONTROL
Sydney Cramer, Douglaston, Robert S. Feldstein, New York, Allen G. Jacobson, Brooklyn, and Leo Staschover, Syosset, N.Y., assignors to North Hills Electronics, Inc., Glen Cove, N.Y., a corporation of New York
Filed June 1, 1962, Ser. No. 199,508
10 Claims. (Cl. 315—210)



1. In a system for controlling power from an alternating current source, the combination of, a first load device and a second load device, a first source of control signals and a second source of control signals, a silicon controlled rectifier, means responsive to the first said control signals for firing said silicon controlled rectifier through said first load on alternate half cycles of said alternating current and means responsive to the second control signal for firing said silicon controlled rectifier through said second load on the half cycles of said alternating current which alternate with the first said alternate half cycles.

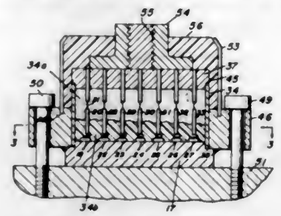
3,226,602
HEAT TRANSFERRING MOUNTING PANELS FOR ELECTRIC COMPONENTS AND CIRCUITS
Thore M. Elfving, 433 Fairfax Ave., San Mateo, Calif.
Filed Oct. 29, 1962, Ser. No. 233,636
12 Claims. (Cl. 317—100)



1. In combination a heat transferring panel comprising first and second members bonded over predetermined areas to form a double walled hermetically sealed panel having a plurality of interconnected passages, a refrigerant partly filling the passages in said panel, said panel comprising a heat absorbing portion and a heat dissipating portion, said heat dissipating portion being spaced from the heat absorbing portion at a higher horizontal level, at least one heat dissipating electrical component, means for transferring heat from the component to the heat absorbing portion of the panel whereby heat transferred from said object to said heat absorbing portion is transferred to the remote heat dissipating portion by the refrigerant, an extended surface heat dissipating means, a thermoelectric heat pump connected between the heat dissipating portion of said panel and said extended surface heat dissipating means to transfer heat from the heat dissipating portion of the panel to the extended surface heat dissipating means and maintain the heat dissipating portion of the panel at a temperature below the temperature of the extended surface heat dissipating means.

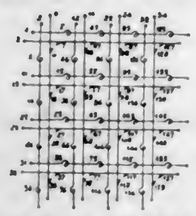
3,226,603
HIGH CURRENT RECTIFIER EMPLOYING A PLURALITY OF WAFERS HAVING RESPECTIVE FUSE ELEMENTS
George B. Finn, Jr., Los Angeles, Edward J. Diebold, Palos Verdes Estates, George J. Eannarino, Los Angeles, and David E. Cooper, Rolling Hills, Calif., assignors to International Rectifier Corporation, El Segundo, Calif., a corporation of California
Filed June 5, 1961, Ser. No. 114,871
3 Claims. (Cl. 317—101)

1. A high current rectifier comprising, in combination, a conductive base member, a conductive plate member, an insulating cylinder secured between said conductive plate member and said conductive base member and separating said conductive plate member and said conductive base member from one another, a plurality of wafers having rectifying junctions therein, each of said wafers mounted on said conductive base member and each spaced from one another on said conductive base member, said conductive base member comprising the common terminal of each of said individual wafers, each of said wafers having a lead extending therefrom connected to the surface of said wafers opposite said base member, each of said leads being connected to a respective fuse element, support means for supporting said leads and at least portions of said fuse links in spaced relation



with respect to one another and a common arc quenching medium surrounding the exposed portions of each of said fuse members, and hermetic sealing means for hermetically sealing said wafers and said fuse element.

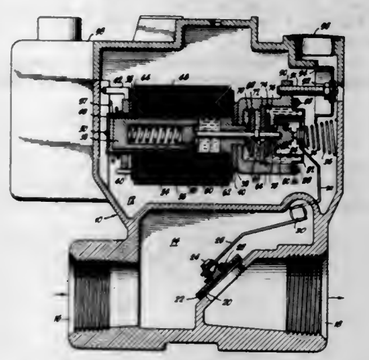
3,226,604
ELECTRICAL CURRENT ROUTING DEVICE
Bertrand Dreyfus-Alain, Sevres, Seine et Oise, France, assignor to Societe d'Electronique et d'Automatisme, Seine, France
Filed Aug. 7, 1961, Ser. No. 129,766
Claims priority, application France, Sept. 16, 1960, 838,873, Patent 1,274,667
5 Claims. (Cl. 317—137)



1. A current routing system comprising in combination:
(1) a first plurality of insulating strips arranged in substantially parallel rows;
(2) a second plurality of strips also arranged in substantially parallel rows equal in number and located adjacent but spaced from said first strips, said second strips being oriented with respect to said first to define thereith a plurality of crossing points therebetween;
(3) a plurality of contacts arranged at spaced intervals along said strips and located in facing relation at said crossing points so as to be capable of electrical contact at said crossing points upon deflection of at least one of said strips toward another in the other plurality of strips; and,
(4) a plurality of coils carried by said strips on the side reverse from that carrying said contacts, said coils being located at said crossing points; whereby energization of a pair of said coils located at a given crossing point produces deflection of at least one of said strips and establishes an electrical connection between the contacts at said crossing point.

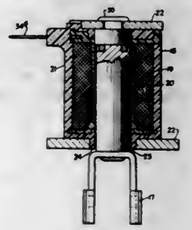
3,226,605
SOLENOID DAMPING MECHANISM
John W. Wright, Long Beach, Calif., and John C. Hewitt, Jr., deceased, late of Long Beach, Calif., by Dorothy V. Hewitt and Patricia A. Morrison, administratrices, Long Beach, Calif., assignors to Roberts Controls Company, Richmond, Va., a corporation of Delaware
Filed Apr. 5, 1962, Ser. No. 185,478
3 Claims. (Cl. 317—178)

1. In a solenoid assembly for operating a valve, the combination comprising a cylinder open at one end, a coil surrounding said cylinder and an armature movably disposed in said cylinder, a dashpot housing fixed to said cylinder and having one end communicating with the open end of said cylinder and an opposite end sealed by a diaphragm actuator, a quantity of damping liquid filling said cylinder and said housing, an apertured plate member fixed in said housing, a plunger element extending through said plate member and mounted between said



armature and said diaphragm actuator to transmit motion therebetween, a pair of disc elements on opposite sides of said plate member and cooperating therewith to retard displacement of the damping liquid from one side of said plate member to the other, and means on said plunger element moving one of said disc elements away from said plate member to permit displacement of the damping liquid from the said one side of said plate member to the other.

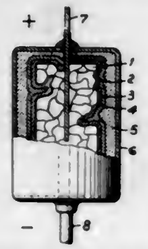
3,226,606
SOLENOID ASSEMBLY WITH PROTECTIVE ENCLOSURE AND DEPENDING LIP
Howard L. Erickson, Bensenville, Ill., assignor to The Dole Valve Company, Morton Grove, Ill., a corporation of Illinois
Filed Dec. 14, 1962, Ser. No. 244,606
3 Claims. (Cl. 317—191)



1. In a solenoid:
a nonmagnetic coil support having a hollow opening extending therethrough,
a coil mounted on said coil support,
a reciprocable plunger of magnetically permeable material, said plunger extending into said opening in said coil support,
a frame through which said plunger extends,
a plunger stop extending into the other end of said opening in said coil support and being secured to said frame, said stop being engageable by said plunger to define the attracted position thereof,
and a coating of nonmagnetic material incapsulating said coil support and coil, said nonmagnetic coating having a substantially cylindrical lip formed thereon, said lip encircling said plunger and being positioned between said plunger and said frame to prevent said

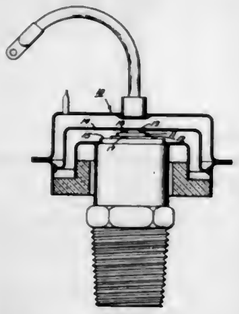
plunger from frictionally engaging said frame, said lip extending a short distance into one end of said hollow opening in said coil support to guide said plunger as it enters said coil support.

3,226,607
ELECTRICAL CAPACITOR
Hans Eugen Lauckner, Weissenburg, Bavaria, Germany, assignor, by mesne assignments, to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed May 26, 1960, Ser. No. 31,832
Claims priority, application Germany, May 30, 1959, St 15,195
10 Claims. (Cl. 317—230)



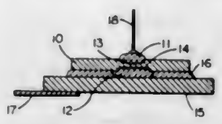
1. An electrical capacitor comprising an electrode of a valve metal, an anodic dielectric oxide film on the surface of said electrode, said oxide film comprising oxide of a first valve metal and oxide of a second valve metal, a second electrode disposed over the exposed surface of the dielectric film and being separated from the first electrode thereby, said oxide of the first valve metal including metal oxide ions of p-type conductivity having the metal component therein at a first valence, and said oxide of the second valve metal including metal oxide ions of p-type conductivity having the metal component therein at a second valence higher than the valance of the metal component in the first valve metal oxide ions whereby the resistivity of the dielectric oxide film is greater than the resistivity of a film of a single one of said oxides.

3,226,608
LIQUID METAL ELECTRICAL CONNECTION
Louis F. Coffin, Jr., Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed June 24, 1959, Ser. No. 822,571
4 Claims. (Cl. 317—234)



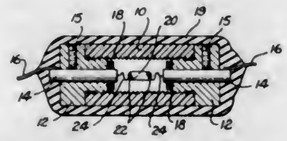
1. In a high current rectifier, a fixed, electrical, soldered joint comprising in combination, a pair of spaced apart conductors, a rectifier diode between said conductors, a metal element positioned between said rectifier diode and one of said conductors and spaced from said conductor, said element having a different coefficient of expansion than that of said one conductor, and a solid metal in said space between said element and said conductor, said solid element being characterized by melting on the flow of current between said conductors through said rectifier, the combination of the spaced apart element and conductor and the liquid metal providing a flexible connection for expansion mismatch.

3,226,609
HIGH CONDUCTION SEMICONDUCTOR DIODE
William F. Palmer, Carlisle, Mass., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Oct. 25, 1960, Ser. No. 64,770
9 Claims. (Cl. 317—234)



1. A semiconductor device comprising a monocrystalline body of semiconductor material having a first zone of one conductivity type with first and second planar surfaces on opposite sides thereof, second and third zones of the opposite conductivity type disposed in the first zone on each of said sides respectively and forming two spaced PN junctions with the first zone, a first electrode making ohmic contact solely to one of said zones of the opposite conductivity type, and a second electrode making ohmic contact to both said first zone and the other of said zones of the opposite conductivity type.

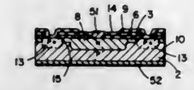
3,226,610
CONSTANT-CURRENT SEMICONDUCTOR DEVICE
George G. Harman, Jr., Theodore Higier, and Owen L. Meyer, Washington, D.C., and Richard L. Raybold, Springfield, Va., assignors to the United States of America as represented by the Secretary of Commerce
Filed June 19, 1962, Ser. No. 203,667
1 Claim. (Cl. 317—234)



A constant-current semiconductor device comprising, a body of p-type semiconductor material, a gas-permeable coating containing particles of a material selected from the group consisting of carbon, silver and gold disposed on a portion of said body, a first lead at least partially embedded in said coating, a second lead electrically connected to said body, an enclosure surrounding said body, coating and leads, said leads extending through said enclosure, said enclosure containing at least one gas selected from the group consisting of water vapor, ammonia, acetone vapor, and hydrogen sulfide.

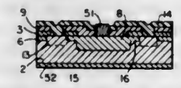
3,226,611
SEMICONDUCTOR DEVICE
John C. Haenichen, Scottsdale, Ariz., assignor to Motorola, Inc., Chicago, Ill., a corporation of Illinois
Filed Aug. 23, 1962, Ser. No. 218,904
15 Claims. (Cl. 317—234)

1. In a semiconductor device having a predetermined voltage breakdown characteristic, including a semiconductor element having a top surface on the body material thereof and having within said body material, a first region of one conductivity type, a second region of the opposite conductivity type within said first region, with each region extending to said surface and defining a rectifying junction between the regions, a third region of said one conductivity type within said second region, a thermally grown intimately bonded passivating coating on said surface and covering at least a portion of said three regions, and a channel underneath the coating in the body material immediately at said surface thereof extending laterally outwardly from said second region at said surface with said rectifying junction extending therewith at the interface between said channel and said first region, said channel being of the opposite conductivity type to said first region, the means for maintaining the voltage breakdown characteristic of the semiconductor device as originally determined in the design



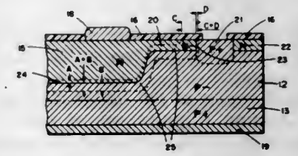
of said device comprising a channel-interrupting region extending from said top surface downwardly into said first region from said surface to a depth greater than the depth of said channel and completely surrounding and spaced from and separated laterally outwardly by a predetermined amount from said second region at said top surface and in the body material of the semiconductor element, said channel-interrupting region being of lower resistivity than the resistivity of said first region, of the same conductivity type as the first region and of lower resistivity and opposite conductivity relative to said channel, with said channel-interrupting region interrupting and terminating said channel at the inside face of said latter region and turning said rectifying junction upwardly at said inside face toward said top surface underneath said passivating coating.

3,226,612
SEMICONDUCTOR DEVICE AND METHOD
John C. Haenichen, Scottsdale, Ariz., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Mar. 18, 1963, Ser. No. 265,736
9 Claims. (Cl. 317—234)



1. In a semiconductor device which has desired reverse current and breakdown voltage characteristics and is one of the type of a group which includes NP, PN, PNP, and NPN devices, said semiconductor device including a semiconductor element having therein a first region and a second region which are adjacent one another and are of opposite conductivity type, a junction at the interface of said two regions, and a grown passivating coating on the top surface of the semiconductor element under which a channel can form within said element immediately at said top surface and which would extend laterally out of said second region into said first region and would be of opposite conductivity type to said first region, with said junction upon formation of such a channel likewise extending outwardly from said second region along the interface of such a channel and the first region, the improvement comprising a channel-interrupting region formed in said first region which provides the desired reverse current characteristic and maintains the desired breakdown voltage characteristic for the semiconductor device by interrupting and terminating any such a channel at a place spaced laterally away and separated from said second region and completely surrounding said second region, said channel-interrupting region being of the same conductivity type as said first region, of lower resistivity than the same, and extending downwardly from said top surface through such a channel and into said first region to a total depth greater than the depth from said top surface of any such a channel so as to structurally block such a channel and turn said junction upwardly toward and to said top surface underneath said passivating coating, with said spacing and separation of said channel-interrupting region from said second region being an amount sufficient to accommodate the entire depletion region in the semiconductor element to maintain said desired breakdown voltage during the operation of said semiconductor device.

3,226,613
HIGH VOLTAGE SEMICONDUCTOR DEVICE
John C. Haenichen, Scottsdale, Ariz., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Mar. 18, 1963, Ser. No. 265,649
8 Claims. (Cl. 317—234)

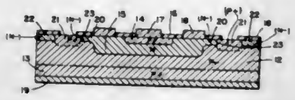


1. In a semiconductor device upon which has desired reverse current and breakdown voltage characteristics and in which breakdown will occur in the bulk of the semiconductor material of the device, semiconductor material in said device having therein a first region and a second region of opposite conductivity types adjacent to one another and a junction at the interface of said two regions, said first region and said second region each respectively having a predetermined resistivity, the combination comprising a grown passivating coating over at least a portion of the top surface of the semiconductor material, a channel region in said first region of the same conductivity type as that of said second region comprising an extension laterally out of said second region immediately adjacent said top surface below said passivating coating and completely surrounding said second region which is thinner in depth from said top surface than is said second region and is of higher resistivity than the bulk material of said second region and of higher resistivity than the resistivity of said first region, said channel region being of opposite conductivity type to said first region, with said junction also extending laterally from said second region along the interface of said channel region and said first region, and means which structurally blocks and completely interrupts said channel region so as to prevent large reverse currents from flowing therein during the operation of the semiconductor device, said means comprising a channel-interrupting region in said first region at a place spaced laterally away from said second region and completely surrounding said channel region, which is of the opposite conductivity type to that of said channel region such that said junction extends upwardly along the interface of said channel interrupting region and said channel region toward and to said top surface underneath said passivating coating, said channel-interrupting region being of the same conductivity type as the first region and of lower resistivity than the same and of lower resistivity than said channel region, with said channel region in said lateral spacing being of such length between said channel-interrupting region and said second region that the entire depletion region spreading in accommodated in the operation of said semiconductor device.

3,226,614
HIGH VOLTAGE SEMICONDUCTOR DEVICE

John C. Haenichen, Scottsdale, Ariz., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois

Filed Nov. 4, 1963, Ser. No. 321,070
10 Claims. (Cl. 317—234)



1. In a semiconductor structure which has desired reverse current and breakdown voltage characteristics,

(a) a silicon semiconductor material having a first region doped with an impurity which imparts a predetermined resistivity and a predetermined conductivity type to that region,

(b) a second region in said semiconductor material adjacent said first region of opposite conductivity type to that of said first region, and said two regions having a common interface in the bulk of said material,

(c) the combination comprising a passivating coating of silicon dioxide on the top surface of said semiconductor material,

(d) a channel region at the top portion of said first region extending laterally out of said second region, completely surrounding said second region and disposed over an area between said passivating coating and said first region, said channel region being of opposite conductivity type to that of said first region and being doped with an impurity having a segregation coefficient such that the final impurity concentration in any part of said channel region is less than the impurity concentration in said first region at the interface between said first region and said second region whereby voltage breakdown occurs in the bulk between the first region and said second region,

(e) means in said first region which structurally blocks and interrupts said channel region and provides the desired reverse current characteristic for the semiconductor structure comprising a channel-interrupting region in said channel region and in said first region which completely surrounds said second region and extends downwardly through said channel region into said first region from said top surface and is of the same conductivity type as the first region and of lower resistivity than the same,

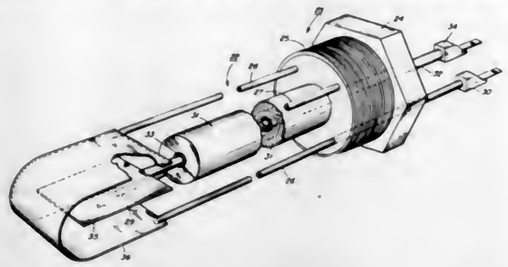
(f) and with this channel-interrupting region being spaced from said second region a dimension such as to accommodate the entire depletion region during the operation of the semiconductor structure and maintain the desired voltage breakdown characteristic thereof.

3,226,615
CAPACITIVE PROBE AND SYSTEM FOR REGULATING GASES

Lester L. Nagel, Summit, N.J., assignor to Buell Engineering Company, Inc., New York, N.Y., a corporation of New York

Filed June 19, 1962, Ser. No. 203,498
4 Claims. (Cl. 317—246)

1. A sensing device for use with an electrostatic precipitator control system, comprising a capacitance probe which is adapted to be inserted into a gas-conducting duct to sense changes in the properties and condition of the gas by variations in capacitance of the probe, said probe comprising a conductive supporting member formed for mounting in a duct wall; an insulating member extending through said supporting member; a small conductive rod extending through said insulating member and electrically insulated thereby from said supporting member; capacitance means including first and second electric condenser plates insulated and spaced from one another one

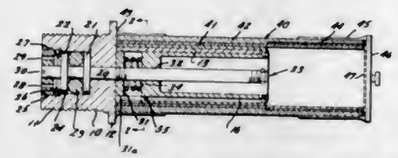


of which is mounted on said rod and has a surface area substantially greater than said rod; and means having no substantial capacitance relationship to said one plate and supporting said second condenser plate in electrically conducting relation with said first mentioned supporting member.

3,226,616
TRIMMER CAPACITOR WITH DIRECT TRAVEL MECHANISM

Hugo Selden, Brooklyn, N.Y., assignor to JFD Electronics Corporation, Brooklyn, N.Y., a corporation of New York

Filed Aug. 22, 1962, Ser. No. 218,753
3 Claims. (Cl. 317—249)

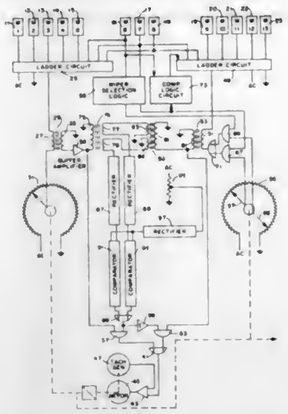


1. A reactor comprising a main support bushing, a tubular bushing extension connected to and extending from one end of said main support bushing, a tubular dielectric cylinder surrounding said tubular bushing extension and being connected to and extending from said one end of said support bushing, a piston assembly contained within said tubular dielectric cylinder, and rotatable adjustment means connected to said piston assembly for moving said piston assembly with respect to said tubular dielectric cylinder; said tubular bushing extension being radially spaced from the interior of said tubular dielectric cylinder by a first predetermined distance; said piston assembly comprising an outer piston shell and an inner piston shell concentric with said outer piston shell; said outer piston shell and said inner piston shell being secured together at one end of said outer and inner piston shells; said inner piston shell including threaded means threadably receiving said rotatable adjustment means; said tubular bushing extension having a longitudinal slot therein; one of said piston shells having a radially extending integral portion extending therefrom and into said slot to prevent rotation of said piston assembly; said inner and outer piston shells being radially spaced from one another by a second predetermined constant radial distance; said outer piston shell having a radial thickness equal to said first predetermined distance and being received between said dielectric tube and said tubular bushing extension; said tubular bushing extension having a radial thickness equal to said second predetermined distance and being received between said inner and outer piston shells.

3,226,617
DIGITAL SERVO SYSTEM

Edgar J. Smith, Verona, and Marvin Masel, West Englewood, N.J., assignors to General Precision Inc., Little Falls, N.J., a corporation of Delaware

Filed May 9, 1963, Ser. No. 279,095
4 Claims. (Cl. 318—28)



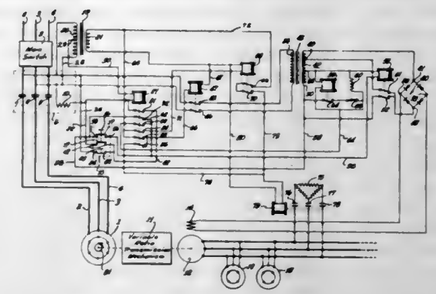
1. A digital servo system comprising digital input means operable to receive digital signals representing a multi-digit number, first circuit means responsive to only a first part of said number consisting of a plurality of digits more significant than the digits of the rest of said number to generate an output signal representing said first part of said input number, second circuit means responsive to only a second part of said input number consisting of a plurality of digits less significant tban the digits of the rest of said number to generate an output signal representing said second part of said number, a mechanically positionable output member, first transducer means to generate an output signal varying in accordance with the position of said output member, second transducer means to generate an output signal varying in accordance with the position of said output member, first differential means to generate a signal representing the difference between the output signal of said first circuit means and said first transducer means, second differential means to generate an output signal representing the difference between the output signal of said second circuit means and said second transducer means, and means responsive to a predetermined function of the output signals of said first and second differential means exceeding a predetermined value to drive said output member in a direction to reduce the output signal of said first differential means and responsive to said predetermined function being less than said predetermined value to drive said output member in a direction to reduce the output signal of said second differential means, said predetermined function being the absolute value of the quantity consisting of the output signal of said first differential means plus or minus the output signal of said second differential means.

3,226,618
PLURAL MOTOR ALTERNATOR FED STOPPING AND BRAKING CONTROL SYSTEM

William M. Evans, La Habra, Calif., assignor, by mesne assignments, to Emerson Electric Co., a corporation of Missouri

Continuation of application Ser. No. 715,396, Feb. 14, 1958. This application Aug. 14, 1961, Ser. No. 131,716
8 Claims. (Cl. 318—62)

1. In a master speed control system including a speed changing device, an alternator driven by the device, said alternator having an exciter circuit for supplying exciting current for the alternator, and capable of being independently controlled to adjust the excitation, and one or more parallel fed motors connected to the alternator output for operation at a speed correlated to the speed at which the alternator is driven by said speed changing device, the combination therewith of: means controlling the application of power for driving said alternator to start and stop

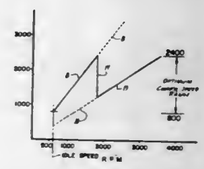


said system; time delay means movable from a first state to a second state upon operation of said controlling means to start said system, and from said second state to said first state upon the elapse of a predetermined period after operation of said controlling means to stop said system; means dependent upon the time delay means being in said second state for providing a supplemental power source; and circuit means operated by said power source for energizing said exciter circuit.

3,226,619
GENERATOR-FED A.C. MOTOR CONTROL WITH CONVERTIBLE-POLE MOTOR AND STANDBY SOURCE

Leo Block, Monterey Park, Calif., assignor, by mesne assignments, to Transicold Corporation, Montebello, Calif., a corporation of Delaware

Filed Jan. 6, 1964, Ser. No. 336,001
1 Claim. (Cl. 318—106)



For transport refrigeration, a vehicle engine of a type capable of both idling and propelling a vehicle through a normal range of highway velocities, generating means driven by the engine to provide a source of electric power having a frequency varying with the speed of the engine ranging between first and second limits, said generating means including output connections therefrom, a compressor having an optimum speed range lying within first and second limits well within the first named limits, a multi-speed electric motor driving said compressor, said motor having two-pole mode connections providing a first pair of magnetic field poles serving to operate the motor at high speed operation for a given frequency, and having four-pole mode connections serving to electrically add a second pair of magnetic field poles to said first pair to operate the motor at a lower speed for said given frequency, speed control switch means serving in one condition to operatively couple the generator output connections to said four-pole mode connections and in another

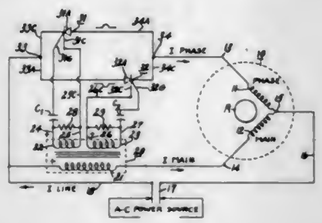
condition to operatively couple the generator output connections to said two-pole mode connections, first and second relays operatively coupled to be energized from said output connections, said first relay having a de-energized state serving to establish the four-pole condition of the switch means and having an energized state serving to establish the two-pole condition thereof, said second relay having an energized state serving to de-energize said first relay and having a de-energized state serving to condition said first relay to be energized from said generator output connections, said first relay requiring a first level of generator output in order to shift to the energized state thereof, said first level being significantly below a second generator output level required to switch said second relay to the energized state thereof but yet sufficiently high to permit said first relay to remain in its de-energized state during initial starting levels of operation of the generator, a selector switch electrically between said generator and said relays for decoupling said generator output connections therefrom, auxiliary power connections adapted to be coupled to a dockside source of power, a third relay to be operated by said dockside source of power and serving, when in its energized state, to close said auxiliary power connections, said third relay having a de-energized state serving to open said auxiliary power connections, a motor protection circuit defined via said selector switch and the first named switch means for energizing said third relay only when said first relay is in the de-energized state thereof whereby four-pole operation of the motor is assured under auxiliary power.

3,226,620

STARTING ARRANGEMENT

James O. Elliott, Daniel L. Frank, and Robert W. Leland, Dayton, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Aug. 16, 1962, Ser. No. 217,419
3 Claims. (Cl. 318—221)



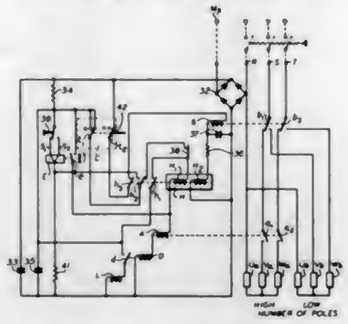
1. In a starting arrangement having a motor means with a rotor portion as well as phase and main inductive winding portions energized from a power source through connections including an inductive transformer means having a primary portion in series with the main winding portion as well as a pair of secondary transformer portions each having a resistance means connected across output thereof to a pair of back-to-back connected semiconductor means triggered by signals from said inductive transformer means during start energization of said inductive winding portions, the improvement which comprises a starting capacitance means in series with said phase winding portion both for starting phase shift and for offset of lagging electrical characteristic due to said inductive transformer means and said inductive winding portions which together cause difficulty in properly triggered relationship of the back-to-back connected semiconductor means, said capacitance means having connection to one side thereof directly to back-to-back semi-conductor means output connection.

3,226,621

SEWING MACHINE DRIVE

Rolf Heinemann, Stuttgart-Zuffenhausen, Harry Reinecke, Leinfelden, near Stuttgart, and Siegfried Frey, Heiligenstadt, Germany, assignors to Georgii-Kobold Elektro-Motoren-Apparatebau G.m.b.H., Stuttgart, Germany, a limited-liability company of Germany

Filed Apr. 16, 1963, Ser. No. 273,403
Claims priority, application Germany, Apr. 28, 1962, G 34,844
8 Claims. (Cl. 318—224)



1. A sewing machine drive, comprising an electric motor including a magnetically actuated brake for said electric motor and at least two separate windings with widely differing numbers of poles, a position indicator adapted to be connected to the shaft of a sewing machine and having a set of contacts for stopping the operation of said motor when said shaft is in a selected angular position, at least two relays including coils each operatively associated with one of said motor windings for energizing and disenergizing, respectively, the same, a main switch for rendering operative and inoperative, respectively, said relays, said main switch having one off position and at least two on positions, the number of on positions being identical with the number of said motor windings, a switch device having at least one set of contacts connected in series with said coil of one of said relays associated with one of said motor windings having the highest number of poles, said set of contacts of said switch device being actuable upon energizing any of said motor windings for actuating said one of said relays along a first supply path, said set of contacts of said position indicator being also connected in series with said relay associated with said winding with the highest number of poles for actuating said last mentioned relay along a second supply path, and means for energizing said magnetically actuated brake upon operation of said one of said relays in order to release said brake.

3,226,622

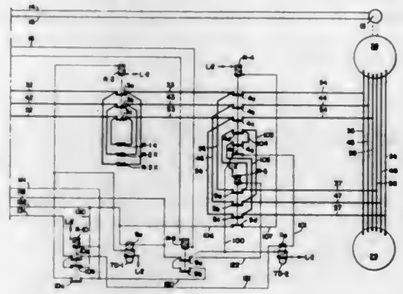
SHUTTLE CAR MOTOR CONTROL

Alfred R. Benvenuto, Franklin, Pa., assignor to Joy Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Jan. 30, 1962, Ser. No. 169,788
9 Claims. (Cl. 318—225)

8. A shuttle car comprising, a body, movable traction means carried by said body for propelling said body upon movement of said traction means, electrical motor means having the rotor thereof connected to said traction means for causing movement thereof, said motor means having first and second electrically energizable winding means, an electrically energizable controller means, a circuit connecting said controller means to said first and second winding means, said circuit having a first electrically energizable control means for controlling the electrical energization of said first winding means when said first control means is electrically energized, said circuit having

a second electrically energizable control means for controlling the electrical energization of said second winding means when said second control means is electrically energized, said circuit having a first electrically energizable time delay device for controlling in part the electrical energization of said first control means when said first time delay device is electrically deenergized, said second control means having electrically connected means when said second control means is electrically deenergized for additionally controlling the electrical energization of said first control means, said circuit having a second electrically energizable time delay device for controlling in one manner the electrical energization of said second control means after said second time delay device is electrically energized, said first time delay device having electrically connectable means operable after energization of said



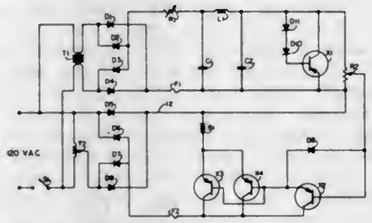
first time delay device to electrically energize said second time delay device, an auxiliary control electrically energized by a predetermined rotational movement for a given unit of time of said traction means for controlling the electrically energization of said second control means by said circuit independently of the control of the energization thereof by said first time delay device, said second time delay device being operative after electrical energization to discontinue the electrical energization of said second control means in said one manner, said circuit having a third electrically energizable time delay device for controlling the electrical energization of said first winding means after electrical energization of said second control means in said one manner or by said auxiliary control has been discontinued, and said controller means being operable to selectively electrically energize and deenergize said first time delay device.

3,226,623

TRANSISTORIZED BATTERY CHARGER

Donald A. Krueger, Glenn Dale, Md., and Eugene R. Stroup, Arlington, Va., assignors to the United States of America as represented by the Secretary of the Navy

Filed Feb. 28, 1963, Ser. No. 261,908
5 Claims. (Cl. 320—43)



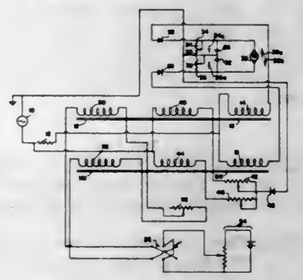
1. A battery charger comprising:
a pair of input terminals for receiving a source of power;
first and second rectifier means coupled to said input terminals;
variable voltage means coupling said second rectifier means to said input terminals;
first and second output terminals adapted to be connected to a battery to be charged;
variable impedance means connecting the output current from said second rectifier means to said first output terminal, said second output terminal being connected through said second rectifier means to one of said input terminals, said variable impedance means having a control electrode;
constant voltage means responsive to the output of said first rectifier means, said constant voltage means being selectively adjustable to provide different levels of constant voltage;
amplifier means having an input circuit and an output circuit, said input circuit being connected between said constant voltage means and said second output terminal and said output circuit being connected between said control electrode of said variable impedance means and said second output terminal so that said amplifier means is responsive to the difference between said constant voltage and the voltage across said output terminals to control the impedance of said variable impedance means;
whereby, upon the adjustment of said variable voltage means to supply the potential required by the battery to be charged and the selection of said constant voltage to be slightly less than said battery potential, a battery connected to said output terminal will be charged until its potential is substantially equal to the constant voltage supplied by said constant voltage means.

3,226,624

MAGNETIC AMPLIFIER REVERSIBLE OUTPUT CONVERTER CIRCUIT

Anthony L. Novack, Minneapolis, Minn., assignor to General Mills, Inc., a corporation of Delaware

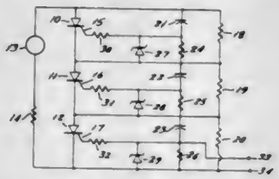
Filed Sept. 25, 1962, Ser. No. 226,139
10 Claims. (Cl. 321—25)



7. A magnetic amplifier reversible output circuit comprising an alternating current source, a resistor, a first reactor, a second reactor, a first output winding on said first reactor with one end connected to said current source through said resistor, a second output winding on said second reactor with one end connected to said current source through said resistor, a first dummy load impedance, a second dummy load impedance in series with said first dummy load impedance, said series connected dummy impedances being adapted to be connected in parallel with a load and having their common point of connection wired to said alternating current source, a first rectifier connected between the free end of said first output winding and the free end of said first dummy impedance, a second rectifier connected between the free end of said second output winding and the free end of said second dummy impedance, a first bias winding on said first reactor, a first

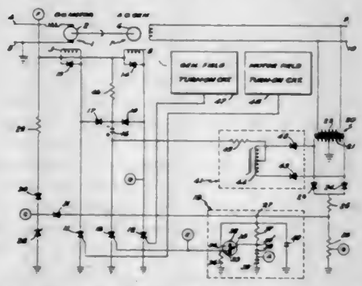
bias impedance in series with said first bias winding, a second bias winding on said second reactor, a second bias impedance in series with said second bias winding, a bias rectifier, said first and second series connected bias windings and bias impedances being connected in parallel with one end of said parallel connection linked to said alternating current source and with the other end thereof linked to said common point of connection of said dummy load impedances through said bias rectifier, a first control winding on said first reactor, a second control winding on said second reactor in series with said first control winding, and means associated with said control windings for varying the current supplied to said control windings.

3,226,625
SERIES CONNECTION OF CONTROLLED SEMICONDUCTOR RECTIFIERS
Edward J. Diebold, Palos Verdes, Calif., assignor to International Rectifier Corporation, El Segundo, Calif., a corporation of California
Filed Aug. 1, 1962, Ser. No. 214,003
4 Claims. (Cl. 321—27)



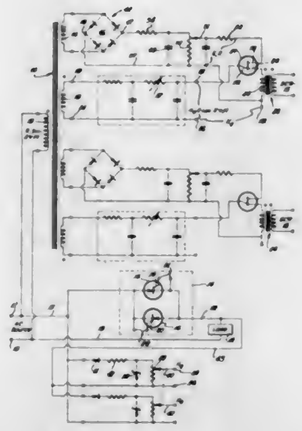
3. A control circuit for a plurality of series connected controlled rectifiers; each of said series connected controlled rectifiers having a control electrode; each of said control electrodes being connected in series with a respective control capacitor; each of said capacitors being connected in series with one another; each of said control electrodes being connected in series with a respective resistor; each of said resistors being connected in series; each of said resistors and capacitors being connected in a series string; each of said capacitors being in closed series relation with said control electrode and the cathode of its said respective controlled rectifier; each of said resistors being in closed series relation with said control electrode and the anode of said controlled rectifier; each of said resistors having a zener diode in parallel therewith.

3,226,626
ELECTRICAL CONTROL SYSTEMS
Thomas W. Moore, Dayton, Ohio, assignor to American Machine & Foundry Company, a corporation of New Jersey
Filed Dec. 15, 1961, Ser. No. 159,541
19 Claims. (Cl. 322—16)



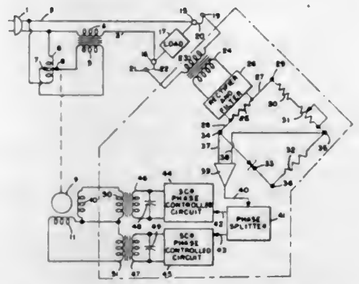
1. In a regulating system for controlling an inverter of the type comprising a D.C. motor driving an A.C. generator, the combination of
two controlled rectifiers;
circuit means for energizing the field winding of the generator and the field winding of the motor from a source of direct current, whereby one of said controlled rectifiers can be operated to control energization of the field winding of the motor and the other of the controlled rectifiers can be operated to control energization of the field winding of the generator;
a first timing circuit responsive to the alternating output of said generator and connected to render said one controlled rectifier conductive at a time, during each cycle of said output, dependent upon the frequency of said output;
a second timing circuit responsive to said output and connected to render the other of said controlled rectifiers conductive, during each cycle, dependent on the magnitude of said output; and
commutating circuit means being responsive to said output to render both of said controlled rectifiers nonconductive at substantially the same instant during each cycle of said output.

3,226,627
TWO STATE DEVICES CONTROLLED BY AN INPUT AND PHASE-SHIFTED SIGNAL APPLIED TO A TRIGGER MEANS OF SAID DEVICES
Jack Fromkin, Gardena, Calif., assignor to Epsilon Industrial Electronics, a limited purpose partnership, Los Angeles, Calif.
Filed Apr. 24, 1961, Ser. No. 104,976
11 Claims. (Cl. 323—22)



1. In a differential regulator cooperable with a cyclic voltage source having a variable peak amplitude: a two state device having a high impedance off state and a low impedance on state; trigger means for controlling the phase angle at which the device changes its state; said trigger means having two variables that must reach a characteristic proportionate relationship to each other in order to trigger; first means deriving from said source a first signal voltage proportional to the peak amplitude of said source; second means deriving from said source a second signal proportional to the instantaneous amplitude of said source but in fixed spaced phase relationship to said source; means applying said signals as said variables to said trigger means so that the operating angle of said trigger means is correlated to the peak amplitude of said source to maintain constant the average amplitude passed by said two state device.

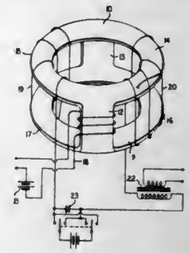
3,226,628
ALTERNATING CURRENT VOLTAGE/CURRENT REGULATED POWER SUPPLY
Kenneth Kupferberg and Jaime Ash, Flushing, N.Y., assignors to Forbro Design Corp., New York, N.Y., a corporation of New York
Filed Feb. 4, 1963, Ser. No. 255,855
4 Claims. (Cl. 323—43.5)



1. In an alternating current wide range voltage regulator, the combination of;
an input circuit,
an output circuit,
two phase motor controlled voltage changing means coupled between said input circuit and said output circuit for varying the transfer of voltage from said input to said output circuit,
rectifying means coupled to said output circuit for providing direct current voltage proportional to the alternating current voltage across said output circuit,
a voltage comparison bridge including said direct current voltage in one of its arms and a wide range adjustable reference voltage in another of its arms for comparing said direct current voltage with said reference voltage and to provide an error signal substantially equal to their difference,
an amplifier coupled to said bridge for amplifying said error signal,
a phase splitting circuit coupled to said amplifier to receive said amplified error signal for providing a two phase signal in response to said amplified error signal,
and alternating current phase control means coupled between said phase splitting circuit and said motor for controlling said motor in accordance with said phase split amplified error signal to control said motor whereby the transfer of voltage from said input circuit to said output circuit is controlled in a manner to tend to reduce said error signal toward zero.

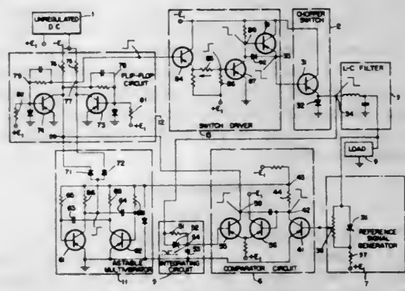
3,226,629
CONVERTER-CONTROLLER TRANSFORMER SYSTEM
Frank C. Hazzard, Orlando, Fla., assignor to Martin-Marietta Corporation, a corporation of Maryland
Filed Aug. 30, 1961, Ser. No. 134,923
11 Claims. (Cl. 323—56)

11. A magnetic controller comprising a body of magnetic material, an A.C. input winding wound on said body of magnetic material, means for supplying an alternating current to said A.C. input winding, said alternating current producing alternating magnetic flux in said body of magnetic material, a D.C. control winding wound on said body of magnetic material, an output winding wound on said body of magnetic material, means for supplying a D.C. control voltage of either polarity to said D.C. control winding, said output winding being positioned on said body of magnetic material so that normally the net A.C. flux linkage through said output coil is zero, said D.C. control winding being positioned on said body of magnetic material so that a D.C. control voltage of a first polarity diverts A.C. flux through said output coil to produce an A.C. output voltage in said output coil of a first phase, said D.C. control winding being positioned on said body of magnetic material so that an applied D.C. potential of the other polariy diverts flux through said A.C.



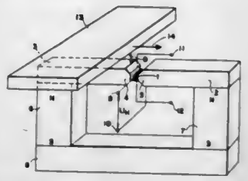
output coil to produce an A.C. output voltage of the opposite phase, and a unidirectional flux bias source applied to said body of magnetic material, said unidirectional flux bias being of a sufficient magnitude so that the net alternating and unidirectional flux does not pass through the zero flux condition.

3,226,630
POWER SUPPLY REGULATORS
George G. Lampke, Framingham, Mass., assignor to Raytheon Company, Lexington, Mass., a corporation of Delaware
Filed Mar. 1, 1963, Ser. No. 262,038
3 Claims. (Cl. 323—66)



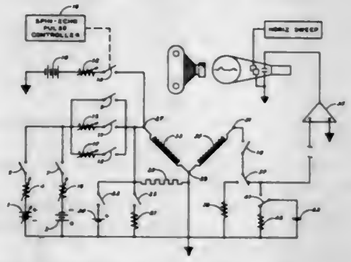
3. A system for eliminating ripple in a voltage supplied from a source to a load comprising:
switching means between said source and said load for periodically interrupting said voltage;
means between said switching means and load for smoothing the voltage output of said switch; generating means responsive to said smoothed voltage output for providing a reference signal;
a free-running multivibrator generating pulses at a substantially constant repetition rate;
a bistable multivibrator coupled to the output of said free-running multivibrator;
means coupling the output of one stage of said bistable multivibrator to said switching means for controlling said switching means;
and a feedback circuit from between the output of said switching means and the other stage of said bistable multivibrator including means for integrating the output of said switching means and detecting when the magnitude of said integrated output exceeds the magnitude of said reference signal, then producing a signal for resetting said bistable multivibrator, thereby controlling the interval of pulses applied to said switching means.

3,226,631
MAGNETO-ELECTRIC TRANSMITTER OF THE PROXIMITY TYPE
Friedrich Kuhrt and Hans-Joachim Lippmann, Nurnberg, Germany, assignors to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, and at Erlangen, Germany, a corporation of Germany
Filed June 29, 1961, Ser. No. 120,781
Claims priority, application Germany, July 7, 1960, S 69,270
3 Claims. (Cl. 323—94)



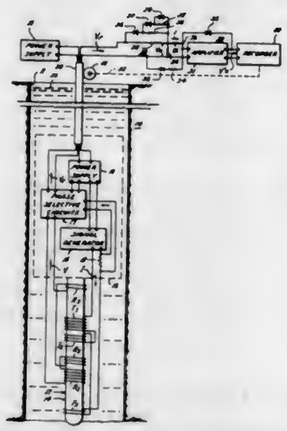
3. A magnetically responsive signal transmitter for responding to the presence of a magnetizable material, comprising a Hall-voltage generator having a magnetic field structure with a field gap and having a Hall plate in said gap, said structure comprising two pole pieces of magnetizable material spaced from each other at areas of the same polarity to form said gap between said same polarity pole pieces and having two permanent magnets of substantially the same strength having respective poles of the same polarity magnetically joined with said two pole pieces, a soft-magnetic yoke magnetically interconnecting the other poles of said respective two magnets and forming a magnetic circuit together with said two magnets and said two pole pieces, said magnetic circuit having normally in said gap and said Hall plate a resultant field strength substantially equal to the zero value so that the generated Hall-voltage is substantially zero, said Hall plate being positioned in the gap between said pole pieces in spaced relation with each of said pole pieces in a manner whereby proximity of a magnetizable material creates magnetic disturbance which causes a change in gap field strength and a change in the Hall-voltage generated by said signal transmitter.

3,226,632
SPIN-ECHO WELL LOGGING
Robert J. S. Brown, Fullerton, Calif., Henry C. Torrey, Highland Park, N.J., and Jan Korringa, Columbus, Ohio, assignors to Chevron Research Company, a corporation of Delaware
Filed Apr. 2, 1962, Ser. No. 184,325
3 Claims. (Cl. 324—.5)



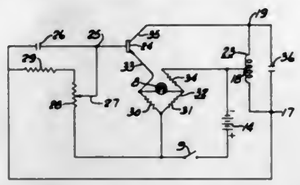
1. An earth's magnetic field free precession method for determining the response function to polarization for polarizable protons within a portion of an earth formation penetrated by a well bore, comprising the steps of:
(a) establishing a controllable first unidirectional magnetic field from within said well bore adjacent to said portion of said earth formation to polarize said polarizable protons,
(b) interrupting said first unidirectional field to initiate free precession of said polarized protons in the earth's magnetic field,
(c) during said free precession and a predetermined time period after interruption of said first unidirectional field, establishing a second unidirectional field of greater strength than said earth's magnetic field and oriented in the same direction as said first magnetic field to refocus said precessing polarized protons,
(d) detecting a spin-echo free precession signal from said refocused precessing polarized protons,
(e) repeating the foregoing steps at least once again with a different predetermined time period for establishing said second unidirectional field,
(f) and detecting spin-echo free precession signals after each of said repeated steps,
(g) constructing a relaxation curve from said detected spin-echo signals,
(h) constructing additional relaxation curves from spin-echo signals determined with different controllable first magnetic fields,
(i) and comparing said constructed relaxation curves to determine the response function to polarization for said polarizable protons.

3,226,633
INDUCTION LOGGING APPARATUS INCLUDING NON-LINEAR MEANS FOR TRANSLATING A DETECTED SIGNAL
William P. Schneider, Houston, Tex., assignor to Schlumberger Well Surveying Corporation, Houston, Tex., a corporation of Texas
Filed June 8, 1960, Ser. No. 34,825
13 Claims. (Cl. 324—6)



1. In induction logging apparatus for investigating earth formations traversed by a borehole, the combination comprising: a coil system adapted for movement through the borehole; means for energizing the coil system with alternating current to develop an electrical signal which is dependent on the electrical characteristics of the adjacent formation material, such signal including a nonlinear component caused by electrical skin effect phenomena; means coupled to the coil system for detecting the magnitude of a particular phase component of the coil system signal having a predetermined phase relative to the energizing current and developing an electrical output signal proportional to such magnitude; means responsive to the output signal for producing a modified signal having a magnitude which is a nonlinear function of the magnitude of such output signal, such nonlinear function being proportioned to minimize the nonlinear skin effect component; and means for providing an indication of the modified signal.

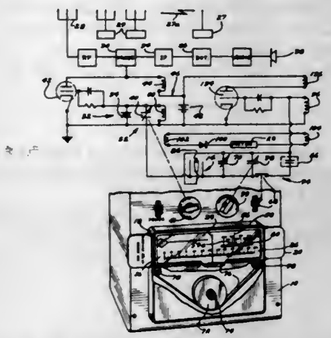
3,226,634
TRANSISTORIZED METAL DETECTOR WITH TEMPERATURE COMPENSATION MEANS
Frank M. Shoemaker, 2560 Noblestown Road, Pittsburgh, Pa.
Filed Mar. 23, 1961, Ser. No. 97,870
5 Claims. (Cl. 324—41)



1. A device for detecting metallic objects comprising an oscillator made up of transistor means, a pickup coil having an intermediate tap, a condenser connected in multiple with the extremities of said pickup coil to form an oscillator tank circuit, the collector of said transistor means connected to one extremity of said pickup coil, a second condenser connected between the base of said transistor means and the other extremity of said pickup coil, a resistance having one end connected to said other extremity of said pickup coil and having an other end, a second resistor having one end connected to said other end of said first resistance and having an other end, a connection from the base of said transistor means to an intermediate portion of said second resistor, a three-legged resistance bridge, a first leg being connected between said other end of said second resistance and the emitter of said transistor means, the second and third legs being connected in series and one end of the second leg of which is connected to said other end of said second resistance means and the other end of said third leg which is connected to said intermediate tap, battery means having the negative terminal connected to said intermediate tap, switch means having one contact connected to said other end of said second resistance, the positive end of said battery means being connected to the other contact of said switch means, a meter connected on one side to said emitter and on the other side to a position between said second and third legs of said three-legged bridge.

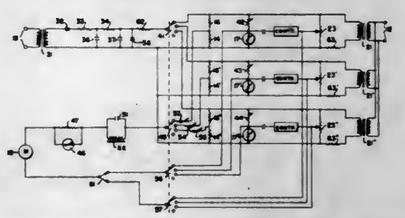
3,226,635
TESTING APPARATUS AND METHOD FOR MEASURING DIELECTRIC CONSTANT OF MATERIALS BY NULL-BALANCING A TUNED OSCILLATOR TO A STANDARD RADIO FREQUENCY
Lowell A. Moe, Minneapolis, Minn., assignor to F. H. Peavey and Company, Minneapolis, Minn., a corporation of Minnesota
Filed Jan. 25, 1962, Ser. No. 168,788
12 Claims. (Cl. 324—61)

1. The method of determining the ingredient content of materials to be tested at diverse and remotely disposed locations which comprises the steps of:
(a) establishing a single source of reference signal;
(b) uni-directionally transmitting a radio signal proportionally related to said source of reference signal;
(b') providing a plurality of remotely disposed receivers;
(c) receiving said signal at a plurality of remotely disposed locations;
(d) providing a variable frequency oscillator at each remotely disposed location at which material is to be tested;
(e) applying the output of a oscillator to the receiver for said reference signal;
(e') providing a sample receiving impedance;
(f) connecting the sample receiving impedance containing a sample of material to be tested in frequency controlling relationship to the oscillator; and



(g) adjusting the frequency of the oscillator and comparing the difference between the reference signal and the output of the oscillator by observing the output of the receiver whereby coincidence of the reference signal and the output of the oscillator is indicated by the lack of output from the receiver.

3,226,636
DUAL FUNCTION CIRCUIT
Francis P. Bulting, Sudbury, Mass., assignor to Fenwal, Incorporated, Ashland, Mass., a corporation of Massachusetts
Filed Dec. 21, 1960, Ser. No. 77,400
2 Claims. (Cl. 324—65)



1. Apparatus for simultaneously measuring and controlling temperature, said apparatus comprising, in combination, a source of alternating voltage, a source of direct voltage, first and second resistors disposed in series across said sources, third and fourth resistors disposed in series across said sources, said fourth resistor exhibiting resistance variations in response to variations in the temperature to be meaured and controlled, a two postion selector switch having a movable contact and two fixed contacts, direct voltage measuring means connected between the junction of said first and second resistors and the movable contact of said selector switch, one of the fixed contacts of said selector switch being connected to the juction of said third and fourth resistors to provide thereby a measure of the direct voltage between the junction of said third and fourth resistors and the junction of said first and second resistors when said switch is in a first position, means to prevent alternating current from flowing through said direct voltage measuring means, a potentiometer having two end terminals and a movable contact, the end terminals of said potentiometer being connected across said sources, a temperature controller responsive to alternating current signals connected between the junction of said third and fourth resistors and the movable contact of said

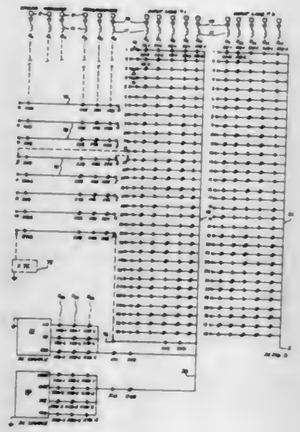
potentiometer adjustment of the movable contact of said potentiometer adjusting the voltage set point for said controller, means to prevent direct current from flowing through said controller, and means connecting a second fixed contact of said selector switch to the movable arm of said potentiometer to provide thereby a measure of the direct voltage by said direct voltage measuring means between the junction of said first and second resistors and the movable arm of said potentiometer when said switch is in a second position thereby indicating the temperature corresponding to the set point for said controller.

3,226,637

DIGITAL CODE RESPONSIVE AUTOMATIC CIRCUIT AND COMPONENT TESTER HAVING CODE SELECTED SERIES CIRCUITS

Roy A. Hempel, 4504 N. 16 St., Phoenix, Ariz.

Filed Feb. 19, 1964, Ser. No. 345,959
12 Claims. (Cl. 324—73)



1. In an automatic component tester:

(a) a plurality of channels, each comprising:

(1) a sensing device responsive to a single bit of a binary coded word for generating a signal in response to said bit,

(2) a relay coil,

(3) amplifying means connecting said sensing device to said relay coil for amplifying said signal and energizing said relay coil,

(4) a group of relay contacts for opening and closing electrical circuits in response to the energization of said relay coil,

(b) one of said channels being a synchronizing channel the relay contacts of which are normally open and which inhibit the operation of the automatic component tester until said normally open relay contacts are closed,

(c) a predetermined number of said channels being input channels for receiving binary coded information provided to said component tester, said input channels being divided into first and second groups, the relay contacts of each channel within one group being arranged in a plurality of series circuits with the relay contacts of each of the other channels within said one group, to thereby provide a plurality of series circuits in each of said groups, each series circuit having relay contacts from all of the channels in that respective group of channels,

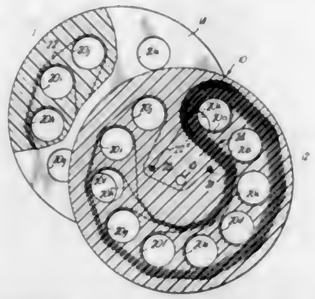
(d) means for connecting circuits and components to be tested between said two groups of input channels.

3,226,638

APPARATUS FOR USE IN PHASE RELATIONSHIP DETERMINATIONS INCLUDING A PLURALITY OF COILS MOUNTED ON A FLAT STRUCTURAL MEMBER

James W. Brain, late of 501 Watson Road, Lee's Summit, Mo.; Virginia R. Brain, executrix of said James W. Brain, deceased

Filed Feb. 26, 1962, Ser. No. 175,598
8 Claims. (Cl. 324—83)



1. In apparatus for use in determining the phase relationship between a power component of a first electrical source and a power component of a second electrical source,

(a) a first continuous electrical conductor formed into a plurality of coils, each coil being of a different number of turns of said conductor;

(b) first terminal means electrically coupled to each end of said conductor and adapted to be coupled with said first electrical source;

(c) a second continuous electrical conductor formed into a plurality of coils, each coil being of a different number of turns of said conductor; and

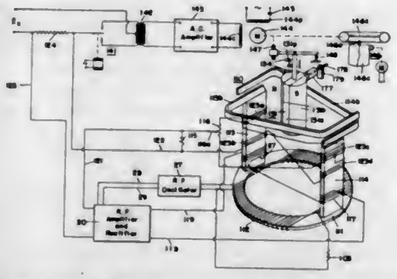
(d) second terminal means electrically coupled to each end of said second conductor and adapted to be coupled to said second electrical source, said first and second conductors being shiftable to dispose any coil of said first conductor adjacent any coil of said second conductor.

3,226,639

NULL-FLUX TRANSDUCER FOR USE IN ELECTRICAL MEASURING AND CONTROL SYSTEMS

Will McAdam, Blue Bell, Pa., assignor to Leeds and Northrup Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Apr. 10, 1961, Ser. No. 101,736
17 Claims. (Cl. 324—99)



4. A transducer having a magnetic circuit comprising:

saturable core means including a ring-shaped portion having a driving winding thereon,

a pair of spaced pole pieces projecting from said saturable core means,

input means for producing an M.M.F. to establish a variable flux level in said magnetic circuit,

bias means associated with said pair of pole pieces for producing predetermined opposing flux in opposition to the established variable flux in said magnetic circuit to provide a reference flux level for said input means at which the output from said transducer is zero,

an output winding on a portion of said magnetic circuit responsive to a net flux level other than zero to produce a signal,

a feedback winding on said pair of pole pieces, and

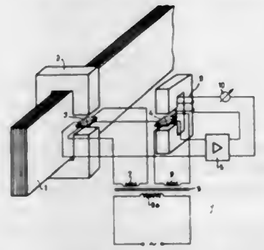
amplifying means having its input circuit connected to said output winding and its output connected to said feedback winding to restore the net flux level substantially to zero in response to said signal.

3,226,640

D.C. MEASURING DEVICE USING HALL PLATES CONNECTED IN FEEDBACK RELATIONSHIP AND HAVING A COMMON CONTROL SOURCE

Friedrich Kuhrt and Karl Maaz, Nurnberg, Erich Rainer, Erlangen, and Julius Brunner, Nurnberg, Germany, assignors to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany

Filed Jan. 31, 1962, Ser. No. 170,181
Claims priority, application Germany, Feb. 2, 1961, S 72,331
4 Claims. (Cl. 324—117)



1. A direct-current measuring device for use with a conductor traversed by the direct current to be measured, comprising Hall voltage generator means having magnetizable core structure to be inductively linked with the conductor and having first Hall plate means traversed by magnetic flux of said core structure due to current flowing in the conductor, said Hall plate means having control-current supply terminals and Hall electrodes; a Hall-voltage modulator, having magnet winding means and second Hall plate means traversed by magnetic flux excited by said winding means, said second Hall plate means having current-supply terminals and Hall electrodes; alternating-current supply means common to said two Hall plate means and connected to said terminals of said respective Hall plate means, circuit means connecting the Hall electrodes of said first and second Hall plates in differential relation and having output leads, amplifier means having an input connected to said output leads and an output circuit connected to said winding means for constraining the Hall voltage of the second Hall plate toward the Hall voltage of the first plate, and meter means for measuring the output of said amplifier means.

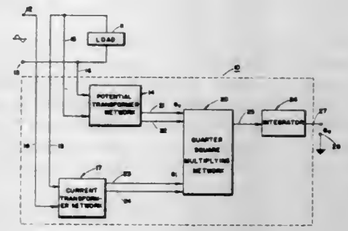
3,226,641

ELECTRONIC TYPE CONVERTER FOR PRODUCING A D.C. SIGNAL PROPORTIONAL TO WATT INPUT

Meritt L. Miller, Fort Wayne, Ind., assignor to General Electric Company, a corporation of New York

Filed Dec. 5, 1961, Ser. No. 157,064
7 Claims. (Cl. 324—142)

1. A wattage converter comprising a current transformer means adapted for monitoring the current of an alternating power supply and converting the current to a first electrical signal proportional in magnitude to said current; a potential transformer means adapted for monitoring the voltage of the power supply and converting the voltage to a second electrical signal proportional thereto; a multiplying circuit including a first input, a second input and at least one output lead, said first electrical signal being coupled to the first input of said multiplying circuit and said second electrical signal being coupled to the second input of said multiplying circuit, a first and a second operational amplifier, means coupling said first and second inputs with said first operational amplifier to provide a signal proportional to the sum of the instantaneous values of the first and second electrical signals, means including resistors coupling the output of said first operational amplifier and said first input with the input of said second operational amplifier to provide an output signal at said second operational amplifier proportional to the difference between said first and second electrical signals, said multiplying circuit including a first, second, third and



fourth diode square function generator, said first and fourth function generators being negatively biased and said second and third being positively biased, means coupling the output of said first operational amplifier with the inputs of said first and third function generators and coupling the output of said second operational amplifier with the inputs of said second and fourth function generators, a sign reversing means connected in circuit with the outputs of said first and second function generators, and means joining the output of said third and fourth function generator and the output of said sign reversing means in circuit with said output lead of the multiplying circuit, said multiplying circuit producing an electrical signal at said output lead proportional to the product of the instantaneous values of the first and second electrical signals; and an integrating means having its input coupled with the output of the multiplying circuit, said integrating means including an operational amplifier with a capacitor and resistor in the feedback path and converting said electrical signal produced by said multiplying circuit to an electrical signal proportional to the true wattage.

3,226,642

MEASURING THE THERMAL RESISTANCE OF A TRANSISTOR BY ALTERNATELY MEASURING THE CHANGE IN COLLECTOR SATURATION VOLTAGE IN THE COMMON EMITTER MODE AND APPLYING POWER IN THE COMMON BASE MODE

Grant F. Stetzler, Temple, Pa., assignor to Western Electric Company, Incorporated, a corporation of New York

Filed June 9, 1961, Ser. No. 116,014
5 Claims. (Cl. 324—158)

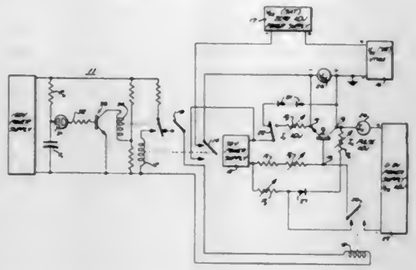
1. In a method of measuring the thermal resistance of a transistor, the steps of:

(a) applying a predetermined bias to the transistor in

the common emitter mode in a manner such that the temperature of the transistor does not increase appreciably;

(b) measuring the collector-emitter saturation voltage in the common emitter mode during step (a);

(c) alternately applying the predetermined bias to the transistor in the common emitter mode and applying power to the transistor in the common base mode

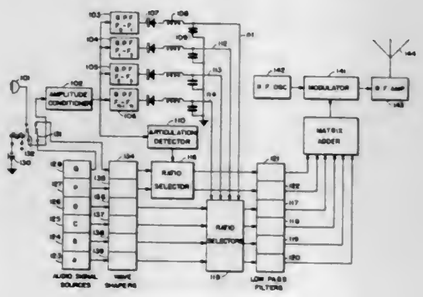


for respective time intervals such that essentially only the power supplied to the transistor in the common base mode increases the temperature thereof;

(d) measuring the change in collector-emitter saturation voltage in the common emitter mode from that obtained in step (b); and

(e) measuring the power supplied to the transistor in the common base mode.

3,226,643
COMMAND COMMUNICATION SYSTEM OF THE RECTANGULAR WAVE TYPE
Robert J. McNair, Cincinnati, Ohio, assignor to Avco Corporation, Cincinnati, Ohio, a corporation of Delaware
Filed Jan. 8, 1962, Ser. No. 164,671
4 Claims. (Cl. 325—40)



1. A voice command system comprising:

first, a transmitter including

a microphone for speech input, said speech consisting of a succession of syllables,

an amplitude-conditioning device coupled to said microphone for equalizing the intensity of the output signals of said microphone over a large range of frequencies,

a plurality of band pass filters coupled to said amplitude conditioner for analyzing speech into a spectrum,

a like plurality of rectifier-low pass filter networks coupled to the band pass filters for producing a plurality of direct current voltages indicative of the components of a speech wave,

an articulation detector coupled to said amplitude conditioner for measuring the duration of each syllable and producing an output voltage indicative of the end of a syllable,

a plurality of audio signal sources having discrete frequencies,

a separate pair of audio signal sources having discrete frequencies,

a plurality of wave-shaping networks coupled to said plurality of audio signal sources for converting the outputs thereof into a plurality of rectangular waves,

a separable pair of wave-shaping networks coupled to said separate pair of audio signal sources for converting the outputs thereof into a separate pair of rectanglar waves,

a ratio selector device controlled by said plurality of direct current voltages and coupled to said plurality of wave-shaping networks to produce a plurality of first digital output signals indicative of the tonal components of said speech,

a separate ratio selector device coupled to said separate pair of wave shapers and controlled by said articulation detector for producing second digital output signals indicative of the duration of each syllable,

means for producing a radio frequency carrier,

and means including a modulator and a matrix adder for recovering from the carrier and isolating a plusaid carrier;

and, second, a receiver including

means including a first plurality of demodulator networks and a separate pair of demodulator networks for recovering from the carrier and isolating a plurality of modulation components correspondings to said first digital output signals and modulation components corresponding to said second digital output signals,

temporary storage means coupled to said first plurality of demodulator networks for storing an encoded word,

permanent storage means for storing a command consisting of a plurality of encoded words,

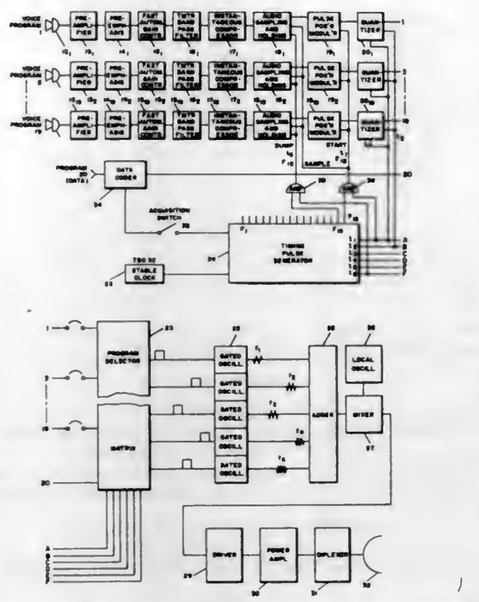
means responsive to the second digital components for shifting each temporarily stored word from the temporary storage means to the permanent storage means,

means including a counter and a comparator and a memory for comparing a received and stored command to a sequence of standard commands,

and means for executing an order when the command is satisfied.

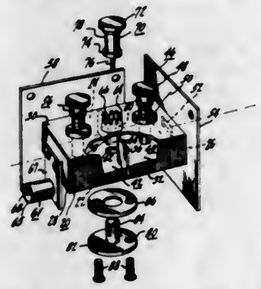
3,226,644
TROPOSPHERIC SCATTER COMMUNICATION SYSTEM HAVING HIGH DIVERSITY GAIN
McKay Goode and MacDonald J. Wiggins, Orange County, Fla., assignors to Martin-Marietta Corporation, Middle River, Md., a corporation of Maryland
Filed Apr. 12, 1962, Ser. No. 186,912
12 Claims. (Cl. 325—56)

10. A diversity type pulse communication system utilizing the tropospheric scatter medium comprising a single transmitting device which propogates a complex radio frequency signal, such complex radio frequency signal having inherent multiple frequency diversity capabilities, and a single receiving device for receiving said complex radio frequency signal, said transmitter device comprising time-frequency multiplexing means for transmitting a plurality of information-carrying signals, said time frequency multiplexing means simultaneously producing said complex radio frequency signal, said receiving device comprising means for achieving diversity gains from said complex radio frequency signal, said receiving device including means for separating said time-frequency multi-



plex signals into a plurality of outputs in cooperation with said means for achieving diversity gains.

3,226,645
PARAMETRIC FREQUENCY CONVERTERS
Leopold A. Harwood and Tomomi Murakami, Haddonfield, N.J., assignors to Radio Corporation of America, a corporation of Delaware
Filed Apr. 18, 1962, Ser. No. 188,476
5 Claims. (Cl. 325—445)



2. A parametric frequency converter comprising in combination:

a chassis compartment made of conductive material;

a conductive partition mounted within said compartment to separate said compartment into a first cavity resonator, resonant at a frequency f_p of a pump oscillator signal, and a second cavity resonator, resonant at a frequency f_1 of an idler signal;

said conductive partition mounted so as to define an iris between said first and second cavity resonators;

a conductive disc;

means including an annular insulating member for mounting said disc on the outside of said compartment to cover an opening in said compartment at the bottom of said iris;

a nonlinear variable capacitance diode having a pair of electrodes;

means for mounting said diode in said iris so that one of said electrodes makes electrical contact with the top of said compartment and the other of said electrodes is coupled through the opening in said compartment at the bottom of said iris to make electrical contact with said conductive disc;

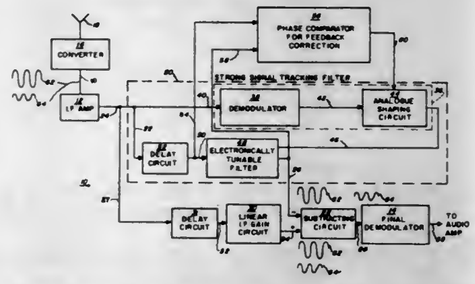
said conductive disc and said compartment exhibiting therebetween a substantial capacitive reactance at a frequency f_s of an applied input signal and a small capacitive reactance at the frequencies f_p and f_1;

means for applying said input signal across said capacitive reactance;

means defining an aperture in said first cavity resonator for coupling pump oscillator signals into said first cavity resonator; and

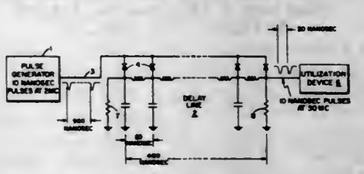
means defining an aperture in said second cavity resonator for coupling therefrom output idler signals at the frequency f_1 produced by the interaction of said input and pump oscillator signals in the nonlinear capacitance of said diode.

3,226,646
INTERFERING RADIO SIGNAL CANCELLING BRIDGE
David R. Ludwig, Braintree, Mass., assignor to General Electronic Laboratories Inc., Cambridge, Mass., a corporation of Massachusetts
Filed May 8, 1962, Ser. No. 193,147
9 Claims. (Cl. 325—475)



1. In a bridge type system for cancelling the stronger of two radio frequency signals, the combination of an interference signal tracking filter means in the path of the two radio frequency signals for isolating the stronger signal, a linear gain amplifier in the path of the two radio frequency signals, and signal subtracting means arranged for subtracting the output of the tracking filter from the output of the amplifier.

3,226,647
PULSE FREQUENCY MULTIPLIER USING DELAY LINE WITH PLURAL TAPS, EACH FED BY INDIVIDUAL DIODE FROM SOURCE
Jack Shirman, Rochester, N.Y., assignor to General Dynamics Corporation, Rochester, N.Y., a corporation of Delaware
Filed Sept. 3, 1963, Ser. No. 306,060
5 Claims. (Cl. 328—16)



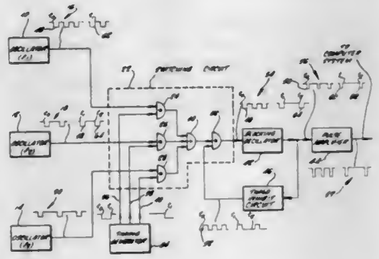
1. Circuitry for generating a very high frequency pulse train having a period of T nanoseconds comprising a rela-

tively low frequency pulse train generator for generating pulses having pulse widths less than T nanoseconds and having an output circuit, a delay line having a plurality of spaced points, the time delay between said points being substantially equal to T nanoseconds, means coupled between the output circuit of said pulse train generator and said spaced points for introducing pulses produced by said low frequency pulse train generator into said delay line, means for preventing pulses moving within said delay line from re-entering said delay line via said last-named means, and a utilization device coupled to the output circuit of said delay line.

3,226,648
CLOCK SYSTEM FOR ELECTRONIC COMPUTERS

James C. Davidson, Glendora, Calif., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed Jan. 29, 1962, Ser. No. 169,335
2 Claims. (Cl. 328—63)



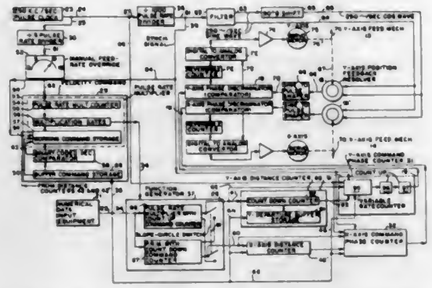
2. A clock system comprising:
a plurality of continuously cycling oscillators for generating pulse signals of different repetition frequencies;
a pulse forming circuit for generating a pulse in response to an input signal pulse;
means for gating an output signal from any selected one of said oscillators to the pulse forming circuit including means for switching from one oscillator output signal to another at any random time in relation to the pulse signals generated by the oscillators in response to applied selection signals;
and means responsive to the output pulses from the pulse forming circuit for inhibiting operation of the pulse forming circuit following the generation of each output therefrom during a time interval only slightly less than the shortest period between output pulses of any of said oscillators.

3,226,649
PULSE TRAIN PHASE MODULATOR FOR CONTROL SYSTEM

Leroy U. C. Kelling, Waynesboro, Va., assignor to General Electric Company, a corporation of New York

Filed Sept. 5, 1961, Ser. No. 136,420
15 Claims. (Cl. 328—71)

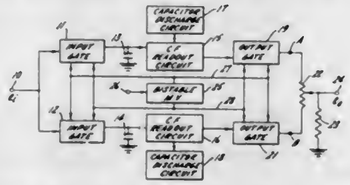
1. In a phase sensitive control system, means for generating a phase modulated signal comprising: a pulse counter; means for applying a pulse train input to said counter; first circuit means coupled to said counter for blocking the count of any of the pulses of said train during a first period; and second circuit means coupled to said counter for constraining said counter to increase its count by more than one count for any of said pulses of said train during a second period, whereby the output pulse train of said counter has a variable phase which may range between a leading sense and lagging sense of any magnitude; each of said first and second circuits having input signals that can be in one of solely two states.



3,226,650
VIDEO PULSE AMPLITUDE DETECTOR FOR AIRBORNE RADAR SYSTEMS

Thomas E. Higbie, Indianapolis, Ind., assignor to the United States of America as represented by the Secretary of the Navy

Filed Mar. 9, 1964, Ser. No. 350,950
11 Claims. (Cl. 329—109)
(Granted under Title 35, U.S. Code (1952), sec. 266)

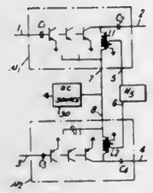


1. A detector circuit comprising:
first and second input control means;
input terminal means coupled in common to said first and second input control means for providing electrical input signals simultaneously thereto;
first and second storage means, said first storage means coupled to said first input control means and said second storage means coupled to said second input control means, said first and second input control means alternately providing said electrical input signals to said first and second storage means for temporary retention therein;
first and second signal readout means, said first signal readout means being coupled to said first storage means and said second signal readout means being coupled to said second storage means;
first and second output control means, said first output control means being coupled to said first signal readout means and said second output control means being coupled to said second signal readout means;
first and second signal removal means for alternately removing said electrical input signals from said first and second storage means after said storage means have been read out in preparation for storage of subsequent ones of said electrical input signals, said first signal removal means being coupled to said first storage means via said first signal readout means and said second signal removal means being coupled to said second storage means via said second signal readout means;
output terminal means coupled in common to said first and second output control means for providing thereat signal information alternately obtained from said first and second storage means by said first and second signal readout means and said first and second output control means;
and bilevel electrical potential generating means having input means for receiving external synchronizing control signals to cause said bilevel generating means to switch from one level to the other, said bilevel generating means being coupled to said first and second input control means and to said first and second output control means.

3,226,651
MONITOR FOR A FEEDBACK AMPLIFIER

Kunio Ishimoto and Kiyoshi Nakamura, both of Minato-ku, Tokyo, Japan, assignors to Nippon Electric Company, Limited, Minato-ku, Tokyo, Japan, a corporation of Japan

Filed Apr. 16, 1962, Ser. No. 187,657
Claims priority, application Japan, Apr. 18, 1961, 36/13,486
1 Claim. (Cl. 330—2)

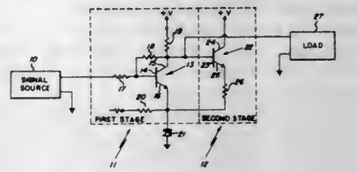


In a highly reliable amplifier of the negative feedback type in which the same information is amplified in each of a plurality of parallel amplifying paths, each having an input and output side, said amplifier having a D.C. power source connected to energize each amplifying path, a signal information input circuit, a hybrid input isolating circuit connected to said signal input circuit and to the input side of each of said amplifying paths for supplying the same information signal to each amplifying path and for isolating said input sides from each other, a hybrid output isolating circuit connected to the output side of each amplifying path for combining the signals from said amplifying paths and for isolating said output sides from each other, an output circuit connected to receive the thus combined signals from said hybrid output circuit, and a single feedback path connected between said output circuit and said information input circuit for negatively feeding back a component of said combined signal to said information input circuit, an improved arrangement for continuously monitoring the operation of said amplifying paths comprising: a separate transformer having a primary and secondary winding, for each amplifying path, the primary winding of the transformer in each amplifying path being connected between said D.C. power source and the junction between the output side of said amplifying path and said hybrid output isolating circuit; an additional hybrid isolating circuit connected to the secondary windings of all said transformers for combining the signals generated in said secondary windings to be in phase opposing relationship and for isolating the thus generated secondary winding signals from each other; and indicator means coupled to said additional hybrid isolating circuit for receiving said combined signals and for indicating the relative value of the signal components contained in said combined signal.

3,226,652
TRANSISTOR AMPLIFIER HAVING MEANS FOR COMPENSATING FOR NONLINEAR BASE-TO-EMITTER IMPEDANCE

Ernest P. Auger, Billerica, Mass., assignor to Raytheon Company, Lexington, Mass., a corporation of Delaware

Filed Mar. 26, 1962, Ser. No. 182,293
6 Claims. (Cl. 330—24)

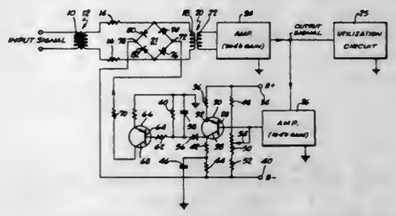


1. A transistor amplifier comprising:
a first signal amplifying stage having a first transistor including base and emitter electrodes and input and output terminals coupled to said first transistor;
a second signal amplifying stage having a second transistor and input and output terminals coupled to said second transistor;
means connecting to the output terminal of said first stage to the input terminal of said second stage; and,
means for compensating for the nonlinear base-to-emitter impedance of said first stage including unidirectional current conducting means connected to said first stage in series opposition with the base-to-emitter junction of said first transistor, a source of current connected to said current conducting means for applying thereto a current substantially equal to the first transistor emitter current during quiescent operation of said first transistor, and negative feedback means connected between the output of said second stage and said current conducting means for providing a current to said current conducting means, said current being substantially equal to twice the decrease in current flow through said current conducting means caused by the nonlinearity of said base-to-emitter impedance.

3,226,653
AUTOMATIC GAIN CONTROL CIRCUIT EMPLOYING VARIABLE ATTENUATION BALANCED DIODE BRIDGE

Jerry W. Miller, Mountain View, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California

Filed May 7, 1963, Ser. No. 278,674
3 Claims. (Cl. 330—26)



1. An automatic gain control circuit comprising:
first and second transformers each including primary and secondary windings;
means for applying an input signal to the primary winding of said first transformer;
a pair of resistors respectively coupling opposite ends of said secondary winding of said first transformer to opposite ends of said primary winding of said second transformer;

a variable attenuator including a balanced diode bridge having first and second junction points between the diodes thereof at opposite ends of a first diagonal of the bridge and third and fourth junction points between the diodes thereof at opposite ends of a second diagonal of the bridge, said first and second junction points respectively connected to the ends of said primary winding of said second transformer;

high gain amplifying means coupled to the secondary winding of the second transformer;

a switching control transistor coupled to the amplifying means, having emitter, base and collector electrodes, said emitter and collector electrodes being coupled to voltage sources;

a voltage divider coupled to the voltage sources, including a variable resistance, for biasing the base electrode of the switching control transistor;

a switching diode having an anode and a cathode, said cathode coupled to the collector electrode of the switching control transistor;

a capacitor coupled to the anode of the switching diode to provide a peak detector;

a resistance connected in parallel with said capacitor and providing a time constant network thereby controlling the discharge time of said capacitor;

a bias control transistor having emitter, base and collector electrodes, the base electrode being coupled to the time constant network, the collector electrode of the bias control transistor being coupled to said third function point between the diodes of the diode bridge; and

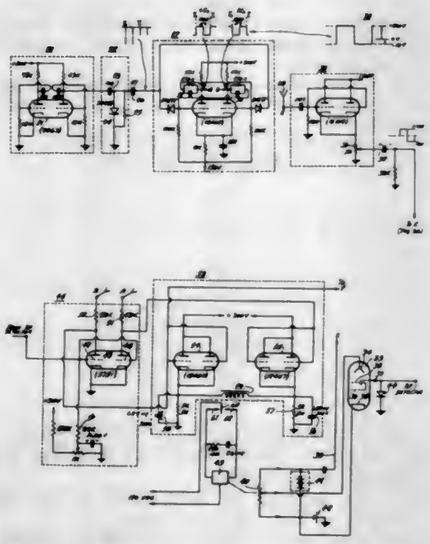
means for providing a potential to said fourth junction point between the diodes of the diode bridge.

3,226,654

SYSTEM FOR AUTOMATICALLY MAXIMIZING THE POWER OUTPUT OF A FREQUENCY VELOCITY-MODULATED OSCILLATOR

Louis Mandel, Levittown, N.Y., assignor to the United States of America as represented by the Secretary of the Navy

Filed Sept. 24, 1963, Ser. No. 311,262
1 Claim. (Cl. 331—84)
(Granted under Title 35, U.S. Code (1952), sec. 266)



An automatic system for optimizing the mode adjustment of a reflex klystron oscillator including a reflector electrode and having an R.F. output detector connected to the output of said klystron oscillator which comprises:

(a) a square wave generator having a pair of outputs which are in phase opposition,

(b) a cathode follower connected between said reflector electrode and one of said square wave generator outputs,

(c) a dual gated amplifier circuit having a pair of inputs and a pair of outputs and each set capable of being inactivated when a potential of a particular polarity is applied to an element thereof,

(d) means connecting said generator outputs to said amplifier for controlling the activation of the same and connecting said detector to said amplifier,

(e) a differential cathode follower circuit connected to receive the outputs of said dual amplifier and producing an output only when the levels of said outputs are of different amplitudes,

(f) a motor driven potential divider electrically coupled to said electrode,

(g) a source of D.C. potential connected across said divider,

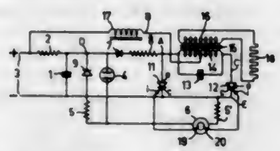
(h) a relay having contacts connected to supply motive energy to said divider and thereby control the activity of said divider, said relay connected to activate its contacts only upon receiving an output from said differential cathode follower.

3,226,655

CIRCUIT ARRANGEMENT FOR STARTING A SELF-GENERATING THYRISTOR OSCILLATOR

Johannes Jacobus Wilting, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Feb. 1, 1962, Ser. No. 170,372
Claims priority, application Netherlands, Feb. 2, 1961, 260,777
11 Claims. (Cl. 331—113)



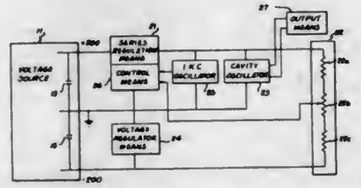
6. A circuit arrangement for starting a self-generating thyristor oscillator including at least one thyristor having cathode, anode and control electrodes, a control circuit coupled to said cathode and control electrodes and an output circuit coupled to said cathode and anode electrodes, said arrangement comprising a direct voltage source, a capacitor and a resistor connected in series with each other across said voltage source, a direct-current conductive impedance and a non-linear element having a threshold voltage connected in series with each other across said capacitor, said non-linear element becoming conductive when the voltage across the capacitor reaches a given value and producing a starting pulse across said impedance when the voltage set up across said capacitor by said direct voltage source reaches the value of said threshold voltage, a circuit intercoupling said direct-current conductive impedance and said control circuit of said thyristor for feeding said starting pulse thereto, and a rectifier connected between a point at varying potential of said output circuit and the junction point of said capacitor and said resistor, said rectifier having a polarity such that oscillations set up in said output circuit charge said capacitor with a voltage having a polarity opposite to that of the voltage set up across said capacitor by said direct voltage source, whereby the resulting voltage across said capacitor remains lower than said threshold voltage when the oscillator is generating.

3,226,656

VARIABLE FREQUENCY MICROWAVE CAVITY SIGNAL GENERATOR WITH REGULATED SUPPLY AND FEED-BACK COMPENSATION

Charles A. Beaty, Tampa, Fla., assignor to RFD, Inc., Tampa, Fla.

Filed Apr. 22, 1964, Ser. No. 361,820
4 Claims. (Cl. 331—186)



1. A microwave signal generator comprising a D.C. voltage source having output terminals across which an output voltage may be taken, one of said terminals including variable impedance means in series therewith, said variable impedance means being of the electron tube variety having at least cathode, control grid, and plate electrodes with a cathode to plate impedance path which is variable in impedance in accordance with the voltage applied to said control grid; voltage amplifier means having at least cathode, control grid, screen grid and plate electrodes and adapted to change the voltage applied to said control grid of said variable impedance means in response to voltage variations at said control grid of said voltage amplifier means; center tapped load impedance means; means electrically connecting said load impedance means across said output terminals of said voltage source such that said variable impedance means and said load impedance means are in serial connection; microwave cavity oscillator means adapted to oscillate when energized by a D.C. voltage of at least a selected magnitude; means electrically connecting said microwave oscillator means across said output terminals of said voltage source such that said variable impedance means and said microwave oscillator means are in serial connection; negative feedback means interconnecting said center tap of said load impedance means and said control grid of said voltage amplifier means such that the impedance of said variable impedance means varies directly as the voltage of said center tap; frequency determining circuit means adapted to resonate at a frequency substantially below the microwave range; means electrically connecting said frequency determining circuit means between said plate electrode of said variable impedance means and said control grid of said voltage amplifier means such that said frequency determining circuit and said voltage amplifier means will oscillate at said frequency substantially below the microwave range; and means for varying the cathode potential of said voltage amplifier means in accordance with variations in voltage fed back to said control grid thereof from said plate electrode of said variable impedance means via said frequency determining circuit means.

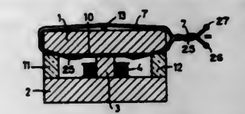
3,226,657

HALL MODULATOR HAVING MAGNETIC CIRCUIT WITH AIR GAP AND SIGNAL WINDING MOVABLE FOR ZERO BALANCING

Klemens Wiehl, Friedrich Kuhrt, and Hans-Joachim Lippmann, Nurnberg, Germany, assignors to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt and Erlangen, both in Germany, a corporation of Germany

Filed Mar. 13, 1963, Ser. No. 264,978
Claims priority, application Germany, May 8, 1962, S 79,335
6 Claims. (Cl. 332—51)

1. A modulator of the Hall type, comprising a Hall plate having a pair of spaced current input terminals and two Hall voltage electrodes, a magnetizable core structure forming a magnetic circuit and having a field gap in which said Hall plate is located, an excitation coil on said structure, one of said pair of input terminals and coil serving to supply the modulating signal and the other to supply carrier frequency, and two output leads for furnishing modulated output voltage, said two leads



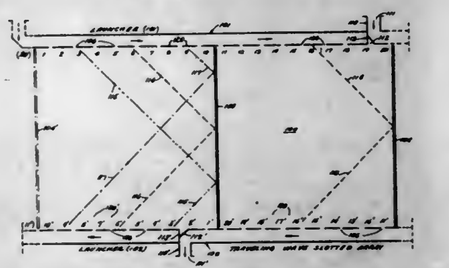
being connected to said respective Hall voltage electrodes and jointly forming a movable loop, said magnetic circuit being at least partially open outside of said field gap and coil whereby the magnetic flux of said coil produces a stray field outside of said core structure, and said loop being movable in said stray field to a position where the flux-induced voltage in said loop is suppressed.

3,226,658

PLURAL INDEPENDENT CHANNEL CONCENTRIC ROTARY COUPLER

David F. Bowman, Wayne, Pa., assignor to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Oct. 3, 1960, Ser. No. 60,025
13 Claims. (Cl. 333—1)



1. A rotary wave signal coupler comprising at least a first and a second launching section, and a rotary section; said rotary section having input and output ends for coupling wave signals between said first and second launching sections, while said sections are in relative rotary motion; said rotary section composed of a first and a second cylindrical conductive surface in substantially uniform spaced relation, and a reflector means positioned between said conductive surfaces and extending transverse to said surfaces; said rotary section defining passage means, said transverse reflector means positioned in oblique relationship with respect to said launching sections, such that said reflector means directs the wave signals between the spaced surfaces in a predetermined manner, such that the wave signals are directed between said input and output ends.

3,226,659

FERRIMAGNETIC CIRCULATOR FOR MICROWAVES

Giovanni B. Stracca, Milan, Italy, assignor to Marelli Lenkurt S.p.A., Milan, Italy

Filed July 25, 1962, Ser. No. 212,288
6 Claims. (Cl. 333—1.1)

1. A non-reciprocal electromagnetic wave transmission line junction comprising:

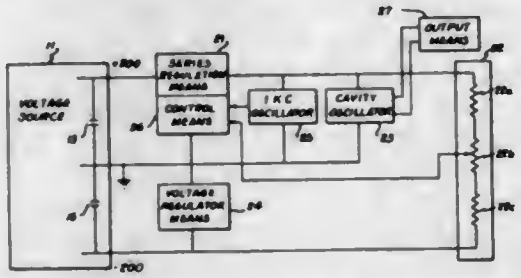
at least three transmission lines, each having inner and outer conducting elements,

an elongated member of ferrimagnetic material having a longitudinal axis defining the axis of said junction,

3,226,656
VARIABLE FREQUENCY MICROWAVE CAVITY SIGNAL GENERATOR WITH REGULATED SUPPLY AND FEED-BACK COMPENSATION

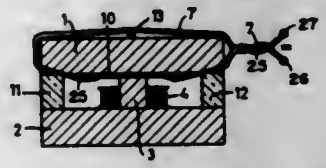
Charles A. Beaty, Tampa, Fla., assignor to RFD, Inc., Tampa, Fla.

Filed Apr. 22, 1964, Ser. No. 361,820
4 Claims. (Cl. 331—186)



1. A microwave signal generator comprising a D.C. voltage source having output terminals across which an output voltage may be taken, one of said terminals including variable impedance means in series therewith, said variable impedance means being of the electron tube variety having at least cathode, control grid, and plate electrodes with a cathode to plate impedance path which is variable in impedance in accordance with the voltage applied to said control grid; voltage amplifier means having at least cathode, control grid, screen grid and plate electrodes and adapted to change the voltage applied to said control grid of said variable impedance means in response to voltage variations at said control grid of said voltage amplifier means; center tapped load impedance means; means electrically connecting said load impedance means across said output terminals of said voltage source such that said variable impedance means and said load impedance means are in serial connection; microwave cavity oscillator means adapted to oscillate when energized by a D.C. voltage of at least a selected magnitude; means electrically connecting said microwave oscillator

two Hall voltage electrodes, a magnetizable core structure forming a magnetic circuit and having a field gap in which said Hall plate is located, an excitation coil on said structure, one of said pair of input terminals and coil serving to supply the modulating signal and the other to supply carrier frequency, and two output leads for furnishing modulated output voltage, said two leads



being connected to said respective Hall voltage electrodes and jointly forming a movable loop, said magnetic circuit being at least partially open outside of said field gap and coil whereby the magnetic flux of said coil produces a stray field outside of said core structure, and said loop being movable in said stray field to a position where the flux-induced voltage in said loop is suppressed.

3,226,658
PLURAL INDEPENDENT CHANNEL CONCENTRIC ROTARY COUPLER

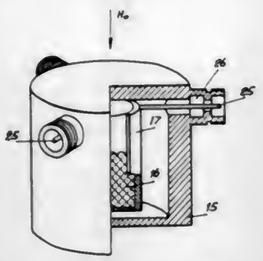
David F. Bowman, Wayne, Pa., assignor to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Oct. 3, 1960, Ser. No. 60,025
13 Claims. (Cl. 333—1)



at least three conductors of equal length, each having a first and a second end, said conductors arranged symmetrically about said longitudinal axis, parallel and adjacent to said ferrimagnetic material, and electromagnetically coupled substantially throughout their length, each of said conductors' first ends connected to the inner conducting element of the corresponding transmission line,

a conducting shield surrounding said conductors and



ferrimagnetic material and connected to the outer conducting elements of said transmission lines,

means including said shield for reactively terminating said conductors' second ends,

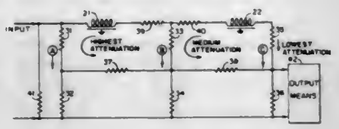
said ferrimagnetic material magnetically biased in a direction parallel to said longitudinal axis so as to cause energy supplied to one of said conductors to be coupled in a non-reciprocal manner to a specific other of said conductors in cyclic order.

3,226,660

PULSE-AMPLITUDE DISCRIMINATING PASSIVE DELAY FILTER USEFUL AT AMPLIFIER INPUT TO INCREASE DYNAMIC RANGE

William Bruce Bachelor, Oxon Hill, Md., assignor to the United States of America as represented by the Secretary of the Navy

Filed Jan. 31, 1963, Ser. No. 255,414
3 Claims. (Cl. 333—20)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A pulse circuit coupling means comprising

a plurality of *n* voltage divider sections including an input section and an output section, each of said voltage dividers in said plurality thereof having a first and second portion in serial connection and a junction point therebetween,

a plurality of *n* signal delay means, said signal delay means electrically connected in series and each adapted to interconnect the first portion end of two respective voltage divider sections in said plurality thereof,

means electrically connecting the second portion end of each of said voltage divider sections in said plurality thereof in common,

means for applying pulse signals of different amplitude across said input section of said plurality of voltage dividers,

output pulse utilization means having a selected dynamic range of operation,

means connecting said output pulse utilization means across said second portion of said output section of said plurality of voltage dividers,

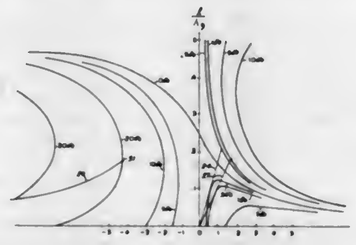
and isolation impedance means connecting said output pulse utilization means across said second portion of the remainder of said voltage dividers in said plurality thereof such that an input to output signal path with predetermined attenuation and substantially no delay, at least one other input to output signal path with a lesser predetermined attenuation and predetermined delay, and another input to output signal path with minimum attenuation and a predetermined delay are obtained, the cumulative attenuation of all of said signal paths having said predetermined attenuation with respect to the attenuation of said path having said minimum attenuation being in a selected ratio within said dynamic range of operation of said output pulse utilization means.

3,226,661

BROAD BAND TEM DIODE LIMITERS

Robert V. Garver, Rockville, Md., and John A. Rosado, McLean, Va., assignors to the United States of America as represented by the Secretary of the Army

Filed May 6, 1963, Ser. No. 278,810
7 Claims. (Cl. 333—81)
(Granted under Title 35, U.S. Code (1952), sec. 266)



6. The method of determining the optimum separation of the diodes in a broad band TEM diode power limiter comprising a transmission line having two conducting members, a pair of diodes electrically connected in a passive manner between said two conducting members, and a load element terminating said line and having an impedance equal to the characteristic impedance of said line, from a preconstructed graphical attenuation pattern of the broad band TEM diode power limiter derived with respect to the spacing between diodes as a function of frequency plotted as the ordinate and a function of the susceptance of one of the diodes plotted as the abscissa, said method comprising the steps of:

(a) selecting the highest frequency at which the limiter is to operate;

(b) determining the low power susceptance for a diode at that frequency;

(c) constructing a vertical line from the abscissa of said preconstructed graphical attenuation pattern at the point corresponding to the low power susceptance of the diode;

(d) constructing a straight line from the origin of said preconstructed graphical attenuation pattern to intersect the vertical line, said straight line being constructed at such an angle that low power attenuation at any point along said straight line between the origin of said pattern and the point of intersection of said straight line with said vertical line is always less than some desired value; and

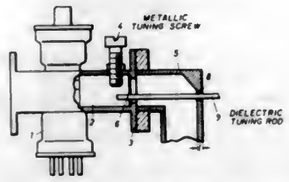
(e) measuring the ordinate of the point of intersection of said straight line with said vertical line to determine the spacing between the diodes.

3,226,662

MECHANICAL FREQUENCY CONTROL IN A KLYSTRON TUBE COMPRISING A DIRECTLY ATTACHED RECTANGULAR CAVITY RESONATOR

Gerhard Walter and Martin Müller, Pforzheim, Germany, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed Jan. 15, 1962, Ser. No. 166,033
Claims priority, application Germany, Jan. 24, 1961, St 17,380
5 Claims. (Cl. 333—83)



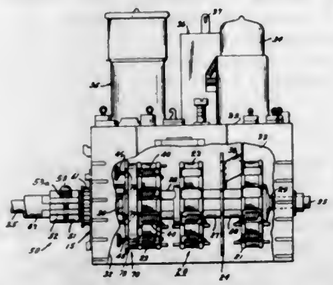
1. An arrangement for effecting the fine mechanical tuning of directly modulated klystrons comprising an attached rectangular cavity resonator and an output coupling diaphragm, first coarse frequency tuning means positioned in said cavity for adjustment in a parallel relation with respect to the electric field therein, second fine frequency tuning means for adjusting the resonant frequency of the klystron resonator including a bar of non-conducting material having a high dielectric constant positioned transversely of said electric field and having one end projecting axially into the cavity through said coupling diaphragm at a position below and adjacent said first tuning means, the frequency variation being dependent upon the distance said bar projects therein from said diaphragm, and output means receiving energy from said resonator, said bar being slidably arranged and supported at another portion in a wall of said output means lying outside the resonator.

3,226,663

DISC TYPE TURRET TUNER WITH PERIPHERALLY MOUNTED INDUCTORS

Robert C. A. Eland, Arcadia, William G. Delp, Pasadena, and Clifford Dale Nestlerode, West Covina, Calif., assignors to Standard Kollsman Industries, Inc., Melrose Park, Ill., a corporation of Illinois

Filed June 30, 1961, Ser. No. 121,151
16 Claims. (Cl. 334—49)



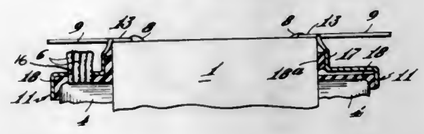
1. In a television tuner, a rotary selective tuning assembly comprising a plurality of tuning inductor sections for the respective RF input, interstage-mixer and oscillator stages of the tuner circuit, each of said sections being constructed of a disc of dielectric material with two faces normal to the rotation axis of the tuner, a metallic array affixed to each of the disc faces and containing a contact arm at each channel tuning position of its associated disc and assembly, each of said contact arms extending radially beyond its disc peripheral surface and in angular phase relation to pair up with the corresponding contact arm at the opposite disc face, and a plurality of inductor coils arranged in transverse recesses in the peripheral region of said disc between successive contact arm pairs thereof for establishing inductor RF tuning steps for the VHF band.

3,226,664

SEALED INDUCTOR

Mazeppa D. Betts, Rockport, Mass., assignor to Sylvania Electric Products, Inc., Wilmington, Del., a corporation of Delaware

Filed July 11, 1962, Ser. No. 209,059
2 Claims. (Cl. 336—96)



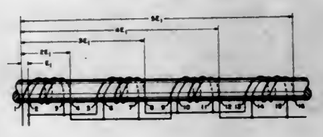
1. A mechanically complete inductor comprising a core, a coil having windings around said core, end bells attached to said core at two sides of said core respectively, each said end bell having a cap portion extending away from the side of the core and spaced from and enclosing the coil and a web extending from each said end bell along the side of the core, means holding each said end bell tightly against said core so as to enclose an interior space around the coil, each said web having a channel shaped portion adjacent the core and forming with the core a passage extending from the exterior of the end bell to the interior space around said coil, said passage being closed on all sides by said core and said web channel and extending along the core a greater distance than the effective diameter of the passage, said passage forming a capillary for a sealing fluid of medium viscosity, and an integral, solidified mass of sealing compound in the space between said coil and cap forming a closure in the passage formed by said channel and core.

3,226,665

TRANSMISSION LINE TRANSFORMER

Agostino Luna, Milan, Italy, assignor to Marelli Lenkurt S.p.A., Milan, Italy

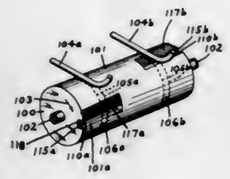
Filed Aug. 1, 1961, Ser. No. 128,479
Claims priority, application Italy, Aug. 3, 1960, 13,869/60
3 Claims. (Cl. 336—182)



1. In combination, a two-element transmission line comprising a plurality of sections, each section comprising a first wire and a second wire wound together, said wires being contiguous and parallel from a first end of each to a second end of each to form a pair of coils, said coils being serially connected with the second end of the first wire connected to the first end of the second wire; said sections being connected in cascade with the second ends of said first and second wires of each section except the last connected to the first ends of the corresponding wires of the next following section; connections for applying an input between the first end of the first wire of the first section and second end of one of the

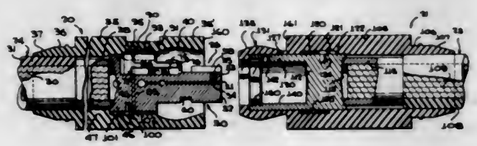
wires of one of the sections, and connections for an output between the first end of the first wire of the first section and the second end of one of the wires of one of the sections.

3,226,666
SLIP RING UNIT WITH DEBRIS-COLLECTING MEANS
Joseph S. Lord, Walpole, Mass., assignor to Kollmorgen Corporation, Northampton, Mass., a corporation of New York
Filed Oct. 8, 1962, Ser. No. 229,140
7 Claims. (Cl. 339—5)



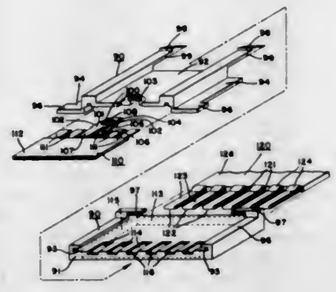
1. A slip ring unit comprising, a first member in the form of a slip ring, a second member in the form of an electroconductive brush in contact with an electroconductive surface of said ring, said brush and ring being relatively rotatable to produce motion of said brush around a track on said surface, means forming in one of said members a channel open to said track by way of a slot opening extending across said track, said slot opening being bounded on one side thereof by a wall which is provided by the body of said one member and which forms at the outward termination of said opening a sharp edge adapted to scour debris from between said brush and track and to divert said scoured debris into said channel, said edge being raised to form a prominence relative to the outward termination of said slot opening at the side thereof opposite said edge.

3,226,667
ELECTRICAL CONNECTOR ASSEMBLY
Robert Senior, Jr., Cincinnati, Ohio, assignor to Empire Products, Inc., Cincinnati, Ohio, a corporation of Ohio
Filed Mar. 4, 1965, Ser. No. 437,235
7 Claims. (Cl. 339—91)



4. An insulated electrical connector assembly comprising:
a pair of flexible electrical cables;
first and second interengaged electrical connector means mounted on ends of said pair of cables to electrically interconnect said pair of cables, the first of said means providing a receptacle within which the second means is at least in part disposed;
cooperating pin and cam means in said electrical connector means for holding said first and second electrical connector means in releasable electrical contact;
ratchet means within said first electrical connector means, and locking means in releasable engagement with said ratchet means, said locking means being mounted on said second electrical connector means;
insulating means surrounding said first and second electrical connector means; and
a portion of said insulating means adjacent said locking means being of sufficient flexibility whereby an external pressure applied to said portion will release said releasable locking means from engagement with said ratchet means.

3,226,668
RECTANGULAR CONDUCTOR HARNESS MEANS AND ATTACHMENTS
Donald G. Baer, Girard, Allan S. Van Slyke, Phalanx Station, and Robert C. Woofter, Cortland, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 28, 1961, Ser. No. 141,483
2 Claims. (Cl. 339—91)

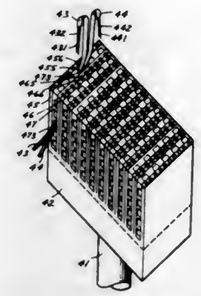


1. For use in combination with flattened wiring harness means, an insulating housing means to hold a single-type terminal means therein, comprising, a pair of substantially flat body portions each having integral interlock projections therewith to maintain assembly therebetween to provide at least one rectangular-shaped access slot for space therein, a partition integral laterally on one body portion and slotted longitudinally inwardly from an edge thereof for accommodation of a contact end of the single type of terminal means projecting from inside one body portion to inside the other whereby a flat conductor of rectangular-shaped harness means fitted through said rectangular-shaped access slot is directly engageable by said projecting contact end of said single type of terminal means.

3,226,669
WIRE CONDUCTORS IN ELECTRICAL CONNECTION FIELDS
Josef Peter Lutz, Bromma, Sweden, assignor to Telefonaktiebolaget L M Ericsson, Stockholm, Sweden, a corporation of Sweden
Filed Dec. 12, 1962, Ser. No. 244,190
Claims priority, application Sweden, Dec. 23, 1961, 12,927/61
6 Claims. (Cl. 339—198)

1. A terminal block assemblage for interconnecting electric conductors, said assemblage comprising a contact plate having inserted therein a plurality of contact elements electrically insulated from each other and exposed on one side of the plate, and a wire guide plate made of insulation material and having in one of its sides a plurality of parallel grooves extending from one edge of said guide plate to an adjacent edge, said contact plate and said

guide plate being superimposed with the side of the contact plate on which the contact elements are exposed and



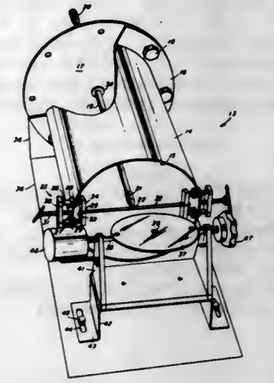
the grooved side of the guide plate facing in the same direction.

3,226,670
APPARATUS FOR DETERMINING CHARACTERISTICS OF THE OCEAN BOTTOM
Joseph D. Richard, Miami, Fla.
(531 S. Barrancas Ave., Warrington, Pensacola, Fla.)
Filed Aug. 24, 1962, Ser. No. 219,227
7 Claims. (Cl. 340—2)



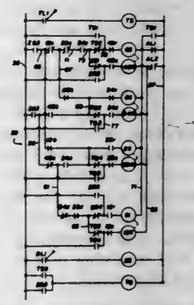
1. Apparatus for telemetering information from the surface of the ocean comprising: a housing suitable for dropping into the ocean from an aircraft; a battery within the said housing; a radio frequency oscillator within the said housing which is powered by the said battery; a transducer for generating an electrical signal in response to some physical characteristic of the said ocean; means for modulating the said oscillator with the output of the said transducer; an inflatable plastic bag attached to the said housing; a flexible antenna suspended within the said bag, the said antenna being energized by the output of the said modulated oscillator; means for inflating the said bag when the said housing is dropped in the water; and a tube venting into the said plastic bag at one end and open to the sea water at the opposite end, the said tube extending vertically beneath the said housing to a predetermined depth in the ocean, the said bag being thereby inflated to a pressure not exceeding the hydrostatic pressure at the open lower end of the said tube.

3,226,671
SOUND SOURCE
Louis R. Padberg, Jr., 22 Rincon Vista Road, Santa Barbara, Calif.
Filed Apr. 3, 1962, Ser. No. 184,863
12 Claims. (Cl. 340—5)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A sound source comprising in combination, a resonant chamber, means disposed within said resonant chamber for generating acoustical energy therein for effecting vibratory excitation thereof, and means disposed external of said resonant chamber in the path of said generated acoustical energy for reflecting same back thereto in phase with the vibration thereof.

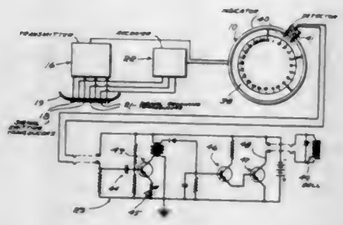
3,226,672
SELECTOR FOR ELEVATORS
Lawrence F. Jaseph, Memphis, Tenn., assignor to Dover Corporation, Washington, D.C.
Filed June 20, 1961, Ser. No. 118,345
8 Claims. (Cl. 340—21)



1. In an elevator system having a hoistway, a pair of terminal landings and a plurality of intermediate landings adjacent said hoistway; a slow-down zone, an upper approach zone, and a lower approach zone respectively adjacent, above and below each of said intermediate landings; an elevator car, and means mounting said elevator car in said hoistway for movement to various positions to serve said landings; a selector for signifying the position of said elevator car relative to said landings comprising a plurality of latch relays one less in number than the number of said landings; each of said latch relays including a main relay half, a releasing relay half, and interlock means for holding one of said halves latched when the other of said halves is released without preventing simultaneous operation of both halves, said main relay halves respectively corresponding to intervals between adjacent landings, said main relays being grouped in pairs to cor-

respond to said landings so that each group represents a particular landing, circuit means for operating said latch relays so that when only one of said main relays is latched the particular main relay latched normally signifies that said elevator car is in the interval between a pair of said landings to which said main relay corresponds and so that when one of said groups of said main relays is latched that particular group latched normally signifies that said elevator car is in the slow-down zone of a landing to which said group corresponds, and elevator car direction signifying means independent of said movement means and operably coupled to said latch relays for stepping said main relays to correspond to the movement of said elevator car.

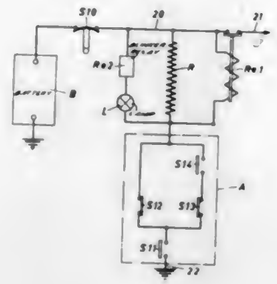
3,226,673
DEVICE FOR INDICATING OBJECTS REARWARDLY OF A VEHICLE
Allen L. Cudworth, Framingham, Mass., assignor to Liberty Mutual Insurance Company, Boston, Mass., a corporation of Massachusetts
Filed June 18, 1962, Ser. No. 203,053
6 Claims. (Cl. 340—31)



1. In a device for use in a vehicle for indicating the distance between the vehicle and an object towards which it is backing, an indicator including a bulb of the gaseous discharge type, a permanent magnet spaced therefrom, and means to rotate said bulb and said magnet about a common axis, pulse generating means including a pick-up coil in said indicator and so disposed relative to the path of said magnet as to generate a pulse on each pass of said magnet, said generating means including a series of signal emitting transducers supported transversely and disposed rearwardly of the vehicle, and signal receiving means for receiving pulses reflected from an object within a predetermined range and including said bulb, a series of rearwardly disposed signal receiving transducers disposed transversely of the rear of said vehicle, and means to convert the received signals into electric bulb-flashing pulses, said generating means delivering pulses directly to said receiving means to establish a zero reference flashing of said bulb.

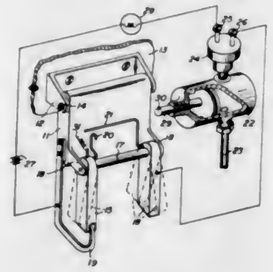
3,226,674
SAFETY BELT CONTROLLED VEHICLE ELECTRICAL CIRCUIT
Leif Joel Verner Eriksson, Landvetter, Sweden (Speldosegatan 4, Gothenburg, Sweden)
Filed Nov. 14, 1962, Ser. No. 237,641
Claims priority, application Sweden, Aug. 10, 1962, 8,711/62; Nov. 24, 1961, 11,697/61
6 Claims. (Cl. 340—53)

1. In an automobile having at least one safety belt, electrically operated means for interrupting the operation of the engine, an electrically operated alarm device, an electrical circuit connecting said interrupting means and said alarm device to a source of electric power, said circuit comprising switch means for reversing the state of the circuit upon the occurrence of a predetermined operating condition of the automobile, being related to the speed of the automobile, said circuit further comprising switch means associated with said safety belt and adapted to cancel the influence of said first mentioned switch means



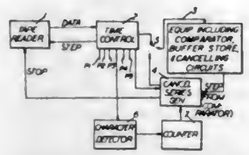
on said circuit when said safety belt is in use, and delay means delaying the operation of said interrupting means in relation to the operation of said alarm device.

3,226,675
INERTIAL RESPONSIVE STOP SIGNAL FOR VEHICLES
Robert W. Edwards, 253 Hugel Ave. W., Midland, Ontario, Canada
Filed July 5, 1960, Ser. No. 40,587
11 Claims. (Cl. 340—62)



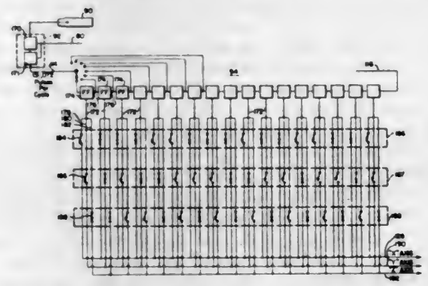
1. Apparatus for signalling the act of stopping a vehicle having brakes, comprising a first pendulum pivotally mounted on a second pendulum which is pivotally mounted on the vehicle, each pendulum being mounted to swing freely about a substantially horizontal axis which is substantially at right angles to the straight-line direction of motion of the vehicle; means to fix the position of the second pendulum in response to application of the brakes of the vehicles; a first normally-closed switch responsive to motion of the first and second pendulums, said switch moving to open position when the center of gravity of the first pendulum is displaced forward through a substantially greater angle relative to the pivotal axis of the first pendulum than the angle through which the center of gravity of the second pendulum is displaced forward relative to the pivotal axis of the second pendulum; a normally-open second switch serially connected to the first switch; means controlling said second switch in response to the application of vehicle brakes for moving the second switch to closed position; and electrically actuated signalling means controlled by said switches and giving a signal when the first and second switches are both closed.

3,226,676
DATA HANDLING SYSTEM WITH MODIFICATION OF DATA CONTROL PATTERNS
Esmond Philip Goodwin Wright, London, England, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Nov. 7, 1961, Ser. No. 150,740
Claims priority, application Great Britain, Nov. 15, 1960, 39,143/60
5 Claims. (Cl. 340—146.1)



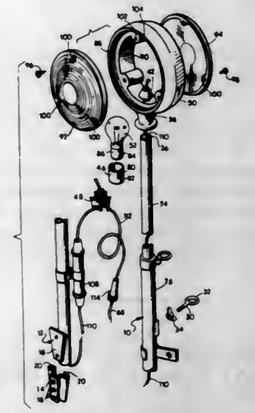
1. A data handling system enabling the employment of predetermined patterns of characters normally used to initiate control functions in data handling in the text of a message for data handling comprising:
a source of message, said messages including as distinct portions thereof the message text and predetermined patterns of characters to initiate control functions;
sensing means for detecting said predetermined patterns occurring at random in said message text only; and
means coupled to said sensing means responsive to the detection of said predetermined patterns in said message text for modifying said detected predetermined patterns during data handling to prevent said detected predetermined patterns from initiating the control function they normally represent.

3,226,677
PULSE RATIO CONTROL SYSTEM
Jay W. Forrester, Concord, William M. Pease, Wellesley, and James O. McDonough and Alfred K. Susskind, Concord, Mass., assignors, by mesne assignments, to John T. Parsons, Danville, Ill.
Original application Aug. 14, 1952, Ser. No. 304,294, now Patent No. 3,069,608, dated Dec. 18, 1962. Divided and this application Dec. 14, 1962, Ser. No. 244,801
5 Claims. (Cl. 340—147)



1. In a control system, a sequential series of pulse scaling elements having a common input and an output associated with each of said scaling elements to provide a plurality of pulse trains of successively decreasing frequency at each said output in inverse proportion to the number of pulse scaling elements interposed between said input and an output, at least two series of output pulse train switch means each having a common output, with each switch means of said series having its input connected to one only of said scaling element outputs, and means for selectively operating each of said series of output pulse train switch means to maintain each of said switch means thereof in a preselected condition providing substantially simultaneously and independently from each of the outputs of said series of switch means a series of pulses decreased in frequency relatively to the input pulses fed to said series of pulse scaling elements by a ratio established by the condition of said switch means of each of said series thereof.

3,226,678
VEHICLE SIGNAL LANTERN HAVING SHOCK MOUNTING
Chester E. Dekko, Albion, and Rob Roy Glass, Rome City, Ind., assignors to Lyall Electric, Inc., Albion, Ind., a corporation of Indiana
Filed July 19, 1963, Ser. No. 296,179
8 Claims. (Cl. 340—119)

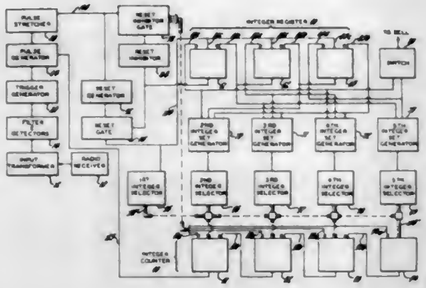


1. A signalling device adapted for mounting on vehicles and the like, and comprising:
(a) a flexible staff adapted for mounting to the vehicle and extending upwardly to mount a light signal housing at the upper end thereof;
(b) a flexible mounting member having a neck adapted to fit over the upper end of said staff and including a gripping connection adapted to receive a part of said staff;
(c) a flexible boss portion of said mounting member which is spaced from the main body of the mounting member by a circular groove;
(d) a socket sleeve adapted to fit over the boss and snap within the groove which extends within the inner periphery of said light housing;
(e) a lamp for fitting within said socket sleeve and proportioned to fit between the open ends of said light housing and being energized to provide illumination; and
(f) two substantially transparent lenses which fit over the open ends of said light housing to enclose the space wherein said lamp is mounted.

3,226,679
ELECTRONIC SELECTIVE RINGING DECODER SYSTEM
James D. Malone, Milwaukee, Wis., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 12, 1961, Ser. No. 158,709
10 Claims. (Cl. 340—164)

1. In a selective signaling system using call signals represented by permutations of integers and encoded in a transmitted signal, a receiving station including a decoder circuit for developing from said signal a pulse train comprising several groups of pulses, each group corresponding to one of said integers, first counter means to count the pulses of each group, sequentially energized selecting

means electrically connected to said first counter means for presetting the first counter means to states corresponding to the integers of the call number assigned to the station whereby each group of the received signal is compared to the corresponding group of the call signal assigned to



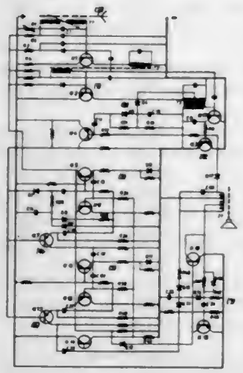
the station, second counter means controlled by the outputs of the first counter means to register the receipt of integers corresponding to the call number of the receiving station, and means corresponding to the output of the second counter to indicate the receipt of the complete call number.

3,226,680

PULSE RESPONSIVE RECEIVER HAVING PLURAL DELAY STAGES IN ACCORDANCE WITH A PARTICULAR PULSE CODE

Alois Koller and Gottfried Tschannen, Zurich, Switzerland, assignors to Albiswerk Zurich A.G., Zurich, Switzerland, a corporation of Switzerland

Filed May 22, 1961, Ser. No. 111,554
Claims priority, application Switzerland, May 23, 1960, 5,872/60
6 Claims. (Cl. 340—167)



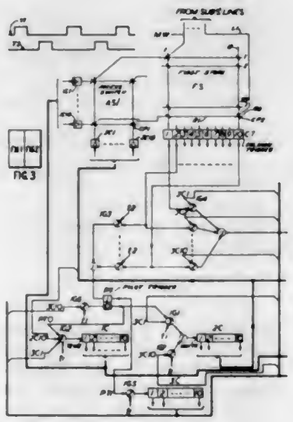
1. A selective-call-system receiver which is selected by responding to a starting pulse followed by a group of selector pulses whose mutual time spacings serve as selection criteria, comprising a plurality of successive pulse-delay stages corresponding in number to the number of selection criteria and having delay times characterizing the receiver, a signal generator stage following the last of said pulse-delay stages, a plurality of coincidence gates connected between each stage and the successive stage, pulse forming means connected to each pulse-delay stage for generating a gating pulse which opens each coincidence gate for a given time interval in response to the output of a pulse from the preceding pulse-delay stage, selector pulse input means connected to the first of said pulse-delay stages and to all of said coincidence gates for passing selector pulses through said gates only when the trailing edges of the selector pulses occur during said gating pulses, whereby a signal can actuate the signal generator stage only when the selector pulse time-spacing corresponds to the delay times characterizing the receiver.

3,226,681

DATA PROCESSING EQUIPMENT

Esmond Philip Goodwin Wright and Alan Douglas Marr, London, England, assignors to International Standard Electric Corporation, New York, N.Y.

Filed Feb. 2, 1960, Ser. No. 6,256
Claims priority, application Great Britain, Feb. 13, 1959, 5,112/59
4 Claims. (Cl. 340—172.5)



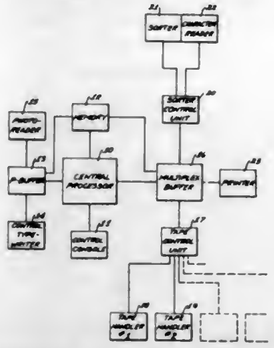
1. Electrical data processing equipment including a data storage device comprising a plurality of storage elements arranged in groups with each group consisting of two or more elements, means for storing data information in any of said elements, said information being stored at time of occurrence on a random time base, first scanning means for successively scanning the said elements group by group to detect the storage of data information in predetermined ones of said elements in each group and to provide an output indication thereof, second scanning means, means for operating said second scanning means responsive to each said output indication to scan the said predetermined ones of said elements in the corresponding group to gain access to data information stored therein, wherein the said predetermined ones of said elements in each group include all elements in a group except one and wherein the first scanning means scans the said one element to gain access to the data information therein concurrently with the said scanning of the elements group by group to detect the storage of data information, a second storage device providing the same number of storage addresses as there are storage elements in the first-mentioned storage device, access means, and means for controlling said access means in synchronism with the first and second scanning means to modify data stored in the corresponding addresses of the second storage device in accordance with data stored in any element of the first storage device to which access is at any instance afforded.

3,226,682

ERROR SENSING APPARATUS FOR A DOCUMENT HANDLER

Jay G. Levinthal, Scottsdale, and Norman R. Crain, Phoenix, Ariz., assignors to General Electric Company, a corporation of New York

Filed July 29, 1960, Ser. No. 46,162
7 Claims. (Cl. 340—172.5)



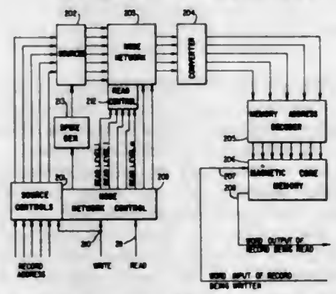
1. In combination: apparatus for automatically reading an information bearing document and for providing electrical representations of the information thereon, a data processing unit for performing a plurality of operations on information supplied thereto, means for transferring said electrical representations to said data processing unit, a device containing a plurality of receptacles for receiving documents, a register for storing a receptacle identification item identifying one of said receptacles, means for receiving said document and for depositing said document in one of said receptacles in response to an identification item in said register identifying said one receptacle, means for causing said data processing unit to produce a receptacle identification item in response to said electrical representations, means for transmitting the identification item produced by said data processing unit to said register, means for providing a first signal following the termination of an interval of predetermined duration relative to the time of reading said document, testing means for sensing the transmission of said identification item to said register, and means responsive to said first signal and the failure of said testing means to detect said transmission prior to the occurrence of said first signal for generating a second signal.

3,226,683

SEQUENTIAL DECISION MAKING DEVICE

John E. Gaffney, Jr., Briarcliff Manor, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Oct. 19, 1960, Ser. No. 63,631
15 Claims. (Cl. 340—172.5)



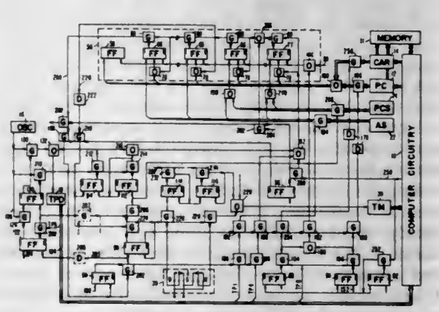
1. A computer control system establishing a sequence of control signals comprising a plurality of node circuits each of which produces one of said control signals when energized, said node circuits being arranged in levels, means for interconnecting the node circuits in each level in such a manner as to establish a preference in the energization of node circuits in that level, means for sequentially energizing and interconnecting one node in each level with a node in another level in accordance with the preference among unenergized nodes in the respective level, means for maintaining said sequence of nodes in the energized condition to permit the subsequent reproduction of the sequence of control signals produced by said energized nodes and means responsive to said sequence of control signals for performing a desired computer function.

3,226,684

COMPUTER CONTROL APPARATUS

Theodore C. Cox, Rhinebeck, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Dec. 29, 1960, Ser. No. 79,315
18 Claims. (Cl. 340—172.5)

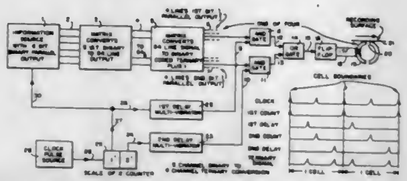


13. Diagnostic apparatus for use in the maintenance of a high speed digital computer operable to process binary coded data in acordance with a stored program of binary coded instructions, said computer including memory means to store said instructions and data and time pulse generating and distributing means to generate and distribute a predetermined number of time pulses in each computer machine cycle for normally controlling the processing of data in accordance with said instructions, comprising a counter having a plurality of bistable devices, manually operable means to select a portion of a program of instructions including a starting instruction and a terminal program step and to select a number of time pulses, maintenance control circuitry for initiating said selected program portion at said starting instruction and enabling said program portion to be processed to the completion of said terminal program step at normal computer speed as controlled by said time pulse generating and distributing means, means to transfer to said counter during each machine cycle the binary coded information contents of a register used to address said memory means and to transfer the selected terminal program step value to said counter during each machine cycle, means to utilize said counter to compare the contents of said register with the selected terminal program step value during each machine cycle, means responsive to a successful comparison to transfer control of the processing of data from said time pulse distributing means to said maintenance control circuitry and to transfer the selected time pulse number to said counter, and means to generate under the control of said counter and said maintenance control circuitry the specified number of pulses to advance the computer to the selected point and to halt the computer at that point.

3,226,685
DIGITAL RECORDING SYSTEMS UTILIZING TERNARY, N BIT BINARY AND OTHER SELF-CLOCKING FORMS

John T. Potter, Locust Valley, George E. Comstock 3rd, Huntington, and Andrew Gabor, Port Washington, N.Y., assignors to Potter Instrument Company, Inc., Plainview, N.Y., a corporation of New York

Filed June 2, 1961, Ser. No. 114,431
6 Claims. (Cl. 340—172.5)



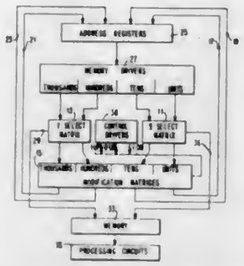
1. A high density information processing system comprising an information storage medium capable of maintaining two distinct states, transducer means for recording on said medium by changing the state of said medium from one of said states to the other within a localized region, means to provide relative movement between said storage medium and said transducer means so that said transducer means is operable to record transitions between said states along a track on said medium, a source of information, encoding means responsive to information from said source to cause said transducer means to record a pattern of said transitions along said track to represent said information in accordance with a code including (1) means to space transition positions containing a transition or the absence of a transition at regularly occurring intervals along said track, (2) means to divide said transition positions into cells of a predetermined number of transition positions greater than one and, (3) means responsive to said information from said source to provide at least one transition in each cell in a pattern in which the maximum number of transition positions in a row which do not contain a transition is a small predetermined number greater than one, said transducer means including read-out means for producing pulses in response to said transitions as said track is moved relative to said transducer means, and means responsive to the pulses produced by said read-out means to produce clock pulses occurring at regular intervals and to produce information pulses representing the information recorded in said track in accordance with said code.

3,226,686
ADDRESS MODIFICATION MATRICES

Lester R. Adams, Endwell, and Arthur F. Collins, Vestal, N.Y., Edward B. Eichelberger, Hightstown, N.J., and Martin J. Kelly, Endwell, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed June 30, 1961, Ser. No. 121,032
4 Claims. (Cl. 340—172.5)

1. Circuitry for modifying a multi-digit address comprising, in combination, core matrices for each of the digit order positions, each of said matrices comprising a **1**–Up, a **0**–Up and a **1**–Down group of ten bistable magnetic cores having a Set and Reset state, input lines wound on said cores for coupling an *m*-out-of-*n* code in a complementary form indicating a decimal digit to the core groups in the respective matrices by not selecting certain cores, said input lines being wound in different patterns through the cores in each of the groups of cores in an order position, the input lines for a digit order matrix which indicate the decimal digits **0** and **9** in said code being wound through selected groups of cores in the higher order matrices, the input lines being wound in a similar pattern in the similar numbered groups, a **1**–Up, a **0**–Up and a **1**–Down control line each being selectively wound through the cores in said groups, a read out line wound through all of said cores, sense lines for each of the order position matrices, said sense lines being selectively wound through the cores of each of said groups to provide an output in an *m*-out-of-*n* code in complementary form indicating a decimal digit, said sense lines being wound to provide cancellation of all but the

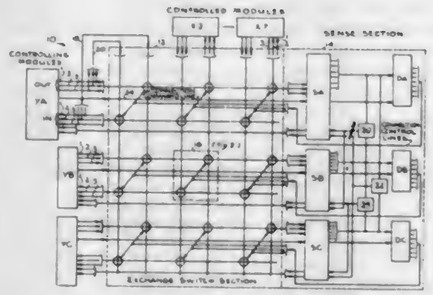


desired output pulse to obtain an intelligible coded output, one of said control lines being selectively energizable in response to an address modification signal to cause said non-selected cores to be shifted to a Set state, and said input lines from a lower order matrix controlling which of said cores are shifted to indicate 0 and 9 conditions, and said read out lines being energizable for shifting the selected cores to their Reset state, whereby currents are induced in the associated sense lines to indicate a modified address.

3,226,687
MODULAR COMPUTER SYSTEM CONNECTION REJECTION CAPABILITY

Lowell D. Amdahl, Weaver T. Brian, Jr., and Alfred D. Scarbrough, Northridge, and Edward J. Schneberger and Ralph J. Koerner, Canoga Park, Calif.; said Amdahl, Brian, Scarbrough, and Schneberger assignors, by mesne assignments, to The Bunker-Ramo Corporation, Stamford, Conn., a corporation of Delaware

Filed July 3, 1961, Ser. No. 121,458
9 Claims. (Cl. 340—172.5)

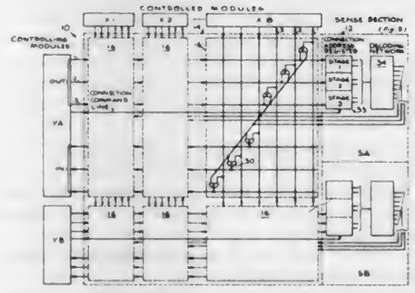


1. In a data processing system including a plurality of controlled modules and a plurality of controlling modules wherein each controlling module is capable of providing a plurality of different connection commands each of which uniquely addresses one of said controlled modules; interconnecting means for establishing communication paths between any controlling module and any controlled module in response to said connection commands comprising: a plurality of normally open information channels interconnecting each controlling module with each controlled module; a register associated with each controlling module for storing the address portion of said connection commands; comparing means associated with said registers for comparing a newly entered address in any register with addresses stored in all other registers; means for rejecting connection command whose address portion is identical to an address stored in any other register; means for accepting a connection command whose address portion is not identical to an address stored in any other register; and means for closing the normally open information channel interconnecting the commanding controlling module and the controlled module addressed by an accepted connection command.

3,226,688
MODULAR COMPUTER SYSTEM

Lowell D. Amdahl, Weaver T. Brian, Jr., and Alfred D. Scarbrough, Northridge, and Edward J. Schneberger and Ralph J. Koerner, Canoga Park, Calif.; said Amdahl, Brian, Scarbrough, and Schneberger assignors, by mesne assignments, to The Bunker-Ramo Corporation, Stamford, Conn., a corporation of Delaware

Filed July 3, 1961, Ser. No. 121,593
6 Claims. (Cl. 340—172.5)



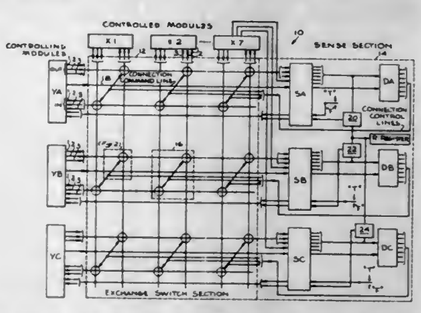
1. A modular computer system including a plurality of programmable controlling modules and including a plurality of controlled modules; an exchange for selectively connecting any one of said controlling modules, in response to a programmed connection command therefrom, to any specific one of said controlled modules comprising: a set of controlled module conductors connected to each controlled module; a set of controlling module conductors connected to each controlling module; normally opened means interconnecting each set of controlled module conductors with each set of controlling module conductors; sense means connected to each set of controlling module conductors for recognizing connection commands thereon; connection control means connected to said sense means and responsive thereto for closing the interconnecting means between the set of conductors connected to a commanding controlling module and the set of conductors connected to a selected control module; said sense means including a decoding network; said connection control means being responsive to the output of said decoding network and including a plurality of connection control lines each of which extends to a different one of said interconnecting means.

3,226,689
MODULAR COMPUTER SYSTEM MASTER DISCONNECT CAPABILITY

Lowell D. Amdahl, Weaver T. Brian, Jr., and Alfred D. Scarbrough, Northridge, and Edward J. Schneberger and Ralph J. Koerner, Canoga Park, Calif.; said Amdahl, Brian, Scarbrough, and Schneberger assignors, by mesne assignments, to The Bunker-Ramo Corporation, Stamford, Conn., a corporation of Delaware

Filed July 3, 1961, Ser. No. 121,594
11 Claims. (Cl. 340—172.5)

1. In a data processing system including a plurality of controlled modules and a plurality of controlling modules wherein each controlling module is capable of providing a plurality of different connection commands each of which uniquely addresses one of said controlled modules; interconnecting means for establishing communication paths between any controlling module and any controlled module in response to said connection commands comprising: a plurality of normally open information channels interconnecting each controlling module with each controlled module; a connection address register associated with each controlling module for storing the address portion of said connection commands; a restricted address register for storing the address of a controlled

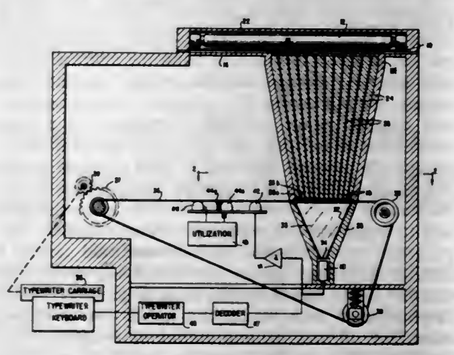


module to which access is restricted; comparing means for comparing newly entered addresses in said connection address registers with said restricted address; means associated with each controlling module for indicating whether or not access to said restricted address is available to that controlling module; means rejecting said connection commands addressing said restricted address when access to the controlling module issuing said command is not available; and means for closing the normally open information channel interconnecting the commanding controlling module and the addressed controlled module when access is available.

3,226,690
DATA TRANSLATOR

John V. Sharp, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

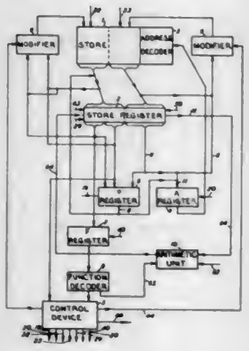
Filed Nov. 3, 1961, Ser. No. 150,016
16 Claims. (Cl. 340—172.5)



1. Apparatus for translating data from a stationary multi-column punched record to high speed output comprising; means for simultaneously passing light through a plurality of said punched record columns, means for segregating the light rays passing through each record perforation, a moving tape positioned in the path of said rays, the tape including a single row of spaced apertures to sequentially allow passage of segregated rays of any one of said record columns, a fixed row of photo-respon-

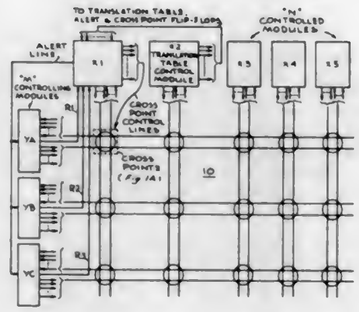
sive means positioned on the side of said tape opposite said record and aligned with said tape apertures to receive said segregated rays passing therethrough and means associated with said photo-responsive means responsive to ray interception for recording said columnar record information in another form.

3,226,691
DATA PROCESSING APPARATUS
Robin Frank Hazard, Stevenage, England, assignor to International Computers and Tabulators Limited
Filed Jan. 22, 1962, Ser. No. 167,535
Claims priority, application Great Britain, Jan. 26, 1961, 3,035/61
6 Claims. (Cl. 340—172.5)



1. Data processing apparatus controlled in operation by sequences of program instructions, including storage means for program instructions, said storage means having a plurality of individually addressable storage locations in which at least two partial programs of instructions are stored; at least two independently selectable program instruction address indicators each associated with a corresponding partial program respectively and each containing an effective and an ineffective storage location, said effective storage location specifying the address of a program instruction; means for selecting one of said program instruction address indicators; means for reading out the program instruction from the address specified in said effective storage location of the selected indicator; means for registering the program instruction read out; and control means normally responsive to a registered instruction to perform the operation specified thereby, to modify the address specified in said effective location of the selected indicator to specify the address of the next instruction in sequence of the associated partial program, and to condition the selecting means to reselect the same program instruction address indicator; said control means further including means for identifying special instructions of a first and a second form respectively and means responsive to such identifying means for modifying the operation of said control means in response to an instruction of said first form to condition said selecting means to select a different program instruction address indicator and to enter an identification of the previously selected program instruction address indicator into the ineffective part of the currently selected program instruction address indicator, and in response to said second form of instruction to interrogate said ineffective part of the current program instruction address indicator to condition said selecting means to select the program instruction address indicator identified therein.

3,226,692
MODULAR COMPUTER SYSTEM
Richard H. Fuller, Los Angeles, and Ralph J. Koerner and Edward J. Schneberger, Canoga Park, Calif., assignors, by mesne assignments, to The Bunker-Ramo Corporation, Stamford, Conn., a corporation of Delaware
Filed Mar. 1, 1962, Ser. No. 176,603
19 Claims. (Cl. 340—172.5)



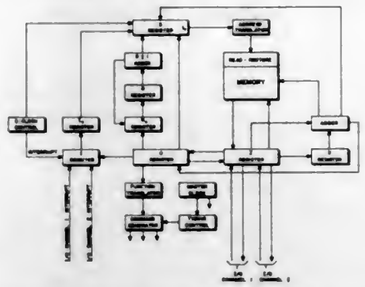
1. A data processing system comprising:
(a) a plurality of controlled modules;
(b) a plurality of controlling modules each capable of generating a plurality of different switch request output signals;
(c) each of said switch request signals including symbolic address signals;
(d) means for converting said symbolic address signals to physical address signals;
(e) and means responsive to said physical address signals for establishing a communication path between the controlling module generating said signals and the controlled module identified by said physical address signals.

3,226,693
INFORMATION REVERSING METHOD AND APPARATUS
Arnold I. Dumey, Roslyn Heights, N.Y., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed May 10, 1962, Ser. No. 194,220
18 Claims. (Cl. 340—172.5)



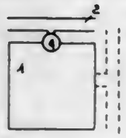
1. A device for reversing the order of occurrence of an incoming block of data bits, said block comprising M groups each containing N bits, where $M \times N$ is greater than M or N, said reversing device comprising: group reversal means responsive to said incoming block of data bits for producing an intermediate block of data bits wherein the groups thereof are reversed; and bit reversal means responsive to said intermediate block of data bits for reversing the order of occurrence of the bits in each group in said intermediate block whereby the data bits appear at the output of said bit reversal means in the reverse order from that in which they appear in said incoming block.

3,226,694
INTERRUPT SYSTEM
Harry D. Wise, Minneapolis, Minn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed July 3, 1962, Ser. No. 207,253
36 Claims. (Cl. 340—172.5)



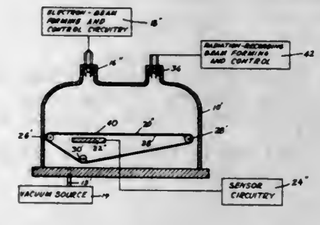
1. In a data processing system controlled in accordance with instructions acquired and executed one at a time during instruction cycles, the combination comprising:
(a) means adapted to store at addressable locations thereof a plurality of programs, each program comprised of a group of instructions having specific addresses;
(b) a plurality of program address means, a different one associated with each of said stored programs, each program address means being selectable to thereby sequentially supply the addresses of all instructions of its associated program one at a time during successive instruction cycles; and
(c) means to select at an instruction cycle any one of said program address means for supplying the address of an instruction to be acquired during said last named instruction cycle.

3,226,695
BINARY CODED INFORMATION STORE
Jean Henri Lemoine, Rueil-Malmaison, France, assignor to Societe d'Electronique et d'Automatisme, Courbevoie, France
Filed Aug. 7, 1961, Ser. No. 129,698
Claims priority, application France, Sept. 28, 1960, 839,937, Patent 1,275,507
2 Claims. (Cl. 340—173)



1. A permanent store for binary coded information comprising:
a dielectric plate;
a conductive matrix arranged on one face of said plate including a plurality of condenser electrodes arranged in a plurality of mutually perpendicular rows and columns, the condenser electrodes in each row being spaced apart from the condenser electrodes in adjacent rows;
a conductive line arranged between each pair of adjacent rows, and having branch connections to the condenser electrodes in one of said rows, but being insulated from the electrodes in the other adjacent row;
a second conductive matrix formed of a plurality of condenser electrodes carried on the opposite face of said dielectric plate, the electrodes in said second matrix being arranged in a plurality of rows extending at right angles to the rows in the first matrix, each row in the second matrix being spaced apart from the adjacent row, the second matrix having a conductive line located in the space between adjacent rows and having branch connections to the condenser electrodes in one row, but being insulated from the condenser electrodes in the row immediately adjacent the conductive line, said condenser electrodes, conductive lines, and branch connections in each matrix being arranged in the same plane, and said branch connections in each matrix being positioned so that each connection may be interrupted by a perforation passing through said plate without, however, destroying the electrical continuity of the line.

3,226,696
DATA STORAGE AND RETRIEVAL SYSTEM
John F. Dove, Overhill Drive, Rome, N.Y.
Filed Mar. 23, 1962, Ser. No. 181,968
3 Claims. (Cl. 340—173)

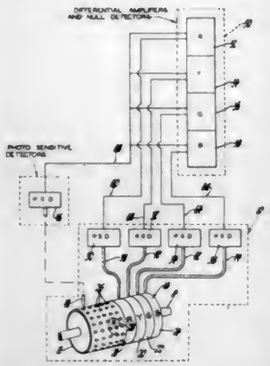


2. A high speed, high density data storage and retrieval system comprising in combination a vessel; an energy source to produce a small diameter radiated beam positioned in said vessel; a metallic record medium mounted in said vessel in the path of said radiated beam; writing control means for selectively varying the intensity of said beam to directly remove at least a portion of said record medium; reading control means for selectively varying the intensity of said beam to illuminate said record medium without changing the physical characteristics thereof; and sensor and sensor control means for indicating the presence of changes in said record medium produced with said first control means, when illuminated by a low intensity beam produced under control of the second said control means.

3,226,697
INFORMATION STORAGE SYSTEM USING COLOR CODE
William S. Fujitsubo, Reseda, Calif., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 27, 1963, Ser. No. 326,551
3 Claims. (Cl. 340—173)

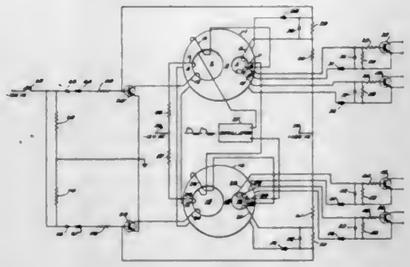
1. In information storage means, a photographically developed print having therein a plurality of reference areas of respective colors and at least one discrete storage area of a color to be determined, means for determining the color of the storage area comprising a first photosensitive means operatively associated with the storage area for producing a first electrical signal output related to the color thereof, a plurality of second photosensitive means operatively associated with the reference areas for producing respective second output signals related to the colors of the reference areas, a plurality of comparison means having two inputs and an output, means connecting the outputs of the second photosensitive means to one of the inputs of the respective comparison means and means

connecting the output of the first photosensitive means to all of the other inputs of the comparison means for simul-



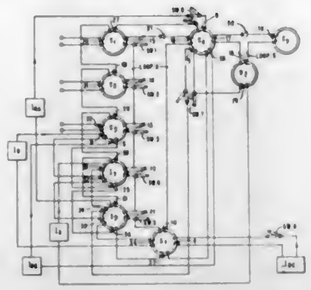
taneously comparing the first output signal with each of the second output signals.

3,226,698
MAGNETIC MEMORY CIRCUIT
William James Mahoney, Darien, Conn., assignor to American Machine & Foundry Company, a corporation of New Jersey
Filed May 18, 1961, Ser. No. 111,035
11 Claims. (Cl. 340—174)



3. In an electrical apparatus, the combination of a first and a second transfluxor each comprising a multi-apertured core of magnetic material and a primary winding, a secondary winding and at least one control winding operatively associated with said core, said transfluxors each having a set state in which application of pulses to the primary winding causes pulses to be induced in the secondary winding, and a blocked state, said transfluxors being so electrically interconnected that when one is in the set state producing an electrical output quantity in its secondary winding the other is in the blocked state, whereby only one of said electrical windings at a time is operative to produce an output electrical quantity; electrical means for producing control pulses; control means connected to the control windings of said transfluxors and to said electrical means to receive control pulses therefrom, said control means being operative upon receiving a control pulse from said electrical means, to place in the set state the one of the transfluxors which is then in the blocked state; and circuit means connecting said control means to at least one of said secondary windings to receive the output electrical quantity therefrom, the presence of an output electrical quantity applied to said control means preventing energization of one of said control windings to insure the energization of the proper control winding to change the state of said transfluxors.

3,226,699
MAGNETIC UNIVERSAL LOGICAL CIRCUIT
John A. Kauffmann, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Continuation of abandoned application Ser. No. 689,827, Oct. 14, 1957. This application Aug. 29, 1961, Ser. No. 136,971
10 Claims. (Cl. 340—174)

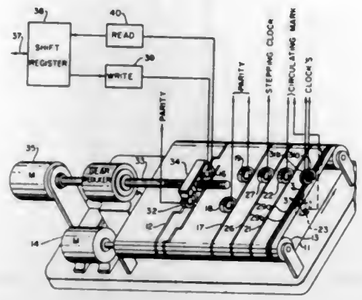


1. A binary information circuit comprising a magnetic storage core capable of retaining alternate stable residual magnetic states in representing binary information; control winding means on said storage core; a first, a second, a third and a fourth coupling core; input and output winding means on each of said coupling cores; an inhibit core; output winding means on said inhibit core; circuit means including an asymmetrical impedance device connecting the output winding means on said first, second and third coupling core and said inhibit core, said control winding means and said input winding means on said fourth coupling core; all in series with said output winding means of said first and second coupling cores being connected in opposition to said output winding means of said third coupling core and said inhibit core; shift winding means on each of said coupling cores and said inhibt core adapted to be energzed simultaneously and to drive each of said coupling cores and said inhibit core toward a datum residual state; additional shift winding means on said third coupling core, said inhibit core and said storage core adapted to be energized simultaneously and to drive said third coupling core, said inhibit core and said storage core toward the datum residual state; further shift winding means on said third coupling core, said inhibit core, said storage core and said fourth coupling core adapted to be energized simultaneously and to drive said third and fourth coupling core, said inhibit core and said storage core toward the datum residual state; a third shift winding means on said inhibit core adapted to drive said inhibit core toward the opposite residual state when energized, and switching means operably connected across the output windings on said first, second and third coupling cores and said inhibit core said switching means being effective when selectively operated to control the response of said circuit to said information whereby a selective one of a plurality of switching operations is performed.

3,226,700
DATA STORAGE SYSTEM
Armin Miller, 630 Berkeley Ave., Menlo Park, Calif.
Filed Nov. 22, 1960, Ser. No. 70,994
16 Claims. (Cl. 340—174.1)

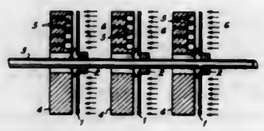
1. A data storage system for storing information supplied from associated equipment onto a cyclically moving storage medium including a single continuous record track extending around and advancing by steps extending laterally of the direction of movement of the storage medium to serially receive data in the track, means for writing information bits in said single continuous record

track including said steps thereof during a write operation, a circulating mark track having a single mark therein, means for transducing said circulating mark on said circulating mark track, means responsive to said transduced mark on said circulating mark track serving to immediately commence a write operation in the first named track via the first named means, means responsive to the transduced circulating mark for erasing the circu-



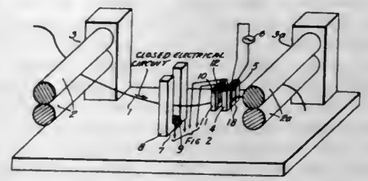
lating mark from the circulating mark track to remove the mark from its track during a write operation, and means for immediately writing a new circulating mark on the circulating mark track at a position corresponding directly to that position on the storage medium at which the write operation is completed upon completion of a data transfer operation whereby the information is indexed by the single new circulating mark.

3,226,701
ROTATING FLEXIBLE MAGNETIC DISC ASSEMBLY
Claude Marie Edmond Masson, Asnieres, France, assignor to Societe d'Electronique et d'Automat Isme, Courbevoie, France
Filed Aug. 22, 1962, Ser. No. 218,764
Claims priority, application France, Sept. 22, 1961, 874,028, Patent 1,308,059
11 Claims. (Cl. 340—174.1)



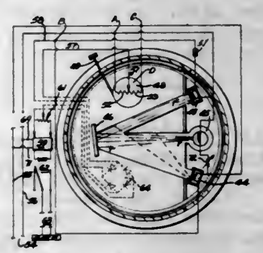
1. A binary coded information store comprising in combination:
(1) a flexible magnetic disc for the storage of information thereon;
(2) an annular magnetic read-out, read-in head carrier;
(3) means mounting said disc for rotation about its center on the axis of said head carrier and in close proximity thereto, said means further permitting axial movement of the entirety of said disc simultaneously with its rotation;
(4) and means operative during rotation of said disc for establishing a dynamic fluid pressure urging said disc toward said head carrier and also an air bearing between said disc and said head carrier to prevent contact therebetween.

3,226,702
APPARATUS FOR DETERMINING THE POSITION OF AN ELECTRICALLY CONDUCTIVE WIRE IN THE PLANE OF ITS CATENARY
Jakob Zawels, Pretoria, Transvaal, Republic of South Africa, assignor to South African Iron and Steel Industrial Corporation, Limited, Pretoria, Transvaal, Republic of South Africa, a corporation of the Republic of South Africa
Filed Sept. 20, 1961, Ser. No. 139,522
Claims priority, application Republic of South Africa, Sept. 28, 1960, 3,979/60
1 Claim. (Cl. 340—196)



Apparatus for producing a signal to determine the position of an elongated, electrically conductive element which forms part of a closed electrically conductive loop and is movable relative to the remainder of the loop, comprising in combination an electromagnetic exciter including a coil with a closed core embracing the element to induce in the closed loop electric current flow which is substantially independent of the position of the element in relation to the exciter; and detector means including a coil having an open core embracing the element and flux linked to the element, the electromagnetic field of current flowing through said element inducing in the open-cored coil a current dependent on the position of the element, and said flux linkage of the element and detector varying substantially linearly with the position of the element with respect to the coil, a reference unit comprising a coil with a closed core embracing said element and flux linked with said element, the current in said element inducing in said reference coil a current substantially independent of the position of the element; and a comparator circuit connected to said reference coil and to said open-cored coil and producing a resultant signal according to the current in each coil, said resultant signal being substantially independent of the current flow along the element and varying substantially linearly with the position of the element.

3,226,703
FIRE DETECTING DEVICE
Sam M. Finkle, 6567 Gundry Ave., Long Beach 5, Calif.
Filed Nov. 19, 1962, Ser. No. 238,545
5 Claims. (Cl. 340—237)

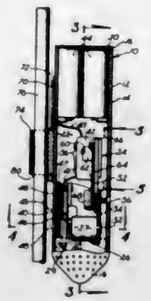


5. In a fire detecting device, the combination of:
(a) a first light sensitive resistor connected to form one arm of a Wheatstone bridge;
(b) a second light sensitive resistor connected to form a second arm of said bridge and provide a null point between said first and second arms;

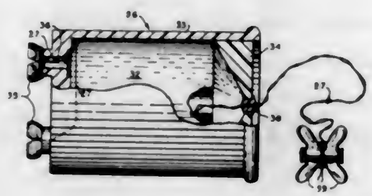
(c) a potentiometer having first and second segmented portions of its resistance winding connected to form respectively third and fourth arms of said bridge and a movable contact to adjust said potentiometer to effect a balance of said bridge and with said resistance winding form a second null point on said bridge;
(d) an electrically energized light source so arranged that the rays thereof impinge continuously upon said first light sensitive resistor;
(e) a chassis on which first and second light sensitive resistors and said light source are mounted, which chassis has a first smoke chamber therein open to the light from said source and so arranged as to transmit light to said first light sensitive resistor, with said chassis having a second smoke chamber communicating with said first smoke chamber that is so arranged as to receive and transmit light reflected from individual smoke particles to said second light sensitive means, and smoke from said fire conductive into said smoke chamber decreasing the intensity of light transmitted to said first light sensitive means and increasing the intensity of light transmitted to said second light sensitive means;
(f) an electric circuit for supplying electric energy to said first and second resistors and said light source;
(g) a mounting plate for supporting said chassis;
(h) a housing enclosing said chassis attached at one end to said mounting plate to form vent openings in said housing and open at its other end;
(i) a cover for closing the open end of said housing;
(j) a light shield attached to said cover, said light shield having a surface thereof arranged to engage a groove in said housing in snap-on fashion, which cover and light shield are connected to form a port, with said source of light heating the interior of said housing to the extent that cool air from the ambient atmosphere is continuously drawn into the interior of said housing to replace heated air in said housing that escapes upwardly through said vent;
(k) an electrically operated alarm that forms a part of said circuit and is energized by the unbalance of said bridge, with said unbalance occurring when white smoke is drawn into said housing due to the escape of heated air therefrom in a sufficient quantity that the intensity of the beam of light reflected to said first resistor is decreased to increase the resistance of said first resistor and the individual particles of said white smoke in said housing serve as a reflectory medium to reflect a portion of said beam of light to said second resistor to decrease the resistance thereof, and said unbalance occurring when black smoke is drawn into said housing in such quantity as to substantially obstruct the passage of the reflected beam of light from said mirror to said first resistor, as well as the reflection of a portion of said beam of light by the particles in said black smoke to said second resistor.

3,226,704
GOLF CLUB ACCELEROMETER
Edward Petrash, 18020 Rancho Drive, Encino, Calif.
Filed July 22, 1963, Ser. No. 296,770
5 Claims. (Cl. 340—262)

1. An accelerometer for a golf club comprising:
inertia means including an inertia weight attached to an arm;
a pivot pin rigid with the shaft of said club for pivotally mounting said arm, said arm normally extending parallel to said shaft, said arm when pivoted about said pin having a component or movement substantially perpendicular to said shaft, switch means positioned in the path of movement of said arm, yieldable restraining means to hold said arm in its normal position;
and said switch means actuated by said arm when said arm has been caused to pivot by acceleration force developed on said weight during swing movement of said club at an undesirable high acceleration for producing a signal indicating undesirable movement of said club.

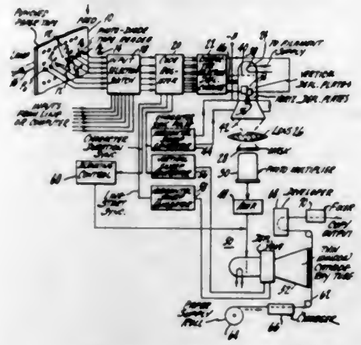


3,226,705
MINIATURE ALARM
Paul Kaufman, Deal, and Harry Barr Speaker, Neptune, N.J., assignors to the United States of America as represented by the Secretary of the Army
Filed Oct. 4, 1963, Ser. No. 314,077
5 Claims. (Cl. 340—273)
(Granted under Title 35, U.S. Code (1952), sec. 266)



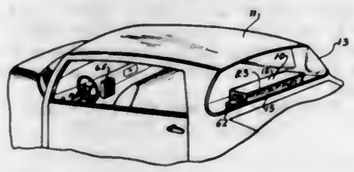
1. An alarm breakwire assembly comprising; a hollow cylindrical container having first and second opposed end walls; said first end wall having an opening therein; said second end wall having a pair of electrical contacts mounted on the exterior thereof and communicating with the interior of said container; a pair of fragile conductors placed in said container; each said conductor being insulated throughout its length; one end of each said conductors extending through said opening to the exterior of said container; the other end of each said conductor being connected to a different one of said electrical contacts; the intermediate portion of said conductors being substantially adjacent throughout the length thereof and each conductor being coiled in the same direction into a cylindrical tubular roll with the outside diameter of said roll being substantially equal to the inside diameter of said chamber and mounted coaxially therewith; said one end of each said conductor extending axially from the interior of said tubular roll and said other end of each said conductor extending from the exterior of said tubular roll; the coils of said roll being unattached to each other whereby said two conductors may be simultaneously unwound from the interior of said roll and through said opening upon the application of tension to said one end of each said conductor.

3,226,706
CATHODE RAY TUBE DISPLAY AND PRINTER CONTROLLED BY CODED MASK
Maurice Artzt, Princeton, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed May 31, 1962, Ser. No. 199,006
10 Claims. (Cl. 340—324)



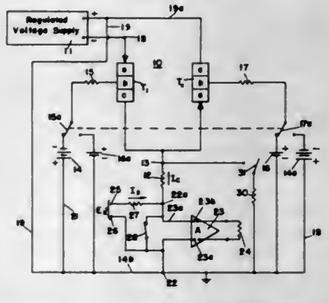
1. Information translation apparatus comprising output means for displaying successive adjacent portions of individual characters, a mask having a plurality of sequences of radiant energy transmissive and opaque portions corresponding to successive portions of different ones of said characters, said sequences being disposed respectively along different, spaced lines, means operative in response to coded information for said characters for providing inputs to said output means in response to radiant energy transmitted through successive adjacent portions of those of said lines having positions corresponding to said coded information, and means responsive to said coded information for generating a beam of radiant energy incident upon a selected one of said lines and scanning said beam across said selected line.

3,226,707
AUTOMOTIVE MESSAGE INDICATOR
Herman Newman, 715 Fairmont Place, Bronx, N.Y., and David Coby, 345 W. 86th St., New York, N.Y.
Filed June 20, 1963, Ser. No. 289,271
3 Claims. (Cl. 340—324)



1. A message indicator for vehicles comprising, a housing having a window portion, a tape adapted for movement within said housing past said window portion, said tape having the desired messages to be indicated printed thereon, means for selective movement of said tape, said means including a first and a second roller attached to opposite ends of said tape, power means to rotate said first roller in either direction of rotation, said second roller having spring means urging the same to rotate in a direction whereby said tape will be urged to be wound thereon, and unwound from said first roller, whereby actuation of said power means will cause appropriate movement of said tape, and lamp means within said housing, and a flasher unit electrically connected to said lamp means whereby said lamp means will intermittently light when actuated, and a driver panel box having a first switch for control of said power means and a second switch for control of said lamp means, and a plurality of first contact means on said tape, each of said first contact means being positioned for successive electrical grounding of one of a series of second fixed housing contact means, and a plurality of bulbs within said panel box, each of said series of second fixed housing contact means being electrically connected to an individual bulb within said driver panel box whereby the grounding of any of said series of second fixed housing contact means will cause one of said individual bulbs to light, thereby indicating the position of said tape.

3,226,708
SEMICONDUCTOR ANALOG-TO-DIGITAL CONVERTER SYSTEM
Murray Garden, Oreland, Pa., assignor to Leeds and Northrup Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Mar. 14, 1961, Ser. No. 95,714
14 Claims. (Cl. 340—347)

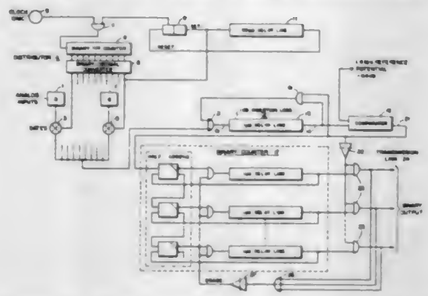


1. The combination with a transistor having at least an emitter, a base and a collector, of a voltage-regulated source,
a series circuit including said source of supply, said emitter and said collector,
a precision resistor connected in said series circuit between said collector and said regulated source,
means including a second source connected to said base and to said precision resistor on the side thereon remote from said collector having a polarity and magnitude which fully turn on said transistor for establishing between said emitter and said collector a potential difference of negligible magnitude,
and means including said second source for establishing at a junction between said collector and said precision resistor a potential which is slightly below the potential of said regulated supply, said regulated source supplying a current of low magnitude compared with that of said second source through a path including said emitter and collector of said transistor, said path being characterized by its said negligible potential difference between said emitter and said collector for maintaining said junction point at said potential of said regulated source of supply.

3,226,709
HIGH-SPEED TIME DIVISION MULTIPLEX TRANSMISSION SYSTEM
Barrie Brightman, Webster, and J. Carter Perkins, Jr., Victor, N.Y., assignors to General Dynamics Corporation, Rochester, N.Y., a corporation of Delaware
Filed June 21, 1961, Ser. No. 118,586
11 Claims. (Cl. 340—347)

11. In a time division multiplex transmission system for transmitting information during repetitive transmission frames, each transmission frame including a plurality of subframes, N sources of analog signals to be quantized, a first recirculation loop for storing N signals produced by

said sources and for altering the amplitudes of said signals a predetermined amount for each recirculation, a first distributor for successively transmitting said signals from said sources into said first recirculation loop during a particular subframe within each transmission frame, means for comparing the amplitude of each signal circulating in said first recirculation loop with the amplitude of a reference signal and for producing an output signal for each recirculation of each signal in said loop as long as each signal differs from said reference signal in a first sense but not in a second sense, a first delay line counter having an input circuit coupled to the output circuit of said means for comparing for registering a count each time said means for comparing produces an output signal, a transmission link, means responsive to the lack of an output signal from said means for comparing for reading out the count registered in said first counter into one end of said transmission link, a second delay line counter for producing an output signal when a predetermined count



is registered therein, means coupled to the other end of said transmission link for feeding the information transmitted over said transmission link into said second counter, a second recirculation loop including a delay line for altering the amplitude of signals circulating in said loop a fixed amount for each circulation, means for introducing reference signals into said second recirculation loop when information is being fed into said second counter, means for changing each count stored in said second delay line counter a fixed amount each time an associated reference signal recirculates in said second recirculation loop, N storage units, a second distributor having an input circuit for transmitting the signals read out of said second recirculation loop into said N storage units during a plurality of subframes within each transmission frame, and means for reading out signals recirculating in said second recirculation loop into the input circuit of said second distributor in response to the production of an output signal by said second counter when said predetermined count is reached.

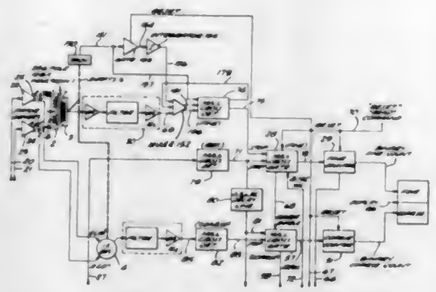
3,226,710

ANALOG-DIGITAL CONVERTER

Robert W. Tripp, Eastchester, N.Y., assignor to Inductosyn Corporation, Carson City, Nev., a corporation of Nevada

Filed Mar. 7, 1963, Ser. No. 263,586
5 Claims. (Cl. 340—347)

1. An analog-digital converter comprising
(a) a position-measuring transformer having
(1) a variable mechanical analog input and
(2) relatively movable members,
(3) one of said members having polyphase windings,
(4) another of said members having a single phase winding for supplying a phase-sensitive relative position signal;
(b) a tachometer having as an input said variable mechanical analog input, said tachometer having an output signal proportional to the velocity of said input and having a sign related to the direction of motion of said input;
(c) a clock pulse generator supplying pulses to
(d) a frequency divider having an output of subharmonic frequency as an input to
(e) a polyphase generator having as outputs
(1) polyphase signals of different time phase for inputs to said polyphase windings and an output of
(2) a reference signal as an input to
(f) a first null crossing detector having an output of a
(1) first control signal;
(g) a second null crossing detector having inputs of



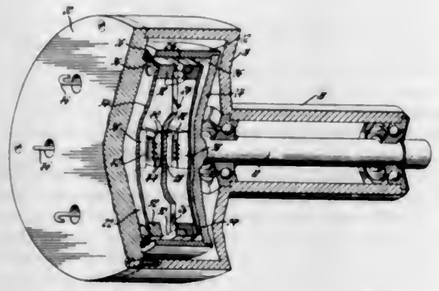
(1) said phase-sensitive relative position signal and
(2) said proportional signal from said tachometer, and having an output of
(3) a second control signal;
(h) a gate having inputs of
(1) said clock pulses,
(2) said first control signal and
(3) said second control signal, and having an output of
(4) a number of clock pulses representing a digital number corresponding to the time difference between the first control signal and the second control signal.

3,226,711

MAGNETIC SHAFT ENCODER WITH RELATIVELY MOVING TOOTHED MEMBERS

Argyle G. Lautzenhiser, Essex, Mass., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Mar. 10, 1961, Ser. No. 94,923
4 Claims. (Cl. 340—359)



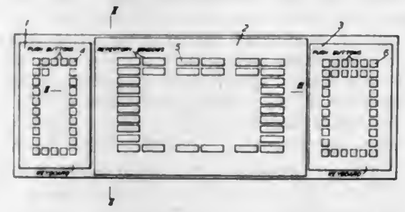
1. A shaft position encoder for detecting the relative movement between a stationary member and a shaft member comprising: an annular cup-shaped rotor member of magnetic material secured to said shaft, said annular cup-shaped rotor member including inwardly extending and evenly spaced toothed members formed on the inner periphery of said rotor; said stationary member including a pair of parallel discs of magnetic material concentrically positioned within said annular cup-shaped rotor member with toothed members formed around the periphery of each of said discs, said disc toothed members having spacing complementary to the spacing of said rotor toothed members and an opposingly spaced apart position from the toothed members of said rotor to provide a variable air gap spacing therebetween; an elongated magnet means positioned between said discs having end poles of like polarity positioned adjacent the periphery of the discs and a center pole of opposite polarity to produce a magnetic flux through a pair of parallel magnetic circiuts wherein each circuit includes said rotor toothed members, the toothed members of one of said discs and the air gap therebetween; plural Hall effect magnetic detectors with constant input currents coupled to said magnetic circuits between each of said discs and said center magnetic pole, each of said Hall effect detectors producing an electrical pulse when the magnetic flux of said magnetic circuits are varied by the movement of said rotor member so that one of said rotor teeth replaces the same opposing position of an adjacent rotor tooth relative to one of said disc toothed members.

3,226,712

MULTIPLE REPERTORY ENCODING KEYPANEL

Georges Xavier Lens and Jean Pierre Henri Vandevenne, Antwerp, Belgium, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed June 14, 1962, Ser. No. 202,583
Claims priority, application Netherlands, June 21, 1961, 266,190
6 Claims. (Cl. 340—365)



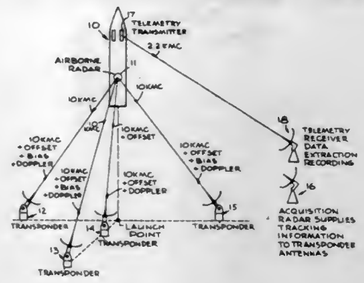
1. A multiple repertory keypanel comprising:
A repertory of a plurality of groups of codes, means for displaying one of said groups of codes, first selecting means for selectively causing the group containing a desired code to be displayed so that each code of said selected group is in a fixed position relative to said keypanel, second selecting means for selecting the fixed position of said desired code, and first, second, and third sub-panels, said first sub-panel comprehending a plurality of said first selecting means from which one is to be selected according to the particular repertory code group desired to be seen, said display means comprising said second sub-panel having a plurality of openings in which the codes of said selected code group are disposed, and said third sub-panel comprehending a plurality of said second selecting means, one of which corresponds in relative position to each of said openings in said second sub-panel.

3,226,713

PRECISION TRACKING SYSTEM

Morris Sorkin, Santa Monica, and Don M. Jacob, Los Angeles, Calif., assignors to TRW Inc., a corporation of Ohio

Filed Oct. 31, 1963, Ser. No. 320,472
12 Claims. (Cl. 343—6.5)



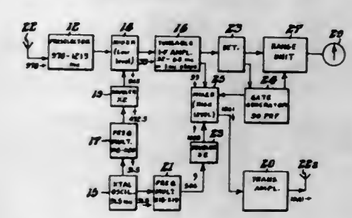
1. A cooperative tracking system comprising
means for radiating a continuous wave (C.W.) signal from a moving vehicle,
at least three cooperative transponders located at fixed remote positions for receiving said C.W. signal,
each of said transponders transmitting a C.W. signal to said vehicle that is phase coherent with said received signal, and
means in said vehicle for receiving each of said received transponder signals and comparing the phase of said received signals with said transmitted signal thereby extracting the doppler phase shift in each of said received signals.

3,226,714

AIRBORNE DISTANCE MEASURING EQUIPMENT

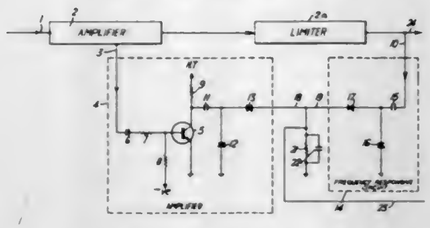
Alexander R. Applegarth, Jr., Plymouth Meeting, Pa., assignor to National Aeronautical Corporation, Fort Washington, Pa., a corporation of Pennsylvania

Filed June 5, 1963, Ser. No. 285,647
5 Claims. (Cl. 343—6.8)



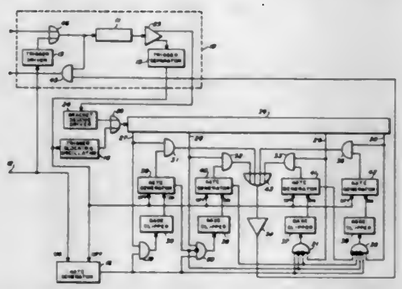
1. In an interrogator-transponder-responser system for airborne aircraft in which pairs of shaped precisely-spaced high-frequency pulse signals are transmitted at random intervals by ground station transponders at least some of which signals are ordinarily at least in response to interrogation signals from interrogating aircraft, the method of producing pairs of similarly shaped interrogation signals aboard the aircraft, said method comprising the steps of receiving aboard the particular aircraft from a selected ground station transponder randomly-spaced pairs of shaped high frequency pulse signals none of which are necessarily in response to interrogation signals previously transmitted from said particular aircraft, converting said received pulse signals into pairs of similarly shaped pulse signals of a different high frequency, and selecting certain of said pairs of converted signals for transmission to said selected transponder as interrogation signals.

3,226,715
MONITORING CIRCUIT FOR AN F.M. RADAR RECEIVER
William Littery Garfield and Ian Frederick Howard Goult, London, England, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Aug. 22, 1962, Ser. No. 218,687
Claims priority, application Great Britain, Sept. 8, 1961, 32,346/61
5 Claims. (Cl. 343—14)



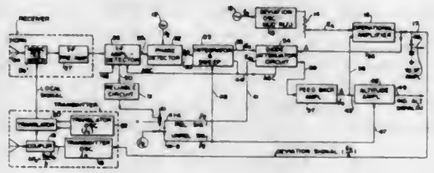
1. A monitoring circuit for an F.M. radar system having means to transmit signals, means to receive reflected signals and means to derive a beat signal by mixing the received signals with a locally generated signal, comprising means to derive from said beat signal first and second D.C. signals dependent on the amplitude and frequency respectively of said beat signal, means to feed the D.C. signals with the same polarity to a common load, and means to indicate when the combined D.C. voltage across the common load falls below a certain value.

3,226,716
DELAY LINE SYNCHRONIZER
Bernarr H. Humpherys, Escondido, Calif., assignor to the United States of America as represented by the Secretary of the Navy
Filed Sept. 16, 1963, Ser. No. 309,355
5 Claims. (Cl. 343—6.5)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. Apparatus for selectively adding increments of delay to a fixed electrical delay line in response to the variable interval between succesive pulses of a repetitive pulse train, comprising,
- a first fixed electrical delay line having a delay time less than the minimum expected interval between successive pulses of said repetitive pulse train,
- a second delay line having a plurality of incrementally spaced taps along its delay path,
- terminal means for receiving repetitive pulses,
- coincidence gating means associated with each of said plurality of spaced taps,
- means for impressing a first of said repetitive pulses upon said fixed delay line,
- gate generator means adapted to receive said first repetitive pulse after its delay by said first delay line and responsive thereto for producing an "off" output at said generator,
- said gate generator means also being adapted to receive a second of said repetitive pulses and responsive thereto for producing an "on" output,
- each of said coincidence gating means being adapted to simultaneously receive the output of said gate generator means,
- each of said coincidence gating means also being adapted to receive signals from its respective tap on said second delay line and responsive to signals at said tap to gate signals from said tap when an "on" output is simultaneously received from said gate generator,
- means for impressing said first repetitive pulse upon said second delay line after its delay by said first delay line and at the same time it is received by said gate generator,
- whereby the gated incremental portion of said second delay line is substantially equal to the time difference between the delay time of said first delay line and the interval between successive ones of said repetitive pulses.

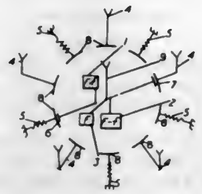
3,226,717
FM-CW RADAR ALTIMETER APPARATUS
Robert Painter Benjamin, Rockville, Md., assignor to Litton Systems, Inc., a corporation of Maryland
Filed Sept. 19, 1961, Ser. No. 139,092
16 Claims. (Cl. 343—14)



1. A continuous-wave frequency-modulation radio distance-measuring system comprising means for radiating a frequency-modulated carrier wave, means for receiving said frequency-modulated carrier wave after reflection from a remote point, means for producing from said received wave a control signal whose magnitude varies as a Bessel function of the product of distance to said point by the frequency deviation of said radiated wave, means for varying said frequency deviation under the control of said signal to maintain said control signal at a peak of said Bessel function, said means comprising a source of modulating signal of fixed amplitude, an operational amplifier supplied by said source, a feedback circuit for said operational amplifier, means for controlling the amount of feedback in said path in response to said control signal, means for controlling the frequency deviation of said radiating means in response to the output of said operational amplifier, and means responsive to the control signal for obtaining from said feedback circuit a signal that is linearly proportional to distance.

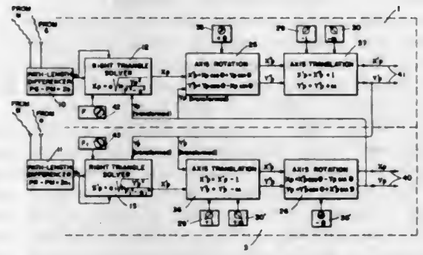
3,226,718
DUAL SIDEBAND RADIO BEACON
Charles William Earp, London, England, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Feb. 12, 1963, Ser. No. 257,949
Claims priority, application Great Britain, Feb. 19, 1962, 6,331/62
8 Claims. (Cl. 343—106)

1. Radio beacon having an odd number of spaced antennae occupying one half of a number of equispaced positions on a circle, no antenna being diametrically opposite another antenna, including means to energize the antennae singly and cyclically from a first source of waves so that the energization cycle travels at a constant speed around the circle, means operative on the energization reaching a position in its cycle unoccupied by an antenna to energize the antenna diametrically opposite that position from a second source of waves, whereby radiation is alternately of waves from the one source and of waves from the other source and whereby the cyclic progression of a pair of diametrically opposite and intermittent sources



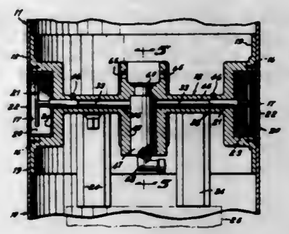
of radiation is simulated, and means to energize a further antenna at the centre of the circle from a third source of waves, the waves from the first and second sources having the phases and frequencies of respective equal order amplitude modulation sidebands of the waves from the third source, the beacon being arranged to transmit a reference signal phase-correlated with the said energization cycle for its indication to a receiver, and the spacing between adjacent positions not exceeding one half of a wavelength at the radiated frequencies.

3,226,719
GEOGRAPHIC COORDINATE-INDICATING NAVIGATION APPARATUS FOR HYPERBOLIC SYSTEMS
Bruce Farrell Chown, Ottawa, Ontario, Canada, assignor to Computing Devices of Canada Limited, Ottawa, Ontario, Canada, a company of Canada
Filed Aug. 1, 1963, Ser. No. 299,432
11 Claims. (Cl. 343—112)



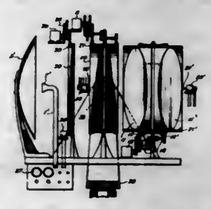
3. Apparatus for use in the navigation of a mobile craft with position finding radio systems of the hyperbolic type comprising means for providing a pair of signals representative of path-length differences from said craft to two pairs of geographic reference points, settable means for providing: a pair of signals representative of the coordinates of a geographic reference point midway on a line between one pair of said reference points in a Cartesian grid system based on the other pair of said positions; a signal representative of the angular incongruence between said line and an axis of said grid system; and a pair of signals representative of the semi-base distances of the pair of hyperbolae intersecting in the craft position and based on respective pairs of said stations; and computing means responsive to all of said signals jointly for continuously indicating the position of said craft in said grid system.

3,226,720
INTEGRATED AIRFRAME BULKHEAD AND CAVITY ANTENNA
John E. Brunner, Middletown, and Alton Z. Hallum, Cleveland, Ohio, assignors to Aeronca Manufacturing Corporation, Middletown, Ohio, a corporation of Ohio
Filed Oct. 11, 1962, Ser. No. 229,819
5 Claims. (Cl. 343—708)



1. In a missile having a forward section and a rearward section, an antenna assembly joining said two sections, said antenna assembly comprising,
- a transverse bulkhead including an annular flange having an outside diameter equal to the outside diameter of said missile sections,
- means joining said forward and rearward sections to said annular flange,
- a plurality of dipole radiating elements circumferentially spaced about said flange and having their outermost extremities within the cylindrical plane of said annular flange,
- a radome covering each said element and having its outer surface lying in the cylindrical plane of said annular flange,
- a plurality of posts projecting longitudinally from said bulkhead,
- an augmenter secured to and supported only by said posts,
- and coaxial transmission means connecting said radiating elements to said augmenter.

3,226,721
SCANNING ANTENNA UTILIZING FOUR ROTARY PRISMS TO PRODUCE RECTILINEAR SCAN AND FIFTH ROTARY PRISM TO PRODUCE CONICAL SCAN
Robert V. Gould, Hempstead, N.Y., assignor to Sperry Rand Corporation, a corporation of Delaware
Filed Mar. 26, 1948, Ser. No. 17,192
7 Claims. (Cl. 343—754)



1. In a scanning antenna structure for locating objects comprising an antenna feed for emitting electromagnetic energy, a pair of oppositely rotatable similar dielectric wedge lenses positioned in the path of energy from said antenna feed, an electromagnetic deflector fixed with respect to said antenna feed for deflecting energy for passing through said wedge lenses, motive means connected for rotating the wedge lenses in opposite directions to effect a linear scanning operation in one direction, means for receiving the electromagnetic energy from said wedge

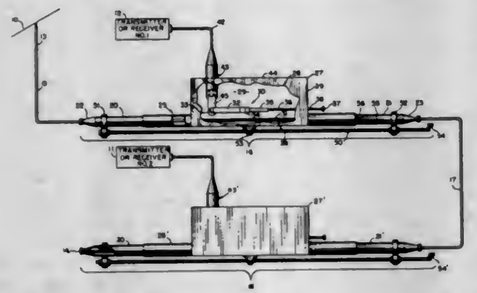
lenses for effecting a linear scanning operation of said energy in a direction at right angles to said one direction to produce a resulting raster searching scan, and a rotatable single wedge lens also positioned in the path of energy from said feed for effecting a conical tracking scan operation for tracking purposes.

3,226,722
PROBE FED PILLBOX ANTENNA WITH PATTERN SHAPING PINS AT APERTURE
Richard F. H. Yang, Orland Park, Ill., assignor to Andrew Corporation, Orland Park, Ill., a corporation of Illinois
Filed Aug. 17, 1962, Ser. No. 217,762
11 Claims. (Cl. 343—780)



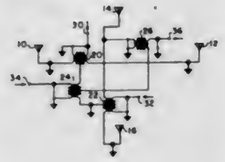
1. In a directive antenna having:
(a) a radiator cavity having a pair of plane parallel conducting walls and a rear wall extending perpendicularly to, and connecting, said parallel walls, the rear wall being in the general form of a parabola having its focus in the front portion of the cavity, the front portion of the cavity being substantially open and forming the radiator mouth, and
(b) a feed in the cavity at the focus of the parabolic back wall comprising a substantially omnidirectional radiating probe element and a reflector conductor adjacently forward thereof to impede direct external radiation from the feed in the directly forward direction, the improved construction having:
(c) parallel mutually spaced conductors of rearward-to-forward dimension smaller than the spacing extending perpendicularly between and connecting the parallel walls at the open mouth portion of the cavity slightly forward of the feed to impede direct external radiation from the feed in the laterally forward directions.

3,226,723
ANTENNA FEEDING SYSTEM
Lee R. White, 2118 University Ave., Madison, Wis.
Filed Mar. 11, 1949, Ser. No. 80,982
6 Claims. (Cl. 343—852)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A system for coupling a plurality of radio wave translating devices which are tuned to different frequencies to a single antenna, comprising: a coaxial line shorted at one end and connected to the antenna at the other end, the outer conductor of said line including a plurality of enlarged sections forming a like member of cavities through which the inner conductor of said line passes, a quarter wave coupling element for each translating device in a corresponding one of said enlarged sections and in electrical coupled relation to said inner conductor, means for adjusting the length of each coupling element and means for adjusting the distance of each coupling element from the shorted end of the line.

3,226,724
MULTIPLE ANTENNA MULTIPLEX SYSTEM
Helmut Brueckmann, Little Silver, N.J., assignor to the United States of America as represented by the Secretary of the Army
Filed July 5, 1963, Ser. No. 293,214
7 Claims. (Cl. 343—853)
(Granted under Title 35, U.S. Code (1952), sec. 266)



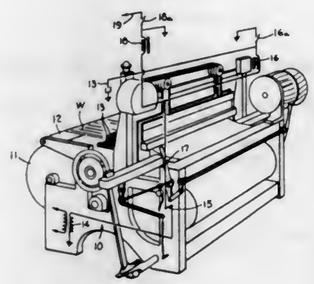
1. An antenna array having a plurality of inputs, that can function simultaneously without interaction, comprising a first, a second, and a third hybrid transformer, each having a primary winding and a center-tapped secondary winding; a fourth transformer having a primary winding and a secondary winding; a first pair of antenna elements connected to the ends of said secondary winding of said first hybrid transformer, a second pair of antenna elements connected to the ends of said secondary winding of said second hybrid transformer, said first and second pairs of antenna elements forming a square; the center-taps of said secondary windings of said first and said second hybrid transformers being connected to the ends of said secondary winding of said third hybrid transformer; the center-tap of said secondary winding of said third hybrid transformer being connected to one end of said secondary winding of said fourth transformer, the other end of said secondary winding of said fourth transformer being connected to ground; a first source of radiant energy connected to said primary winding of said first hybrid transformer; a second source of radiant energy connected to said primary winding of said second hybrid transformer; a third source of radiant energy connected to said primary winding of said third hybrid transformer; and a fourth source of radiant energy connected to said primary winding of said fourth hybrid transformer.

3,226,725
CENTRALLY LOADED INDUCTIVELY TUNABLE WHIP ANTENNA
Roy Ritchie and John R. Killeen, Cambridge, England, assignors to Pye Limited, Cambridge, England, a British company
Filed Feb. 27, 1962, Ser. No. 175,997
Claims priority, application Great Britain, Mar. 1, 1961, 7,464/61
13 Claims. (Cl. 343—745)

1. A centre-loaded tunable whip aerial, comprising a flexible housing of insulating material forming the base section of the aerial, a flexible metal whip constituting a radiating member and rigidly secured to the upper end of said housing, a coil enclosed by the housing located away from the lower end of the housing and having its upper end electrically connected to said whip, a further radiating member connected to the lower end of said coil, said further radiating member being entirely enclosed by the housing and extending below said coil, and adjusting means located in said housing and operable remotely from said aerial for adjusting the inductance value of said coil so as to effect tuning of the aerial.

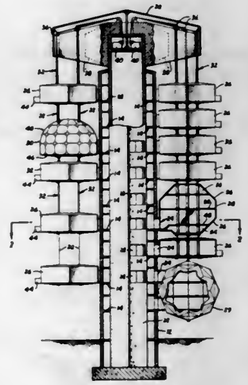


3,226,726
TEXTILE PRODUCTION CONTROL APPARATUS
Cecil S. Adams, Deborrah Lane, Saluda Lake; James B. Adams, 137 Twinbrook Drive; Felton B. Bailey, 220 Sunshine Ave.; and Edgar F. Walker, 14 Tranquil Ave., all of Greenville, S.C.
Continuation of application Ser. No. 208,816, July 10, 1962. This application Jan. 8, 1965, Ser. No. 428,009
6 Claims. (Cl. 346—34)



1. In a large number of textile machines of like character each having switch means actuated by a given operating condition of the machine, the improvement including, scanning means monitoring said switch means, power operated means cycling said switch means uniformly, said scanning means being arranged in stacked groups of rotary switches each having a brush and contacts, said brushes being ganged and said contacts being stacked, the brushes of each scanning means being staggered with respect to other brushes of the ganged arrangement, a second scanning means having a lesser number of brushes of said first scanning means, a rotor in said second scanning means turning at a sufficient speed to scan each brush of said first scanning means in timed relation with the first scanning operation, and recording means operated by said second scanning means responsive to a given operating condition of a machine, whereby said second scanning means sequentially connects individual brushes of said first scanning means to said recording means.

3,226,727
SUSPENDED MODULE BUILDINGS
Christian Frey, San Francisco, Calif., assignor to Suspended Structures Incorporated, San Francisco, Calif., a corporation of California
Filed Oct. 9, 1962, Ser. No. 229,421
8 Claims. (Cl. 52—745)



1. The method of erecting a building which comprises:
(A) erecting at least one substantially vertical column on the ground,
(B) mounting at least one support portion on said column at an elevation substantially above the ground with said support portion extending laterally from the column,
(C) prefabricating a plurality of housing units at locations remote from said column with each unit substantially structurally complete and self contained with at least one floor and a plurality of walls on said floor for laterally enclosing an occupiable area and service facilities therein,
(D) providing a lifting mechanism adjacent to said column for lifting said units from positions adjacent to the ground to elevated positions above the ground,
(E) moving a first one of said prefabricated units from a remote location to a location adjacent to said column,
(F) moving a second one of said prefabricated units from a remote location to a location adjacent to said column,
(G) operating a lifting mechanism to lift said first and second units to elevated positions above the ground,
(H) permanently suspending said first and second units from said support portion, and

(I) continuing to move, lift, and suspend additional ones of said prefabricated units until the building is substantially complete.

3,226,728
OFFSHORE APPARATUS AND METHOD
James G. Walvoord, Grand Isle, La., assignor, by mesne assignments, to Esso Production Research Company, Houston, Tex., a corporation of Delaware
Filed Sept. 26, 1963, Ser. No. 311,821
17 Claims. (Cl. 166—46)

1. A method for placing a flow line on a well supported by a structure extending from above water surface to water bottom, which comprises arranging a first length of said flow line for longitudinal movement on said structure while supporting a second length of said flow line at least at its free end, connecting to the free end of said first length a sufficient length of pipe to extend the length of said first length such that the extended length is sufficient to reach from above water surface to water bottom, lowering said extended first length to

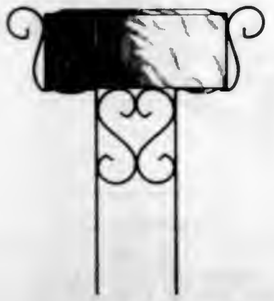


water bottom while continuing to support said second length, and then connecting the free end of the extended first length to said well.

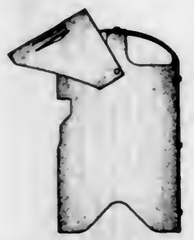
DESIGNS

DECEMBER 28, 1965

203,328
SIGN
Gilbert W. Cupp, 2000 S. Osceola Way, Denver, Colo.
Filed July 6, 1964, Ser. No. 80,697
Term of patent 14 years
(Cl. D1—12)



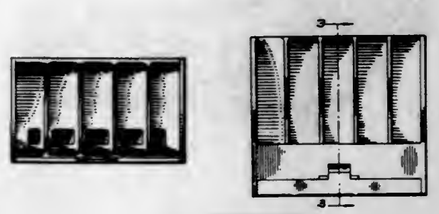
203,329
HELMET
Mary G. Fitchko and Michael Hearty Fitchko, 190 N. Roosevelt, Columbus, Ohio
Filed Apr. 26, 1965, Ser. No. 84,955
Term of patent 14 years
(Cl. D3—13)



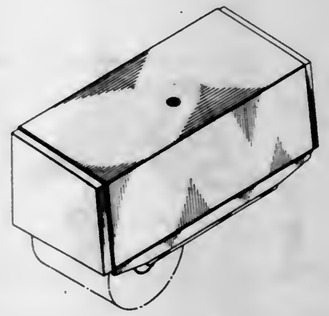
203,330
DOUBLE LAUNDRY TUB AND CABINET COMBINATION
Bernard E. Mustee, Westlake, Ohio, assignor to E. L. Mustee & Sons, Inc.
Filed Feb. 27, 1963, Ser. No. 73,742
Term of patent 14 years
(Cl. D4—2)



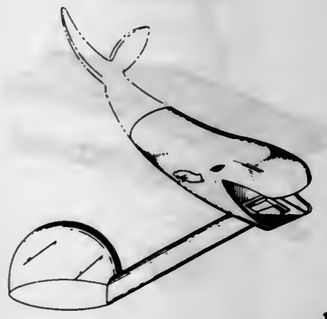
203,331
SOAPHOLDER
Leslie E. Lanczi, 24 Radcliffe Road, Montreal, Quebec, Canada
Filed June 21, 1963, Ser. No. 75,462
Term of patent 7 years
(Cl. D4—3)



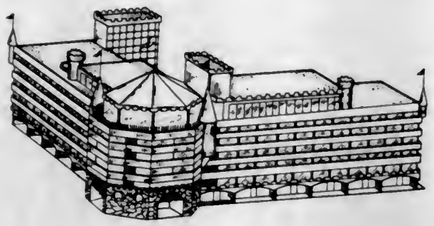
203,332
TOILET TISSUE DISPENSER
Council A. Tucker, Glendale, Calif., assignor to Towlsaver, Inc., Los Angeles, Calif., a corporation of California
Filed Sept. 28, 1964, Ser. No. 82,142
Term of patent 14 years
(Cl. D4—3)



203,333
COMBINED RESTAURANT ENCLOSURE AND ENTRANCE UNIT
Rockford E. Mosteller, 25084 5th St., San Bernardino, Calif.
Filed Nov. 20, 1964, Ser. No. 82,704
Term of patent 14 years
(Cl. D13—1)



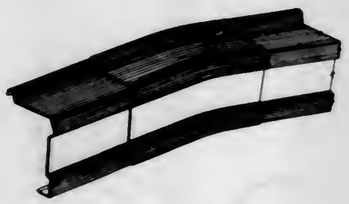
203,334
BUILDING
Vollie M. Piland, Tulsa, Okla., assignor to Ainslie Perrault, Tulsa, Okla.
Filed Dec. 28, 1964, Ser. No. 83,170
Term of patent 14 years
(Cl. D13—1)



203,335
BUILDING ADAPTED FOR USE AS A CHILDREN'S SHOE STORE OR THE LIKE
Lawrence T. Hord, Jr., Memphis, Tenn., assignor to Raiford's, Inc., Memphis, Tenn., a corporation of Tennessee
Filed Feb. 3, 1965, Ser. No. 83,674
Term of patent 14 years
(Cl. D13—1)



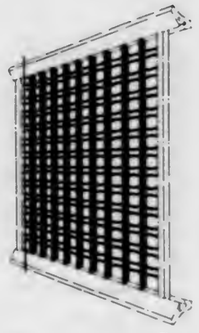
203,336
BUILDING TRIM AND GUTTER STRUCTURE
Robert P. Orr, Kansas City, Mo., assignor to Butler Manufacturing Company, Kansas City, Mo., a corporation of Missouri
Filed Mar. 10, 1965, Ser. No. 84,184
Term of patent 14 years
(Cl. D13—1)



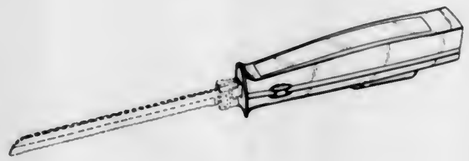
203,337
DRIP MOLDING TRIM OR THE LIKE
Alva Gaither, 1323 Channing St., Los Angeles, Calif.
Filed June 22, 1964, Ser. No. 80,505
Term of patent 14 years
(Cl. D13—6)



203,338
ORNAMENTAL PANEL
Louis Blum and William J. Horgan, Jr., both of Pittsburgh, Pa., assignors to Blumcraft of Pittsburgh, Pittsburgh, Pa., a firm consisting of Hyman Blum, Louis Blum, and Harry P. Blum
Filed Dec. 13, 1963, Ser. No. 77,778
Term of patent 14 years
(Cl. D13—7)



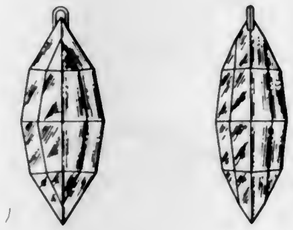
203,339
ELECTRIC KNIFE HANDLE
Jerold R. Peterson, Roselle, Ill., assignor to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed May 25, 1965, Ser. No. 85,445
Term of patent 14 years
(Cl. D22—3)



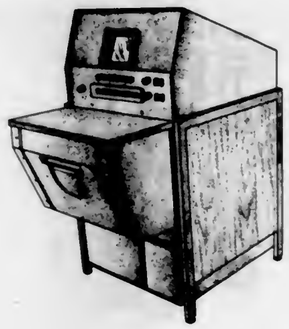
203,340
MIXING APPARATUS FOR DENTAL MATERIALS
Michael W. Bolde, 8824 Monogram St., Los Angeles County, Calif.
Filed Apr. 30, 1965, Ser. No. 85,046
Term of patent 14 years
(Cl. D24—1)



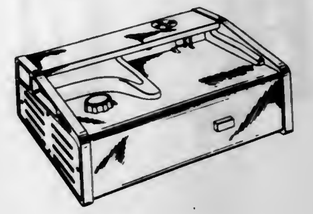
203,341
CHRISTMAS TREE ORNAMENT, OR SIMILAR ARTICLE
Jack Burnbaum, 451 D St., Newton, Mass.
Filed Jan. 11, 1965, Ser. No. 83,379
Term of patent 14 years
(Cl. D29—1)



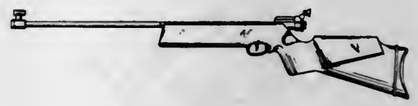
203,342
COMBINED TELEVISION RECEIVER AND PRINTER
Edward L. Byer and Jack L. Stark, Fort Wayne, Ind., assignors to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland
Filed May 26, 1964, Ser. No. 80,155
Term of patent 14 years
(Cl. D26—14)



203,343
CARTRIDGE MAGNETIC TAPE PLAYER OR SIMILAR ARTICLE
Gordon H. Reed, St. Heller, Jersey, Channel Islands, assignor to Television Research Limited, St. Heller, Jersey, Channel Islands, a British company
Filed Aug. 11, 1964, Ser. No. 81,240
Claims priority, application Great Britain Feb. 27, 1964
Term of patent 14 years
(Cl. D26—14)



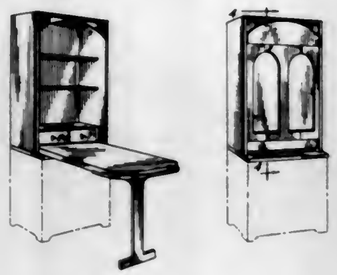
203,344
SPORT RIFLE
Jacques Bertschinger, Lenzburg, Switzerland, assignor to Hämmerli Aktiengesellschaft, Lenzburg, Switzerland, a Swiss corporation
Filed May 24, 1963, Ser. No. 75,050
Claims priority, application Switzerland Nov. 29, 1962
Term of patent 7 years
(Cl. D30—1)



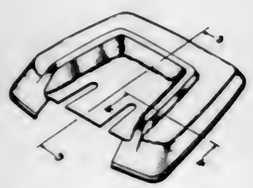
203,345
DISPENSER FOR DISCHARGING POWDER-LIKE MATERIALS
Jordan V. Sukert, 7745 W. Davis, Morton Grove, Ill., and Lawrence M. Sukert, 6946 N. Wolcott, Chicago, Ill.
Filed Dec. 28, 1964, Ser. No. 83,180
Term of patent 14 years
(Cl. D31—3)



203,346
CABINET
Elizabeth D. Hartzell, 417 W. Barry Ave., Chicago, Ill.
Filed Jan. 11, 1965, Ser. No. 83,388
Term of patent 14 years
(Cl. D33—19)



203,347
TILLER HOUSING
John W. Davies III, Plymouth, Wis., assignor to Gilson Bros. Co., Plymouth, Wis., a corporation of Wisconsin
Filed Oct. 28, 1964, Ser. No. 82,367
Term of patent 14 years
(Cl. D40—1)



203,348
LIGHTER
Jean Genoud, Lyon, France, assignor to Etablissements Genoud & Cie, Venissieux (Rhone), France
Filed Nov. 17, 1964, Ser. No. 82,645
Claims priority, application France May 28, 1963
Term of patent 7 years
(Cl. D48—27)



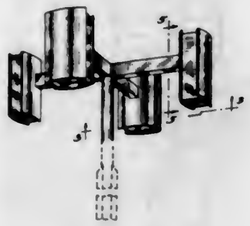
203,349
GAS IGNITER GUN
Harold I. Gross, Beverly Hills, Calif., assignor to National Silver Company, New York, N.Y., a corporation of New York
Filed Feb. 5, 1965, Ser. No. 83,703
Term of patent 14 years
(Cl. D48—27)



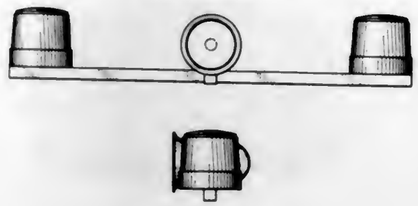
203,350
LIGHTING FIXTURE
Mitchell Bobrick, Los Angeles, Calif., assignor to Solar Light Manufacturing Co., Melrose Park, Ill., a corporation of Illinois
Filed Jan. 8, 1965, Ser. No. 83,333
Term of patent 14 years
(Cl. D48—31)



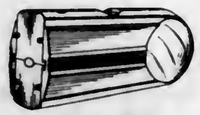
203,351
LIGHTING FIXTURE
Mitchell Bobrick, Los Angeles, Calif., assignor to Solar Light Manufacturing Co., Melrose Park, Ill., a corporation of Illinois
Filed Jan. 8, 1965, Ser. No. 83,363
Term of patent 14 years
(Cl. D48—31)



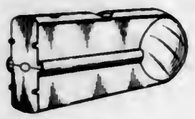
203,352
COMBINED WARNING LIGHT AND SIREN FOR EMERGENCY VEHICLES
Earl W. Gosswiller, Chicago, Ill., assignor to Federal Sign and Signal Corporation, Blue Island, Ill., a corporation of New York
Filed Sept. 9, 1963, Ser. No. 76,520
Term of patent 14 years
(Cl. D48—32)



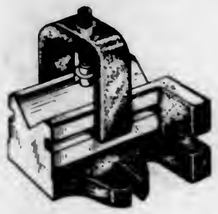
203,353
VEHICLE PARKING LIGHT
Hubert Roy Holland, Northwood, and Anthony William Lennard, Ruislip, England, assignors to Halroy Products Limited, a British company
Filed Aug. 24, 1964, Ser. No. 81,416
Claims priority, application Great Britain Feb. 27, 1964
Term of patent 7 years
(Cl. D48—32)



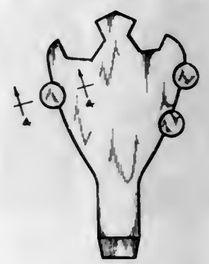
203,354
VEHICLE PARKING LIGHT
Hubert Roy Holland, Northwood, and Anthony William Lennard, Ruislip, England, assignors to Halroy Products Limited, a British company
Filed Aug. 24, 1964, Ser. No. 81,427
Claims priority, application Great Britain Feb. 27, 1964
Term of patent 7 years
(Cl. D48—32)



203,355
WORK-HOLDING V BLOCK AND CLAMP
Matthew Kuziak, Turkey Roost Road, Monroe, Conn.
Filed Dec. 4, 1964, Ser. No. 82,912
Term of patent 7 years
(Cl. D54—13)



203,356
COMBINATION WRENCH SCREWDRIVER AND FEELER GAUGE TOOL
Jack L. Roberts and George L. Webb, Fond du Lac, Wis., assignors to Wells Manufacturing Corporation, Fond du Lac, Wis., a corporation of Wisconsin
Filed Feb. 9, 1965, Ser. No. 83,746
Term of patent 7 years
(Cl. D54—13)



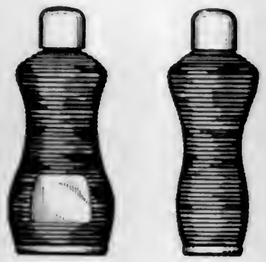
203,357
OPTICAL CONTACT LENS
Irving N. Adler, Detroit, Mich., assignor of one-half to Richard J. Wlodyga, Warren, Mich.
Filed May 11, 1964, Ser. No. 79,900
Term of patent 14 years
(Cl. D57—1)



203,358
EYEGLASS FRAME
Robert Keim, Brooklyn, N.Y., assignor to Vericco, Inc., New York, N.Y., a corporation of New York
Filed Feb. 24, 1964, Ser. No. 78,759
Term of patent 7 years
(Cl. D57—1)



203,359
SHAMPOO SQUEEZE BOTTLE
Eino K. Marttinen, Westendin Puistotie 45, Helsinki Westend, Finland
Filed Sept. 29, 1964, Ser. No. 81,909
Term of patent 14 years
(Cl. D58—6)



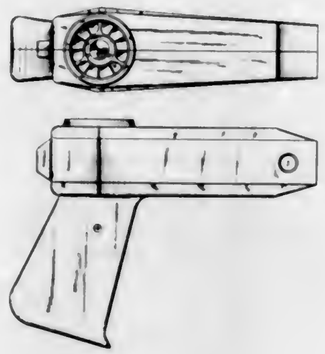
203,360
COMBINED BOTTLE AND BOTTLE CAP
John F. Becker, Vineland, N.J., assignor to Wheaton Glass Company, Millville, N.J., a corporation of New Jersey
Filed Dec. 3, 1964, Ser. No. 82,899
Term of patent 14 years
(Cl. D58—6)



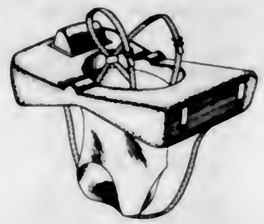
203,361
BOTTLE CAP
John F. Becker, Vineland, N.J., assignor to Wheaton Glass Company, Millville, N.J., a corporation of New Jersey
Filed Dec. 3, 1964, Ser. No. 82,898
Term of patent 14 years
(Cl. D58—26)



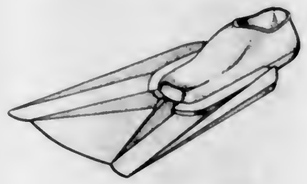
203,362
AUTOMOBILE WINDSHIELD DEFROSTER OR SIMILAR ARTICLE
William P. Richardson, Greenwich, Conn., assignor to Empire Brushes, Inc., Port Chester, N.Y., a corporation of New York
Filed Dec. 21, 1964, Ser. No. 83,103
Term of patent 14 years
(Cl. D62—2)



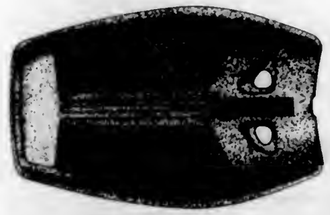
203,363
LIFE PRESERVER
Hubert H. Crawford, 231 Humboldt Parkway, Buffalo, N.Y.
Filed Sept. 8, 1964, Ser. No. 81,634
Term of patent 14 years
(Cl. D71—1)



203,364
FOOT FIN FOR SWIMMERS
Everett A. Brunner, 3807 N. Merced, Baldwin Park, Calif.
Filed Nov. 2, 1964, Ser. No. 82,441
Term of patent 14 years
(Cl. D71—1)



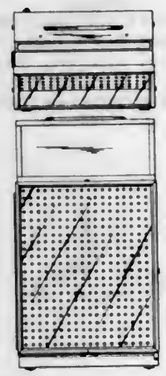
203,365
SWIM BOARD
Russell G. Heston, Jr., Little Silver, N.J., assignor, by mesne assignments, to Union Carbide Corporation, New York, N.Y., a corporation of New York
Filed May 25, 1965, Ser. No. 85,446
Term of patent 14 years
(Cl. D71—1)



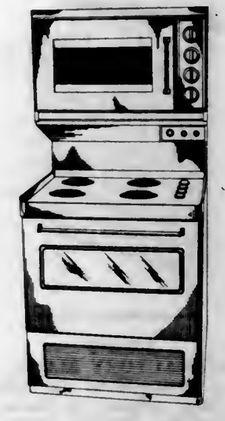
203,366
DISPLAY RACK FOR FLOOR CLEANING EQUIPMENT AND THE LIKE
Murray Federman, Brooklyn, N.Y., assignor to Glamorene, Inc., Clifton, N.J., a corporation of New York
Filed Apr. 16, 1965, Ser. No. 84,836
Term of patent 14 years
(Cl. D80—10)



203,367
DISPLAY CABINET FOR KNIVES AND THE LIKE
Sidney S. Wisch, Shaker Heights, Ohio, assignor to Cole National Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Oct. 2, 1964, Ser. No. 81,999
Term of patent 14 years
(Cl. D80—11)



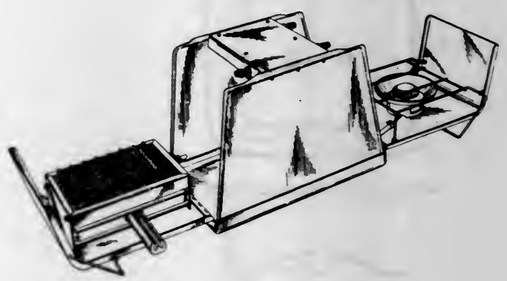
203,368
COOKING RANGE
Daniel G. Meckley III, Mansfield, Ohio, assignor to The Tappan Company, Mansfield, Ohio, a corporation of Ohio
Filed Jan. 13, 1965, Ser. No. 83,406
Term of patent 14 years
(Cl. D81—4)



203,369
FIRE SCREEN OR SIMILAR ARTICLE
Joseph Dzaich, 3921 San Fernando Road, Glendale, Calif.
Filed Apr. 15, 1963, Ser. No. 74,443
Term of patent 14 years
(Cl. D81—5)



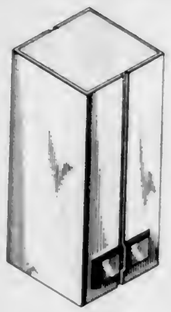
203,370
PORTABLE COOKING STOVE
Norman Albert Whitaker, Belfast, Northern Ireland, assignor to The Tilley Lamp Company Limited, Belfast, Northern Ireland, a company of Great Britain
Filed July 29, 1964, Ser. No. 81,061
Term of patent 3½ years
(Cl. D81—10)



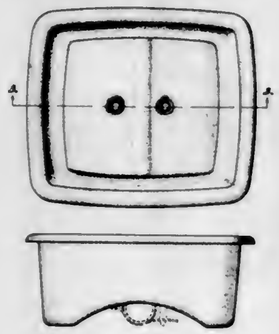
203,371
BISCUIT BASKET FOR POP-UP TOASTERS
Harrison Keller, 456 W. Ohio Ave., Sebring, Ohio
Filed Dec. 4, 1964, Ser. No. 82,909
Term of patent 14 years
(Cl. D81—10)



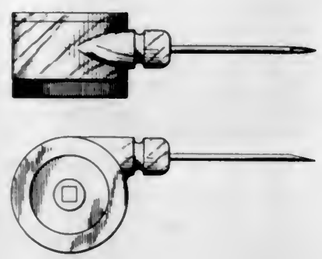
203,372
REFRACTORY BLOCK
Charles H. Miller, Youngstown, and William J. Wilson, Columbiana, Ohio, assignors to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware
Filed Mar. 11, 1965, Ser. No. 84,241
Term of patent 14 years
(Cl. D81—25)



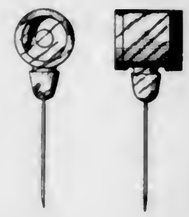
203,373
TUB FOR MASSAGE APPARATUS
Samuel L. McNair, 1200 S. Highland, Fullerton, Calif.
Filed Mar. 15, 1965, Ser. No. 84,276
Term of patent 14 years
(Cl. D83—1)



203,374
ROTARY HYPODERMIC SYRINGE
Rosario Russo, 4115 N. Delay Ave., Covina, Calif.
Filed Feb. 8, 1965, Ser. No. 83,712
Term of patent 14 years
(Cl. D83—12)



203,375
ROTARY HYPODERMIC SYRINGE
Rosario Russo, 4115 N. Delay Ave., Covina, Calif.
Filed Feb. 8, 1965, Ser. No. 83,713
Term of patent 14 years
(Cl. D83—12)



203,376
CIGARETTE EXTINGUISHER
Benjamin A. Thompson, Box 2, Locke, Calif., and Edwin F. Weidner, Jr., 3151 21st Ave., Sacramento, Calif.
Filed Mar. 5, 1965, Ser. No. 84,103
Term of patent 14 years
(Cl. D85—2)



203,377
SMOKING PIPE
Stephen P. Chernock, 1553 Boston Post Road, Milford, Conn.
Filed May 13, 1965, Ser. No. 85,256
Term of patent 14 years
(Cl. D85—8)



203,378
FLUSH TANK FLAPPER VALVE UNIT
Robert E. Harold, Pasadena, Calif., assignor to Kirkhill Inc., Downey, Calif., a corporation of California
Filed Aug. 21, 1964, Ser. No. 81,397
Term of patent 14 years
(Cl. D91—1)



LIST OF PLANT PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 28TH DAY OF DECEMBER, 1965

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

Bourne, Benjamin A.: *See*—
Weetman, Leslie M., and Bourne. 2,584.

Cary, Mary F.: *See*—
Ploetz, John W. 2,581.

Jackson & Perkins Co.: *See*—
Robinson, Herbert. 2,582.

Martin, Esmond B. Cattleya orchid plant. 2,583, 12–28–65, Cl. 68.

Ploetz, John W., to M. F. Cary. Maple tree. 2,581, 12–28–65, Cl. 51.

Robinson, Herbert, to Jackson & Perkins Co. Rose plant. 2,582, 12–28–65, Cl. 18.

United States Sugar Corp.: *See*—
Weetman, Leslie M., and Bourne. 2,584.

Weetman, Leslie M., and B. A. Bourne, to United States Sugar Corp. Sugar cane. 2,584, 12–28–65, Cl. 89.

LIST OF DESIGN PATENTEES

Adler, Irving N., ½ to R. J. Wlodyga. Optical contact lens. 203,357, 12–28–65, Cl. D57—1.

Ainslie Perrault: *See*—
Piland, Vollie M. 203,334.

Becker, John F., to Wheaton Glass Co. Combined bottle and bottle cap. 203,360, 12–28–65, Cl. D58—6.

Becker, John F., to Wheaton Glass Co. Bottle cap. 203,361, 12–28–65, Cl. D58—26.

Bertschinger, Jacques, to Hammerli Aktiengesellschaft. Sport rifle. 203,344, 12–28–65, Cl. D30—1.

Blum, Louis, and W. J. Horgan, Jr., to Blumcraft of Pittsburgh. Ornamental panel. 203,338, 12–28–65, Cl. D13—7.

Blumcraft of Pittsburgh: *See*—
Blum, Louis, and Horgan. 203,338.

Bobrick, Mitchell, to Solar Light Mfg. Co. Lighting fixture. 203,350, 12–28–65, Cl. D48—31.

Bobrick, Mitchell, to Solar Light Mfg. Co. Lighting fixture. 203,351, 12–28–65, Cl. D48—31.

Bolde, Michael W. Mixing apparatus for dental materials. 203,340, 12–28–65, Cl. D24—1.

Brunner, Everett A. Foot fin for swimmers. 203,364, 12–28–65, Cl. D71—1.

Burnbaum, Jack. Christmas tree ornament, or similar article. 203,341, 12–28–65, Cl. D29—1.

Butler Mfg. Co.: *See*—
Orr, Robert P. 203,336.

Byer, Edward L., and J. L. Stark, to International Telephone and Telegraph Corp. Combined television receiver and printer. 203,342, 12–28–65, Cl. D26—14.

Chernock, Stephen P. Smoking pipe. 203,377, 12–28–65, Cl. D85—8.

Cole National Corp.: *See*—
Wisch, Sidney S. 203,367.

Crawford, Hubert H. Life preserver. 203,363, 12–28–65, Cl. D71—1.

Cupp, Gilbert W. Sign. 203,328, 12–28–65, Cl. D1—12.

Davies, John W., III, to Gibson Bros. Co. Tiller housing. 203,347, 12–28–65, Cl. D40—1.

Dziach, Joseph. Fire screen or similar article. 203,369, 12–28–65, Cl. D81—5.

Empire Brushes, Inc.: *See*—
Richardson, William P. 203,362.

Federal Sign and Signal Corp.: *See*—
Gosswiller, Earl W. 203,352.

Federman, Murray, to Glamorene, Inc. Display rack for floor cleaning equipment and the like. 203,366, 12–28–65, Cl. D80—10.

Fitchko, Mary G. and M. H. Helmet. 203,329, 12–28–65, Cl. D3—13.

Fitchko, Michael H.: *See*—
Fitchko, Mary G. and M. H. 203,329.

Gaither, Alva. Drip molding trim or the like. 203,337, 12–28–65, Cl. D13—6.

Genoud & Cie, Etablissements: *See*—
Genoud, Jean. 203,348.

Genoud, Jean, to Etablissements Genoud & Cie. Lighter. 203,348, 12–28–65, Cl. D48—27.

Gibson Bros. Co.: *See*—
Davies, John W., III. 203,347.

Glamorene, Inc.: *See*—
Federman, Murray. 203,366.

Gosswiller, Earl W., to Federal Sign and Signal Corp. Combined warning light and siren for emergency vehicles. 203,352, 12–28–65, Cl. D48—32.

Gross, Harold I., to National Silver Co. Gas igniter gun. 203,349, 12–28–65, Cl. D48—27.

Halroy Products Ltd.: *See*—
Holland, Hubert R., and Lennard. 203,353.
Holland, Hubert R., and Lennard. 203,354.

Hammerli Aktiengesellschaft: *See*—
Bertschinger, Jacques. 203,344.

Harold, Robert E., to Kirkhill Inc. Flush tank flapper valve unit. 203,378, 12–28–65, Cl. D91—1.

Hartzell, Elizabeth D. Cabinet. 203,346, 12–28–65, Cl. D38—19.

Heston, Russell G., Jr., to Union Carbide Corp. Swim board. 203,365, 12–28–65, Cl. D71—1.

Holland, Hubert R., and A. W. Lennard, to Halroy Products Ltd. Vehicle parking light. 203,353, 12–28–65, Cl. D48—32.

Holland, Hubert R., and A. W. Lennard, to Halroy Products Ltd. Vehicle parking light. 203,354, 12–28–65, Cl. D48—32.

Hord, Lawrence T., Jr., to Raiford's, Inc. Building adapted for use as a children's shoe store or the like. 203,335, 12–28–65, Cl. D13—1.

Horgan, William J., Jr.: *See*—
Blum, Louis, and Horgan. 203,338.

International Telephone and Telegraph Corp.: *See*—
Byer, Edward L., and Stark. 203,342.

Kaiser Aluminum & Chemical Corp.: *See*—
Miller, Charles H., and Wilson. 203,372.

Keim, Robert, to Vericco, Inc. Eyeglass frame. 203,358, 12–28–65, Cl. D57—1.

Keller, Harrison. Biscuit basket for pop-up toasters. 203,371, 12–28–65, Cl. D81—10.

Kirkhill Inc.: *See*—
Harold, Robert E. 203,378.

Kuziak, Matthew. Work-holding "V" block and clamp. 203,355, 12–28–65, Cl. D54—13.

Lanczi, Leslie E. Soapholder. 203,331, 12–28–65, Cl. D4—3.

Lennard, Anthony W.: *See*—
Holland, Hubert R., and Lennard. 203,353.
Holland, Hubert R., and Lennard. 203,354.

McNair, Samuel L. Tub for massage apparatus. 203,373, 12–28–65, Cl. D83—1.

Marttinen, Eino K. Shampoo squeeze bottle. 203,359, 12–28–65, Cl. D58—6.

Meckley, Daniel G., III, to The Tappan Co. Cooking range. 203,368, 12–28–65, Cl. D81—4.

Miller, Charles H., and W. J. Wilson, to Kaiser Aluminum & Chemical Corp. Refractory block. 203,372, 12–28–65, Cl. D81—25.

Mosteller, Rockford E. Combined restaurant enclosure and entrance unit. 203,333, 12–28–65, Cl. D13—1.

Mustee, Bernard E., to E. L. Mustee & Sons, Inc. Double laundry tub and cabinet combination. 203,330, 12–28–65, Cl. D4—2.

Mustee, E. L., & Sons, Inc.: *See*—
Mustee, Bernard E. 203,330.

National Silver Co.: *See*—
Gross, Harold I. 203,349.

Orr, Robert P., to Butler Mfg. Co. Building trim and gutter structure. 203,336, 12–28–65, Cl. D13—1.

Peterson, Jerold R., to Sunbeam Corp. Electric knife handle. 203,339, 12–28–65, Cl. D22—3.

Piland, Vollie M., to Ainslie Perrault. Building. 203,334, 12–28–65, Cl. D13—1.

Raiford's, Inc.: *See*—
Hord, Lawrence T., Jr. 203,335.

Reed, Gordon H., to Television Research Ltd. Cartridge magnetic tape player or similar article. 203,343, 12–28–65, Cl. D26—14.

Richardson, William P., to Empire Brushes, Inc. Automobile windshield defroster or similar article. 203,362, 12–28–65, Cl. D62—2.

Roberts, Jack L., and G. L. Webb, to Wells Mfg. Corp. Combination wrench screwdriver and feeler gauge tool. 203,356, 12–28–65, Cl. D54—13.

Russo, Rosario. Rotary hypodermic syringe. 203,374, 12–28–65, Cl. D83—12.

Russo, Rosario. Rotary hypodermic syringe. 203,375, 12–28–65, Cl. D83—12.

Solar Light Mfg. Co.: *See*—
Bobrick, Mitchell. 203,350.
Bobrick, Mitchell. 203,351.

Stark, Jack L.: *See*—
Byer, Edward L., and Stark. 203,342.

Sukert, Jordan V. and L. M. Dispenser for discharging powder-like materials. 203,345, 12–28–65, Cl. D31—3.

Sukert, Lawrence M.: *See*—
Sukert, Jordan V. and L. M. 203,345.
Sunbeam Corp.: *See*—
Peterson, Jerold R. 203,339.
Tappan Co., The: *See*—
Meckley, Daniel G., III. 203,368.
Television Research Ltd.: *See*—
Reed, Gordon H. 203,343.
Thompson, Benjamin A., and E. F. Weidner, Jr. Cigarette extinguisher. 203,376, 12–28–65, Cl. D85—2.
Tilley Lamp Co. Ltd., The: *See*—
Whitaker, Norman A. 203,370.
Towlsaver, Inc.: *See*—
Tucker, Council A. 203,332.
Tucker, Council A., to Towlsaver, Inc. Toilet tissue dispenser. 203,332, 12–28–65, Cl. D4—3.
Union Carbide Corp.: *See*—
Heston, Russell G., Jr. 203,365.
Vericco, Inc.: *See*—
Keim, Robert. 203,368.
Webb, George L.: *See*—
Roberts, Jack L., and Webb. 203,356.
Weidner, Edwin F., Jr.: *See*—
Thompson, Benjamin A., and Weidner. 203,376.
Wells Mfg. Corp.: *See*—
Roberts, Jack L., and Webb. 203,356.
Wheaton Glass Co.: *See*—
Becker, John F. 203,360.
Becker, John F. 203,361.
Whitaker, Norman A., to The Tilley Lamp Co. Ltd. Portable cooking stove. 203,370, 12–28–65, Cl. D81—10.
Wilson, William J.: *See*—
Miller, Charles H., and Wilson. 203,372.
Wisch, Sidney S., to Cole National Corp. Display cabinet for knives and the like. 203,367, 12–28–65, Cl. D80—11.
Wlodyga, Richard J.: *See*—
Adler, Irving N. 203,357.

LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 28TH DAY OF DECEMBER, 1965

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

A/SA. Andersens Staalvarefabrik: *See*—
Andersen, Anders. 3,225,840.
ACF Industries, Inc.: *See*—
Anderson, Clifford E. 3,226,078.
Gulick, Ronald A., and Lowrey. 3,226,082.
Lowrey, William E. 3,226,080.
Rollins, Dallas W., and Fischer. 3,225,707.
Abbott Laboratories: *See*—
Mhatre, Madhukar V. 3,226,430.
Zaugg, Harold E., De Net, and Michaels. 3,226,419.
Abbott, William B.: *See*—
Klepper, Herbert, and Abbott. 3,225,908.
Abbott, William B., to Eltra Corp. Spaceband box for typographical composing machines. 3,225,906, 12–28–65, Cl. 199—22.
Abbott, William B.: *See*—
Klepper, Herbert, and Abbott. 3,225,909.
Aberg, Anders B. Fastener and distance means for tubes and conductors. 3,225,506, 12–28–65, Cl. 52—701.
Abraham, Edward P., G. G. F. Newton, and C. W. Hale, to National Research Development Corp. Cephalosporin C_A derivatives. 3,226,384, 12–28–65, Cl. 260—239.75.
Adams, Cecil S. and J. B., F. B. Bailey, and E. F. Walker. Textile production control apparatus. 3,226,726, 12–28–65, Cl. 346—34.
Adams, James B.: *See*—
Adams, Cecil S. and J. B., Bailey, and Walker. 3,226,726.
Adams, Lester R., A. F. Collins, E. B. Eichelberger, and M. J. Kelly, to International Business Machines Corp. Address modification matrices. 3,226,686, 12–28–65, Cl. 340—172.5.
Adamski, Tadeusz W., and B. Kalinowski. Method of and apparatus for grinding hard materials. 3,226,042, 12–28–65, Cl. 241—30.
Adelaar, Hans H., to International Standard Electric Corp. Resonant transfer time division multiplex system using transistor gating circuits. 3,226,483, 12–28–65, Cl. 179—15.
Aero Service Corp.: *See*—
Snyder, Charles H. 3,225,461.
Aeronca Mfg. Corp.: *See*—
Anspach, Roy L. 3,225,483.
Anspach, Roy L. 3,226,524.
Brunner, John E., and Hallum. 3,226,720.
Aerospace Corp., The: *See*—
Josephson, Vernal. 3,226,591.
Agfa Aktiengesellschaft: *See*—
Himmelmann, Wolfgang, Ulrich, and Meckl. 3,226,234.
Agruss, Meyer S., to Miehle-Goss-Dexter, Inc. Photosensitive compositions containing leucocyanides of triphenylmethane dyes. 3,226,233, 12–28–65, Cl. 96—82.
Aichi Kogyo Kabushiki Kaisha: *See*—
Toyoda, Shoichiro, and Sakakibara. 3,226,013.
Aircraft Armaments, Inc.: *See*—
Sauerbrey, Wilmer J. E. 3,226,090.
Alas, Raigo: *See*—
Paterson, Patrick J., Alas, and Leavitt. 3,226,059.
Albert, Harry E.: *See*—
Garvey, Benjamin S., Jr., Albert, and Whiton. 3,226,371.
Albertson, Orris E., to Dorr-Oliver Inc. Anaerobic digestion of waste sludges. 3,226,317, 12–28–65, Cl. 210—6.
Albiswerk Zurich A.G.: *See*—
Alder, Jakob, and Reinhard. 3,225,611.
Koller, Alois, and Tschannen. 3,226,680.
Albright, Jay D., L. A. Mitscher, and L. Goldman, to American Cyanamid Co. Ring E. substituted yohimbanes. 3,226,391, 12–28–65, Cl. 260—287.
Alden Self-Transist System Corp.: *See*—
Gilvar, Martin, and Alden. 3,225,704.
Alden, William L.: *See*—
Gilvar, Martin, and Alden. 3,225,704.
Alder, Hubert: *See*—
Winter, Stanley, and Alder. 3,225,377.
Alder, Jakob, and L. Reinhard, to Albiswerk Zurich A.G. Directional radar-antenna drive with selective coupling permitting either conical or oscillatory scan. 3,225,611, 12–28–65, Cl. 74—86.
Aldersley, Kenneth: *See*—
Davey, Norman, and Aldersley. 3,225,398.
Alexander, William O. Pressure injector. 3,225,554, 12–28–65, Cl. 62—77.
Allegretti, John E., H. Gutsche, and W. J. McAleer, to Merck & Co., Inc. Monocrystalline elongate polyhedral semiconductor material. 3,226,269, 12–28–65, Cl. 148—33.5.
Allen, Billie W. Automatic sunken watercraft marker buoy. 3,225,368, 12–28–65, Cl. 9—9.
Allen, Carling D. Suspended seating for tables. 3,226,154, 12–28–65, Cl. 297—142.
Allen, Claude V., to The Inta-Roto Machine Co., Inc. Butt splicer control. 3,226,279, 12–28–65, Cl. 156—505.
Allen, Edward L., to Ingersoll-Rand Co. Wire wrapping device. 3,225,796, 12–28–65, Cl. 140—117.
Allen, George R., Jr., and J. F. Poletto, to American Cyanamid Corp. Substituted 3-(α-acyloxy-lower alkyl)-4,7-indoloquinones. 3,226,385, 12–28–65, Cl. 260—240.
Allen, George R., Jr., and J. F. Poletto, to American Cyanamid Co. 3-formyl- and 3-lower alkanoyl-4,7-indoloquinones. 3,226,397, 12–28–65, Cl. 260—319.
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Allied Chemical Corp.: *See*—
Gordon, Joseph, Nychka, and Woolf. 3,226,448.
Hibbitts, Charles H., and Sansing. 3,226,222.
All-N-One Products Corp.: *See*—
Bule, Edward R. 3,225,734.
Almond, James A.: *See*—
Bradmiller, Richard W., and Almond. 3,226,567.
Alsobrooks, Darriel L., A. C. Hamalian, and R. Oldenburger, to Curtiss-Wright Corp. Isochronous, centrifugally actuated, hydaulic governor. 3,225,540, 12–28–65, Cl. 60—52.
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Amdahl, Lowell D., W. T. Brian, Jr., A. D. Scarbrough, E. J. Schneberger, and R. J. Koerner, said B. Amdahl, Jr., Scarbrough, and Schneberger, assors to The Bunker-Ramo Corp. Modular computer system connection rejection capability. 3,226,687, 12–28–65, Cl. 340—172.5.
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Amdahl, Lowell D., W. T. Brian, Jr., A. D. Scarbrough, E. J. Schneberger, and R. J. Koerner; said Amdahl, Brian, Scarbrough, and Schneberger, assors. to The Bunker-Ramo Corp. Modular computer system master disconnect capability. 3,226,689, 12–28–65, Cl. 340—172.5.
American Brake Shoe Co.: *See*—
Devaney, John L. 3,225,873.
American Brass Co., The: *See*—
Voegeli, Henry E. 3,226,140.
American Can Co.: *See*—
Huth, Carl A. 3,225,957.
American Coldset Corp.: *See*—
Wisenbaker, John D., and Stuart. 3,225,828.
American Cyanamid Co.: *See*—
Albright, Jay D., Mitscher, and Goldman. 3,226,391.
Allen, George R., Jr., and Poletto. 3,226,385.
Allen, George R., Jr., and Poletto. 3,226,397.
Allen, George R., Jr., and Poletto. 3,226,398.
Allen, George R., Jr., Remers, and Weiss. 3,226,399.
Bikales, Norbert M. 3,226,416.
Bikales, Norbert M. 3,226,417.
Bitha, Panayota, and Rigler. 3,226,434.
Forster, Warren S. 3,226,247.
Giddings, Sydney A. 3,226,363.
Giddings, Sydney A. 3,226,369.
Martino, Joseph F. 3,226,182.
McCormick, Jerry R. D., Sjolander, and Johnson. 3,226,-305.
McCormick, Jerry R. D., Winterbottom, and Bitha. 3,226,435.
Meyer, Walter E., Patrick, and Mowat. 3,226,393.
Petisi, Joseph, and Boothe. 3,226,436.
Sax, Karl J., Blank, Holmlund, and Evans. 3,226,404.
Seeger, Doris R., and Tomcufcik. 3,226,377.
Seeger, Doris R., and Tomcufcik. 3,226,382.
Siiliteri, Pentti K., and Mills. 3,226,304.
American Enka Corp.: *See*—
Noordenbos, Pieter K. 3,226,047.
American Factors Associates, Ltd.: *See*—
Steele, Clarence R., and Price. 3,226,257.
American Machine & Foundry Co.: *See*—
Gamberini, Goffredo. 3,226,163.
Godfrey, Thomas A., and Gustavson. 3,225,772.
Gustavson, Sterling T. 3,225,933.
Gustavson, Sterling T. 3,225,773.
Mahoney, William J. 3,226,698.
Moore, Thomas W. 3,226,626.
Sicard, Marcel C. 3,225,929.
American Motors Corp.: *See*—
Anderson, Donald A. 3,225,947.
American Optical Co.: *See*—
Brandt, Milo O. 3,225,497.
Woodcock, Richard F. 3,226,589.
American Telephone and Telegraph Co.: *See*—
Habighorst, Henry J. 3,226,088.
Ametek, Inc.: *See*—
Sebok, Albert L. 3,225,422.

Amman, Jurg: *See*—
Hindermann, Peter, Kolliker, Amman, and Pugin. 3,226,-176.

Ampex Corp.: *See*—
Miller, Jerry W. 3,226,653.

Amphenol Corp.: *See*—
Concelman, Carl W. 3,226,515.

Amthor, Franklin R., Jr., J. M. Katzfey, R. E. Kanitz, G. L. Schaefer, R. P. Kodet, and F. Haban, to Hamilton Mfg. Co. Shelf construction. 3,225,937, 12–28–65, Cl. 211—148.

Ancar A.G., Firma: *See*—
Breidthardt, Edgar. 3,226,134.

Anderegg, Billy A.: *See*—
Field, Henry M., and Anderegg. 3,225,916.

Andersen, Anders, to A/SA. Andersens Staalvarefabrik. Resilient harrow tooth. 3,225,840, 12–28–65, Cl. 172—708.

Anderson, Burton C., and G. R. Morlock, to E. I. du Pont de Nemours and Co. Preparation of trifluoromethyl fluoroformate and bistrifluoromethyl carbonate. 3,226,418, 12–28–65, Cl. 260—463.

Anderson, Clifford E., to ACF Industries, Inc. Gate valve. 3,226,078, 12–28–65. Cl. 251—62.

Anderson, Donald A., to American Motors Corp. Dump hopper. 3,225,947, 12–28–65, Cl. 214—302.

Anderson, Eugene A., to Scovill Mfg. Co. Machine for setting fasteners upon blanks. 3,225,994, 12–28–65, Cl. 227—39.

Anderson, Wayne E. Bumper carrier for a two-wheeled vehicle. 3,225,986, 12–28–65, Cl. 224—42.03.

Andex Corp.: *See*—
Cirrincione, Vincent W. 3,225,680.

Andrew Corp.: *See*—
Yang, Richard F. H. 3,226,722.

Angel, Henry R.: *See*—
Morgan, A. Henry, Uhl, and Angel. 3,226,508.

Angilello, Joseph, D. Magaletto, and A. Pinori, to Pam Plastics Inc. Apparatus for making a plastic painting shield. 3,225,387, 12–28–65, Cl. 18—19.

Angrisani, Aldo. Magnetic device for circuit control. 3,226,-506, 12–28–65, Cl. 200—87.

Anspach, Roy L., to Aeronca Mfg. Corp. Method and apparatus for indexing and assembling a core strip to a honeycomb core panel. 3,225,433, 12–28–65, Cl. 29—429.

Anspach, Roy L., to Aeronca Mfg. Corp. Apparatus for fabricating honeycomb material. 3,226,524, 12–28–65, Cl. 219—78.

Anspon, Harry D., and R. P. Cahoy, to Gulf Oil Corp. N,N'-bisolelyloxamide. 3,226,437, 12–28–65, Cl. 260—561.

Anstett, Raymond M., to Colgate-Palmolive Co. Detergent bar. 3,226,330, 12–28–65, Cl. 252—117.

Anthon, Erik W.: *See*—
Baruch, Hans, and Anthon. 3,225,645.

Anthon, Erik W., to Warner-Lambert Pharmaceutical Co. Method for attaching connector elements to resiliently flexible tubing. 3,225,435, 12–28–65, Cl. 29—432.2.

Anthon, Erik W., to Warner-Lambert Pharmaceutical Co. Turntable drive. 3,225,628, 12–28–65, Cl. 74—822.

Applegarth, Alexander R., Jr., to National Aeronautical Corp. Airborne distance measuring equipment. 3,226,714, 12–28–65, Cl. 343—6.8.

Aquariums Inc.: *See*—
Willinger, Allan H. 3,225,930.
Willinger, Allan H. and H. W. 3,225,736.

Arcabasso, Domenico. Agitator for breading meats. 3,225,-735, 12–28–65, Cl. 118—19.

Archer, William E., to Joy Mfg. Co. Cyclone dust collector having a wear shield. 3,225,525, 12–28–65, Cl. 55—346.

Arko, Robert E., to Teletype Corp. Code generating mechanism. 3,226,477, 12–28–65, Cl. 178—17.

Armbrust, Henry N. Method for cleaning a submerged surface. 3,226,259, 12–28–65, Cl. 134—21.

Armstrong, Alfred: *See*—
Jacobs, William H., Nahikian, and Armstrong. 3,225,965.

Arnold, Vernon W., and D. E. Pickart, to Standard Oil Co. Method of preparing blends of polystyrene, butadiene elastomer and graft copolymer of styrene on said elastomer. 3,226,453. 12–28–65, Cl. 260—876.

Art Amiki Kabushiki Kaisha: *See*—
Tanaka, Makoto. 3,225,568.

Artzt, Maurice, to Radio Corp. of America. Cathode ray tube display and printer controlled by coded mask. 3,226,-706, 12–28–65, Cl. 340—324.

Ash, Jaime: *See*—
Kupferberg, Kenneth, and Ash. 3,226,628.

Ashworth Bros. Inc.: *See*—
Roinestad, Gerald C. 3,225 898.
Roinestad, Gerald C. 3,225,902.

Associated Electrical Industries Ltd.: *See*—
Craig, Robert D. and Green. 3,226,542.

Athas, Stanley T., to United States of America, Army. Hose nozzle supporting device. 3,225,974, 12–28–65, Cl. 222—529.

Atkin, Leonard, and C. Roth, to Stonco Electric Products Co. Lighting fixture. 3,226,536, 12–28–65, Cl. 240—3.

Atkinson, Ralph L., and P. A. Florio, to Johnson & Johnson. Cleaning device. 3,225,375, 12–28–65, Cl. 15—210.

Atlantic Products Corp.: *See*—
Pollak, Victor S., and Cart. 3,225,806.

Atlantic Refining Co., The: *See*—
Bonetti, Giovanni A., De Savigny, and Michalski. 3,226,442.
Taylor, Robert C., and Meehan. 3,226,331.

Atlantic Research Corp.: *See*—
Vayda, Michael, M., Jr., Darley, Jensen, and Talton. 3,226,097.

Atlas Chemical Industries, Inc.: *See*—
Greth, Gerald G., and Wilson. 3,226,375.

Ataukawa, Masumi, K. Matsumoto, and H. Murokawa, to Mitsubishi Shipbuilding & Engineering Co. Ltd. Process of treating waste gas containing sulfur oxide. 3,226,192. 12–28–65, Cl. 23—167.

Auger, Ernest P., to Raytheon Co. Transistor amplifier having means for compensating for nonlinear base-to-emitter impedance. 3,226,652, 12–28–65, Cl. 330—24.

Augunas, Algis G., to General Motors Corp. Remotely controlled mirror. 3,225,621, 12–28–65, Cl. 74—501.

Aussedat, Robert A. M.: *See*—
Behar, Robert, Cahn, Dubien, and Aussedat. 3,226,451.

Austin, Lowell W.: *See*—
Smith Edwin J., Vucich, and Austin. 3,226,315.

Austin Motor Co. Ltd.: *See*—
Page, Graham D. 3,225,618.

Autenrieth, Hans, G. K. Peuschel, and G. Weichart, to Kali-Forschungs-Anstalt, Gesellschaft mit beschrankter Haftung. Process for the electrostatic separation of carnallite-containing crude salts. 3,225,924, 12–28–65, Cl. 209—9.

Autio, Paul, to Illinois Tool Works Inc. Washer detector for screw and washer assembly machine. 3,225,371, 12–28–65, Cl. 10—155.

Automatic Electric Laboratories, Inc.: *See*—
Hartz, Joseph M., and Vogel. 3,226,494.
Martin, Charles M., Myers, Le Gros, Evans, and Marbeine. 3,226,478.
Reimer, William A. 3,226 493.
Rust, Willard A. 3,226,479.
Sikorski, Frank B., and Spellnes. 3,226,488.

Avco Corp.: *See*—
McNair, Robert J. 3,226,643.

Ayres, Waldemar A. Word writing machine producing closed-up printing in response to simultaneous actuation of keys. 3,225,883, 12–28–65 Cl. 197—11.

Azuma, Yasuo, and T. Emoto, to Fujitsu Ltd. Pulse separation spacing control circuit. 3,226,577, 12–28–65, Cl. 307—88.5.

BTR Industries Ltd.: *See*—
Singleton George, and Ross. 3,226,355.

Bachelor, William B., to United States of America, Navy. Pulse-amplitude discriminating passive delay filter useful at amplifier input to increase dynamic range. 3,226,660, 12–28–65, Cl. 333—20.

Bachl, Herbert. Rotary turbine. 3,226,085, 12–28–65, Cl. 253—164.

Baer, Donald G., A. S. Van Slyke and R. C. Woofter, to General Motors Corp. Rectangular conductor harness means and attachments. 3,226,668, 12–28–65, Cl. 339—91.

Baier, Edwin: *See*—
Schimmelschmidt, Kurt, Hoffmann, Baier, and Ulmer. 3,226,395.

Bailey, Charles R. Chart for indicating the sales space occupancy periods of products displayed for sale. 3,225,-473, 12–28–65, Cl. 40—124.

Bailey, Felton B.: *See*—
Adams, Cecil S. and J. B., Bailey, and Walker. 3,226,726.

Balaz, Joseph K., and R. A. Kelly, to Flinn & Dreffein Engineering Co. Insulated furnace members. 3,226,101, 12–28–65 Cl. 263—6.

Baldwin, D. H., Co.: *See*—
Hugle, Frances B. and W. B. 3,226,271.

Ball, Arthur F., to Essex Products, Inc. Reinforced heel and dowel. 3,225,465, 12–28–65, Cl. 36—34.

Ballantyne Instruments and Electronics Inc.. *See*—
Poole, Gean, and Hoff. 3,226,000.

Ballestra, Mario. Apparatus for continuously separating liquids having different specific gravities. 3,225,936, 12–28–65, Cl. 210—519.

Balston, W. & R., Ltd.: *See*—
Knight, Colin S. 3,226,380.

Balzer and Droll, Schnitt- und Werkzeugbau: *See*—
Dröll, Hans, and Muskulus. 3,226,046.

Ban, Thomas E., to McDowell-Wellman Engineering Co. Apparatus for the production of combustible gases from solid carbonaceous materials. 3,226,212, 12–28–65, Cl. 48—63.

Bandel, Alberto: *See*—
Bezzi, Silvio, Gallazzo, and Bandel. 3,226,366.

Bänziger, Ernst. Apparatus for producing whipped cream. 3,226,100, 12–28–65, Cl. 261—140.

Baptist, James N., P. R. Steyermark, and P. L. Veltman, to W. R. Grace & Co. Microbiocides in hydrocarbon fuel compositions. 3,226,210, 12–28–65, Cl. 44—66.

Baptist, James N., and J. B. Ziegler, to W. R. Grace & Co. Method of making absorbable surgical sutures from poly beta hydroxy acids. 3,225,766, 12–28–65, Cl. 128—335.5.

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Barclay, Ralph G.: *See*—
Warren, Raymond W., Barclay, and Moorhead. 3,225,-780.

Barkow, William H., and C. C. Matthews, to Radio Corp. of America. Electromagnetic deflection yoke. 3,226,588, 12–28–65, Cl. 313—76.

Barnes, Elmer J. Hand truck. 3,225,868, 12–28–65, Cl. 187—9.

Barney Machinery Co.: *See*—
Lemley, Kenneth F. 3,225,544.

Barnstead, Gardner E., D. F. Letosky, and D. E. Missett, to I-T-E Circuit Breaker Co. Adjustable riser duct floor support. 3,226,472, 12–28–65, Cl. 174—100.

Barr, Irwin R., to United States of America, Army. Multi-package launcher. 3,225,654, 12–28–65, Cl. 89—1.5.

Barrera, Salvatore E., to Muskin Mfg. Co., Inc. Sectional above ground swimimng pool construction. 3,225,362, 12–28–65, Cl. 4—172.

Barrett, Donald L., to The Goodyear Tire & Rubber Co. Airplane tire. 3,225,812, 12–28–65, Cl. 152—361.

Barrett, Wayne T., to W. R. Grace & Co. Organo-phosphorus compounds. 3,226,425, 12–28–65, Cl. 260—465.8.

Barth, Bruce P.: *See*—
Daniels, Rupert S., and Barth. 3,226,214.

Bartha, Kenneth J.: *See*—
Schott, Arthur K., Bartha, and Rovoldt. 3,225,636.

Barton, Otis. Balance chamber for deep sea coring. 3,225,-602, 12–28–65, Cl. 73—425.2.

Baruch, Hans, and E. W. Anton, to Warner-Lambert Pharmaceutical Co. Cuvette and supply system therefor. 3,225,-645, 12–28–65, Cl. 88—14.

Bascien-Blessing Co., The: *See*—
Ivins, Nelson J. 3,226,139.
Shaw, Harr N., and Hanson. 3,226,079.

Bateman, John A. M., to Fieldcrest Mills, Inc. Convertible merchandise display fixture. 3,226,172, 12–28–65, Cl. 312—140.1.

Battistone, Nick. Fixture for grinding machine tools. 3,225,-494, 12–28–65, Cl. 51—220.

Battle Creek Equipment Co.: *See*—
Underhill, Richard S. 3,226,115.

Bauer, Konrad E., and H. R. Carlson, to Hupp Corp. Gas burners. 3,225,815, 12–28–65, Cl. 158—99.

Bauer, Robert D.. *See*—
Kelley, Carl S., and Bauer. 3,225,550.

Baumgarten, Ulirich: *See*—
Kruger, Heinz, and Baumgarten. 3,225,781.

Bayles, John J., and A. A. Denny. Blast actuated closure valve and particulate filter. 3,225,526, 12–28–65, Cl. 55—420.

Bayuk Cigars Inc.: *See*—
Bulger, Robert F., Lucas, Gurdack, and Cain. 3,225,512.

Beaird, Francis M., Jr., and P. Kobetz, to Ethyl Corp. Preparation of tetramethyllead and catalyst therefor. 3,226,408, 12–28–65, Cl. 260—437.

Beaird, Francis M., Jr., and P. Kobetz, to Ethyl Corp. Tetraalkyllead process. 3,226,409, 12–28–65, Cl. 260—437.

Beardmore, James W.: *See*—
Lorensen, Lyman E., and Beardmore. 3,226,326.

Beattie, John R., and K. J. B. Wolfe, to Pilkington Bros. Ltd. Method of producing toughened glass. 3,226,215, 12–28–65, Cl. 65—29.

Beaty, Charles A., to RFD, Inc. Variable frequency microwave cavity signal generator with regulated supply and feed-back compensation. 3,226,656, 12–28–65, Cl. 331—186.

Becke, Margot, to Olin Mathieson Chemical Corp. Composition of the formula $P_4N_5Cl_4$ and process for preparing the same. 3,226,181, 12–28–65, Cl. 23—14.

Becker, Gottfried: *See*—
Bungardt, Karl, and Becker. 3,226,207.

Becker, Hermann. Apparatus for dividing a film of thermoplastic material into small strips. 3,225,634, 12–28–65, Cl. 83—171.

Becker, Richard M., to Ibis Enterprises Ltd. Method and apparatus for making reinforced plastic tubing. 3,226,273. 12–28–65, Cl. 156—195.

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Behr, Otto M.: *See*—
Broderick, John E., and Behr. 3,225,582.

Behr, William F. Fluid shock absorbing bumper. 3,226,146, 12–28–65, Cl. 293—30.

Beiderbecke, Charles H., and M. B. Emig, to International Business Machines Corp. Document feeding device. 3,225,887, 12–28–65, Cl. 197—130.

Belcher, George W., to Union Carbide Corp. Casting process using borax-silica slag. 3,225,399, 12–28–65, Cl. 22—200.

Belfit Robert W., Jr.: *See*—
Nelson, Rodney A., and Belfit. 3,226,213.

Belknap, Donald J. Apparatus for making miniature incandescent lamps. 3,226,218, 12–28–65, Cl. 65—139.

Bell Telephone Laboratories, Inc.: *See*—
James, Dennis B. 3,226 484.
Monforte, Frank R., and Schnettler. 3,226,327.

Bemis Co., Inc.: *See*—
Mueller, Robert C. 3,226,009.

Bencoe, Paul, to Southwest International, Inc. Storage and shipping kit for stove-lantern apparatus. 3,225,756, 12–28–65, Cl. 126—9.

Bendix Corp., The: *See*—
Rosenbaum, Erik. 3,226,570.

Benetti, John G., ⅓ to G. A. Petersen, and ⅓ to A. E. Petersen. Support for trencher tooth. 3,225,468, 12–28–65, Cl. 37—191.

Bengston, Phillip S., to United States of America, Navy. Wave shaping diode network. 3,226,578, 12–28–65, Cl. 307—107.

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Bergman, Lars O. Process for acid and then alkaline refining fatty oils. 3,226,407, 12–28–65, Cl. 260—424.

Bergquist, Earl: *See*—
Nehl, George J. 3,226,118.

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Engel, Georg. 3,226,050.

Betts Machine Co.: *See*—
Hanson, John R., and Johnson. 3,226,537.

Betts, Mazeppa D., to Sylvania Electric Products, Inc. Sealed inductor. 3,226,664, 12–28–65, Cl. 336—96.

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Bhrany, Upendra N., to United States Steel Corp. Particle classifier. 3,225,927, 12–28–65, Cl. 209—479.

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Biehl, Heinrich. Pig rearing houses. 3,225,737, 12–28–65, Cl. 119—16.

Bierkarre, Gert F. H.: *See*—
Heinze, Karl. A. O., and Bierkarre. 3,226,549.

Bikales, Norbert M., to American Cyanamid Co. Cyanoethyl alkylxanthate esters. 3.226,416. 12–28–65, Cl. 260—455.

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Schwartz, Seymour S., and Bilow. 3,226,344.

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Bird, Walter W., P. A. Strobel, P. I. Rongved, and D. P. Zamore. Inflatable form for a concrete building. 3,225,-413, 12–28–65, Cl. 25—128.

Bishop, Thomas D., to The Deritend Engineering Co. Ltd. Suction feed mechanism for corrugated and like cardboard. 3,226,108, 12–28–65, Cl. 271—32.

Bitha, Panayota, and N. E. Rigler, to American Cyanamid Co. Preparation of neutral 6-demethyl-7-chlorotetracycline. 3,226,434, 12–28–65, Cl. 260—559.

Black. Bernard. Gas and liquid contact device. 3,225,522, 12–28–65, Cl. 55—223.

Black, H. R., Co.: *See*—
Black, Hugh R. 3,225,928.

Black, Hugh R., to H. R. Black, Co. Endless belt filter. 3 225 928, 12–28–65, Cl. 210—121.

Black, Stewart L., T. L. Hanson, and B. G. Nail, to The Vendo Co. Apparatus for preparing and discharging water having controlled amounts of carbonation. 3,226,099, 12–28–65, Cl. 261—35.

Blanchard, Wesley A., and J. C. Rhode, to E. I. du Pont de Nemours and Co. Process for preparing perfluoroalkyl iodides. 3,226,449, 12–28–65, Cl. 260—653.1.

Bland, Reginald B., and F. J. Ewing, to The Catacycle Co., Inc. Conversion of heats of chemical reactions to sensible energy. 3,225,538, 12–28–65, Cl. 60—37.

Blank, Robert H.: *See*—
Sax, Karl J., Blank, Holmlund, and Evans, Jr. 3,226,-404.

Blazejak, Manfred, and R. Stroh, to Farbenfabriken Bayer Aktiengesellschaft. Process for the production of aryl magnesium chlorides. 3,226,450, 12–28–65, Cl. 260—665.

Blickle, Karl, E. Hoflich, and W. Hub, to J. M. Voith, G.m.b.H. Cycloidal ship propeller. 3,225,834, 12–28–65, Cl. 170—148.

Block, Leo, to Transicoid Corp. Generator-fed A.C. motor control with convertible-pole motor and standby source. 3,226,619, 12–28–65, Cl. 318—106.

Bloom, Justin L., to Martin-Marietta Corp. Thermal neutron flux measuring device using two boron thermistors. 3,226,-547, 12–28–65, Cl. 250—83.1.

Bloom, Stanley: *See*—
Berghammer, Johannes, and Bloom. 3,226,595.

Blount, Luther H. Power assist for vessel steering mechanism. 3,225,730, 12–28–65, Cl. 114—144.

Bochumer Verein fur Gusstahlfabrikation A.G.: *See*—
Sickbert, Adolf. 3,226,224.

Bockmann, Arthur. Advertising device. 3,225,476, 12–28–65, Cl. 40—130.

Bofors, Aktiebolaget: *See*—
Ekenstam, Bo T. af, von Fieandt, and Furendal. 3,226,-297

Bogar, William H., E. L. Davis, R. L. Hassenauer, P. J. Fakurar, and J. C. Ruffolo, to E. I. du Pont de Nemours and Co. Beam racks for railroad cars. 3,225,706, 12–28–65, Cl. 105—367.

Bohlinger, Ernst, and S. Friedman. Pearl slide shortener and pin adaptor. 3,225,565, 12–28–65, Cl. 63—2.

Bolkow Gesellschaft mit beschrankter Haftung, Firma: *See*—
Glockl, Hans. 3,225,458.

Bonner, Eugene V., Jr., to Sole Mfg. Co., Inc. Ski and pole carrier. 3,225,987, 12–28–65, Cl. 224—45.

Bonetti, Giovanni A., C. B. De Savigny, and C. Michalski, to The Atlantic Refining Co. Preparation of primary amines from 1-nitro-olefins. 3,226,442, 12–28–65, Cl. 260—583.

Boothe, James H.: *See*—
Petisi, Joseph, and Boothe. 3,226,436.

Borah, John E. Ball striking head. 3,226,120, 12–28–65, Cl. 273—83.

Borg-Warner Corp.: *See*—
Robbins, James D., and Curtis. 3,225,572.
Talamonti, John. 3,225,436.

Boris, Sonia (nee Jokelson), to Societe Technique de Pulverisation (par abreviation STEP). Vaporizer having first and second piston construction. 3,226,035, 12–28–65, Cl. 239—361.

Borman, William F. H., to General Electric Co. Functional aromatic substituents in polyphenylene oxides. 3,226,361, 12–28–65, Cl. 260—47.

Bosch, Robert, G.m.b.H.: *See*—
Zielasek, Gotthold. 3,226,600.

Bostcrom Corp.: *See*—
Reinfeldt, Edward J., and Radke. 3,226,157.

Bottomley, Roy, R. Greenwood, J. A. Wild, and R. Kelly. Travelling apparatus for cleaning machine and floor surfaces in manufacturing plants. 3,225,378, 12–28–65, Cl. 15—312.

Bournazel, Claude L.: *See*—
Moulin, Jacques F., and Bournazel. 3,225,588.

Bouvier, Maurice: *See*—
Horgen, Helge, and Bouvier. 3,225,751.

Bowman, Arvid N., to Goodman Mfg. Co. Crushing apparatus. 3,226,043, 12–28–65, Cl. 241—101.

Bowman, David F., to I-T-E Circuit Breaker Co. Plural independent channel concentric rotary coupler. 3,226,658, 12–28–65, Cl. 333—1.

Bowman, Dudley, to Gas Appliance Supply Corp. Apparatus for closing the ends of pipes. 3,225,998, 12–28–65, Cl. 228—2.

Boyer, Neil E., to Wehr Corp. Hammer press. 3,225,410, 12–28–65, Cl. 25—84.

Boynton, Ethel C.: *See*—
Boynton, William H. 3,226,296.

Boynton, William H. (deceased), by E. C. Boynton, executrix, to Cutter Laboratories, Inc. Attenuated hog cholera virus vaccine and method of producing same. 3,226,296, 12–28–65, Cl. 167—80.

Bracco Industria Chimica S.p.A.: *See*—
Felder, Ernst, and Pitre. 3,226,431.

Bracutt, Michael, to United States of America, Army. Universal integrating accelerometer. 3,226,503, 12–28–65, Cl. 200—61.45.

Braden, John R., to United States of America, Navy. Bulkhead pipe support. 3,226,136, 12–28–65, Cl. 285—158.

Bradmiller, Richard W., and J. A. Almond, to Martin-Marietta Corp. Active time delay devices. 3,226,567, 12–28–65, Cl. 307—88.5.

Brady, Robert T., M. J. McInerney, and J. L. Czyl, to Vapor Corp. Combustor for a steam generator. 3,226,038, 12–28–65, Cl. 239—405.

Brailkevitch, Michael, and J. G. Warnock, to The English Electric Co. Ltd. Reversible pump turbines. 3,226,083, 12–28–65, Cl. 253—26.

Brain, James W. (deceased); by V. R. Brain, executrix. Apparatus for use in phase relationship determinations including a plurality of coils mounted on a flat structural member. 3,226,638, 12–28–65, Cl. 324—83.

Brain, Virginia R.: *See*—
Brain, James W., and Brain. 3,226,638.

Bran & Lubbe, Messrs: *See*—
Fuhrmann, Hans. 3,226,200.

Branch, Albert P.: *See*—
Huffaker, Vearn J. 3,225,409.

Brandt, Edward A., and C. N. Drevalas, to Western Electric Co., Inc. Device for positioning flat articles. 3,225,635, 12–28–65, Cl. 83—268.

Brandt, Milo O., to American Optical Co. Method and apparatus for forming a lens surface. 3,225,497, 12–28–65, Cl. 51—358.

Braun, Arieh L., 75% to Gamma Refrigeration Co., Inc. Air conditioning devices. 3,225,563, 12–28–65, Cl. 62—277.

Braun, Bernard. Display and delivery for packaged goods. 3,225,939, 12–28–65, Cl. 211—148.

Braun, Japnell D., to Monsanto Research Corp. Sn-Pb-In-Zn solders for gold and gold alloys. 3,226,226, 12–28–65, Cl. 75—175.

Braus, Harry, and F. D. Waas, to National Distillers and Chemical Corp. Polyolefins stabilized with derivatives of xylylene thioethers. 3,226,357, 12–28–65, Cl. 260—45.85.

Breidthardt, Edgar, to Ancar A.G., Firma. Sets of reproduction transfer sheets. 3,226,134. 12–28–65, Cl. 282—28.

Breitenbach, Karl H., and F. Kobler, to SKF Kugellagerfabriken Gesellschaft mit beschrankter Haftung. Drawing mechanism for a spinning machine. 3,225,392, 12–28–65, Cl. 19—267.

Breslow, David S., and H. M. Spurlin, to Hercules Powder Co. Poly(α-diazoalkanoates). 3,226,381, 12–28–65, Cl. 260—239.

Bretsznajder, Stanislaw, W. Kawecki, and J. Porowski, to Instytut Chemii Ogolnej. Method of obtaining insoluble basic aluminum ammonium alum. 3,226,187, 12–28–65, Cl. 23—118.

Bretsznajder, Stanislaw, to Instytut Chemii Ogolnej. Method of preparing silica-free aluminum sulphate solution. 3,226,-189, 12–28–65 Cl. 23—123.

Bretsznajder, Stanislaw, J. Porowski, and J. Lis, to Instytut Chemii Ogolnej. Method of obtaining pure aluminum ammonium alum. 3,226,186, 12–28–65, Cl. 23—118.

Brewington, Philip J. Anchoring device for water closets. 3,225,642. 12–28–65, Cl. 85—9.

Brewster Franklin C., C. L. Shano, and A. G. Ocken, Jr., to Motorola, Inc. Generating system. 3,226,581, 12–28–65, Cl. 310—59.

Brian, Weaver T., Jr.: *See*—
Amdahl, Lowell D. Brian, Scarbrough, Schneberger, and Koerner. 3,226,687.
Amdahl, Lowell D. Brian, Scarbrough, Schneberger, and Koerner. 3,226,688.
Amdahl, Lowell D., Brian, Scarbrough, Schneberger, and Koerner. 3,226,689.

Bridge, Arnold H.: *See*—
Rye, Grover W., Bridge, and Kovac. 3,226,276.

Bridoux, Claude: *See*—
Stohr, Jacques A., and Bridoux. 3,225,437.

Briechle, Joseph, and O. F. Van Brocklin, to Scovill Mfg. Co. Aerosol dispenser button. 3,226,040, 12–28–65, Cl. 239—496.

Brightman, Barrie, and J. C. Perkins, Jr., to General Dynamics Corp. High-speed time division multiplex transmission system. 3,226,709, 12–28–65, Cl. 340—347.

Brigman, Walter L. Valve arrangement for well pumps. 3,225,696, 12–28–65, Cl. 103—6.

Brinker, Emil F., and D. P. Fitzsimmons, deceased (by M. E. Fitzsimmons, executrix), to Westinghouse Air Brake Co. Automatic control system for railway classification yards. 3,226,541, 12–28–65, Cl. 246—182.

Bristol Siddeley Engines Ltd.: *See*—
Gough, Peter J. C., and Hall. 3,226,592.

Broderick, John E., and O. M. Behr, to Martin-Marietta Corp. Method of contouring a honeycomb core. 3,225,582, 12–28–65, Cl. 72—373.

Brodrick, Merrill S. Agricultural dairy establishment. 3,225,739, 12–28–65, Cl. 119—27.

Broome, Joseph W.: *See*—
Hansen, Jack T., and Broome. 3,225,542.

Browder, George G., Jr.: *See*—
Keilen, John J., Jr., and Browder. 3,225 360.

Brown, Boveri & Cie, Aktiengesellschaft: *See*—
Frowein, Egbertus, and Ruffieux. 3,226,513.

Brown, Kernard D. Liquid pump for deep wells. 3,225,697, 12–28–65, Cl. 103—25.

Brown, Robert J. S., H. C. Torrey, and J. Korringa, to Chevron Research Co. Spin-echo well logging. 3,226,632, 12–28–65, Cl. 324—.5.

Browne, Anthony A. B., and J. Mather, to Imperial Chemical Industries Ltd. Process of preparing linear copolyesters of phosphoric acid. 3,226,360, 12–28–65, Cl. 260—47.

Brownlie, Isaac A., and G. A. Wemyss, to Scottish Agricultural Industries Ltd. Manufacture of solid ammonium phosphates. 3,226,184, 12–28–65, Cl. 23—107.

Brueckmann, Helmut, to United States of America, Army. Multiple antenna multiplex system. 3,226,724, 12–28–65, Cl. 343—853.

Brumbach, Robert E. Fluid dispenser. 3,225,972, 12–28–65, Cl. 222—516.

Brunner, John E., and A. Z. Hallum, to Aeronca Mfg. Corp. Integrated airframe bulkhead and cavity antenna. 3,226,-720, 12–28–65, Cl. 343—708.

Brunner, Julius: *See*—
Kuhrt, Friedrich, Maaz, Rainer, and Brunner. 3,226,640.

Bryant, Ben L. Drying assembly. 3,225,912, 12–28–65, Cl. 206—37.

Bryant, Charles J., to General Motors Corp. Load bearing connector. 3,226,470, 12–28–65, Cl. 174—79.

Bryant, Irvin E., to The Lufkin Rule Co. Micrometer measuring device having feelers. 3,225,447, 12–28–65, Cl. 33—143.

Buchanan, Stephen N., and W. S. Pawl. Insulated splicer cap. 3,226,471, 12–28–65, Cl. 174—87.

Buckeye Mfg. Co.: *See*—
Orr, Sydney C., Jr. 3,225,740.

Budd Co., The: *See*—
Scheuer, Edward W. 3,226,286.

Buehler Corp., The: *See*—
Cochran, Richard L. 3,226,033.

Buell Engineering Co., Inc.: *See*—
Nagel, Lester L. 3,226,615.

Buffalo Forge Co.: *See*—
Spisiak, Daniel R. 3,225,698.

Bulting, Francis P., to Fenwal, Inc. Dual function circuit. 3,226,636, 12–28–65, Cl. 324—65.

Bule, Edward R., to All-N-One Products Corp. Extensible flag pole. 3,225,734, 12–28–65, Cl. 116—173.

Bulger, Robert F., S. Lucas W. D. Gurdack, and J. F. Cain, to Bayuk Cigars Inc. Packaging machine. 3,225,512, 12–28–65, Cl. 53—159.

Bungardt, Karl, and G. Becker, to Howe Sound Co. Article of manufacture having a chromium alloy base and a vapor diffused aluminized surface. 3,226,207, 12–28–65, Cl. 29—197.

Bunge, Joachim: *See*—
Bernard, Jean A., Bunge, Dufresne, Finzi, and Volta. 3,226,301.

Bunker-Ramo Corp., The: *See*—
Amdahl, Lowell D., Brian, Scarbrough, Schneberger, and Koerner. 3,226,687.
Amdahl, Lowell D. Brian, Scarbrough, Schneberger, and Koerner. 3,226,688.
Amdahl, Lowell D., Brian, Scarbrough, Schneberger, and Koerner. 3,226,689.
Fuller, Richard H., Koerner, and Schneberger. 3,226,692.

Burbank, Robert C.: *See*—
Galitzki, Bernard I., and Burbank. 3,225,768.

Burmeister, Hans. Welder's helmet. 3,225,356, 12–28–65, Cl. 2—8.

Burnham, Charles E. Air ventilated insole. 3,225,463, 12–28–65, Cl. 36—3.

Burow, Frank H., to Gulf Research & Development Co. Sample preparation and collection means for gas chromatographic columns. 3,225,520, 12–28–65, Cl. 55—67.

Burow, Frank H., to Gulf Research & Development Co. Serially connected thermochromatographic columns. 3,225,521, 12–28–65, Cl. 55—67.

Burroughs Corp.: *See*—
Davidson, James C. 3,226,648.
Lacher, William A. 3,226,566.

Buschow, Herman F., to Hydrocarbon Research, Inc. Method for casting transition couplings. 3,225,400, 12–28–65, Cl. 22—204.

Bussard, Adrien, H. Gruber, and H. Stephan, to W. C. Heraeus, G.m.b.H. Method and apparatus for melting metals by inductive heating and electron bombardment. 3,226,223, 12–28–65, Cl. 75—10.

Bustamante, Roberto L. Illuminating means. 3,226,538, 12–28–65, Cl. 240—10.67.

Bygdnes, Perry A., to Mach-Tronics, Inc. Alternating current electric motor. 3,226,579, 12–28–65, Cl. 310—51.

Byk-Gulden-Lomberg Chemische Fabrik G.m.b.H.: *See*—
Schoetensack, Wolfgang, Hallmann, and Haegele. 3,226,402.

Byrnes, David J., Jr. Voting mechanism. 3,226,019, 12–28–65, Cl. 235—50.

Cable, Harold E. and H. E., to Weld Tooling Corp. Magnetically held track and the like. 3,226,027, 12–28–65, Cl. 238—1.

Cable, Herbert E.: *See*—
Cable, Harold E. and H. E. 3,226,027.

Cabot Corp.: *See*—
Jordan, Merrill E., and Hardy. 3,226,244.

Cahn, Andre D.: *See*—
Behar, Robert, Cahn, Dubien, and Aussedat. 3,226,451.

Cahoy, Roger P.: *See*—
Anspon, Harry D., and Cahoy. 3,226,437.

Cain, James F.: *See*—
Bulger, Robert F., Lucas, Gurdack, and Cain. 3,225,512.

Caldwell, John R.: *See*—
Jackson, Winston J., Jr., and Caldwell. 3,226,362.

Call, George R. Low pressure warning device. 3,225,784, 12–28–65, Cl. 137—234.

Campbell, Rex C., to General Electric Co. Current shaping circuit for photosensitive device. 3,226,551, 12–28–65, Cl. 250—206.

Canadian Breweries Ltd.: *See*—
Williamson, Alan G. 3,226,235.

Canadian-Ingersoll-Rand Co.: *See*—
Young, Douglas L. G. 3,225,448.

Cancel, Luis E., to The Commonwealth of Puerto Rico. Method of shelling coconuts. 3,225,804, 12–28–65, Cl. 146—223.

Caplaux, Jacques: *See*—
Kulbicki, Georges L., Sahores, Vanuxem, Enjalbert, and Caplaux. 3,225,493.

Capitol Records, Inc.: *See*—
Ueck, Edward H. 3,226,125.

Caporali, Giorgio: *See*—
Giordano, Nicola, Caporali, and Ferlazzo. 3,226,421.

Capwell, Howard B., to Woodward Governor Co. Speed and acceleration regulator. 3,225,814, 12–28–65, Cl. 158—36.4.

Carabateas, Philip M., to Sterling Drug Inc. 1-[N-aryl-N-acylaminoalkyl]-4-aryl-1,2,3,6-tetrahydropyridines, the corresponding piperidines and their salts. 3,226,392, 12–28–65, Cl. 260—293.4.

Caramanna, George, to General Motors Corp. Safety hinge and latch for a vehicle body closure. 3,225,856, 12–28–65, Cl. 180—69.

Carl Zeiss-Stiftung: *See*—
Wöhner, Karl-Heinz. 3,225,673.

Carlsen, Kurt. Reversible Marine propulsion system. 3,225,-732, 12–28–65, Cl. 115—.5.

Carlson, Harry R.: *See*—
Bauer, Konrad E., and Carlson. 3,225,815.

Carpenter, James W. Paint distributor attachments for rotary-powered paint brushes. 3,225,872, 12–28–65, Cl. 15—29.

Carpenter, Keith H., W. E. Fritz, and F. J. Terkoski, to General Motors Corp. Brush and sealing means for an electric speedometer assembly. 3,226,498, 12–28–65, Cl. 200—24.

Carpinella, Michael J., to Scovill Mfg. Co. Fastener setting machine. 3,226,281, 12–28–65, Cl. 156—518.

Carrier Corp.: *See*—
Church, Richard A., and Haritonoff. 3,225,788.

Cart, Theodore W.: *See*—
Pollak, Victor S., and Cart. 3,225,806.

Carter, Valene J.: *See*—
Hewett, Walter R. 3,225,427.

Casselli, Aveo J., to The Singer Co. Locked tufting stitch. 3,225,725, 12–28–65, Cl. 112—410.

Catacycle Co., Inc., The: *See*—
Bland, Reginald B., and Ewing. 3,225,538.

Cataldo, John B.: *See*—
Kussy, Frank W., Thomas, Cataldo, and Kralik. 3,226,-500.

Cech, Edward T., Sr., to W. Kaiser. Fluid flow device. 3,225,-700, 12–28–65, Cl. 103—139.

Cetran, Louis, and K. R. Frechette, to Royal Typewriter Co., Inc. Multi-uniform and variable pitch escapement mechanism. 3,225,886, 12–28–65, Cl. 197—84.

Chambers, Isaac M., to Henry Miller Spring and Mfg. Co. Squaring spring flat for coiling machine. 3,225,579, 12–28–65, Cl. 72—142.

Champion Papers Inc.: *See*—
Rhodes, Philip H. 3,226,343.

Chance, A. B., Co.: *See*—
Curtis, Thomas E., and Gebhardt. 3,226,499.
Fink, Miller H. 3,225,862.

Charleston Rubber Co.: *See*—
Keilen, John J., Jr., and Browder. 3,225,360.

Chase, Marston. Paper clip index tab. 3,225,469, 12–28–65, Cl. 40—23.

Chatlos, Edward S., to The McIntire Co. Moisture indicator cap for refrigerant systems. 3,225,555, 12–28–65, Cl. 62—129.

Chemische Werke Huls Aktiengesellschaft: *See*—
Thier, Bernd. 3,225,817.

Cherdron, Egon: *See*—
Rüter, Hermann, Cherdron, and Flissle. 3,226,188.

Chesebrough-Ponds, Inc.: *See*—
Waterman, Neil S. 3,225,763.

Chevron Research Co.: *See*—
Brown, Robert J. S., Torrey, and Korringa. 3,226,632.
Chown, Robert G., and Rose. 3,225,829.
Clark, Calvin M. 3,226,544.
Kohn, Gustave K. 3,226,290.
Postlewaite, William R. 3,225,826.

Chin, Te N., to Radio Corp. of America. Cathode ray tube and magnetic deflection means therefor. 3,226,587, 12–28–65, Cl. 313—75.

Chiorri, Bartolomeo. Connection joint for paper-board-made packing boxes or the like. 3,226,008, 12–28–65, Cl. 229—49.

Chittleburgh, William F. S.: *See*—
Wright, Esmond P. G., Terry, and Chittleburgh. 3,226,-480.

Chown, Bruce F., to Computing Devices of Canada Ltd. Geographic coordinate-indicating navigation apparatus for hyperbolic systems. 3,226,719, 12–28–65, Cl. 343—112.

Chown, Robert G., and L. D. Rose, to Chevron Research Co. Apparatus for burning a combustible mixture in a well. 3,225,829, 12–28–65, Cl. 166—59.

Christenson, Howard W., to General Motors Corp. Torque transmitting mechanism. 3,225,627, 12–28–65, Cl. 74—769.

Christie, Howard W.: *See*—
Herrick, Wallace D., and Christie. 3,225,954.

Christy, Richard S., to General Electric Co. Fluorescent panel lamp. 3,226,590, 12–28–65, Cl. 313—109.

Church, Richard A., and B. W. Haritonoff, to Carrier Corp. Air distributing units. 3,225,788, 12–28–65, Cl. 137—599.

Ciba Ltd.: *See*—
Koeppel, Walter, Meier, and Schweizer. 3,226,610.

Ciegler, Alex, to United States of America, Agriculture. Production of beta-carotene. 3,226,302, 12–28–65, Cl. 195—28.

Cienlewics, Theodore A., and I. L. Custman, to Western Electric Co., Inc. Masking method for semiconductor. 3,226,-255, 12–28–65, Cl. 117—212.

Cilluffo, Francis A., to Continental Can Co., Inc. Egg carton. 3,226,004, 12–28–65, Cl. 229—28.

Ciongwa, Joachim: *See*—
Plock, Karl, Mertins, and Ciongwa. 3,225,776.

Cirrincione, Vincent W. Filter and retaining device. 3,225,-680, 12–28–65, Cl. 99—312.

Cislaw, Frank M. Ski sled. 3,226,181, 12–28–65, Cl. 280—22.

Clark, Benjamin F., and J. F. Haller, to Olin Mathieson Chemical Corp. Hydrogenation of chlorovinylboranes. 3,226,-432, 12–28–65, Cl. 260—543.

Clark, Calvin M., to Chevron Research Co. Well bore gamma-ray spectrum equalization. 3,226,544, 12–28–65, Cl. 250—71.5.

Clark, Charles A.: *See*—
Dersch, Fritz, and Clark. 3,226,281.

Clark Equipment Co.: *See*—
Erickson, Dennis E., and Messner. 3,225,949.

Clarke, Leonard O. Hanger for cylindrical conduits and the like. 3,226,069, 12–28–65, Cl. 248—73.

Clay, Wallace A. Methods of stereoscopic reproduction of images. 3,225,651, 12–28–65, Cl. 88—24.

Clay, Wallace A. Stereoscopic photographing and reproduction apparatus and method. 3,225,672, 12–28–65, Cl. 95—18.

Clements, Albert, to The Minster Machine Co. Press with sliding bolster and die clamp. 3,225,686, 12–28–65, Cl. 100—43.

Clevite Corp.: *See*—
Pochapsky, Harry, and Kruper. 3,226,308.

Cobb, James S., Jr., to E. I. du Pont de Nemours and Co. Spinneret distribution plate. 3,225,383, 12–28–65, Cl. 18—8.

Coby, David: *See*—
Newman, Herman, and Coby. 3,226,707.

Cochran, Richard L., to The Buehler Corp. Jet boat reverse movement arrangement. 3,226,033, 12–28–65, Cl. 239—265.27.

Codman & Shurtleff Inc.: *See*—
Mallina, Rudolph F. 3,225,996.

Coe, Herbert A. Feeding and like tray assembly. 3,226,074, 12–28–65, Cl. 248—311.

Coffin, Louis F., Jr., to General Electric Co. Liquid metal electrical connection. 3,226,608, 12–28–65, Cl. 317—234.

Coil, Stanley F.: *See*—
Schwab, Helmut, Horst, Van Voorhis, and Coil. 3,225,470.

Coleman Co., Inc., The: *See*—
Herrick, Wallace D., and Christie. 3,225,954.

Colgate-Palmolive Co.: *See*—
Anstett, Raymond M. 3,226,330.

Coller, John H., to Fuller-Trimview, a Division of Texas Aluminum Co., Inc. Panel structure. 3,225,393, 12–28–65, Cl. 20—19.

Collins, A. I.: *See*—
Marshall, Johnny H. 3,226,147.

Collins, Arthur F.: *See*—
Adams, Lester R., Collins, Eichelberger, and Kelly. 3,226,686.

Combustion Engineering, Inc.: *See*—
Froot, Bernard. 3,225,749.
Schuetzenduebel, Wolfram G. 3,225,748.

Commander Board International, Inc.: *See*—
Edwards, Lindell N. 3,225,477.

Commercial Solvents Corp.: *See*—
Purcell, Robert F., and Pals. 3,226,348.

Commonwealth Scientific and Industrial Research Organization: *See*—
Henshaw, David E. 3,225,533.

Comparin, Robert A.: *See*—
Greenblott, Bernard J., and Comparin. 3,226,530.

Complex, Inc.: *See*—
Nagelvoort, Adrian. 3,226,202.

Compur-Werke Gesellschaft mit beschrankter Haftung & Co.: *See*—
Lermann, Peter. 3,225,674.

Computing Devices of Canada Ltd.: *See*—
Chown, Bruce F. 3,226,719.

Comstock, George E., 3rd.: *See*—
Potter, John T., Comstock, and Gabor. 3,226,685.

Conselman, Carl W., to Amphenol Corp. Coaxial switch. 3,226,515, 12–28–65, Cl. 200—153.

Consolidated Electrodynamics Corp.: *See*—
Golke, Thomas M. 3,225,785.

Consolidated Mining and Smelting Co. of Canada Ltd., The: *See*—
Reynolds, John W. 3,225,861.
Wellington, John R., and Phillips. 3,226,314.

Continental Can Co., Inc.: *See*—
Ciliuffo, Francis A. 3,226,004.
Frankenberg, Henry E. 3,225,958.
Kehe, Alfred W., and Heartstedt. 3,225,691.

Continental Elektroindustrie Aktiengesellschaft: *See*—
Ziegler, Horst. 3,225,600.

Control Data Corp.: *See*—
Hardy, Norman. 3,226,529.

Cook, Shirl E., and H. Shapiro, to Ethyl Corp. Gasoline fuel composition. 3,226,209, 12–28–65, Cl. 44—69.

Cooper, David E.: *See*—
Finn, George B., Jr., Diebold, Eannarino, and Cooper. 3,226,603.

Cooper, Theodore W., to Hughes Aircraft Co. Method of making alloy connections to semiconductor bodies. 3,225,438, 12–28–65, Cl. 29—488.

Copeland, David E.: *See*—
Mercer, Carles H., Wolford, and Copeland. 3,226,113.

Corbett, Herbert O., to National Distillers and Chemical Corp. Method for forming mill rolls of sheeted materials. 3,226,049, 12–28–65, Cl. 242—56.3.

Cordes, Floyd L., to Sperry Rand Corp. Coupling mechanism. 3,225,613, 12–28–65, Cl. 74—110.

Corn Products Co.: *See*—
Schoch, Thomas J., and Korth. 3,226,239.

Cornelia, John, Jr.: *See*—
Green, Martin. 3,225,864.

Cornelius Co., The: *See*—
Cornelius, Richard T., and Kovar. 3,225,880.

Cornelius, Richard T., and H. C. Kovar, to The Cornelius Co. Coin mechanism. 3,225,880, 12–28–65, Cl. 194—1.

Cornforth, William W.: *See*—
Harmon, Darrell R. 3,226,201.

Corning Glass Works: *See*—
Riseman, John H. 3,226,313.

Corn Products Co.: *See*—
Schoch, Thomas J., and Korth. 3,226,239.

Cory, Charles E., to FMC Corp. Bag closing and tying machine and method. 3,225,507, 12–28–65, Cl. 53—14.

Couch, Claude R. Gusset plate for truss systems. 3,225,643, 12–28–65, Cl. 85—13.

Couch, Claude R. Split shank nail and packaging system. 3,225,917, 12–28–65, Cl. 206—56.

Couch, S. H., Co., Inc.: *See*—
Schuchard, Walter F. 3,226,520.

Couper, Mervyn G., and L. Doubleday, to Monsanto Chemicals (Australia) Ltd. Industrial centrifuges. 3,226,016, 12–28–65, Cl. 233—23.

Courtaulds North America, Inc.: *See*—
Wise, Harold F., Klein, Nelson, and Richardson. 3,226,461.

Coverston, George C. Explosion inertia turbine engine. 3,225,539, 12–28–65, Cl. 60—39.75.

Cowels Chemical Co.: *See*—
Irwin, Joseph T. 3,226,180.

Cox, Theodore C., to International Business Machines Corp. Computer control apparatus. 3,226,684, 12–28–65, Cl. 340—172.5.

Craig, Robert D., and B. N. Green, to Associated Electrical Industries Ltd. Mass spectrometer arc-type ion source having electrode cooling means. 3,226,542, 12–28–65, Cl. 250—41.9.

Crain, Norman R.: *See*—
Levinthal, Jay G., and Crain. 3,226,682.

Cramer, Sydney, R. S. Feldstein, A. G. Jacobson, and L. Staschover, to North Hills Electronics, Inc. Light display with sound signal control. 3,226,601, 12–28–65, Cl. 315—210.

Crete, Charles A.: *See*—
Spear, Herbert W. 3,225 527.

Creter, Frederick G., to The Singer Co. Handwheel for sewing machines. 3,225,624, 12–28–65, Cl. 74—573.

Cross, Dee H., F. J. Lohman, and F. R. Ward, to said Ward to said Cross & Lohman. Automatic film processing apparatus. 3,225,675. 12–28–65, Cl. 95—89.

Cross, Harold M.: *See*—
MacBean, Donald G., and Cross. 3,225,900.

Crowley Michael S., to Standard Oil Co. Calcium aluminate cement composition. 3,226,240, 12–28–65, Cl. 106—64.

Crown-Zellerbach Corp.: *See*—
Bennett, Clifton F., and Goheen. 3,226,433.
Rosenfeld, Alan S. 3 226,190.

Crownover, Joseph W., 25% to W. W. Haefliger. Piezoelectric phonograph pickup. 3,226,490, 12–28–65, Cl. 179—100.41.

Cudworth Allen L., to Liberty Mutual Insurance Co. Device for indicating objects rearwardly of a vehicle. 3,226,673, 12–28–65, Cl. 340—31.

Cull, Neville L., to Esso Research and Engineering Co. Ethylene-alpha olefin polymer latices. 3,226,349, 12–28–65, Cl. 260—29.6.

Cummins, Charles R., to Rerair, Inc. Rug tool. 3,225,379, 12–28–65, Cl. 15—367.

Curci Alfred. Captive cap for containers. 3,225,971, 12–28–65, Cl. 222—515.

Currie, Francis, to FMC Corp. Accumulating conveyor. 3,225,893, 12–28–65, Cl. 198—127.

Curry, Byron V.: *See*—
Jamison, Albert L. 3,225,959.

Curtis, Richard A.: *See*—
Robbins, James D., and Curtis. 3,225,572.

Curtis, Rolando T. to V-W Corp. Wall board having compressible edge structure. 3,226,284, 12–28–65, Cl. 161—44.

Curtis Thomas E., and M. A. Gebhardt, to A. B. Chance Co. Load break switch gear. 3,226,499, 12–28–65, Cl. 200—48.

Curtiss-Wright Corp.: *See*—
Alsobrooks, Darriel L., Hamalian, and Oldenburger. 3,225,540.

Cushman Paul A.: *See*—
Patton, Timothy E., and Cushman. 3,226,468.

Custman, Ira L.: *See*—
Cieniewicz, Theodore A. and Custman. 3,226,255.

Cutter Laboratories Inc.: *See*—
Boynton, William H. and E. C. 3,226,296.

Cuttill, William E., to General Motors Corp. Rocket vehicle attitude control. 3,225 693, 12–28–65, Cl. 102—50.

Czarnomski, Thaddeus J.: *See*—
Manyak, Anthony R., and Czarnomski. 3,226,452.

Czyl Joseph L.: *See*—
Brady, Robert T., McInerney, and Czyl. 3,226,038.

D. C. M.: *See*—
Fara, Pierre J. 3,225,418.

Dafrico, Richard D.: *See*—
Thomas, Terry, and Dafrico. 3,225,875.

Dahlgren, Victor F., to Sanders Associates, Inc. Encapsulated conductive paths with readily removable insulation. 3,226,473, 12–28–65, Cl. 174—117.

Dahlman Mfg. & Sales, Inc.: *See*—
Heinisch, Harold P. 3,225,901.

Daley, Horace S., and R. R. Thompson, to The Singer Co. Beater-brush roller for vacuum cleaner. 3,225,374, 12–28–65, Cl. 15—183.

Daniels, Humphrey B., ½ to Transatlantic Plastics Ltd. Clip for flexible sheet. 3,225,407, 12–28–65, Cl. 24—243.

Daniels, Rupert S., and B. P. Barth, to Union Carbide Corp. Epoxy resin abrasive structures and method therefor. 3,226,214, 12–28–65, Cl. 51—298.

Darley, Charles B.: *See*—
Vayda, Michael M., Jr., Darley, Jensen and Talton. 3,226,097.

Daughtrey, Joseph W., to Gulf Oil Corp. Apparatus for multiple completion wells. 3,226,143, 12–28–65, Cl. 287—111.

Davey, Norman, and K. Aldersley, to United Kingdom Atomic Energy Authority. Bottom pour furnace. 3,225,398, 12–28–65, Cl. 22—84.

Davidson, James C., to Burroughs Corp. Clock system for electronic computers. 3,226,648, 12–28–65, Cl. 328—63.

Davidson, Lawrence C., to United States of America, Navy. Pipe line hydrophone system. 3,225,859, 12–28–65, Cl. 181—.5.

Davis, Edward L.: *See*—
Bogar, William H., Davis, Hassenauer, Pakurar, and Ruffolo. 3,225,706.

Davis, Frank L. Adjustable belt buckle with safety catch. 3,225,401. 12–28–65, Cl. 24—75.

Davis, Louis K., to General Electric Co. Oscillation damping system. 3,226,062, 12–28–65, Cl. 244—93.

Davis, Orvis A., Sr.: *See*—
Biber, Albert, Davis, and Walsh. 3,226,037.

Davison, Daniel G.: *See*—
Bertolini, William A., and Davison. 3 226,166.

Day, Lawrence, J. Dobrick, and A. Kay, to Spitfire Tool & Machine Co., Inc. Lapping apparatus. 3,225,492, 12–28–65, Cl. 51—3.

Dayton Abrasive Products, Inc.: *See*—
Field, Henry M., and Anderegg. 3,225,916.

Dayton Steel Foundary Co., The: *See*—
Walther, Daniel A. 3,225,426.

Dean, John, to McGraw-Edison Co. Apparatus for slip casting ceramic electrical ware. 3,225,414, 12–28–65, Cl. 25—129.

Deere & Co.: *See*—
Forth, Murray W., and Harrington. 3,225,711.

Deffner, John F., and E. L. Fareri to Gulf Research & Development Co. Inhibiting growth of microorganisms in fuel compositions. 3,226,211, 12–28–65, Cl. 44—70.

DeHaan, Wolbert, and R. A. Vogelei, to General Motors Corp. Safety hinge and latch for a removable vehicle body closure. 3,225,857, 12–28–65, Cl. 180—69.

Deitz, Louis S., Jr. Method of reclaiming copper from insulated copper wire. 3,225,428 12–28–65, Cl. 29—403.

Deitz, Victor R., to W. Siskind. Method and apparatus for producing a controlled pattern of ultraviolet radiation from that at higher wave lengths. 3,226,228, 12–28–65, Cl. 96—27.

Dekko, Chester E., and R. R. Glass, to Lyall Electric, Inc. Vehicle signal lantern having shock mounting. 3,226,678, 12–28–65, Cl. 340—119.

Deladerriere André. to Revells Bayard, Societe Anonyme. Time keeping apparatus possessing sounding alarms. 3,225,535, 12–28–65, Cl. 58—16.

Della Porta, Paolo. Getter devices with non-evaporated gettering material, for maintaining vacuum in electronic tubes. 3,225,910, 12–28–65, Cl. 206—.4.

Della Porta, Paolo. Ring-shaped getter with top deflector, for improving and/or keeping up vacuum in electronic tubes. 3,225,911, 12–28–65, Cl. 206—.4.

Delp William G.: *See*—
Eland Robert C. A., Delp, and Nestlerode. 3,226,663.

De Net, Robert W.: *See*—
Zaugg, Harold E., De Net, and Michaels. 3,226,419.

Denny, Arthur A.: *See*—
Bayles, John J., and Denny. 3,225,526.

Densmore Neal W., to Joy Mfg. Co. Mine ventilation scheme. 3,225,678, 12–28–65. Cl. 98—50.

De Priest, Joseph R., to Serro Electronic Switch and Signal Co. Hot box detector alarm circuit. 3,226,540, 12–28–65, Cl. 246—169.

Deritend Engineering Co. Ltd., The: *See*—
Bishop, Thomas D. 3,226,108.

Dersch, Fritz, and C. A. Clark, to General Aniline & Film Corp. Fog reduction in silver halide emulsions with 3-mercaptobenzoic acid. 3,226,231, 12–28–65, Cl. 96—61.

De Savigny, Chester B.: *See*—
Bonetti, Giovanni A., De Savigny, and Michalski. 3,226,442.

Dessureau, John B.: *See*—
Dessureau, Joseph T. and J. B. 3,225,798.

Dessureau, Joseph T. and J. B. Means for processing stone sawing wires. 3,225,798, 12–28–65, Cl. 140—149.

Detrick. M. H., Co.: *See*—
Rowley, Harold A. 3,225,721.

Dettling, Conrad J., and R. C. Ramsay, to The Polymer Corp. Coating method and apparatus. 3,226,245, 12–28–65, Cl. 117—21.

De Uriarte Pina, Angel B. Envelope for information-bearing sheets and the like. 3,225,769. 12–28–65, Cl. 129—16.

Deutsche Tefeiglas Aktiengesellschaft Detag: *See*—
Graff, Roderich, Thoma, and Reichl. 3,226,458.

Devaney, John L., to American Brake Shoe Co. Railroad car retarder. 3,225,873, 12–28–65, Cl. 188—62.

De Vries, Eduard R., to Prismo Safety Corp. Process of peening metals with coated glass beads. 3,225,495, 12–28–65, Cl. 51—319.

Dexter, Martin: *See*—
Meier, Eric A., and Dexter. 3,226,443.

Diatemp, Inc.: *See*—
Durst, Henry J., and Theiss. 3,226 512.

Di Cosola, Michael A., to Orthopaedic Specialties Corp. Apparatus for treatment of bone fracture. 3,225,760, 12–28–65, Cl. 128—83.

Diebold, Edward J., to International Rectifier Corp. Method of making a transistor containing a multiplicity of depressions. 3,225,416, 12–28–65, Cl. 29—25.3.

Diebold, Edward J., to International Rectifier Corp. Series connection of controlled semi-conductor rectifiers. 3,226,625, 12–28–65, Cl. 321—27.

Diebold, Edward J.: *See*—
Finn, George B., Jr., Diebold, Eannarino, and Cooper. 3,226,603.

Dietz, Milton S.: *See*—
Friedman, Melvin, and Dietz. 3,225,670.

Dietzsch, Hans-Joachim. Method for producing materials of honeycomb structure. 3,226,460, 12–28–65, Cl. 264—165.

Di Marco, Bernard: *See*—
Kussy, Frank W., and Di Marco. 3,226,516.

Diorama, Inc.: *See*—
Kisbany, Frederick N. 3,225,373.

Dison, James R., to General Motors Corp. Aircraft safety coupling. 3,225,876, 12–28–65, Cl. 192—46.

Ditting, Adolf: *See*—
Engi, Walter. 3,225,802.

Dixie Mfg. Co., Inc.: *See*—
Wolfe, Russell C. 3,225,953.

Djerassi, Carl: *See*—
Ringold, Howard J., and Djerassi. 3,226,383.

Dobrick, Joseph: *See*—
Day, Lawrence, Dobrick, and Kay. 3,225,492.

Dodd, Edmund L.: *See*—
Vergobbi, Robert W., and Dodd. 3,225,847.

Dods, James: *See*—
Robinson, Douglas A. and L. M., and Dods. 3,225,647.

Doebell, Oscar. Generator device for absorption refrigerating machines. 3,225,560, 12–28–65, Cl. 62—236.

Dole Valve Co., The: *See*—
Erickson, Howard L. 3,226,606.

Dolloff, Richard T., to Union Carbide Corp. Method for growing crystals. 3,226,193, 12–28–65, Cl. 23—191.

Dominion Engineering Works Ltd.: *See*—
Kanger, Feodor. 3,226,084.

Dominion Tar & Chemical Co., Ltd.: *See*—
Fossenier, Germain B. 3,225,942.

Domm, Ulrich, W. Föller. and R. Egelhofer, to Klein, Schanzlin & Becker Aktiengesellschaft. Thermostatically controlled valve for a steam trap. 8,226,026, 12–28–65, Cl. 236—59.

Doniguian, Thaddeus M.: *See*—
Rohrback, Gilson H., and Doniguian. 3,226,262.

Dorey, George E. Finger-hold models for bowling balls. 3.225,448, 12–28–65, Cl. 33—174.

Dorrer, Herbert M., to International Standard Electric Corp. Machine for automatic application of circuit elements preferably of printed circuits. 3,225,995, 12–28–65, Cl. 227—85.

Dorr-Oliver Inc.: *See*—
Albertson, Orris E. 3,226,317.

Dostatni, Albert W., to Preparation Industrielle des Combustibles. Vibrating sieves. 3,225,926, 12–28–65, Cl. 209—315.

Dotto, Gianni A., to P. R. Mallory & Co., Inc. Fluid depth measuring apparatus. 3,225,595, 12–28–65, Cl. 73—301.

Dotzer, Richard: *See*—
Miederer, Walter, Ziegler, and Dotzer. 3,226,270.

Dove, John F. Data storage and retrieval system. 3,226,696, 12–28–65, Cl. 340—173.

Dover Corp.: *See*—
Jaseph, Lawrence F. 3,226,672.

Dow Chemical Co., The: *See*—
Dunbar, Joseph E. 3,226,427.
Foerster, George S. 3,226,267.
Nelson, Rodney A., and Belfit. 3,226,218.
Oja, Phyllis D., and Hartzell. 3,226,438.
Oswald, Max R., and Kinsey. 3,225,384.
Poindexter, Frank M. 3,226,370.
Reifschneider, Walter. 3,226,445.
Reithel. Fred J. 3,226,250.
Romesberg, Floyd E., Matheison, and Lefevre. 3,226,462.
Shaver, Robert J. 3,226,292.
Smith, Hubert S., Jr. 3,226,457.
Tousignant, William F., and Sovish. 3,226,372.

Downey, Jack W. Saw-horse. 3,225,865, 12–28–65, Cl. 182—155.

Downing, James H., E. L. Koerner, and J. E. Wells III, to Union Carbide Corp. High-temperature kiln. 3,226,465, 12–28–65, Cl. 13—27.

Dowty, George H., and C. W. Tinson, to Dowty Technical Developments Ltd. Steerable undercarriage assemblies. 3,226,061, 12–28–65, Cl. 244—50.

Dowty Technical Developments Ltd.: *See*—
Dowty, George H., and Tinson. 3,226,061.

Drain, David J., H. W. R. Williams, and J. G. B. Howes, to T. J. Smith & Nephew Ltd. Hydroxybenzyloxy amine derivatives. 3,226,446, 12–28–65, Cl. 260—621.

Drapen, Myron E., and A. E. Seigel. Dental cleaning and massaging device. 3,225,759, 12–28–65, Cl. 128—66.

Drengler, George R., to Union Carbide Corp. Rechargeable alkaline cell. 3,226,260, 12–28–65, Cl. 136—30.

Drenning, John W., to Koppers Co., Inc. Ultrasonic web position detector and aligning means. 3,225,988, 12–28–65, Cl. 226—19.

Dresser Industries, Inc.: *See*—
Du Bois, Robert C., Goff, and Plavcan. 3,225,622.
Stacha, Leon A. 3,225,783.

Drevalas, Constantine N.: *See*—
Brandt, Edward A., and Drevalas. 3,225,635.

Dreyfus-Alain, Bertrand, to Societe d'Electronique et d'Automatisme. Electrical current routing device. 3,226,604, 12–28–65, Cl. 317—137.

Dröll, Hans, and W. Muskulus, to Blazer and Droll, Schnitt- und Werkzeugbau. Device for winding an annular article having inwardly directed slots. 3,226,046, 12–28–65, Cl. 242—1.1.

Dubien. Marcel: *See*—
Behar, Robert, Cahn, Dubien, and Aussedat. 3,226,451.

Dubin, Sol. Multiple ratio steering system. 3,225,620, 12–28–65, Cl. 74—500.

Du Bois, Robert C., R. Goff, and E. J. Plavcan, to Dresser Industries, Inc. Condition responsive device. 3,225,622, 12–28–65, Cl. 74—522.

Duddridge, Gordon K., and J. A. Millard, to International Standard Electric Corp. Welding of electric cables. 3,226,522, 12–28–65, Cl. 219—60.

Dufaylife Developments Ltd.: *See*—
May, George. 3,225,509.

Dufresne, Jacques: *See*—
Bernard, Jean A., Bunge, Dufresne, Finzi, and Volta. 3,226,301.

Duggan, Aloysius M. Guide apparatus for drafting inking. 3,225,445, 12–28–65, Cl. 33—107.

Dumey, Arnold L., to Sperry Rand Corp. Information reversing method and apparatus. 3,226,693, 12–28–65, Cl. 340—172.5.

Dunbar, Joseph E., to The Dow Chemical Co. Carbamate thiosulfonates. 3,226,427, 12–28–65, Cl. 260—471.

Dunlap and Associates, Inc.: *See*—
Furman, Daniel W. 3,226,546.

Dunn, Joseph B., and M. O. Ross, to General Motors Corp. Filter cartridge. 3,225,932, 12–28–65, Cl. 210—282.

Dunn, Lyman D., and S. Gembicki, to Marlan Co. Guide means for band saw blade. 3,225,801, 12–28–65, Cl. 143—160.

Dunn, Maurice B., to Memco Machinery Corp. Carton blanks and resulting cartons with fulcrum locking of side panels. 3,226,006, 12–28–65, Cl. 229—35.

Du Pont de Nemours, E. I., and Co.: *See*—
Anderson, Burton C., and Morlock. 3,226,418.
Blanchard, Wesley A., and Rhode. 3,226,449.
Bogar, William H., Davis, Hassenauer, Pakurar, and Ruffolo. 3,225,706.
Cobb, James S., Jr. 3,225,383.
Hartzler, Harris D. 3,226,388.
Hertler, Walter R. 3,226,389.
Knospe, Robert H. 3,225,534.
Middleton, William J. 3,226,439.
Stovaken, Robert E., and Talbott. 3,225,415.
Yost, Robert D. 3,226,423.
Walker, Isaac F. 3,226,178.
Webster, Owen W. 3,226,420.

Durham, William J., to Charles Schwartz & Co. Removable anchor attachment device for sheet covers. 3,225,408, 12–28–65, Cl. 24—265.

Durkoppwerke Aktiengesellschaft: *See*—
Neese, Gerhard. 3,226,170.

Durst, Henry J., and J. J. Theiss, to Diatemp, Inc. Thermostat control with sequentially operated switches. 3,226,512, 12–28–65, Cl. 200—140.

Dusinberre, Robert, R. E. Kraft, and F. A. Greenawalt, said Kraft and said Greenwalt assors., to said Dusinberre. Impulse-operated odometer mechaniam. 3,226,021, 12–28–65, Cl. 235—96.

Dusseau, Lambert, to Package & Display Corp. Display device. 3,225,474, 12–28–65, Cl. 40—124.1.

Dvorak, Joseph J.: *See*—
Grafstein, Daniel, and Dvorak. 3,226,429.

Dyna-Nuclear Corp.: *See*—
Robinson, Harold E. 3,225,752.

Eames, Charles, and R. L. Staples, to Herman Miller, Inc. Seating. 3,226,071, 12–28–65, Cl. 248—163.

Eannarino, George J.: *See*—
Finn, George B., Jr., Diebold, Eannarino, and Cooper. 3,226,603.

Earle, John, to International Business Machines Corp. Logic tree comprising NOR or AND logic blocks. 3,226,565, 12–28–65, Cl. 307—88.5.

Earp, Charles W., to International Standard Electric Corp. Dual sideband radio beacon. 3,226,718, 12–28–65, Cl. 343—106.

East Coast Auto Specialties Co.: *See*—
Goldberg, Ira. 3,226,145.

Eastman Kodak Co.: *See*—
Jackson, Winston J., Jr., and Caldwell. 3,226,362.

Easton, Russell P.: *See*—
Sweet, Monroe H. 3,226,552.

Eaton Mfg. Co.: *See*—
Pipes, George R. 3,225,370.

Eberle, Eugene C., ½ to J. B. Stevens. Waterproof sealing means. 3,226,162, 12–28–65, Cl. 301—108.

Eberspacher, J., Esslingen/Neckar: *See*—
Hottich, Alfred, Hofink, and Martin. 3,226,206.

Economation, Inc.: *See*—
Lovett, William E., and Harrington. 3,225,665.

Edison: *See*—
Giordano, Nicola, Caporali, and Ferlazzo. 3,226,421.

Edouard Dubried et Cie (Societe Anonyme): *See*—
Seiler, Fritz. 3,225,567.

Edwards, Lindell N., to Commander Board International, Inc. Signs. 3,225,477, 12–28–65, Cl. 40—142.

Edwards, Robert W. Inertial responsive stop signal for vehicle. 3,226,675, 12–28–65, Cl. 340—62.

Egelhofer, Rudolf: *See*—
Domm, Ulrich, Foller, and Egelhofer. 3,226,026.

Ehe, Albert L., to Multicup Automation Co., Inc. Automatic packaging machine 3,225,513, 12–28–65, Cl. 53—160.

Eichelberger, Edward B.: *See*—
Adams, Lester R., Collins, Eichelberger, and Kelly. 3,226,686.

Eickemeyer, Daniel B., to Sinclair Research, Inc. Lubricant composition containing phenothiazine and dipyridylamine. 3,226,324, 12–28–65, Cl. 252—47.5.

Eisenstadt, David L.: *See*—
Lasley, Robert A., Handel, and Eisenstadt. 3,225,925.

Ettel, Jay M., to Telsta Corp. Multiple conductor stringing apparatus. 3,226,087, 12–28–65, Cl. 254—134.3.

Ekenstam, Bo Thuresson af, B. H. F. von Fieandt, and A. R. B. Furendal, to Bofors, Aktiebolaget. Dentifrice compositions comprising polymethyl methacrylate abrasives. 3,226,297, 12–28–65, Cl. 167—93.

Ekland, Robert C. A., W. G. Delp, and C. D. Nestlerode, to Standard Kollsman Industries, Inc. Disc type turret tuner with peripherally mounted inductors. 3,226,663, 12–28–65, Cl. 334—49.

Eldridge, Thomas S.: *See*—
Randell, Theodore C., and Eldridge. 3,225,460.

Electric & Musical Industries Ltd.: *See*—
Percival, William S. 3,226,475.

Electricite de France (Service National): *See*—
Hauser, Raymond, and Zyngier. 3,226,548.

Electro-Char Corp.: *See*—
Savio, Joseph. 3,225,682.

Electronic Controls, Inc.: *See*—
Morgan, A. Henry, Uhl, and Angel. 3,226,508.

Elfving, Thore M. Thermoelectric cooling device. 3,225,549, 12–28–65, Cl. 62—3.

Elfving, Thore M. Heat transferring mounting panels for electric components and circuits. 3,226,602, 12–28–65, Cl. 317—100.

Elliott, James O., D. L. Frank, and R. W. Leland, to General Motors Corp. Starting arrangement. 3,226,620, 12–28–65, Cl. 318—221.

Elliott, John L., to Tracer Control Co. Vane pressurising means. 3,225,786, 12–28–65, Cl. 137—512.

Ellis, James B., to Klondex Inc. Machine for passing sheet material through a liquid. 3,226,111, 12–28–65, Cl. 271—51.

Ellis, John D. Flared end tube fitting. 3,226,138, 12–28–65, Cl. 285—382.3.

Elox Corp. of Michigan: *See*—
Webb, Robert S. 3,226,599.

Elsässer, Friedrich: *See*—
Kienel, Gerhard, and Elsässer. 3,226,467.

Eltra Corp.: *See*—
Abbott, William B. 3,225,906.
Fingerlos, Ernest H. 3,226,017.
Greenwood, David L., and Klepper. 3,225,907.
Klepper, Herbert, and Abbott. 3,225,908.
Klepper, Herbert, and Abbott. 3,225,909.

El-Waziri, Abdel H., to United States Steel Corp. Reduction of edge taper in strip rolling. 3,225,580, 12–28–65, Cl. 72—236.

Emerson Electric Co.: *See*—
Evans, William M. 3,226,618.

Emig, Marsden B.: *See*—
Beiderbecke, Charles H., and Emig. 3,225,887.

Emoto, Toshiaki: *See*—
Azuma, Yasuo, and Emoto. 3,226,577.

Empire Products, Inc.: *See*—
Senior, Robert, Jr. 3,226,667.

Enabnit, Robert S., to The Goodyear Tire & Rubber Co. Digital coded elastomeric article. 3,225,810, 12–28–65, Cl. 152—330.

Endahl, Charles A., Jr.: *See*—
Hogan, William J., and Endahl. 3,225,795.

Engel, Georg, to Beteiligungs- und Patentverwaltungsgesellschaft mit Beschraenkter Haftung. Unwinding device for band-shaped rolled goods. 3,226,050, 12–28–65, Cl. 242—78.8.

Engelhard, William E. Portable pyrometer. 3,225,597, 12–28–65, Cl. 73—361.

Engi, Walter, to A. Ditting. Slicing machine including knife sharpening means. 3,225,802, 12–28–65, Cl. 146—102.

Engle, Loy S., to Interchemical Corp. Color concentrates of graft copolymers of methyl methacrylate and 2-hydroxymethyl-5-norbornene. 3,226 353, 12–28–65, Cl. 260—29.8.

English Electric Co. Ltd., The: *See*—
Braikevitch, Michael, and Warnock. 3,226,083.

Enjalbert, Andre: *See*—
Kulbicki, Georges L., Sahores, Vanuxem, Enjalbert, and Caplaux. 3,225,493.

Epsilon Industrial Electronics: *See*—
Fromkin, Jack. 3,226,627.

Epstein, Saul. Triple walled vent pipe. 3,226,135, 12–28–65, Cl. 285—41.

Erickson, Dennis E., and J. S. Messner, to Clark Equipment Co. Lift truck with load handling assembly mounted on a movable frame supported by the steering wheel of the truck. 3,225,949, 12–28–65, Cl. 214—660.

Erickson, Howard L., to The Dole Valve Co. Solenoid assembly with protective enclosure and depending lip. 3,226,606, 12–28–65, Cl. 317—191.

Eriksson, Leif J. V. Safety belt controlled vehicle electrical circuit. 3,226,674, 12–28–65, Cl. 340—53.

Ernst, William B., to The National Ideal Co. Laying cages. 3,225,741, 12–28–65, Cl. 119—48.

Espe, George E., to R. E. Phelon Co., Inc. Method and means for securing an article to a laminated core. 3,226,583, 12–28–65, Cl. 310—153.

Essex Products, Inc.: *See*—
Ball, Arthur F. 3,225,465.

Esso Production Research Co.: *See*—
Ortloff, John E., and Howe. 3,225,843.
Roberts, Alan P. 3,225,844.
Walvoord, James G. 3,226,728.
Cull, Neville L. 3,226,349.
McDermott, John P. 3,226,321.
Metrailler, William J., and Moser. 3,226,316.
Skarstrom, Charles W., and Tegge. 3,225,518.

Estephanio, Jose. Safety locking apparatus to render inoperative machine tools and the like. 3,225,878, 12–28–65, Cl. 192—129.

Esveldt, Cornelis J., R. Fluks, and H. P. Peloschek, to North American Philips Co., Inc. Method for making lithium nickel ferrite having a substantially rectangular hysteresis loop. 3,226,328, 12–28–65, Cl. 252—62.5.

Ethyl Corp.: *See*—
Beaird, Francis M., Jr., and Kobetz. 3,226,408.
Beaird, Francis M., Jr., and Kobetz. 3,226,409.
Cook, Shirl E., and Shapiro. 3,226,209.
Gyan, Joseph A., and Whaley. 3,226,185.

European Atomic Energy Community-Euratom: *See*—
Bernard, Jean A., Bunge, Dufresne, Finzi, and Volta. 3,226,301.

Eutectic Welding Alloys Corp.: *See*—
Schilling, Donald C. 3,226,028.

Evans, Emil E.: *See*—
Martin, Charles M., Myers, Le Gros, Evans, and Marheine. 3,226,478.

Evans, Ralph H., Jr.: *See*—
Sax, Karl J., Blank, Holmlund, and Evans. 3,226,404.

Evans, William M., to Emerson Electric Co. Plural motor alternator fed stopping and braking control system. 3,226,618, 12–28–65, Cl. 318—62.

Ewing, Fred B., Jr. High speed sea going planing hull. 3,225,729, 12–28–65, Cl. 114—66.5.

Ewing, Frederick J.: *See*—
Bland, Reginald B., and Ewing. 3,225,538.

Ezopov, Igor. Slide rule of circular type, with enlarged scales. 3,226,020, 12–28–65, Cl. 235—84.

FMA, Inc.: *See*—
Timares, Norman R., and MacKenzie. 3,225,649.

FMC Corp.: *See*—
Cory, Charles E. 3,225,507.
Currie, Francis. 3,225,893.
Hettich, Bedrich V., and Latourette. 3,226,410.
Ingham, Donald M. 3,225,867.
Keesling, Thomas B. 3,225,892.
King, William N. 3,225,529.
King, William N., and McGee. 3,225,685.
McRobert, Leon R. 3,225,771.
Mumma, Harold J. 3,225,948.
Reimers, James L. 3,225,666.
Reimers, Kirk W. 3,225,895.
Vadas, Leslie. 3,225,904.

Fabric Research Laboratories Inc.: *See*—
MacBean, Donald G., and Cross. 3,225,900.

Fady, Jean A., to Societe Francaise de Fermetures de Luxe. Method of making and applying stock chain for slide fasteners. 3,225,429, 12–28–65, Cl. 29—408.

Fagut, Joseph H.: *See*—
Barbeau, Raymond A., Fagut, Johnson, and Pearson. 3,225,990.

Fairman, Earl T., Sr. Apparatus for forming hollow glass articles. 3,225,791, 12–28–65, Cl. 137—624.18.

Falcon, Carl J., and D. A. Fogg, to The Rapids-Standard Co., Inc. Telescoping conveyor. 3,225,879, 12–28–65, Cl. 193—35.

Famiio, George H., 50% to Harvey J. Tucker. Safety device for gas fired boilers. 3,225,816, 12–28–65, Cl. 158—125.

Fara, Pierre J., to D. C. M. Variable-camber cylinder. 3,225,418, 12–28–65, Cl. 29—113.

Farbenfabriken Bayer Aktiengesellschaft: *See*—
Blazejak, Manfred, and Stroh. 3,226,450.
Reischl, Artur, Holtschmidt, and Fischer. 3,226,368.

Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning: *See*—
Fischer, Edgar, and Hermann. 3,226,444.
Kaupp, Josef, and Klug. 3,226,400.
Riemenschneider, Wilhelm, Pintschovius, and Probst. 3,226,337.
Schimmelschmidt, Kurt, Hoffmann, Baier, and Ulmer. 3,226,395.

Fareri, Elizabeth L.: *See*—
Deffner, John F., and Fareri. 3,226,211.

Fareri, Elizabeth L., and J. P. Pellegrini, Jr., to Gulf Research & Development Co. Oil-soluble copolymers of acrylic acid esters and quaternary ammonium salts of acrylic acids. 3,226,373, 12–28–65, Cl. 260—86.1.

Farkas, George B., to Hydrocarbon Research, Inc. Revaporisation of cryogenic liquids. 3,225,552, 12–28–65, Cl. 62—51.

Farkas, George B.: *See*—
Stotler, Harold H., Farkas, and Keith. 3,226,204.

Farkas, George B., and A. D. Korin, to Hydrocarbon Research, Inc. Land storage for liquefied gases. 3,225,955, 12–28–65, Cl. 220—9.

Fasciano, Patrick, to Scovill Mfg. Co. Gap production in slide fastener chain. 3,225,430, 12–28–65, Cl. 29—408.

Fassle, Fritz: *See*—
Ruter, Hermann, Cherdron, and Fassle. 3,226,188.

Faul, Karl. Device for stabilizing legged furniture. 3,225,880, 12–28–65, Cl. 16—82.

Faulkner, Arthur M.: *See*—
Walton, William, and Faulkner. 3,225,583.

Faust, John A.: *See*—
Sabyun, Melville, Faust, and Hansl. 3,226,440.

Federal Bearings Co., Inc., The: *See*—
Recknagel, Frederick W. 3,226,168.

Felder, Ernst, and D. Pitre, to Bracco Industria Chimica S.p.A. X-ray contrast agent. 3,226,431, 12–28–65, Cl. 260—519.

Feldstein, Robert S.: *See*—
Cramer, Sydney, Feldstein, Jacobson, and Staschover. 3,226,601.

Fellows Gear Shaper Co., The: *See*—
Levanovich, Harry. 3,225,658.

Fenwal, Inc.: *See*—
Bulting, Francis P. 3,226,636.

Ferlazzo, Natale: *See*—
Giordano, Nicola, Caporali, and Ferlazzo. 3,226,421.

Ferner, George W., to The Goodyear Tire & Rubber Co. Hydrochlorination of polyisoprene in presence of phenols. 3,226,359, 12–28–65, Cl. 260—45.95.

Ferrari, Andres, to Technicon Instruments Corp. Method and apparatus for treating gases. 3,226,198, 12–28–65, Cl. 23—232.

Ferri, Giampiero, and J. Marinai. Toy revolver with labyrinth seal for explosive caps. 3,225,480, 12–28–65, Cl. 42—58.

Ferris, David R., to Kysor Industrial Corp. Electrically driven thermostatically controlled heat regulating mechanism for automotive vehicles. 3,226,025, 12–28–65, Cl. 236—35.

Fette, Wilhelm: *See*—
Kruse, Otto. 3,225,713.

Fiber Controls Corp.: *See*—
Wise, Cecil S., and Lytton. 3,225,848.

Field, Henry M., and B. A. Anderegg, to Dayton Abrasive Products, Inc. Assemblage of abrasive elements. 3,225,916, 12–28–65, Cl. 206—56.

Fieldcrest Mills, Inc.: *See*—
Bateman, John A. M. 3,226,172.

Filipski, Stanley P., H. R. Miller, and A. J. Newman, to Union Carbide Corp. Gas arc welding with argon-hydrogen mixture. 3,226,523, 12–28–65, Cl. 219—74.

Fingerlos, Ernest H., to Eltra Corp. Dual indicator attachment for phototypographical machines. 3,226,017, 12–28–65, Cl. 234—5.

Fink, Miller H., to A. B. Chance Co. Dielectric ladder. 3,225,862, 12–28–65, Cl. 182—46.

Finkle, Sam M. Fire detecting device. 3,226,703, 12–28–65, Cl. 340—237.

Finn, George B., Jr., E. J. Diebold, G. J. Eannarino, and D. E. Cooper, to International Rectifier Corp. High current rectifier employing a plurality of wafers having respective fuse elements. 3,226,603, 12–28–65, Cl. 317—101.

Finzi, Sergio: *See*—
Bernard, Jean A., Bunge, Dufresne, Finzi, and Volta. 3,226,301.

Fischer, Artur. Holder for boring bits and the like. 3,225,846, 12–28–65, Cl. 175—403.

Fischer, Earl L.: *See*—
Rollins, Dallas W., and Fischer. 3,225,707.

Fischer, Edgar, and H. D. Hermann, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Process for the manufacture of pure formaldehyde. 3,226,444, 12–28–65, Cl. 260—606.

Fischer, Harry C., to Sunroc Corp. Control system for maintaining different temperature ranges within compartments having a common refrigerating unit. 3,225,559, 12–28–65, Cl. 62—180.

Fischer, Peter: *See*—
Reischl, Artur, Holtschmidt, and Fischer. 3,226,368.

Fisher & Ludlow Ltd.: *See*—
Maxwell, Stewart A. 3,225,625.

Fisons Pest Control Ltd.: *See*—
Newbold, Geoffrey T., and Tippett. 3,226,387.

Fitzgerald, William A., Jr., and K. Yoshizumi, to General Foods Corp. Dispenser. 3,226,171, 12–28–65, Cl. 312—42.

Fitzgerald, William J., to International Business Machines Corp. Superconductive adder and correlator. 3,226,534, 12–28–65, Cl. 235—173.

Fitzsimmons, David P.: *See*—
Brinker, Emil F., and Fitzsimmons. 3,226,541.

Flaherty, John T., and R. R. Scholz. Field ride rest. 3,225,656, 12–28–65, Cl. 89—37.

Fleckenstein, Joseph E.: *See*—
Holloway, Thomas M., and Fleckenstein. 3,226,024.

Flegel, George J., to Josam Mfg. Co. Drain construction. 3,225,545, 12–28–65, Cl. 61—10.

Flinn & Dreffein Engineering Co.: *See*—
Balaz, Joseph K., and Kelly. 3,226,101.

Flinn, William S.: *See*—
Zmola, Paul C., Rickert, and Flinn. 3,226,300.

Florio, Patrick A.: *See*—
Atkinson, Ralph L., and Florio. 3,225,375.

Fluks, Ringenier: *See*—
Esveldt, Cornelis J., Fluks, and Peloschek. 3,226,328.

Foerster, George S., to The Dow Chemical Co. High strength aluminum alloy extrusion process and product. 3,226,267, 12–28–65, Cl. 148—11.5.

Fogg, Daniel A.: *See*—
Falcon, Carl J., and Fogg. 3,225,879.

Folb, Jacob. Bow sockets. 3,226.066, 12–28–65, Cl. 248—40.

Föller, Werner: *See*—
Domm, Ulrich, Föller, and Egelhofer. 3,226,026.

Forbro Design Corp.: *See*—
Kupferberg, Kenneth, and Ash. 3,226,628.

Fordham, Bryan B.: *See*—
Goodman, John E., and Fordham. 3,226,029.

Forrat, Francis: *See*—
Bertaut, Erwin F., and Forrat. 3,226,183.

Forrester, Jay W., W. M. Pease, J. O. McDonough, and A. K. Susskind, to J. T. Parsons. Pulse ratio control system. 3,226,677, 12–28–65, Cl. 340—147.

Forster, Warren S., to American Cyanamid Co. Red shade brightener and cellulose brightening method. 3,226,247, 12–28–65, Cl. 117—33.5.

Forten, Jeremy: *See*—
Oswin, Harry G., Forten, and Lieb. 3,226,341.

Forten, Jeremy, and R. J. Roethlein, to Leesona Corp. Fuel cell electrodes. 3,226,261, 12–28–65, Cl. 136—86.

Forth, Murray W., and R. E. Harrington, to Deere & Co. Wafering die. 3,225,711, 12–28–65, Cl. 107—14.

Fossenier, Germain B., to Dominion Tar & Chemical Co., Ltd. Stacking device. 3,225,942, 12–28–65, Cl. 214—6.

Foster, Harry C., to Olin Mathieson Chemical Corp. Target throwing apparatus having automatically varied throwing angle. 3,225,754, 12–28–65, Cl. 124—9.

Fountain, James L. Door hinge system. 3,225,381, 12–28–65, Cl. 16—132.

Fox, Charles R., to Metro Electronics Corp. Speaker assembly. 3,225,860, 12–28–65, Cl. 181—31.

Fox Industries, Inc.: *See*—
Sloan, Roy R. 3,225,577.

Foy, Claudius P. Billiard cue with readily replaceable tip. 3,226,119, 12–28–65, Cl. 273—70.

Fracke, Aribert. *See*—
Oehlrich, Karl-Heinz, and Fracke. 3,226,580.

Francis, Lynn M. End loading cargo vehicle. 3,225,709, 12–28–65, Cl. 105—455.

Frank, Daniel L.: *See*—
Elliott, James O., Frank, and Leland. 3,226,620.

Frankenberg, Henry E., to Continental Can Co., Inc. Plastic overcap for domed top aerosol can. 3,225,958, 12–28–65, Cl. 220—60.

Frechette, Kenneth R.: *See*—
Cetran, Louis, and Frechette. 3,225,886.

Freeman, Leo: *See*—
Shelton, Harry J., Jr., and Freeman. 3,226,045.

Frey, Christian, to Suspended Structures Inc. Suspended module buildings. 3,226,727, 12–28–65, Cl. 52—745.

Frey, Siegfried: *See*—
Heinemann, Rolf, Reinecke, and Frey. 3,226,621.

Friden, Inc.: *See*—
Samwel, Jan A. 3,226,568.

Friedman, Melvin, and M. S. Dietz, to Polaroid Corp. Camera apparatus. 3,225,670, 12–28–65, Cl. 95—13.

Friedman, Melvin, to Polaroid Corp. Containing device for a photographic film assembly. 3,225,671, 12–28–65, Cl. 95—13.

Friedman, Samuel: *See*—
Bohlinger, Ernst, and Friedman. 3,225,565.

Frilette, Vincent J., and R. W. Maatman, to Socony Mobil Oil Co., Inc. Process for preparing a platinum metal-crystalline zeolite catalyst. 3,226,339, 12–28–65, Cl. 252—455.

Fritschi, Charles. Method of making stereotype matrices and backing sheet for use therein. 3,225,687, 12–28–65, Cl. 101—17.

Fritz, William E.: *See*—
Carpenter, Keith H., Fritz, and Terkoski. 3,226,498.

Frohlich, Franklin. Heat exchanger. 3,225,823, 12–28–65, Cl. 165—69.

Fromkin, Jack, to Epsilon Industrial Electronics, a limited purpose. Two state devices controlled by an input and phase-shifted signal applied to a trigger means of said devices. 3,226,627, 12–28–65, Cl. 323—22.

Froot, Bernard, to Combustion Engineering, Inc. Fluid heater organization with improved flow control means. 3,225,749, 12–28–65, Cl. 122—406.

Frowein, Egbertus, and S. Ruffeux, to Aktiengesellschaft Brown, Boveri & Cie. Compressed gas actuated circuit breaker having a dwell phase in the opening stroke of the movable contact. 3,226,513, 12–28–65, Cl. 200—148.

Fuchs, Francis J., Jr., and W. R. Wyatt, to Western Electric Co., Inc. Combined feeding and marking apparatus. 3,225,689, 12–28–65, Cl. 101—44.

Fuchs, Martin, to Fr. Hesser Maschinenfabrik-Aktiengesellschaft. Machine for producing folded boxes. 3,225,667, 12–28–65, Cl. 93—44.1.

Fuhrmann, Hans, to Messrs. Bran & Lubbe. Apparatus for gas analysis. 3,226,200, 12–28–65, Cl. 23—254.

Fujii, Kiyoshi: *See*—
Matsubayashi, Kanji, Inoue, Yoshimura, and Fujii. 3,226,455.

Fujita, Ryuzo: *See*—
Masuda, Masaharu, Kita, and Fujita. 3,226,277.

Fujitsu Ltd.: *See*—
Azuma, Yasuo, and Emoto. 3,226,577.
Kuroda, Akira. 3,226,572.
Motegi, Ryukichi. 3,226,521.
Seki, Kouji. 3,226,495.

Fujitsubo, William S., to General Motors Corp. Information storage system using color code. 3,226,697, 12–28–65, Cl. 340—173.

Fulcher, Charles R.: *See*—
Josephsen, Roy C., Tino, and Fulcher. 3,225,950.

Fuller, Glenn, to Shell Oil Co. Liquid hydrocarbon composition and additives therefor. 3,226,322, 12–28–65, Cl. 252—32.7.

Fuller, Richard H., R. J. Koerner, and E. J. Schneberger, to The Bunker-Ramo Corp. Modular computer system. 3,226,692, 12–28–65, Cl. 340—172.5.

Fuller-Trimview, a Division of Texas Aluminum Co., Inc.: *See*—
Coller, John H. 3,225,393.

Furendal, Allan R. B.: *See*—
Ekenstam, Bo T., von Fleandt, and Furendal. 3,226,297.

Furman, Daniel W., to Dunlap and Associates, Inc. Nuclear blast and overpressure detection and recording system. 3,226,546, 12–28–65, Cl. 250—83.

Gabor, Andrew: *See*—
Potter, John T., Comstock, and Gabor. 3,226,685.

Gaffney, John E., Jr., to International Business Machines Corp. Sequential decision making device. 3,226,683, 12–28–65, Cl. 340—172.5.

Gallazzo, Guido: *See*—
Bezzi, Silvio, Gallazzo, and Bandel. 3,226,366.

Galitzki, Bernard I., and R. C. Burbank; said Burbank assor. to Jantzen Inc. Fabric laminated brassiere. 3,225,768, 12–28–65, Cl. 128—463.

Gamberini, Goffredo, to American Machine & Foundry Co. Cigarette pack conveying mechanism. 3,226,163, 12–28–65, Cl. 302—2.

Gamma Refrigeration Co., Inc.: *See*—
Braun, Arieh L. 3,225,563.

Gandy, John M. Hangers. 3,225,977, 12–28–65, Cl. 223—85.

Gantt, Robert G. Clutch and the like. 3,225,877, 12–28–65, Cl. 192—76.

Garden, Murray, to Leeds and Northrup Co. Semiconductor analog-to-digital converter system. 3,226,708, 12–28–65, Cl. 340—347.

Garfield, William L., and I. F. H. Goult, to International Standard Electric Corp. Monitoring circuit receiver for an F.M. radar. 3,226,715, 12–28–65, Cl. 343—14.

Garmendia, Joe J. Electrical switch assembly and shaft therefor. 3,226,519, 12–28–65, Cl. 200—166.

Garnett, Lawrence T., and R. L. Schroeder, Jr., to Robertshaw Controls Co. Capacitance probe assembly. 3,226,474, 12–28–65, Cl. 174—151.

Garrett Corp., The: *See*—
Spangler, Selden B., Jr., and Munier. 3,225,589.

Gartner, Stanley J., and J. E. Morean, to Sylvania Electric Products, Inc. Cam cutting machine and method. 3,225,659, 12–28–65, Cl. 90—13.7.

Garver, Robert V., and J. A. Rosado, to United States of America, Army. Broad band tem diode limiters. 3,226,661, 12–28–65, Cl. 333—81.

Garvey, Benjamin S., Jr., H. E. Albert, and A. C. Whiton, to Pennsalt Chemicals Corp. Regulation of butadiene-acrylonitrile polymerization using a mixture of decyl and undecyl secondary and tertiary mercaptans. 3,226,371, 12–28–65, Cl. 260—82.7.

Gas Appliance Supply Corp.: *See*—
Bowman, Dudley. 3,225,998.

Gaskell, Edward S. Dough-moulding machines. 3,225,714, 12–28–65, Cl. 107—19.

Gates, Robert L., to Thompson Ramo Wooldridge Inc. Means and method for gyrocompass alignment. 3,225,452, 12–28–65, Cl. 33—226.

Gavlek, Andrew L. Coaster-craft. 3,225,367, 12–28–65, Cl. 9—1.

Gebhardt, Marion A.: *See*—
Curtis, Thomas E., and Gebhardt. 3,226,499.

Gebruder Buhler: *See*—
Remund, Werner. 3,225,632.

Gebruder Giulini G.m.b.H.: *See*—
Rüter, Hermann, Cherdron, and Fässle. 3,226,188.

Geigy Chemical Corp.: *See*—
Meier, Eric A., and Dexter. 3,226,443.

Geigy, J. R., A.-G.: *See*—
Hindermann, Peter, Kolliker, Amman, and Pugin. 3,226,176.

Gembicki, Stanley: *See*—
Dunn, Lyman D., and Gembicki. 3,225,801.

Gemmill, Wayne J., to Union Carbide Corp. Process for making high purity radioactive iodine-131. 3,226,298, 12–28–65, Cl. 176—10.

General Aniline & Film Corp.: *See*—
Dersch, Fritz, and Clark. 3,226,231.
Sweet, Monroe H. 3,226,552.

General Dynamics Corp.: *See*—
Brightman, Barrie, and Perkins. 3,226,709.
Inglis, Ronald T. 3,225,655.
Shirman, Jack. 3,226,647.
Stine, Richard L. 3,225,989.

General Electric Co.: *See*—
Borman, Willem F. H. 3,226,361.
Campbell, Rex C. 3,226,551.
Christy, Richard S. 3,226,590.
Coffin, Louis F., Jr. 3,226,608.
Davis, Louis K. 3,226,062.
Green, Alwin C. 3,226,597.
Horvay, Julius B. 3,225,564.
Kelling, Leroy U. C. 3,226,649.
Klein, Leon. 3,226,559.
Levinthal, Jay G., and Crain. 3,226,682.
Longfellow, Herbert W. 3,226,272.
Miller, Meritt L. 3,226,641.
Miller, Richard F. 3,226,555.
Russell, Arthur P., and Grgetic. 3,226,175.
Stange, Klaus K. 3,225,680.

General Electronic Laboratories, Inc.: *See*—
Ludwig, David R. 3,226,646.

General Foods Corp.: *See*—
Fitzgerald, William A., Jr., and Yoshizumi. 3,226,171.

General Industries Co.: *See*—
Roe, Elverton O. 3,226,585.

General Mills, Inc.: *See*—
Gugel, Walter, and Gerhardt. 3,226,093.
Novak, Anthony L. 3,226,624.
Page, John A. 3,225,715.
Page, John A. 3,225,717.
Page, John A. 3,225,718.

General Motors Corp: *See*—
Augunas, Algis G. 3,225,621.
Baer, Donald G., Van Slyke, and Wootter. 3,226,668.
Bryant, Charles J. 3,226,470.
Caramanna, George. 3,225,856.
Carpenter, Keith H., Fritz, and Terkoski. 3,226,498.
Christenson, Howard W. 3,225,627.
Cuttill, William E. 3,225,693.
DeHaan, Wolbert, and Vogelei. 3,225,857.
Dison, James R. 3,225,876.
Dunn, Joseph B., and Ross. 3,225,932.
Elliott, James O., Frank, and Leland. 3,226,620.

General Motors Corp.: *See*—Continued
Fujitsubo, William S. 3,226,697.
Geyer, Howard M. 3,225,626.
Hall, Walter B., Jr. 3,225,561.
Harris, Edward P., and Moorman. 3,225,641.
Heller, Paul S. 3,225,376.
Kesten, Patrick N. 3,226,342.
Lautzenhiser, Argyle C. 3,226,711.
Malone, James D. 3,226,679.
Norton, James A., and Holloway. 3,226,251.
Poston, Irvin E., and Zielinski. 3,225,951.
Reuther, Albert H. 3,226,151.
Reuther, Albert H. 3,226,152.
Schaberg, Johannes G., and Pritzläff. 3,225,607.
Schaefer, Robert H. 3,225,619.
Scofield, Robert O., Sr., and Hess. 3,226,278.
Shearer, Thomas W., Jr. 3,226,526.
Simon, Ivan. 3,225,606.
Sullivan, Leo S., Jr. 3,225,420.
Sullivan, Leo S., Jr. 3,226,141.
Terkoski, Frank J. 3,226,497.
Wiley, John B. 3,225,424.
Wyczalek, Floyd A. 3,225,997.

General Precision Inc.: *See*—
Riordan, Hugh E. 3,225,820.
Smith, Edgar J., and Masel. 3,226,617.
Stiles, John C. 3,225,606.
Stiles, John C. 3,225,609.

General Time Corp.: *See*—
Neitzert, Carl. 3,226,562.

Georgii-Kobold Elektro-Motoren-Apparatebau G.m.b.H.: *See*—
Heinemann, Rolf, Reinecke, and Frey. 3,226,621.

Geresy, Steve. Trailer hitch locking device. 3,226,133, 12–28–65, Cl. 280—507.

Gerhardt, Max: *See*—
Gugel, Walter, and Gerhardt. 3,226,093.

Gesell, Reinhard, to Dr.-Ing. Rudolf Hell, Kommanditgesellschaft. Device for developing or fixing exposed photographic papers in automatic picture telegraph equipment. 3,225,676, 12–28–65, Cl. 95—89.

Gewerkschaft Eisenhuette Westfalia: *See*—
Hoffmann, Erich. 3,225,547.

Geyer, Howard M., to General Motors Corp. Electromechanical actuator systems. 3,225,626, 12–28–65, Cl. 74—661.

Gibbert, A. C., Co., The: *See*—
Mallalieu, Durham F. 3,225,487.

Giddings, Sydney A., to American Cyanamid Co. Organometallic polymeric condensation products and method of preparation. 3,226,363, 12–28–65, Cl. 260—47.

Giddings, Sydney A., to American Cyanamid Co. Process of preparing titanoxane polymers. 3,226,369, 12–28–65, Cl. 260—80.

Gillies, Duncan M., and C. F. Spencer, to Duncan M. Gillies Co., Inc. Apparatus for printing a series of indicia on an elongated work piece. 3,225,688, 12–28–65, Cl. 101—36.

Gillies, Duncan M., Co., Inc.: *See*—
Gillies, Duncan M., and Spencer. 3,225,688.

Gilman Paper Co.: *See*—
Kurlander, Robert A. 3,226,070.

Gilvar, Martin, and W. L. Alden, to Alden Self-Transit Systems Corp. Transportation systems. 3,225,704, 12–28–65, Cl. 104—121.

Giordano, Nicola, G. Caporali, and N. Ferlazzo, to Edison. Catalytic process for the preparation of nitriles. 3,226,421, 12–28–65, Cl. 260—465.3.

Girrinclone, Vincent W., to Andex Corp. Filter and retaining device. 3,225,680, 12–28–65, Cl. 99—312.

Giumen, Anstalt: *See*—
Moser, Friedrich. 3,225,405.

Glass, Rob R.: *See*—
Dekko, Chester E., and Glass. 3,226,678.

Glaverbel, S. A.: *See*—
Plumat, Emile. 3,226,220.

Glockl, Hana, to Bolkow Gesellschaft mit beschrankter Haftung, Firma. Helicopter training device. 3,225,458, 12–28–65. Cl. 35—12.

Goble, Charles L.: *See*—
Nehl, George J. 3,226,118.

Goble, Elizabeth A.: *See*—
Nehl, George J. 3,226,118.

Gobrecht, Heinrich, to International Standard Electric Corp. Method of producing photosensitive layers of lead selenide. 3,226,253, 12–28–65, Cl. 117—201.

Godfrey, Thomas A., and S. T. Gustavson, to American Machine & Foundry Co. Cigar and method of applying a wrapper. 3,225,772, 12–28–65, Cl. 131—8.

Goerner, Leighton. Engine drive arrangement for a bicycle. 3,225,854 12–28–65, Cl. 180—33.

Goetz, Carlos C. and P. C. Method of making cetyl alcohol emulsions. 3,226,295, 12–28–65, Cl. 167—63.

Goetz, Paul C.: *See*—
Goetz, Carlos C. and P. 3,226,295.

Goff, Randall: *See*—
Du Bois, Robert C., Goff, and Plavcan. 3,225,622.

Gogarty, William B., and G. I. Nielson, to Marathon Oil Co. Batching pig and separation of interfaces in pipe line flow. 3,225,787. 12–28–65, Cl. 137—561.

Goheen, David W.: *See*—
Bennett, Clifton F., and Goheen. 3,226,433.

Goike, Thomas M., to Consolidated Electrodynamics Corp. Servo-system for fluid flow regulating valves. 3,225,785, 12–28–65, Cl. 137—486.

Goldbaum, Robert H. Reinforced heel. 3,225,464, 12–28–65, Cl. 36—34.

Goldberg, Ira, to East Coast Auto Specialties Co. Resilient covered bumper guard. 3,226,145, 12–28–65, Cl. 293—65.

Goldfarb, Adolph E. Inflatable aerial toy. 3,225,488, 12–28–65, Cl. 46—89.

Goldfarb, Adolph E. Bow making machine. 3,225,976, 12–28–65, Cl. 223—46.

Goldfarb, Adolph E. Electrical guessing game having control means for selectively causing action of action object means. 3,226,121, 12–28–65, Cl. 273—86.

Goldman, Leon: *See*—
Albright, Jay D., Mischer, and Goldman. 3,226,391.

Goode, McKay, and M. J. Wiggins, to Martin-Marietta Corp. Tropospheric scatter communication system having high diversity gain. 3,226,644, 12–28–65, Cl. 325—56.

Goodman, John E., and B. B. Fordham, to Ultrasonics Ltd. Production of aerosols and the like and apparatus therefor. 3,226,029, 12–28–65, Cl. 239—4.

Goodman Mfg. Co.: *See*—
Bowman, Arvid N. 3,226,043.
Lo Presti, Roy F., and Salmons. 3,225,899.

Goodman, Robert M. Photosensitive scanner for detecting radiation from any azimuthal angle. 3,226,557, 12–28–65, Cl. 250—236.

Goodyear Tire & Rubber Co., The: *See*—
Barrett, Donald L. 3,225,812.
Enabnit, Robert S. 3,225,810.
Ferner, George W. 3,226,359.
Hawkes, Joseph S. 3,225,811.
Rye, Grover W., Bridge, and Kovac. 3,226,276.
Smith, Edwin S., and Sell. 3,226,350.

Goonewardene, Hilary F., to Rohm & Haas Pharma G.m.b.H. Method and compositions for chemosterilization of insects. 3,226,289, 12–28–65, Cl. 167—22.

Gordon, Benjamin Z.: *See*—
Lavieri, Daniel C., and Gordon. 3,226,086.

Gordon, Edward, D. F. Searcy, and J. T. Cotten, to United Gas Corp. Computer apparatus for scanning a chart record and determining a mathematical result therefrom. 3,226,532, 12–28–65, Cl. 235—164.

Gordon, Joseph, H. R. Nychka, and C. Woolf, to Allied Chemical Corp. Preparation of fluorine compounds. 3,226,448, 12–28–65, Cl. 260—650.

Gordon, Keith M., to Miniature Precision Bearings, Inc. Bearing torque test instrument. 3,225,587, 12–28–65, Cl. 73—9.

Gotzinger, George. Combination soil cultivator and weeder implement. 3,225,838, 12–28–65, Cl. 172—378.

Gough, Peter J. C., and K. Hall, to Bristol Siddeley Engines Ltd. Apparatus for producing a high velocity jet consisting of a plasma of ions and electrons. 3,226,592, 12–28–65, Cl. 313—230.

Gould, Robert V., to Sperry Rand Corp. Scanning antenna utilizing four rotary prisms to produce rectilinear scan and fifth rotary prism to produce conical scan. 3,226,721, 12–28–65, Cl. 343—754.

Goult, Ian F. H.: *See*—
Garfield, William L., and Goult. 3,226,715.

Grace, W. R., & Co.: *See*—
Baptist, James N., Steyermark, and Veltman. 3,226,210.
Baptist, James N., and Ziegler. 3,225,766.
Barrett, Wayne T. 3,226,425.
Josephsen, Roy C., Tino, and Fulcher. 3,225,950.
Kehr, Clifton L., and Guthrie. 3,226,356.
Manyak, Anthony R., and Csarnomski. 3,226,452.
Marans, Nelson S., and Gregorian. 3,226,454.
Stevermark, Paul R. 3,226,379.
Werber, Frank X., and Gregorian. 3,226,351.
Wood, Louis L. 3,226,346.

Graff, Roderich, L. Thoma, and K. J. Reichl, to Deutsche Tefelglas Aktiengesellschaft Detag. Method and apparatus for continuously producing molded articles and sectional sheets of plastics. 3,226,458, 12–28–65, Cl. 264—90.

Graftstein, Daniel, and J. J. Dvorak, to Thiokol Chemical Corp. Boron compounds and method for making the same. 3,226,429, 12–28–65, Cl. 260—485.

Graham, Geoffroy, J. Hure, and R. Saint-James. Spray-type processing columns with pulsed continuous phase. 3,226,092, 12–28–65, Cl. 259—2.

Grahn, Chester N., to Kaiser Aluminum & Chemical Corp. Nozzle for gunning refractory material. 3,226,036, 12–28–65, Cl. 239—400.

Grambech, Russell J. Communications control system. 3,226,489, 12–28–65, Cl. 179—89.

Grant Oil Tool Co.: *See*—
Leathers, Clarence H. 3,225,566.

Graumann, Hermann, to Lavasti S.A. Process and apparatus for grinding cereal grains. 3,226,041, 12–28–65, Cl. 241—9.

Gravesteijn, Jacobus C.: *See*—
Vermeulen, Gerardus A. W., and Gravesteijn. 3,226,246.

Gray, James H., to Tupelo Spindle Co., Inc. Cotton picking spindle. 3,225,528, 12–28–65, Cl. 56—50.

Great Lakes Carbon Corp.: *See*—
Mueller, Albert J., and Wills. 3,226,208.

Green, Alwin C., to General Electric Co. High pressure metal vapor discharge lamp. 3,226,597, 12–28–65, Cl. 315—60.

Green, Brian N.: *See*—
Craig, Robert D., and Green. 3,226,542.

Green, Martin, ¼ to J. Cornelia, Jr. Work bench scaffold and lift combination. 3,225,864, 12–28–65, Cl. 182—144.

Green, Rowland P. to Stothert & Pitt Ltd. Vibrating rollers. 3,225,669, 12–28–65, Cl. 94—50.

Greenawalt, Frederick A.: *See*—
Dusinberre, Robert, Kraft, and Greenawalt. 3,226,021.

Greenblott, Bernard J., and R. A. Comparin, to International Business Machines Corp. Fluid controlled device. 3,226,530, 12–28–65 Cl. 235—61.11.

Greene, Dewitt T., Jr. Engine torque measuring apparatus. 3,225,592, 12–28–65, Cl. 73—136.

Greene, John P., to Parachem Corp. Leaf dispenser. 3,226,110, 12–28–65, Cl. 271—41.

Greenman, William B., to Instro-Dynamics Corp. Chin-secured dental aspirator. 3,225,444, 12–28–65, Cl. 32—33.

Greenwood, David L., and H. Klepper, to Eltra Corp. Assembling mechanism for linecasting machines. 3,225,907, 12–28–65, Cl. 199—28.

Greenwood, Robert: *See*—
Bottomley, Roy, Greenwood, Wild, and Kelly. 3,225,378.

Gregoire Engineering and Development Co.: *See*—
Gregoire, Resta S. 3,225,504.

Gregoire, Resta S., to Gregoire Engineering and Development Co. Locked wall panel joint with fastener. 3,225,504, 12–28–65, Cl. 52—509.

Gregorian, Razmic S.: *See*—
Marans, Nelson S., and Gregorian. 3,226,454.
Werber, Frank X., and Gregorian. 3,226,351.

Greiner, Otto. Machine for trimming sheet material. 3,225,638, 12–28–65, Cl. 83—658.

Greth, Gerald G., and J. E. Wilson, to Atlas Chemical Industries, Inc. Method of emulsion polymerization. 3,226,375, 12–28–65, Cl. 260—89.1.

Greubel, Paul W.: *See*—
Milton, Walter H., and Greubel. 3,225,419.

Grgetic, Edward F.: *See*—
Russell, Arthur P., and Grgetic. 3,226,175.

Grier, Robert C., Jr. Stair climbing chair. 3,226,128, 12–28–65, Cl. 280—5.2.

Griffin, Pat: *See*—
West, Vern W. 3,225,881.

Griffith, Joseph W. Electron beam multiplication tube. 3,226,594, 12–28–65, Cl. 315—8.5.

Griffith, Raymond C. Hydraulic pumps. 3,225,701, 12–28–65, Cl. 103—161.

Grimshaw, Norman, to Vitafoam Ltd. Cushion supporting members. 3,225,366, 12–28–65, Cl. 5—236.

Groendycke, Alan R., to Hughes Aircraft Co. Tunnel diode shift register. 3,226,571, 12–28–65, Cl. 307—88.5.

Gruber, Helmut: *See*—
Bussard, Adrien, Gruber, and Stephan. 3,226,223.

Gruendler Crusher and Pulverizer Co.: *See*—
Shelton, Harry J., Jr., and Freeman. 3,226,045.

Grundig, Max: *See*—
Krauss, Otto, and Link. 3,225,884.

Grunewald, Waldemar, and R Schöps, to Pintsch Bamag Aktiengesellschaft Zweigniederlassung Cologne- Bayenthal. Ladle carriage, particularly for converters in steel mills. 3,225 397, 12–28–65, Cl. 22—82.

Gugel, Walter, and M. Gerhardt, to General Mills, Inc. Mixing apparatus for multi component resin. 3,226,093, 12–28–65, Cl. 259—7.

Guida, Michael F. Simulative display devices. 3,225,472, 12–28–65, Cl. 40—106.41.

Gulick, Ronald A., and W. E. Lowrey, to ACF Industries, Inc. Joint connection and seal therefor. 3,226,082, 12–28–65, Cl. 251—367.

Gulf Oil Corp.: *See*—
Anspon, Harry D., and Cahoy. 3,226,437.
Daughtrey, Joseph W. 3,226,143.
Helin, Arthur F., and Mantell. 3 226,352.
Hopkins, Thomas R., and Strickler. 3,226,426.

Gulf Research & Development Co.: *See*—
Biber, Albert, Davis, and Walsh. 3,226,037.
Burow, Frank H. 3,225 520.
Burow, Frank H. 3,225,521.
Deffner, John F., and Fareri. 3,226,211.
Fareri, Elizabeth L., and Pellegrini. 3,226,373.
Humes, William H., and Stewart. 3,226,335.
Walsh, Bruce R. 3,225,813.

Gunderson, Ralph R. Fastener for cloth material. 3,225,404, 12–28–65, Cl. 24—162.

Gurdack, Walter D.: *See*—
Bulger, Robert F., Lucas, Caln, and Gurdack. 3,225,512.

Gustafson, Roger B., to Joy Mfg. Co. Commandair control system. 3,226,011, 12–28–65, Cl. 230—2.

Gustavson, Sterling T.: *See*—
Godfrey, Thomas A., and Gustavson. 3,225,772.

Gustavson, Sterling T., to American Machine & Foundry Co. Tobacco web feed with universal binder shaper. 3,225,633, 12–28–65, Cl. 83—152.

Gustavson, Sterling T., to American Machine & Foundry Co. Method of making a multiple-length cigar horseshoe shaped binder. 3,225,773, 12–28–65, Cl. 131—20.

Guthrie, James L.: *See*—
Kehr, Clifton L., and Guthrie. 3,226,356.

Gutsche, Heinrich: *See*—
Allegretti, John E., and Gutsche, and McAleer. 3,226,269.

Gutshall, Charles E., to Illinois Tool Works Inc. Lock nut. 3,225,808, 12–28–65 Cl. 151—15.

Guttman, Yolan R. Intravenous stylet catheter. 3,225,762, 12–28–65, Cl. 128—214.

Gyan, Joseph A., and T. P. Whaley, to Ethyl Corp. Method of preparing an alkali metal dithionite. 3,226,185, 12–28–65, Cl. 23—116.

Haban, Frank: *See*—
Amthor, Franklin R., Jr., Katzfey, Kanitz, Schaefer, Kodet, and Haban. 3,225,937.

Habighorst, Henry J., to American Telephone and Telegraph Co. Apparatus for pulling cable through underground conduit. 3,226,088, 12–28–65, Cl. 254—134.3.

Hackethal-Draht-und Kabel-Werke Aktiengesellschaft: *See*—
Kleine, Friedrich. 3,225,385.

Hackney, Stanley, to United Kingdom Atomic Energy Authority. Method and apparatus for rendering subcritical a boiling water nuclear reactor. 3,226,299, 12–28–65, Cl. 176—20.

Hadley, Benjamin H.: *See*—
Schwien, Leo N. 3,225,599.

Hadley, Harlan A. Weighing scale bearing structure. 3,226,167, 12–28–65, Cl. 308—2.

Haedtiger, William W.: *See*—
Crownover, Joseph W. 3,226,490.

Haegele, Karl: *See*—
Schoetensack, Wolfgang, Hallmann, and Haegele. 3,226,402.

Haenichen, John C., to Motorola, Inc. Semiconductor device. 3,226,611, 12–28–65, Cl. 317—234.

Haenichen, John C., to Motorola, Inc. Semiconductor device and method. 3,226,612, 12–28–65, Cl. 317—234.

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Hagans, Kenneth W. Animal feeder. 3,225,742, 12–28–65, Cl. 119—51.11.

Hageman, Howard A., and J. A. Riddell, to United States Rubber Co. Inhibiting tobacco sucker growth. 3,226,221, 12–28–65, Cl. 71—2.7.

Hagen, Reinold. Apparatus for making hollow plastic articles. 3,225,382, 12–28–65, Cl. 18—5.

Hagiwara, Naoki: *See*—
Machida, Jyusaku, Hagiwara, Yamada, Isago, and Sugishita. 3,226,334.

Hald, William C., to Strick Trailers, a Division of Fruehauf Corp. Two-position removable roof bow. 3,226,153, 12–28–65, Cl. 296—104.

Haigh, Frederick C.: *See*—
Smith, Robert M., and Haigh. 3,226,358.

Hale, Clifford W.: *See*—
Abraham, Edward P., Newton, and Hale. 3,226,384.

Hall, Kenneth: *See*—
Gough, Peter J. C., and Hall. 3,226,592.

Hall, St. John M., to Scovill Mfg. Co. Snap fastener attaching machine. 3,225,993, 12–28–65, Cl. 227—18.

Hall, Walter B., Jr., to General Motors Corp. Refrigerating apparatus. 3,225,561, 12–28–65, Cl. 62—262.

Hallauer, Walter, to Schweizerische Aluminium A.G. Composite frame. 3,225,502, 12–28–65, Cl. 52—461.

Hallburg, Gerald M. Moving sign display device. 3,225,471, 12–28–65, Cl. 40—36.

Haller, John F.: *See*—
Clark, Benjamin F., and Haller. 3,226,432.

Hallerbäck, Stig L. Cooking vessels with a pouring lip. 3,225,975, 12–28–65, Cl. 222—572.

Halliburton Co.: *See*—
Shelton, Robert Q., Pittman, and Love. 3,225,777.

Hallmann, Guenther: *See*—
Schoetensack, Wolfgang, Hallmann, and Haegele. 3,226,402.

Hallum, Alton Z.: *See*—
Brunner, John E., and Hallum. 3,226,720.

Hamalian, Aram C.: *See*—
Alsobrooks, Darriel L., Hamalian, and Oldenburger. 3,225,540.

Hamilton Mfg. Co.: *See*—
Amthor, Franklin R., Jr., Katzfey, Kanitz, Schaefer, Kodet, and Haban. 3,225,937.
Kanitz, Roy E. 3,225,479.

Hamilton Watch Co.: *See*—
Reber, John, Jr. 3,225,586.

Hamlin, Guther L. Hat holders. 3,226,156, 12–28–65, Cl. 297—191.

Hamlin Products, Inc.: *See*—
Walklet, Mercer D. 3,226,117.

Handel, Siegfried K.: *See*—
Lasley, Robert A., Handel, and Eisenstadt. 3,225,925.

Hansberg, Fritz. Seal for control slide of core and mold making machine. 3,225,396, 12–28–65, Cl. 22—10.

Hansen, Jack T., and J. W. Broome, to The Oilgear Co. Speed control system. 3,225,542, 12–28–65, Cl. 60—53.

Hansjosten, Nikolaus. Mold for the production of shoes. 3,225 388, 12–28–65, Cl. 18—34.

Hansl, Nikolaus R.: *See*—
Sahyun, Melville, Faust, and Hansl. 3,226,440.

Hanson, Herbert G.: *See*—
Shaw, Harr N., and Hanson. 3,226,079.

Hanson, John R., and K. L. Johnson, to Betts Machine Co. Vehicle lamp. 3 226,537, 12–28–65, Cl. 240—3.2.

Hanson, Theodore L.: *See*—
Black. Stewart L., Hanson, and Nail. 3,226,099.

Harbison-Walker Refractories Co.: *See*—
Miller, Eldon D., Jr. 3,226,241.

Harding, William H. Apparatus for perforating sheet material. 3,226,527, 12–28–65, Cl. 219—384.

Hardy, John F.: *See*—
Jordan, Merrill E., and Hardy. 3,226,244.

Hardy, Norman, to Control Data Corp. Reading machine system with tape output. 3,226,529, 12–28–65, Cl. 235—61.11.

Haritonoff, Boris W.: *See*—
Church, Richard A., and Haritonoff. 3,225,788.

Harman, George G., Jr., T. Higier, O. L. Meyer, and R. L. Raybold, to United States of America, Commerce. Constant-current semiconductor device. 3,226,610, 12–28–65, Cl. 317—234.

Harmon, Darrell R., to William W. Cornforth. Apparatus for treating irrigation water. 3,226,201, 12–28–65, Cl. 23—262.

Harrington, George F.: *See*—
Lovett, William E., and Harrington. 3,225,665.

Harrington, Roy E.: *See*—
Forth, Murray W., and Harrington. 3,225,711.

Harris, Edward P., and C. L. Moorman, to General Motors Corp. Apparatus and article of manufacture. 3,225,641, 12–28–65, Cl. 85—5.

Harris-Intertype Corp.: *See*—
Staines, Alfred J. 3,226,107.

Hartz, Joseph M., and C. W. Vogel, to Automatic Electric Laboratories, Inc. Push button assembly. 3,226,494, 12–28–65, Cl. 200—5.

Hartzell, Gordon E.: *See*—
Oja, Phyllis D., and Hartzell. 3,226,438.

Hartzler, Harris D., to E. I. du Pont de Nemours and Co. 9-dicyanomethylenenitrofluorenes and the charge-transfer compounds thereof. 3,226,388, 12–28–65, Cl. 260—268.

Harwood, Leopold A., and T. Murakami, to Radio Corp. of America. Parametric frequency converters. 3,226,645, 12–28–65, Cl. 325—445.

Hassenauer, Robert L.: *See*—
Bogar, William H., Davis, Hassenauer, Pakurar, and Ruffolo. 3,225,706.

Hastings Mfg. Co.: *See*—
Wilkinson, James W. 3,226,238.

Hauser, Raymond, and H. Zyngier, to Electricite de France (Service National). Neutronic flux detector. 3,226,548, 12–28–65, Cl. 250—83.1.

Hausner Enterprises, Inc.: *See*—
Hausner, Johann K. 3,226,300.

Hausner, Johann K., to Hausner Enterprises, Inc. Rotary film distillation and gas refrigerant condensing apparatus. 3,226,306, 12–28–65, Cl. 202—177.

Hawkes, Joseph S., to The Goodyear Tire & Rubber Co. Tire with run-flat warning device. 3,225,811, 12–28–65, Cl. 152—340.

Hayden, David H. Retaining wall and section thereof. 3,225,548, 12–28–65, Cl. 61—49.

Hayden, Ernest A., and J. S. Tanner; said Tanner assor. to said Hayden. Lumber sawing attachment for portable chain saw. 3,225,799, 12–28–65, Cl. 143—32.

Hayot, Marcel. Crushing machine for sugar-cane stalks. 3,225,803, 12–28–65, Cl. 146—119.

Hazard, Robin F., to International Computers and Tabulators Ltd. Data processing apparatus. 3,226,691, 12–28–65, Cl. 340—172.5.

Hazen Engineering Co.: *See*—
Keller, John D. 3,225,757.

Hazzard, Frank C., to Martin-Marietta Corp. Converter-controller transformer system. 3,226,629, 12–28–65, Cl. 323—56.

Heartstedt, Otto E.: *See*—
Kehe, Alfred W., and Heartstedt. 3,225,691.

Hechtle, Emil, to Radiant Pen Corp. Plunger latch for a ball-point pen. 3,225,745, 12–28–65, Cl. 120—42.03.

Hechtle, Emil, to Radiant Pen Corp. Pen plunger latch. 3,225,746, 12–28–65, Cl. 120—42.03.

Heckethorn, John E., to Oldberg Mfg. Co. Shock absorber baffle means. 3,225,870, 12–28–65, Cl. 188—100.

Heer, H., & Cie: *See*—
Spuhler, Ernst. 3,226,076.

Heller, Paul S., to General Motors Corp. Concealed windshield wiper mechanism. 3,225,876, 12–28–65, Cl. 15—250.19.

Heimgartner, Josef, to Trichema AG. Device for dispensing liquids, pastes and other flowable material. 3,225,967, 12–28–65, Cl. 222—188.

Heinemann, Rolf, H. Reinecke, and S. Frey, to Georgii-Kobold Elektro-Motoren-Apparatebau G.m.b.H. Sewing machine drive. 3,226,621, 12–28–65, Cl. 318—224.

Heinisch, Harold P., to Dahlman Mfg. & Sales, Inc. Draper chain structure. 3,225,901, 12–28–65, Cl. 198—195.

Heinze, Karl A. O., and G. F. H. Bierkarre, to North American Philips Co., Inc. Measuring device for the discontinuous measurement of the thickness of preferably small workpieces by means of β-rays. 3,226,549, 12–28–65, Cl. 250—83.6.

Heinzl, Hans. Driving arrangement for electrical toy train. 3,225,705, 12–28–65, Cl. 105—29.

Heiss, Herbert L.: *See*—
Saunders, James H., and Heiss. 3,226,345.

Heiss, Herbert L., to Monsanto Co. Adhesive products of polyisocyanates and polyisothiocyanates. 3,226,354, 12–28–65, Cl. 260—31.2.

Heist, C. H., Ohio Corp.: *See*—
Heist, Charles H. 3,226,258.

Heist, Charles H., to C. H. Heist Ohio Corp. Method for removing incrustations. 3,226,258, 12–28–65, Cl. 134—8.

Helin, Arthur F., and G. J. Mantell, to Gulf Oil Corp. Ethylene polymerization in nonionic emulsion systems. 3,226,352, 12–28–65, Cl. 260—29.6.

Hell, Dr.-Ing. Rudolf, Kommanditgesellschaft: *See*—
Gesell, Reinhard. 3,225,676.

Heller, John F., and J. D. Morley, to National Electric Welding Machines Co. Joining device for metal strip material. 3,225,999, 12–28–65, Cl. 228—4.

Helman, Phillip, to Myron Snyder, Inc. Soaping attachment for a faucet. 3,226,084, 12–28–65, Cl. 239—316.

Hempel, Roy A. Digital code responsive automatic circuit and component tester having code selected series circuits. 3,226,637, 12–28–65, Cl. 324—73.

Hemstock, Glen A., to Minerals & Chemicals Philipp Corp. Color-reactable inorganic adsorbent pigment and sensitized sheet material coated therewith. 3,226,252, 12–28–65, Cl. 17—155.

Henry-Baudot, Jacques, to Printed Motors Inc. Axial airgap rotary machines. 3,226,586, 12–28–65, Cl. 310—254.

Henschen, Irvin C.: *See*—
Housel, Richard F., and Henschen. 3,226,169.

Henshaw, David E., to Commonwealth Scientific and Industrial Research Organization. Apparatus and process for forming yarns and other twisted assemblies. 3,225,533, 12–28–65, Cl. 57—64.

Heraeus, W. C., G.m.b.H.: *See*—
Bussard, Adrien, Gruber, and Stephan. 3,226,223.
Kienel, Gerhard, and Elsasser. 3,226,467.

Herbenar, Edward J., to Thompson Ramo Wooldridge Inc. Ball joint assembly. 3,226,142, 12–28–65, Cl. 287—87.

Hercules Powder Co.: *See*—
Breslow, David S., and Spurlin. 3,226,331.

Hermann, Hans D.: *See*—
Fischer, Edgar, and Hermann. 3,226,444.

Hermann, Otto, to The R. K. Le Blond Machine Tool Co. Self-adjusting steady rest roller. 3,225,631, 12–28–65, Cl. 82—39.

Hermann, Otto, to The R. K. Le Blond Machine Tool Co. Screw type zero speed mercury switch. 3,226,514, 12–28–65, Cl. 200—152.

Herrick, Wallace D., and H. W. Christie, to The Coleman Co., Inc. Insulated container. 3,225,954, 12–28–65, Cl. 220—9.

Hertler, Walter R., to E. I. du Pont de Nemours and Co. 11,11,12,12-tetracyano-naphtho-2,6-quinodimethan and its anion-radical salts. 3,226,389, 12–28–65, Cl. 260—288.

Hess, Richard M.: *See*—
Scofield, Robert O., Sr., and Hess. 3,226,278.

Hesser, Fr., Maschinenfabrik-Aktiengesellschaft: *See*—
Fuchs, Martin. 3,225,667.

Hettich, Alfred, S. Kofink, and H. Martin, to J. Eberspacher, Esslingen/Neckar. Exhaust gas system. 3,226,206, 12–28–65, Cl. 23—288.

Hettich, Bedrich V., and H. K. Latourette, to FMC Corp. Continuous method of preparing aromatic isocyanates. 3,226,410, 12–28–65, Cl. 260—453.

Hewett, Walter R., to V. J. Carter. Valve spring depressing tool. 3,225,427, 12–28–65, Cl. 29—217.

Hewitt, Dorothy V.: *See*—
Wright, John W., and Hewitt. 3,226,605.

Hewitt, John C., Jr.: *See*—
Wright, John W. 3,226,605.

Hibbitts, Charles H., and J. E. Sansing, Jr., to Allied Chemical Corp. High nitrogen reaction products of NH_3-P_2O_5 and process therefor. 3,226,222, 12–28–65, Cl. 71—29.

Hickin, Robert J., E. J. Plough, and G. H. Steele, to Packaging Corp. of America. Method of and apparatus for transferring articles. 3,225,891, 12–28–65, Cl. 198—31.

Hickin, Robert J., to PKG Corp. Carton and blank therefor. 3,226 003, 12–28–65, Cl. 229—17.

Higbie, Thomas E., to United States of America, Navy. Video pulse amplitude detector for airborne radar systems. 3,226,650, 12–28–65, Cl. 329—109.

Higier, Theodore: *See*—
Harman, George G., Jr., Higier, Meyer, and Raybold. 3,226,810.

Hill, James L. Pantograph-type receiving apparatus. 3,225,702, 12–28–65, Cl. 104—114.

Hi-Lo Mfg. Corp.: *See*—
Klancnik, Frank J. 3,226,067.
Klancnik, Frank J. 3,226,068.

Hill, Leonard: *See*—
McJohnson, Otis S. 3,226,149.

Hill-Rockford Co.: *See*—
Slattery, Robert E. 3,225,941.

Himmelmann, Wolfgang, H. Ulrich, and H. Meckl, to Agfa Aktiengesellschaft. Hardening photographic layers containing proteins. 3,226,234, 12–28–65, Cl. 96—111.

Hinderer, Gottlob, to Price-Pfister Brass Mfg. Co. Metal forming process for shaping ends of tubes. 3,225,581, 12–28–65, Cl. 72—370.

Hindermann, Peter, H. P. Kolliker, J. Amman, and A. Pugin, to J. R. Geigy, A.-G. Cellulose, wood, silk and leather fibers fast-dyed with chlorotriazine containing reactive dyestuffs. 3,226,176, 12–28–65, Cl. 8—10.

Hitachi Ranpu Kabushiki Kaisha: *See*—
Machida, Jyusaku, Hagiwara, Yamada, Isago, and Sugishita. 3,226,334.

Hoff, J. Robert: *See*—
Poole, Gean, and Hoff. 3,226,000.

Hoffmann, Erich, to Gewerkschaft Eisenhuette Westfalia. Travelling hydraulic development frame for mining operations. 3,225,547, 12–28–65, Cl. 61—45.

Hoffmann, Hermann: *See*—
Schimmelschmidt, Kurt, Hoffmann, Baier, and Ulmer. 3,226,395.

Hoffmann-La Roche Inc.: *See*—
Jampolsky, Lester M., Kiss, Pecherer, and Piati. 3,226,424.

Hoflich, Eugen: *See*—
Blickle, Karl, Hoflich, and Hub. 3,225,834.

Hogan, William J., and C. A. Endahl, Jr., to Stapling Machines Co. Machine for forming an eye at either end of a wire binder on wirebound box components. 3,225,795, 12–28–65, Cl. 140—104.

Holland, Raymond P., Jr. Multiple span aircraft. 3,226,056, 12–28–65, Cl. 244—2.

Holland, Raymond P., Jr. Induction propeller. 3,226,031, 12–28–65, Cl. 170—159.

Holley Carburetor Co.: *See*—
Londal, Ralph K. 3,225,778.

Holloway, Robert E.: *See*—
Norton, James A., and Holloway. 3,226,251.

Holloway, Thomas M., and J. E. Fleckenstein, to Johnson Service Co. Controls for combination heating and cooling systems. 3,226,024, 12–28–65, Cl. 236—1.

Holman, Keith L., to United States Steel Corp. Adjustable side stake. 3,225,708, 12–28–65, Cl. 105—380.

Holmlund, Chester E.: *See*—
Sax, Karl J., Blank, Holmlund, and Evans. 3,226,404.

Holstein & Kappert Maschinenfabrik Phoenix G.m.b.H.: *See*—
Plock, Karl, Mertins, and Ciongwa. 3,225,776.

Holtschmidt, Hans: *See*—
Reischl, Artur, Holtschmidt, and Fischer. 3,226,368.

Hopengarten, Abram: *See*—
Wilson, Harry H., Jr., and Hopengarten. 3,226,481.

Hopkins, Evan L. and R. E., to Hopkins Mfg. Corp., Inc. Article holder. 3,226,075, 12–28–65, Cl. 248—313.
Hopkins Mfg. Corp., Inc.: *See*—
Hopkins, Evan L. and R. E. 3,226,075.
Hopkins, Ross E.: *See*—
Hopkins, Evan L. and R. E. 3,226,075.
Hopkins, Thomas R., and P. D. Strickler, to Gulf Oil Corp. 4-hydroxy-2-butynyl carbamates. 3,226,426, 12–28–65, Cl. 260—471.
Horgen, Helge, and M. Bouvier, to Societe d'Etudes et de Participations, Eau, Gaz, Electricite, Energie S.A. Internal combustion engines, and in particular free piston engines, of the gaseous fuel injection type. 3,225,751, 12–28–65, Cl. 123—46.
Horrocks, Raymond G., to PLM Products, Inc. Device for removing insulation from cables. 3,225,629, 12–28–65, Cl. 81—9.5.
Horst, William R.: *See*—
Schwab, Helmut, Horst, Van Voorhis, and Coll. 3,225,470.
Horton, Billy M. Fluid scalars. 3,226,023, 12–28–65, Cl. 235—201.
Horvay, Julius B., to General Electric Co. Compact refrigerator. 3,225,564, 12–28–65, Cl. 62—377.
Hoskinson, Eugene A.: *See*—
Begley, Warren W., Wilcox, and Hoskinson. 3,225,782.
Hosoda, Yutaka, J. Shimatani, and K. Sakuma, to Mitsui Kagaku Kogyo Kabushiki Kaisha. Process for the dyeing of polyolefin fibrous materials. 3,226,177, 12–28–65, Cl. 8—39.
Houdaille Industries, Inc.: *See*—
Rumsey, Rollin D. 3,225,664.
Schott, Arthur K., Bartha, and Rovoldt. 3,225,636.
Housel, Richard F., and I. C. Henschen, to United States of America, Navy. Compact, high load, anti-friction bearing assembly. 3,226,169, 12–28–65, Cl. 308—219.
Howard, Jeff D.: *See*—
Powell, Stanley. 3,225,485.
Howe, Richard J.: *See*—
Ortloff, John E., and Howe. 3,225,843.
Howe Sound Co.: *See*—
Bungardt, Karl, and Becker. 3,226,207.
Hub, Wilhelm: *See*—
Blickle, Karl, Hoflich, and Hub. 3,225,834.
Huet, Andre. Junction pieces for tube elements. 3,225,423, 12–28–65, Cl. 29—157.
Huffaker, Vearn J., ½ to A. P. Branch. Adobe making machine. 3,225,409, 12–28–65, Cl. 25—41.
Huffman, Coy L., Jr., and R. L. Springfield. Shuttle checking device. 3,225,793, 12–28–65, Cl. 139—185.
Huffman, Max N. 17α-allyl-2-androstene-17β-ol acetate. 3,226,405, 12–28–65, Cl. 260—397.5.
Hughes Aircraft Co.: *See*—
Cooper, Theodore W. 3,225,438.
Groendycke, Alan R. 3,226,571.
Perry, Charles B., and Webb. 3,225,439.
Schwartz, Seymour S., and Bilow. 3,226,344.
Hugle, Frances B. and W. B., to D. H. Baldwin Co. Semiconductive films and method of producing them. 3,226,271, 12–28–65, Cl. 148—186.
Hugle, William B.: *See*—
Hugle, Frances B. and W. B. 3,226,271.
Humes, William H., and M. M. Stewart, to Gulf Research & Development Co. Reactivation of catalysts by impregnation of silica. 3,226,335, 12–28–65, Cl. 252—412.
Humpherys, Bernaar H., to United States of America, Navy. Delay line synchronizer. 3,226,716, 12–28–65, Cl. 343—6.5.
Hupp Corp.: *See*—
Bauer, Konrad E., and Carlson. 3,225,815.
Hure, Jacques: *See*—
Graham, Geoffroy, Hure, and Saint-James. 3,226,092.
Huth, Carl A., to American Can Co. Metal end closure. 3,225,957, 12–28–65, Cl. 220—54.
Huyck Corp.: *See*—
Manaslan, Arthur E., and Lehner. 3,226,179.
Hydril Co.: *See*—
Knox, Granville S. 3,225,831.
Hydrocarbon Research, Inc.: *See*—
Buschow, Herman F. 3,225,400.
Farkas, George B. 3,225,552.
Farkas, George B., and Korin. 3,225,955.
Stotler, Harold H. 3,225,519.
Stotler, Harold H., Farkas, and Keith. 3,226,204.
Hyman, Raymond. Support for saxophones and similar musical instruments. 3,225,984, 12–28–65, Cl. 224—5.
Hyman, Sidney S. Fast idler attachment for cars. 3,225,623, 12–28–65, Cl. 74—532.
I-T-E Circuit Breaker Co.: *See*—
Barnstead, Gardner E., Letosky, and Missett. 3,226,472.
Bowman, David F. 3,226,658.
Kussy, Frank W., and Di Marco. 3,226,516.
Kussy, Frank W., Thomas, Cataldo, and Kralik. 3,226,500.
Thomas, Robert W., and Platz. 3,226,510.
Ibis Enterprises Ltd.: *See*—
Becker, Richard M. 3,226,273.
Ideal Industries, Inc.: *See*—
Whitehurst, Joe R. 3,225,391.
Illinois Tool Works Inc.: *See*—
Autio, Paul. 3,225,371.
Gutshall, Charles E. 3,225,808.
Imperial Chemical Industries Ltd.: *See*—
Browne, Anthony A. B., and Mather. 3,226,360.
Inductosyn Corp.: *See*—
Tripp, Robert W. 3,226,710.
Industrial Brush Co.: *See*—
Jones, Lloyd E. 3,225,389.
Ingersoll-Rand Co.: *See*—
Allen, Edward L. 3,225,796.
Ingram, Donald M., to FMC Corp. Cargo handling apparatus. 3,225,867, 12–28–65, Cl. 187—9.
Inglett, Cecil M., to Inglett & Co., Inc. Automatic bag-hanging and bag-filling apparatus. 3,225,514, 12–28–65, Cl. 53—190.
Inglett & Co., Inc.: *See*—
Inglett, Cecil M. 3,225,514.
Inglett, Wilfred L. Automatic bag hanger. 3,225,515, 12–28–65, Cl. 53—190.
Inglis, Ronald T., to General Dynamics Corp. Controlled tip-off launcher. 3,225,655, 12–28–65, Cl. 89—1.7.
Inoue, Takeshi: *See*—
Matsubayashi, Kanji, Inoue, Yoshimura, and Fujii. 3,226,455.
Instro-Dynamics Corp.: *See*—
Greenman, William B. 3,225,444.
Instytut Chemii Ogolnej: *See*—
Bretsznajder, Stanislaw. 3,226,189.
Bretsznajder, Stanislaw, Kawecki, and Porowski. 3,226,187.
Bretsznajder, Stanislaw, Porowski, and Lis. 3,226,186.
Inta-Roto Machine Co., Inc., The: *See*—
Allen, Claude V. 3,226,279.
Interchemical Corp.: *See*—
Engle, Loy S. 3,226,353.
Milton, Walter H., and Greubel. 3,225,419.
Smith, Daniel, Otto, Lazzarini, and McHugh. 3,226,288.
Interlake Steel Corp.: *See*—
Rhea, Donald W. 3,225,683.
Swingle, Roy E. 3,225,919.
International Business Machines Corp.: *See*—
Adams, Lester R., Collins, Elchelberger, and Kelly. 3,226,686.
Barbeau, Raymond A., Fagut, Johnson, and Pearson. 3,225,990.
Belderbecke, Charles H., and Emig. 3,225,887.
Cox, Theodore C. 3,226,684.
Earle, John. 3,226,565.
Fitzgerald, William J. 3,226,534.
Gaffney, John E., Jr. 3,226,683.
Greenblott, Bernard J., and Comparin. 3,226,530.
Kauffmann, John A. 3,226,699.
Rogers, Fred L., Jr. 3,226,576.
Sharp, John V. 3,226,690.
Terlet, Rene H. 3,226,553.
Terlet, Rene H. 3,226,554.
International Computers and Tabulators Ltd.: *See*—
Hazard, Robin F. 3,226,691.
International Leasing Corp.: *See*—
Wilkes, Albert J. 3,225,723.
International Minerals & Chemical Corp.: *See*—
Lawver, James E. 3,225,923.
International Rectifier Corp.: *See*—
Diebold, Edward J. 3,225,416.
Diebold, Edward J. 3,226,625.
Finn, George B., Jr., Diebold, Eannarino, and Cooper. 3,226,603.
Stanley, Howard E. 3,225,450.
International Standard Electric Corp.: *See*—
Adelaar, Hans H. 3,226,483.
Benmussa, Henri. 3,226,487.
Benmussa, Henri, Marty, and Kobus. 3,226,486.
Dorrer, Herbert M. 3,225,995.
Duddridge, Gordon K., and Millard. 3,226,522.
Earp, Charles W. 3,226,718.
Garfield, William L., and Goult. 3,226,715.
Gobrecht, Heinrich. 3,226,253.
Kobus, Stanislas. 3,226,518.
Lauckner, Hans E. 3,226,607.
Lens, Georges X., and Vandevenne. 3,226,712.
Suhr, Kurt. 3,226,055.
Walter, Gerhard, and Muller. 3,226,662.
Wright, Esmond P. G. 3,226,482.
Wright, Esmond P. G. 3,226,676.
Wright, Esmond P. G., and Marn. 3,226,681.
Wright, Esmond P. G., Terry, and Chittleburgh. 3,226,480.
Zimmermann, Dieter, and Peter. 3,226,054.
Intron International, Inc.: *See*—
Pintell, Robert H. 3,226,584.
Iovenko, Michael J., 50% to A. Mencher. Modified plastic tubing. 3,226,285, 12–28–65, Cl. 161—72.
Irwin, Joseph T., to Cowels Chemical Co. Process of conditioning metal surfaces and compositions therefor. 3,226,180, 12–28–65, Cl. 21—2.5.
Isago, Masao: *See*—
Machida, Jyusaku, Hagiwara, Yamada, Isago, and Sugishita. 3,226,334.
Ishimoto, Kunio, and K. Nakamura, to Nippon Electric Co., Ltd. Monitor for a feedback amplifier. 3,226,651, 12–28–65, Cl. 330—2.
Ivins, Nelson J., to The Bastien-Blessing Co. Bracket hold-down device. 3,226,139, 12–28–65, Cl. 287—20.
JFD Electronics Corp.: *See*—
Seiden, Hugo. 3,226,616.
Jackes-Evans Mfg. Co.: *See*—
Miller, Joseph N. 3,225,557.
Jackson, Donald R. P., to The Molins Organisation Ltd. Feeding of webs of material. 3,226,282, 12–28–65, Cl. 156—519.

Jackson, Winston J., Jr., and J. R. Caldwell, to Eastman Kodak Co. Polyamides from alicyclic bisphenyleneoxydicarboxylic acids. 3,226,362, 12–28–65, Cl. 260—47.
Jacob, Don M.: *See*—
Sorkin, Morris, and Jacob. 3,226,713.
Jacobs, William H., E. Nahikian, and A. Armstrong, to Product R. & D. Inc. Apparatus for carbonating and dispensing beverages. 3,225,965, 12–28–65, Cl. 222—129.1.
Jacobsen, Jac., A/S: *See*—
Jacobsen, Jacob, and Krogsrud. 3,226,073.
Jacobsen, Jacob, and J. C. Krogsrud, to Jac. Jacobsen, A/S. Equipoised lamp structure. 3,226,078, 12–28–65, Cl. 248—280.
Jacobson, Allen G.: *See*—
Cramer, Sydney, Feldstein, Jacobson, and Staschover. 3,226,601.
Jacquier, René, to Resines et Vernis Artificiels. Process for the preparing of thixotropic gelled resins, products resulting therefrom, and applications thereof. 3,226,347, 12–28–65, Cl. 260—22.
James, Dennis B., to Bell Telephone Laboratories, Inc. Time division telephone signaling. 3,226,484, 12–28–65, Cl. 179—15.
James, Dwight C., to Martin-Marietta Corp. Failure detection circuits for redundant systems. 3,226,569, 12–28–65, Cl. 307—88.5.
Jamison, Albert L., ⅛ to B. V. Curry, and ⅛ to A. B. Willis. Carrier for containers. 3,225,959, 12–28–65, Cl. 220—102.
Jamnik, Fridolin, to Moosbrunner Glasfabriks-Aktiengesellschaft. Device for the fabrication of U-shaped profiles of glass in a continuous rolling procedure. 3,226,219, 12–23–65, Cl. 65—170.
Jampolsky, Lester M., J. Kiss, B. Pecherer, and J. T. Platt, to Hoffmann-La Roche Inc. Process for preparing 2-lower alkoxy-1,1-dicyanoethylene and 2-amino-1,1-dicyanoethylene. 3,226,424, 12–28–65, Cl. 260—465.5.
Janczy, John R.: *See*—
Begg, Clayton B., and Janczy. 3,225,584.
Janenkov, Nikolai P. Two-stage plate rotary vacuum pumps. 3,226,014, 12–28–65, Cl. 230—158.
Jantzen Inc.: *See*—
Galitzki, Bernard I., and Burbank. 3,225,768.
Jarrow Products, Inc.: *See*—
Monti, Angelo. 3,226,367.
Jaseph, Lawrence F., to Dover Corp. Selector for elevators. 3,226,672, 12–28–65, Cl. 340—21.
Javors, Sol. Color type means. 3,225,888, 12–28–65, Cl. 197—150.
Jeanneret, Jules L. Cutting control means for lathes. 3,225,630, 12–28–65, Cl. 82—14.
Jensen, William P.: *See*—
Vayda, Michael M., Jr., Darley, Jensen, and Talton. 3,226,097.
Jesmont, John J., and S. Weimersheimer, to U.S. Magnet & Alloy Corp. Method of making permanent magnets. 3,226,266, 12–28–65, Cl. 148—3.
Joch, Josef, M. Kaspar, and O. Kase, to Sdruzeni podniku textilniho strojirenstvi. Device for thermal fixation of synthetic cables. 3,225,454, 12–28–65, Cl. 34—65.
Johnels, Arne. Yarn dyeing apparatus. 3,225,573, 12–28–65, Cl. 68—198.
Johnson, Bertil E. Adjustable support element. 3,226,072, 12–28–65, Cl. 248—223.
Johnson, Dwight O., Jr.: *See*—
Barbeau, Raymond A., Fagut, Johnson, and Pearson. 3,225,990.
Johnson, Herbert E., to Union Carbide Corp. Process for preparing aminoindole compounds. 3,226,396, 12–28–65, Cl. 260—319.
Johnson & Johnson: *See*—
Atkinson Ralph L., and Florio. 3,225,375.
Johnson, Kenneth L.: *See*—
Hanson, John R., and Johnson. 3,226,537.
Johnson, Merle E., and E. F. Ustynik. Adjustment tables. 3,226,106, 12–28–65, Cl. 269—325.
Johnson Rubber Co., The: *See*—
McCulley, James H. 3,225,731.
Johnson Service Co.: *See*—
Holloway, Thomas M., and Fleckenstein. 3,226,024.
Johnson, Sylvia J.: *See*—
McCormick, Jerry R. D., Sjolander, and Johnson. 3,226,305.
Johnson, Thomas, to Welsh Mfg. Co. Cover plate for eye protecting device. 3,225,357, 12–28–65, Cl. 2—14.
Jokelson, Sonia: *See*—
Boris, Sonia, and Jokelson. 3,226,035.
Jones, Lloyd E., to Industrial Brush Co. Cotton gin rotary brush means and brush strip holder therefor. 3,225,389, 12–28–65, Cl. 19—60.
Jones, R. A., and Co., Inc.: *See*—
Jones, Wickliffe, and Weichhand. 3,225,510.
Jones, Robert L.: *See*—
Osment, Harry E., and Jones. 3,226,191.
Jones, Wickliffe, and R. J. Weichhand, to R. A. Jones and Co., Inc. Article cartoning machine. 3,225,510, 12–28–65, Cl. 53—48.
Jordan, Merrill E., and J. F. Hardy, to Cabot Corp. Process for making high color carbon black pigments. 3,226,244, 12–28–65, Cl. 106—307.
Josam Mfg. Co.: *See*—
Flegel, George J. 3,225,545.
Joseph, David A., and J. A. Petrusha, to Leesona Corp. Method of improving lithiated nickel oxide fuel cell electrodes. 3,226,264, 12–28–65, Cl. 136—120.
Josephsen, Roy C., J. R. Tino, and C. R. Fulcher, to W. R. Grace & Co. Plastic bottle. 3,225,950, 12–28–65, Cl. 215—1.
Josephson, Vernal, to The Aerospace Corp. Heavy duty gas tube with a magnetic trigger. 3,226,591, 12–28–65, Cl. 313—154.
Joy Mfg. Co.: *See*—
Archer, William E. 3,225,525.
Benvenuto, Alfred R. 3,226,622.
Densmore, Neal W. 3,225,678.
Gustafson, Roger B. 3,226,011.
Koontz, James H., and Miller. 3,225,845.
La Casse, George N. 3,225 849.
Thompson, Charles T. 3,225,841.
Thompson, Charles T. 3,226,064.
Wachsmuth, Erich A. 3,225,517.
Wiebe, Donald. 3,225,523.
Juillard, Yves, to Societe Alsacienne de Constructions Mecaniques. Weaving frame having improved weft trimming means. 3,225,794, 12–28–65, Cl. 139—266.
Kaiser Aluminum & Chemical Corp.: *See*—
Grahn, Chester N. 3,226,036.
Lincoln, Robert C., and Osment. 3,226,332.
Osment, Harry E., and Jones. 3,226,191.
Kaiser Gypsum Co., Inc.: *See*—
Tillisch, Paul W., and Meyer. 3,225,394.
Kaiser Steel Corp.: *See*—
Wiese, Klaus H. 3,225,890.
Kaiser, William: *See*—
Cech, Edward T., Sr. 3,225,700.
Kali-Forschungs-Anstalt, Gesellschaft mit beschrankter Haftung: *See*—
Autenrieth, Hans, Peuschel, and Weichart. 3,225,924.
Kalinowski, Bohdan: *See*—
Adamski, Tadeusz W., and Kalinowski. 3,226,042.
Kamper-Maschinenbau GmbH.: *See*—
Kruger, Helnz, and Baumgarten. 3,225,781.
Kandler, Joachim: *See*—
Sennewald, Kurt, Vogt, Kandler, Sommerfeld, and Sorbe. 3,226,422.
Kanger, Feodor, to Dominion Engineering Works Ltd. Adjustable blade propeller type pumps and pump turbines. 3,226,084, 12–28–65, Cl. 253—31.
Kanitz, Roy E.: *See*—
Amthor, Franklin R., Jr., Katzfey, Kanitz, Schaefer, and Kodet, and Haban. 3,225,937.
Kanitz, Roy E., to Hamilton Mfg. Co. Indicator device. 3,225,479, 12–28–65, Cl. 40—332.
Kaplan, Sam H., to Zenith Radio Corp. Photographic method of manufacturing aperture correction screens used in color image reproducers. 3,226,229, 12–28–65, Cl. 96—35.
Kapp, Benjamin, and R. C. Wilson, to Space Recovery Systems, Inc. Pyrotechnic bridge detonating circuit with zener diode circuit controlling switching of SCR. 3,225,695, 12–28–65, Cl. 102—70.2.
Karmerze, Joseph D., and M. S. Malin, to Lukens Steel Co. Expansible template with hinged skirts. 3,225,395, 12–28–65, Cl. 22—9.
Kasahara, Yasuo, to S. Shimada. Circuit breaker having a permanent magnet made of Curie point material. 3,226,507, 12–28–65, Cl. 200—88.
Kase, Oldrich: *See*—
Joch Josef, Kaspar, and Kase. 3,225,454.
Kaspar, Mirko: *See*—
Joch, Josef, Kaspar, and Kase. 3,225,454.
Kasperowicz, Henry. Flat color cathode ray tube. 3,226,596, 12–28–65, Cl. 315—21.
Katzfey, James M.: *See*—
Amthor, Franklin R., Jr., Katzfey, Kanitz, Schaefer, Kodet, and Haban. 3,225,937.
Kauffmann, John A., to International Business Machines Corp. Magnetic universal logical circuit. 3,226,699, 12–28–65, Cl. 340—174.
Kaufman, Paul, and H. B. Speaker, to United States of America Army. Miniature alarm. 3,226,705, 12–28–65, Cl. 340—273.
Kaupp, Josef, and H. Klug, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Method for the manufacture of perchlorodiphenylene dioxide. 3,226,400, 12–28–65, Cl. 260—340.3.
Kawecki, Wieslaw: *See*—
Bretsznajder, Stanislaw, Kawecki, Porowski, and Lis. 3,226,187.
Kay, Arthur: *See*—
Day, Lawrence, Dorbrick, and Kay. 3,225,492.
Keesling, Thomas B., to FMC Corp. Fruit processing method. 3,225,892, 12–28–65, Cl. 198—33.
Kehe, Alfred W., and O. E. Heartstedt, to Continental Can Co., Inc. Printing plate for gasket type closures. 3,225,691, 12–28–65, Cl. 101—127.
Kehr, Clifton L., and J. L. Guthrie, to W. R. Grace & Co. Crosslinking process. 3,226,356, 12–28–65, Cl. 260—41.
Kellen, John J., Jr., and G. G. Browder, Jr., to Charleston Rubber Co. Seamless article. 3,225,360, 12–28–65, Cl. 2—167.
Keith, Percival C.: *See*—
Stotler, Harold H., Farkas, and Keith. 3,226,204.
Keller, John D., to Hazen Engineering Co. Radiant tube heaters. 3,225,757, 12–28–65, Cl. 126—91.
Keller, Wolfgang: *See*—
Reuschel, Konrad, and Keller. 3,226,265.
Kelley, Carl S., and R. D. Bauer, to Phillips Petroleum Co. Fractional distillation control system. 3,225,550, 12–28–65, Cl. 62—21.
Kelley, Carl S., to Phillips Petroleum Co. Fractional distillation system. 3,225,551, 12–28–65, Cl. 62—21.
Kelley, Francis R.: *See*—
Kopchik, Steve, Jr., Kelley, and Parrett. 3,225,946.
Kelling, Leroy U. C., to General Electric Co. Pulse train phase modulator for control system. 3,226,649, 12–28–65, Cl. 328—71.

Kelly, Martin J.: *See*—
Adams, Lester R., Collins, Eichelberger, and Kelly. 3,226,686.
Kelly, Raymond: *See*—
Bottomley, Roy, Greenwood, Wild, and Kelly. 3,225,378.
Kelly, Richard A.: *See*—
Balaz, Joseph K., and Kelly. 3,226,101.
Kemlite Corp.: *See*—
Menzer, Alfred B. 3,226,150.
Kemp, C. M., Mfg. Co., The: *See*—
Smith, Weston E., and Lehmann. 3,225,516.
Kesten, Patrick N., to General Motors Corp. Spark plug and seal therefor. 3,226,342, 12–28–65, Cl. 252—503.
Kienel, Gerhard, and F. Elsasser, to W. C. Heraeus, G.m.b.H. Double-walled ultra-high vacuum vessel defining a work chamber. 3,226,467, 12–28–65, Cl. 174—18.
Kienzle Apparate G.m.b.H.: *See*—
Müller, Felix. 3,226,509.
Kiess, Edward M., to The Singer Co. Method of interlocking the yarns of knitted or woven fabric. 3,226,275, 12–28–65, Cl. 156—306.
Kikuhara, Shizuo: *See*—
Nomura, Suetsugu, and Kikuhara. 3,225,728.
Killeen, John R.: *See*—
Ritchie, Roy, and Killeen. 3,226,725.
King, William N., to FMC Corp. Tree shaking mechanism. 3,225,529, 12–28–65, Cl. 56—328.
King, William N., and A. L. McGee, to FMC Corp. Method and apparatus for wafering fibrous organic material. 3,225,685, 12–28–65, Cl. 100—41.
King, William S. Fishing reel. 3,226,052, 12–28–65, Cl. 242—84.54.
Kingston Products Corp.: *See*—
Woolley, Lee A. 3,225,874.
Kinsey, Roy L.: *See*—
Oswald, Max R., and Kinsey. 3,225,384.
Kirsch, Benjamin. Foot-actuated latch. 3,225,363, 12–28–65, Cl. 5—55.
Kishany, Frederick N., to Diorama, Inc. Lint remover. 3,225,373, 12–28–65, Cl. 15—104.
Kiss, Joseph: *See*—
Jampolsky, Lester M., Kiss, Pecherer, and Plati. 3,226,424.
Kistler, Werner, to P. A. Muller. Method of producing filter plugs. 3,225,390, 12–28–65, Cl. 19—66.
Kita, Hideo: *See*—
Masuda, Masaharu, Kita, and Fujita. 3,226,277.
Kitchens of Sara Lee, Inc.: *See*—
Winton, Stanley J. 3,225,727.
Klancnik, Frank J., to Hi-Lo Mfg. Corp. Bracket support for a UHF television antenna. 3,226,067, 12–28–65, Cl. 248—43.
Klancnik, Frank J., to Hi-Lo Mfg. Corp. Bracket support for a UHF television antenna. 3,226,068, 12–28–65, Cl. 248—43.
Klassert, Aloys, to W. Ullrich. Chain stitching method and article. 3,225,724, 12–28–65, Cl. 112—410.
Klein, Elias: *See*—
Wise, Harold F., Klein, Nelson, and Richardson. 3,226,461.
Klein, Leon, to General Electric Co. Control system for D.C. generator. 3,226,539, 12–28–65, Cl. 307—57.
Klein, Schanzlin & Becker Aktiengesellschaft: *See*—
Domm, Ulrich, Föller, and Egelhofer. 3,226,026.
Klein, Solomon A., and L. Polakoff. Kit for spot removal. 3,225,914, 12–28–65, Cl. 206—47.
Kleine, Friedrich, to Hackethal-Draht-und Kabel-Werke Aktiengesellschaft. Apparatus for making jacketed tubular members. 3,225,385, 12–28–65, Cl. 18—13.
Klepper, Herbert: *See*—
Greenwood, David L., and Klepper. 3,225,907.
Klepper, Herbert, and W. B. Abbott, to Eltra Corp. Distributing mechanism for linecasting machines. 3,225,908, 12–28–65, Cl. 199—33.
Klepper, Herbert, and W. B. Abbott, to Eltra Corp. Mold disk turning mechanism for linecasting machines. 3,225,909, 12–28–65, Cl. 199—52.
Klingler, Harold P. Punching bag. 3,226,116, 12–28–65, Cl. 272—78.
Klondex Inc.: *See*—
Ellis, James B. 3,226,111.
Klug, Helmut: *See*—
Kaupp, Josef, and Klug. 3,226,400.
Knapsack-Griesheim Aktiengesellschaft: *See*—
Sennewald, Kurt, Vogt, Kandler, Sommerfeld, and Sorbe. 3,226,422.
Knight, Colin S., to W. & R. Balston, Ltd. Polyhydroxy materials containing ion-exchange groups and non-ionic substituents and their method of preparation. 3,226,380, 12–28–65, Cl. 260—212.
Knoll Associates, Inc.: *See*—
Platner, Warren. 3,226,161.
Knospe, Robert H., to E. I. du Pont de Nemours and Co. Differential shrinkage yarn. 3,225,534, 12–28–65, Cl. 57—140.
Knox, Granville S., to Hydril Co. Apparatus and method for packing off multiple tubing strings. 3,225,831, 12–28–65, Cl. 166—75.
Kober, Ehrenfried H., to Olin Mathieson Chemical Corp. Hydrogenolysis of trichloromethyl-substituted compounds. 3,226,386, 12–28–65, Cl. 260—248.
Kobetz, Paul: *See*—
Beaird, Francis M., Jr., and Kobetz. 3,226,408.
Beaird, Francis M., Jr., and Kobetz. 3,226,409.
Kobus, Stanislas: *See*—
Benmussa, Henri, Marty, and Kobus. 3,226,486.
Kobus, Stanislas, to International Standard Electric Corp. Selecting finger arrangement including damping means for use in crossbar switches. 3,226,518, 12–28–65, Cl. 200—166.
Kodet, Reuben P.: *See*—
Amthor, Franklin R., Jr., Katsfey, Kanitz, Schaefer, Kodet, and Haban. 3,225,937.
Koeppel, Walter, E. Meier, and E. Schweizer, to Ciba Ltd. Electrolytic fusion cells and method of operating the same. 3,226,310, 12–28–65, Cl. 204—64.
Koerner, Ernest L.: *See*—
Downing, James H., Koerner, and Wells. 3,226,465.
Koerner, Ralph J.: *See*—
Amdahl, Lowell D., Brian, Scarbrough, Schneberger, and Koerner. 3,226,687.
Amdahl, Lowell D., Brian, Scarbrough Schneberger and Koerner. 3,226,688.
Amdahl, Lowell D., Brian, Scarbrough, Schneberger, and Koerner. 3,226,689.
Fuller, Richard H., Koerner, and Schneberger. 3,226,692.
Kofink, Siegfried: *See*—
Hettich, Alfred, Kofink, and Martin. 3,226,206.
Kohn, Gustave K., to Chevron Research Co. Mixed fungicide preparation. 3,226,290, 12–28–65, Cl. 167—33.
Kohn, Henry: *See*—
Little, Robert K. 3,225,615.
Kohno, Tomoyuki, to Mitsumi Denki Kabushiki Kaisha. Method of manufacturing electrodes of variable condenser. 3,226,274, 12–28–65, Cl. 156—252.
Koller, Alois, and G. Tschannen, to Albiswerk Zurich A.G. Pulse responsive receiver having plural delay stages in accordance with a particular pulse code. 3,226,680, 12–28–65, Cl. 340—167.
Kolliker, Hans P.: *See*—
Hindermann, Peter, Kolliker, Amman, and Pugin. 3,226,176.
Kollmorgen Corp.: *See*—
Lord, Joseph S. 3,226,666.
Konaka, Takamori: *See*—
Nakagawa, Kunio, and Konaka. 3,226,390.
Koontz, James H., and R. A. Miller, to Joy Mfg. Co. Core barrel assembly. 3,225,845, 12–28–65, Cl. 175—236.
Kopchik, Steve, Jr., F. R. Kelley, and N. F. Parrett, to Universal American Corp. Carrier and dispenser for work pieces. 3,225,946, 12–28–65, Cl. 214—300.
Koppers Co., Inc.: *See*—
Dreuning, John W. 3,225,988.
Korin, Andrew D.: *See*—
Farkas, George B., and Korin. 3,225,955.
Korringa, Jan: *See*—
Brown, Robert J. S., Torrey, and Korringa. 3,226,632.
Korth, John A.: *See*—
Schoch, Thomas J., and Korth. 3,226,239.
Kourkens, Jack P. Post tensioning concrete reinforcing wires. 3,225,499, 12–28–65, Cl. 52—230.
Kovac, Fred J.: *See*—
Rye, Grover W., Bridge, and Kovac. 3,226,276.
Kovar, Henry C.: *See*—
Cornelius, Richard T., and Kovar. 3,225,880.
Kraft, Russell E.: *See*—
Dusinberre, Robert, Kraft, and Greenawalt. 3,226,021.
Kralik, Andrew J.: *See*—
Kussy, Frank W., Thomas, Cataldo, and Kralik. 3,226,500.
Kramer, Israel, to Kramer Trenton Co. Roof top refrigeration unit. 3,225,562, 12–28–65, Cl. 62—263.
Kramer Trenton Co.: *See*—
Kramer, Israel. 3,225,562.
Krauss, Otto, and M. Link, to M. Grundig. Type lever action control arrangement. 3,225,884, 12–28–65, Cl. 197—17.
Krazinski, Leo C.: *See*—
Krooss, Robert J., and Saxe. 3,225,716.
Krieger, Erwin C. Method and apparatus for utilizing electrical discharge pressure waves. 3,225,578, 12–28–65, Cl. 72—56.
Krieger, Roman A.: *See*—
Bing, George H., and Krieger. 3,226,447.
Krogsrud, Jens C.: *See*—
Jacobsen, Jacob, and Krogsrud. 3,226,073.
Krooss, Robert J., and R. L. Saxe, 15% to L. C. Krazinski, and 25% to R. J. Krooss. Griddle cake cooking apparatus. 3,225,716, 12–28–65, Cl. 107—57.
Krueger, Donald A., and E. R. Stroup, to United States of America, Navy. Transistorized battery charger. 3,226,623, 12–28–65, Cl. 320—43.
Krueger, Glenn N., and J. J. Taylor, to United States Steel Corp. Position control device for conveyor chain dogs. 3,225,896, 12–28–65, Cl. 198—170.
Kruger, Heinz, and U. Baumgarten, to Kamper-Maschinenbau G.m.b.H. Shut-off valve and associated pressure relief means. 3,225,781, 12–28–65, Cl. 137—108.
Kruper, Wayne A.: *See*—
Pochapsky, Harry, and Kruper. 3,226,308.
Kruse, Otto, to W. Fette. Material feeding device for tableting machines and the like. 3,225,713, 12–28–65, Cl. 107—17.
Krusell, George R. Closed breech gun. 3,225,657, 12–28–65, Cl. 89—187.
Kübler, Friedrich: *See*—
Breitenbach, Karl H., and Kübler. 3,225,392.
Kuever, Cecil P. Stack elevator for printing machine. 3,226,112, 12–28–65, Cl. 271—62.
Kuhrt, Friedrich: *See*—
Wiehl, Klemens, Kuhrt, and Lippmann. 3,226,657.

Kuhrt, Friedrich, and H.-J. Lippmann, to Siemens-Schuckertwerke Aktiengesellschaft. Magneto-electric transmitter of the proximity type. 3,226,631, 12–28–65, Cl. 323—94.
Kuhrt, Friedrich, K. Maaz, E. Rainer, and J. Brunner, to Siemens-Schuckertwerke Aktiengesellschaft. D.C. measuring device using Hall plates connected in feedback relationship and having a common control source. 3,226,640, 12–28–65, Cl. 324—117.
Kulbicki, Georges L., J. Sahores, J. Vanuxem, A. Enjalbert, and J. Caplaux, to Societe anonyme dite Societe Nationale des Petroles d'Aquitaine. Thin section trueing machine. 3,225,493, 12–28–65, Cl. 51—134.
Kuntz, Urban E., to United Aircraft Corp. Process for producing silicon nitride and a product thereof. 3,226,194, 12–28–65, Cl. 23—191.
Kunz, Oskar W. Musical toy. 3,225,640, 12–28–65, Cl. 84—95.
Kupferberg, Kenneth, and J. Ash, to Forbro Design Corp. Alternating current voltage/current regulated power supply. 3,226,628, 12–28–65, Cl. 323—43.5.
Kurashiki Rayon Co. Ltd.: *See*—
Matsubayashi, Kanji, Inoue, Yoshimura, and Fujii. 3,226,455.
Yano, Masayuki, Yasui, and Ueno. 3,226,199.
Kurlander, Robert A., to Gilman Paper Co. Refuse-bag support. 3,226,070, 12–28–65, Cl. 248—97.
Kuroda, Akira, to Fujitsu Ltd. Trigger circuits. 3,226,572, 12–28–65, Cl. 307—88.5.
Kurti, Alexander, to United Aircraft Corp. Thrust deflection device. 3,226,032, 12–28–65, Cl. 239—265.25.
Kussy, Frank W., R. W. Thomas, J. B. Cataldo, and A. J. Kralik, to I-T-E Circuit Breaker Co. Universal unitary handle for switches. 3,226,500, 12–28–65, Cl. 200—50.
Kussy, Frank W., and B. Di Marco, to I-T-E Circuit Breaker Co. Add-on main pole unit for contactors. 3,226,516, 12–28–65, Cl. 200—165.
Kysor Industrial Corp.: *See*—
Ferris, David R. 3,226,025.
La Belle, Clayton J. Reciprocating interfingered conveyors. 3,225,905, 12–28–65, Cl. 198—219.
La Casse, George N., to Joy Mfg. Co. Tilting suspension for crawler frames. 3,225,849, 12–28–65, Cl. 180—9.5.
Lacher, William A., to Burroughs Corp. High speed common emitter switch. 3,226,566, 12–28–65, Cl. 307—88.5.
Lagercrantz, Bengt A., to Telefonaktiebolaget L. M. Ericsson. Method of producing an oxide film capacitor. 3,225,417, 12–28–65, Cl. 29—25.31.
Lamberti, Martin J. Convertible shoes. 3,225,462, 12–28–65, Cl. 36—2.5.
Laming, Lindon C. Pressure vessel seal. 3,225,956, 12–28–65, Cl. 220—46.
Lamm, Alphonse and G. Processes for the manufacture of natural and synthetic rubbers reinforced with fillers. 3,226,312, 12–28–65, Cl. 204—154.
Lamm, Gusta: *See*—
Lamm, Alphonse and G. 3,226,312.
Lampke, George G., to Raytheon Co. Power supply regulators. 3,226,630, 12–28–65, Cl. 323—66.
Laskin, Allen I., S. C. Pan, and F. L. Weisenborn, to Olin Mathieson Chemical Corp. 5α-hydroxylation of A-NOR-5α-steroids. 3,226,303, 12–28–65, Cl. 195—51.
Lasley, Robert A., and W. D. Novak, to The Mosler Safe Co. Card selecting apparatus. 3,225,770, 12–28–65, Cl. 129—16.1.
Lasley, Robert A., S. K. Handel, and D. L. Eisenstadt, to Mosler Safe Co. Card selecting apparatus. 3,225,925, 12–28–65, Cl. 209—74.
Latourette, Harold K.: *See*—
Hettich, Bedrich V., and Latourette. 3,226,410.
Lauckner, Hans E., to International Standard Electric Corp. Electrical capacitor. 3,226,607, 12–28–65, Cl. 317—230.
Laughlin, James C., to J. T. Shabel. Water softener valve with fast rinse means. 3,225,790, 12–28–65, Cl. 137—599.1.
Lautzenhiser, Argyle G., to General Motors Corp. Magnetic shaft encoder with relatively moving toothed members. 3,226,711, 12–28–65, Cl. 340—359.
Lavasti S.A.: *See*—
Graumann, Hermann. 3,226,041.
Lavieri, Daniel C., and B. Z. Gordon. Power lift for trucks. 3,226,086, 12–28–65, Cl. 254—93.
La Vietes, Joseph R. Method of testing urine for pregnancy. 3,226,196, 12–28–65, Cl. 23—230.
Lawrence, Stanley L., to Massey-Ferguson Inc. Hay wafering apparatus. 3,225,712, 12–28–65, Cl. 107—14.
Lawrence, William H.: *See*—
Rediske, John H., and Lawrence. 3,226,291.
Lawver, James E., to International Minerals & Chemical Corp. Beneficiation of phosphate ores. 3,225,923, 12–28–65, Cl. 209—3.
Lazzarini, Donald J.: *See*—
Smith, Daniel, Otto, Lazzarini, and McHugh. 3,226,288.
Leathers, Clarence H., to Grant Oil Tool Co. Drill string shock absorber. 3,225,566, 12–28–65, Cl. 64—23.
Leavitt, John N.: *See*—
Paterson, Patrick J., Alas, and Leavitt. 3,226,059.
Le Blond, R. K., Machine Tool Co., The: *See*—
Hermann, Otto. 3,226,514.
Hermann, Otto. 3,225,631.
Leckliter, Laurence W., to United States of America, Air Force. Hydroelectric spot-welding device. 3,226,525, 12–28–65, Cl. 219—89.
Lee, Laurel M. Capsule and tablet pocket carrier. 3,225,913, 12–28–65, Cl. 206—42.
Lee, Sara, Kitchens of, Inc.: *See*—
Weiler, Berthold L. 3,226,236.
Leeds and Northrup Co.: *See*—
Garden, Murray. 3,226,708.
McAdam, Will. 3,226,639.
Leesona Corp.: *See*—
Forten, Jeremy, and Roethlein. 3,226,261.
Joseph, David A., and Petrusha. 3,226,264.
Oswin, Harry G. 3,226,263.
Oswin, Harry G., Forten, and Lieb. 3,226,341.
Oxley, James E. 3,226,309.
Lefevre, Lloyd E.: *See*—
Romesberg, Floyd E., Matheison, and Lefevre. 3,226,462.
Le Gros, Kenneth G.: *See*—
Martin, Charles M., Myers, Le Gros, and Evans. 3,226,478.
Lehmann, Wallace K.: *See*—
Smith, Weston E., and Lehmann. 3,225,516.
Lehner, George: *See*—
Manasian, Arthur E., and Lehner. 3,226,179.
Leland, Robert W.: *See*—
Elliott, James O., Frank, and Leland. 3,226,620.
Lemcke, Eberhard, to Wegematic. Monorail beamways. 3,225,703, 12–28–65, Cl. 104—120.
Lemley, Kenneth F., to Barney Machinery Co. Fail-safe gate-operating apparatus. 3,225,544, 12–28–65, Cl. 60—57.
Lemoine, Jean H., to Societe d'Electronique et d'Automatisme. Binary coded information store. 3,226,695, 12–28–65, Cl. 340—173.
Lenkurt, Marelli, S.p.A.: *See*—
Stracca, Giovanni B. 3,226,659.
Lens, Georges X., and J. P. H. Vandevenne, to International Standard Electric Corp. Multiple repertory encoding keypanel. 3,226,712, 12–28–65, Cl. 340—365.
Leobeck, Robert E., to Phillips Petroleum Co. Method of and means for supplying additive to a fluid. 3,225,962, 12–28–65, Cl. 222—1.
Lermann, Peter, to Compur-Werk Gesellschaft mit beschrankter Haftung & Co. Photographic shutter. 3,225,874, 12–28–65, Cl. 95—63.
Less, Louis L., to One-In-Hand Tie Co. Article of neckwear with suspended ornament. 3,225,358, 12–28–65, Cl. 2—150.
Less, Louis L., to One-In-Hand Tie Co. Necktie with suspended ornament. 3,225,359, 12–28–65, Cl. 2—150.
Letosky, Donald F.: *See*—
Barnstead, Gardner E., Letosky, and Missett. 3,226,472.
Letter Lover, Inc.: *See*—
Myers, Dwight G. 3,225,441.
Levanovich, Harry, to The Fellows Gear Shaper Co. Cutter spindle elevating mechanism. 3,225,658, 12–28–65, Cl. 90—7.
Levin, Martin, to J. A. Ritter. Plastering composition. 3,226,243, 12–28–65, Cl. 106—109.
Levinthal, Jay G., and N. R. Crain, to General Electric Co. Error sensing apparatus for a document handler. 3,226,682, 12–28–65, Cl. 340—172.5.
Levy, Eugene A. Toy simulating a trip to the moon. 3,225,486, 12–28–65, Cl. 46—10.
Levy, Joseph M. Jewelry clasp. 3,225,406, 12–28–65, Cl. 24—230.
Lewis, James E., to The Martin Sweets Co., Inc. Cold trap. 3,225,825, 12–28–65, Cl. 165—157.
Lewis, James E., to The Martin Sweets Co., Inc. Method and apparatus for determining C_{14}. 3,226,197, 12–28–65, Cl. 23—230.
Liberty Mutual Insurance Co.: *See*—
Cudworth, Allen L. 3,226,673.
Lieb, Harry C.: *See*—
Oswin, Harry G., Forten, and Lieb. 3,226,341.
Light Metals Research Laboratory, Inc.: *See*—
Pagonis, George A. 3,226,102.
Lincoln, Robert C., and H. E. Osment, to Kaiser Aluminum & Chemical Corp. Production of potassium permanganate activated alumina composite. 3,226,332, 12–28–65, Cl. 202—184.
Lindsey, Seth B.: *See*—
Gallistel, Albert F., and Lindsey. 3,226,504.
Link, Manfred: *See*—
Krauss, Otto, and Link. 3,225,884.
Lippmann, Hans-Joachim: *See*—
Wiehl, Klemens, Kuhrt, and Lippmann. 3,226,657.
Kuhrt, Friedrich, and Lippmann. 3,226,631.
Lipton, Thomas J., Inc.: *See*—
Wilson, Robert O. 3,226,378.
Lis, Jan: *See*—
Bretsznajder, Stanislaw, Porowski, and Lis. 3,226,186.
Little, Robert K., ½ to H. Kohn. Positive drive mechanism. 3,225,615, 12–28–65, Cl. 74—416.
Littler, Edmund S.: *See*—
Oxley, George H., and Littler. 3,226,216.
Oxley, George H., and Littler. 3,226,217.
Litton Industries, Inc.: *See*—
Sasadi, John. 3,225,943.
Litton Systems, Inc.: *See*—
Benjamin, Robert P. 3,226,717.
Livingston, Herman G. Apparatus for bottom hole orientation. 3,225,830, 12–28–65, Cl. 166—66.
Lockheed Aircraft Corp.: *See*—
Wohnoutka, George J. 3,225,585.
Lohman, Frank J.: *See*—
Cross, Dee H., Lohman, and Ward. 3,225,675.
Lomaz, Ralph D., to The Pacific Coast Co. Overhead door latch. 3,226,144, 12–28–65, Cl. 292—113.
Londal, Ralph K., to Holley Carburetor Co. Hydraulic resistors. 3,225,778, 12–28–65, Cl. 137—54.
Longfellow, Herbert W., to General Electric Co. Electroluminescent lamp manufacture. 3,226,272, 12–28–65, Cl. 156—67.

Lootzook, Jury V., to Pneumo-Hydraulic Automatic Control Laboratory of Automatic Control and Telemechanics Institute of the Academy of Sciences of the U.S.S.R. Pneumatic or hydraulic automatic control system. 3,225,779, 12–28–65, Cl. 137—81.5.

Lo Presti, Roy F., and J. C. Salmons, to Goodman Mfg. Co. Rope frame conveyor with controlled belt deflection. 3,225,-890, 12–28–65, Cl. 198—192.

Lord, Joseph S., to Kollmorgen Corp. Slip ring unit with debris-collecting means. 3,226,666, 12–28–65, Cl. 339—5.

Lorensen, Lyman E., and J. W. Beardmore, to Shell Oil Co. Lubricating composition. 3,226,326, 12–28–65, Cl. 252—57.

Lovci, John C., and A. A. Yurek. Teletype current supply system. 3,226,563, 12–28–65, Cl. 307—88.5.

Love, Robert G.: *See*—
Shelton, Robert Q., Pittman, and Love. 3,225,777.

Lovett, William E., and G. F. Harrington, to Economation, Inc. Container partition assembling apparatus. 3,225,665, 12–28–65, Cl. 93—37.

Lowrey, William E., to ACF Industries, Inc. Ball valve seat. 3,226,080, 12–28–65, Cl. 251—309.

Lowrey, William E.: *See*—
Gullick, Ronald A., and Lowrey. 3,226,082.

Lucas, Luther R., and C. E. Miner, to United States of America, Atomic Energy Commission. Fluid flow interlock. 3,226,505, 12–28–65, Cl. 200—81.9.

Lucas, Roger. Safety device for locking doors and the like. 3,225,575, 12–28–65, Cl. 70—134.

Lucas, Stephen: *See*—
Bulger, Robert F., Lucas, Gurdack, and Cain. 3,225,512.

Luchi, Vinicio, to Solis Societa a Responsabilita Limitata. Circular knitting machine having weit hooks which cooperate only with alternate needles. 3,225,569, 12–28–65, Cl. 66—95.

Ludlow, Howard T. Safety ladder. 3,225,863, 12–28–65, Cl. 182—104.

Ludwig, David R., to General Electronic Laboratories, Inc. Interfering radio signal cancelling bridge. 3,226,646, 12–28–65, Cl. 325—475.

Lufkin Rule Co., The: *See*—
Bryant, Irvin E. 3,225,447.

Lukens Steel Co.: *See*—
Karmerze, Joseph D., and Malin. 3,225,395.

Luketa, Frank J. Trawl door construction involving universal and interchangeable components. 3,225,483, 12–28–65, Cl. 43—9.

Luna, Agostino, to Marelli Lenkurt S.p.A. Transmission line transformer. 3,226,605, 12–28–65, Cl. 336—182.

Lundman, Ben E. Garment hanger. 3,225,979, 12–28–65, Cl. 223—94.

Lutz, Josef P., to Telefonaktiebolaget L. M. Ericsson. Wire conductors in electrical connection fields. 3,226,669, 12–28–65, Cl. 339—198.

Lyall Electric, Inc.: *See*—
Dekko, Chester E., and Glass. 3,226,678.

Lynch, Arnold C., and K. R. Wilderspin. Method of making a magnetic core tor a magnetic switch. 3,225,421, 12–28–65, Cl. 29—155.5.

Lynch Corp.: *See*—
Scourtes, George. 3,225,596.

Lytton, Kenneth G.: *See*—
Wise, Cecil S., and Lytton. 3,225,848.

Lytz, Lucian C. Fire-resistant door. 3,225,505, 12–28–65, Cl. 52—615.

M-R-S Mfg. Co.: *See*—
Simmons, Lovel R., Travis, Monk, and Ogletree. 3,225,-850.
Simmons, Lovel R., Travis, Monk, and Ogletree. 3,225,-851.
Simmons, Lovel R., Travis, Monk, and Ogletree. 3,225,-852.

Maatman, Russell W.: *See*—
Frilette, Vincent J., and Maatman. 3,226,339.

Maaz, Karl: *See*—
Kuhrt, Friedrich, Maaz, Rainer, and Brunner. 3,226,640.

MacBean, Donald G., and H. M. Cross, to Fabric Research Laboratories Inc. Lightweight dryer felt seams. 3,225,-900, 12–28–65, Cl. 198—193.

Machida, Jyusaku, N. Hagiwara, T. Yamada, M. Isago, and N. Sugishita, to Hitachi Ranpu Kabushiki Kaisha. Method of producing phosphors. 3,226,334, 12–28–65, Cl. 252—301.4.

Machinefabriek Reineveld N.V.: *See*—
Van Riel, Pieter. 3,225,934.

Mach-Tronics, Inc.: *See*—
Bygdnes, Perry A. 3,226,579.

MacKenzie, Ronald: *See*—
Timares, Norman R., and MacKenzie. 3,225,649.

MacMillan, Francis S. K., to The Procter & Gamble Co. Germicidal cleansing composition. 3,226,329, 12–28–65, Cl. 252—107.

Magaletto, Dino: *See*—
Angilello, Joseph, Magaletto, and Pinori. 3,225,387.

Magid, Sidney H. Baby pants or other article having tubular edging. 3,225,764, 12–28–65, Cl. 128—288.

Maginniss, Hamilton J. Method and apparatus for distributing concrete. 3,225,668, 12–28–65, Cl. 94—46.

Magne, Frank C., R. R. Mod, and E. L. Skau, to United States of America, Agriculture. Diesteramide plasticizers. 3,226,-403, 12–28–65, Cl. 260—348.

Magnino, Peter J., to Pet Milk Co. Food heat treatment process. 3,226,237, 12–28–65, Cl. 99—215.

Maher, John A.: *See*—
Weickgenannt, Egon R., and Maher. 3,226,105.

Mahler, Peter A., to The Singer Co. Apparatus for yarn severing in circular knitting machines. 3,225,571, 12–28–65, Cl. 66—140.

Mahoney, William J., to American Machine & Foundry Co. Magnetic memory circuit. 3,226,698, 12–28–65, Cl. 340—174.

Majka, Andrew J. Combination fishing creel and portable cooler. 3,225,983, 12–28–65, Cl. 224—5.

Majors, James P. Low voltage outlet with a conduit clamping device. 3,226,469, 12–28–65, Cl. 174—65.

Malin, Morris S.: *See*—
Karmerze, Joseph D., and Malin. 3,225,395.

Mallalieu, Durham F., to The A. C. Gibbert Co. Model roadbed including adjustable trestles and supports. 3,225,487, 12–28–65, Cl. 46—17.

Mallina, Rudolph F., to Codman & Shurtleff Inc. Individual stapler. 3,225,996, 12–28–65, Cl. 227—137.

Mallory, P. R., & Co., Inc.: *See*—
Dotto, Gianni A. 3,225,595.

Malone, James D., to General Motors Corp. Electronic selective ringing decoder system. 3,226,679, 12–28–65, Cl. 340—164.

Manasian, Arthur E., and G. Lehner, to Huyck Corp. Papermaker's felt, woven fabrics and fibers of wool modified with an aldehyde-4,4-bis(4-hydroxy phenyl) pentanoic acid reaction product and the production thereof. 3,226,179, 12–28–65, Cl. 8—127.6.

Mandel, Louis, to United States of America, Navy. System for automatically maximizing the power output of a frequency velocity-modulated oscillator. 3,226,654, 12–28–65, Cl. 331—84.

Manfredonia, Mario, to Union Bag-Camp Paper Corp. Waste receptacle. 3,226,015, 12–28–65, Cl. 232—43.2.

Mantell, Gerald J.: *See*—
Helin, Arthur F., and Mantell. 3,226,352.

Manyak, Anthony R., and T. J. Czarnomski, to W. R. Grace & Co. Alpha-pinene modified polyester resins. 3,226,452, 12–28–65, Cl. 260—871.

Marans, Nelson S., and R. S. Gregorian, to W. R. Grace & Co. Polyethylene composition containing cross-linked polyethylene graft copolymer and process therefor. 3,226,454 12–28–65, Cl. 260—876.

Marathon Oil Co.: *See*—
Gogarty, William B., and Nielson. 3,225,787.

Marelli Lenkurt S.p.A.: *See*—
Luna, Agostino. 3,226,665.

Margolis, Joel, to The Royal Alexandra Hospital for Children. Warming and shaking apparatus. 3,226,094, 12–28–65, Cl. 259—13.

Marheine, Edward A.: *See*—
Martin, Charles M., Myers, Le Gros, Evans, and Marheine. 3,226,478.

Marinal, Jori: *See*—
Ferri, Giampiero, and Marinal. 3,225,480.

Market Forge Co.: *See*—
Binding, Kenneth W. 3,226,159.

Marlan Co.: *See*—
Dunn, Lyman D., and Gambicki. 3,225,801.

Marley Co., The: *See*—
Shryock, Howard A. 3,226,098.

Marn, Alan D.: *See*—
Wright, Esmond P. G., and Marn. 3,226,681.

Marschak, Howard J. Display and storage shelving. 3,225,-719, 12–28–65, Cl. 108—61.

Marshall, Johnny H., ½ to A. I. Collins. Clothes hanger loader, carrier, and unloader. 3,226,147, 12–28–65, Cl. 294—15.

Martin, Charles M., R. O. Myers, K. C. Le Gros, E. E. Evans, and E. A. Marheine, to Automatic Electric Laboratories, Inc. Automatic telephone answering and message recording system. 3,226,478, 12–28–65, Cl. 179—6.

Martin, Heinz, to Siemens-Schuckertwerke Aktiengesellschaft. Semiconductor devices with cooling plates. 3,226,466, 12–28–65, Cl. 174—15.

Martin, Herbert: *See*—
Hettich, Alfred, Kofink, and Martin. 3,226,206.

Martin, John S., 20% to W. D. Stokes. Automatic cooking utensil. 3,226,528, 12–28–65, Cl. 219—441.

Martinelli, Robert. Microtome knife. 3,225,639, 12–28–65, Cl. 83—915.5.

Martin-Marietta Corp.: *See*—
Bloom, Justin L. 3,226,547.
Bradmiller, Richard W., and Almond. 3,226,567.
Broderick, John E., and Behr. 3,225,582.
Goode, McKay, and Wiggins. 3,226,644.
Hazzard, Frank C. 3,226,629.
James, Dwight C. 3,226,569.
Winkler, John T. 3,226,574.

Martin Sweets Co., Inc., The: *See*—
Lewis, James E. 3,225,825.
Lewis, James E. 3,226,197.

Martino, Joseph F., to American Cyanamid Co. Purification of crude cyanogen chloride. 3,226,182, 12–28–65, Cl. 23—14.

Martter, Richard P. Prestressed tendon anchor means. 3,225,500, 12–28–65, Cl. 52—127.

Marty, Pierre R. L.: *See*—
Benmussa, Henri, Marty, and Kobus. 3,226,486.

Masel, Marvin: *See*—
Smith, Edgar J., and Masel. 3,226,617.

Maslow, Louis. Corner brace. 3,225,720, 12–28–65, Cl. 108—64.

Massachusetts General Hospital, The: *See*—
Potsaid, Majic S. 3,226,545.

Massey-Ferguson Inc.: *See*—
Lawrence, Stanley L. 3,225,712.

Masson, Claude M. E., to Societe d'Electronique et d'Automatisme. Rotating flexible magnetic disc assembly. 3,226,-701, 12–28–65, Cl. 340—174.1.

Masuda, Masaharu, H. Kita, and R. Fujita, to Nippon Sheet Glass Co. Ltd. Machine for chemically polishing glass. 3,226,277, 12–28–65, Cl. 156—345.

Matheison, Robert J.: *See*—
Romesberg, Floyd E., Matheison, and Lefevre. 3,226,462.

Mather, John: *See*—
Browne, Anthony A. B., and Mather. 3,226,360.

Mathieu, Francis L.: *See*—
Thies, Robert, Ratasitz, and Mathieu. 3,226,007.

Matsubayashi, Kanji, T. Inoue, Y. Yoshimura, and K. Fujii, to Kurashiki Rayon Co. Ltd. Polypropylene of improved dyeability containing ethylene-vinyl alcohol copolymers or derivatives thereof. 3,226,455, 12–28–65, Cl. 260—897.

Matsubayashi, Yukio, and R. Sato, to Nisso Seiko Kabushiki Kaisha. Grinding mill. 3,226,044, 12–28–65, Cl. 241—172.

Matsumoto, Kazuhiro: *See*—
Atsukawa, Masumi, Matsumoto, and Murokawa. 3,226,-192.

Matthews, Clifford C.: *See*—
Barkow, William H., and Matthews. 3,226,588.

Max-Planck-Gesellschaft zur Foerderung der Wissenschaften E.V.: *See*—
Meixner, Friedheim. 3,226,543.

Maxwell, Stewart A., to Fisher & Ludlow Ltd. Coin vending machines. 3,225,625, 12–28–65, Cl. 74—582.

May, George, to Dufaylife Developments Ltd. Shock protective material. 3,225,509, 12–28–65, Cl. 53—29.

McAdam, Will, to Leeds and Northrup Co. Null-flux transducer for use in electrical measuring and control systems. 3,226,639, 12–28–65, Cl. 324—99.

McAleer, William J.: *See*—
Allegretti, John E., Gutsche, and McAleer. 3,226,269.

McCaron, Joseph. Fence post. 3,225,501, 12–28–65, Cl. 52—298.

McClure, Mark. Hopper and trough feeder with adjustable supply means. 3,225,743, 12–28–65, Cl. 119—53.

McCormick, Jerry R. D., N. O. Sjolander, and S. J. Johnson, to American Cyanamid Co. Biological transformation of 1, 3,10,11,12-penta - hydroxynaphthacene - 2 - carboxamides to tetracycline antibiotics. 3,226,305, 12–28–65, Cl. 195—80.

McCormick, Jerry R. D., R. Winterbottom, and P. Bitha, to American Cyanamid Co. Novel 7,11A-dihalotetracyclines and the process of preparing them. 3,226,435, 12–28–65, Cl. 260—559.

McCulley, James H., to The Johnson Rubber Co. Boat fender. 3,225,731, 12–28–65, Cl. 114—219.

McDermott, John P., to Esso Research and Engineering Co. Solids having improved electrical conductivity. 3,226,321, 12–28–65, Cl. 252—8.8.

McDonough, James O.: *See*—
Forrester, Jay W., Pease, McDonough, and Susskind. 3,226,677.

McDowell-Wellman Engineering Co.: *See*—
Ban, Thomas E. 3,226,212.

McGee, Arthur L.: *See*—
King, William N., and McGee. 3,225,685.

McGowan, Colin R.: *See*—
Nichols, John W. de L., and McGowan. 3,226,195.

McGraw-Edison Co.: *See*—
Dean, John. 3,225,414.

McHugh, John F.: *See*—
Smith, Daniel, Otto, Lazzarini, and McHugh. 3,226,288.

McInerney, Michael J.: *See*—
Brady, Robert T., McInerney, and Czyl. 3,226,038.

McIntire Co., The: *See*—
Chatlos, Edward S. 3,225,555.

McJohnson, Otis S., 50% to L. Hill. Spade, shovel and spading fork. 3,226,149, 12–28–65, Cl. 294—50.

McKinley Robert W. Vehicle and deformable wheel therefor. 3,226,129, 12–28–65, Cl. 280—5.2.

McNair, Robert J., to Avco Corp. Command communication system of the rectangular wave type. 3,226,643, 12–28–65, Cl. 325—40.

McNenny, Harold F. Fluid spring and shock absorber. 3,226,-103, 12–28–65, Cl. 267—64.

McRobert, Leon R., to FMC Corp. Roller-type separating means for potato harvester. 3,225,771, 12–28–65, Cl. 130—30.

Meckl, Heinz: *See*—
Himmelmann, Wolfgang, Ulrich, and Meckl. 3,226,234.

Meehan, Elizabeth J.: *See*—
Taylor, Robert C., and Meehan. 3,226,331.

Mees, George M., and K. C. Murch, to NEWAL, Inc. Electronic wire turn counter. 3,226,531, 12–28–65, Cl. 235—92.

Meier, Edwin: *See*—
Koeppel, Walter, Meier, and Schweizer. 3,226,310.

Meier, Eric A., and M. Dexter, to Geigy Chemical Corp. Carbonyl compounds containing a hindered phenol group. 3,226,443, 12–28–65, Cl. 260—590.

Melton, Carl M. Adjustable and portable flashlight. 3,225,-982, 12–28–65, Cl. 224—5.

Meltzer, Meyer, C. and S. Potash. Stretchable straw hat. 3,225,361, 12–28–65, Cl. 2—193.

Meixner, Friedheim, to Max-Planck-Gesellschaft zur Foerderung der Wissenschaften E.V. Pulsed time of flight mass spectrometer. 3,226,543, 12–28–65, Cl. 250—41.9.

Memco Machinery Corp.: *See*—
Dunn, Maurice B. 3,226,006.

Mencher, Alexander: *See*—
Iovenko, Michael J. 3,226,285.

Meneley, Carl A. Double map navigational control system for aircraft. 3,226,058, 12–28–65, Cl. 244—14.

Menzer, Alfred B., to Kemlite Corp. Refrigerator panel. 3,226,150, 12–28–65, Cl. 296—24.

Mercer, Carles H., G. A. Wolford, and D. E. Copeland. Collapsible wheel structure for rotary amusement devices. 3,226,-113, 12–28–65, Cl. 272—29.

Merck & Co., Inc.: *See*—
Allegretti, John E., Gutsche, and McAleer. 3,226,269.
Nelson, Carl E. 3,226,294.

Merrick, Wallace N. Air-flo unloader. 3,226,164, 12–28–65, Cl. 302—14.

Mertins, Georg: *See*—
Plock, Karl, Mertins, and Clongwa. 3,225,776.

Mertler, Charles S., to Stevens Mfg. Co., Inc. Low friction snap-acting thermostat. 3,226,511, 12–28–65, Cl. 200—138.

Messner, John S.: *See*—
Erickson, Dennis E., and Messner. 3,225,949.

Metrailer, William J., and J. F. Moser, Jr., to Esso Research and Engineering Co. Coking of hydrocarbons with the removal of metallic contaminants from the coke. 3,226,816, 12–28–65, Cl. 208—46.

Metro Electronics Corp.: *See*—
Fox, Charles R. 3,225,860.

Meuly, Walter C., and A. Seidner, to Rhodia, Inc. Method for abating stream pollution. 3,226,320, 12–28–65, Cl. 210—63.

Meyer, Christoph P. Air deflector. 3,225,679, 12–28–65, Cl. 98—103.

Meyer, George E.: *See*—
Tillisch, Paul W., and Meyer. 3,225,394.

Meyer, Owen L.: *See*—
Harman, George G., Jr., Higier, Meyer, and Raybold. 3,226,610.

Meyer, Walter E., J. B. Patrick, and J. H. Mowat, to American Cyanamid Co. N-substituted derivatives of mitomycin A and mitomycin C. 3,226,393, 12–28–65, Cl. 260—295.

Mhatre, Madhukar V., to Abbott Laboratories. Sulfonation of cyclohexylamine with So3. 3,226,430, 12–28–65, Cl. 260—501.

Micale, Angelo. Combination protective and utility device for sewing machines. 3,225,981, 12–28–65, Cl. 223—109.

Michaels, Raymond J., Jr.: *See*—
Zaugg, Harold E., De Net, and Michaels. 3,226,419.

Michalski, Conrad: *See*—
Bonetti, Giovanni A., De Savigny, and Michalski. 3,226,-442.

Michelson, Gunnar P. Missile. 3,225,894, 12–28–65, Cl. 102—56.

Middleton, William J., to E. I. du Pont de Nemours and Co. Polyhalogenated alkyl imines and hydrozones and method of preparation. 3,226,439, 12–28–65, Cl. 260—566.

Miederer, Walter, G. Ziegler, and R. Dotzer, to Siemens-Schuckertwerke Aktiengesellschaft. Method of crucible-free production of gallium arsenide rods from alkyl galliums and arsenic compounds at low temperatures. 3,226,270, 12–28–65, Cl. 148—174.

Miehle-Goss-Dexter, Inc.: *See*—
Agruss, Meyer S. 3,226,233.
Thumim, Carl. 3,225,637.
Thumim, Carl. 3,225,662.

Milk, James, and T. Pallow. Replaceable heel. 3,225,466, 12–28–65, Cl. 36—42.

Mill Equipment, Inc.: *See*—
Pease, Lionel. 3,225,800.

Millard, Anthony J.: *See*—
Duddridge, Gordon K., and Millard. 3,226,522.

Miller, Armin. Data storage system. 3,226,700, 12–28–65, Cl. 340—174.1.

Miller, Eldon D., Jr., to Harbison-Walker Refractories Co. Alumina refractories. 3,226,241, 12–28–65, Cl. 106—65.

Miller, Henry, Spring and Mfg. Co.: *See*—
Chambers, Isaac M. 3,225,579.

Miller, Herman, Inc.: *See*—
Eames, Charles, and Staples. 3,226,071.

Miller, Howard R.: *See*—
Filipski, Stanley P., Miller, and Newman. 3,226,523.

Miller, Jerry W., to Ampex Corp. Automatic gain control circuit employing variable attenuation balanced diode bridge. 3,226,653, 12–28–65, Cl. 330—26.

Miller, Jolyon E.: *See*—
Miller, Oscar E. and J. E. 3,225,365.

Miller, Joseph N., to Jackes-Evans Mfg. Co. Three-way valve and system therefor. 3,225,557, 12–28–65, Cl. 62—156.

Miller, Max W., to Chas. Pfizer & Co., Inc. 2-decarboxamido-2-acetyl-tetracycline derivatives and process. 3,226,441, 12–28–65, Cl. 260—571.

Miller, Meritt L., to General Electric Co. Electronic type converter for producing a D.C. signal proportional to watt input. 3,226,641, 12–28–65, Cl. 324—142.

Miller, Oscar E. and J. E., to Rock-A-Bye Co. Crib rocking device. 3,225,365, 12–28–65, Cl. 5—109.

Miller, Richard F., to General Electric Co. Photosensitive system for indicating variations in a dimension of an article. 3,226,555, 12–28–65, Cl. 250—223.

Miller, Robert A.: *See*—
Koontz, James H., and Miller. 3,225,845.

Milleville, Bertram J., to Rockwell Mfg. Co. Lubricating system for valve actuator. 3,226,091, 12–28–65, Cl. 251—355.

Mills, Richard D.: *See*—
Stilteri, Pentti K., and Mills. 3,226,304.

Milton, Walter H., and P. W. Grenbel, to Interchemical Corp. Roller for applying fountain solution in lithographic printing. 3,225,419, 12–28–65, Cl. 29—132.

Miner, Claire E.: *See*—
Lucas, Luther R., and Miner. 3,226,505.

Minerals & Chemicals Philipp Corp.: *See*—
Hemstock, Glen A. 3,226,252.

Mines, Julian L. Baby pants for covering diapers. 3,225,-918, 12–28–65, Cl. 206—58.

Miniature Precision Bearings, Inc.: *See*—
Gordon, Keith M. 3,225,587.

Minster Machine Co., The: *See*—
Clements, Albert. 3,225,686.

Minton, Robert, to Radio Corp. of America. Transistor circuitry having combined heat dissipating means. 3,226,564, 12–28–65, Cl. 307—88.5.

Miret, Jaime R. Transformable multiple utility cot. 3,225,364, 12–28–65, Cl. 5—93.

Mishcon, Lester, to The Singer Co. Automatic stitch control. 3,225,570, 12–28–65, Cl. 66—132.

Missett, Donald E.: *See*—
Barnstead, Gardner E., Letosky, and Missett. 3,226,472.

Mitscher, Lester A.: *See*—
Albright, Jay D., Mitscher, and Goldman. 3,226,391.

Mitsubishi Shipbuilding & Engineering Co.: *See*—
Atsukawa, Masumi, Matsumoto, and Murokawa. 3,226,192.

Mitsui Kagaku Kogyo Kabushiki Kaisha: *See*—
Hosoda, Yutaka, Shimatani, and Sakuma. 3,226,177.

Mitsumi Denki Kabushiki Kaisha: *See*—
Kohno, Tomoyuki. 3,226,274.

Miwa, Thomas K., and I. A. Wolff, to United States of America, Agriculture. Wax ester substitute for jojoba oil from the seed of limnanthes douglasii. 3,226,406, 12–28–65, Cl. 260—410.9.

Mod, Robert R.: *See*—
Magne, Frank C., Mod, and Skau. 3,226,403.

Moe, Lowell A., to F. H. Peavey and Co. Testing apparatus and method for measuring dielectric constant of materials by null-balancing a tuned oscillator to a standard radio frequency. 3,226,635, 12–28–65, Cl. 324—61.

Mohney, Franklin W., to The Singer Co. Sewing machine stands with electric switch box. 3,226,174, 12–28–65, Cl. 312—253.

Molins Organisation Ltd., The: *See*—
Jackson, Donald R. P. 3,226,282.

Monforte, Frank R., and F. J. Schnettler, to Bell Telephone Laboratories, Inc. Ferrite compositions and method of manufacture. 3,226,327, 12–28–65, Cl. 252—62.5.

Monk, James T.: *See*—
Simmons, Lovel R., Travis, Ogletree, and Monk. 3,225,850.
Simmons, Lovel R., Travis, Ogletree, and Monk. 3,225,851.
Simmons, Lovel R., Travis, Ogletree, and Monk. 3,225,852.

Monsanto Chemicals (Australia) Ltd.: *See*—
Couper, Mervyn G., and Doubleday. 3,226,016.

Monsanto Co.: *See*—
Heiss, Herbert L. 3,226,354.
O'Connell, Frank S. 3,226,364.
Saunders, James H., and Heiss. 3,226,345.

Monsanto Research Corp.: *See*—
Braun, Japnell D. 3,226,226.
Stemniski, John R. 3,226,323.
Wilson, Glenn R. 3,226,325.

Montecatini Societa Generale per l'Industria Mineraria e Chimica: *See*—
Bezzi, Silvio, Gallazzo, and Bandel. 3,226,366.

Monti, Angelo, to Jarrow Products, Inc. Gasket assembly for refrigerator door and the like. 3,226,367, 12–28–65, Cl. 20—69.

Moore, Thomas W., to American Machine & Foundry Co. Electrical control systems. 3,226,626, 12–28–65, Cl. 322—16.

Moorhead, John G.: *See*—
Warren, Raymond W., Barclay, and Moorhead. 3,225,780.

Moorman, Cletus L.: *See*—
Harris, Edward P., and Moorman. 3,225,641.

Moosbrunner Glasfabriks-Aktiengeseellschaft: *See*—
Jamnik, Fridolin. 3,226,219.

Morch, Ernst T. Piston type respirator. 3,225,758, 12–28–65, Cl. 128—29.

Morean, James E.: *See*—
Gartner, Stanley J., and Morean. 3,225,659.

Moretti, Daniel: *See*—
Stevens, Eddie S. 3,225,819.

Morgan A. Henry, W. D. Uhl, and H. R. Angel, to Electronic Controls, Inc. Electrical switch device. 3,226,508, 12–28–65, Cl. 200—104.

Morley, John D.: *See*—
Heller, John F., and Morley. 3,225,999.

Morlock, Gerhard R.: *See*—
Anderson, Burton C., and Morlock. 3,226,418.

Morrison, Patricia A.: *See*—
Wright, John W., and Hewitt. 3,226,605.

Morrison, Willard L., to The Union Stock Yard and Transit Co. of Chicago. Method of shipping frozen food. 3,225,553, 12–28–65, Cl. 62—76.

Moser, Friedrich, to Anstalt Glumen. Slider for slide fasteners. 3,225,405, 12–28–65, Cl. 24—205.14.

Moser, John F., Jr.: *See*—
Metrailer, William J., and Moser. 3,226,316.

Mosier, Jack M.: *See*—
Moiser, Jeanette E. J. and J. M. 3,225,765.

Mosier, Jeanette E. J. and J. M. Menstrual pad and holder. 3,225,765, 12–28–65, Cl. 128—290.

Mosler Safe Co. The: *See*—
Lasley, Robert A., Handel, and Eisenstadt. 3,225,925.
Lasley, Robert A., and Novak. 3,225,770.

Motegi, Ryukichi, to Fujitsw Ltd. Panel mounted adjustable pressure electrical contact. 3,226,521, 12–28–65, Cl. 200—170.

Motorola, Inc.: *See*—
Brewster, Franklin C., Shano, and Ocken. 3,226,581.
Haenichen, John C. 3,226,611.
Haenichen, John C. 3,226,612.
Haenichen, John C. 3,226,613.
Haenichen, John C. 3,226,614.

Moulin, Jacques F., and C. L. Bournazel, to Societe de Prospection Electrique Schlumberger, S.A. Densimetering systems. 3,225,588, 12–28–65, Cl. 73—32.

Moult, George J. S.: *See*—
Thompson, Stanley H. A., and Moult. 3,226,109.

Mowat, John H.: *See*—
Meyer, Walter E., Patrick, and Mowat. 3,226,393.

Mueller, Albert J. and L. E. Wills, to Great Lakes Carbon Corp. Lighter fluid for barbecue briquet ignition. 3,226,208, 12–28–65, Cl. 44—7.

Mueller, Robert C., to Bemis Co., Inc. Bag. 3,226,009, 12–28–65, Cl. 229—66.

Müller, Felix, to Kienzle Apparate G.m.b.H. Magnetic tumbler switch. 3,226,509, 12–28–65, Cl. 200—113.

Muller, Martin: *See*—
Walter, Gerhard, and Muller. 3,226,662.

Muller, Paul A.: *See*—
Kistler, Werner. 3,225,390.

Muller, Paul A. Apparatus for producing an endless filter string. 3,226,280, 12–28–65, Cl. 156—510.

Multicap Automation Co. Inc.: *See*—
Ehe, Albert L. 3,225,513.

Mumma, Harold J., to FMC Corp. Machine for handling eggs. 3,225,948, 12–28–65, Cl. 214—314.

Munier, James L.: *See*—
Spangler, Selden B., Jr., and Munier. 3,225,589.

Murch, Kenneth C.: *See*—
Mees, George M. and Murch. 3,226,531.

Murokawa, Hiroyuki: *See*—
Atsukawa, Masumi, Matsumoto, and Murokawa. 3,226,192.

Muskin Mfg. Co., Inc.: *See*—
Barrera, Salvatore E. 3,225,362.

Muskulus, Willi: *See*—
Dröll, Hans, and Muskulus. 3,226,046.

Myers, Dwight G., to Letter Lover, Inc. Envelope shear. 3,225,441, 12–28–65, Cl. 30—231.

Myers, Robert O.: *See*—
Martin, Charles M., Myers, Le Gros, Evans, and Marheine. 3,226,478.

Myron Snyder, Inc.: *See*—
Helman, Phillip. 3,226,034.

Nagai Torao, to Tokyo Kogaku Kikai Kabushiki Kaisha. Photo-conductive exposure meter. 3,225,646, 12–28–65, Cl. 88—23.

Nagel, Lester L., to Buell Engineering Co., Inc. Capacitive probe and system for regulating gases. 3,226,615, 12–28–65, Cl. 317—246.

Nagelvoort, Adrian, to Complex, Inc. Apparatus for recovery of a solute from a volatile solvent. 3,226,202, 12–28–65, Cl. 23—267.

Nahikian, Edwin: *See*—
Jacobs, William H., Nahikian, and Armstrong. 3,225,965.

Nail, Billie G.: *See*—
Black, Stewart L., Hanson, and Nail. 3,226,099.

Nakagawa, Kunio, and T. Konaka, to Shionogi & Co., Ltd. Oxidation with nickel peroxide. 3,226,390, 12–28–65, Cl. 260—285.

Nakamura, Kiyoshi: *See*—
Ishimoto, Kunio, and Nakamura. 3,226,651.

National Aeronautical Corp.: *See*—
Applegarth, Alexander R., Jr. 3,226,714.

National Beryllia Corp.: *See*—
Ryshkewitch, Eugene I., Strott, and Uts. 3,226,456.

National Cash Register Co., The: *See*—
Schwab, Helmut, Horst, Van Voorhis, and Coit. 3,225,470.

National Distillers and Chemical Corp.: *See*—
Braus, Harry, and Waas. 3,226,357.
Corbett, Herbert O. 3,226,049.
Newman, James B., Jr. 3,225,386.

National Electric Welding Machines Co.: *See*—
Heller, John F., and Morley. 3,225,999.

National Ideal Co., The: *See*—
Ernst, William B. 3,225,741.

National Research Development Corp.: *See*—
Abraham, Edward P., Newton, and Hale. 3,226,384.

National Steel Corp.: *See*—
O'Brien, Paul S. 3,225,872.
Smith, Edwin J., Vucich, and Austin. 3,226,315.

Neese, Gerhard, to Durkoppwerke Aktiengesellschaft. Thrust bearing and method of making same. 3,226,170, 12–28–65, Cl. 308—235.

Nellsons Gaiety Ltd.: *See*—
Powling, Philip S., and Pettit. 3,225,921.

Neitzert, Carl, to General Time Corp. Adjustable high count magnetic counter. 3,226,562, 12–28–65, Cl. 307—88.

Nelson, Carl E., to Merck & Co. Inc. Anti-depressant composition and method of using same. 3,226,294, 12–28–65, Cl. 167—55.

Nelson, Donald S.: *See*—
Wise, Harold F., Klein, Nelson, and Richardson. 3,226,461.

Nelson, Rodney A., and R. W. Belfit, Jr., to The Dow Chemical Co. Fuel gas composition. 3,226,218, 12–28–65, Cl. 48—197.

Neo Products Co.: *See*—
Wach, Bohumil J. 3,225,978.

Nestlerode, Clifford D.: *See*—
Eland, Robert C. A., Delp, and Nestlerode. 3,226,663.

NEWAL, Inc.: *See*—
Mees, George M., and Murch. 3,226,531.

Newbold, Geoffrey T., and H. P. Tippett, to Fisons Pest Control Ltd. 4-hydroxy-quinazoline-3-oxides. 3,226,387, 12–28–65, Cl. 260—251.

Newkirk, Clarence E. Adjustable implement hitch means. 3,225,836, 12–28–65, Cl. 172—319.

Newman, Arthur J.: *See*—
Filipski, Stanley P., Miller, and Newman. 3,226,523.

Newman, Herman, and D. Coby. Automotive message indicator. 3,226,707, 12–28–65, Cl. 340—324.

Newman, James B., Jr., to National Distillers and Chemical Corp. Extrusion apparatus. 3,225,886, 12–28–65, Cl. 18—14.

Newspaper Enterprise Association, Inc.: *See*—
Parks, Regis E. 3,225,961.

Newton, Guy G. F.: *See*—
Abraham, Edward P., Newton, and Hale. 3,226,384.

Nichols, John W. de L., and C. R. McGowan, to United Kingdom Atomic Energy Authority. Testing for the presence or absence of a reagent in liquors. 3,226,195, 12–28–65, Cl. 23—230.

Nielson, Gary I.: *See*—
Gogarty, William B., and Nielson. 3,225,787.

Nieuwenhoven, Hendricus J. C.: *See*—
Van der Lely, Cornelis, and Nieuwenhoven. 3,225,434.

Nippon Electric Co., Ltd.: *See*—
Ishimoto, Kunio, and Nakamura. 3,226,651.

Nippon Sheet Glass Co. Ltd.: *See*—
Masuda, Masaharu, Kita, and Fujita. 3,226,277.

Nisso Seiko Kabushiki Kaisha: *See*—
Matsubayashi, Yukio, and Sato. 3,226,044.

Nomura, Suetsugu, and S. Kikuhara. Hulled body equipped with wave-riding device. 3,225,728, 12–28–65, Cl. 114—66.5.

Noordenbos, Pieter K., to American Enka Corp. Traversing drive apparatus. 3,226,047, 12–28–65, Cl. 242—18.

Nordic Enterprises, Inc.: *See*—
Ostrom, Raymond G. 3,225,490.

Norris Brothers Ltd.: *See*—
Petty, John W. L. 3,226,053.

Norris-Thermador Corp.: *See*—
Bintz, Louis J. 3,225,753.

North American Aviation, Inc.: *See*—
Slater, John M. 3,225,606.

North American Philips Co., Inc.: *See*—
Esveldt, Cornelis J., Fluks, and Peloschek. 3,226,328.
Heinze, Karl A. O., and Bierkarre. 3,226,549.
Van Bakel, Henricus A., and Spreuwenberg. 3,226,249.
Van Nimwegen, Gerardus M. B. 3,226,598.
Vermeulen, Gerardus A. W., and Gravesteijn. 3,226,246.
Verster, Jan L., and Wytzes. 3,226,550.
Wilting, Johannes J. 3,226,655.

North Hills Electronics, Inc.: *See*—
Cramer, Sydney, Feldstein, Jacobson, and Staschover. 3,226,601.
Staschover, Leo, and Weiner. 3,226,560.

Norton, James A., and R. E. Holloway, to General Motors Corp. Method of manufacturing filter elements. 3,226,251, 12–28–65, Cl. 117—165.

Norton, Orlo C., J. Spiteri, and W. J. Schaaf, said Spiteri, assor. to said Schaaf and Norton. Control handle for golf cart. 3,225,853, 12–28–65, Cl. 180—19.

Novak, Anthony L., to General Mills, Inc. Magnetic amplifier reversible output converter circuit. 3,226,624, 12–28–65, Cl. 321—25.

Novak, Warren D.: *See*—
Lasley, Robert A., and Novak. 3,225,770.

Nyc, Wladimir. Cigarette quencher. 3,225,775, 12–28–65, Cl. 131—256.

Nychka, Henry R.: *See*—
Gordon, Joseph, Nychka, and Woolf. 3,226,448.

O'Brien, Paul S., to National Steel Corp. Structural member. 3,225,872, 12–28–65, Cl. 189—36.

O'Donnell, William R., to Valve Corp. of America. Aerosol valve construction. 3,225,969, 12–28–65, Cl. 222—394.

Oakes, Gradie. Cylinder and shaft releasable clutch means. 3,225,892, 12–28–65, Cl. 101—375.

Oberg, Paul E. Paddling aquatic toy. 3,225,491, 12–28–65, Cl. 46—245.

Ocken, Alfred G., Jr.: *See*—
Brewster, Franklin C., Shano, and Ocken. 3,226,581.

O'Connell, Frank S., to Monsanto Co. Two-part catalyst system in process for preparing one stage phenolic resins. 3,226,364, 12–28–65, Cl. 260—57.

Oehlrich, Karl-Heins, and K. R. Schmidt, to Siemens-Schuckertwerke Aktiengesellschaft. Method and apparatus for handling pulverulent material. 6,226,165, 12–28–65, Cl. 302—17.

Oehlrich, Karl-Heins, and A. Fracke, to Siemens-Schuckertwerke Aktiengesellschaft. Fluid-cooled rotating machines, particularly electric motors and generators. 3,226,580, 12–28–65, Cl. 310—57.

Ogletree, Andrew W.: *See*—
Simmons, Lovel R., Travis, Monk, and Ogletree. 3,225,850.
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Simmons, Lovel R., Travis, Monk, and Ogletree. 3,225,852.

Oilgear Co., The: *See*—
Hansen, Jack T., and Broome. 3,225,542.

Oiljack Mfg. Co., Inc., The: *See*—
Edwards, Robert N., and Reese. 3,225,882.

Oja, Phyllis D., and G. E. Hartsell, to The Dow Chemical Co. Method for the preparation of triaminoguanidine. 3,226,438, 12–28–65, Cl. 260—564.

Oldberg Mfg. Co.: *See*—
Heckethorn, John E. 3,225,870.

Oldenburger, Rufus: *See*—
Alsobrooks, Darriel L., Hamalian, and Oldenburger. 3,225,540.

Olexson, Andrew S. and E. P. Piggyback pocket level. 3,225,451, 12–28–65, Cl. 33—207.

Olexson, Eugene P.: *See*—
Olexson, Andrew S. and E. P. 3,225,451.

Olin Mathieson Chemical Corp.: *See*—
Becke, Margot. 3,226,181.
Clark, Benjamin F., and Haller. 3,226,432.
Foster, Harry C. 3,225,754.
Kober, Ehrenfried H. 3,226,386.
Laskin, Allen I., Pan, and Weisenborn. 3,226,303.
Smith, Eric. 3,226,411.
Smith, Eric. 3,226,412.
Smith, Eric. 3,226,413.
Smith, Eric. 3,226,414.
Smith, Eric. 3,226,415.

Olson, Ole N. Cartridge loading clip for revolvers. 3,225,482, 12–28–65, Cl. 42—89.

One-In-Hand Tie Co.: *See*—
Less, Louis L. 3,225,358.
Less, Louis L. 3,225,359.

Orkney, John C.: *See*—
Orkney, John C., Jr., and J. C. Orkney. 3,225,591.

Orkney, John C., Jr., and J. C. Orkney. Apparatus for use in measuring the hydraulic efficiency of fluid machines, such as turbines. 3,225,591, 12–28–65, Cl. 73—112.

Orr, Sydney C., Jr., to Buckeye Mfg. Co. Egg hatching system. 3,225,740, 12–28–65, Cl. 119—35.

Orthopedic Specialties Corp.: *See*—
Di Cosola, Michael A. 3,225,760.

Ortloff, John E., and R. J. Howe, to Esso Production Research Co. Bit loading apparatus. 3,225,843, 12–28–65, Cl. 175—93.

Osment, Harry E.: *See*—
Lincoln, Robert C., and Osment. 3,226,832.

Osment, Harry E., and R. L. Jones, to Kaiser Aluminum & Chemical Corp. Method of producing active alumina and the resulting product. 3,226,191, 12–28–65, Cl. 23—141.

Ostrom, Raymond G., to Nordic Enterprises, Inc. Detonating toy projectile. 3,225,490, 12–28–65, Cl. 46—200.

Oswald, Max R., and R. L. Kinsey, to The Dow Chemical Co. Apparatus for foaming elongated segments of strands of foamable styrene polymer compositions. 3,225,584, 12–28–65, Cl. 18—12.

Oswin, Harry G., J. Forten, and H. C. Lieb, to Leesona Corp. Method of preparing a catalyst composition consisting of lithium in a host metal of either group IB or VIII. 3,226,341, 12–28–65, Cl. 252—474.

Oswin, Harry G., to Leesona Corp. Fuel cell electrodes. 3,226,263, 12–28–65, Cl. 136—120.

Otani, Ynko. Frame of a bicycle. 3,226,132, 12–28–65, Cl. 280—281.

Otto, Edward C.: *See*—
Smith, Daniel, Otto, Lazzarini, and McHugh. 3,226,288.

Owens, Neal. Electric shaver having angled blades adapted to be inserted in corresponding angled slots in a blade supporting member. 3,225,440, 12–28–65, Cl. 30—43.4.

Owens-Illinois, Inc.: *See*—
Smith, Robert M., and Haigh. 3,226,358.

Oxley, George H., and E. S. Littler, to Pilkington Bros. Ltd. Method of and apparatus for annealing sheet glass. 3,226,216, 12–28–65, Cl. 65—95.

Oxley, George H., and E. S. Littler, to Pilkington Bros. Ltd. Method and apparatus for the manufacture of sheet glass. 3,226,217, 12–28–65, Cl. 65—95.

Oxley, James E., to Leesona Corp. Method of electrodeposition of a palladium-silver alloy. 3,226,309, 12–28–65, Cl. 204—39.

PKG Corp.: *See*—
Hickin, Robert J. 3,226,003.

PLM Products, Inc.: *See*—
Horrocks, Raymond G. 3,225,629.

Packard, Charles F., to United States of America, Army. Charging handle assembly. 3,225,653, 12–28–65, Cl. 89—1.

Pacific Coast Co., The: *See*—
Lomas, Ralph D. 3,226,144.

Pacific Industries, Inc.: *See*—
Whittle, La Var E. 3,226,575.

Package & Display Corp.: *See*—
Dusseau, Lambert. 3,225,474.

Packaging Corp. of America: *See*—
Hickin, Robert J., Plough, and Steele. 3,225,891.

Padberg, Louis R., Jr. Sound source. 3,226,671, 12–28–65, Cl. 340—5.

Page, Graham D., to Austin Motor Co. Ltd. Hydrostatic power transmission systems. 3,225,618, 12–28–65, Cl. 74—472.

Page, John A., to General Mills, Inc. Apparatus for producing roll-in type doughs. 3,225,715, 12–28–65, Cl. 107—30.

Page, John A., to General Mills, Inc. Dough curling device. 3,225,717, 12–28–65, Cl. 107—69.

Page, John A., to General Mills, Inc. Roll cutter. 3,225,718, 12–28–65, Cl. 107—69.

Page, Richard W. Operating chair head rest. 3,226,160, 12–28–65, Cl. 297—410.

Pagonis, George A., to Light Metals Research Laboratory, Inc. Continuous vacuum and inert gas apparatus for treating and processing titanium and other metals. 3,226,102, 12–28–65, Cl. 266—34.

Paige, Richard E. Foldable paper container. 3,226,005, 12–28–65, Cl. 229—33.

Pakurar, Paul J.: *See*—
Bogar, William H., Davis, Hassenauer, Pakurar, and Ruffolo. 3,225,706.

Palencia, Luis A. Animal cage and support apparatus. 3,225,738, 12–28–65, Cl. 119—17.

Pallow, Theodore: *See*—
Milk, James, and Pallow. 3,225,466.

Palmer, Robert B.: *See*—
Rosin, Seymour, and Palmer. 3,226,539.

Palmer, W. A., Films, Inc.: *See*—
Palmer, William A. 3,225,991.

Palmer, William A., to W. A. Palmer Films, Inc. Intermittent film transport and method. 3,225,991, 12–28–65, Cl. 226—56.

Palmer, William F., to Sylvania Electric Products Inc. High conduction semiconductor diode. 3,226,609, 12–28–65, Cl. 317—234.

Palowkar, David R.: *See*—
Ranby, Peter W., and Palowkar. 3,226,333.

Pals, Lowell D.: *See*—
Purcell, Robert F., and Pals. 3,226,348.

Pam Plastics Inc.: *See*—
Angilello, Joseph, Magaletto, and Pinori. 3,225,387.

Pan, Samuel C.: *See*—
Laskin, Allen I., Pan, and Weisenborn. 3,226,303.

Paolicchi, Albert. Balancing machine. 3,225,604, 12–28–65, Cl. 73—475.

Parachem Corp.: *See*—
Greene, John P. 3,226,110.

Parker-Hannifin Corp.: *See*—
Topinka, George F. 3,225,612.

Parkhurst, Warren E., and C. L. Tillman, III. Well pressure control apparatus with protector device. 3,225,833, 12–28–65, Cl. 166—207.

Parks, Regis E., to Newspaper Enterprise Association, Inc. Vending machine. 3,225,961, 12–28–65, Cl. 221—20.

Parnell & Sons Ltd.: *See*—
Thompson, Stanley H. A., and Moult. 3,226,109.

Parrett, Norman F.: *See*—
Kopchik, Steve, Jr., Kelley, and Parrett. 3,225,946.

Parsons, Fred E. Fluid and vehicle propelling device. 3,225,537, 12–28–65, Cl. 60—35.54.

Parsons, John T.: *See*—
Forrester, Jay W., Pease, McDonough, and Susskind. 3,226,677.

Patent Concern N.V.: *See*—
Van der Lely, Cornelis. 3,225,531.

Paterson, Patrick J., R. Alas, and J. N. Leavitt. Tethered airborne observation device. 3,226,059, 12–28–65, Cl. 244—17.17.

Patrick, James B.: *See*—
Meyer, Walter E., Patrick, and Mowat. 3,226,393.

Patton, Timothy E., and P. A. Cushman. Multiple conduit spacing and clipping apparatus. 3,226,468, 12–28–65, Cl. 174—40.

Patz, Paul. Portable winch drum hoist. 3,226,089, 12–28–65, Cl. 254—145.

Pawl, Walter S.: *See*—
Buchanan, Stephen N., and Pawl. 3,226,471.

Peak, George P., Sr., ½ to Parker C. Peak. Lock nut combination. 3,225,809, 12–28–65, Cl. 151—19.

Peak, Parker C.: *See*—
Peak, George P., Sr. 3,225,809.

Pearson, Eugene S.: *See*—
Barbeau, Raymond A., Fagut, Johnson, and Pearson. 3,225,990.

Pease, Lionel, to Mill Equipment, Inc. Edging picker. 3,225,800, 12–28–65, Cl. 143—37.

Pease, William M.: *See*—
Forrester, Jay W., Pease, McDonough, and Susskind. 3,226,677.

Peavey, F. H., and Co.: *See*—
Moe, Lowell A. 3,226,635.

Pelisson, Claude G. D. J., to Societe d'Exploitation des Materiels Hispano-Suiza. Hydraulic control systems including double action receiver apparatus. 3,225,663, 12–28–65, Cl. 91—305.

Pellegrini, John P., Jr.: *See*—
Fareri, Elizabeth L., and Pellegrini. 3,226,373.

Peloschek, Hans P.: *See*—
Esveldt, Cornelis J., Fluks, and Peloschek. 3,226,328.

Pennsalt Chemicals Corp.: *See*—
Garvey, Benjamin S., Jr., Albert, and Whiton. 3,226,371.

Percival, William S., to Electric & Musical Industries Ltd. Function generators especially for colour television receivers. 3,226,475, 12–28–65, Cl. 178—5.4.

Perkins, J. Carter, Jr.: *See*—
Brightman, Barrie, and Perkins. 3,226,709.

Perry, Charles B., and W. F. Webb, to Hughes Aircraft Co. Machine tool control. 3,225,439, 12–28–65, Cl. 29—568.

Persyn, David C. Tonsorial instrument. 3,225,442, 12–28–65, Cl. 30—233.5.

Pet Milk Co.: *See*—
Magnino, Peter J. 3,226,237.

Peter, Hans-Joachim: *See*—
Zimmermann, Dieter, and Peter. 3,226,054.

Petersen, Anita E.: *See*—
Bennetti, John G. 3,225,468.
Troeppi, William M. 3,225,467.

Petersen, Gerald A.: *See*—
Bennetti, John G. 3,225,468.
Troeppi, William M. 3,225,467.

Peterson, Ronald P., to Radio Corp. of America. Dampened suspension systems for stereophonic phonograph pickups. 3,226,124, 12–28–65, Cl. 274—24.

Petisi, Joseph, and J. H. Boothe, to American Cyanamid Co. 7-and 9-alkylamino-6-deoxytetracycline. 3,226,436, 12–28–65, Cl. 260—559.

Petitt, William H. Mechanism for adjusting tool and ground support relative to supporting frame. 3,225,839, 12–28–65, Cl. 172—398.

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Petrusha, John A.: *See*—
Joseph, David A., and Petrusha. 3,226,264.

Pettit, Ray L.: *See*—
Powling, Philip S., and Pettit. 3,225,921.

Petty, John W. L., to Norris Brothers Ltd. Means for dispensing and locking a safey strap. 3,226,053, 12–28–65, Cl. 242—107.4.

Peuschel, Gerd K.: *See*—
Autenrieth, Hans, Peuschel, and Weichart. 3,225,924.

Pfab, Benedict H., to Western Geophysical Co. of America. Radio synchronized firing control. 3,225,858, 12–28–65, Cl. 181—.5

Pfizer, Chas., & Co., Inc.: *See*—
Miller, Max W. 3,226,441.
Ursprung, Joseph J. 3,226,293.

Pflueger Corp.: *See*—
Sarah, Thomas F. 3,226,051.

Phelon, R. E., Co., Inc.: *See*—
Eape, George E. 3,226,583.

Philco Corp.: *See*—
Wilson, Harry H., Jr., and Hopengarten. 3,226,481.

Phillips Petroleum Co.: *See*—
Kelley, Carl S. 3,225,551.
Kelley, Carl S., and Bauer. 3,225,550.
Leobeck, Robert E. 3,225,962.
Rohling, Raymond G. 3,226,205.

Phillips, William L.: *See*—
Wellington, John R., and Phillips. 3,226,814.

Piazzolla, Giovanni, and C. Villa. Dobby, especially adapted for speedy looms. 3,225,792, 12–28–65, Cl. 139—71.

Pickart, Don E.: *See*—
Arnold, Vernon W., and Pickart. 3,226,453.

Piemont, Georges. Encased belt conveyors. 3,225,903, 12–28–65, Cl. 198—206.

Pietruska, Friedrich. Cigar pressing machine. 3,225,774, 12–28–65, Cl. 131—80.

Pilkington Brothers Ltd.: *See*—
Beattie, John R., and Wolfe. 3,226,215.
Oxley, George H., and Littler. 3,226,216.
Oxley, George H., and Littler. 3,226,217.

Pinori, Arthur: *See*—
Angilello, Joseph, Magaletto, and Pinori. 3,225,387.

Pintell, Robert H., to Intron International, Inc. Induced-quadrature field synchronous motor. 3,226,584, 12–28–65, Cl. 310—162.

Pintsch Bamag Aktiengesellschaft Zweigniederlassung Cologne-Bayenthal: *See*—
Grunewald, Waldemar, and Schöps. 3,225,397.

Pintschovius, Ulrich: *See*—
Riemenschneider, Wilhelm, Pintschovius, and Probst. 3,226,337.

Pipes, George R., to Eaton Mfg. Co. Nut and insert assembly machine. 3,225,370, 12–28–65, Cl. 10—155.

Piret, Jean, to Societe Anonyme Simca Automobiles. Hydraulic anti-shock device. 3,225,541, 12–28–65, Cl. 60—52.

Pitre, Davide: *See*—
Felder, Ernst, and Pitre. 3,226,431.

Pittman, Forrest C.: *See*—
Shelton, Robert Q., Pittman, and Love. 3,225,777.

Pittman, Ralph R. Excess-voltage protective device. 3,226,393, 12–28–65, Cl. 313—231.

Plate, Robert B., to United States of America, Navy. Self-adjusting packing assembly. 3,226,126, 12–28–65, Cl. 277—125.

Platner, Warren, to Knoll Associates, Inc. Wire grid furniture frame. 3,226,161, 12–28–65, Cl. 297—449.

Platz, Elwood T.: *See*—
Thomas, Robert W., and Platz. 3,226,510.

Plavcan, Edward J.: *See*—
Du Bois, Robert C., Goff, and Plavcan. 3,225,622.

Pless, Emory J.: *See*—
Schrage, Albert, and Pless. 3,226,336.

Plessey Co. Ltd., The: *See*—
Walton, William, and Faulkner. 3,225,583.

Plock, Karl, G. Mertins, and J. Clongwa, to Holstein & Kappert Maschinenfabrik Phonix G.m.b.H. Container washing apparatus. 3,225,776, 12–28–65, Cl. 134—129.

Plough, Edwin J.: *See*—
Hickin, Robert J., Plough, and Steele. 3,225,891.

Plumat, Emile, to Glaverbel, S. A. Device for the protection of barriers in glass furnaces. 3,226,220, 12–28–65, Cl. 65—342.

Pneumatic Scale Corp., Ltd.: *See*—
Vergobbi, Robert W., and Dodd. 3,225,847.
Whelan, James P. 3,225,960.

Pneumo-Hydraulic Automatic Control Laboratory of Automatic Control: *See*—
Lootsook, Jury V. 3,225,779.

Pochapsky, Harry, and W. A. Kruper, to Clevite Corp. Electrochemical treating method and apparatus. 3,226,308, 12–28–65, Cl. 204—26.

Poindexter, Frank M., to The Dow Chemical Co. Granular polymerization in aqueous emulsion of normally crystalline vinylidene chloride. 3,226,370, 12–28–65, Cl. 260—80.5.

Polakoff, Louis: *See*—
Klein, Solomon A., and Polakoff. 3,225,914.

Polaroid Corp.: *See*—
Friedman, Melvin. 3,225,671.
Friedman, Melvin, and Dietz. 3,225,670.

Poletto, John F.: *See*—
Allen, George R., Jr., and Poletto. 3,226,385.
Allen, George R., Jr., and Poletto. 3,226,397.
Allen, George R., Jr., and Poletto. 3,226,398.

Pollak, Victor S., and T. W. Cart, to Atlantic Products Corp. Carrying bag construction. 3,225,806, 12–28–65, Cl. 150—52.

Polymer Corp., The: *See*—
Dettling, Conrad J., and Ramsay. 3,226,245.

Poole, Gean, and J. R. Hoff, to Ballantyne Instruments and Electronics Inc. Cup with destruction inducing means. 3,226,000, 12–28–65, Cl. 229—1.5.

Porowski, Januss: *See*—
Bretsznajder, Stanislaw, Kawecki, and Porowski. 3,226,187.
Bretsznajder, Stanislaw, Porowski, and Lis. 3,226,186.

Porsche, Dr. Ing. h.c.F., K.G., Firma: *See*—
Binder, Robert. 3,225,610.

Porteous, John A., to United States Rubber Co. Drainage bed. 3,225,935, 12–28–65, Cl. 210—404.

Post, Herbert A., Inc.: *See*—
Thies, Robert, Ratasitz, and Mathieu. 3,226,007.

Postlewaite, William R., to Chevron Research Co. Method and apparatus for working submerged wells. 3,225,826, 12–28–65, Cl. 166—.6.

Poston, Irvin E., and A. R. Zielinski, to General Motors Corp. Windshield washer equipment. 3,225,951, 12–28–65, Cl. 215—6.

Potash, Charles: *See*—
Meltzer, Meyer, and C. and S. Potash. 3,225,861.

Potash, Selig: *See*—
Meltzer, Meyer, and C. and S. Potash. 3,225,861.

Potsaid, Majic S., to The Massachusetts General Hospital. Radiation dosimeter with a radiochromic couple suspended in an essentially anhydrous solid translucent matrix. 3,226,545, 12–28–65, Cl. 250—83.

Potter Instrument Co., Inc.: *See*—
Potter, John T., Comstock, and Gabor. 3,226,685.

Potter, John T., G. E. Comstock, 3d, and A. Gabor, to Potter Instrument Co., Inc. Digital recording systems utilizing ternary, N bit binary and other self-clocking forms. 3,226,685, 12–28–65, Cl. 340—172.5.

Powell, Stanley, ¼ to R. S. Sutton, and ¼ to J. D. Howard. Animal trap. 3,225,485, 12–28–65, Cl. 43—67.

Powling, Philip S., and R. L. Pettit, to Neilsons Galety Ltd. Package of cracker and method of making said package. 3,225,921, 12–28–65, Cl. 206—65.

Pratt, Michael, to Shell Oil Co. Underground combustion control. 3,225,827 12–28–65, Cl. 166—11.

Preisser, Raymond G. Universal clamping device. 3,226,104, 12–28–65, Cl. 269—227.

Preparation Industrielle des Combustibles: *See*—
Dostatni, Albert W. 3,225,926.

Price, Frank B.: *See*—
Steele, Clarence R., and Price. 3,226,257.

Price-Pfister Brass Mfg., Co.: *See*—
Hinderer, Gottlob. 3,225,581.

Prime Movers (Wiltshire) Ltd.: *See*—
Sherwen, Theo. 3,225,855.

Printed Motors Inc.: *See*—
Henry-Baudot, Jacques. 3,226,586.

Prismo Safety Corp.: *See*—
deVries, Eduard R. 3,225,495.

Pritsiaff, Frederick C.: *See*—
Schaberg, Johannes G., and Pritsiaff. 3,225,607.

Probst, Otto: *See*—
Riemenschneider, Wilhelm, Pintschovius, and Probst. 3,226,337.

Procter, Elsie H. Stock loader. 3,225,744, 12–28–65, Cl. 119—82.

Procter & Gamble Co., The: *See*—
MacMillan, Francis S. K. 3,226,329.

Product R. & D. Inc.: *See*—
Jacobs, William H., Nahikian, and Armstrong. 3,225,965.

Prospection Electrique Schlumberger, S.A., Societe de: *See*—
Moulin, Jacques F., and Bournasel. 3,225,588.

Puerto Rico, Commonwealth of, The: *See*—
Cancel, Luis E. 3,225,804.

Pugin, Andre: *See*—
Hindermann, Peter Kolliker, Amman, and Pugin. 3,226,176.

Pullman Inc.: *See*—
Bertolini, William A., and Davison. 3,226,166.

Purcell, Robert F., and L. D. Pals, to Commercial Solvents Corp. Novel alkyd resins modified with tris(hydroxymethyl) aminomethane. 3,226,348, 12–28–65, Cl. 260—22.

Pye Ltd.: *See*—
Ritchie, Roy, and Killeen. 3,226,725.
Shrewsbury, Derek D. 3,225,601.

Pyle, Leon. Zone isolation adapter for packers. 3,225,832, 12–28–65, Cl. 166—146.

RFD, Inc.: *See*—
Beaty, Charles A. 3,226,656.

Radiant Pen Corp.: *See*—
Hechtle, Emil. 3,225,745.
Hechtle, Emil. 3,225,746.

Radio Corp. of America: *See*—
Artzt, Maurice. 6,226,706.
Barkow, William H., and Matthews. 3,226,588.
Berghammer, Johannes, and Bloom. 3,226,595.
Chin, Te N. 3,226,587.
Harwood, Leopold A., and Murakami. 3,226,645.
Minton, Robert. 3,226,564.
Peterson, Ronald P. 3,226,124.
Wolf, Nikolaus E. 3,226,227.

Radio Frequency Laboratories, Inc.: *See*—
Seabury, Richard W., Jr. 3,226,496.

Radke, Arthur O.: *See*—
Reinfeldt, Edward J., and Radke. 3,226,157.

Railsback, Horace E., and H. W. Stewart. Rapid preference system. 3,226,018, 12–28–65, Cl. 235—50.

Rainer, Erich: *See*—
Kuhrt, Friedrich, Maas, Rainer, and Brunner. 3,226,640.

Rallis, James M. Ceiling access opening and bracket therefor. 3,225,503, 12–28–65, Cl. 52—497.

Ramsay, Robert C.: *See*—
Dettling, Conrad J., and Ramsay. 3,226,245.

Ranby, Peter W., and D. R. Palowkar, to Thorn Electrical Industries Ltd. Titanium and tin activated magnesium borate luminescent material. 6,226,833, 12–28–65, Cl. 252—301.4.

Randell, Theodore C., and T. S. Eldridge. Amusement and educational device. 3,225,460, 12–28–65, Cl. 35—22.

Ranson, Charles W. Fruit and vegetable washing device with vertical circulative flow and extendable body. 3,226,095, 12–28–65, Cl. 259—18.

Ranson, Charles W. Fruit and vegetable washing device with vertical circulative flow and faucet adapter. 3,226,096, 12–28–65, Cl. 259—18.

Rapide-Standard Co., Inc., The: *See*—
Falcon, Carl J., and Fogg. 3,225,879.

Ratasitz, John F.: *See*—
Thies, Robert, Ratasitz, and Mathieu. 3,226,007.

Raven Industries Inc.: *See*—
Winker, James A. 3,226,060.

Raybold, Richard L.: *See*—
Harman, George G., Jr., Higier, Meyer, and Raybold. 3,226,610.

Raytheon Co.: *See*—
Auger, Ernest P. 3,226,652.
Lampke, George G. 3,226,630.

Reber, John, Jr., to Hamilton Watch Co. Method of regulating and poising adjustment. 3,225,586, 12–28–65, Cl. 73—6.

Recaro AG.: *See*—
Strien, Werner, and Resag. 3,226,158.

Recknagel, Frederick W., to The Federal Bearings Co., Inc. Composite seal construction for antifriction bearings. 3,226,168, 12–28–65, Cl. 308—187.1.

Rediske, John H., and W. H. Lawrence. Method for protecting growing plants against animal damage. 3,226,291, 12–28–65, Cl. 167—46.

Reese, Lawrence C., Sr.: *See*—
Edwards, Robert N., and Reese. 3,225,882.

Ref Dynamics Corp.: *See*—
Wulfken, Joseph J. 3,225,558.

Reich, Robert W. Electric clock. 3,225,536, 12–28–65, Cl. 58—23.

Reifschneider, Walter, to The Dow Chemical Co. Alkylthiobenzenepolythiols. 3,226,445, 12–28–65, Cl. 260—609.

Reilly, Paul C., to Rexall Drug and Chemical Co. Wrapper. 3,225,920, 12–28–65, Cl. 206—68.2.

Reimbert, Andre. Stocking systems. 3,225,944, 12–28–65, Cl. 214—17.

Reimer, William A., to Automatic Electric Laboratories, Inc. Push button control unit. 3,226,493, 12–28–65, Cl. 200—5.

Reimers, James L., to FMC Corp. Flap folding apparatus. 3,225,666, 12–28–65, Cl. 93—44.1.

Reimers, Kirk W., to FMC Corp. Conveyor chain and link therefor. 3,225,895, 12–28–65, Cl. 198—168.

Reinecke, Harry: *See*—
Heinemann, Rolf, Reinecke, and Frey. 3,226,621.

Reiners & Wiggermann Getriebe- und Maschinenbau: *See*—
Wiggermann, Georg. 3,225,699.

Reinfeldt, Edward J., and A. O. Radke, to Bostrom Corp. Covering for seats having a hinged back. 3,226,157, 12–28–65, Cl. 297—219.

Reinhard, Louis: *See*—
Alder, Jakob, and Reinhard. 3,225,611.

Reischl, Artur, H. Holtschmidt, and P. Fischer, to Farbenfabriken Bayer Aktiengesellschaft. Process of preparing polyesterurethanes containing carbodiimide groups. 3,226,366, 12–28–65, Cl. 260—75.

Reithel, Fred J., to The Dow Chemical Co. Anti-fogging treatment for film and coated products. 3,226,250, 12–28–65, Cl. 117—138.8.

Remers, William A.: *See*—
Allen, George R., Jr., Remers, and Weiss. 3,226,899.

Remund, Werner, to Gebruder Buhler. Machine for handling continuously extruded plastic material. 3,225,632, 12–28–65, Cl. 83—88.

Rerair, Inc.: *See*—
Cummins, Charles R. 3,225,379.

Resag, Jorg: *See*—
Strien, Werner, and Resag. 3,226,158.

Resines et Vernis Artificiels: *See*—
Jacquier, René. 3,226,347.

Reuschel, Konrad, to Siemens-Schuckertwerke Aktiengesellschaft. Method of producing electronic semiconductor devices by precipitation of monocrystalline semiconductor substances from a gaseous compound. 3,226,254, 12–28–65, Cl. 117—201.

Reuschel, Konrad, and W. Keller, to Siemens-Schuckertwerke Aktiengesellschaft. Method for producing a semiconductor device with a monocrystalline semiconductor body. 3,226,265 12–28–65, Cl. 148—1.5.

Reuther, Albert H., to General Motors Corp. Electrically-operable visor systems. 3,226,151, 12–28–65, Cl. 296—97.

Reuther, Albert H., to General Motors Corp. Fluid-actuated visor systems. 3,226,152, 12–28–65, Cl. 296—97.

Revells Bayard, Societe Anonyme: *See*—
Deladerriere, André. 3,225,535.

Rex Chainbelt, Inc.: *See*—
Roeschen, William R. 3,225,842.
Rexall Drug and Chemical Co.: *See*—
Reilly, Paul C. 3,225,920.
Schrage, Albert, and Plesa. 3,226,336.
Reynolds, John W., to The Consolidated Mining and Smelting Co. of Canada Ltd. Sound suppressing device comprising elastic tubular sleeve for air actuated percussive type tools. 3,225,861, 12–28–65, Cl. 181—36.
Rhea, Donald W., to Interlake Steel Corp. Strapping machine control. 3,225,683, 12–28–65, Cl. 100—4.
Rhode, Judson C.: *See*—
Blanchard, Wesley A., and Rhode. 3,226,449.
Rhodes, Philip H., to Champion Papers Inc. Process of recovery of polyethylene from cellulosic fibers. 3,226,343, 12–28–65, Cl. 260—2.3.
Rhodia, Inc.: *See*—
Meuly, Walter C., and Seidner. 3,226,320.
Richard, Joseph D. Aeolian fish lure. 3,225,484, 12–28–65, Cl. 43—17.1.
Richard, Joseph D. Time recording lock system. 3,225,576, 12–28–65, Cl. 70—434.
Richard, Joseph D. Wave measuring apparatus. 3,225,593, 12–28–65, Cl. 73—170.
Richard, Joseph D. Apparatus for determining characteristics of the ocean bottom. 3,226,670, 12–28–65, Cl. 340—2.
Richards, Ronald G., ½ to C. J. P. Smith. Device for spreading material on lawns or for leveling soft soil and the like. 3,225,837, 12–28–65, Cl. 172—371.
Richardson, Westgarth & Co. Ltd.: *See*—
Walker, Herbert O. 3,226,558.
Richardson, William C.: *See*—
Wise, Harold F., Klein, Nelson, and Richardson. 3,226,461.
Richier Societe Anonyme: *See*—
Vivier, Claude. 3,225,543.
Rickert, Royce J.: *See*—
Zmola, Paul C., Rickert, and Flinn. 3,226,300.
Riddell, John A.: *See*—
Hageman, Howard A., and Riddle. 3,226,221.
Riemenschneider, Wilhelm, U. Pintschovius, and O. Probst, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Process for producing a catalyst for the oxidation of olefins and diolefins to unsaturated dicarboxylic acids. 3,226,337, 12–28–65, Cl. 252—435.
Rigler, Neil E.: *See*—
Bitha, Panayota, and Rigler. 3,226,434.
Riley, Harry L., and A. Romanski, to United Coke and Chemicals Co. Ltd. Vanadium pentoxide potassium pyrosulfate catalyst and method of preparation thereof. 3,226,338, 12–28–65, Cl. 252—440.
Ringold, Howard J. and C. Djerassi, to Syntex Corp. 21-desoxy-16.17-cyclic acetals. 3,226,383, 12–28–65, Cl. 260—239.55.
Riordan, Hugh E., to General Precision, Inc. Device for controlling temperature by heat conduction. 3,225,820, 12–28–65, Cl. 165—26.
Riseman, John H., to Corning Glass Works. Glass electrode and method of making the same. 3,226,313, 12–28–65, Cl. 204—195.
Ritchie, Roy, and J. R. Killeen, to Pye Ltd. Centrally loaded inductively tunable whip antenna. 3,226,725, 12–28–65, Cl. 343—745.
Ritter Co., Inc.: *See*—
Weickgenannt, Egon B., and Maher. 3,226,105.
Ritter, Joseph A.: *See*—
Levin, Martin. 3,226,243.
Robbins, James D., and R. A. Curtis, to Borg-Warner Corp. Dry cleaning system. 3,225,572, 12–28–65, Cl. 68—27.
Roberts, Alan P., to Esso Production Research Co. Bit weight applicator. 3,225,844, 12–28–65, Cl. 175—230.
Robertshaw-Controls Co.: *See*—
Garnett, Lawrence T., and Schroeder. 3,226,474.
Wright, John W., J. C. Hewitt, Jr., D. V. Hewitt, and Morrison. 3,226,605.
Robinson, Douglas A. and L. M., and J. Dods. Apparatus for viewing gems and similar objects. 3,225,647, 12–28–65, Cl. 88—24.
Robinson, Harold E., to Dyna-Nuclear Corp. By-pass valve for engines. 3,225,752, 12–28–65, Cl. 123—119.
Robinson, Lytton M.: *See*—
Robinson, Douglas A. and L. M., and Dods. 3,225,647.
Robinson, Paul G.: *See*—
Zeamer, Aaron C., and Robinson. 3,225,885.
Robson, William W., Jr. Automatic furnace. 3,225,722, 12–28–65, Cl. 110—38.
Rock-A-Bye Co.: *See*—
Miller, Oscar E. and J. E. 3,225,365.
Rockwell Mfg. Co.: *See*—
Milleville, Bertram J. 3,226,081.
Roe, Elverton O., to General Industries Co. Dynamo-electric machine coil retaining means. 3,226,585, 12–28–65, Cl. 310—194.
Roeschen, William R., to Rex Chainbelt, Inc. Self-propelled percussion tool assembly. 3,225,842, 12–28–65, Cl. 173—24.
Roethlein, Richard J.: *See*—
Forten, Jeremy, and Roethlein. 3,226,261.
Rogers, Ford, Jr. Cigarette packaging. 3,226,010, 12–28–65, Cl. 229—87.
Rogers, Forrest E. Letter selecting device for use in word building game. 3,226,122, 12–28–65, Cl. 273—142.
Rogers, Fred L., Jr., to International Business Machines Corp. Monostable multivibrator utilizing unidirectional device in cross-coupling to isolate output from input during quiescent condition. 3,226,576, 12–28–65, Cl. 307—88.5.
Rogstad, Robert E. Water pistol having an unpredictable ejection direction. 3,225,964, 12–28–65, Cl. 222—79.
Rohling, Raymond G., to Phillips Petroleum Co. Reactor impeller with feed inlet along shaft. 3,226,205, 12–28–65, Cl. 23—288.
Rohm & Haas Pharma GmbH: *See*—
Goonewardene, Hilary F. 3,226,289.
Rohmer, Richard H. Key marker. 3,225,478, 12–28–65, Cl. 40—330.
Rohrback, Gilson H., and T. M. Doniguian, to TRW Inc. Bioelectrode assembly for generating electricity. 3,226,262, 12–28–65, Cl. 136—86.
Rohrs, Marvin K., to Worthington Corp. Capacity control for absorption refrigeration. 3,225,556, 12–28–65, Cl. 62—141.
Roinestad, Gerald C., to Ashworth Bros. Inc. Collapsible conveyor belt. 3,225,898, 12–28–65, Cl. 198—181.
Roinestad, Gerald C., to Ashworth Bros., Inc. Belt control. 3,225,902, 12–28–65, Cl. 198—202.
Rollins, Dallas W., and E. L. Fischer, to ACF Industries, Inc. Collapsible support. 3,225,707, 12–28–65, Cl. 105—368.
Romanski, Andrzej: *See*—
Riley, Harry L., and Romanski. 3,226,338.
Romesberg, Floyd E., R. J. Matheison, and L. E. Lefevre, to The Dow Chemical Co. Process for producing microporous films. 3,226,462, 12–28–65, Cl. 264—216.
Romney, Russell H. Multi-purpose pack carrier. 3,225,985, 12–28–65, Cl. 224—25.
Rongved, Paul I.: *See*—
Bird, Walter W., Strobel, Rongved, and Zamore. 3,225,413.
Rooney, William J. Container closure with integral spout. 3,225,970, 12–28–65, Cl. 222—484.
Root, Victor N. Wind break. 3,226,091, 12–28–65, Cl. 256—12.5.
Roraback, Harry G. Balanced golf club head including flat alignment shoulder between reduced toe and thickened heel. 3,226,123, 12–28–65, Cl. 273—164.
Rosado, John A.: *See*—
Garver, Robert V., and Rosado. 3,226,661.
Rose, Leslie D.: *See*—
Chown, Robert G., and Rose. 3,225,829.
Rosenbaum, Erik, to The Bendix Corp. Short pulse eliminator discriminator utilizing feed-back to effect desired output pulses. 3,226,570, 12–28–65, Cl. 307—88.5.
Rosenfeld, Alan S., to Crown Zellerbach Corp. Recovery process for calcium-base sulfite spent liquor. 3,226,190, 12–28–65, Cl. 23—131.
Rosin, Seymour, to Technicon Instruments Corp. Photosensitive liquid examining means for electrophoresis apparatus. 3,226,556, 12–28–65, Cl. 250—226.
Rosin, Seymour, and R. B. Palmer, to United States of America, Atomic Energy Commission. Bubble chamber illumination means. 3,226,539, 12–28–65, Cl. 240—41.3.
Ross, John A.: *See*—
Singleton, George, and Ross. 3,226,355.
Ross, Marvin O.: *See*—
Dunn, Joseph B., and Ross. 3,225,932.
Rossi, Anthony M. Spray apparatus having pressure responsive selector valve means. 3,226,030, 12–28–65, Cl. 239—135.
Rotameter Mfg. Co. Ltd.: *See*—
Stephenson, Eric F., and Stagg. 3,225,603.
Roth, Charles: *See*—
Atkin, Leonard, and Roth. 3,226,536.
Rovoldt, Charles L.: *See*—
Schott, Arthur K., Bartha, and Rovoldt. 3,225,636.
Rowley, Harold A., to M. H. Detrick Co. Dumping refractory hearth furnace. 3,225,721, 12–28–65, Cl. 110—7.
Royal Alexandra Hospital for Children, The: *See*—
Margolis, Joel. 3,226,094.
Royal Typewriter Co., Inc.: *See*—
Cetran, Louis, and Frechette. 3,225,886.
Ruffieux, Stanislas: *See*—
Frowein, Egbertus, and Ruffieux. 3,226,513.
Ruffolo, James C.: *See*—
Bogar, William H., Davis, Hassenauer, Pakurar, and Ruffolo. 3,225,706.
Rummel, Theodor, to Siemens & Halske Aktiengesellschaft. Apparatus for preparing semiconductor rods. 3,226,203, 12–28–65, Cl. 23—273.
Rumsey, Rollin D., to Houdaille Industries, Inc. Snubbing means for rotary hydraulic actuators. 3,225,664, 12–28–65, Cl. 91—408.
Russell, Arthur P., and E. F. Grgetic, to General Electric Co. Electric lamp making apparatus. 3,226,175, 12–28–65, Cl. 316—31.
Rust, Andrew. Bale buncher. 3,225,532, 12–28–65, Cl. 56—475.
Rust, Willard A., to Automatic Electric Laboratories, Inc. Tandem toll adapter circuit. 3,226,479, 12–28–65, Cl. 179—7.
Rüter, Hermann, E. Cherdron, and F. Flässle, to Gebruder Giulini G.m.b.H. Process for the production of aluminum sulfate melt. 3,226,188, 12–28–65, Cl. 23—123.
Ryan, John W. Doll head and replaceable hairdo construction. 3,225,489, 12–28–65, Cl. 46—172.
Rybicki, Norman, to Wehr Corp. Apparatus for compressing material. 3,225,411. 12–28–65, Cl. 25—91.
Rye, Grover W., A. H. Bridge, and F. J. Kovac, to The Goodyear Tire & Rubber Co. Method of bonding cord to rubber with a phenolaldehyde blocked polyisocyanate. 3,226,276, 12–28–65, Cl. 156—335.
Ryshkewitch, Eugene I., A. J. Strott, and D. L. Utz, to National Beryllia Corp. Method of producing high density ceramic articles. 3,226,456, 12–28–65, Cl. 264—.5.
SCM Corp.: *See*—
Zeamer, Aaron C., and Robinson. 3,225,885.

SKF Kugellagerfabriken Gesellschaft mit beschrankter Haftung: *See*—
Breitenbach, Karl H., and Kübler. 3,225,392.
Saeger, Gert, to J. H. Stielow. Printing machine. 3,225,690, 12–28–65, Cl. 101—48.
Sagarin, Philip H., to Valve Corp. of America. Actuator cap construction for aerosol devices. 3,225,966, 12–28–65, Cl. 222—153.
Sahores, Jean: *See*—
Kulbicki, Georges L., Sahores, Vanuxem, Enjalbert, and Caplaux. 3,225,493.
Sahyun, Melville, J. A. Faust, and N. R. Hansl, said Faust and said Hansl assors. to said Sahyun. Beta-loweralkoxy-trifluromethyl-phenethylamines. 3,226,440, 12–28–65, Cl. 260—570.6.
Saint-James, Rose: *See*—
Graham, Geoffroy, Hure, and Saint-James. 3,226,092.
Sakakibara, Shigeru: *See*—
Toyoda, Shoichiro, and Sakakibara. 3,226,013.
Sakuma, Koji: *See*—
Hosoda, Yutaka, Shimatani, and Sakuma. 3,226,177.
Salmons, Jerome C.: *See*—
Lo Presti, Roy F., and Salmons. 3,225,899.
Samwel, Jan A., to Friden, Inc. Gating means for passing a predetermined number of pulses. 3,226,568, 12–28–65, Cl. 307—88.5.
Sanders Associates, Inc.: *See*—
Dahlgren, Victor F. 3,226,473.
Sansing, James E., Jr.: *See*—
Hibbitts, Charles H., and Sansing. 3,226,222.
Sarah, Thomas F., to Pfueger Corp. Line guide control for a spinning reel. 3,226,051, 12–28–65, Cl. 242—84.21.
Sarber, Oliver T. Chuck. 3,226,127, 12–28–65, Cl. 279—4.
Sarfati, Alberto G., and G. Vischiani, to Sobrevin Soc. de Brevets Industriels Etablissement. Method and apparatus for handling filaments. 3,25,446, 12–28–65, Cl. 35—125.
Sasadi, John, to Litton Industries, Inc. Cantilever rotary reclaimer. 3,225,943, 12–28–65, Cl. 214—10.
Sato, Ryokichi: *See*—
Matsubayashi, Yukio, and Sato. 3,226,044.
Sauerbrey, Wilmer J. E., to Aircraft Armaments, Inc. Materials handling arrangement. 3,226,090, 12–28–65, Cl. 254—190.
Saumsiegle, Robert W., and F. E. Wiley. Method for making plastic containers. 3,226,464, 12–28–65, Cl. 264—325.
Saunders, James H., and H. L. Heiss, to Monsanto Co. Method for making a cellular polyurethane. 3,226,345, 12–28–65, Cl. 260—2.5.
Sauppe, Norman A., to Spindler & Sauppe. Remote control slide projector. 3,225,652, 12–28–65, Cl. 88—28.
Savio, Joseph. to Electro-Char Corp. Griddle plate. 3,225,682, 12–28–65, Cl. 99—446.
Sax, Karl J., R. H. Blank, C. E. Holmlund, and R. H. Evans, Jr., to American Cyanamid Co. Ester 4-en-3-one and 16-oxygenated derivatives thereof. 3,226,404, 12–28–65, Cl. 260—397.4.
Saxe, Robert L.: *See*—
Krooss, Robert J., and Saxe. 3,225,716.
Scarbrough, Alfred D.: *See*—
Amdahl, Lowell D., Brian, Scarbrough, Schneberger, and Koerner. 3,226,687.
Amdahl, Lowell D., Brian, Scarbrough, Schneberger, and Koerner. 3,226,688.
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Schaaf, Will J.: *See*—
Norton, Orio C., Spiteri, and Schaaf. 3,225,853.
Schaberg, Johannes G., and F. C. Pritzlaff, to General Motors Corp. Gyroscope. 3,225,607, 12–28–65, Cl. 74—5.
Schaefer, George L.: *See*—
Amthor, Franklin R., Jr., Katsfey, Kanits, Schaefer, Kodet, and Haban. 3,225,937.
Schaefer, Robert H., to General Motors Corp. Transmission control system. 3,225,619, 12–28–65, Cl. 74—472.
Schafer, Leonhard. Pastry convoluting device. 3,225,710, 12–28–65, Cl. 107—9.
Schaub, Willy O. Adaptable strainer for paint guns. 3,225,931, 12–28–65, Cl. 210—251.
Scheffelowitz, Henry, to Telefonaktiebolaget LM Ericsson. Distortion compensation at wide-band transmission over a number of equal narrow-band channels. 3,226,485, 12–28–65, Cl. 179—15.
Scheuer, Edward W., to The Budd Co. Dehydrated mica products and method of making same. 3,226,286, 12–28–65, Cl. 161—171.
Schibli, Marcel, to Schweizerische Wagons-und Aufsugefabrik A.-G. Logical elevator control system using minimum logical components. 3,225,869, 12–28–65, Cl. 187—29.
Schick, Josef. Sewage treatment process with consolidating of separated sewage sludge. 3,226,818, 12–28–65, Cl. 210—10.
Schick, Josef. Process of consolidating a voluminous, low solids content sludge. 3,226,319, 12–28–65, Cl. 210—52.
Schilling, Donald C., to Eutectic Welding Alloys Corp. Flame-spraying torch. 3,226,028, 12–28–65, Cl. 239—1.
Schimmelschmidt, Kurt, H. Hoffmann, E. Baier, and H. Ulmer, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Water-insoluble phthalocyanine dyestuffs and process for their manufacture. 3,226,395, 12–28–65, Cl. 260—314.5.
Schipper, Edgar S., to Shulton, Inc. Pyridylethylated antharanilamides and derivatives thereof. 3,226,894, 12–28–65, Cl. 260—295.
Schlumberger Well Surveying Corp.: *See*—
Schneider, William P. 3,226,633.
Schmidt, Hans O. Multicolor pen, particularly a multicolor ball point pen. 3,225,747, 12–28–65, Cl. 120—42.16.
Schmidt, Karl R.: *See*—
Oehlrich, Karl-Heinz, and Schmidt. 3,226,165.
Schneberger, Edward J.: *See*—
Amdahl, Lowell D., Brian, Scarbrough, Schneberger, and Koerner. 3,226,689.
Schneble, Frederick W., Jr., and R. J. Zeblisky. Method of making printed circuits. 3,226,256, 12–28–65, Cl. 117—212.
Schneberger, Edward J.: *See*—
Amdahl, Lowell D., Brian, Scarbrough, Schneberger, and Koerner. 3,226,687.
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Fuller, Richard H., Koerner, and Schneberger. 3,226,692.
Schneider, William P., to Schlumberger Well Surveying Corp. Induction logging apparatus including non-linear means for translating a detected signal. 3,226,633, 12–28–65, Cl. 324—6.
Schnettler, Frank J.: *See*—
Monforte, Frank R., and Schnettler. 3,226,327.
Schoch, Thomas J., and J. A. Korth, to Corn Products Co. Confectioners' molding starch. 3,226,230, 12–28–65, Cl. 106—38.5.
Schoetensack, Wolfgang, G. Hallmann, and K. Haegele, to BYK-Gulden-Lomberg Chemische Fabrik G.m.b.H. 2-substituted benzofuran compounds and process of making and using same. 3,226,402, 12–28–65, Cl. 260—346.2.
Scholz, Richard R.: *See*—
Flaherty, John T., and Scholz. 3,225,656.
Schöps, Rudolf: *See*—
Grunewald, Waldemar, and Schöps. 3,225,397.
Schott, Arthur K., K. J. Bartha, and C. L. Rovoldt, to Houdaille Industries, Inc. Punching machine and structure therefor. 3,225,636, 12–28–65, Cl. 83—468.
Schotz, Otto W. Portable lamp switch. 3,226,502, 12–28–65, Cl. 200—60.
Schrage, Albert, and E. J. Plesa, to Rexall Drug and Chemical Co. Composition and process for preparing a three-component polymerization system. 3,226,336, 12–28–65, Cl. 252—429.
Schreiner, Horst, to Siemens-Schuckertwerke Aktiengesellschaft. Electrical contact device. 3,226,517, 12–28–65, Cl. 200—166.
Schroeder, Ralph L., Jr.: *See*—
Garnett, Lawrence T., and Schroeder. 3,226,474.
Schwartz, Charles, & Co.: *See*—
Durham, William J. 3,225,408.
Schweizer, Erich: *See*—
Koepell, Walter, Meier, and Schweizer. 3,226,310.
Schweizerische Aluminium A.G.: *See*—
Hallauer, Walter. 3,225,502.
Schweizerische Wagons- und Aufsugefabrik A.-G.: *See*—
Schibli, Marcel. 3,225,869.
Schwein Engineering, Inc.: *See*—
Schwien, Leo N. 3,225,599.
Schrewsbury, Derek D., to Pye Ltd. Liquid sample containers for use in a spectrophotometer. 3,225,601, 12–28–65, Cl. 73—421.
Schuch, Kurt, to VEB Carl Zeiss Jena. Apparatus producing interferential test data for measuring and control instruments. 3,225,644, 12–28–65, Cl. 88—14.
Schuchard, Walter F., to S. H. Couch Co., Inc. Illuminated push button switch assembly including latching means. 3,226,520, 12–28–65, Cl. 200—167.
Schure, Alexander. Device for selectively exposing and concealing stimuli. 3,225,457, 12–28–65, Cl. 35—9.
Schutze, Wilfried P. M., to Telefonaktiebolaget L M Ericsson. Circuit arrangement for telephone instruments. 3,226,492, 12–28–65, Cl. 179—170.
Schwartz, Henry A., to Viking of Minneapolis, Inc. Endless magnetic tape cartridge. 3,226,048, 12–28–65, Cl. 242—55.19.
Schwartz, Seymour S., and N. Bilow, to Hughes Aircraft Co. Polyurethane foam forming compositions. 3,226,344, 12–28–65, Cl. 260—2.5.
Schwien, Leo N., to Schwien Engineering, Inc. Manometer. 3,225,599, 12–28–65, Cl. 73—401.
Scofield, Robert O., Sr., and R. M. Hess, to General Motors Corp. Apparatus for manufacturing vehicle wiring harnesses. 3,226,278, 12–28–65, Cl. 156—497.
Scott, Earl D.: *See*—
Skinner, William J., and Scott. 3,225,425.
Skinner, William J., and Scott. 3,225,614.
Scott & Williams, Inc.: *See*—
Whitehead, Richard H. 3,225,616.
Scottish Agricultural Industries Ltd.: *See*—
Brownlie, Isaac A., and Wemyss. 3,226,184.
Scourtes, George, to Lynch Corp. Condition indicating system. 3,225,596, 12–28–65, Cl. 73—361.
Scovill Mfg. Co.: *See*—
Briechle, Joseph, and Van Brocklin. 3,226,040.
Carpinella, Michael J. 3,226,281.
Fasciano, Patrick. 3,225,430.
Hall, St. John M. 3,225,998.
Schuetzenduebel, Wolfram G., to Combustion Engineering, Inc. Common startup system. 3,225,748, 12–28–65, Cl. 122—1.
Schwab, Helmut, W. R. Horst, C. S. Van Voorhis, and S. F. Coil, to The National Cash Register Co. Light-reactant display devices. 3,225,470, 12–28–65, Cl. 40—28.
Schwarzer, Fred, Boat propelling mechanism. 3,225,783, 12–28–65, Cl. 115—23.
Schwien, Leo N., to B. H. Hadley. Manometer. 3,225,599, 12–28–65, Cl. 73—401.
Scovill Mfg. Co.: *See*—
Anderson, Eugene A. 3,225,994.
Sdruzeni podniku textilniho strojirenstvi: *See*—
Joch, Josef, Kaspar, and Kase. 3,225,454.

Seabury, Richard W., Jr., to Radio Frequency Laboratories, Inc. Rotary electrical switch with improved spring contact and rotor structure. 3,226,496, 12–28–65, Cl. 200—11.

Sebok, Albert L., to Ametek, Inc. Method of fabricating centrifugal fan impellers. 3,225,422, 12–28–65, Cl. 29—156.8.

Seeger, Doris R., and A. S. Tomcufcik, to American Cyanamid Co. Novel bis(N,N'-diethylenephosphoramides). 3,226,377, 12–28–65, Cl. 260—152.

Seeger, Doris R., and A. S. Tomcufcik, to American Cyanamid Co. Novel bis(N,N'-diethylenephosphoramides). 3,226,382, 12–28–65, Cl. 260—239.

Seiden, Hugo, to JFD Electronics Corp. Trimmer capacitor with direct travel mechanism. 3,226,616, 12–28–65, Cl. 317—249.

Seigel, Arnold E.: *See*—
Drapen, Myron E., and Seigel. 3,225,759.

Seiler, Fritz, to Edouard Dubried et Cie. (Societe Anonyme). Selecting devices for circular knitting machines. 3,225,567, 12–28–65, Cl. 66—50.

Seki, Kouji, to Fujitsu Ltd. Rotary switch structure with saddle-shaped insulator and two-legged contact brush. 3,226,495, 12–28–65, Cl. 200—11.

Seldner, Abraham: *See*—
Meuly, Walter C., and Seldner. 3,226,320.

Sell, James E.: *See*—
Smith, Edwin S., and Sell. 3,226,350.

Sembach, Paul E.: *See*—
Tillinghast, David G., and Sembach. 3,225,871.

Senior, Robert, Jr., to Empire Products, Inc. Electrical connector assembly. 3,226,667, 12–28–65, Cl. 339—91.

Sennewald, Kurt, W. Vogt, J. Kandler, R. Sommerfeld, and G. Sorbe, to Knapsack-Griesheim Aktiengesellschaft. Process for preparing unsaturated nitriles. 3,226,422, 12–28–65, Cl. 260—465.3.

Sequeira, Nabor. Cans and bottles with self-contained drinking straws. 3,226,001, 12–28–65, Cl. 229—7.

Serro Electronic Switch and Signal Co.: *See*—
De Priest, Joseph R. 3,226,540.

Seserman, Samuel. Finger mount assembly for control switch. 3,226,501, 12–28–65, Cl. 200—52.

Shabel, Jack T.: *See*—
Laughlin, James C. 3,225,790.

Shank, Rufus H. Display devices. 3,225,475, 12–28–65, Cl. 40—129.

Shankland, John H.: *See*—
Shankland, Milford N. 3,225,755.

Shankland, Milford N., ½ to J. H. Shankland. Horizontal arrow rest. 3,225,755, 12–28–65, Cl. 124—41.

Shano, Charles L.: *See*—
Brewster, Franklin C., Shano, and Ocken. 3,226,581.

Shanok, Jesse P. and V. Composite strip. 3,226,287, 12–28–65, Cl. 161—175.

Shanok, Victor: *See*—
Shanok, Jesse P. and V. 3,226,287.

Shapiro, Hymin: *See*—
Cook, Shirl E., and Shapiro. 3,226,209.

Sharp, John V., to International Business Machines Corp. Data translator. 3,226,690, 12–28–65, Cl. 340—172.5.

Shaver, Robert J., to The Dow Chemical Co. Bis(tripropyltin) oxide anthelmintic composition and method of using same. 3,226,292, 12–28–65, Cl. 167—53.

Shaw, Harr N., and H. G. Hanson, to The Bastian-Blessing Co. Swivel ring valve. 3,226,079, 12–28–65, Cl. 251—218.

Shearer, Thomas W., Jr., to General Motors Corp. Welding gun. 3,226,526, 12–28–65, Cl. 219—130.

Shell Oil Co.: *See*—
Fuller, Glenn. 3,226,322.
Lorensen, Lyman E., and Beardmore. 3,226,326.
Prats, Michael. 3,225,827.

Shelton, Harry J., Jr., and L. Freeman, to Gruendler Crusher and Pulveriser Co. Grinders. 3,226,045, 12–28–65, Cl. 241—188.

Shelton, Robert Q., F. C. Pittman, and R. G. Love, to Halliburton Co. Apparatus for cleaning tube bundles. 3,225,777, 12–28–65, Cl. 134—141.

Sherron, Percival H. Telephone booth construction. 3,225,498, 12–28–65, Cl. 52—27.

Sherwen, Theo, to Prime Movers (Wiltshire) Ltd. Swivel mountings for fluid-driven steerable vehicle wheels. 3,225,855, 12–28–65, Cl. 180—43.

Shimada, Shoichi: *See*—
Kasahara, Yasuo. 3,226,507.

Shimatani, Juichi: *See*—
Hosoda, Yutaka, Shimatani, and Sakuma. 3,226,177.

Shionogi & Co., Ltd.: *See*—
Nakagawa, Kunio, and Konaka. 3,226,390.

Shirman, Jack, to General Dynamics Corp. Pulse frequency multiplier using delay line with plural taps, each fed by individual diode from source. 3,226,647, 12–28–65, Cl. 328—16.

Shoemaker, Frank M. Transistorized metal dector with temperature compensation means. 3,226,634, 12–28–65, Cl. 324—41.

Sholders, James H. Gun with protective guard for forearm extension. 3,225,481, 12–28–65, Cl. 42—71.

Shryock, Howard A., to The Marley Co. Inlet structure for cooling towers. 3,226,098, 12–28–65, Cl. 261—24.

Sicard, Marcel C., to American Machine & Foundry Co. Closure means for filter containing pressure vessels. 3,225,929, 12–28–65, Cl. 210—232.

Sickbert, Adolf, to Bochumer Verein fur Gusstahlfabrikation A.G. Process for vacuum degasification of metal. 3,226,224, 12–28–65, Cl. 75—49.

Siemens & Halske Aktiengesellschaft: *See*—
Rummel, Theodor. 3,226,203.

Siemens-Schuckertwerke Aktiengesellschaft: *See*—
Kuhrt, Friedrich, and Lippmann. 3,226,631.
Kuhrt, Friedrich, Maas, and Rainer. 3,226,640.
Kuhrt, Friedrich, Maas, Rainer, and Brunner. 3,226,640.
Martin, Heinz. 3,226,466.
Miederer, Walter, Ziegler, and Dotzer. 3,226,270.
Oehlrich, Karl-Heinz, and Schmidt. 3,226,165.
Oehlrich, Karl-Heinz, and Fracke. 3,226,580.
Reuschel, Konrad. 3,226,254.
Reuschel, Konrad, and Keller. 3,226,265.
Schreiner, Horst. 3,226,517.
Weiss, Herbert, and Wilhelm. 3,226,225.
Wiehl, Klemens, Kuhrt, and Lippmann. 3,226,657.

Signode Corp.: *See*—
Smith, Norman J. 3,225,684.

Sikorski, Frank B., and K. K. Spelines, to Automatic Electric Laboratories Inc. Data switching system. 3,226,488, 12–28–65, Cl. 179—18.

Silliteri, Pentti K., and R. D. Mills, to American Cyanamid Co. High purity streptokinase and process for preparing same. 3,226,304, 12–28–65, Cl. 195—62.

Simmons, Lovel R., H. H. Travis, J. T. Monk, and A. W. Ogletree, to M-R-S Mfg. Co. Traction for earth movers and the like. 3,225,650, 12–28–65, Cl. 180—14.

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Simon, Ivan, to General Motors Corp. Diamagnetic suspension system. 3,225,608, 12–28–65, Cl. 74—5.6.

Simon, Warner H. Method of manufacturing uncontaminated welding rod. 3,225,508, 12–28–65, Cl. 53—22.

Sinclair Research, Inc.: *See*—
Eickemeyer, Daniel B. 3,226,324.

Singer Co., The: *See*—
Casselli, Aveo J. 3,225,725.
Creter, Frederick G. 3,225,624.
Daley, Horace S., and Thompson. 3,225,374.
Kiess, Edward M. 3,226,275.
Mahler, Peter A. 3,225,571.
Mishcon, Lester. 3,225,570.
Mohney, Franklin W. 3,226,174.

Singleton, George, and J. A. Ross, to BTR Industries Ltd. Flame resistant compositions containing chlorosulfonated polyethylene, epoxy resin, and phosphonitrilic chloride. 3,226,355, 12–28–65, Cl. 260—41.

Siskind, William: *See*—
Deitz, Victor R. 3,226,228.

Sjolander, Newell O.: *See*—
McCormick, Jerry R. D., Sjolander, and Johnson. 3,226,305.

Skarstrom, Charles W., and B. R. Tegge, to Esso Research and Engineering Co. Closed system heatless dryer. 3,225,518, 12–28–65, Cl. 55—33.

Skau, Evald L.: *See*—
Magne, Frank C., Mod, and Skau. 3,226,403.

Skinner, William J., and E. D. Scott, to United States of America Small Business Administration. Method of fabricating a metal article. 3,225,425, 12–28–65, Cl. 29—159.

Skinner, William J., and E. D. Scott, to U.S.A. Small Business Administration. Sheave. 3,225,614, 12–28–65, Cl. 74—230.01.

Slater, John M., to North American Aviation, Inc. Eddy current induction device. 3,225,605, 12–28–65, Cl. 73—503.

Slattery, Robert E., to Hill-Rockford Co. Automatic assembling or transferring units. 3,225,941, 12–28–65, Cl. 214—1.

Sloan, Roy R., to Fox Industries, Inc. Rolling mill guides. 3,225,577, 12–28–65, Cl. 72—12.

Smith, Charles J. P.: *See*—
Richards, Ronald G. 3,225,837.

Smith, Clifford W., to South Chester Corp. Tracheal tube device. 3,225,767, 12–28–65, Cl. 128—351.

Smith, Daniel, E. C. Otto, D. J. Lazzarini, and J. F. McHugh, to Interchemical Corp. Heat-sensitive copying sheet. 3,226,288, 12–28–65, Cl. 161—229.

Smith, Edgar J., and M. Masel, to General Precision Inc. Digital servo system. 3,226,617, 12–28–65, Cl. 318—28.

Smith, Edwin J., M. G. Vucich, and L. W. Austin, to National Steel Corp. Continuous electroplating apparatus. 3,226,315, 12–28–65, Cl. 204—206.

Smith, Edwin S., and J. E. Sell, to The Goodyear Tire & Rubber Co. Preparation of high solids vinyl chloride polymer latex. 3,226,350, 12–28–65, Cl. 260—29.6.

Smith, Eric, to Olin Mathieson Chemical Corp. Isocyanates stabilized with polybutylated 4,4'-isopropylidenebisphenol. 3,226,411, 12–28–65, Cl. 260—453.

Smith, Eric, to Olin Mathieson Chemical Corp. Stabilization of organic isocyanates with diphenyl carbazide. 3,226,412, 12–28–65, Cl. 260—453.

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Smith, Francis P. Coasting vehicle steered by tiltable rider supporting means. 3,226,130, 12–28–65, Cl. 280—22.

Smith, Homer P., to United States Rubber Co. Emulsion polymerization of butadiene hydrocarbons by means of a divalent cobalt salt of beta-diketones. 3,226,376, 12–28–65, Cl. 260—94.3.

Smith, Hubert S., Jr., to The Dow Chemical Co. Method and apparatus for continuously forming plastic articles. 3,226,457, 12–28–65, Cl. 264—90.

Smith, Norman J., to Signode Corp. Machine for tying bundles. 3,225,684, 12–28–65, Cl. 100—4.

Smith, Robert M., and F. C. Haigh, to Owens-Illinois, Inc. Ultraviolet light-absorbing epoxy resins and containers coated therewith. 3,226,358, 12–28–65, Cl. 260—45.95.

Smith, Sterling L. Clamp for use in hanging pictures. 3,225,403, 12–28–65, Cl. 24—129.

Smith, Sterling L. Picture hook. 3,226,065, 12–28–65, Cl. 248—32.

Smith, T. J., & Nephew Ltd.: *See*—
Drain, David J., Williams, and Howes. 3,226,446.

Smith, Weston E., and W. K. Lehmann, to The C. M. Kemp Mfg. Co. Method and apparatus for purifying gaseous mixtures by cyclic adsorption. 3,225,516, 12–28–65, Cl. 55—25.

Smyser, Clifford E.: *See*—
Smyser, James A., E. T., and C. E. 3,225,661.

Smyser, Edgar T.: *See*—
Smyser, James A., E. T., and C. E. 3,225,661.

Smyser Fluid Motors: *See*—
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Smyser, James A., E. T., and C. E., to Smyser Fluid Motors. Rotary fluid motors. 3,225,661, 12–28–65, Cl. 91—149.

Snyder, Charles H., to Aero Service Corp. Preprinted hollow relief globe, method of making it and apparatus therefor. 3,225,461, 12–28–65, Cl. 35—46.

Sobel, Sol: *See*—
Altman, Stanley, and Sobel. 3,225,402.

Sobrevin Soc. de Brevets Industriels Etablissement: *See*—
Sarfati, Alberto G., and Vischiani. 3,225,446.

Societe Alsacienne de Constructions Mecaniques: *See*—
Juillard, Yves. 3,225,794.

Societe Anonyme Simca Automobiles: *See*—
Piret, Jean. 3,225,541.

Societe d'Electronique et d'Automatisme: *See*—
Dreyfus-Alain, Bertrand. 3,226,604.
Masson, Claude M. E. 3,226,701.
Lemoine, Jean H. 3,226,695.

Societe d'Etudes et de Participations, Eau, Gaz, Electricite, Energie S.A.: *See*—
Horgen, Helge, and Bouvier. 3,225,751.

Societe d'Exploitation des Materiels Hispano-Suiza: *See*—
Pelisson, Claude G. D. J. 3,225,663.

Societe Francaise de Fermetures de Luxe: *See*—
Fady, Jean A. 3,225,429.

Societe Francaise Duco: *See*—
Behar, Robert, Cahn, Dubien, and Aussedat. 3,226,451.

Societe Nationale des Petroles d'Aquitaine, Societe: *See*—
Kulbicki, Georges L., Sahores, Vanuxem, Enjalbert, and Capiaux. 3,225,493.

Societe Technique de Pulverisation (par abreviation STEP): *See*—
Boris, Sonia. 3,226,035.

Socony Mobil Oil Co., Inc.: *See*—
Frilette, Vincent J., and Maatman. 3,226,339.

Sole Mfg. Co., Inc.: *See*—
Bonner, Eugene V., Jr. 3,225,987.

Solis Societa a Responsabilita Limitata: *See*—
Luchi, Vinicio. 3,225,560.

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Solvay & Cie: *See*—
Van Diest, Jacques. 3,226,311.

Sommer, William F. Control apparatus. 3,225,750, 12–28–65, Cl. 122—448.

Sommerfeld, Rolf: *See*—
Sennewald, Kurt, Vogt, Kandler, Sommerfeld, and Sorbe. 3,226,422.

Sony Corp.: *See*—
Tokumoto, Shin-ichi. 3,226,307.

Sorbe, Gunter: *See*—
Sennewald, Kurt, Vogt, Kandler, Sommerfeld, and Sorbe. 3,226,422.

Sorkin, Morris, and D. M. Jacob, to TRW Inc. Precision tracking system. 3,226,713, 12–28–65, Cl. 343—6.5.

South African Iron and Steel Industrial Corp., Ltd.: *See*—
Zawels, Jakob. 3,226,702.

South Chester Corp.: *See*—
Smith, Clifford W. 3,225,767.

Southwest International, Inc.: *See*—
Bencoe, Paul. 3,225,756.

Sovish, Richard C.: *See*—
Tousignant, William F., and Sovish. 3,226,372.

Space Recovery Systems, Inc.: *See*—
Kapp, Benjamin, and Wilson. 3,225,696.

Spangler, Harold G. Telephone switch control device. 3,226,491, 12–28–65, Cl. 179—161.

Spangler, Selden B., Jr., and J. L. Munier, to The Garrett Corp. Apparatus for testing the principles of detonation combustion. 3,225,589, 12–28–65, Cl. 73—35.

Speaker, Harry B.: *See*—
Kaufman, Paul, and Speaker. 3,226,705.

Spear, Herbert W., to C. A. Crete. Rotary lawn mower, blade and sharpener. 3,225,527, 12–28–65, Cl. 56—25.4.

Spelines, Kore K.: *See*—
Sikorski, Frank B., and Spelines. 3,226,488.

Spencer, Charles F.: *See*—
Gillies, Duncan M., and Spencer. 3,225,688.

Sperry Rand Corp.: *See*—
Cordes, Floyd L. 3,225,613.
Dumey, Arnold I. 3,226,693.
Gould, Robert V. 3,226,721.
Wise, Harry D. 3,226,694.

Spindler & Sauppe: *See*—
Sauppe, Norman A. 3,225,652.

Spisiak, Daniel R., to Buffalo Forge Co. Hermetic motor-pump construction. 3,225,698, 12–28–65, Cl. 103—87.

Spiteri, Joseph: *See*—
Norton, Orlo C., Spiteri, and Schaaf. 3,225,853.

Spitfire Tool & Machine Co., Inc.: *See*—
Day, Lawrence, Dobrick, and Kay. 3,225,492.

Spreuwenberg, Paul B. T. H.: *See*—
Van Bakel, Henricus A., and Spreuwenberg. 3,226,249.

Springfield, Robert L.: *See*—
Huffman, Coy L., Jr., and Springfield. 3,225,793.

Spuhler, Ernst, to H. Heer & Cie. Suspension device for cable troughing of perforated sheet metal. 3,226,076, 12–28–65, Cl. 248—327.

Stacha, Leon A., to Dresser Industries, Inc. Pilot gas lift valve. 3,225,783, 12–28–65, Cl. 137—155.

Stagg, Leslie W.: *See*—
Stephenson, Eric F., and Stagg. 3,225,603.

Staines, Alfred J., to Harris-Intertype Corp. Sheet feeding method and apparatus. 3,226,107, 12–28–65, Cl. 271—27.

Standard Kollsman Industries, Inc.: *See*—
Eland, Robert C. A., Delp, and Nestlerode. 3,226,663.

Standard Oil Co. (Indiana): *See*—
Arnold, Vernon W., and Pickart. 3,226,453.
Crowley, Michael S. 3,226,240.

Stange, Klaus K., to General Electric Co. Fluid actuated positioning device. 3,225,660, 12–28–65, Cl. 91—51.

Stanley, Howard E., to International Rectifier Corp. Position indicating device. 3,225,450, 12–28–65, Cl. 33—206.

Staples, Robert L.: *See*—
Eames, Charles, and Staples. 3,226,071.

Stapling Machine Co.: *See*—
Hogan, William J., and Endahl. 3,225,795.

Staschover, Leo: *See*—
Cramer, Sydney, Feldstein, Jacobson, and Staschover. 3,226,601.

Staschover, Leo, and M. A. Weiner, to North Hills Electronics, Inc. Regulation circuit employing means to maintain sum of currents in two control devices constant. 3,226,560, 12–28–65, Cl. 307—60.

Steele, Clarence R., and F. B. Price, to American Factors Associates Ltd. Continuous centrifugal apparatus. 3,226,257, 12–28–65, Cl. 127—19.

Steele, Gerald H.: *See*—
Hickin, Robert J., Plough, and Steele. 3,225,891.

Steele, Richard M. Junction chamber for equalising pressure of conditioned-air supply incorporating returned-air duct. 3,225,677, 12–28–65, Cl. 98—33.

Steinbach, Hermann J. Pasture conditioner. 3,225,835, 12–28–65, Cl. 172—138.

Stemmiski, John R., to Monsanto Research Corp. Lubricant composition containing a haloalkanoic compound. 3,226,328, 12–28–65, Cl. 252—33.6.

Stephan, Herbert: *See*—
Bussard, Adrien, Gruber, and Stephan. 3,226,223.

Stephenson, Eric F., and L. W. Stagg, to Rotameter Mfg. Co. Ltd. Fluid density measuring apparatus. 3,225,603, 12–28–65, Cl. 73—434.

Sterling Drug Inc.: *See*—
Carabateas, Philip M. 3,226,392.

Stetzler, Grant F., to Western Electric Co., Inc. Measuring the thermal resistance of a transistor by alternately measuring the change in collector saturation voltage in the common emitter mode and applying power in the common base mode. 3,226,642, 12–28–65, Cl. 324—158.

Stevens, Eddie S., to D. Moretti. Apparatus and method for air to air heat exchange. 3,225,819, 12–28–65, Cl. 165—2.

Stevens, Jack B.: *See*—
Eberle, Eugene C. 3,226,162.

Stevens Mfg. Co., Inc.: *See*—
Mertler, Charles S. 3,226,511.

Stewart, Harold W.: *See*—
Railsback, Horace E., and Stewart. 3,226,018.

Stewart, Meredith M.: *See*—
Humes, William H., and Stewart. 3,226,335.

Steyermark, Paul R., to W. R. Grace & Co. Novel 1,3-bis(polyhydroxyalkyl)-2-imidazolidinones and 1,3-bis(polyhydroxyalkyl)-imidazolidine-2-thiones. 3,226,379, 12–28–65, Cl. 260—211.

Steyermark, Paul R.: *See*—
Baptist, James N., Steyermark, and Veltman. 3,226,210.

Stielow, John H.: *See*—
Saeger, Gert. 3,225,600.

Stiles, John C., to General Precision Inc. Counter-rotation bearing race drive mechanism for gyros. 3,225,606, 12–28–65, Cl. 74—5.

Stiles, John C., to General Precision, Inc. Two-axis gyroscope. 3,225,609, 12–28–65, Cl. 74—5.7.

Stiles, Phillip H., to Z. Z. Corp. Locking strip. 3,225,952, 12–28–65, Cl. 217—65.

Stine, Richard L., to General Dynamics Corp. Control system. 3,225,989, 12–28–65, Cl. 226—44.

Stohr, Jacques A., and C. Bridoux. Fluid-tight closure of fuel elements sheathed with partially oxidised powdered metal. 3,225,437, 12–28–65, Cl. 29—473.5.

Stokes, William D.: *See*—
Martin, John S. 3,226,528.

Stonco Electric Products Co.: *See*—
Atkin, Leonard, and Roth. 3,226,536.

Stoody, Ralph E. Apparatus and method for straightening wire-like objects. 3,225,797, 12–28–65, Cl. 140—147.

Story, William K. Closet shelf and hanger. 3,225,940, 12–28–65, Cl. 211—153.

Stothert & Pitt Ltd.: *See*—
Green, Rowland P. 3,225,669.

Stotler, Harold H., to Hydrocarbon Research, Inc. Gas absorption. 3,225,519, 12–28–65, Cl. 55—48.

Stotler, Harold H., G. B. Farkas, and P. C. Keith, to Hydrocarbon Research, Inc. Baffled reactor. 3,226,204, 12–28–65, Cl. 23—284.

Stoveken, Robert E., and G. M. Talbott, to E. I. du Pont de Nemours and Co. Defect responsive apparatus. 3,225,415, 12–28–65, Cl. 28—1.

Stracca, Giovanni B., to Marelli Lenkurt, S.p.A. Ferrimagnetic circulator for microwaves. 3,226,659, 12–28–65, Cl. 333—1.1.

Strick Trailers, a Division of Freuhauf Corp.: *See*—
Haid, William C. 3,226,153.

Strickler, Paul D.: *See*—
Hopkins, Thomas R., and Strickler. 3,226,426.

Strien, Werner, and J. Resag, to Recaro AG. Device for adjusting the back rest of a seat. 3,226,158, 12–28–65, Cl. 297—361.

Strobel, Peter A.: *See*—
Bird, Walter W., Strobel, Rongved, and Zamore. 3,225,413.

Stroh, Rudolf: *See*—
Blazejak, Manfred, and Stroh. 3,226,450.

Strott, Adolf J.: *See*—
Ryshkewitch, Eugene I., Strott, and Utz. 3,226,456.

Stroup, Eugene R.: *See*—
Krueger, Donald A., and Stroup. 3,226,623.

Struble, Arthur D., Jr. Model indicator for aircraft movement. 3,225,594, 12–28–65, Cl. 73—178.

Stuart, Robert W.: *See*—
Wisenbaker, John D., and Stuart. 3,225,828.

Sugishita, Nobuyuki: *See*—
Machida, Jyusaku, Hagiwara, Yamada, Isago, and Sugishita. 3,226,334.

Suhr, Kurt, to International Standard Electric Corp. Pneumatic tube stations. 3,226,055, 12–28–65, Cl. 243—19.

Sullivan, Leo S., Jr., to General Motors Corp. Method of preloading a ball joint seat assembly. 3,225,420, 12–28–65, Cl. 29—149.5.

Sullivan, Leo S., Jr., to General Motors Corp. Ball joint seat assembly. 3,226,141, 12–28–65, Cl. 287—87.

Shulton, Inc.: *See*—
Schipper, Edgar S. 3,226,394.

Sunnen, Joseph. Honing mandrel. 3,225,496, 12–28–65, Cl. 51—356.

Sunroc Corp.: *See*—
Fischer, Harry C. 3,225,559.

Suspended Structures Inc.: *See*—
Frey, Christian. 3,226,727.

Sutton, Robert S.: *See*—
Powell, Stanley. 3,225,465.

Swanson, Donald F.: *See*—
Winkler, Wynn G., and Swanson. 3,225,968.

Sweet, Monroe H., deceased; by R. P. Easton, executor, to General Aniline & Film Corp. Photomultiplier zero level control circuit. 3,226,552, 12–28–65, Cl. 250—207.

Swensen, Robert. Fatigue support for men no leg straps. 3,225,761, 12–28–65, Cl. 128—158.

Swider, John L. Training device for swimmers. 3,226,114, 12–28–65, Cl. 272—57.

Swingle, Roy E., to Interlake Steel Corp. Palletized load. 3,225,919, 12–28–65, Cl. 206—60.

Sylvania Electric Products, Inc.: *See*—
Betts, Maseppa D. 3,226,664.
Gartner, Stanley J., and Morean. 3,225,659.
Palmer, William F. 3,226,609.

Syntex Corp.: *See*—
Ringold, Howard J., and Djerassi. 3,226,383.

TRW Inc.: *See*—
Rohrback, Gilson H., and Donigulan. 3,226,262.
Sorkin, Morris, and Jacob. 3,226,713.

Talamonti, John; to Borg-Warner Corp. Method of assembling a fluid seal structure. 3,225,436, 12–28–65, Cl. 29—436.

Talbott, Graham M.: *See*—
Stoveken, Robert E., and Talbott. 3,225,415.

Talley, Claude P., to Texaco Experiment Inc. Method of producing refractory monocrystalline boron structures. 3,226,248, 12–28–65, Cl. 117—93.3.

Talton, Roland T., Jr.: *See*—
Vayda, Michael M., Jr., Darley, Jensen, and Talton. 3,226,097.

Tanaka, Makoto, to Art Amiki Kabushiki Kaisha. Hand-knitting machine. 3,225,568, 12–28–65, Cl. 66—60.

Taniai, Seiichi, to Tokyo Shibaura Denki Kabushiki Kaisha. Synchronizing devices between alternating current systems. 3,226,561, 12–28–65, Cl. 307—87.

Tanner, John S.: *See*—
Hayden, Ernest A., and Tanner. 3,225,799.

Taylor, John J.: *See*—
Krueger, Glenn N., and Taylor. 3,225,896.

Taylor, Robert C., and E. J. Meehan, to The Atlantic Refining Co. Oil-soluble liquid detergent compositions. 3,226,331, 12–28–65, Cl. 252—153.

Technicon Instruments Corp.: *See*—
Ferrari, Andres. 3,226,198.
Rosin, Seymour. 3,226,556.

Tegge, Bruce R.: *See*—
Skarstrom, Charles W., and Tegge. 3,225,518.

Telefonaktiebolaget L M Ericsson: *See*—
Lagererantz, Bengt A. 3,225,417.
Lutz, Josef P. 3,226,669.
Scheftelowitz, Henry. 3,226,485.
Schutze, Wilfried P. M. 3,226,492.

Telemechanics Institute of the Academy of Sciences of the U.S.S.R.: *See*—
Lootzook, Jury V. 3,225,779.

Teletype Corp.: *See*—
Arko, Robert E. 3,226,477.

Telsta Corp.: *See*—
Eitel, Jay M. 3,226,087.

Tennison, Alfred A., Jr. Anti-splash roof valley. 3,225,726, 12–28–65, Cl. 113—116.

Terkoski, Frank J.: *See*—
Carpenter, Keith H., Fritz, and Terkoski. 3,226,498.

Terkoski, Frank J., to General Motors Corp. Brush holder assembly with cantilever spring contact means. 3,226,497, 12–28–65, Cl. 200—11.

Terlet, Rene H., to International Business Machines Corp. Photosensitive multiple state circuit for computing and data processing systems. 3,226,553, 12–28–65, Cl. 250—209.

Terlet, Rene H., to International Business Machines Corp. Cascade storage apparatus. 3,226,554, 12–28–65, Cl. 250—209.

Terry, Victor J.: *See*—
Wright, Esmond P. G., Terry, and Chittleburgh. 3,226,480.

Texaco Experiment Inc.: *See*—
Talley, Claude P. 3,226,248.

Theiss, John J.: *See*—
Durst, Henry J., and Theiss. 3,226,512.

Thier, Bernd, to Chemische Werke Huls Aktiengesellschaft. Rotor for thin-layer vaporizers. 3,225,817, 12–28–65, Cl. 159—6.

Thies, Robert, J. F. Ratasitz, and F. L. Mathieu, to Herbert A. Post, Inc. Cartons. 3,226,007, 12–28–65, Cl. 229—39.

Thiokol Chemical Corp.: *See*—
Grafstein, Daniel, and Dvorak. 3,226,429.

Thomas, Robert W.: *See*—
Kussy, Frank W., Thomas, Cataldo, and Kralik. 3,226,500.

Thomas, Terry, and R. D. Dafrico, to United States of America, Navy. One revolution clutch apparatus. 3,225,875, 12–28–65, Cl. 192—26.

Thomas, Robert W., and E. T. Platz, to I-T-E Circuit Breaker Co. Electric overload switch with improved thermal actuator. 3,226,510, 12–28–65, Cl. 200—122.

Thompson, Andrew A. Phase difference means for seismic studies. 3,226,535, 12–28–65, Cl. 235—193.

Thompson, Charles T., to Joy Mfg. Co. Drilling apparatus. 3,225,841, 12–28–65, Cl. 173—15.

Thompson, Charles T., to Joy Mfg. Co. Adjustable mounting for rock drills. 3,226,064, 12–28–65, Cl. 248—16.

Thompson Ramo Wooldridge Inc.: *See*—
Gates, Robert L. 3,225,452.
Herbenar, Edward J. 3,226,142.

Thompson, Richard G. Water softener valve. 3,225,789, 12–28–65, Cl. 137—599.1.

Thompson, Ronald R.: *See*—
Daley, Horace S., and Thompson. 3,225,374.

Thompson, Stanley H. A., and G. J. S. Moult, to Parnall & Sons Ltd. Document processing machines. 3,226,109, 12–28–65, Cl. 271—84.

Thorn Electrical Industries Ltd.: *See*—
Ranby, Peter W., and Palowkar. 3,226,383.

Thumim, Carl, to Miehle-Goss-Dexter, Inc. Reciprocable cutting mechanism for automatic cutting machines. 3,225,637, 12–28–65, Cl. 83—526.

Thumim, Carl, to Miehle-Goss-Dexter, Inc. Submerged servomotor with prefill valve for guillotine type paper cutting machine. 3,225,662, 12–28–65, Cl. 91—210.

Tijunelis, Donatas, to Union Carbide Corp. Quenching of polyolefin film. 3,226,459, 12–28–65, Cl. 264—95.

Tillingbast, David G., and P. E. Sembach, to Trailmobile Inc. Rail mount. 3,225,871, 12–28–65, Cl. 189—66.

Tillisch, Paul W., and G. E. Meyer, to Kaiser Gypsum Co., Inc. Ceiling suspension clip. 3,225,394, 12–28–65, Cl. 20—92.

Tillman, Cassius L., III: *See*—
Parkhurst, Warren E., and Tillman. 3,225,833.

Timares, Norman R., and R. MacKenzie, to FMA, Inc. Aperture card conversion camera. 3,225,649, 12–28–65, Cl. 88—24.

Tino, Joseph R.: *See*—
Josephsen, Roy C., Tino, and Fulcher. 3,225,950.

Tinsley, Samuel W., to Union Carbide Corp. Ethylenically unsaturated monoepoxy compounds. 3,226,401, 12–28–65, Cl. 260—340.6.

Tinson, Clifford W.: *See*—
Dowty, George H., and Tinson. 3,226,061.

Tippett, Helen P.: *See*—
Newbold, Geoffrey T., and Tippett. 3,226,387.

Tokumoto, Shin-ichi, to Sony Corp. Multicolor picture film. 3,226,307, 12–28–65, Cl. 204—2.

Tokyo Kogaku Kikai Kabushiki Kaisha: *See*—
Nagai, Torao. 3,225,646.

Tokyo Shibaura Denki Kabushiki Kaisha: *See*—
Taniai, Seiichi. 3,226,561.

Toler, Benjamin L. Apparatus for projecting transparencies and opacities. 3,225,648, 12–28–65, Cl. 88—24.

Tomcufcik, Andrew S.: *See*—
Seeger, Doris R., and Tomcufcik. 3,226,377.
Seeger, Doris R., and Tomcufcik. 3,226,382.

Topinka, George F., to Parker-Hannifin Corp. Valve operator. 3,225,812, 12–28–65, Cl. 74—102.

Torrey, Henry C.: *See*—
Brown, Robert J. S., Torrey, and Korringa. 3,226,632.

Tousignant, William F., and R. C. Sovish, to The Dow Chemical Co. Novel heterocyclic compounds and polymers. 3,226,372, 12–28–65, Cl. 260—85.5.

Touton, Rush D. Apparatus for curing tobacco in bundles. 3,225,456, 12–28–65, Cl. 34—202.

Toyo Kogyo Co. Ltd.: *See*—
Yamamoto, Iwao. 3,226,865.

Toyoda, Shoichiro, and S. Sakakibara, to Toyota Motor Co. Ltd. and Aichi Kogyo Kabushiki Kaisha. Rotary machine. 3,226,013, 12–28–65, Cl. 230—145.

Toyota Motor Co. Ltd.: *See*—
Toyoda, Shoichiro, and Sakakibara. 3,226,018.

Tracer Control Co.: *See*—
Elliott, John L. 3,225,786.

Trailmobile Inc.: *See*—
Tillinghast, David G., and Sembach. 3,225,871.

Transatlantic Plastics Ltd.: *See*—
Daniels, Humphrey B. 3,225,407.

Transicold Corp.: *See*—
Block, Leo. 3,226,019.

Trask, Allen. Centrifugal compressor. 3,226,012, 12–28–65, Cl. 230—117.

Travis, Hollis H.: *See*—
Simmons, Lovel R., Travis, Monk, and Ogletree. 3,225,850.
Simmons, Lovel R., Travis, Monk, and Ogletree. 3,225,851.
Simmons, Lovel R., Travis, Monk, and Ogletree. 3,225,852.

Trichema AG.: *See*—
Heimgartner, Josef. 3,225,967.

Tripp, Robert W., to Inductosyn Corp. Analog-digital converter. 3,226,710, 12–28–65, Cl. 340—347.

Trnka, Otto A. Fire-hose mender. 3,226,137, 12–28–65, Cl. 285—913.

Troeppl, William M., ⅛ to G. A. Petersen and ⅛ to A. E. Petersen. Tooth for digging equipment used in compacted soil. 3,225,467, 12–28–65, Cl. 37—142.

Tschannen, Gottfried: *See*—
Koller, Alois, and Tschannen. 3,226,680.

Tucker, Harvey J.: *See*—
Famiio, George H. 3,225,816.

Tupelo Spindle Co., Inc.: *See*—
Gray, James H. 3,225,526.

Tyler, Roy H. Television scanning device for providing remote motor indication. 3,226,476, 12–28–65, Cl. 178—8.

Tyler, Tracy B. Liquid dispersing nozzle. 3,226,039, 12–28–65, Cl. 239—406.

Ueck, Edward H., to Capitol Records, Inc. Increased information storage on records. 3,226,125, 12–28–65, Cl. 274—46.

Ueno, Takashi: *See*—
Yano, Masayuki, Yasui, and Ueno. 3,226,199.

Uhl, Walter D.: *See*—
Morgan, A. Henry, Uhl, and Angel. 3,226,508.

Ullrich, Walter: *See*—
Klassert, Aloys. 3,225,724.

Ulmer, Hans: *See*—
Schimmelschmidt, Kurt, Hoffmann, Baier, and Ulmer. 3,226,395.

Ulrich, Hans: *See*—
Himmelmann, Wolfgang, Ulrich, and Meckl. 3,226,234.

Ultrasonics Ltd.: *See*—
Goodman, John E., and Fordham. 3,226,029.

Underhill, Richard S., to Battle Creek Equipment Co. Compact gymnasium. 3,226,115, 12–28–65, Cl. 272—58.

Ungerer, Fritz. Apparatus for guiding elongated members. 3,225,992, 12–28–65, Cl. 226—170.

Union Bag-Camp Paper Corp.: *See*—
Manfredonia, Mario. 3,226,015.

Union Carbide Australia Ltd.: *See*—
Bing, George H., and Krieger. 3,226,447.

Union Carbide Corp.: *See*—
Belcher, George W. 3,225,399.
Daniels, Rupert S., and Barth. 3,226,214.
Dolloff, Richard T. 3,226,193.
Downing, James H., Koerner, and Wells. 3,226,465.
Drengler, George R. 3,226,260.
Filipski, Stanley P., Miller, and Newman. 3,226,523.
Gemmill, Wayne J. 3,226,296.
Johnson, Herbert E. 3,226,396.
Tijunelis, Donatas. 3,226,459.
Tinsley, Samuel W. 3,226,401.
White, Wayne G., and Walther. 3,226,374.

Union Stock Yard and Transit Co. of Chicago, The: *See*—
Morrison, Willard L. 3,225,558.

United Aircraft Corp.: *See*—
Kuntz, Urban E. 3,226,194.
Kurti, Alexander. 3,226,032.

United Coke and Chemicals Co. Ltd.: *See*—
Riley, Harry L., and Romanski. 3,226,838.

United Gas Corp.: *See*—
Gordon, Edward, Searcy, and Cotten. 3,226,562.

United Kingdom Atomic Energy Authority: *See*—
Davey, Norman, and Aldersley. 3,225,398.
Hackney, Stanley. 3,226,299.
Nichols, John W. de L., and McGowan. 3,226,195.

U.S. Magnet & Alloy Corp.: *See*—
Jesmont, John J., and Weimershelmer. 3,226,266.

United States of America
Agriculture: *See*—
Ciegler, Alex. 3,226,302.
Magne, Frank C., Mod, and Skau. 3,226,403.
Miwa, Thomas K., and Wolff. 3,226,406.
Vail, Sidney L., Moran, and Reid. 3,226,428.
Air Force: *See*—
Leckliter, Laurence W. 3,226,525.
Army: *See*—
Athas, Stanley T. 3,225,974.
Barr, Irwin R. 3,225,654.
Bracutt, Michael. 3,226,503.
Brueckmann, Helmut. 3,226,724.
Garver, Robert V., and Rosado. 3,226,661.
Kaufman, Paul, and Speaker. 3,226,705.
Packard, Charles F. 3,225,653.
Warren, Raymond W., Barclay, and Moorhead. 3,225,780.

United States of America—Continued
Atomic Energy Commission: *See*—
Lucas, Luther R., and Miner. 3,226,505.
Rosin, Seymour, and Palmer. 3,226,539.
Zmola, Paul C., Rickert, and Flinn. 3,226,800.
Commerce: *See*—
Harman, George G., Jr., Higier, Meyer, and Raybold. 3,226,610.
Navy: *See*—
Bachelor, William B. 3,226,660.
Bengston, Phillip S. 3,226,578.
Bernett, Marianne K., and Zisman. 3,225,866.
Braden, John R. 3,226,136.
Davidson, Lawrence C. 3,225,859.
Higbie, Thomas E. 3,226,650.
Housel, Richard F., and Henschen. 3,226,169.
Humpherys, Bernarr H. 3,226,716.
Krueger, Donald A., and Stroup. 3,226,623.
Mandel, Louis. 3,226,654.
Plate, Robert B. 3,226,126.
Thomas, Terry, and Dafrico. 3,225,875.
Wieder, Harry H. 3,226,573.
Small Business Administration: *See*—
Skinner, William J., and Scott. 3,225,425.
Skinner, William J., and Scott. 3,225,614.

United States Rubber Co.: *See*—
Hageman, Howard A., and Riddell. 3,226,221.
Porteous, John A. 3,225,935.
Smith, Homer P. 3,226,376.

United States Steel Corp.: *See*—
Bhrany, Upendra N. 3,225,927.
El-Waziri, Abdel H. 3,225,580.
Holman, Keith L. 3,225,708.
Krueger, Glenn N., and Taylor. 3,225,896.

Universal American Corp.: *See*—
Kopchik, Steve, Jr., Kelley, and Parrett. 3,225,946.

Ursprung, Joseph J., to Chas. Pfizer & Co. Inc. Octadecyl amine anthelmintic compositions and therapy. 3,226,293, 12–28–65 Cl. 167—55.

Ustynik, Edwin F.: *See*—
Johnson, Merle E., and Ustynik. 3,226,106.

Utz, Donald L.: *See*—
Ryshkewitch, Eugene I., Strott, and Utz. 3,226,456.

VEB Carl Zeiss Jena: *See*—
Schuch, Kurt. 3,225,644.

V-W Corp.: *See*—
Curtis, Rolando T. 3,226,284.

Vadas, Leslie, to FMC Corp. Fruit preparation machine. 3,225,904, 12–28–65, Cl. 198—211.

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O'Donnell, William R. 3,225,969.
Sagarin, Philip H. 3,225,966.

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Van Brocklin, Owen F.: *See*—
Briechle, Joseph, and Van Brocklin. 3,226,404.

Van der Lely, C. N.V.: *See*—
Van der Lely, Cornelis, and Nieuwenhoven. 3,225,434.

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Lens, Georges X., and Vandevenne. 3,226,712.

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Van Riel, Pieter, to Machinefabriek Reinsveld N.V. Centrifuge. 3,225,934, 12–28–65, Cl. 210—370.

Van Slyke, Allan S.: *See*—
Baer, Donald G., Van Slyke, and Woofter. 3,226,668.

Vanuxem, Jacques: *See*—
Kulbicki, Georges L., Saboras, Vanuxem, Enjalbert, and Capiaux. 3,225,493.

Van Voorhis, Carol S.: *See*—
Schwab, Helmut, Horst, Van Voorhis, and Coll. 3,225,470.

Vapor Corp.: *See*—
Brady, Robert T., McInerney, and Czyl. 3,226,038.

Vayda, Michael M., Jr., C. B. Darley, W. F. Jensen, and R. T. Talton, Jr., to Atlantic Research Corp. Mixer. 3,226,097, 12–28–65, Cl. 259—41.

Veltman, Preston L.: *See*—
Baptist, James N., Steyermark, and Veltman. 3,226,210.

Vendo Co., The: *See*—
Black, Stewart L., Hanson, and Nail. 3,226,099.

Vergobbi, Robert W., and E. L. Dodd, to Pneumatic Scale Corp., Ltd. Weighing machine. 3,225,847, 12–28–65, Cl. 177—52.

Vermeulen, Gerardus A. W., and J. C. Gravesteijn, to North American Philips Co., Inc. Method of manufacturing display screens for cathode-ray tubes. 3,226,246, 12–28–65, Cl. 117—33.5.

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Vest, Robert D., to E. I. du Pont de Nemours and Co. Mercaptodicyanovinyl sulfide. 3,226,423, 12–28–65, Cl. 260–465.5.

Viking of Minneapolis, Inc.: *See*
Schwartz, Henry A. 3,226,048.

Villa, Carlo.: *See*
Piazzolla, Giovanni, and Villa. 3,225,792.

Villalon, Roberto P. System for simultaneously perforating and re-enforcing the hole so made in sheet material for filing purposes. 3,226,283, 12–28–65, Cl. 156—522.

Vischiani, Giuseppe: *See*
Sarafati, Alberto G., and Vischiani. 3,225,446.

Vitafoam Ltd.: *See*
Grimshaw, Norman. 3,225,366.

Vivier, Claude, to Richier Societe Anonyme. Hydraulic system notably for mixer truck. 3,225,543, 12–28–65, Cl. 60—53.

Voegeli, Henry E., to The American Brass Co. Stud element. 3,226,140, 12–28–65, Cl. 287—20.2.

Vogel, Carl W.: *See*
Hartz, Joseph M., and Vogel. 3,226,494.

Vogel, Walter H. Circular prescoring and transfer apparatus. 3,225,511, 12–28–65, Cl. 53—113.

Vogelei, Robert A.: *See*
DeHaan, Wolbert, and Vogelei. 3,225,857.

Vogt, Wilhelm: *See*
Sennewald, Kurt, Vogt, Kandler, Sommerfeld, and Sorbe. 3,226,422.

Voith, J. M., G.m.b.H.: *See*
Blickle, Karl, Hoflich, and Hub. 3,225,834.

Volta, Giuseppe: *See*
Bernard, Jean A., Bunge, Dufresne, Finzi, and Volta. 3,226,301.

Von Brömssen, Nils A. Supporting tray for vessels. 3,225,988, 12–28–65, Cl. 211—85.

Von Fieandt, Bror H. F.: *See*
Ekenstam, Bo T., Von Fieandt, and Furendal. 3,226,297.

Vucich, Michael G.: *See*
Smith, Edwin J., Vucich, and Austin. 3,226,315.

Waas, Fred D.: *See*
Braus, Harry, and Waas. 3,226,357.

Wach, Bohumil J., to Neo Products Co. Garment hanger. 3,225,978, 12–28–65, Cl. 223—91.

Wachsmuth, Erich A., to Joy Mfg. Co. Gas drying method. 3,225,517, 12–28–65, Cl. 55—31.

Waddelle, Fred W. Textile yarn steamer and dryer. 3,225,455, 12–28–65, Cl. 34—77.

Waddington, Rogor S., and B. Duval. Grommet appliances. 3,225,973, 12–28–65, Cl. 222—522.

Wagner, Eleanor I. Jet and rocket engine blast and sound suppressing means. 3,226,063, 12–28–65, Cl. 244—114.

Walter, Gerhard, and M. Muller, to International Standard Electric Corp. Mechanical frequency control in a klystron tube comprising a directly attached rectangular cavity resonator. 3,226,662, 12–28–65, Cl. 333—83.

Walker, Herbert O., to Richardson, Westgarth & Co. Ltd. Automatic control systems. 3,226,558, 12–28–65, Cl. 290—40.

Walker, Isaac F., to E. I. du Pont de Nemours and Co. Process for dyeing and aftertreating polyethylene oxide modified nylon fibers and the products obtained thereby. 3,226,178, 12–28–65, Cl. 8—55.

Walker, James W. Flexible container, fitting therefor, and composite package. 3,226,002, 12–28–65, Cl. 229—14.

Walklet, Mercer D., to Hamlin Products, Inc. Bar bell disk weight construction. 3,226,117, 12–28–65, Cl. 272—84.

Wallace, Joseph M. Methods of making circuit components. 3,226,463, 12–28–65, Cl. 264—272.

Walsh, Bruce R.: *See*
Biber, Albert, Davis, and Walsh. 3,226,037.

Walsh, Bruce R., to Gulf Research & Development Co. Oil burner apparatus. 3,225,813, 12–28–65, Cl. 158—4.

Walther, Daniel A., to The Dayton Steel Foundry Co. Method of making a two piece wide base rim. 3,225,426, 12–28–65, Cl. 29—159.1.

Walther, Richard A.: *See*
White, Wayne G., and Walther. 3,226,374.

Walthers, Otto. Game scoring indicator. 3,226,022, 12–28–65, Cl. 235—114.

Walton, William, and A. M. Faulkner, to The Plessey Co. Ltd. Manually operable crimping tools. 3,225,583, 12–28–65, Cl. 72—412.

Walvoord, James G., to Esso Production Research Co. Offshore apparatus and method. 3,226,728, 12–28–65, Cl. 166—46.

Ward, Frank R.: *See*
Cross, Dee H., Lohman, and Ward. 3,225,675.

Warner-Lambert Pharmaceutical Co.: *See*
Anthon, Erik W. 3,225,628.
Anthon, Erik W. 3,225,435.
Baruch, Hana, and Anthon. 3,225,645.

Warnock, James G.: *See*
Brailkevitch, Michael, and Warnock. 3,226,083.

Warren, Raymond W., R. G. Barclay, and J. G. Moorhead, to United States of America, Army. Pressure recovery from bistable element. 3,225,780, 12–28–65, Cl. 137—81.5.

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Waterman, Neil S., to Chesebrough-Ponds, Inc. Medicinal injector. 3,226,763, 12–28–65, Cl. 128—232.

Watkins, Arthur S. Nuts. 3,225,807, 12–28–65, Cl. 151—7.

Ward, Earl C., and E. L. Wolf. Method and apparatus for locating the center of gravity. 3,225,590, 12–28–65, Cl. 73—65.

Webb, Robert S., to Elox Corp. of Michigan. High frequency gas rectifier circuit. 3,226,599, 12–28–65, Cl. 315—181.

Webb, William F.: *See*
Perry, Charles B., and Webb. 3,225,439.

Webster, Owen W., to E. I. du Pont de Nemours and Co. 1,4-disubstituted-2,3,5,6 tetracyano benzene compounds and process for preparation thereof. 3,226,420, 12–28–65, Cl. 260—465.

Wegematic: *See*
Lomcke, Eberhard. 3,225,703.

Wehr Corp.: *See*
Boyer, Nell E. 3,225,410.
Rybicki, Norman. 3,225,411.

Weichart, Gunter: *See*
Autenrieth, Hans, Peuschel, and Weichart. 3,225,924.

Weichhand, Robert J.: *See*
Jones, Wickliffe, and Weichhand. 3,225,510.

Weickgennant, Egon R., and J. A. Maher, to Ritter Co., Inc. Self-storing knee rest for medical examination table and the like. 3,226,105, 12–28–65, Cl. 269—324.

Weimersheimer, Samuel: *See*
Jesmont, John J., and Weimersheimer. 3,226,266.

Weiner, Martin A.: *See*
Staschover, Leo, and Weiner. 3,226,560.

Weisenoorn, Frank L.: *See*
Laskin, Allen L., Pan, and Weisenborn. 3,226,308.

Weiss, Herbert, and M. Wilhelm, to Siemens-Schuckertwerke Aktiengesellschaft. Electronic semiconductor members and method of their manufacture. 3,226,225, 12–28–65, Cl. 75—134.

Weiss, Martin J.: *See*
Allen, George R., Jr., Remers, and Weiss. 3,226,399.

Welch, Glenn. Automatic pressure altimeter. 3,225,598, 12–28–65, Cl. 73—386.

Weld Tooling Corp.: *See*
Cable, Harold E. and H. 3,226,027.

Weller, Berthold L., to Kitchens of Sara Lee, Inc. Method of forming a food package. 3,226,236, 12–28–65, Cl. 99—171.

Wellington, John R., and W. L. Phillips, to The Consolidated Mining and Smelting Co. of Canada Ltd. Sacrificial zinc anode. 3,226,314, 12–28–65, Cl. 204—197.

Wells, George F., to Wells Mfg. Co. Lift mechanism for deep fat fryers. 3,225,681, 12–28–65, Cl. 99—336.

Wells, James E., III: *See*
Downing, James H., Koerner, and Wells. 3,226,465.

Wells Mfg. Co.: *See*
Wells, George F. 3,225,681.

Welsh Mfg. Co.: *See*
Johnson, Thomas. 3,225,357.

Wemyss, George A.: *See*
Brownlie, Isaac A., and Wemyss. 3,226,184.

Werber, Frank X., and R. S. Gregorian, to W. R. Grace & Co. Polyethylene of improved clarity. 3,226,351, 12–28–65, Cl. 260—29.6.

West, Grady L.: *See*
Widell, Eric H., and West. 3,225,412.

West, John B. Machine for packaging food products. 3,225,889, 12–28–65, Cl. 198—20.

West, Vern W., to P. Griffin. Coin controlled gasoline dispenser. 3,225,881, 12–28–65, Cl. 194—3.

Western Electric Co., Inc.: *See*
Begg, Clayton B., and Jancsy. 3,225,584.
Brandt, Edward A., and Drevelas. 3,225,635.
Cieniewicz, Theodore A., and I. L. Custman. 3,226,255.
Fuchs, Francis J., Jr., and Wyatt. 3,225,689.
Stetzler, Grant F. 3,226,642.

Western Geophysical Co. of America: *See*
Pfab, Benedict H. 3,225,858.

Westinghouse Air Brake Co.: *See*
Brinker, Emil F., and Fitzsimmons. 3,226,541.

Westling, Lester L. Containerized cargo refrigeration system and method. 3,225,822, 12–28–65, Cl. 165—48.

Weygandt, Raymond A.: *See*
Weygandt, Raymond M. and R. A. 3,225,530.
Weygandt, Raymond M. and R. A. 3,225,894.

Weygandt, Raymond M. and R. A. Apparatus for and method of harvesting vine-borne fruit from wire supports or the like. 3,225,530, 12–28–65 Cl. 56—330.

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Whaley, Thomas P.: *See*
Gyan, Joseph A., and Whaley. 3,226,185.

Whelan, James P., to Pneumatic Scale Corp, Ltd. Container handling apparatus. 3,225,960, 12–28–65, Cl. 221—10.

Whirlpool Corp.: *See*
Winkler, Wynn G., and Swanson. 3,225,968.

White, Lee R. Antenna feed system. 3,226,723, 12–28–65, Cl. 343—852.

White, Wayne G., and R. A. Walther, to Union Carbide Corp. Copolymer of ethylene and vinyl alkyl ether. 3,226,374, 12–28–65, Cl. 260—88.1.

Whiteford, Grover C. Combination rocking and reclining chair. 3,226,155, 12–28–65, Cl. 297—85.

Whitehead, Richard H., to Scott & Williams, Inc. Gear construction. 3,225,616, 12–28–65, Cl. 74—449.

Whitehurst, Joe R., to Ideal Industries, Inc. Fiber transfer controlling apparatus and method for main cylinder of a card. 3,225,391, 12–28–65, Cl. 19—98.

Whiton, Alfred C.: *See*
Garvey, Benjamin S., Jr., Albert, and Whiton. 3,226,371.

Whittle, La Var E., to Pacific Industries, Inc. Pulse shaper circuit employing oppositely poled series connected tunnel diodes in base circuit of transistor. 3,226,575, 12–28–65, Cl. 307—88.5.

Widell, Eric H., and G. L. West. Plastic mass-forming apparatus. 3,225,412, 12–28–65, Cl. 25—106.

Widman, Erwin R. Sheet metal assembly tool and method. 3,225,432, 12–28–65, Cl. 29—429.

Wiebe, Donald, to Joy Mfg. Co. Cyclone dust collector for removing particles from a fluid stream. 3,225,523, 12–28–65, Cl. 55—224.

Wieckmann, Gerhard. Clothes hanger. 3,225,980, 12–28–65, Cl. 223—98.

Wieuer, Harry H., to United States of America, Navy. Electrical pulse delay and regenerator circuit employing four-layer diode. 3,226,573, 12–28–65, Cl. 307—88.5.

Wiehl, Klemens, F. Kuhrt, and H.-J. Lippmann, to Siemens-Schuckertwerke Aktiengesellschaft. Hall modulator having magnetic circuit with air gap and signal winding movable for zero balancing. 3,226,657, 12–28–65, Cl. 332—51.

Wiese, Klaus H., to Kaiser Steel Corp. Article aligning apparatus. 3,225,890, 12–28–65, Cl. 198—29.

Wiggermann, Georg, to Reiners & Wiggermann Getriebe- und Maschinenbau. Controllable hydraulic pump or motor. 3,225,699, 12–28–65, Cl. 103—120.

Wilcox, Robert E.: *See*
Begley, Warren W., Wilcox, and Hoskinson. 3,225,782.

Wild, James A.: *See*
Bottomley, Roy, Greenwood, Wild, and Kelly. 3,225,878.

Wilderspin, Kenneth R.: *See*
Lynch, Arnold C., and Wilderspin. 3,225,421.

Wiley, Fred E.: *See*
Saumsiegle, Robert W., and Wiley. 3,226,464.

Wiley, John B., to General Motors Corp. Method of making an edge wound core. 3,225,424, 12–28–65, Cl. 29—155.57.

Wilhelm, Manfred: *See*
Weiss, Herbert, and Wilhelm. 3,226,225.

Wilkes, Albert J., to International Leasing Corp. Air feed tufting machine. 3,225,723, 12–28–65, Cl. 112—80.

Wilkinson, James W., to Hastings Mfg. Co. Sealing or leakstop material adapted for use in radiators and the like. 3,226,238, 12–28–65, Cl. 106—33.

Williamson, Alan G., to Canadian Breweries Ltd. Method of heating wort. 3,226,235, 12–28–65, Cl. 99—52.

Willinger, Allan H. and H. W., to Aquarium Inc. Aquarium assembly. 3,225,736, 12–28–65, Cl. 119—5.

Willinger, Allan H., to Aquariums Inc. Aquarium cleaning device. 3,225,930, 12–28–65, Cl. 210—241.

Willinger, Harding W.: *See*
Willinger, Allan H. and H. W. 3,225,736.

Willis, Arthur B.: *See*
Jamison, Albert L. 3,225,959.

Wills, Lowell E.: *See*
Mueller, Albert J., and Wills. 3,226,208.

Wilson, Glenn R., to Monsanto Research Corp. Lubricant composition containing a halophenol. 3,226,325, 12–28–65, Cl. 252—54.

Wilson, Harry H., Jr., and A. Hopengarten, to Philco Corp. F.M. sum and difference stereo receiver having compensation means. 3,226,481, 12–28–65, Cl. 179—15.

Wilson, Joseph E.: *See*
Greth, Gerald G., and Wilson. 3,226,375.

Wilson, R. Carr: *See*
Kapp, Benjamin, and Wilson. 3,225,695.

Wilson, Robert G. Automatic control system for navigating a vehicle toward an isolated reference point. 3,226,057, 12–28–65, Cl. 244—14.

Wilson, Robert O., to Thomas J. Lipton, Inc. Process for the purification of natural gums. 3,226,378, 12–28–65, Cl. 260—209.

Wilstein, Leonard L. Instrument flight training hood. 3,225,459. 12–28–65, Cl. 35—12.

Wilting, Johannes J., to North American Philips Co., Inc. Circuit arrangement for starting a self-generating thyristor oscillator. 3,226,655, 12–28–65, Cl. 331—113.

Winker, James A., to Raven Industries Inc. Controlled excess material balloon. 3,226,060, 12–28–65, Cl. 244—31.

Winkler, John T., to Martin-Marietta Corp. Power saving storage circuit employing controllable power source. 3,226,574, 12–28–65, Cl. 307—88.5.

Winkler, Wynn G., and D. F. Swanson, to Whirlpool Corp. Ice maker dispensing apparatus. 3,225,968, 12–28—65, Cl. 222—238.

Winter, Stanley, and H. Alder. Brush and comb cleaning device. 3,225,377, 12–28–65, Cl. 15—311.

Winterbottom, Robert: *See*
McCormick, Jerry R. D., Winterbottom, and Bitha. 3,226,435.

Winton, Stanley J., to Kitchens of Sara Lee, Inc. Method of forming foil pans. 3,225,727, 12–28–65, Cl. 113—120.

Wiora, Joseph A. Battery carrier. 3,226,148, 12–28–65, Cl. 294—16.

Wise, Cecil S., and K. G. Lytton, to Fiber Controls Corp. Automatic control system for blending equipment. 3,225,848, 12–28–65, Cl. 177—80.

Wise, Glenn E. Sectional handbag. 3,225,805, 12–28–65, Cl. 150—35.

Wise, Glenn E. Projection screen. 3,225,818, 12–28–65, Cl. 160—24.

Wise, Glenn E. Combined closure, stirrer, and condiment container for drinking vessel. 3,225,915, 12–28–65, Cl. 206—47.

Wise, Harold F., E. Klein, D. S. Nelson, and W. C. Richardson, to Courtaulds North America, Inc. Manufacture of regenerated cellulose fibers from viscose. 3,226,461, 12–28–65, Cl. 264—189.

Wise, Harry D., to Sperry Rand Corp. Interrupt system. 3,226,694, 12–28–65, Cl. 340—172.5.

Wisenbaker, John D., and R. W. Stuart, to American Coldset Corp. Downhole vertical slotting tool. 3,225,828, 12–28–65, Cl. 166—55.

Wöhner, Karl-Heins, to Carl Zeiss-Stiftung, d.b.a. Carl Zeiss. Photographic objective. 3,225,673, 12–28–65, Cl. 95—45.

Wohnoutka, George J., to Lockheed Aircraft Corp. Method and apparatus for measuring air in hydraulic systems. 3,225,585, 12–28–65, Cl. 73—19.

Wolf, Erich L.: *See*
Ward, Earl C., and Wolf. 3,225,590.

Wolfe, Kenneth J. B.: *See*
Beattie, John R., and Wolfe. 3,226,215.

Wolfe, Russell C., to Dixie Mfg. Co., Inc. Tank structure. 3,225,953, 12–28–65, Cl. 220—5.

Wolff, Ivan A.: *See*
Miwa, Thomas K., and Wolff. 3,226,406.

Wolff, Nikolaus E., to Radio Corp. of America. Method of producing a solvent-resistant pattern using developed electrostatic image formation techniques. 3,226,227, 12–28–65, Cl. 96—1.

Wolford, Glenn A.: *See*
Mercer, Carles H., Wolford, and Copeland. 3,226,118.

Wood, James F. Drafting instrument. 3,225,449, 12–28–65, Cl. 33—177.

Wood, Louis L., to W. R. Grace & Co. Expandable composition comprising a thermoplastic resin and a urea-formaldehyde-hydrogen peroxide reaction product and process of forming same. 3,226,346, 12–28–65, Cl. 260—2.5.

Woodard, Joseph H., to Woodard Mfg. Co. Method of manufacturing woven metal articles of furniture. 3,225,431, 12–28–65, Cl. 29—419.

Woodard Mfg. Co.: *See*
Woodard, Joseph H. 3,225,431.

Woodcock, Richard F., to American Optical Co. Fiber type light transferring devices and method of making the same. 3,226,589, 12–28–65, Cl. 313—89.

Woodward Governor Co.: *See*
Capwell, Howard B. 3,225,814.

Woofter, Robert C.: *See*
Baer, Donald G., Van Slyke, and Woofter. 3,226,668.

Woolf, Cyril: *See*
Gordon, Joseph, Nychka, and Woolf. 3,226,448.

Woolley, Lee A., to Kingston Products Corp. Unidirectional self starting device for synchronous motor. 3,225,874, 12–28–65, Cl. 192—4.

Worthington Corp.: *See*
Rohrs, Marvin K. 3,225,556.

Wright, Arthur R. Apparatus for screening films, slides and the like in adverse light conditions. 3,225,660, 12–28–65, Cl. 88—24.

Wright, Esmond P. G., V. J. Terry, and W. F. S. Chittleburgh, to International Standard Electric Corp. Duplex data transmission system utilizing a telephone channel. 3,226,480, 12–28–65, Cl. 179—15.

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Wright, Esmond P. G., and A. D. Marn, to International Standard Electric Corp. Data processing equipment. 3,226,681, 12–28–65, Cl. 340—172.5.

Wright, John W., and J. C. Hewitt, Jr., deceased (by D. V. Hewitt, and P. A. Morrison, administratrices), to Robertshaw-Controls Co. Solenoid damping mechanism. 3,226,605, 12–28–65, Cl. 317—178.

Wulfken, Joseph J., to Ref Dynamics Corp. Dry Ice refrigerator. 3,225,558, 12–28–65, Cl. 62—167.

Wyatt, William R.: *See*
Fuchs, Francis J., Jr., and Wyatt. 3,225,689.

Wyczalek, Floyd A., to General Motors Corp. Sonic vibration spot welder. 3,225,997, 12–28–65, Cl. 228—1.

Wytzes, Sjoerd: *See*
Verster, Jan L., and Wytzes. 3,226,550.

Yamada, Tomoo: *See*
Machida, Jyusaku, Hagiwara, Yamada, Isago, and Sugishita. 3,226,334.

Yamamoto, Iwao, to Toyo Kogyo Co. Ltd. Process for producing liquid novolak type phenol-formaldehyde resin compositions. 3,226,365, 12–28–65, Cl. 260—57.

Yang, Richard F. H., to Andrew Corp. Probe fed pillbox antenna with pattern shaping pins at aperture. 3,226,722, 12–28–65, Cl. 343—780.

Yano, Masayuki, T. Yasui, and T. Ueno, to Kurashiki Rayon Co. Ltd. Apparatus for the flame decomposition of hydrocarbons and apparatus therefor. 3,226,199, 12–28–65, Cl. 23—252.

Yasui, Teruo: *See*
Yano, Masayuki, Yasui, and Ueno. 3,226,199.

Yoder, Stanley W. Load supporting and directing device. 3,225,945, 12–28–65, Cl. 214—84.

Yoshimura, Yasuo: *See*
Matsubayashi, Kanji, Inoue, Yoshimura, and Fujii. 3,226,455.

Yoshisumi, Kenji: *See*
Fitzgerald, William A., Jr., and Yoshisumi. 3,226,171.

Young, Douglas L. G., to Canadian-Ingersoll-Rand Co. Support means for vibratory hand-held power tools. 3,225,448, 12–28–65, Cl. 30—273.

Young, James R. Variable ratio friction transmission and control system therefor. 3,225,617, 12–28–65, Cl. 74—472.

Yurek, Allen A.: *See*
Lovci, John C., and Yurek. 3,226,563.

Z.Z. Corp.: *See*
Stiles, Phillip H. 3,225,952.

Zamore, David P.: *See*
Bird, Walter W., Strobel, Rongved, and Zamore. 3,225,413.

Zaucha, Peter A. Support and drain tile. 3,225,546, 12–28–65, Cl. 61—13.

Zaugg, Harold E., R. W. De Net, and R. J. Michaels, Jr., to Abbott Laboratories. Substituted β-alkyl and β-cycloalkylaminopropionamides. 3,226,419, 12–28–65, Cl. 260—463.

Zawels, Jakob, to South African Iron and Steel Industrial Corp., Ltd. Apparatus for determining the position of an electrically conductive wire in the plane of its catenary. 3,226,702, 12–28–65, Cl. 340—196.

Zeamer, Aaron C., and P. G. Robinson, to SCM Corp. Carriage return mechanism driven by a temporarily overloaded induction motor. 3,225,885, 12–28–65, Cl. 197—66.

Zeblisky, Rudolph J.: *See*—
Schneble, Frederick W., Jr., and Zeblisky. 3,226,256.

Zeiss, Carl: *See*—
Wohner, Karl-Heins. 3,225,873.

Zenith Radio Corp.: *See*—
Kaplan, Sam H. 3,226,229.

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CLASSIFICATION OF PATENTS

ISSUED DECEMBER 28, 1965

NOTE.—First number, class; second number, subclass; third number, patent number

2– 8	3,225,356	25–128	3,225,413	51–319	3,225,495	71– 29	3,226,222	91–210	3,225,662	116–173	3,225,734
14	3,225,357	129	3,225,414	355	3,225,496	72– 12	3,225,577	305	3,225,663	117– 21	3,226,245
150	3,225,358	28– 1	3,225,415	358	3,225,497	56	3,225,578	408	3,225,664	33.5	3,226,246
	3,225,359	29– 25.3	3,225,416	52– 27	3,225,498	142	3,225,579	93– 37	3,225,665		3,226,247
167	3,225,360	25.31	3,225,417	127	3,225,500	236	3,225,580	44.1	3,225,666	93.3	3,226,248
193	3,225,361	113	3,225,418	230	3,225,499	370	3,225,581		3,225,667	119.6	3,226,249
4–172	3,225,362	132	3,225,419	298	3,225,501	373	3,225,582	94– 46	3,225,668	138.8	3,226,250
5– 55	3,225,363	149.5	3,225,420	461	3,225,502	412	3,225,583	50	3,225,669	155	3,226,251
93	3,225,364	155.5	3,225,421	497	3,225,503	461	3,225,584	95– 13	3,225,670		3,226,252
109	3,225,365	155.57	3,225,424	509	3,225,504	73– 6	3,225,586		3,225,671	201	3,226,253
236	3,225,366	156.8	3,225,422	615	3,225,505	9	3,225,587	18	3,225,672		3,226,254
8– 10	3,226,176	157	3,225,423	701	3,225,506	19	3,225,585	45	3,225,673	212	3,226,255
39	3,226,177	159	3,225,425	745	3,226,727	32	3,225,588	63	3,225,674		3,226,256
55	3,226,178	159.1	3,225,426	53– 14	3,225,507	35	3,225,589	89	3,225,675	118– 19	3,225,735
127.6	3,226,179	197	3,226,207	22	3,225,508	65	3,225,590		3,225,676	119– 5	3,225,736
9– 1	3,225,367	217	3,225,427	29	3,225,509	112	3,225,591	96– 1	3,226,227	16	3,225,737
9	3,225,368	403	3,225,428	48	3,225,510	136	3,225,592	27	3,226,228	17	3,225,738
333	3,225,369	408	3,225,429	113	3,225,511	170	3,225,593	35	3,226,229	27	3,225,739
10–155	3,225,370		3,225,430	159	3,225,512	178	3,225,594	55	3,226,230	35	3,225,740
	3,225,371	419	3,225,431	160	3,225,513	301	3,225,596	61	3,226,231	48	3,225,741
13– 27	3,226,465	429	3,225,432	190	3,225,514	361	3,225,596		3,226,232	51.11	3,225,742
15– 29	3,225,372		3,225,433		3,225,515		3,225,597	82	3,226,233	53	3,225,743
104	3,225,373	430	3,225,434	55– 25	3,225,516	386	3,225,598	111	3,226,234	82	3,225,744
183	3,225,374	432.2	3,225,435	31	3,225,517	401	3,225,599	98– 33	3,225,677	120– 42.03	3,225,745
210	3,225,375	436	3,225,436	33	3,225,518	407	3,225,600	50	3,225,678		3,225,746
250.19	3,225,376	473.5	3,225,437	48	3,225,519	421	3,225,601	103	3,225,679	42.13	3,225,747
311	3,225,377	488	3,225,438	67	3,225,520	425.2	3,225,602	99– 52	3,226,235	122– 1	3,225,748
312	3,225,378	568	3,225,439		3,225,521	434	3,225,603	171	3,226,236	406	3,225,749
367	3,225,379	30– 43.4	3,225,440	223	3,225,522	475	3,225,604	215	3,226,237	448	3,225,750
16– 32	3,225,380	231	3,225,441	224	3,225,523	503	3,225,605	312	3,225,680	123– 46	3,225,751
132	3,225,381	233.5	3,225,442	269	3,225,524	74– 5	3,225,606	336	3,225,681	119	3,225,752
18– 5	3,225,382	273	3,225,443	346	3,225,525		3,225,607	446	3,225,682		3,225,753
8	3,225,383	32– 33	3,225,444	420	3,225,526	5.6	3,225,608	100– 4	3,225,683	124– 9	3,225,754
12	3,225,384	33–107	3,225,445	56– 25.4	3,225,527	5.7	3,225,609		3,225,684	41	3,225,755
13	3,225,385	125	3,225,446	50	3,225,528	56	3,225,610	41	3,225,685	126– 9	3,225,756
14	3,225,386	143	3,225,447	328	3,225,529	86	3,225,611	43	3,225,686	91	3,225,757
19	3,225,387	174	3,225,448	330	3,225,530	102	3,225,612	101– 17	3,225,687	127– 19	3,225,757
34	3,225,388	177	3,225,449	372	3,225,531	110	3,225,613	36	3,225,688	128– 29	3,225,758
19– 60	3,225,389	206	3,225,450	475	3,225,532	230.01	3,225,614	44	3,225,689	66	3,225,759
66	3,225,390	207	3,225,451	57– 34	3,225,533	416	3,225,615	48	3,225,690	83	3,225,760
98	3,225,391	226	3,225,452	140	3,225,534	449	3,225,616	127	3,225,691	158	3,225,761
267	3,225,392	34– 12	3,225,453	58– 16	3,225,535	472	3,225,617	375	3,225,692	214	3,225,762
20– 19	3,225,393	65	3,225,454	23	3,225,536		3,225,618	102– 50	3,225,693	232	3,225,763
69	3,226,367	77	3,225,455	60– 35.54	3,225,537		3,225,619	56	3,225,694	288	3,225,764
92	3,225,394	202	3,225,456	37	3,225,538	500	3,225,620	70.2	3,225,695	290	3,225,765
21– 2.5	3,226,180	35– 9	3,225,457	39.75	3,225,539	501	3,225,621	103– 6	3,225,696	335.5	3,225,766
22– 9	3,225,395	12	3,225,458	52	3,225,540	522	3,225,622	25	3,225,697	351	3,225,767
10	3,225,396		3,225,459		3,225,541	532	3,225,623	87	3,225,698	463	3,225,768
82	3,225,397	22	3,225,460	53	3,225,542	573	3,225,624	120	3,225,699	129– 16	3,225,769
84	3,225,398	46	3,225,461		3,225,543	582	3,225,625	139	3,225,700	16.1	3,225,770
200	3,225,399	36– 2.5	3,225,462	57	3,225,544	661	3,225,626	161	3,225,701	130– 30	3,225,771
204	3,225,400	3	3,225,463	61– 10	3,225,545	769	3,225,627	104–114	3,225,702	131– 8	3,225,772
23– 14	3,226,181	34	3,225,464	13	3,225,546	822	3,225,628	120	3,225,703	20	3,225,773
	3,226,182		3,225,465	45	3,225,547	75– 10	3,226,223	121	3,225,704	80	3,225,774
58	3,226,183	42	3,225,466	49	3,225,548	49	3,226,224	105– 29	3,225,705	256	3,225,775
107	3,226,184	37–142	3,225,467	62– 3	3,225,549	134	3,226,225	367	3,225,706	134– 8	3,226,258
116	3,226,185	191	3,225,468	21	3,225,550	175	3,226,226	368	3,225,707	21	3,226,259
118	3,226,186	40– 23	3,225,469		3,225,551	81– 9.5	3,225,629	380	3,225,708	129	3,225,776
	3,226,187	28	3,225,470	51	3,225,552	82– 14	3,225,630	455	3,225,709	141	3,225,777
123	3,226,188	36	3,225,471	76	3,225,553	39	3,225,631	106– 33	3,226,238	136– 30	3,226,260
	3,226,189	106.41	3,225,472	77	3,225,554	83– 83	3,225,632	38.5	3,226,239	86	3,226,261
131	3,226,190	124	3,225,473	129	3,225,555	152	3,225,633	64	3,226,240		3,226,262
141	3,226,191	124.1	3,225,474	141	3,225,556	171	3,225,634	65	3,226,241	120	3,226,263
167	3,226,192	129	3,225,475	156	3,225,557	268	3,225,635	98	3,226,242		3,226,264
191	3,226,193	130	3,225,476	167	3,225,558	468	3,225,636	109	3,226,243	137– 54	3,225,778
	3,226,194	142	3,225,477	180	3,225,559	526	3,225,637	307	3,226,244	81.5	3,225,779
230	3,226,195	330	3,225,478	236	3,225,560	658	3,225,638	107– 9	3,225,710		3,225,780
	3,226,196	332	3,225,479	262	3,225,561	915.5	3,225,639	14	3,225,711	108	3,225,781
	3,226,197	42– 58	3,225,480	263	3,225,562	84– 95	3,225,640		3,225,712	115	3,225,782
232	3,226,198	71	3,225,481	277	3,225,563	85– 5	3,225,641	17	3,225,713	155	3,225,783
252	3,226,199	89	3,225,482	377	3,225,564	9	3,225,642	19	3,225,714	234	3,225,784
254	3,226,200	43– 9	3,225,483	63– 2	3,225,565	13	3,225,643	30	3,225,715	486	3,225,785
262	3,226,201	17.1	3,225,484	64– 23	3,225,566	88– 14	3,225,644	57	3,225,716	512	3,225,786
267	3,226,202	67	3,225,485	65– 29	3,226,215		3,225,645	69	3,225,717	561	3,225,787
273	3,226,203	44– 7	3,226,208	95	3,226,216	23	3,225,646		3,225,718	599	3,225,788
284	3,226,204	66	3,226,210		3,226,217	24	3,225,647	108– 61	3,225,719	599.1	3,225,789
288	3,226,205	69	3,226,209	139	3,226,218		3,225,648	64	3,225,720		3,225,790
	3,226,206	70	3,226,211	170	3,226,219		3,225,649	110– 7	3,225,721	624.18	3,225,791
24– 75	3,225,401	46– 10	3,225,486	342	3,226,220		3,225,650	38	3,225,722	139– 71	3,225,792
120	3,225,402	17	3,225,487	66– 50	3,225,567		3,225,651	112– 80	3,225,723	185	3,225,793
129	3,225,403	89	3,225,488	60	3,225,568	28	3,225,652	410	3,225,724	266	3,225,794
162	3,225,404	172	3,225,489	95	3,225,569	89– 1	3,225,653		3,225,725	140–104	3,225,795
205.14	3,225,405	200	3,225,490	132	3,225,570	1.5	3,225,654	113–116	3,225,726	117	3,225,796
230	3,225,406	245	3,225,491	140	3,225,571	1.7	3,225,655	120	3,225,727	147	3,225,797
243	3,225,407	48– 63	3,226,212	68– 27	3,225,572	37	3,225,656	114– 66.5	3,225,728	149	3,225,798
265	3,225,408	197	3,226,213	198	3,225,573	187	3,225,657		3,225,729	143– 32	3,225,799
25– 41	3,225,409	51– 3	3,225,492	207	3,225,574	90– 7	3,225,658	144	3,225,730	37	3,225,800
84	3,225,410	134	3,225,493	70–134	3,225,575	13.7	3,225,659	219	3,225,731	160	3,225,801
91	3,225,411	220	3,225,494	434	3,225,576	91– 51	3,225,660	115– .5	3,225,732	146–102	3,225,802
108	3,225,412	298	3,226,214	71– 2.7	3,226,221	149	3,225,661	23	3,225,733	119	3,225,803

146–223 : 3,225,804	179– 15 : 3,226,483	200–166 : 3,226,519
148– 1.5 : 3,226,265	3,226,484	167 : 3,226,520
3 : 3,226,266	3,226,485	170 : 3,226,521
11.5 : 3,226,267	18 : 3,226,486	202–177 : 3,226,306
33.2 : 3,226,268	3,226,487	204– 2 : 3,226,307
33.5 : 3,226,269	3,226,488	26 : 3,226,308
174 : 3,226,270	89 : 3,226,489	39 : 3,226,309
186 : 3,226,271	100.41: 3,226,490	64 : 3,226,310
150– 35 : 3,225,805	161 : 3,226,491	69 : 3,226,311
52 : 3,225,806	170 : 3,226,492	154 : 3,226,312
151– 7 : 3,225,807	180– 9.5 : 3,225,849	195 : 3,226,313
15 : 3,225,808	14 : 3,225,850	197 : 3,226,314
19 : 3,225,809	3,225,851	206 : 3,226,315
152–330 : 3,225,810	3,225,852	206– .4 : 3,225,910
340 : 3,225,811	19 : 3,225,853	3,225,911
361 : 3,225,812	33 : 3,225,854	37 : 3,225,912
156– 67 : 3,226,272	43 : 3,225,855	42 : 3,225,913
195 : 3,226,273	69 : 3,225,856	47 : 3,225,914
252 : 3,226,274	3,225,857	3,225,915
306 : 3,226,275	181– .5 : 3,225,858	56 : 3,225,916
335 : 3,226,276	3,225,859	3,225,917
345 : 3,226,277	31 : 3,225,860	58 : 3,225,918
497 : 3,226,278	36 : 3,225,861	60 : 3,225,919
505 : 3,226,279	182– 46 : 3,225,862	63.2 : 3,225,920
510 : 3,226,280	104 : 3,225,863	65 : 3,225,921
513 : 3,226,281	144 : 3,225,864	3,225,922
519 : 3,226,282	155 : 3,225,865	208– 46 : 3,226,316
522 : 3,226,283	184– 1 : 3,225,866	209– 3 : 3,225,923
158– 4 : 3,225,813	187– 9 : 3,225,867	9 : 3,225,924
36.4 : 3,225,814	3,225,868	74 : 3,225,925
99 : 3,225,815	29 : 3,225,869	315 : 3,225,926
125 : 3,225,816	188– 62 : 3,225,873	479 : 3,225,927
159– 6 : 3,225,817	100 : 3,225,870	210– 6 : 3,226,317
160– 24 : 3,225,818	189– 36 : 3,225,871	10 : 3,226,318
161– 44 : 3,226,284	3,225,872	52 : 3,226,319
72 : 3,226,285	192– 4 : 3,225,874	63 : 3,226,320
171 : 3,226,286	26 : 3,225,875	121 : 3,225,928
175 : 3,226,287	46 : 3,225,876	232 : 3,225,929
229 : 3,226,288	76 : 3,225,877	241 : 3,225,930
165– 2 : 3,225,819	129 : 3,225,878	251 : 3,225,931
26 : 3,225,820	193– 35 : 3,225,879	282 : 3,225,932
30 : 3,225,821	194– 1 : 3,225,880	333 : 3,225,933
48 : 3,225,822	3 : 3,225,881	370 : 3,225,934
69 : 3,225,823	6 : 3,225,882	404 : 3,225,935
122 : 3,225,824	195– 28 : 3,226,302	519 : 3,225,936
157 : 3,225,825	51 : 3,226,303	211– 85 : 3,225,938
166– .6 : 3,225,826	62 : 3,226,304	148 : 3,225,937
11 : 3,225,827	80 : 3,226,305	3,225,939
46 : 3,226,728	197– 11 : 3,225,883	153 : 3,225,940
55 : 3,225,828	17 : 3,225,884	214– 1 : 3,225,941
59 : 3,225,829	66 : 3,225,885	6 : 3,225,942
66 : 3,225,830	84 : 3,225,886	10 : 3,225,943
75 : 3,225,831	130 : 3,225,887	17 : 3,225,944
146 : 3,225,832	150 : 3,225,888	84 : 3,225,945
207 : 3,225,833	198– 20 : 3,225,889	300 : 3,225,946
167– 22 : 3,226,289	29 : 3,225,890	302 : 3,225,947
33 : 3,226,290	31 : 3,225,891	314 : 3,225,948
46 : 3,226,291	33 : 3,225,892	660 : 3,225,949
53 : 3,226,292	127 : 3,225,893	215– 1 : 3,225,950
55 : 3,226,293	140 : 3,225,894	6 : 3,225,951
3,226,294	168 : 3,225,895	217– 65 : 3,225,952
63 : 3,226,295	170 : 3,225,896	219– 60 : 3,226,522
80 : 3,226,296	171 : 3,225,897	74 : 3,226,523
93 : 3,226,297	181 : 3,225,898	78 : 3,226,524
170–148 : 3,225,834	192 : 3,225,899	89 : 3,226,525
159 : 3,226,031	193 : 3,225,900	130 : 3,226,526
172–138 : 3,225,835	195 : 3,225,901	384 : 3,226,527
319 : 3,225,836	202 : 3,225,902	441 : 3,226,528
371 : 3,225,837	206 : 3,225,903	220– 5 : 3,225,953
378 : 3,225,838	211 : 3,225,904	9 : 3,225,954
398 : 3,225,839	219 : 3,225,905	3,225,955
708 : 3,225,840	199– 22 : 3,225,906	46 : 3,225,956
173– 15 : 3,225,841	28 : 3,225,907	54 : 3,225,957
24 : 3,225,842	33 : 3,225,908	60 : 3,225,958
174– 15 : 3,226,466	52 : 3,225,909	102 : 3,225,959
18 : 3,226,467	200– 5 : 3,226,493	221– 10 : 3,225,960
49 : 3,226,468	3,226,494	20 : 3,225,961
65 : 3,226,469	11 : 3,226,495	222– 1 : 3,225,962
79 : 3,226,470	3,226,496	3,225,963
87 : 3,226,471	3,226,497	79 : 3,225,964
100 : 3,226,472	24 : 3,226,498	129.1 : 3,225,965
117 : 3,226,473	48 : 3,226,499	153 : 3,225,966
151 : 3,226,474	50 : 3,226,500	183 : 3,225,967
175– 93 : 3,225,843	52 : 3,226,501	238 : 3,225,968
230 : 3,225,844	60 : 3,226,502	394 : 3,225,969
236 : 3,225,845	61.45: 3,226,503	484 : 3,225,970
403 : 3,225,846	61.53: 3,226,504	515 : 3,225,971
176– 10 : 3,226,298	81.9 : 3,226,505	516 : 3,225,972
20 : 3,226,299	87 : 3,226,506	522 : 3,225,973
29 : 3,226,300	88 : 3,226,507	529 : 3,225,974
52 : 3,226,301	104 : 3,226,508	572 : 3,225,975
177– 52 : 3,225,847	113 : 3,226,509	223– 46 : 3,225,976
80 : 3,225,848	122 : 3,226,510	85 : 3,225,977
178– 5.4 : 3,226,475	138 : 3,226,511	91 : 3,225,978
6 : 3,226,476	140 : 3,226,512	94 : 3,225,979
17 : 3,226,477	148 : 3,226,513	98 : 3,225,980
179– 6 : 3,226,478	152 : 3,226,514	109 : 3,225,981
7 : 3,226,479	153 : 3,226,515	224– 5 : 3,225,982
15 : 3,226,480	165 : 3,226,516	3,225,983
3,226,481	166 : 3,226,517	3,225,984
3,226,482	3,226,518	25 : 3,225,985

224– 42.03: 3,225,986	248–313 : 3,226,075	260–239.75: 3,226,384
45 : 3,225,987	327 : 3,226,076	240 : 3,226,385
226– 19 : 3,225,988	448 : 3,226,077	248 : 3,226,386
44 : 3,225,989	250– 41.9 : 3,226,542	251 : 3,226,387
51 : 3,225,990	3,226,543	268 : 3,226,388
56 : 3,225,991	71.5 : 3,226,544	283 : 3,226,389
170 : 3,225,992	83 : 3,226,545	285 : 3,226,390
227– 18 : 3,225,993	3,226,546	287 : 3,226,391
39 : 3,225,994	83.1 : 3,226,547	298.4 : 3,226,392
85 : 3,225,995	3,226,548	295 : 3,226,393
137 : 3,225,996	83.6 : 3,226,549	3,226,394
228– 1 : 3,225,997	3,226,550	314.5 : 3,226,395
2 : 3,225,998	206 : 3,226,551	319 : 3,226,396
4 : 3,225,999	207 : 3,226,552	3,226,397
229– 1.5 : 3,226,000	209 : 3,226,553	3,226,398
7 : 3,226,001	3,226,554	3,226,399
14 : 3,226,002	223 : 3,226,555	340.3 : 3,226,400
17 : 3,226,003	226 : 3,226,556	340.6 : 3,226,401
28 : 3,226,004	236 : 3,226,557	346.2 : 3,226,402
33 : 3,226,005	251– 62 : 3,226,078	348 : 3,226,403
35 : 3,226,006	218 : 3,226,079	397.4 : 3,226,404
39 : 3,226,007	309 : 3,226,080	397.5 : 3,226,405
49 : 3,226,008	355 : 3,226,081	410.9 : 3,226,406
66 : 3,226,009	367 : 3,226,082	424 : 3,226,407
87 : 3,226,010	252– 8.8 : 3,226,321	437 : 3,226,408
230– 2 : 3,226,011	32.7 : 3,226,322	3,226,409
117 : 3,226,012	33.6 : 3,226,323	453 : 3,226,410
145 : 3,226,013	47.5 : 3,226,324	3,226,411
158 : 3,226,014	54 : 3,226,325	3,226,412
232– 43.2 : 3,226,015	57 : 3,226,326	3,226,413
233– 23 : 3,226,016	62.5 : 3,226,327	3,226,414
234– 5 : 3,226,017	3,226,328	3,226,415
235– 50 : 3,226,018	107 : 3,226,329	455 : 3,226,416
3,226,019	117 : 3,226,330	3,226,417
61.11: 3,226,529	153 : 3,226,331	463 : 3,226,418
3,226,530	184 : 3,226,332	3,226,419
84 : 3,226,020	301.4 : 3,226,333	465 : 3,226,420
92 : 3,226,531	3,226,334	465.3 : 3,226,421
96 : 3,226,021	412 : 3,226,335	3,226,422
114 : 3,226,022	429 : 3,226,336	465.5 : 3,226,423
164 : 3,226,532	435 : 3,226,337	3,226,424
169 : 3,226,533	440 : 3,226,338	465.8 : 3,226,425
173 : 3,226,534	455 : 3,226,339	471 : 3,226,426
193 : 3,226,535	465 : 3,226,340	3,226,427
201 : 3,226,023	474 : 3,226,341	482 : 3,226,428
236– 1 : 3,226,024	503 : 3,226,342	485 : 3,226,429
35 : 3,226,025	253– 26 : 3,226,083	501 : 3,226,430
59 : 3,226,026	31 : 3,226,084	519 : 3,226,431
238– 1 : 3,226,027	164 : 3,226,085	543 : 3,226,432
239– 1 : 3,226,028	254– 93 : 3,226,086	3,226,433
4 : 3,226,029	134.3 : 3,226,087	559 : 3,226,434
135 : 3,226,030	3,226,088	3,226,435
265.25: 3,226,032	145 : 3,226,089	3,226,436
265.27: 3,226,033	190 : 3,226,090	561 : 3,226,437
316 : 3,226,034	256– 12.5 : 3,226,091	564 : 3,226,438
361 : 3,226,035	259– 2 : 3,226,092	566 : 3,226,439
400 : 3,226,036	7 : 3,226,093	570.6 : 3,226,440
405 : 3,226,037	13 : 3,226,094	571 : 3,226,441
3,226,038	18 : 3,226,095	583 : 3,226,442
406 : 3,226,039	3,226,096	590 : 3,226,443
496 : 3,226,040	41 : 3,226,097	606 : 3,226,444
240– 3 : 3,226,536	260– 2.3 : 3,226,343	609 : 3,226,445
8.2 : 3,226,537	2.5 : 3,226,344	621 : 3,226,446
10.67: 3,226,538	3,226,345	650 : 3,226,447
41.3 : 3,226,539	3,226,346	3,226,448
241– 9 : 3,226,041	22 : 3,226,347	653.1 : 3,226,449
30 : 3,226,042	3,226,348	665 : 3,226,450
101 : 3,226,043	29.6 : 3,226,349	861 : 3,226,451
172 : 3,226,044	3,226,350	871 : 3,226,452
188 : 3,226,045	3,226,351	876 : 3,226,453
242– 1.1 : 3,226,046	3,226,352	3,226,454
18 : 3,226,047	29.8 : 3,226,353	897 : 3,226,455
55.19: 3,226,048	31.2 : 3,226,354	261– 24 : 3,226,098
56.3 : 3,226,049	41 : 3,226,355	35 : 3,226,099
78.8 : 3,226,050	3,226,356	140 : 3,226,100
84.21: 3,226,051	45.85: 3,226,357	263– 6 : 3,226,101
84.54: 3,226,052	45.95: 3,226,358	264– .5 : 3,226,456
107.4 : 3,226,053	3,226,359	90 : 3,226,457
243– 16 : 3,226,054	47 : 3,226,360	3,226,458
19 : 3,226,055	3,226,361	95 : 3,226,459
244– 2 : 3,226,056	3,226,362	165 : 3,226,460
14 : 3,226,057	3,226,363	189 : 3,226,461
3,226,058	57 : 3,226,364	216 : 3,226,462
17.17: 3,226,059	3,226,365	272 : 3,226,463
31 : 3,226,060	67 : 3,226,366	325 : 3,226,464
50 : 3,226,061	75 : 3,226,368	266– 34 : 3,226,102
93 : 3,226,062	80 : 3,226,369	267– 64 : 3,226,103
114 : 3,226,063	80.5 : 3,226,370	269–227 : 3,226,104
246–169 : 3,226,540	82.7 : 3,226,371	324 : 3,226,105
182 : 3,226,541	85.5 : 3,226,372	325 : 3,226,106
248– 16 : 3,226,064	86.1 : 3,226,373	271– 27 : 3,226,107
32 : 3,226,065	88.1 : 3,226,374	32 : 3,226,108
40 : 3,226,066	89.1 : 3,226,375	34 : 3,226,109
43 : 3,226,067	94.3 : 3,226,376	41 : 3,226,110
3,226,068	152 : 3,226,377	51 : 3,226,111
73 : 3,226,069	209 : 3,226,378	62 : 3,226,112
97 : 3,226,070	211 : 3,226,379	272– 29 : 3,226,113
163 : 3,226,071	212 : 3,226,380	57 : 3,226,114
223 : 3,226,072	239 : 3,226,381	58 : 3,226,115
280 : 3,226,073	3,226,382	78 : 3,226,116
311 : 3,226,074	239.55: 3,226,383	84 : 3,226,117

273– 1 : 3,226,118	297–142 : 3,226,154	310– 59 : 3,226,581
70 : 3,226,119	191 : 3,226,156	3,226,582
83 : 3,226,120	219 : 3,226,157	153 : 3,226,583
86 : 3,226,121	361 : 3,226,158	162 : 3,226,584
142 : 3,226,122	397 : 3,226,159	194 : 3,226,585
164 : 3,226,123	410 : 3,226,160	254 : 3,226,586
274– 24 : 3,226,124	449 : 3,226,161	312– 42 : 3,226,171
46 : 3,226,125	301–108 : 3,226,162	140.1 : 3,226,172
277–125 : 3,226,126	302– 2 : 3,226,163	223 : 3,226,173
279– 4 : 3,226,127	14 : 3,226,164	253 : 3,226,174
280– 5.2 : 3,226,128	17 : 3,226,165	313– 75 : 3,226,587
3,226,129	52 : 3,226,166	76 : 3,226,588
22 : 3,226,130	307– 57 : 3,226,559	89 : 3,226,589
3,226,131	60 : 3,226,560	109 : 3,226,590
281 : 3,226,132	87 : 3,226,561	154 : 3,226,591
507 : 3,226,133	88 : 3,226,562	230 : 3,226,592
282– 28 : 3,226,134	88.5 : 3,226,563	231 : 3,226,593
285– 41 : 3,226,135	3,226,564	315– 8.5 : 3,226,594
113 : 3,226,137	3,226,565	16 : 3,226,595
158 : 3,226,136	3,226,566	21 : 3,226,596
332.3 : 3,226,138	3,226,567	60 : 3,226,597
287– 20 : 3,226,139	3,226,568	111 : 3,226,598
20.2 : 3,226,140	3,226,569	181 : 3,226,599
87 : 3,226,141	3,226,570	209 : 3,226,600
3,226,142	3,226,571	210 : 3,226,601
111 : 3,226,143	3,226,572	316– 31 : 3,226,175
290– 40 : 3,226,558	3,226,573	317–100 : 3,226,602
292–113 : 3,226,144	3,226,574	101 : 3,226,603
293– 30 : 3,226,146	3,226,575	137 : 3,226,604
65 : 3,226,145	3,226,576	178 : 3,226,605
294– 15 : 3,226,147	3,226,577	191 : 3,226,606
16 : 3,226,148	107 : 3,226,578	230 : 3,226,607
50 : 3,226,149	308– 2 : 3,226,167	234 : 3,226,608
296– 24 : 3,226,150	187.1 : 3,226,168	3,226,609
97 : 3,226,151	219 : 3,226,169	3,226,610
3,226,152	235 : 3,226,170	3,226,611
104 : 3,226,153	310– 51 : 3,226,579	3,226,612
297– 85 : 3,226,155	57 : 3,226,580	3,226,613

317–234 : 3,226,614	330– 24 : 3,226,652	340–172.5 : 3,226,690
246 : 3,226,615	26 : 3,226,653	3,226,691
249 : 3,226,616	331– 84 : 3,226,654	3,226,692
318– 28 : 3,226,617	113 : 3,226,655	3,226,693
62 : 3,226,618	186 : 3,226,656	3,226,694
106 : 3,226,619	332– 51 : 3,226,657	173 : 3,226,695
221 : 3,226,620	333– 1 : 3,226,658	3,226,696
224 : 3,226,621	1.1 : 3,226,659	3,226,697
225 : 3,226,622	20 : 3,226,660	174 : 3,226,698
320– 43 : 3,226,623	81 : 3,226,661	3,226,699
321– 25 : 3,226,624	83 : 3,226,662	174.1 : 3,226,700
27 : 3,226,625	334– 49 : 3,226,663	3,226,701
322– 16 : 3,226,626	336– 96 : 3,226,664	196 : 3,226,702
323– 22 : 3,226,627	182 : 3,226,665	237 : 3,226,703
43.5 : 3,226,628	339– 5 : 3,226,666	262 : 3,226,704
56 : 3,226,629	91 : 3,226,667	273 : 3,226,705
66 : 3,226,630	3,226,668	324 : 3,226,706
94 : 3,226,631	198 : 3,226,669	3,226,707
324– .5 : 3,226,632	340– 2 : 3,226,670	347 : 3,226,708
6 : 3,226,633	5 : 3,226,671	3,226,709
41 : 3,226,634	21 : 3,226,672	3,226,710
61 : 3,226,635	31 : 3,226,673	359 : 3,226,711
65 : 3,226,636	53 : 3,226,674	365 : 3,226,712
73 : 3,226,637	62 : 3,226,675	343– 6.5 : 3,226,713
83 : 3,226,638	119 : 3,226,678	3,226,716
99 : 3,226,639	146.1 : 3,226,676	6.8 : 3,226,714
117 : 3,226,640	147 : 3,226,677	14 : 3,226,715
142 : 3,226,641	164 : 3,226,679	3,226,717
158 : 3,226,642	167 : 3,226,680	106 : 3,226,718
325– 40 : 3,226,643	172.5 : 3,226,681	112 : 3,226,719
56 : 3,226,644	3,226,682	708 : 3,226,720
445 : 3,226,645	3,226,683	745 : 3,226,725
475 : 3,226,646	3,226,684	754 : 3,226,721
328– 16 : 3,226,647	3,226,685	780 : 3,226,722
63 : 3,226,648	3,226,686	852 : 3,226,723
71 : 3,226,649	3,226,687	853 : 3,226,724
329–109 : 3,226,650	3,226,688	346– 34 : 3,226,726
330– 2 : 3,226,651	3,226,689	

CLASSIFICATION OF DESIGNS

D 1– 12 : 203,328	D13– 6 : 203,337	D33– 19 : 203,346	D54– 13 : 203,355	D71– 1 : 203,363
D 3– 13 : 203,329	7 : 203,338	D40– 1 : 203,347	203,356	203,364
D 4– 2 : 203,330	D22– 3 : 203,339	D48– 27 : 203,348	D57– 1 : 203,357	203,365
3 : 203,331	D24– 1 : 203,340	203,349	203,358	D80– 10 : 203,366
203,332	D26– 14 : 203,342	31 : 203,350	D58– 6 : 203,359	11 : 203,367
D13– 1 : 203,333	203,343	203,351	203,360	D81– 4 : 203,368
203,334	D29– 1 : 203,341	32 : 203,352	26 : 203,361	5 : 203,369
203,335	D30– 1 : 203,344	203,353	D62– 2 : 203,362	10 : 203,370
203,336	D31– 3 : 203,345	203,354		

D81– 10 : 203,371		
25 : 203,372		
D83– 1 : 203,373		
12 : 203,374		
203,375		
D85– 2 : 203,376		
8 : 203,377		
D91– 1 : 203,378		

CLASSIFICATION OF PLANTS

P. – 18 : 2,582	P. – 51 : 2,581	P. – 68 : 2,583	P. – 89 : 2,584

GEOGRAPHICAL INDEX OF RESIDENCE OF INVENTORS

(U.S. States, Territories and Armed Forces, the Commonwealth of Puerto Rico, and the Canal Zone)

Alabama	1	Louisiana	17	Pennsylvania	37
Alaska	53	Maine	18	Puerto Rico	51
Arizona	2	Maryland	19	Rhode Island	38
Arkansas	3	Massachusetts	20	South Carolina	39
California	4	Michigan	21	South Dakota	40
Canal Zone	57	Minnesota	22	Tennessee	41
Colorado	5	Mississippi	23	Texas	42
Connecticut	6	Missouri	24	U.S. Army	55
Delaware	7	Montana	25	U.S. Air Force	54
District of Columbia	8	Nebraska	26	U.S. Navy	56
Florida	9	Nevada	27	U.S. Samoa	59
Georgia	10	New Hampshire	28	Utah	43
Guam	58	New Jersey	29	Vermont	44
Hawaii	50	New Mexico	30	Virgin Islands	52
Idaho	11	New York	31	Virginia	45
Illinois	12	North Carolina	32	Washington	46
Indiana	13	North Dakota	33	West Virginia	47
Iowa	14	Ohio	34	Wisconsin	48
Kansas	15	Oklahoma	35	Wyoming	49
Kentucky	16	Oregon	36		

(First number in listing denotes location according to above key. Refer to patent number in body of the Official Gazette to obtain details as to inventor name, location, etc.)

PATENTS

1 : 3,226,461
2 : 3,225,589
3,225,660
3,225,865
3,226,088
3,226,611
3,226,612
3,226,613
3,226,614
3,226,637
3,226,682
3 : 3,225,726
3,225,945
3,226,593
4 : 3,225,389
3,225,393
3,225,394
3,225,412
3,225,416
3,225,433
3,225,435
3,225,438
3,225,439
3,225,444
3,225,445
3,225,447
3,225,450
3,225,452
3,225,459
3,225,468
3,225,486
3,225,488
3,225,489
3,225,499
3,225,500
3,225,501
3,225,507
3,225,508
3,225,525
3,225,526
3,225,527
3,225,529
3,225,538
3,225,549
3,225,566
3,225,581
3,225,585
3,225,590
3,225,594
3,225,599
3,225,602
3,225,605
3,225,628
3,225,645

4 : 3,225,649
3,225,652
3,225,655
3,225,661
3,225,666
3,225,675
3,225,677
3,225,681
3,225,685
3,225,694
3,225,695
3,225,753
3,225,765
3,225,775
3,225,782
3,225,799
3,225,822
3,225,826
3,225,829
3,225,831
3,225,836
3,225,858
3,225,867
3,225,868
3,225,873
3,225,890
3,225,892
3,225,893
3,225,904
3,225,912
3,225,913
3,225,918
3,225,948
3,225,952
3,225,959
3,225,976
3,225,980
3,225,986
3,225,989
3,225,991
3,226,002
3,226,017
3,226,018
3,226,019
3,226,036
3,226,052
3,226,063
3,226,069
3,226,071
3,226,072
3,226,077
3,226,087
3,226,095
3,226,096

4 : 3,226,102
3,226,121
3,226,125
3,226,130
3,226,135
3,226,138
3,226,162
3,226,201
3,226,202
3,226,262
3,226,271
3,226,290
3,226,296
3,226,321
3,226,322
3,226,326
3,226,332
3,226,344
3,226,438
3,226,440
3,226,463
3,226,468
3,226,470
3,226,474
3,226,490
3,226,505
3,226,524
3,226,534
3,226,544
3,226,554
3,226,571
3,226,573
3,226,575
3,226,579
3,226,591
3,226,602
3,226,603
3,226,605
3,226,618
3,226,619
3,226,625
3,226,627
3,226,632
3,226,648
3,226,653
3,226,663
3,226,671
3,226,687
3,226,688
3,226,689
3,226,692
3,226,697
3,226,700
3,226,703

4 : 3,226,704
3,226,713
3,226,716
3,226,727
5 : 3,225,643
3,225,697
3,225,787
3,225,881
3,225,917
3,226,091
3,226,129
3,226,257
3,226,405
3,226,569
6 : 3,225,399
3,225,487
3,225,613
3,225,622
3,225,748
3,225,749
3,225,763
3,225,785
3,225,886
3,225,920
3,225,929
3,225,966
3,225,969
3,225,971
3,226,032
3,226,040
3,226,049
3,226,086
3,226,094
3,226,104
3,226,123
3,226,140
3,226,161
3,226,194
3,226,221
3,226,264
3,226,281
3,226,284
3,226,300
3,226,317
3,226,363
3,226,369
3,226,386
3,226,410
3,226,411
3,226,412
3,226,413
3,226,414
3,226,415
3,226,432

6 : 3,226,441
3,226,508
3,226,515
3,226,527
3,226,531
3,226,546
3,226,589
3,226,698
7 : 3,225,534
3,225,706
3,226,178
3,226,375
3,226,381
3,226,388
3,226,389
3,226,418
3,226,420
3,226,423
3,226,439
3,226,442
3,226,449
8 : 3,225,805
3,225,818
3,225,866
3,226,112
3,226,228
3,226,610
9 : 3,225,427
3,225,484
3,225,505
3,225,548
3,225,570
3,225,576
3,225,593
3,225,760
3,225,838
3,225,923
3,225,940
3,226,021
3,226,039
3,226,147
3,226,567
3,226,574
3,226,629
3,226,644
3,226,656
3,226,670
10 : 3,225,514
3,225,515
3,225,761
3,225,882
11 : 3,226,519
12 : 3,225,371
3,225,404

12 : 3,225,408
3,225,411
3,225,436
3,225,467
3,225,471
3,225,472
3,225,476
3,225,492
3,225,511
3,225,553
3,225,612
3,225,635
3,225,637
3,225,683
3,225,691
3,225,692
3,225,711
3,225,719
3,225,721
3,225,722
3,225,727
3,225,743
3,225,754
3,225,758
3,225,801
3,225,808
3,225,814
3,225,896
3,225,899
3,225,919
3,225,931
3,225,941
3,225,958
3,225,978
3,225,983
3,225,994
3,226,030
3,226,038
3,226,043
3,226,067
3,226,068
3,226,079
3,226,101
3,226,114
3,226,150
3,226,156
3,226,171
3,226,229
3,226,233
3,226,236
3,226,239
3,226,240
3,226,286

12 : 3,226,302
3,226,306
3,226,324
3,226,367
3,226,406
3,226,419
3,226,459
3,226,477
3,226,479
3,226,488
3,226,493
3,226,494
3,226,533
3,226,555
3,226,581
3,226,582
3,226,606
3,226,722
13 : 3,225,425
3,225,517
3,225,545
3,225,614
3,225,619
3,225,627
3,225,665
3,225,679
3,225,693
3,225,742
3,225,744
3,225,845
3,225,874
3,225,876
3,226,011
3,226,033
3,226,120
3,226,124
3,226,127
3,226,348
3,226,453
3,226,641
3,226,650
3,226,678
14 : 3,225,358
3,225,359
3,225,784
3,225,790
15 : 3,225,954
3,226,075
3,226,098
3,226,122
3,226,426
16 : 3,225,554
3,225,564
3,225,825
3,225,887
3,226,197
3,226,576
17 : 3,225,440
3,225,832
3,225,833
3,226,185
3,226,191
3,226,209
3,226,316
3,226,349
3,226,403
3,226,408
3,226,409
3,226,428
3,226,532
3,226,728
19 : 3,225,516
3,225,582
3,225,598
3,225,654
3,225,759
3,225,766
3,225,859
3,225,889
3,225,953
3,225,988
3,226,023
3,226,090
3,226,126
3,226,136
3,226,169
3,226,210
3,226,218
3,226,346
3,226,351
3,226,356
3,226,379
3,226,454
3,226,469
3,226,471
3,226,528
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3,225,977	3,226,425	3,226,128	3,226,080	3,225,842	3,226,401
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3,226,027	3,226,541	40 : 3,226,060	3,226,143	3,226,097	3,225,607
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3,226,062	3,226,566	3,225,839	3,226,164	3,226,222	3,225,755
3,226,074	3,226,622	3,225,870	3,226,476	3,226,248	3,225,937
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3,226,153	3,226,639	3,226,362	3,226,633	3,226,551	3,225,964
3,226,155	3,226,642	3,226,672	43 : 3,225,651	3,226,559	3,226,022
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3,226,241	3,226,708	3,225,449	3,225,708	3,226,649	3,226,089
3,226,243	3,226,714	3,225,475	3,225,982	46 : 3,225,365	3,226,148
3,226,245	38 : 3,225,357	3,225,592	3,225,985	3,225,483	3,226,157
3,226,255	3,225,729	3,225,642	3,226,154	3,225,702	3,226,237
3,226,275	3,225,730	3,225,783	44 : 3,225,658	3,225,703	3,226,478
3,226,294	3,226,259	3,225,791	3,225,798	3,225,800	3,226,489
3,226,298	39 : 3,225,360	3,225,827	3,226,167	3,226,291	3,226,679
3,226,331	3,225,403	3,225,828	45 : 3,225,383	3,226,433	3,226,723
3,226,335	3,225,415	3,225,830	3,225,469	47 : 3,225,414	51 : 3,225,804
3,226,345	3,225,455	3,225,872	3,225,623	3,226,354	56 : 3,225,524
3,226,371	3,225,793	3,225,877	3,225,648	3,226,374	

DESIGN PATENTS

4 : 203,332	4 : 203,369	6 : 203,355	13 : 203,342	31 : 203,358	34 : 203,371
203,333	203,373	203,362	20 : 203,341	203,363	203,372
203,337	203,374	203,377	21 : 203,357	203,366	35 : 203,334
203,340	203,375	12 : 203,339	24 : 203,336	34 : 203,329	37 : 203,338
203,349	203,376	203,345	29 : 203,360	203,330	41 : 203,335
203,350	203,378	203,346	203,361	203,367	48 : 203,347
203,351	5 : 203,328	203,352	203,365	203,368	203,356
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PLANT PATENTS

31 : 2,581	31 : 2,583	31 : 2,584

U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
December 28, 1965 Volume 821 Number 4

TRADEMARKS

NOTICES

Notice of Tentative Recordation of a Trade Name

[T.D. 66491]

Tentative recordation of trade name under section 42, Trademark Act of 1946, and section 11.16, Customs Regulations

TREASURY DEPARTMENT,
OFFICE OF THE COMMISSIONER OF CUSTOMS,
Washington, D.C., Sept. 27, 1965.

To Collectors of Customs and Others Concerned:

An application has been filed in the Treasury Department for the recordation of the following-described trade name under the provisions of section 42, Trademark Act of 1946, and section 11.16, Customs Regulations:

"DUETEENO ORIGINALS," a trade name used by Swiss-knit Manufacturing, Inc., a corporation organized under and by virtue of the laws of the State of New York, located and doing business at 112 West 34th Street, New York, New York. The trade name is associated with imported children's wearing apparel manufactured in various Far-Eastern areas.

Any person who on or before November 15, 1965, notifies the Commissioner of Customs, Washington, D.C., 20226, of his opposition to the recordation of the trade name described above will be furnished with a copy of the application for recordation, the documents filed in support of the application, and instructions as to the procedure to be followed to file a formal notice of such opposition. The customs officers concerned will be advised of the filing of any opposition proceeding.

Until December 1, 1965, or until final determination has been made in any case in which notice has been received of the filing of an opposition proceeding, any article of foreign manufacture which bears a name or mark copying or simulating the trade name described above shall be detained, without seizure. Thereafter, the articles so detained shall be treated in accordance with the provisions of section 11.17 of the Customs Regulations.

LESTER D. JOHNSON,
Commissioner of Customs.

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 203,957 (RED AND WHITE), S. M. Flickinger Co., Inc., Wheat flour, macaroni, food-flavoring extracts, egg

CONDITION OF TRADEMARK APPLICATIONS AS OF OCTOBER 31, 1965

Total number of applications awaiting action [excluding renewals and Sec. 12 (c)]	17,985
Date of oldest new application	Mar. 17, 1965
Date of oldest amended application	Mar. 1, 1965

C. M. WENDT, Director, Trademark Examining Operation

TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application: New	Oldest Application: Amended
(I) L. J. BETTENDORF (Acting), Classes 2, 4, 5, 8, 11, 12, 13, 14, 15, 16, 17, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 39, 41, 42, 43, 44	3-17-65	3-1-65
(II) H. E. KASCHUB, Classes 1, 3, 6, 7, 9, 10, 18, 22, 27, 38, 40, 45, 46, 47, 48, 49, 50, 51, 52; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, 107; Collective Membership Marks, Class 200; Certification Marks, Classes A and B	4-12-65	4-2-65
Renewals (All Classes)	10-5-65	----------
Sec. 12 (c) Publications (All Classes)	10-13-65	----------

Applications filed during the month of October 1965—2,989

Registrations Issued ---------- 294—No. 800,827 to No. 801,120
Renewals Issued ---------- 60

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, $12.00 per annum, foreign mailing $4.00 additional; single copies, 25 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 20 cents each. Address orders to the Commissioner of Patents, Washington, D.C., 20231.

noodles, cocoa, etc.; **Reg. No. 278,207**, same, Men's and boys' coats, pants, vests, dress and work shirts, jackets, hats, etc.; **Reg. No. 719,835**, Bushey & Wright, Inc., Lye and bleach; **Reg. No. 720,012**, same, Paper towels, facial tissues, toilet paper, waxed paper and napkins; **Reg. No. 720,117**, same, Household detergent; **Reg. No. 727,335**, same, Retail grocery service; **Reg. No. 728,904**, same, Wheat flour, macaroni, food flavoring extracts, egg noodles, cocoa, etc., filed Mar. 23, 1964, D.C., S.D.N.Y., Doc. 64/914, *Red & White Foundation et ano. v. Red & White Markets, Inc. et al.* Consent order dismissing action with prejudice Nov. 1, 1965.

Reg. No. 278,207. (See Reg. No. 203,957.)

Reg. No. 334,794 (GARDEN CLUB), Greenbrae, Inc., Brandy, cognac, gin, rum, and whiskey; **Reg. No. 352,206** (GARDEN CLUB AND DESIGN), same, Alcoholic beverages, specifically liqueurs, cordials, distilled brandies, etc., filed Nov. 1, 1965, D.C., W.D. Ky. (Louisville), Doc. 5177, *Charles Jacquin et Cie, Inc. v. Pilgrim Distributing Corp. et al.*

Reg. No. 352,206. (See Reg. No. 334,794.)

Reg. No. 571,798 (ROQUEFORT), The Community of Roquefort, Cheese, filed Nov. 5, 1965, D.C., N.D. Ill. (Chicago), Doc. 65c1840, *Community of Roquefort v. Armando's Restaurant.* Same, filed Nov. 9, 1965, D.C., N.D. Calif. (San Francisco), Doc. 44341, *The Community of Roquefort v. Stan's of Donville.* Same, filed Nov. 10, 1965, D.C., N.D. Calif. (San Francisco), Doc. 44348, *The Community of Roquefort v. Fairmont Hotel Corporation.* Same, filed Nov. 19, 1965, D.C., S.D.N.Y., Doc. 65/3527, *Community of Roquefort v. La Crepe, Ltd.*

Reg. No. 600,018 (PLAYBOY), HMH Publishing Co., Inc., Monthly magazine, filed Aug. 24, 1965, D.C., N.D. Ill. (Chicago), Doc. 65c1416, *HMH Publishing Co., Inc. v. Kable News Co.* Judgment enjoining defendant Nov. 5, 1965.

Reg. No. 713,970 (AIRWAYS RENT-A-CAR SYSTEM AND DESIGN), Airways Rent-A-Car System, Car rental service; **Reg. No. 757,918** (AIRWAYS RENT-A-CAR SYSTEM), same, filed July 9, 1965, D.C., N.D. Ill. (Chicago), Doc. 65c1152, *Airways Rent-A-Car System, Inc. v. Airways Rent-A-Car, Inc.* Cause dismissed on notice of plaintiff with prejudice Nov. 2, 1965.

Reg. No. 719,835. (See Reg. No. 203,957.)

Reg. No. 720,012. (See Reg. No. 203,957.)

Reg. No. 720,117. (See Reg. No. 203,957.)

Reg. No. 727,335. (See Reg. No. 203,957.)

Reg. No. 728,904. (See Reg. No. 203,957.)

Reg. No. 757,918. (See Reg. No. 713,970.)

Reg. No. 786,427 (PENTEL), Ben N. Yasutomo, doing business as Yasutomo & Co., Marking pens, filed Nov. 3, 1965, D.C., N.D. Calif. (San Francisco), Doc. 44326, *The Japan Stationery Co., Ltd. v. Yasutomo & Co. et al.*

Erratum

In the OFFICIAL GAZETTE, vol. 820, p. TM 112, Nov. 16, 1965, first column, line 9 thereof, for "Cross Country Sales Co., Inc. et ano." read *Cross County Sales Co., Inc. et ano.*

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 188,765. Jacuzzi Bros., Incorporated, Richmond, Calif. Filed Mar. 16, 1964.

Jacuzzi

Owner of Reg. No. 656,389.

Class 12—Construction Materials

For Diving Standards.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Skimmers and Fittings.

Class 21—Electrical Apparatus, Machines, and Supplies

For Underwater Lights.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Pumps, Air Compressors and Vacuum Cleaners.

Class 31—Filters and Refrigerators

For Filters.

Class 50—Merchandise Not Otherwise Classified

For Pool Ladders.

First use October 1958.

SN 191,709. Philadelphia Quarts Company, Philadelphia, Pa. Filed Apr. 21, 1964.



Owner of Reg. Nos. 108,917, 611,645, and others.

Class 6—Chemicals and Chemical Compositions

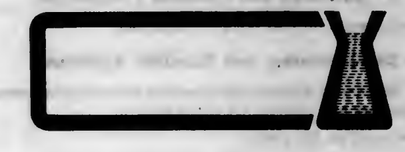
For Soluble Inorganic Alkali Silicates; Soluble Organic Alkali Silicates; Microfine Synthetic Silicas; Laundry Sours; Bleaching Compositions.

Class 52—Detergents and Soaps

For Nonionic and Anionic Surface Active Agents and Detergents for Washing and Laundering Operations; Washing Compositions; Dedusting Compositions Containing Some Paraffin Oils.

First use on or about Dec. 6, 1963.

SN 194,884. Hooker Chemical Corporation, Niagara Falls, N.Y. Filed June 4, 1964.



The drawing is lined for gray, but no claim of color is asserted. Owner of Reg. No. 768,976.

Class 6—Chemicals and Chemical Compositions

For Chemical Compositions Useful as Rust and Corrosion Inhibitors for Metals.

Class 16—Protective and Decorative Coatings

For Phosphate-Based Industrial Coatings for Treatment of Aluminum, Galvanized or Steel Surfaces To Produce a Paint-Holding and/or Corrosion Resistant Coating Thereon.

Class 52—Detergents and Soaps

For Metal Cleaning Compositions.

First use Feb. 12, 1963.

SN 204,150. Electro-Autosizing Machine Corporation, Closter, N.J. Filed Oct. 16, 1964.

EAM

Class 21—Electrical Apparatus, Machines, and Supplies

For Automating, Measuring and Control Devices, and Parts Therefor, Including Electromechanical, Mechanical and Hydraulic Mechanisms—Namely, Transducers; Motors (Special); Servos; Numerical Readout Devices, Analog and Digital; Strip Chart Recorders; Operational Amplifiers; Differential Amplifiers; and Electronic Components Therefor.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Automating, Measuring and Control Devices, and Parts Therefor, Including Electromechanical, Mechanical and Hydraulic Mechanisms—Namely, Metalworking Tools; Grinding Equipment; and Electronic Components Therefor.

Class 26—Measuring and Scientific Appliances

For Automating, Measuring and Control Devices and Parts Therefor, Including Electromechanical, Mechanical and Hydraulic Mechanisms—Namely, Gages; Inspection Instruments; Test Equipment; Automatic Machine Tool Control Systems Based on Continuous Measurement of Workpiece; Sorting and Classifying Equipment; Optical Measurement, Reading or Focusing Devices; Autocollimators; Numerical Control Systems; and Electronic Components Therefor.

First use May 1954.

SN 209,844. Electronic Instrument Company, d.b.a. Berkeley Medical Instruments, Berkeley, Calif. Filed Jan. 13, 1965.

BMI

Class 6—Chemicals and Chemical Compositions

For Reagents for Use With Colorimeters.

Class 26—Measuring and Scientific Appliances

For Electronic Medical Instruments and Supplies—Namely, Colorimeters and Laboratory Glassware.

First use Feb. 28, 1963.

SN 211,736. E. J. Longyear Company, Minneapolis, Minn. Filed Feb. 10, 1965.

LONGYEAR

Owner of Reg. Nos. 615,697 and 797,161.

Class 100—Miscellaneous

For Making Geological Surveys for Others and Interpreting Results of Same Including Geological Mapping, Geophysical Surveys, and Geochemical Surveys; Preparation of Mining Layouts and Design of Mines; Estimating of Ores, Mining Methods, and the Capital, Personnel and Operating Requirements for Mining; Evaluation of Mineral Properties and Market Surveys and Feasibility Studies in Respect Thereto; Engineering Services in Respect to Roads, Foundations, Dams and Building Sites, Underground Storage and Water Resources; Technical Witness Services; Project Design Relating to Testing, Beneficiation and Processing of Ores and Design and Construction of Processing Plants.

Class 103—Construction and Repair

For Exploratory Drilling for Others.

First use 1890.

SN 212,358. Sternco Industries, Inc., Allendale, N.J. Filed Feb. 18, 1965.

DELTA

Owner of Reg. Nos. 775,176 and 780,492.

Class 1—Raw or Partly Prepared Materials

For Live Fish.
First use Nov. 6, 1964.

Class 22—Games, Toys, and Sporting Goods

For Rawhide Chewing Toys for Dogs.
First use Sept. 10, 1964.

SN 216,462. Little Brute Company, Monticello, Iowa. Filed Apr. 14, 1965.

LITTLE BRUTE

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Hand Operated Tools and Engine Accessories—Namely, Crankshaft Straightener, Seal Puller, Engine Positioner, Adaptor, Magneto Flywheel Knocker, Carburetor Adjuster, Coil Spring Booster, Bicycle Front Fork Straightener and Flywheels.
First use Apr. 1, 1960.

Class 26—Measuring and Scientific Appliances

For Flywheel, Magneto Tester, Condenser and Coil Tester and Compression Gauges.
First use Apr. 1, 1961.

SN 222,093. Pennsalt Chemicals Corporation, Philadelphia, Pa. Filed June 28, 1965.

PENNSALT
CHEMICALS ● EQUIPMENT

Applicant hereby disclaims the words "Chemicals" and "Equipment" apart from the mark as shown. Owner of Reg. Nos. 392,195, 662,748, and others.

Class 1—Raw or Partly Prepared Materials

For Alumina Cryolite, Fluorocarbon Polymers and Fluorocarbon Resins.

Class 6—Chemicals and Chemical Compositions

For Activated Carbons, Activating Compositions for Use With Phosphatising Compounds, Adsorbent Powders for Laundry and Dry Cleaning, Alcohols, Algicides, Amines, Ammonia, Ammonium Salts, Amylenes, Animal Repellants, Bactericides, Carbamates, Caustic Soda and Potash, Chlorates, Chlorine, Compositions for Deposition of Chromium Containing Coatings, Defoliants, Deodorants, Deoxidisers, Desiccants, Aluminum Desmutters, Disinfectants, Etchants, Ethers, Fabric Treating Compositions Such as Water Repellents, Fluoride Salts, Fluorocarbons, Fungicides, Gas Odorants, Halogenated Hydrocarbons, Herbicides, Inorganic Acids, Inorganic Chlorides, Inorganic Peroxides, Insecticides, Laundry Bleaches, Sours, Blues, Whiteners, Starches, Spotters and Sizing Agents for use in Laundry and Dry Cleaning, Mercaptans, Metal Treating Compositions Preparatory to Painting, Stamping, Drawing or Extruding, Organic Acids and Acetates, Organic Sulfides and Disulfides, Persulfates, Phenols, Phosphatising Compositions, Pickling Inhibitors, Propellants, Refrigerants, Wetting Agents, Rubber Accelerators, Antioxidants, Antiozonants, and Vulcanising Agents, Seed Disinfectants, Silica and Silicates, Solvents, Thiocarbamates, Ureas and Thioureas.

Class 12—Construction Materials

For Cement Powder and Cement Liquids Sold Together for Preparing Self-Hardening Acid, Alkali and Waterproof Cements in Situ by Construction Workers in Setting Bricks, Tile and in the Preparation of Linings, Pumps, Valves, Pipes and Impellers, and Caulking Compounds.

Class 15—Oils and Greases

For Lubricating and Coating Compositions for Forming a Lubricating and Coating Film on Metal Prior to Stamping, Drawing, Extruding, or Other Forming or Deforming Operations.

Class 16—Protective and Decorative Coatings

For Paint Primers, Bituminous Coating Materials and Pigmented and Non-Pigmented Chlorinated Rubber Base Paints and Liquid Abrasion and Corrosion Resistant Compositions for Application to Metal, Concrete and Wood, and So Forth for Forming Protective Coatings Thereon, and Paints.

Class 52—Detergents and Soaps

For Acid and Alkaline Cleaners and Detergents for Use in Dairying, Food Processing, Laundry and Dry Cleaning, General Household, Industrial, Institutional and Commercial Purposes, Cleaners and Degreasers for Automotive Parts, Paint Removers and Fuel Tank Desealants and Emulsion and Solvent Cleaners.

First use Sept. 14, 1964.

SN 225,092. Columbia Records Distribution Corp., New York, N.Y. Filed Aug. 6, 1965.

Fender

Class 21—Electrical Apparatus, Machines, and Supplies

For Electrical Apparatus for Use With Guitars and for Other Purposes—Namely, Amplifiers, Loudspeakers, Echo Chambers, and Reverberation Units, and Components and Accessories for Such Electrical Apparatus—Namely, Amplifier Cords, Amplifier Carriers, Amplifier Covers, Foot Pedal Controls, Switches, Amplifier Handles, Amplifier Knobs, Amplifier Corners, Amplifier Volume and Tone Controls, Speaker Cabinets, Amplifier Tube Shields, Amplifier Thumb Screws, Amplifier Legs, and Tape Cartridges.

Class 36—Musical Instruments and Supplies

For Musical Instruments—Namely, Electric Spanish Guitars, Electric Mandolins, Electric Basses, Acoustic Guitars, Pedal Steel Guitars, and Steel Guitars, and Components and Accessories for Guitars and the Like—Namely, Legs, Cases, Bags, Strings, Polish, Waist Belts, Stands, Picks, Steels, Necks, Heads, Pickups, Pickup Covers, Pickguards, Bridge Covers, Tremolo Handles, Control Knobs, and Straps.

First use in or about 1945.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 206,469. Anthony L. Peca, d.b.a. Batavia Turf Farms, Batavia, N.Y. Filed Nov. 18, 1964.

INSTANT LAWNS

The word "Lawns" is disclaimed apart from the mark as shown.

For Grass Sod in Rolls.

First use July 1, 1961.

SN 214,963. Durby Laboratories, Incorporated, Westwood, N.J. Filed Mar. 25, 1965.



For Thermoplastic Film in Rolls for Hot Stamping Imprints.

First use 1938.

SN 218,730. Avon Sole Company, Avon, Mass. Filed May 13, 1965.

STYLON

For Shoe Soling Material in Sheet Form.

First use Sept. 12, 1963.

SN 220,565. Shellbuilder Company, Houston, Tex. Filed June 7, 1965.

DRI-EZE

For Calcined Mineral Product Derived From a Colloidal Clay for Use in Making Poultry Nests, Poultry Litter, and the Like.

First use Jan. 1, 1965.

SN 220,643. E. I. du Pont de Nemours and Company, Wilmington, Del. Filed June 8, 1965.

TEMPLEX

For Photopolymer Sensitized Plastic Material in the Form of Sheets.

First use Apr. 27, 1965.

SN 223,294. E. I. du Pont de Nemours and Company, Wilmington, Del. Filed July 14, 1965.

TORVEX

For Honeycomb Shaped Ceramic Material for Generalized Use in the Industrial Arts.

First use June 23, 1965.

Class 2 — Receptacles

SN 192,859. White Consolidated Industries, Inc., Lakewood, Ohio, by change of name from White Sewing Machine Corporation, Lakewood, Ohio. Filed May 6, 1964.



Owner of Reg. Nos. 760,713, 782,075 and 784,211.
For Glass Fiber Reinforced Pressure Vessels for Compressed Gases, Airbrake Tanks, Filter Housings, Water Storage Tanks, Fuel Tanks, Brine Storage Tanks, Lightweight Storage Drums, Tote Trays, and Laundry Tubs.
First use on or about Oct. 1, 1961.

SN 197,063. Berg Vault Company, St. Louis, Mo. Filed July 6, 1964.

BERGVAULT

Owner of Reg. No. 427,635.
For Burial Vaults.
First use July 1940.

SN 202,610. Metal Edge Industries, Barrington, N.J. Filed Sept. 24, 1964.

STAYSAFE

For Fiberboard Boxes for Merchandising and Storage.
First use Aug. 14, 1964.

SN 209,280. Liberty Carton Co., Minneapolis, Minn. Filed Jan. 4, 1965.



For Insulated Shipping Cartons and Shipping Containers.
First use on or about Nov. 3, 1964.

Class 5 — Adhesives

SN 223,406. Hawkins-Hawkins Co., Inc., Berkeley, Calif. Filed July 15, 1965.



For Epoxy Adhesives To Bond Street and Highway Safety Devices to Pavement.
First use about September 1963.

Class 6 — Chemicals and Chemical Compositions

SN 192,654. Wilmot Castle Company, Rochester, N.Y. Filed May 4, 1964.

BIOSPORE

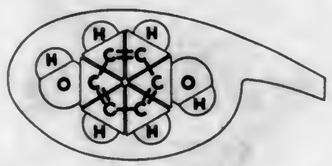
For Biological Sterility Strip Indicators for Testing Sterilization by Moist Heat (Steam), Chemical Gases, Dry Heat or Otherwise.
First use Mar. 16, 1964.

SN 208,953. National Detergents, Inc., d.b.a. National Cleaners Chemical Mfg. Co., Chicago, Ill. Filed Dec. 28, 1964.

WEATHER GUARD

For Water Repellent Composition for the Treatment of Clothing and Fabrics.
First use Nov. 3, 1964.

SN 212,970. Carus Chemical Company, Inc., La Salle, Ill. Filed Mar. 1, 1965.



Applicant claims no exclusive rights in the graphic structural formula for the goods identified herein.
For Hydroquinone.
First use Jan. 25, 1965.

SN 219,249. National Lead Company, New York, N.Y. Filed May 19, 1965.

RC-HT

For Composite Titanium Dioxide-Calcium Sulfate Pigment.
First use December 1948.

SN 219,250. National Lead Company, New York, N.Y. Filed May 19, 1965.

RC-HT-X

For Composite Titanium Dioxide-Calcium Sulfate Pigment.
First use December 1948.

SN 224,916. Calgon Corporation, Pittsburgh, Pa. Filed Aug. 4, 1965.

CALGON

Owner of Reg. Nos. 306,582, 699,145, and others.
For Fabric Softener for Home Use.
First use May 27, 1965.

Class 8 — Smokers' Articles, Not Including Tobacco Products

SN 202,581. S. M. Frank & Co., Inc., New York, N.Y. Filed Sept. 24, 1964.

Debonair

For Smokers' Pipes.
First use June 2, 1964.

SN 202,583. S. M. Frank & Co., Inc., New York, N.Y. Filed Sept. 24, 1964.

Elite

For Smokers' Pipes.
First use June 2, 1964.

SN 202,585. S. M. Frank & Co., Inc., New York, N.Y. Filed Sept. 24, 1964.

Ventilator

For Smokers' Pipes.
First use January 1957.

SN 202,586. S. M. Frank & Co., Inc., New York, N.Y. Filed Sept. 24, 1964.

Guardsman

For Smokers' Pipes.
First use 1920.

SN 212,802. S. M. Frank & Co., Inc., New York, N. Y. Filed Feb. 18, 1965.

HUMIDIPAK

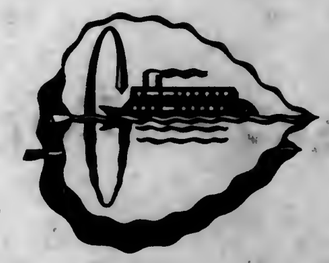
For Leather Covered Tobacco Humidifier for Insertion Into Tobacco Pouches and the Like.
First use Jan. 20, 1965.

SN 216,209. Societe S. T. Dupont, Paris, France. Filed Apr. 9, 1965.

S.T. Dupont

Owner of French Reg. No. 516,578, dated Oct. 18, 1963.
For Lighters and Smokers' Articles—Namely, Cigarette Lighters, Gas Cigarette Lighters, Pipes, Cigarette Holders, Cigarette Cases, Ash Trays, Tobacco Holders, Pipe Cleaners, and Reloaders for Gas Cigarette Lighters.
First use 1934; in commerce 1953.

SN 216,575. John Richard Dengler, St. Louis, Mo. Filed Apr. 15, 1965.



For Pipes (Briar and Meerschaum); Cigar and Cigarette Holders; Smokers' Requisites—Namely, Cigar Cutters or Clippers, Cigar Punches, Pipe Reamers, Pipe Tampers, Pipe Gloves, Pipe Lids, Pipe Cloths for Polishing, Pipe Cleaners, Pipe Holsters, Pipe Cases; Pipe Bags; Cigar, Cigarette and Tobacco Humidors; Pipe Box; Smoking Tobacco Containers; Pipe Racks; Lighters; Tobacco Pouch; Ash Trays; Cigar and Cigarette Cases; Cigar Boxes; Tobacco Containers, 8 Oz. Tins, Pocket Size.
First use Mar. 29, 1965.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

SN 200,585. Astra, Unceta y Cia, S.A., Guernica, Viscaya, Spain. Filed Aug. 25, 1964.



Owner of Spanish Reg. No. 24,766, dated Apr. 27, 1914.
For Firearms—Namely, Guns, Pistols, and Revolvers.

SN 202,150. Harrington & Richardson, Inc., Worcester, Mass. Filed Sept. 18, 1964.

"MEDALIST"

For Rifles.
First use September 1946.

Class 10 — Fertilizers

SN 215,084. S. S. Kresge Company, Detroit, Mich. Filed Mar. 26, 1965.

Owner of Reg. Nos. 743,912, 791,829, and others.
For Lawn Fertilizers and Lawn Foods.
First use on or before Jan. 28, 1965.

Class 12 — Construction Materials

SN 168,848. PBH Corporation, Gary, Ind. Filed May 14, 1963.

PERSUL-KOTE

For Sprayable Insulating Composition Comprising Expanded Pearlite, Asbestos Fibers, Epoxy Resins, and Vinyl Acetates, for Application to Metal, Concrete, Brick, Fiberboard, and Like Surfaces.
First use May 15, 1962.

SN 173,167. Phillip J. Hermansen, Coraopolis, Pa. Filed July 17, 1963.

TENT-O-WOOD

For Collapsible Prefabricated Housing Structures.
First use on or about May 26, 1963.

SN 189,223. Timber Structures, Inc., Portland, Oreg. Filed Mar. 20, 1964.

TIM-PANEL

Owner of Reg. No. 609,410.
For Wood Decking.
First use Mar. 5, 1963.

SN 203,518. The Newnan Corporation, Newnan, Ga. Filed Oct. 7, 1964.

NEWNA-BAK

For Phenolic Resin-Impregnated Pasteboard-Type Chipboard for Use as a Backing for Sheets and Panels Having a Finished Outer Facing.
First use Aug. 22, 1964.

SN 214,527. Logan Co., Louisville, Ky. Filed Mar. 19, 1965.

FLEX-O-PANEL

For Partitions To Divide Off Space in Buildings and the Like, Made From Metal Wire With Metal Frames.
First use Jan. 21, 1965.

SN 216,216. United States Gypsum Company, Chicago, Ill. Filed Apr. 9, 1965.

RED TOP

Owner of Reg. Nos. 160,315, 579,316, and others.
For Wallboards Especially Formulated for Use in Conjunction With Sources of Radiant Heat in Radiant Heating Systems.
First use Oct. 13, 1964.

SN 218,114. Harris Manufacturing Co., Johnson City, Tenn. Filed May 5, 1965.

NESPAK

For Hardwood Flooring.
First use Jan. 21, 1965.

SN 218,684. Niaqua, Inc., Amherst, N.Y. Filed May 12, 1965.

NIAQUA

For Swimming Pools.
First use April 1963.

SN 219,225. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed May 19, 1965.

3M

Owner of Reg. Nos. 712,738, 767,385, and others.
For Synthetic Resin Material for Application to Various Surfaces (e.g., Athletic Tracks, Runways, Ramps, etc.), To Provide a Resilient Surface Thereon.
First use Aug. 28, 1962.

SN 219,430. William C. Heirich, d.b.a. Sunco Manufacturing Company, Muskogee, Okla. Filed May 21, 1965.

sunSpan

Applicant disclaims the word "Span." Owner of Reg. No. 729,601.
For Aluminum Marquees and Canopies.
First use Feb. 10, 1964.

SN 222,933. Harbison-Walker Refractories Company, Pittsburgh, Pa. Filed July 8, 1965.

CXB

For Refractory Brick.
First use Aug. 1, 1947.

SN 222,935. Harbison-Walker Refractories Company, Pittsburgh, Pa. Filed July 8, 1965.

KXD

For Refractory Brick and Shapes.
First use June 13, 1963.

SN 222,994. United States Plywood Corporation, New York, N.Y. Filed July 8, 1965.

DURA-GUARD

Owner of Reg. Nos. 331,076, 724,105, and others.
For Wood, Wood Fiber, and Lumber Products, i.e., Decorative Paneling.
First use June 14, 1965.

SN 223,054. Thurston Erlandsen Corporation, Sanford, Maine. Filed July 9, 1965.

TEQ

For Cellar Doors.
First use on or about Aug. 25, 1964.

SN 223,138. Mason & Lawrence, Elgin, Ill. Filed July 12, 1965.



Owner of Reg. No. 639,501.
For Storage Structures—Namely, Silos, Cribs and Bins, and Components Thereof.
First use Apr. 28, 1965; Jan. 1, 1917, as to "Ribstone."

SN 223,161. H. H. Robertson Company, Pittsburgh, Pa. Filed July 12, 1965.

VERSACOR

For Protected Metal Building Sheets.
First use June 25, 1965.

SN 223,184. Union Bag-Camp Paper Corporation, New York, N.Y. Filed July 12, 1965.

UNIDOR

For Corrugated Paper Honeycomb Core for Doors.
First use June 7, 1965.

SN 223,337. Panelfold Doors, Inc., Hialeah, Fla. Filed July 14, 1965.

SONICWAL

For Folding Wall Partitions.
First use May 6, 1965.

SN 223,407. Hawkins-Hawkins Co., Inc., Berkeley, Calif. Filed July 15, 1965.



For Metal Highway Guard Rail and Posts.
First use about September 1963.

SN 223,589. Seattle Cedar Lumber Manufacturing Company, Seattle, Wash. Filed July 16, 1965.

SURFSIDE

For Cedar Siding as an Interior and Exterior Construction Material.
First use Dec. 16, 1964.

SN 223,626. Balco, Inc., Wichita, Kans. Filed July 19, 1965.

MULTI-MOVE

For Expansion Joint Cover Structures for Buildings and the Like.
First use June 2, 1965.

SN 223,695. Wallace W. Miller, d.b.a. Vari-Frame Co., El Cajon, Calif. Filed July 19, 1965.

VARI-FRAME

The word "Frame" is disclaimed apart from the mark as shown.
For Metal Door Frames.
First use Apr. 29, 1965.

SN 223,775. Century Manufacturing Company, Inc., Dallas, Tex. Filed July 20, 1965.

CENTURY SEAL

For Thresholds, Weather Strips and Sealing Strips Therefor, and Metal Window Screens.
First use on or about Dec. 1, 1954.

SN 223,878. M. H. Detrick Company, Chicago, Ill. Filed July 21, 1965.

M S

For Refractory Tile.
First use Mar. 23, 1960.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

SN 206,461. M. H. Z. Hachtel & Co., Vorhangschienenfabrik, Musberg, Kreis Boblingen, Wurttemburg, Germany. Filed Nov. 18, 1964.



Owner of German Reg. No. 651,964, dated Mar. 9, 1953.

Curtain Supporting Rails of Metal, Wood, and Plastics, as Well as Parts Thereof—Namely, Side and End Covers, Rolling and Sliding Hangers, Closures for the Locking Openings of Curtain Rails, Supports for the Attachment of Parts to Stone and Wood Walls, Bridges, Guiding Carriages, Clamps for Upper Curtain Valances, End Clamps for Side and End Covers, Attachments for Side Covers, Bands for Window Curtains, Sliding Doors and Fittings for Sliding Doors.

SN 206,649. Republic Industrial Corporation, New York, N.Y. Filed Nov. 20, 1964.



The drawing is lined for blue.

For Industrial Fasteners.

First use Oct. 1, 1963.

SN 208,259. Otto M. Knoof, Jamaica, N.Y. Filed Dec. 16, 1964.



Owner of Reg. No. 709,519.

For Plumbing Fixtures—Namely, Bathtubs, Lavatories, Kitchen Sinks, Service Sinks, Laundry Trays; Cabinets; Stainless Steel Sinks, Water Closets, Bidets, Urinals, and Drinking Fountains.

First use 1948.

SN 213,848. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed Mar. 4, 1965.

SCOTCHFLEX

Owner of Reg. No. 522,761 and others.

For Adhesive Mounting Plates for Electrical or Communication Cable.

First use at least as early as Nov. 5, 1964.

SN 219,598. Otto Mueller, Livonia, Mich. Filed May 24, 1965.

AQUAFLO

For Remote Control Bailing Units for Boats.

First use Apr. 29, 1965.

SN 221,429. Things I Like, Cheverly, Md. Filed June 17, 1965.



The legend "5613 Hawthorne Street, Cheverly, Maryland" is disclaimed apart from the mark as shown.

For Key Chain With Red Ball Attached.

First use May 20, 1965.

SN 222,169. Ted Lederer, Santa Monica, Calif. Filed June 28, 1965.

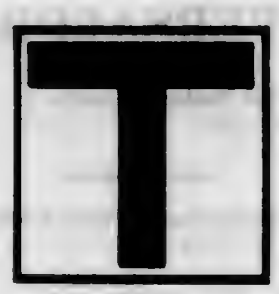


The mark consists of the letters "EC."

For Reversible Sink and Lavatory Hangers.

First use Mar. 15, 1965.

SN 222,282. Teledyne, Inc., Inglewood, Calif. Filed June 29, 1965.



For Fluid Components—Namely, Fittings, Valves, and Connectors.

First use May 19, 1965.

SN 223,128. International Protected Metals, Inc., South Plainfield, N.J. Filed July 12, 1965.



The drawing is lined for orange. Owner of Reg. No. 786,282.
For Plastic-Coated Metal Pipe.
First use May 13, 1965.

SN 223,408. Hawkins-Hawkins Co., Inc., Berkeley, Calif. Filed July 15, 1965.



For Brackets To Contain or Support Merchandise on Motor Vehicles and Brackets for Supporting Signs.
First use about September 1963.

SN 225,673. Pittsburgh Railways Company, Cary, Ill. Filed Aug. 13, 1965.

SEAQUIST

For Aerosol Valves, Valve Caps, Dispensing Heads, and Parts and Attachments Therefor.
First use Feb. 20, 1953.

SN 225,725. California Brass Mfg. Co., Chino, Calif. Filed Aug. 16, 1965.

CAL-PAK

For Valves, Faucets, and Fittings.
First use Feb. 10, 1965.

Class 14 — Metals and Metal Castings and Forgings

SN 221,565. Blackstone Corporation, Jamestown, N.Y. Filed June 21, 1965.



Owner of Reg. Nos. 546,600, 755,013, and others.
For Cast Malleable Iron Parts Including Gears, Pipe Couplings, Drive Shafts, Alternator Rotors, and the Like.
First use May 6, 1965.

Class 15 — Oils and Greases

SN 217,885. Bardahl Manufacturing Corporation, Seattle, Wash. Filed May 3, 1965.



The trademark comprises a red letter "B" and a red numeral "2" separated by a red vertical line, on a yellow oil drop. The drawing is lined for red and yellow.
For Motor Oil Additive.
First use Mar. 31, 1965.

SN 221,526. Sinclair Refining Company, New York, N.Y. Filed June 18, 1965.

Tufflo

For Rubber Process Oils.
First use Apr. 19, 1965.

SN 222,447. The Atlantic Refining Company, Philadelphia, Pa. Filed July 1, 1965.

ARPROL

For Lubricating Oils.
First use on or about Sept. 22, 1941.

SN 222,449. The Atlantic Refining Company, Philadelphia, Pa. Filed July 1, 1965.

DOMINION

For Lubricating Oils.
First use on or about June 6, 1930.

SN 222,451. The Atlantic Refining Company, Philadelphia, Pa. Filed July 1, 1965.

MOGUL

For Lubricating Oils.
First use on or about Jan. 25, 1930.

SN 222,452. The Atlantic Refining Company, Philadelphia, Pa. Filed July 1, 1965.

IDEAL

For Lubricating Oils.
First use on or about Dec. 10, 1929.

Class 16—Protective and Decorative Coatings

SN 190,341. Chas. J. Webb Sons Co., Inc., Philadelphia, Pa., assignee of Corrosion Reaction Consultants, Inc., Dresher, Pa. Filed Apr. 6, 1964.

MASK

For Aerosol Protective Coating Composition Which Cleans, Eliminates Moisture, Prevents Rust, and Lubricates Guns, Fishing Tackle, and Other Sporting Gear and the Like.
First use Jan. 28, 1964.

SN 195,272. Been Products, Inc., Belleville, N.J. Filed June 10, 1964.

SLIP XE-316

For Liquid Coating Compositions, Suitably for Spray Application as a Squeak and Static Arrester for Leather and Plastics, Including Synthetic Sheets, Fibers, Fabrics, and the Like.
First use December 1956.

SN 204,053. Conchemco Incorporated, Kansas City, Mo. Filed Oct. 15, 1964.

COIL-CLAD

For Protective and Decorative Polyester Coatings of All Types and Colors for Precoating Both Ferrous and Non-Ferrous Metals Prior to Forming and Fabrication of the End Product.
First use Oct. 1, 1964.

SN 208,457. Illinois Bronze Powder & Paint Co., Chicago, Ill. Filed Dec. 18, 1964.

NU-TILE

For Aerosol Spray Paints—Namely, Epoxy Paints for Appliances and Tile.
First use on or about Dec. 14, 1964.

SN 217,051. Pioneer Paint & Varnish Co., Tucson, Ariz. Filed Apr. 21, 1965.

BLACK GOLD

For Industrial Building Paints, Enamels, and Primers.
First use Mar. 17, 1953.

SN 217,052. Pioneer Paint & Varnish Co., Tucson, Ariz. Filed Apr. 21, 1965.

RUST-O-PRIME

For Rust-Inhibitive Metal Primers for Exposed Metal Surfaces.
First use July 1964.

SN 217,054. Pioneer Paint & Varnish Co., Tucson, Ariz. Filed Apr. 21, 1965.

WOODSHIELD

For Interior and Exterior Redwood Stain and Seal Finish Coating.
First use February 1963.

SN 223,409. Hawkins-Hawkins Co., Inc., Berkeley, Calif. Filed July 15, 1965.



For Pavement and Curb Paints.
First use about September 1963.

SN 226,467. Pittsburgh Steel Company, Pittsburgh, Pa. Filed Aug. 25, 1965.

PEEL-GUARD

For Strippable Protective Film for Coating Flat Products, Such as Metal Strip and Sheet.
First use July 16, 1965.

Class 17—Tobacco Products

SN 203,458. The American Tobacco Company, New York, N.Y. Filed Oct. 7, 1964.

BRIGHTON

For Cigarettes.
First use Oct. 6, 1964.

SN 209,225. The American Tobacco Company, New York, N.Y. Filed Jan. 4, 1965.



For Cigarettes.
First use Dec. 21, 1964.

SN 209,771. John Cotton Limited, Edinburgh, Scotland. Filed Jan. 12, 1965.



Nassord

Owner of Reg. No. 784,293.
For Cigarettes.
First use Apr. 24, 1964; in commerce Apr. 24, 1964.

SN 217,578. Theodorus Niemeijer N.V., d.b.a. Theodorus Niemeyer N.V., Groningen, Netherlands. Filed Apr. 28, 1965.

HET WAPEN VAN ROTTERDAM

The Dutch words "Het Wapen Van Rotterdam" means in English "the arms of Rotterdam." Owner of Dutch Reg. No. 27,338, dated Jan. 7, 1911.
For Smoking Tobacco.

Class 18 — Medicines and Pharmaceutical Preparations

SN 200,271. Meyer Laboratories, Inc., Detroit, Mich. Filed Aug. 20, 1964.

Meyer

For Medicines and Pharmaceutical Preparations.
First use June 1, 1963; March 1948 as to "Meyer."

SN 210,493. The Upjohn Company, Kalamazoo, Mich. Filed Jan. 22, 1965.

ADEFLOR B

Applicant makes no claim for the letter "B" apart from the mark shown. Owner of Reg. Nos. 705,477, 768,361, and others.
For Fluoride Vitamin Preparation.
First use Jan. 8, 1965.

SN 217,883. Garrett Laboratories, Inc., Baltimore, Md. Filed May 3, 1965.

ANGEL-SWEET

For Medicated Ointment.
First use Apr. 10, 1965.

SN 220,082. Dermik Pharmacal Co., Inc., Syosset, N.Y. Filed June 1, 1965.

VANOXIDE-HC

For Pharmaceutical Preparation for Topical Application in Acne.
First use Sept. 10, 1964.

SN 220,160. Schering Corporation, Bloomfield, N.J. Filed June 1, 1965.

ADIPENE

Owner of Reg. No. 529,527.
For Anti-Diarrheal Preparation for Veterinary Use.
First use on or about Feb. 16, 1965.

SN 220,649. Enzomedic Laboratories, Inc., Milford, Conn. Filed June 8, 1965.

ENZOPRIDE

For Parmaceutical Preparations for the Treatment of Alcoholism and Drug Addiction.
First use May 19, 1965.

SN 220,713. The Upjohn Company, Kalamazoo, Mich. Filed June 8, 1965.

PARVEX PLUS

Owner of Reg. Nos. 640,254 and 689,758.
For Anthelmintic Preparation for Veterinary Use.
First use May 18, 1965.

SN 220,759. Geigy Chemical Corporation, Ardsley, N.Y. Filed June 9, 1965.

PANCORAN

For Analeptic Preparation.
First use June 3, 1965.

SN 220,760. Geigy Chemical Corporation, Ardsley, N.Y. Filed June 9, 1965.

GRIMALDON

For Analgesic Preparation.
First use June 3, 1965.

SN 221,465. Burroughs Wellcome & Co. (U.S.A.) Inc., Tuckahoe, N.Y. Filed June 18, 1965.

NEFATROL

For Inhibitor of Excessive Fatty Acid Mobilization in Conditions Such as Diabetes, Hyperlipidemia, and Hyperthyroidism.
First use June 3, 1965.

SN 221,471. Curts Laboratories, Inc., Kansas City, Kans. Filed June 18, 1965.

MICRO-ZENE

For Suspension of Phenothiazine With Hematinic Minerals, for Veterinary Use.
First use Oct. 14, 1960.

SN 221,472. Curts Laboratories, Inc., Kansas City, Kans. Filed June 18, 1965.

MICRO-ZENE-L

For Suspension of Phenothiazine and Lead Arsenate With Hematinic Minerals, for Veterinary Use.
First use Oct. 14, 1960.

SN 221,473. Curts Laboratories, Inc., Kansas City, Kans. Filed June 18, 1965.

PHENO-CU-SATE

For Anthelmintic Mixture of Phenothiazine, Copper Sulfate, and Lead Arsenate, for Veterinary Use.
First use September 1953.

SN 221,903. Dellen Inc., Omaha, Nebr. Filed June 24, 1965.

DEVAC

For Canine Distemper Vaccine.
First use Mar. 26, 1965.

SN 222,045. Marion Laboratories, Inc., Kansas City, Mo. Filed June 25, 1965.

VASOBID

For Nitroglycerin Capsules.
First use June 3, 1965.

SN 230,219. Colgate-Palmolive Company, New York, N.Y. Filed Oct. 15, 1965.

GERILIQUIDO

Owner of Reg. No. 673,101.
For Geriatric Medication.
First use on or about Nov. 2, 1964.

Class 19—Vehicles

SN 108,818. H. K. Porter Company, Inc., Pittsburgh, Pa. Filed Nov. 21, 1960.

THERMOBOND

For Bonded Brake Shoes.
First use Aug. 12, 1960.

SN 205,552. Wheel Corporation of America, Long Beach, Calif., by change of name from Wheel "T/R" Corporation of America, Long Beach, Calif. Filed Nov. 4, 1964.

RADER

For Metal Automobile Wheels, Hub Caps, and Decorative Spinners for Hub Caps.
First use Oct. 1, 1962.

SN 207,178. Boats, Inc., Sheboygan, Wis. Filed Nov. 27, 1964.

SPAN

For Fibre Glass Boats.
First use Sept. 15, 1964; Sept. 1, 1960, as to "Span."

SN 215,365. Vega Industries, Inc., Hialeah, Fla. Filed Mar. 30, 1965.

Vega

For Boats.
First use June 1962.

SN 217,793. Marvin Saska, d.b.a. Arkansas Boat Company, Hope, Arkansas. Filed Apr. 30, 1965.

STARLITE

For Pontoon Boats and Components Therefor.
First use July 28, 1960.

SN 218,014. The Lake Auto Radiator Mfg. Co., Cleveland, Ohio. Filed May 4, 1965.

LAKE

Owner of Reg. No. 760,257.
For Radiator Cores for Vehicles, Engines, and Industrial Equipment.
First use September 1947; September 1925 as to "Lake."

SN 218,176. Butler Aviation Company, New York, N.Y. Filed May 6, 1965.

BUTLER AVIATION

The upper half of the pyramid design enclosed in the letter "B" is lined for the color blue.
For Airplanes and Structural Parts Thereof.
First use Dec. 1, 1962.

SN 218,510. Welsh Co., St. Louis, Mo. Filed May 10, 1965.

ASTRO-TYKE

For Infants' Carriages and Strollers.
First use Nov. 16, 1964.

Class 21—Electrical Apparatus, Machines, and Supplies

SN 182,878. Illinois Tool Works Inc., Chicago, Ill. Filed Dec. 12, 1963.



The broken lining in the drawing is for shading purposes only.
For Small Electrical Components Comprising Capacitors, Resistors, and Lead Assemblies Therefor.
Firs use at least early as Nov. 4, 1963.

SN 206,832. Co-Operative Industries, Inc., Chester, N.J. Filed Nov. 24, 1964.

duraflex

Owner of Reg. Nos. 516,504 and 795,522.
For Leads and Cables, Including Terminals for Mechanical and Electrical Connections, Used for Carrying Electrical Energy for the Operation of Automotive and Aircraft Engines, and the Controls Therefor.
First use Sept. 19, 1950.

SN 208,161. AMP Incorporated, Harrisburg, Pa. Filed Dec. 15, 1964.

AMPLIVERSAL

Owner of Reg. Nos. 405,714, 747,195, and others.
For Electrical Connectors.
First use Dec. 2, 1964.

SN 208,584. Jefferson Electric Company, Bellwood, Ill. Filed Dec. 21, 1964.

CONVERT-A-MERC

For Prewired Lamp Socket and Ballast Combination Plus Mounting Hardware for Converting Outdoor Incandescent Lamps to Mercury Vapor Lamps.
First use Apr. 10, 1964.

SN 210,281. Ronson Corporation, Woodbridge, N.J. Filed Jan. 19, 1965.

RONSON

Owner of Reg. Nos. 160,372, 768,070, and others.
For Electric Knives, Electric Blenders, and Electric Can Openers.
First use Mar. 18, 1962.

SN 212,171. The Whitney Blake Company, Hamden, Conn. Filed Feb. 16, 1965.

UNIPAIR

For Insulated Electric Wire.
First use on or about Nov. 24, 1964.

SN 212,190. Coleman Cable & Wire Company, River Grove, Ill. Filed Feb. 17, 1965.

TUFFCOTE

Owner of Reg. No. 687,146.
For Insulated Electric Wire and Cable.
First use June 3, 1964.

SN 216,030. Waters Manufacturing, Inc., Wayland, Mass. Filed Apr. 7, 1965.

CLIPREAMP

For Radio Receiving and Transmitting Equipment and Accessories, Specifically, Speech Clipping Amplifiers.
First use Mar. 12, 1965.

SN 216,154. Ekco Products Company, Chicago, Ill. Filed Apr. 9, 1965.

EPIC

For Battery Operated Electric Rotisserie and Barbeque Grill.
First use Feb. 18, 1965.

SN 216,337. Perma-Power Company, Chicago, Ill. Filed Apr. 12, 1965.

Sound Cruiser

For Vehicle Mounted Sound Amplifying System.
First use September 1964.

SN 216,385. Channel Master Corporation, Ellenville, N.Y. Filed Apr. 13, 1965.

CRESTWOOD

For Antenna Rotators and Parts Thereof.
First use Mar. 25, 1965.

SN 216,542. Toyomenka, Inc., New York, N.Y. Filed Apr. 14, 1965.

MICROSONIC

For Portable Radio Receivers.
First use Feb. 26, 1965.

SN 216,655. B & B Engineering Corporation, Norwood, La. Filed Apr. 16, 1965.

TRUFLIGHT

For Navigation Lights, Traffic Signals, Airways Beacons, and Directional Lights for Vehicular Traffic, i.e., Special Traffic Signals.
First use 1952.

SN 216,852. Minneapolis Scientific Controls Corp., d.b.a. Hol-Dem Electric Fencer Co., Minneapolis, Minn. Filed Apr. 19, 1965.

KING-STING

For Electric Fence Controllers.
First use Mar. 31, 1965.

SN 217,076. Allied Radio Corporation, Chicago, Ill. Filed Apr. 22, 1965.

SAFARI

For Citizens Band Transceiver.
First use Mar. 8, 1965.

SN 217,131. Natvar Corporation, Woodbridge, N.J. Filed Apr. 22, 1965.

POLYTERAGLAS

Owner of Reg. No. 704,233.
For Electrical Insulation Material in Sheet and Tape Form.
First use Oct. 10, 1962.

SN 217,329. GFC Engineering & Sales Corporation, Los Angeles, Calif. Filed Apr. 26, 1965.

SPLICEMASTER

For Kit, Consisting of a Wire Holder With Connector Dispenser, Cable Clamps, and Carrying Case, Used for Splicing of Cable With B Wire Connectors.
First use Oct. 1, 1964.

SN 220,935. GC Electronics, Inc., Providence, R.I. Filed June 11, 1965.

ELECTROCRAFT

For Phone Plugs, Phone Jacks, Adaptors, Male to Female Microphone Connectors, Test Leads, Cable Ties, Alligator Clips, Banana Plugs and Jacks, Binding Posts, Test Prods, Switches, and Long-Frame Jacks.
First use Sept. 15, 1955.

SN 221,566. Blackstone Corporation, Jamestown, N.Y. Filed June 21, 1965.

BLACKSTONE

Owner of Reg. Nos. 546,600, 755,013, and others.
For Ultrasonic Cleaning Apparatus Comprising Transducers, Cleaning Tanks, Washing Tanks and Electrical Supply Units and Ultrasonic Probes, Ultrasonic Transducers, Ultrasonic Supply Units, and the Like.
First use Nov. 15, 1962.

Class 22 — Games, Toys, and Sporting Goods

SN 179,069. Ben Sayers Limited, North Berwick, Scotland. Filed Oct. 15, 1963.

STRONGHOLD

For Golf Club Shaft and Club Head Connecting Socket Incorporated as an Integral Part of the Club Head.
First use Jan. 27, 1958; in commerce 1958.

SN 206,666. T.P. Laboratories, Inc., Westville, Ind. Filed Nov. 20, 1964.

VARSITY GUARD

No registration rights are claimed for the word "Guard" apart from the mark shown, but the applicant waives none of its common law rights in the mark shown or any feature thereof.
For Protective Mouth Guards for Use in Athletics.
First use Jan. 3, 1964.

SN 206,908. Airport Coach Service, Orange, Calif., and Airport Service, Inc., Los Angeles, Calif. (joint venture). Filed Nov. 25, 1964.

AIRPORT BOUND?

For Equipment for Playing a Game.
First use on or about Nov. 6, 1964.

SN 208,536. Brunswick Corporation, Chicago, Ill. Filed Dec. 21, 1964.

VISCOUNT

For Billiard Supplies and Equipment—Namely, Tables, Cues, and Balls.
First use Aug. 28, 1964.

SN 212,337. Mattel, Inc., Hawthorne, Calif. Filed Feb. 18, 1965.

SMACK-A-ROO

For Equipment Sold as a Unit for Playing a Board-Type Action Game.
First use Jan. 26, 1965.

SN 213,583. Lines Bros., Inc., New York, N.Y. Filed Mar. 8, 1965.

AIR LINES

For Model and Toy Aeroplanes, and Kits of Parts for Making Model and Toy Aeroplanes.
First use Nov. 10, 1964.

SN 213,584. Lines Bros., Inc., New York, N.Y. Filed Mar. 8, 1965.

AIR LINES

For Model and Toy Aeroplanes, and Kits of Parts for Making Model and Toy Aeroplanes.
First use Nov. 10, 1964.

SN 215,984. Mattel, Inc., Hawthorne, Calif. Filed Apr. 7, 1965.

BABY COLLEEN

Applicant disclaims the term "Baby" apart from the mark as shown.
For Doll, Doll Clothing, and Doll Accessories.
First use Mar. 23, 1965.

SN 216,516. Louis Marx & Co., Inc., New York, N.Y. Filed Apr. 14, 1965.

CHIEF CHEROKEE

Toy Figures and Accessories Therefor, and Toy Sets Containing Same.
First use Apr. 5, 1965.

SN 216,730. Jerome J. Palermino, Savannah, Ga. Filed Apr. 16, 1965.

RETALIATE

For Equipment Sold as a Unit for Playing a Board Game.
First use Mar. 17, 1965.

SN 218,541. Emenee Industries, Inc., New York, N.Y. Filed May 11, 1965.

LOLLYPOP FACTORY

For Toy Cooking Sets.
First use May 1, 1965.

SN 218,587. The Toy Development Center, Inc., Beverly Hills, Calif. Filed May 11, 1965.

Wacky

Owner of Reg. No. 727,443.
For Mechanical Wind-Up Toys.
First use Aug. 28, 1964.

SN 219,384. The Program Aids Company, Inc., Mount Vernon, N.Y. Filed May 7, 1965.

ADJUSTO-BAR

For Chinning Bar.
First use September 1962.

SN 219,639. Transogram Company, Inc., New York, N.Y. Filed May 24, 1965.

DAWK

For Plastic Figure, in the Nature of a Doll, Holding a Sign.
First use Apr. 8, 1965.

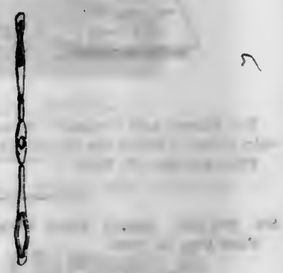
Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

SN 176,425. Bowles Engineering Corporation, Silver Spring, Md. Filed Sept. 6, 1963.

OPTIFORM

Owner of Reg. No. 783,369.
For Exposed and Processed Sheets of Photopolymer Material Having Passages Formed Therein To Define Two-Dimensional Fluid Flow Patterns Which Are Suitable for Use in Fluid Elements, Components, and Systems.
First use May 8, 1963.

SN 185,823. Steel Heddle Manufacturing Company, Philadelphia, Pa. Filed Jan. 31, 1964.



No claim is made to the representation of the goods apart from the mark.
For Heddles for Weaving Looms.
First use 1932.

SN 193,593. U.S. Postage Box Company, San Antonio, Tex. Filed May 15, 1964.



For Stamp Vending Machines.
First use Dec. 20, 1962.

SN 205,632. Turner Applicator Company, Port Jefferson, Ohio. Filed Nov. 5, 1964.



No claim is made to the words "Turner Applicator" apart from the mark as shown.
For Machine for Applying Asphalt to Concrete and Other Surfaces.
First use Mar. 15, 1964.

SN 207,105. American Products, Inc., Spearville, Kans. Filed Nov. 30, 1964.

CRUST-BUSTER

For Harrow-Type Farm Implement.
First use on or about May 1, 1962.

SN 207,423. Racine & Vickers-Armstrongs, Inc., Racine, Wis. Filed Dec. 3, 1964.



For Pumps and Hydraulic Power Units Including a Reservoir, Pump, a Motor for Driving the Pump, and Parts Thereof.
First use Dec. 27, 1963.

SN 208,135. Sperry Rand Corporation, New York, N.Y. Filed Dec. 14, 1964.

LEKTRIEVER

For Mechanized Filing Units.
First use Apr. 30, 1964.

SN 208,345. Desma-Werke G.m.b.H., Uesen, near Bremen, Germany. Filed Dec. 17, 1964.



Owner of German Reg. No. 792,771, dated Feb. 21, 1964.
For Machines for Manufacturing Shoes, Machines for Spraying Coatings Upon Various Articles; Machines, Machine Parts and Forms for the Manufacture of Rubber and Plastic Products—Namely, Shoe Soles, Sealing Rings, Pressure Rings, Collars, Sealing Ledges, Closure Parts, Cone Belts, Plaited Bags, and Hot Water Bottles.

SN 208,346. Desma-Werke G.m.b.H., Uesen, near Bremen, Germany. Filed Dec. 17, 1964.

DESMA

Owner of German Reg. No. 793,348, dated Apr. 8, 1964.
For Machines for Manufacturing Shoes, Machines for Spraying Coatings Upon Various Articles; Machines, Machine Parts and Forms for the Manufacture of Rubber and Plastic Products—Namely, Shoe Soles, Sealing Rings, Pressure Rings, Collars, Sealing Ledges, Closure Parts, Cone Belts, Plaited Bags, and Hot Water Bottles.

SN 210,017. Kumag AG, Zurich, Switzerland. Filed Jan. 15, 1965.

KUMAG

Owner of Swiss Reg. No. 205,489, dated Aug. 6, 1964.
For Riveting Machines; Riveting Presses; Riveting Tools; Electro-Magnetic Classifying and Conveying Apparatus; Part and Full Automatic Assembly Machines and Electric and Electronic Operation Controllers for the Above Machines; Conveyors for Piece Goods and Parcels; Fully-Automatic Staplers for Boxes; Staple Removers; and Fully-Automatic Loading and Unloading Machines.
First use Mar. 15, 1932; in commerce Aug. 19, 1959.

SN 211,378. New Jersey Machine Corporation, Hoboken, N.J. Filed Feb. 4, 1965.

JERSEY

For Box Making, Labeling, and Filling Machines.
First use on or about June 9, 1955.

SN 216,365. The Union Fork and Hoe Company, Columbus, Ohio. Filed Apr. 12, 1965.

PULL-EZY

Owner of Reg. No. 416,065.
For Hand-Operated Lawn and Garden Tools—Namely, Cultivators, Rakes, Hoes, and Hooks.
First use 1918.

SN 216,506. Honda Giken Kogyo Kabushiki Kaisha, Chuo-ku, Tokyo, Japan. Filed Apr. 14, 1965.



Owner of U.S. Reg. Nos. 776,895 and 776,896; and Japanese Reg. No. 591,503, dated July 3, 1962.
For Internal Combustion Engines and Their Parts.

SN 216,507. Honda Giken Kogyo Kabushiki Kaisha, Chuo-ku, Tokyo, Japan. Filed Apr. 14, 1965.



Owner of U.S. Reg. Nos. 776,895 and 776,896; and Japanese Reg. No. 602,898, dated Dec. 25, 1962.
For Internal Combustion Engines and Their Parts.

SN 216,905. Luther R. Walraven, d.b.a. Wally Walraven, Wall Raven, and Wally Walhaven, Newport Beach, Calif. Filed Apr. 19, 1965.

MULTI-NEEDLE

For Frames Which Are Used To Stretch Material, for Use in Conjunction With a Silkscreen Process, Which Frames Are Made and/or Sold by Applicant.
First use Dec. 10, 1963.

SN 217,176. Crown Controls Corporation, New Bremen, Ohio. Filed Apr. 23, 1965.

CROWN

Owner of Reg. Nos. 435,848, 701, 748, and others.
For Materials Handling Equipment—Namely, Lift Trucks, Pallet Trucks, and the Like.
First use on or about Feb. 6, 1959.

SN 218,265. Best Plastic Products, Inc., Chicago, Ill. Filed May 7, 1965.



For Laminator for Applying Protective Laminate Coatings to Paper Articles.
First use Mar. 31, 1965.

SN 218,333. Sperry Rand Corporation, New Holland, Pa. Filed May 7, 1965.

STACKCRUISER

For Farm Machinery—Namely, Self-Propelled Automatic Bale Loading and Stacking Wagons.
First use Nov. 6, 1964.

SN 218,343. Union Carbide Corporation, New York, N.Y. Filed May 7, 1965.

NOJAX

Owner of Reg. No. 417,447.
For Feeder Machinery for Food Casings.
First use on or about Dec. 4, 1964.

SN 218,364. American Marking Company, Hillside, N.J. Filed May 10, 1965.

MAJOR

For Automatic Marking Machines for Making an Impression on the Surface of Articles.
First use 1951.

SN 218,366. American Marking Company, d.b.a. Cozzone Marking Company, Hillside, N.J. Filed May 10, 1965.

BOT-M-CODER

For Automatic Marking Machines for Making an Impression on the Surface of Articles.
First use 1955.

SN 218,367. American Marking Company, d.b.a. Cozzone Marking Company, Hillside, N.J. Filed May 10, 1965.

COZZONE

For Automatic Marking Machines for Making an Impression on the Surface of Articles.
First use 1958.

SN 218,370. American Marking Company, d.b.a. Cozzone Marking Company, Hillside, N.J. Filed May 10, 1965.

CADET

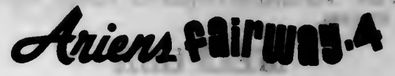
For Automatic Marking Machines for Making an Impression on the Surface of Articles.
First use 1951.

SN 218,827. Bart N. Eberlin, d.b.a. Dial 'n Sew Company, Chicago, Ill. Filed May 3, 1965.



For Household Electric Sewing Machines.
First use Apr. 20, 1965.

SN 218,942. Ariens Company, Brillon, Wis. Filed May 17, 1965.



Owner of Reg. Nos. 396,784, 510,552, and others.
For Wheeled, Motor-Operated Mowers.
First use Mar. 5, 1965.

SN 219,065. Process Engineering Corporation, Crystal Lake, Ill. Filed May 17, 1965.

SIZE WISE

For Self-Adjusting Socket Wrench and Parts Thereof.
First use May 1, 1965.

SN 221,574. Con-Rad Corporation, Tulsa, Okla. Filed June 21, 1965.

DYNACOUSTIC

For Industrial Silencers.
First use June 7, 1965.

SN 221,757. Royal Typewriter Company, Inc., New York, N.Y. Filed June 22, 1965.

SKYLARK

Owner of Reg. No. 758,802.
For Typewriters and Parts Thereof.
First use June 11, 1965.

Class 25 — Locks and Safes

SN 217,635. Independent Lock Company, Fitchburg, Mass. Filed Apr. 29, 1965.

LOCKWOOD

Owner of Reg. Nos. 391,376, 719,249, and others.
For Door, Closet, and Bathroom Lock Sets, With and Without Key Controlled Locking Means, and Keys.
First use July 3, 1964; Jan. 1, 1885, as to "Lockwood."

Class 26 — Measuring and Scientific Appliances

SN 193,385. Kabushiki Kaisha Sankyo Seiki Seisakusho, Suwa-gun, Nagano-ken, Japan. Filed May 13, 1964.

Sankyo
LOAD-MATIC

For Photographic Cameras, Cinematographic Cameras, and Projectors.
First use Oct. 15, 1963; in commerce Dec. 31, 1963.
Subj. to Intf. with SN 186,366.

SN 226,464. Panelgraphic Corporation, Caldwell, N.J. Filed Aug. 25, 1965.

MELPLEX

For Instrument Panels Whose Fronts Show Substantially No Readout Information Until Back-Lit.
First use Aug. 5, 1965.

SN 226,465. Panelgraphic Corporation, Caldwell, N.J. Filed Aug. 25, 1965.

FLASH-FRONT

Instrument Panels Whose Fronts Show Substantially No Readout Information Until Back-Lit.
First use May 25, 1965.

Class 27 — Horological Instruments

SN 217,058. A. Schwarcz & Son, Inc., New York, N.Y. Filed Apr. 21, 1965.

FASHIONTIME DE PORTINOUX

For Watches.
First use Oct. 18, 1963.

SN 219,823. Robert Sedloff, Chicago, Ill. Filed May 26, 1965.

JULES JACQUARD

The name "Jules Jacquard" is fictitious.
For Watches.
First use Feb. 5, 1965.

SN 221,539. Uhrenfabrik Buren Aktiengesellschaft (Buren Watch Company S.A.), Buren, Bern, Switzerland. Filed June 18, 1965.

BUREN

Owner of Swiss Reg. No. 196,370, dated Jan. 23, 1963; and U.S. Reg. Nos. 185,356 and 417,243.
For Watches and Parts Thereof.

SN 223,230. General Time Corporation, New York, N.Y. Filed July 13, 1965.

TRAVEL BEN

The word "Travel" is disclaimed apart from the phrase "Travel Ben."
For Clocks.
First use June 1, 1965.

SN 223,596. Sunbeam Corporation, Chicago, Ill. Filed July 16, 1965.

RUSTIC TIME

Applicant disclaims the exclusive right to the word "Time" except as included in the trademark shown herein.
For Clocks.
First use May 13, 1965.

Class 28 — Jewelry and Precious-Metal Ware

SN 213,635. Fine Design Jewelery Co., Milwaukee, Wis. Filed Mar. 8, 1965.

STAR MARK

The word "Mark" is disclaimed apart from the mark as shown.
For Jewelry.
First use July 1, 1963.

SN 222,977. Crockett William Riley, Fredericksburg, Tex. Filed July 8, 1965.

TURQUOISE GNOMES

The word "Turquoise" is disclaimed apart from the mark as shown.
For Turquoise Stones.
First use June 14, 1965.

SN 225,105. Hattie Carnegie, Inc., New York, N.Y. Filed Aug. 6, 1965.

POOPED PUSSY CAT

For Jewelry—Namely, Buckles and Buttons Made in Whole or in Part of Precious Metal or Plated With the Same, Bracelets, Bracelet Chains and Links, Brooches and Pins, Earrings, Pendants, Finger and Scarf Rings, Lockets, Lavallieres, Breast Pins, Necklaces, Jewelled Hair Ornaments, Jewelled Shoe Buckles, and Jewelled Cases and Holders.
First use Apr. 1, 1965.

SN 225,106. Hattie Carnegie, Inc., New York, N.Y. Filed Aug. 6, 1965.

POOPED POODLE

For Jewelry—Namely, Buckles and Buttons Made in Whole or in Part of Precious Metal or Plated With the Same, Bracelets, Bracelet Chains and Links, Brooches and Pins, Earrings, Pendants, Finger and Scarf Rings, Lockets, Lavallieres, Breast Pins, Necklaces, Jewelled Hair Ornaments, Jewelled Shoe Buckles, and Jewelled Cases and Holders.
First use Apr. 1, 1965.

Class 29 — Brooms, Brushes, and Dusters

SN 223,047. Donald B. Schoenfield and Milton H. Schoenfield (partnership), Los Angeles, Calif. Filed July 9, 1965.

LADY IRENE

For Combination Clothes Brush, Lint Remover, and Perfume Container.
First use June 3, 1965.

Class 30 — Crockery, Earthenware, and Porcelain

SN 215,890. Onondaga Pottery Company, Syracuse, N.Y. Filed Apr. 6, 1965.

COURTSHIP

For Dinnerware and Tableware Made of China.
First use Feb. 26, 1965.

SN 216,187. Onondaga Pottery Company, Syracuse, N.Y. Filed Apr. 9, 1965.

FLIRTATION

For Dinnerware and Tableware Made of China.
First use Feb. 26, 1965.

Class 32 — Furniture and Upholstery

SN 210,297. The Getschal Company, Inc., New York, N.Y. Filed Jan. 21, 1965.

ISOMETRIC

For Mattresses.
First use Dec. 8, 1964.

SN 211,834. New York Feather Co., Inc., Brooklyn, N.Y. Filed Feb. 11, 1965.

TAN O DOWN

The descriptive word "Down" is hereby disclaimed apart from the mark as shown.
For Pillows and Cushions.
First use October 1962.

SN 217,093. Clopay Corporation, Cincinnati, Ohio. Filed Apr. 22, 1965.

INSULITE

For Opaque Room Darkening Window Shades.
First use September 1961.

SN 220,645. Aluminum Extrusions, Inc., Charlotte, Mich. Filed June 8, 1965.

OCTET

For Modular Furniture—Namely, Posts and Poles, Shelves, Cabinets, Tables, Drawers, Cases, Lamps and Other Accessories; and Supporting Devices for Mounting the Shelves, Cabinets, Tables, Drawers, Cases, Lamps, and Other Accessories on Said Posts and Poles.
First use Oct. 15, 1964.

Class 33 — Glassware

SN 213,974. Holiday Inns of America, Inc., Memphis, Tenn. Filed Mar. 12, 1965.



Owner of Reg. Nos. 592,539, 748,127, and others.
For Drinking Glasses.
First use at least as early as Aug. 1, 1957.

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 157,024. Thermonaut Corp., North Hollywood, Calif. Filed Nov. 9, 1962.

AQUADYNE

For Heat Exchangers, Specifically Water Heaters Such as Swimming Pool Heaters.
First use Mar. 19, 1959.

SN 210,232. Ronson Corporation, Woodbridge, N.J. Filed Jan. 19, 1965.

RONSON

Owner of Reg. Nos. 160,372, 768,070, and others.
For Torches.
First use Sept. 21, 1964.

SN 221,564. Blackstone Corporation, Jamestown, N.Y. Filed June 21, 1965.

BLACKSTONE



Owner of Reg. Nos. 546,600, 755,013, and others.
For Soldering and Tinning Flux.
First use February 1964.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 207,334. Southern Oil Stores, Inc., Jacksonville, Fla. Filed Dec. 2, 1964.

SUPER SONIC

For Tires.
First use May 28, 1964; 1958 as to "Sonic."

SN 207,335. Southern Oil Stores, Inc., Jacksonville, Fla. Filed Dec. 2, 1964.

SONIC

For Tires.
First use June 12, 1964.

SN 207,336. Southern Oil Stores, Inc., Jacksonville, Fla. Filed Dec. 2, 1964.

SONIC FLIGHT

For Tires.
First use May 28, 1964; 1958 as to "Sonic."

SN 207,337. Southern Oil Stores, Inc., Jacksonville, Fla. Filed Dec. 2, 1964.

ULTRA SONIC

For Tires.
First use May 28, 1964; 1958 as to "Sonic."

SN 207,339. Southern Oil Stores, Inc., Jacksonville, Fla. Filed Dec. 2, 1964.

SONIC COMMERCIAL

The word "Commercial" is disclaimed apart from the mark as shown.
For Tires.
First use June 23, 1964.

SN 207,340. Southern Oil Stores, Inc., Jacksonville, Fla. Filed Dec. 2, 1964.

SONIC TRACTION

For Tires.
First use Aug. 19, 1964; 1958 as to "Sonic."

SN 207,341. Southern Oil Stores, Inc., Jacksonville, Fla. Filed Dec. 2, 1964.

SONIC LUG

The word "Lug" is disclaimed apart from the mark as shown.
For Tires.
First use July 24, 1964.

SN 207,342. Southern Oil Stores, Inc., Jacksonville, Fla. Filed Dec. 2, 1964.

WINTER SONIC

For Tires.
First use Sept. 21, 1964; 1958 as to "Sonic."

SN 217,809. United States Pipe and Foundry Company, Birmingham, Ala. Filed Apr. 30, 1965.

LOK-TYTON

Owner of Reg. Nos. 646,725, 715,983, and others.
For Gaskets for Use in Pipe Joints.
First use on or about Apr. 9, 1965.

SN 217,924. The Original Tire Company, Cincinnati, Ohio. Filed May 3, 1965.

RAIN-MASTER

For Vehicle Tires and Tubes.
First use Apr. 20, 1965.

SN 218,056. The Armstrong Rubber Company, West Haven, Conn. Filed May 5, 1965.

SPORTWAY

For Pneumatic Tires.
First use Feb. 18, 1965.

Class 36 — Musical Instruments and Supplies

SN 195,379. Dictaphone Corporation, Bridgeport, Conn. Filed June 11, 1964.



For Electrically-Operated Sound Recording and Reproducing Machines—Namely, Dictating and Transcribing Machines, and Parts for Such Machines.
First use March 1962.

SN 195,380. Dictaphone Corporation, Bridgeport, Conn. Filed June 11, 1964.



For Records for Sound Recording and Reproducing Machines—Namely, Belt-Type Records for Use in Recording and Transcribing Dictation, and Envelopes and Boxes Used To Hold Said Records.
First use June 1962.

SN 211,812. The Greatest Book, Inc., d.b.a. Creative Sound Recordings, Los Angeles, Calif. Filed Feb. 11, 1965.



CREATIVE SOUND

Applicant disclaims the word "Sound" apart from the mark as shown.
For Phonograph Records.
First use Dec. 27, 1964.

SN 212,757. Marvin T. Ellis, d.b.a. Pathway Recording & Publishing Co., Ypsilanti, Mich. Filed Feb. 25, 1965.



For Phonograph Records.
First use Dec. 20, 1962.

SN 213,163. Scepter Records, Inc., New York, N.Y. Filed Mar. 2, 1965.



Applicant disclaims the word "Records" apart from the mark as shown.
For Phonograph Records.
First use May 22, 1961.

SN 213,669. Robert L. Halvorson, d.b.a. Halvorson Associates, Chevy Chase, Md. Filed Mar. 9, 1965.

TUTOR-TAPE

For Tape Recordings of Educational Materials.
First use Feb. 20, 1965.

Class 37 — Paper and Stationery

SN 176,712. Coated Products, Inc., Middlesex, N.J. Filed Sept. 11, 1963.



For Pressure Sensitive Label Stock.
First use Apr. 14, 1959.

SN 205,660. Capital Paper Company, Indianapolis, Ind. Filed Nov. 6, 1964.



The drawing is lined for blue and grey, but no claim is made to the colors apart from the mark as shown.
For Toilet Paper.
First use Oct. 1, 1912.

SN 215,085. S. S. Kresge Company, Detroit, Mich. Filed Mar. 26, 1965.



Owner of Reg. Nos. 743,912, 791,329, and others.
For Utility Pens and Ballpoint Pens.
First use on or before Oct. 12, 1964.

SN 215,888. Oneida Paper Products, Inc., Clifton, N.J. Filed Apr. 6, 1965.

ONCOTE "S"

For Plain or Printed Roll Stock of Paper, Plastic, Cellophane, and/or Laminations Thereof, Used in Making Sheets, Wrappers, and/or Bags.
First use Sept. 17, 1963.

SN 217,300. The Central Ohio Paper Company, Columbus, Ohio. Filed Apr. 26, 1965.

TELACOP

For Converted Rolls of Printing Paper for Use on Telautograph or Similar Machines.
First use Nov. 20, 1964.

SN 217,497. R. J. Reynolds Tobacco Company, Winston-Salem, N.C. Filed Apr. 27, 1965.

DEPENDO-SEAL

For Foil-Laminated Wrapping Paper.
First use Oct. 20, 1964.

Class 38 — Prints and Publications

SN 163,281. Science Research Associates, Inc., Chicago, Ill. Filed Feb. 21, 1963.

WORK
widening occupational roles kit

No claim of exclusive rights is made in and to the phrase "Widening Occupational Roles Kit," except as part of the entire mark.
For Sets of Vocational Guidance Publications for Use in Schools and Similar Institutions.
First use May 4, 1962.

SN 187,623. Sokagakkai Religious Corporation, Shinjuku-ku, Tokyo, Japan. Filed Feb. 27, 1964.

聖教グラフ

Applicant disclaims the use of the word "Graphic" apart from the mark as shown. The translation of the Japanese script is "The Seikyo Graphic"; the Japanese words "The Seikyo" when translated into English mean "holy teaching." Owner of Japanese Reg. No. 578,318, dated Aug. 1, 1961.
For Weekly Magazine.

SN 204,705. Philadelphia Chewing Gum Corporation, d.b.a. Trading Card Features, Havertown, Pa. Filed Oct. 23, 1964.



The drawing is lined for the color red. Applicant disclaims the words "Trading Card Features" apart from the mark as shown. Owner of Reg. Nos. 512,653 and 629,668.
For Trading Cards.
First use Aug. 10, 1964.

SN 205,816. Shirley Ann Hewitt, Houston, Tex. Filed Nov. 9, 1964.

The Wish Book

The words "The" and "Book" are disclaimed apart from the mark as a whole.
For Catalog.
First use Nov. 7, 1964.

SN 208,157. The Music Trades Corporation, New York, N.Y. Filed Dec. 10, 1964.

THE PURCHASER'S *Guide* TO THE MUSIC INDUSTRIES

For Annual Trade Directory.
First use March 1920.

SN 211,261. C. E. Culley, d.b.a. Tip-Off Publishing Company, Nashville, Tenn. Filed Feb. 3, 1965.



For Football and Basketball News Sheet.
First use Sept. 1, 1954.

SN 211,956. Mine Publications, Inc., Minneapolis, Minn., assignee of Youth Associates Company, Minneapolis, Minn. Filed Feb. 12, 1965.

Escholier

The term "Escholier" may be translated as "little scholar."
For Magazine for Religious Teaching.
First use September 1948.

SN 214,422. E. D. Bullard Company, Sausalito, Calif. Filed Mar. 18, 1965.

WHAT'S NEW IN SAFETY

For Newsletter Published From Time to Time.
First use September 1941.

SN 215,467. Joseph Cosmo Westmore, d.b.a. Typorama, Camden, N.J. Filed Mar. 31, 1965.

TYPORAMA

For Printed Booklets Comprising a Course in Instructions in Typing.
First use Mar. 1, 1960.

SN 215,969. Institute of Gas Technology, Chicago, Ill. Filed Apr. 7, 1965.

GAS SCOPE

For Magazine for Dissemination to the Gas Industry.
First use Mar. 25, 1965.

SN 217,106. Fife & Drum Publishing Co., Inc., Augusta, Maine. Filed Apr. 22, 1965.

FIFE & DRUM

For Magazine.
First use Mar. 9, 1965.

SN 217,765. National Safety Council, Chicago, Ill. Filed Apr. 30, 1965.



For Books, Pamphlets, and Publications—Namely, Magazines, Technical Releases, Press Releases, Leaflets, Posters, Newsletters, and Industrial Data Sheets, Issued Periodically or From Time to Time, Dealing With Safety and Accident Prevention.
First use October 1960.

SN 218,456. Meredith Publishing Company, Des Moines, Iowa. Filed May 10, 1965.

PULPIT DIGEST

For Magazine.
First use May 1936.

SN 221,857. Scholastic Magazines, Inc., New York, N.Y. Filed June 23, 1965.

FOUR WINDS PRESS

TLe word "Press" is disclaimed apart from the mark as shown.
For Books.
First use June 3, 1965.

SN 225,190. Norcross, Inc., New York, N.Y. Filed Aug. 6, 1965.

MARSHMALLOW

For Greeting Cards.
First use July 13, 1965.

SN 225,191. Norcross, Inc., New York, N.Y. Filed Aug. 6, 1965.

NUTMEG

For Greeting Cards.
First use July 13, 1965.

SN 225,192. Norcross, Inc., New York, N.Y. Filed Aug. 6, 1965.

PEPPERMINT

For Greeting Cards.
First use July 13, 1965.

Class 39 — Clothing

SN 175,461. Stanley Blacker, Inc., Philadelphia, Pa. Filed Aug. 21, 1963.

THE 8½ OUNCER

For Men's and Boys' Sportcoats and Jackets.
First use Jan. 6, 1958.

SN 181,714. United States Rubber Company, New York, N.Y. Filed Nov. 21, 1963.

MAINSAIL

For Boat Shoes.
First use 1961 or earlier.

SN 193,160. Glamorise Foundations, Inc., New York, N.Y. Filed May 11, 1964.

FLOWER SHOW

For Girdles and Brassieres.
First use Apr. 29, 1964.

SN 194,965. Davidow Suits, Inc., New York, N.Y. Filed June 5, 1964.

5 FOOT 3

Owner of Reg. No. 421,914.
For Ladies' and Misses' Clothing—Namely, Suits, Jackets, Skirts, Dresses, Coats, Dress Ensembles, and Blouses.
First use in or about July 1943.

SN 201,382. Ivan E. Cox, Kansas City, Mo. Filed Sept. 8, 1964.

BALANCE RITE

For Men's Shoes.
First use December 1961.

SN 205,378. Phillips Patents Limited, London, England. Filed Oct. 5, 1964.

MAGNA

Owner of British Reg. No. 307,911, dated Nov. 13, 1908.
For India-Rubber Tips and Pads for Heels of Boots and Shoes.

SN 205,543. Sebago-Moc Company, Westbrook, Maine. Filed Nov. 4, 1964.

ROAMERS by SEBAGO-MOC

Owner of Reg. Nos. 562,747, 591,256, and 689,532.
For Men's Shoes.
First use May 1952.

SN 206,081. Sandhurst Mills, Inc., Rockingham, N.C. Filed Nov. 12, 1964.

MISS TANCY

For Ladies' Nylon Hosiery.
First use Sept. 25, 1964.

SN 206,725. Th. C. Holm & Son A/S, Oslo, Norway. Filed Nov. 23, 1964.

HOLMENKOLLEN

The English translation of "Holmenhollen" is "the hill belonging to or situated above Holmen." Owner of Norwegian Reg. No. 31,471, dated Mar. 23, 1944.
For Caps, Scarfs, Guernseys, Pullovers, Trousers, and Coats Made of Woven and Knitted Material.

SN 207,202. Exquisite Form Industries, Inc., New York, N.Y. Filed Dec. 1, 1964.

LIVELY ONES

For Brassieres.
First use Oct. 15, 1964.

SN 207,473. Bernie Shoe Company, Haverhill, Mass. Filed Dec. 4, 1964.

TRULY Adorably Yours by mr. dan

For Women's Shoes.
First use July 20, 1964.

SN 213,449. McGregor-Doniger Inc., New York, N.Y. Filed Mar. 5, 1965.

SCOTSET

For Shirts, Shorts, Slacks, and Jackets.
First use Feb. 17, 1965.

SN 215,508. Fisher Millinery Corporation, New York, N.Y. Filed Mar. 18, 1965.

Caprice

For Ladies' Hats.
First use Jan. 14, 1924.

SN 215,753. Langrock Stores, Inc., Princeton, N.J. Filed Apr. 5, 1965.

RUBE POLO

No claim is made to the word "Polo" apart from the mark as shown.
For Men's Outer Shirts.
First use prior to 1948.

SN 215,974. Knit Products Corporation, Belmont, N.C. Filed Apr. 7, 1965.

TEEN-TIME

Owner of Reg. No. 738,279.
For Hosiery.
First use Nov. 26, 1962.

SN 216,454. Unishops, Inc., Jersey City, N.J. Filed Apr. 13, 1965.

MARK DANIELS

The name "Mark Daniels" is fanciful.
For Men's and Boys' Sportcoats, Suits, Jackets, Overcoats, Sport Shirts, Pajamas, Sweaters, Gloves, Hosiery, Knit Shirts, and Bathing Trunks.
First use Mar. 17, 1965.

SN 218,082. City Stores Company, New York, N.Y. Filed May 5, 1965.

Lady Shannon

For Women's and Misses' Dresses, Sweaters, Skirts, Blouses, Suits, Coats, Raincoats, and Robes.
First use Apr. 10, 1965.

SN 218,278. Frank P. Cammisa, Waterbury, Conn. Filed May 7, 1965.

PRINTSOLE

For Insoles for Shoes.
First use Apr. 24, 1965.

SN 218,794. Stephen Putney Shoe Company, Richmond, Va. Filed May 13, 1965.

BATTLE AXE

For Shoes of Leather or Leather and Composition.
First use Jan. 1, 1896.

SN 219,120. Hodges Research & Development Company, New York, N.Y. Filed May 18, 1965.

I.B.G.

For Clothing—Namely, Frocks Used as Hospital and Industrial Work Garments.
First use December 1964.

SN 219,121. Hodges Research & Development Company, New York, N.Y. Filed May 18, 1965.

I.G.B.

For Clothing—Namely, Frocks Used as Hospital and Industrial Work Garments.
First use December 1964.

SN 219,177. Eddie Bauer, Seattle, Wash. Filed May 19, 1965.

EB

For Insulated Outer Clothing—Namely, Sleeping Robes, Coats, Vests, Parkas, Jackets, Pants, Caps, Mittens, Muffs, and Insulated Underwear.
First use Sept. 4, 1963.

SN 219,203. Fortuna Foundations, Inc., New York, N.Y. Filed May 19, 1965.

ROSES

For Girdles and Panty Girdles.
First use Dec. 3, 1964.

SN 219,213. The Lovable Company, Atlanta, Ga. Filed May 19, 1965.

TAKE IT EASY

For Women's Foundation Garments.
First use Apr. 20, 1965.

SN 219,215. The Lovable Company, Atlanta, Ga. Filed May 19, 1965.

LITE 'N POWER

For Women's Foundation Garments.
First use Apr. 23, 1965.

SN 219,218. The Lovable Company, Atlanta, Ga. Filed May 19, 1965.

LOVE-EASE

For Women's Foundation Garments.
First use Apr. 23, 1965.

SN 219,220. The Lovable Company, Atlanta, Ga. Filed May 19, 1965.

LOVEY-DOVE

For Women's Foundation Garments.
First use Apr. 20, 1965.

SN 223,410. Hawkins-Hawkins Co., Inc., Berkeley, Calif. Filed July 15, 1965.



For Highway Signal Flagman's Clothing Comprising Fluorescent Colored Signal Jackets.
First use about September 1963.

Class 40 — Fancy Goods, Furnishings, and Notions

SN 206,791. Vytrex Corporation, Waterford, N.Y. Filed Nov. 23, 1964.

VYTREX

For Woven and Non-Woven Fabric Tape, Especially Such Tape Adapted for Use as a Component of Slide Fasteners.
First use Sept. 23, 1963.

SN 224,217. Lester C. Loftice, Dallas, Tex. Filed July 26, 1965.

THE 'BLOOMING IDIOT'

For Decorative Artificial Flowers for Hair Curlers, and Holders Therefor.
First use Apr. 14, 1965.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 211,866. C. & I. Distributors, Inc., Lexington, Ky. Filed Feb. 12, 1965.



For Rugs and Carpets.
First use Jan. 20, 1965.

SN 217,171. Berkshire Hathaway, Inc., New Bedford, Mass. Filed Apr. 23, 1965.

LUSTRALINE

For Cotton and Rayon Piece Goods.
First use Mar. 2, 1965.

SN 218,742. Crompton Company, New York, N.Y. Filed May 13, 1965.

RICHSET

For Textile Fabrics in the Piece Composed of Cotton, Synthetic Fibers, and Blends Thereof.
First use Nov. 11, 1964.

SN 219,052. William F. Niemi Co., d.b.a. Eddie Bauer, Seattle, Wash. Filed May 17, 1965.



For Woolen Fabric for Making Hunters' Outer Garments, Caps, and the Like.
First use Feb. 1, 1965.

SN 224,185. Gehring Textiles, Inc., New York, N.Y. Filed July 26, 1965.

VEL LUSH

For Piece Goods Knit From Nylon and Other Synthetic Yarns and Mixtures of Such Yarns.
First use in or about July 1961.

SN 224,255. J. P. Stevens & Co., Inc., New York, N.Y. Filed July 26, 1965.

ASTROCARB

Owner of Reg. No. 750,237.
For High Temperature Woven Fabrics Made From Glass Fibers.
First use July 19, 1965.

SN 224,256. J. P. Stevens & Co., Inc., New York, N.Y. Filed July 26, 1965.

ASTROCHROME

Owner of Reg. No. 750,237.
For High Temperature Woven Fabrics Made From Glass Fibers.
First use July 19, 1965.

SN 224,257. J. P. Stevens & Co., Inc., New York, N.Y. Filed July 26, 1965.

ASTROGRAPH

Owner of Reg. No. 750,237.
For High Temperature Woven Fabrics Made From Glass Fibers.
First use July 19, 1965.

SN 224,259. J. P. Stevens & Co., Inc., New York, N.Y. Filed July 26, 1965.

ASTROMOL

Owner of Reg. No. 750,237.
For High Temperature Woven Fabrics Made From Glass Fibers.
First use July 19, 1965.

SN 224,260. J. P. Stevens & Co., Inc., New York, N.Y. Filed July 26, 1965.

ASTRONIK

Owner of Reg. No. 750,237.
For High Temperature Woven Fabrics Made From Glass Fibers.
First use July 19, 1965.

SN 224,261. J. P. Stevens & Co., Inc., New York, N.Y. Filed July 26, 1965.

ASTROTUNG

Owner of Reg. No. 750,237.
For High Temperature Woven Fabrics Made From Glass Fibers.
First use July 19, 1965.

Class 43 — Thread and Yarn

SN 215,691. Attalla Spinning Mills, Inc., Attalla, Ala. Filed Apr. 5, 1965.

ACRYLI-NYL

For Yarn.
First use on or about Feb. 24, 1965.

SN 215,692. Attalla Spinning Mills, Inc., Attalla, Ala. Filed Apr. 5, 1965.

ACRYLI-RAY

For Yarn.
First use on or about Feb. 24, 1965.

SN 223,979. Dover Mill Company, d.b.a. Dover Group, Shelby, N.C. Filed July 22, 1965.

DORAN

For Yarn for Knitted Outerwear.
First use July 13, 1960.

Class 44 — Dental, Medical, and Surgical Appliances

SN 177,286. Leo Pomerleau, d.b.a. Vibra-Rest, Augusta, Maine. Filed Sept. 18, 1963.

VIBRA-REST

For Vibrators for Therapeutic Use Comprising Small Electric Motors and Eccentric Means To Effect Vibration Upon Rotation of the Motor Shaft.
First use Mar. 1, 1963.

SN 185,067. North American Philips Company, Inc., New York, N.Y. Filed Jan. 21, 1964.



Applicant disclaims the word "Beauty" apart from the mark as shown.
For Electric Shaver With Shaving Head Replaceable With Attachments for Manicuring and Massaging Use.
First use on or before June 25, 1963.

SN 185,667. Hanne Glud, d.b.a. Danalax Company, Boston, Mass. Filed Jan. 30, 1964.

DANALAX

For Contour Shaped Orthopedic Backboard for Use on Seats or Beds.
First use on or about Sept. 1, 1963.

SN 206,481. Surgident, Ltd., Los Angeles, Calif. Filed Nov. 18, 1964.

NEO-PLEX

For Materials for Taking the Impression of Denture Regions.
First use Nov. 30, 1964.

SN 209,002. The Commonwealth Industrial Gases Limited, Alexandria, near Sydney, New South Wales, Australia. Filed Dec. 29, 1964.

AIR-VIVA

Owner of Australian Reg. No. A163,148, dated Oct. 21, 1960.
For Apparatus for Resuscitation Consisting of a Resilient Self-Inflating Bag, a Valve System, and a Face Piece.

SN 210,878. Instrumentation Associates Inc., New York, N.Y. Filed Jan. 28, 1965.

PULMONET

For Integrated Spirometer-Gas Analyzer Used for Total Lung Capacity and Spirometry.
First use 1961.

SN 213,251. Services International Inc., Newark, N.J. Filed Mar. 3, 1965.

SIESTA

For Vibrating Massagers and Clocks, Incorporated as a Part of the Vibrating Massagers.
First use Dec. 29, 1964.

SN 213,389. American Optical Company, Southbridge, Mass. Filed Mar. 5, 1965.

SURE-GUARD

For Respirators, Resuscitators, Hearing Protectors Including Muff-Type Protectors and Ear Plugs, and Emergency First Aid Kits.
First use Aug. 8, 1960.

SN 214,087. Cutter Laboratories, Inc., Berkeley, Calif. Filed Mar. 15, 1965.

ENEMOL

For Disposable Plastic Enema Administration Kit Comprising an Enema Tube With Clamp, Underpad, Lubricant and Enema Soap.
First use Jan. 11, 1964.

SN 216,382. Boehringer Ingelheim G.m.b.H., Ingelheim (Rhine), Germany. Filed Apr. 13, 1965.

DOSOHALER

Owner of U.S. Reg. No. 791,090.
For Medical Inhalation Device in Aerosol Form.
First use Feb. 15, 1965; in commerce Feb. 15, 1965.

SN 217,050. Organon Inc., West Orange, N.J. Filed Apr. 21, 1965.

GESTAJECT

For Medicinal Injection Applicator for Medicine and Pharmaceutical Products for Human and Veterinary Use.
First use Feb. 16, 1965.

SN 217,309. Dental Perfection Company, Inc., Glendale, Calif. Filed Apr. 26, 1965.

KT

For Saliva Ejectors, and Sleeve Applicators for Saliva Ejectors Used by Dentists and Dental Technicians in Evacuating Saliva From the Mouths of Patients Undergoing Dental Work, and Bite-Wing Tabs for Holding X-ray Film in Preselected Positions in a Patient's Mouth During X-raying of Teeth and Mouth Area.
First use June 1947.

SN 221,556. American Coil Spring Company, Muskegon, Mich. Filed June 21, 1965.

HESSELTINE

For Umbilical Cord Clamps.
First use in or about May 1937.

SN 221,560. Alfred A. Atherton and John A. Privett (joint owners), Los Angeles, Calif. Filed June 21, 1965.

HUMMING BIRD

For Hearing Aids.
First use May 28, 1965.

SN 221,974. F. H. Wright Dental Company Limited, Dundee, Scotland. Filed June 24, 1965.

ELITE

For Acrylic Teeth.
First use Dec. 13, 1963; in commerce December 1963.

SN 222,058. Parke, Davis & Company, Detroit, Mich. Filed June 25, 1965.

UNISORB

Owner of Reg. No. 791,483.
For Gauge Sponges and Underpads.
First use on or before July 1, 1963.

Class 45—Soft Drinks and Carbonated Waters

SN 175,208. Penn Syrup Corp., Philadelphia, Pa. Filed Aug. 16, 1963.

SLIM-UP

For Soft Drinks.
First use on or about July 8, 1963.

SN 191,864. The Louisiana Coca-Cola Bottling Co., Ltd., New Orleans, La. Filed Apr. 23, 1964.

rex

For Non-Alcoholic Beverage—Namely, Root Beer.
First use Apr. 6, 1964.

SN 203,443. The Tip Corporation of America, Marion, Va. Filed Oct. 6, 1964.

IT'LL TICKLE YORE INNARDS!

Owner of Reg. No. 551,400.
For Soft Drinks.
First use Sept. 24, 1948.

SN 219,072. The Seven-Up Company, St. Louis, Mo. Filed May 17, 1965.

Like

The drawing is lined for the color red. Owner of Reg. No. 769,645.
For Soft Drinks and Syrups and Extracts for Making the Same.
First use July 22, 1963, on soft drinks.

Class 46—Foods and Ingredients of Foods

SN 147,129. McIlhenny Company, Avery Island, La. Filed June 18, 1962.



The mark consists of a representation of a capped bottle with associated neck band and body panel printed on a carton for the bottle; the configuration of the cap and bottle being that shown in the drawing with the neck band lined for green and the cap lined for red. The portion of the bottle shown above the neck band is lined for shading purposes only while the body of the bottle is lined for red to represent the color of the contents which is hereby disclaimed apart from the mark as shown without waiving any common law rights herein or to any feature thereof.
Owner of Reg. Nos. 280,758, 629,641, and others.
For Condiment—Namely, Pepper Sauce.
First use Mar. 12, 1927.

SN 147,211. McIlhenny Company, Avery Island, La. Filed June 19, 1962.



The mark consists of a capped bottle with associated neck band and body panel; the configuration of the cap and bottle being that shown in the drawing. The neck band is lined for green and the cap is lined for red while the bottle is lined above and below the neck band for shading purposes only.
Owner of Reg. Nos. 280,758, 629,641, and others.
For Condiment—Namely, Pepper Sauce.
First use Mar. 12, 1927.

SN 158,016. Pacific Cracker Company, Omaha, Nebr. Filed Nov. 27, 1962.

STA-CRISP

For Snack Items—Namely, Crackers.
First use Nov. 4, 1938.

SN 177,898. John W. Leavitt Company, Everett, Mass. Filed Sept. 27, 1963.



The wording "Leavitt's" and "Selection" is disclaimed apart from the mark as shown.

For Shelled Nuts in Cans and Jars—Namely, Salted Mixed Nuts, Cashews, Macadamias, Pistachios.

First use on or about Oct. 30, 1961.

SN 178,463. Mars, Incorporated, Wilmington, Del., by merger and change of name from Mars, Incorporated, Chicago, Ill. Filed Oct. 7, 1963.

MARS

FUDGIE ROLL

Applicant disclaims any exclusive rights in the words "Fudgie Roll" apart from the mark as shown. Owner of Reg. Nos. 304,055, 779,545, and others.

For Candy.

First use Sept. 26, 1963.

SN 180,305. Ben Heggy Candy Co., d.b.a. Ben Heggy's, Canton, Ohio. Filed Nov. 1, 1963.

Ben Heggy's

The name "Ben Heggy" is not known to be the name of any particular living individual.

For Chocolates, Caramels, and Salted Nuts.

First use July 5, 1963.

SN 186,295. Welder Health Products, Inc., Union City, N.J. Filed Feb. 7, 1964.

NUTRA-MUSCLE

For Nutritional Rice Food Beverage Especially for Use by Athletes in Training.

First use Mar. 15, 1963.

SN 191,841. Dixie Frosen Foods, Inc., Senoia, Ga. Filed Apr. 23, 1964.



The drawing is lined for the colors orange and brown. Owner of Reg. No. 767,262.

For Frosen Meats—Namely, Cubed Beef Steaks, Chopped Sirloin (Bacon Wrapped), Beef Chip Steaks, Beef Tenderloin for Filet Mignon (Bacon Wrapped), Hamburger Patties, Cubed Veal Steaks, and Breaded Veal Steaks.

First use Apr. 18, 1963.

SN 191,972. Young's Market Company, Los Angeles, Calif. Filed Apr. 24, 1964.

Young's Supreme

No claim is made to the word "Supreme" separate and apart from the association shown. Owner of Reg. No. 786,103.

For Food Products Packed in Cans and Glass—Namely, Kraut; Red Cabbage; Welsh Rarebit; Pickled Beets; Pepperoncini; Pickles; French Fried Onions; Table Syrups; Artichokes; Fruit Preserves; Jelly; Conserve; Steamed Clams; Clam Chowder; Whole Clams; Minced Clams; Clam Juice; Kippered Herring; Sardines; Shad Roe; Anchovies; Pate de Foie; Mayonnaise; Shelled Nuts; Cocktail Snacks—Namely, Seasoned Rice and Seaweed Cocktail Chips, Cocktail Crackers, Roasted Corn Kernels, Cocktail Tamales, Cereal Cocktail Mix With Shelled Nuts, Carrot Sticks.

First use at least as early as 1938; at least as early as October 1919 as to "Young's."

SN 191,976. Young's Market Company, Los Angeles, Calif. Filed Apr. 24, 1964.

Young's

For Frozen Food Products—Namely, Halibut, Swordfish, Salmon and Sea Bass Steaks, Codfish, Fish Sticks, Oysters, Scallops, Breaded Shrimp and Frosen Vegetables.

First use March 1959.

SN 193,159. General Foods France, Paris (Seine), France. Filed May 11, 1964.



The word "Qualite" is disclaimed apart from the mark as shown. Priority claimed under Sec. 44(d) on French Reg. No. 517,140, dated Nov. 13, 1963 (Seine); Natl. Inst. No. 214,569.

For Coffee and Coffee Substitutes, Tea, Cocoa, Sugar, Rice, Tapioca, Sago; Flour, Bread, Biscuits, Fruit Cake, Chocolate Cake, Pastry; Chocolate, Coffee and Fruit Flavored Candy, Chocolate, Coffee and Fruit Flavored Ices; Barley Sugars, Chewing Gums, and Caramels; Honey, Treacle; Yeast for Food Purposes, Baking Powder; Salt, Pepper, Mustard, Vinegar, Spices; Meat-Containing and Meatless Sauces.

SN 195,214. Flavor Corporation of America, Chicago, Ill. Filed June 9, 1964.

TEMPT

For Flavoring Concentrate for Sweetening Animal Feeds So as To Stimulate the Appetite.

First use Aug. 14, 1961.

SN 195,375. Delson Candy Co., Inc., New York, N.Y., assignee of Newton Candy Co., Inc., d.b.a. The Delson Company, New York, N.Y. Filed June 11, 1964.

Delson RING-A-LINGS

Owner of Reg. Nos. 528,261, 528,417, and 587,839.

For Ribbon of Chocolate Candy in Oval Shape.

First use May 13, 1964.

SN 195,376. Delson Candy Co., Inc., New York, N.Y., assignee of Newton Candy Co., Inc., d.b.a. The Delson Company, New York, N.Y. Filed June 11, 1964.

Delson CHOCOLATE RING-A-LINGS

No claim is made to the word "Chocolate" apart from the combination. Owner of Reg. Nos. 528,261, 528,417, and 587,839.

For Ribbon of Chocolate Candy in Oval Shape.

First use May 13, 1964.

SN 199,385. Urban N. Patman, Inc., Los Angeles, Calif. Filed Aug. 6, 1964.

patman's

Owner of Reg. Nos. 364,796, 664,164, and 670,419.

For Packaged Bologna Sausage, Pastrami, Corned Beef and Individual Servings of Refrigerated, Frozen, and/or Smoked Beef, Lamb, and Pork.

First use Aug. 1, 1961; Apr. 23, 1947, as to "Patman's."

SN 200,064. William V. Birch, d.b.a. Wm. C. Bunting, Chincoteague, Va. Filed Aug. 18, 1964.

TOM'S COVE OYSTERS

Applicant hereby disclaims the words "Cove Oysters" apart from the mark as shown.

For Fresh Canned Oysters.

First use Jan. 1, 1905.

SN 200,379. Pride of Colombia, Inc., New York, N.Y. Filed Aug. 21, 1964.

PRIDE OF COLOMBIA

Applicant disclaims the geographical term "Colombia" apart from the mark as shown.

For Coffee and Instant Coffee.

First use July 1, 1961.

SN 200,772. National Dairy Products Corporation, New York, N.Y. Filed Aug. 27, 1964.

Breakstone

Owner of Reg. Nos. 178,782, 767,662, and others.

For Cottage Cheese and Cream Cheese.

First use on or about Apr. 15, 1963.

SN 200,773. National Dairy Products Corporation, New York, N.Y. Filed Aug. 27, 1964.

B Breakstone

Owner of Reg. Nos. 178,782, 767,662, and others.

For Cottage Cheese and Cream Cheese.

First use on or about Apr. 15, 1963.

SN 203,537. Smith's Bakery, Inc., Mobile, Ala. Filed Oct. 7, 1964.

Smith's OLD McDONALD FARM

Without disclaimer of any of its common law rights, applicant makes no claim to exclusive right to use of the surname "Smith's" apart from the mark as shown.

For Bread.

First use May 4, 1964.

SN 203,949. East Coast Enterprises, Inc., Boston, Mass. Filed Oct. 14, 1964.

EAST COAST

For Vegetable Oils.

First use November 1957.

SN 204,374. Farm Crest Bakeries, Inc., Detroit, Mich., by merger and change of name from Farm Crest Bakeries, Incorporated, Detroit, Mich. Filed Oct. 20, 1964.

LEM-N-FROST

Owner of Reg. No. 412,337.
For Cookies.
First use Jan. 6, 1944.

SN 205,053. Walter D. Frith Limited, Vancouver, British Columbia, Canada. Filed Oct. 29, 1964.

ALLY

For Canned Salmon.
First use Jan. 1, 1918.

SN 205,479. National Tea Co., Chicago, Ill. Filed Nov. 3, 1964.

MR. DEE-LISH

For Fresh, Frosen, and Smoked Meat Products—Namely, Ham, Bacon, and Sausage.
First use Apr. 27, 1964.

SN 205,499. Gaymont Laboratories, Inc., Chicago, Ill. Filed Nov. 4, 1964.

MARTINI DIP

The exclusive right to the use of the word "Dip" is disclaimed apart from the mark as shown.
For Food Dip Whose Principal Ingredient Is Cultured Milk to Which There Are Added Vegetables, Vegetable Oils, and Other Ingredients.
First use Oct. 13, 1964.

SN 205,682. Fromageries Grosjean Freres, Societe Anonyme, Lons-le-Saunier (Jura), France. Filed Nov. 6, 1964.

GROSJEANBON

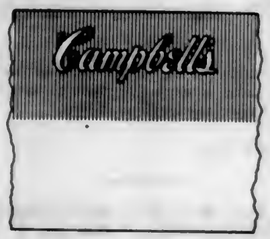
Owner of French Reg. No. 1,273; dated July 6, 1963 (Lons-le-Saunier); Natl. Inst. No. 209,033.
For Ham-Flavored Cheese.

SN 207,999. Koninklijke Fabrieken C. J. van Houten & Zoon N.V., Weesp, Netherlands, by change of name from C. J. van Houten & Zoons N.V., Weesp, Netherlands. Filed Dec. 11, 1964.

TULA

For Cocoa.
First use September 1963; in commerce September 1963.

SN 209,486. Campbell Soup Company, Camden, N.J. Filed Jan. 7, 1965.



The drawing is lined for red. Owner of Reg. Nos. 48,461, 295,884, and others.
For Canned Ready-To-Serve Soups.
First use December 1947.

SN 212,046. Ranch Style, d.b.a. Western JMIL, Concordia, Kans. Filed Feb. 15, 1965.

JML

The mark consists of the interconnected capital letters "JMIL."
For Salad Dressing.
First use Dec. 18, 1964.

SN 213,518. Aunt Nellie's Foods, Inc., Clyman, Wis. Filed Mar. 8, 1965.

PONCHO PUNCH

Applicant disclaims the word "Punch" apart from the mark as shown.
For Non-Carbonated Fruit Flavored Food Drink.
First use Dec. 11, 1964.

SN 214,101. Fisher Flouring Mills Co., Seattle, Wash. Filed Mar. 16, 1965.

CONTIN

For Wheat Flour.
First use Nov. 27, 1962.

SN 214,196. Manhattan Coffee Company, St. Louis, Mo., assignee, by mesne assignment, of Star Coffee Company, St. Louis, Mo. Filed Mar. 15, 1965.

Bernice

For Tea, Cocoa, Hot Chocolate Powder, Spices, Mustard, Salad Dressing, Barbecue Sauce, French Dressing, Mayonnaise, Worcestershire Sauce, Food Flavoring Extracts, Food Colors, Jellies, Jam, and Pancake Mix.
First use Oct. 17, 1932.

SN 214,452. The Coca-Cola Company, Atlanta, Ga. Filed Mar. 18, 1965.



Owner of Reg. No. 374,999.
For Canned Fruit Juices and Fruit Juice Drinks.
First use Jan. 20, 1965; Apr. 4, 1938, as to "Lark."

SN 214,521. GBI, Inc., Long Island City, N.Y. Filed Mar. 19, 1965.

VILLA D'ESTE

"Villa d'Este" means "village of the east" in Italian.
For Canned Tomatoes, Macaroni, Spaghetti, Tomato Paste, Chili Sauce, Tomato Puree, and Catsup.
First use Sept. 21, 1964.

SN 216,763. Weldon Farm Products, Inc., New York, N.Y. Filed Apr. 16, 1965.

COFFEE BREAK

For Non-Dairy Cream Substitute.
First use Apr. 1, 1965.

SN 216,985. Trenton Foods, Inc., Kansas City, Mo. Filed Apr. 20, 1965.

DINNER TIME

Owner of Reg. Nos. 200,865 and 608,435.
For Canned Foods—Namely, Spaghetti With Tomato and Cheese Sauce.
First use Apr. 7, 1965.

SN 217,623. General Baking Company, New York, N.Y. Filed Apr. 29, 1965.

3 LI'L FIGGIES

Applicant disclaims exclusive right to the words "3 Li'l" apart from the mark as shown.
For Chocolate Enrobed Fig Bars.
First use Feb. 15, 1965.

SN 217,813. Wilson & Co., Inc., Chicago, Ill. Filed Apr. 30, 1965.

FESTIVAL

For Smoked, Fully-Cooked Boneless Ham.
First use 1947.

SN 220,180. Wisdom Import Sales Company, Inc., Los Angeles, Calif. Filed June 1, 1965.

BLIMEY

For Lime Juice.
First use May 3, 1965.

SN 220,739. Breddo-Food Products Corporation, Inc., Kansas City, Kans. Filed June 9, 1965.

S.T.V.

For Compound, Powder or Mix Which Functions as an Anti-Staling Agent and Quality Improver for Yeast-Raised Bakery Products.
First use May 19, 1965.

SN 221,433. Wilson & Co., Inc., Chicago, Ill. Filed June 17, 1965.

IDEAL

Owner of Reg. No. 647,953.
For Dog and Cat Food.
First use June 25, 1956.

SN 221,455. Bianco Fruit Corporation, Fresno, Calif. Filed June 18, 1965.

CAMEO

For Fresh Grapes.
First use June 2, 1965.

SN 221,490. First Spice Mixing Company, Inc., Long Island City, N.Y. Filed June 18, 1965.

ALBUNATE

For Non-Fat Dry Milk.
First use Apr. 27, 1965.

SN 221,741. Nash-Finch Company, d.b.a. Warehouse Market, Minneapolis, Minn. Filed June 22, 1965.



Any right to the use of the words "Cash and Carry" apart from the mark as shown is disclaimed.
For Salad Dressing.
First use Nov. 13, 1964.

SN 223,210. George N. Ashley, Jr., d.b.a. Ashley's Restaurant, El Paso, Tex. Filed July 13, 1965.

K-SO

For Cheese Dip and Cheese Sauce.
First use June 10, 1963.

SN 223,412. Horse Fare, Inc., Afton, N.Y. Filed July 15, 1965.

CANTER

For Horse Feed.
First use June 10, 1965.

SN 223,739. Stauffer Chemical Company, New York, N.Y. Filed July 19, 1965.

DIGESTA

Owner of Reg. Nos. 256,536 and 761,038.
For Poultry and Stock Feed.
First use Feb. 15, 1961.

SN 223,856. Yamboree, Inc., Philadelphia, Pa. Filed July 20, 1965.

YAMBOREE

For Dehydrated Sweet Potatoes.
First use in or prior to May of 1963.

SN 223,864. Blue Ribbon Rice Mills, Inc., Houston, Tex. Filed July 21, 1965.

SOUTHERN BEAUTY

For Rice.
First use 1924.

Class 48 — Malt Beverages and Liquors

SN 182,561. Anheuser-Busch, Incorporated, St. Louis, Mo. Filed Dec. 9, 1963.



The mark is lined for the color gold. Owner of Reg. No. 749,963.
For Beer.
First use Dec. 5, 1961.

Class 50 — Merchandise Not Otherwise Classified

SN 169,539. Fabulous Fakes, Inc., New York, N.Y. Filed May 23, 1963.



Applicant disclaims the words "Decorative Art Creations" and "Fakes" apart from the mark as shown.
For Decorative Art Creations Such as Novelty Items, Imitation Antiques, Statuary, Paintings, Reproductions and Objets d'Art.
First use Aug. 6, 1962.

SN 176,692. Thermwell Products Co., Inc., Paterson, N.J. Filed Sept. 10, 1963.

PRO-TEK

For Adhesive Felt.
First use 1950.

SN 214,701. Sculptsmith, Inc., New York, N.Y. Filed Mar. 22, 1965.

A SCULPTSMITH CREATION

Applicant waives exclusive right to the words "A" and "Creation" apart from the mark as a whole.
For Three-Dimensional Works of Art.
First use Aug. 1, 1961.

SN 218,565. Masterpiece, Inc., Olyphant, Pa. Filed May 11, 1965.

MASTERPIECE

For Artificial Christmas Trees.
First use Sept. 1, 1964.

SN 219,987. Patricia J. Harn, d.b.a. Loma Linda Industries, Colton, Calif. Filed May 28, 1965.

Laurel

For Holder for Military Campaign Ribbons.
First use Sept. 10, 1964.

SN 223,411. Hawkins-Hawkins Co., Inc., Berkeley, Calif. Filed July 15, 1965.



For Metal Signs, Sign Posts, Highway and Street Markers, Non-Electrical Highway and Street Warning Lights and Reflectors, Signal Flags, Highway and Street Safety Barricades, Wheel Bumpers, Jiggle Bars, Pavement Stencils, Traffic Cones, and Stripers.
First use about September 1963.

Class 51 — Cosmetics and Toilet Preparations

SN 165,421. Feinseifenwerk Walter Rau & Company, Stuttgart-Mohringen, Germany. Filed Mar. 26, 1963.

Speick

For Eau de Cologne, Shaving Lotion, Bath Salts, Sachets, Skin Creams, Skin Oils, Face Creams, Face Lotions, and Body Powders.
First use Apr. 23, 1929; in commerce Sept. 25, 1952.

SN 176,876. Avon Products, Inc., New York, N.Y. Filed Sept. 13, 1963.

TENDER TINTS

The word "Tints" is disclaimed apart from the mark as shown.
For Lipstick and Nail Polish.
First use Aug. 21, 1963.

SN 196,953. Cosmetics Manufacturing Company, d.b.a. Cosmetico, Los Angeles, Calif. Filed July 2, 1964.

by
Royal Argenta

The word "Agenta" is the Spanish word for silver.
For After Shave Lotion and Cologne for Men.
First use on or about July 26, 1962.

SN 201,652. Sea & Ski Corporation, Millbrae, Calif., assignee of Botany Industries, Inc., d.b.a. Renauld Company, Reno, Nev. Filed Sept. 11, 1964.

RENAULD

Owner of Reg. Nos. 767,972, 792,190, and others.
For Body and Suntan Lotion.
First use Aug. 4, 1964.

SN 204,882. Beecham Products Inc., Clifton, N.J. Filed Oct. 27, 1964.

BEECHAM

Owner of Reg. Nos. 54,148, 54,158, and 54,242.
For Cosmetic Preparations and Toiletries—Namely, Hair Dressing, Personal Deodorants, and Toothpastes.
First use Aug. 3, 1964.

SN 209,890. Yardley of London, Inc., Totowa, N.J. Filed Jan. 18, 1965.

SPY EYES

For Eye Make-Up Preparations.
First use Dec. 16, 1964.

SN 213,300. Colgate-Palmolive Company, New York, N.Y. Filed Mar. 4, 1965.

LUSTRE DENT

For Denture Cleanser.
First use Dec. 16, 1964.

SN 213,550. Tom Fields, Ltd., Northvale, N.J. Filed Mar. 8, 1965.

NOT SO
DRY
BATHTUB
GIN

For Bubble Bath.
First use Sept. 17, 1964.

SN 214,412. Atlas Chemical Industries, Inc., Wilmington, Del. Filed Mar. 18, 1965.

SORBO-SHAVE

Owner of Reg. No. 374,842.
For Shaving Cream.
First use Mar. 10, 1964.

SN 215,507. The Kurlash Company, Inc., Rochester, N.Y. Filed Apr. 1, 1965.

MASCARA KURL

Applicant disclaims the word "Mascara" apart from the mark as shown.
For Mascara.
First use Dec. 20, 1963.

SN 216,659. Carter-Wallace, Inc., New York, N.Y., by change of name from Carter Products, Inc., New York, N.Y. Filed Apr. 16, 1965.

PEAK PERIOD

For Personal Deodorants.
First use Feb. 18, 1965.

SN 216,660. Carter-Wallace, Inc., New York, N.Y., by change of name from Carter Products, Inc., New York, N.Y. Filed Apr. 16, 1965.

ACTIVE

For Personal Deodorants.
First use Mar. 12, 1965.

SN 216,661. Carter-Wallace, Inc., New York, N.Y., by change of name from Carter Products, Inc., New York, N.Y. Filed Apr. 16, 1965.

RISE ICE

Owner of Reg. Nos. 538,626 and 786,531.
For After Shave Preparation.
First use Feb. 18, 1965.

SN 216,662. Carter-Wallace, Inc., New York, N.Y., by change of name from Carter Products, Inc., New York, N.Y. Filed Apr. 16, 1965.

BRUISER

For After Shave Preparation.
First use Feb. 18, 1965.

SN 217,009. Clairol Incorporated, New York, N.Y. Filed Apr. 21, 1965.

NICE 'N EASY

For Hair Tinting, Dyeing, and Coloring Preparation.
First use Aug. 25, 1964.

SN 217,209. The Procter & Gamble Company, Cincinnati, Ohio. Filed Apr. 23, 1965.

CHEEK TO CHEEK

For Facial Cleansing Cream.
First use Feb. 11, 1965.

SN 217,977. Avon Products, Inc., New York, N.Y. Filed May 4, 1965.

HAIL 'N' HEARTY

For Tinted After Shave Lotion.
First use Apr. 15, 1965.

SN 223,947. Avon Products, Inc., New York, N.Y. Filed July 22, 1965.

DEGAGE

The mark "Degage" (French) means "free, easy, untrammelled, pert" in English.
For Perfume, Perfume Oil, Solid Perfume, Cologne, Cologne Mist, Cream Sachet, Powder Sachet, and Dusting Powder.
First use June 29, 1965.

SN 223,949. Avon Products, Inc., New York, N.Y. Filed July 22, 1965.

AVEC MOI

The mark "Avec Moi" (French) means "with me" in English.
For Perfume, Perfume Oil, Solid Perfume, Cologne, Cologne Mist, Cream Sachet, Powder Sachet, and Dusting Powder.
First use June 29, 1965.

SN 223,951. Avon Products, Inc., New York, N.Y. Filed July 22, 1965.

AU JOUR D'HUI

The mark "Au Jour d'Hui" (French) means "today" in English.
For Perfume, Perfume Oil, Solid Perfume, Cologne, Cologne Mist, Cream Sachet, Powder Sachet, and Dusting Powder.
First use June 29, 1965.

Class 52 — Detergents and Soaps

SN 205,139. Associated Food Stores, Inc., Jamaica, N.Y.

Filed Oct. 30, 1964.

Cleans LIKE 60

The word "Clean" is disclaimed apart from the mark as shown.
For All Purpose Liquid Detergent Intended Primarily for Household Use.
First use July 19, 1960.

SN 212,158. Textron Inc., Providence, R.I. Filed Feb. 16, 1965.

BRITISH SILVER

No claim is made to the word "British" apart from the remainder of the mark.
For Men's Toilet Soap.
First use Feb. 4, 1965.

SN 212,162. Textron Inc., Providence, R.I. Filed Feb. 16, 1965.

BRITISH STERLING

No claim is made to the word "British" apart from the remainder of the mark.
For Men's Toilet Soap.
First use Feb. 4, 1965.

SN 214,236. Basol Limited, London, England. Filed Mar. 16, 1965.

BASOL

For Cleaning Preparations for Industrial and Commercial Use, Grease Removing Preparations, Rust Removing and Rust Preventing Preparations and Carbon Removing Preparations.
First use July 1936; in commerce Aug. 25, 1942.

SN 219,167. American Home Products Corporation, New York, N.Y. Filed May 19, 1965.

DRI-BRITE

Owner of Reg. Nos. 278,212, 557,197, and 719,488.
For Dishwashing Compound.
First use Apr. 28, 1965.

SN 220,370. Hercules Chemical Co., Inc., New York, N.Y. Filed June 4, 1965.

SIZZLE

For Lime, Rust and Scale Remover.
First use Jan. 21, 1965.

SN 220,371. Hercules Chemical Company, Inc., New York, N.Y. Filed June 4, 1965.

WHAM

For Drain Pipe Cleaner.
First use July 15, 1939.

SN 221,717. Gamlen Chemical Company, South San Francisco, Calif. Filed June 22, 1965.

GAMACLEAN

For Industrial Detergent for Dispersing Hydrocarbon Oils in Water.
First use Apr. 1, 1965.

SN 223,948. Avon Products, Inc., New York, N.Y. Filed July 22, 1965.

DEGAGE

The mark "Degage" (French) means "free, easy, untrammelled, pert" in English.
For Toilet Soap.
First use June 29, 1965.

SN 223,950. Avon Products, Inc., New York, N.Y. Filed July 22, 1965.

AVEC MOI

The mark "Avec Moi" (French) means "with me" in English.
For Toilet Soap.
First use June 29, 1965.

SN 223,952. Avon Products, Inc., New York, N.Y. Filed July 22, 1965.

AU JOUR D'HUI

The mark "Au Jour d'Hui" (French) means "today" in English.
For Toilet Soap.
First use June 29, 1965.

SN 224,974. Signal Chemical Manufacturing Co., Bedford, Ohio. Filed Aug. 4, 1965.

GELATEX

For Spot Remover Used in Dry Cleaning.
First use June 1, 1960.

SN 224,977. Signal Chemical Manufacturing Co., Bedford, Ohio. Filed Aug. 4, 1965.

PURPLE MAGIC

For Dye Stain Remover.
First use Oct. 1, 1962.

SN 224,980. Signal Chemical Manufacturing Co., Bedford, Ohio. Filed Aug. 4, 1965.

TANENT

For Stain Remover.
First use Sept. 1, 1964.

SN 225,177. Milchem Incorporated, Houston, Tex. Filed Aug. 6, 1965.

MIL-CLEAN

For Chemical Composition Which Is an Industrial Cleaning Agent.
First use May 10, 1965.

SN 226,324. Yosemite Chemical Co., d.b.a. Yosemite Chemical Company, San Francisco, Calif. Filed Aug. 23, 1965.

1 N 4

For Industrial Type Solvent Cleaning Compositions, Particularly Adapted for the Cleaning of and Removal of Carbon From Metal Parts, Such as Internal Combustion Engine Parts.
First use July 21, 1965.

SN 226,637. Elvin R. Goodrich, d.b.a. Goodrich Maintenance Supply Company, Oklahoma City, Okla. Filed Aug. 27, 1965.

TROJAMAGIC

For Compound Dissolvable in Water To Produce General Cleaning Preparation for Machinery, Equipment, Vehicles, Buildings, and the Like.
First use June 17, 1963.

SN 226,736. Emery Industries, Inc., Cincinnati, Ohio. Filed Aug. 30, 1965.

SYNFACTANT

For Detergents and Other Cleaning Additives for Use in Dry Cleaning.
First use on or about July 27, 1965.

SN 226,826. Colgate-Palmolive Company, New York, N.Y. Filed Aug. 31, 1965.

LOOK TWICE

For Hair Shampoo.
First use Aug. 18, 1965.

SN 227,236. Bristol-Myers Company, New York, N.Y. Filed Sept. 7, 1965.

CLEANERINO

For Shampoo for the Hair.
First use June 16, 1965.

SN 227,237. Bristol-Myers Company, New York, N.Y. Filed Sept. 7, 1965.

LIVE IT UP

For Shampoo for the Hair.
First use June 16, 1965.

SN 227,238. Bristol-Myers Company, New York, N.Y. Filed Sept. 7, 1965.

SHINEROO

For Shampoo for the Hair.
First use June 16, 1965.

SN 227,239. Bristol-Myers Company, New York, N.Y. Filed Sept. 7, 1965.

SWINGING SHEEN

For Shampoo for the Hair.
First use June 16, 1965.

SN 227,240. Bristol-Myers Company, New York, N.Y. Filed Sept. 7, 1965.

GLOWING SHINE

For Shampoo for the Hair.
First use June 16, 1965.

SN 227,241. Bristol-Myers Company, New York, N.Y. Filed Sept. 7, 1965.

DIVINE SHINE

For Shampoo for the Hair.
First use June 16, 1965.

SN 227,245. Bristol-Myers Company, New York, N.Y. Filed Sept. 7, 1965.

SHINE AND GLOW

For Hair Shampoo.
First use June 16, 1965.

SN 227,302. Lever Brothers Company, New York, N.Y. Filed Sept. 7, 1965.

PERFECT SOLUTION

For Cream Hair Shampoo.
First use Jan. 20, 1965.

SN 227,691. Lever Brothers Company, New York, N.Y. Filed Sept. 13, 1965.

REWARD

Owner of Reg. Nos. 333,667 and 760,878.
For Detergent Toilet Bar.
First use July 9, 1965.

SERVICE MARKS

Class 100 — Miscellaneous

SN 180,356. The Association of Consulting Chemists and Chemical Engineers, Inc., New York, N.Y. Filed Nov. 4, 1963.

A Clearing House *For Consultants*

Owner of Reg. No. 410,014.
For Furnishing, Upon Request, the Names of Consulting Chemists and Consulting Chemical Engineers to Those Who Need Assistance in These Fields.
First use September 1942.

SN 198,816. Ulysses G. Auger, d.b.a. Blackie's House of Beef, Washington, D.C. Filed July 30, 1964.

BLACKIE'S HOUSE OF BEEF

Owner of Reg. Nos. 655,350 and 690,009.
For Restaurant Service.
First use Dec. 23, 1952.

SN 204,683. Lane's Drive Inns, Inc., Kirksville, Mo. Filed Oct. 23, 1964.

FREEZ 'N SNACK

For Restaurant Services.
First use Aug. 9, 1964.

SN 209,172. Kentucky Fried Chicken Corporation, Shelbyville, Ky. Filed Dec. 31, 1964.

COL. SANDERS' RECIPE
Kentucky Fried Chicken

The words "Recipe" and Kentucky Fried Chicken" are disclaimed apart from the mark as shown. Owner of Reg. No. 637,305.
For Restaurant Services.
First use in or about December 1950.

SN 209,175. Kentucky Fried Chicken Corporation, Shelbyville, Ky. Filed Dec. 31, 1964.

COLONEL SANDERS' RECIPE

The word "Recipe" is disclaimed apart from the mark as shown.
For Restaurant Services.
First use in or about December 1956.

SN 209,613. The Ku Ku, Inc., Salina, Kans. Filed Jan. 8, 1965.

THE KU KU

For Restaurant Services.
First use June 8, 1964.

SN 216,617. Portrait Center Inc., Tulsa, Okla. Filed Apr. 15, 1965.

THE BRAGGIN' WAGON

For Portrait Photography.
First use on or about June 1958.

SN 217,784. Red Top Maintenance Service, Inc., Denver, Colo. Filed Apr. 30, 1965.

RED TOP

For Custodial and Housekeeping Services for Hospitals.
First use April 1957.

SN 217,891. Hardee's Food Systems, Inc., Rocky Mount, N.C. Filed May 3, 1965.



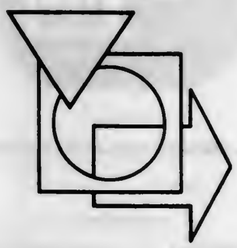
Owner of Reg. Nos. 741,740 and 741,048.
For Restaurant Services.
First use Sept. 1, 1960.

SN 220,252. R. L. Sawyer, Lansdowne, Pa. Filed May 21, 1965.



For Aerial Photography.
First use Apr. 21, 1965.

SN 222,911. Boos, Allen Methods Service Inc., Chicago, Ill. Filed July 8, 1965.



For Consulting Services in Work Study and Associated Activities; Maintenance Management; Facility Planning; and Equipment Requirements, Particularly Including Studies in Such Areas as Work Methods, Work Measurement, Wage Incentives, Job Evaluation Plans, Material Handling Systems and Plant, Office, and Warehouse Planning and Layout.
First use Nov. 30, 1962.

Class 101 — Advertising and Business

SN 193,515. Westons Shoppers City Inc., Buffalo, N.Y. Filed May 14, 1964.



For Department Store Services.
First use Sept. 1, 1958.

SN 201,510. William Bass & Associates Inc., Chicago, Ill. Filed Sept. 9, 1964.



For Insurance Agency Services.
First use Aug. 7, 1964.

SN 204,737. Aldens Shoppers World, Inc., Chicago, Ill. Filed Oct. 26, 1964.



For Department Store Services.
First use Mar. 6, 1956.

SN 204,740. Aldens Shoppers World, Inc., Chicago, Ill. Filed Oct. 26, 1964.

SHOPPERS WORLD

Owner of Reg. Nos. 730,023 and 738,674.
For Department Store Services.
First use Mar. 6, 1956.

SN 205,238. Auto-Tronix, Inc., Westminster, Colo. Filed Nov. 2, 1964.



For Data Processing Services.
First use July 10, 1964.

SN 205,507. Intercollegiate, Inc., Chicago, Ill. Filed Nov. 4, 1964.



For Promoting the Sale of the Goods and Services of Participating Merchants by Selling Membership Cards to the Public, Entitling the Latter to Discount Prices When Dealing With Participating Merchants.
First use May 1963.

SN 209,632. Silver Leaf Certificate, Inc., Omaha, Nebr. Filed Jan. 8, 1965.



For Advertising the Goods and Services of Others Thru Issuance of Certificates Redeemable in Merchandise.
First use Apr. 1, 1963.

SN 218,505. Wm. John Upjohn Associates, Inc., Kalamazoo, Mich. Filed May 10, 1965.



The mark consists of a fanciful representation of the letters "UA."
For Advertising and Marketing Services.
First use latter part of 1961.

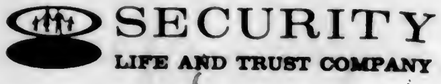
Class 102 — Insurance and Financial

SN 171,422. Bayside Federal Savings and Loan Association, Bayside, N.Y. Filed June 20, 1963.



Owner of Reg. No. 772,963.
For Banking Service.
First use during October 1962.

SN 210,702. Security Life and Trust Company, Winston-Salem, N.C. Filed Jan. 26, 1965.



The words "Face the Future With Security" are disclaimed apart from the mark as shown.
For Underwriting Insurance Risks—Namely, Life, Accident, and Sickness, Fire and Casualty, and Business Insurance.
First use Oct. 1, 1963.

SN 211,643. Georgia Life and Health Insurance Company, Atlanta, Ga. Filed Feb. 9, 1965.



For Insurance Services—Namely, Underwriting Health and Life Insurance.
First use Jan. 10, 1965.

SN 215,159. Americana Life Insurance Company, Jacksonville, Fla. Filed Mar. 29, 1965.

AMERICANA LIFE
INSURANCE COMPANY

For Underwriting Life Insurance.
First use Mar. 1, 1965.

Class 104 — Communication

SN 199,216. The New York Central Railroad Company, New York, N.Y. Filed Aug. 4, 1964.

DATA CENTRAL

Owner of Reg. Nos. 680,181 and 690,013.
For Determining Precisely the Location and Movement of Railway Cars by Means of a Teletypewriter System.
First use Oct. 15, 1963.

SN 200,591. The New York Central Railroad Company, New York, N.Y. Filed Aug. 25, 1964.



For Rapid Telephonic Communications Associated With Railway Transportation.
First use Nov. 1, 1962.

Class 105 — Transportation and Storage

SN 218,521. American Airlines, Inc., New York, N.Y. Filed May 11, 1965.

AUTOJET

For Air Transportation of Passengers Which Includes Making Available a Rental Automobile for Each Passenger Upon Alighting.
First use Jan. 1, 1965.

SN 226,051. The Greyhound Corporation, Chicago, Ill. Filed Aug. 19, 1965.

GREYHOUND

Owner of Reg. Nos. 541,197, 631,488, and others.
For Packing, Storage, and Truck Transportation of the Goods of Others.
First use about February 1960.

SN 226,052. The Greyhound Corporation, Chicago, Ill. Filed Aug. 19, 1965.



Owner of Reg. Nos. 541,197, 631,488, and others.
For Packing, Storage, and Truck Transportation of the Goods of Others.

SN 226,053. The Greyhound Corporation, Chicago, Ill. Filed Aug. 19, 1965.



Owner of Reg. Nos. 541,197, 631,488, and others.
For Packing, Storage, and Truck Transportation of the Goods of Others.
First use about February 1960.

SN 226,356. Hertz System, Inc., New York, N.Y. Filed Aug. 24, 1965.

HERTZUBURBAN

Owner of Reg. Nos. 569,760, 772,089, and others.
For Vehicle Rental Services.
First use Apr. 20, 1965.

Class 106 — Material Treatment

SN 214,601. Baltimore Photo Supply Co., Inc., Baltimore, Md. Filed Mar. 22, 1965.



For Photographic Finishing Services.
First use Jan. 19, 1955.

Class 107 — Education and Entertainment

SN 192,222. Spacerium Limited, Niagara Falls, Ontario, Canada. Filed Apr. 28, 1964.

SPACERIUM

Owner of Canadian Reg. No. 136,989, dated Aug. 14, 1964.
For the Service of Operating and Managing Prefabricated Exhibits Concerned With Man's Technological Achievements on Earth and in Space; the Service of Operation and Management of Prefabricated Exhibits Concerned With Geological, Philosophical and Evolutionary Theories.

SN 202,212. American Institute for Foreign Study, Cincinnati, Ohio. Filed Sept. 21, 1964.



The representation of the globe is disclaimed apart from the mark as shown.

For Promoting Foreign Study Including Arranging the Attendance of Students in Foreign Schools.

First use Aug. 21, 1964.

SN 212,450. JC Sales Co., Inc., Anderson, Ind. Filed Feb. 19, 1965.

BOOBY TRAP

For Title of a Television Program—Namely, a Children's Participation Program.

First use Oct. 12, 1963.

SN 215,672. Young Life Campaign, Colorado Springs, Colo. Filed Apr. 2, 1965.

YOUNG LIFE

Owner of Reg. No. 417,703.

For Education and Missionary Services Directed to Teenagers.

First use March 1944.

SN 215,738. Houston Sports Association, Inc., Houston, Tex. Filed Apr. 5, 1965.



For Entertainment Services in the Nature of Baseball Exhibitions, Some of Which Services Are Rendered Through the Medium of Radio and Television Broadcasts.

First use Dec. 9, 1964.

SN 215,739. Houston Sports Association, Inc., Houston, Tex. Filed Apr. 5, 1965.



For Entertainment Services in the Nature of Baseball Exhibitions, Some of Which Services Are Rendered Through the Medium of Radio and Television Broadcasts.

First use Dec. 9, 1964.

SN 220,923. DWG Cigar Corporation, Detroit, Mich. Filed June 11, 1965.

CIGAR BOWL

Applicant disclaims the word "Cigar" apart from the mark as shown.

For Entertainment Services by Way of Cigar Smoking Competition.

First use Mar. 18, 1965.

COLLECTIVE MEMBERSHIP MARKS

Class 200

SN 204,876. Associated Plumbing and Mechanical Contractors of Sacramento, Inc., d.b.a. Sacramento Piping Industry Fund, Sacramento, Calif. Filed Oct. 27, 1964.



No claim is made to the words "Plumbing," "Heating," or "Cooling" apart from the mark as shown.

For Indicating Membership in Applicant.

First use on or about May 1964.

SN 206,989. United States Ski Association, Colorado Springs, Colo. Filed Oct. 29, 1964.



For Indicating Membership in Applicant Association.

First use August 1963.

SN 212,044. Probus National, West Haven, Conn. Filed Feb. 15, 1965.

PROBUS NATIONAL

For Indicating Membership in Applicant and Its Chartered Clubs.

First use 1921.

TRADEMARK REGISTRATIONS ISSUED

PRINCIPAL REGISTER

Class 1—Raw or Partly Prepared Materials

800,827. TEX-A-GRIP. Textile Rubber and Chemical Company, Inc. SN 173,201. Pub. 10–12–65. Filed 7–17–63.

800,828. INLYTE. General Motors Corporation. SN 194,723. Pub. 10–12–65. Filed 6–2–64.

800,829. BG/BELLA GREEN AND DESIGN. Dante Parenti, d.b.a. Bella Green Zoysia Lawn Nurseries. SN 211,187. Pub. 10–12–65. Filed 2–2–65.

800,830. HI COUNTRY. Safeway Stores, Incorporated. SN 213,250. Pub. 10–12–65. Filed 3–3–65.

800,831. WHITE ANGEL. Louis M. Beno, d.b.a. Beno's Nursery. SN 213,521. Pub. 10–12–65. Filed 3–8–65.

800,832. HILLBILLY HICKORY SMOKIN' CHIPS AND DESIGN. Hillbilly Hickory Products Company. SN 213,797. Pub. 10–12–65. Filed 3–10–65.

800,833. WHITE GUARD. The Griess-Pfleger Tanning Co. SN 217,113. Pub. 10–12–65. Filed 4–22–65.

800,834. SARP AND DESIGN. Sawyer Research Products, Inc. SN 217,794. Pub. 10–12–65. Filed 4–30–65.

800,835. ETHOCEL. The Dow Chemical Company. SN 219,409. Pub. 10–12–65. Filed 5–21–65.

800,836. BIG NUGGET. Icemakers Corporation. SN 219,793. Pub. 10–12–65. Filed 5–26–65.

800,837. VISCOCELL. International Paper Company. SN 220,105. Pub. 10–12–65. Filed 6–1–65.

800,838. RESOPREG. Pioneer Plastics Corporation. SN 220,401. Pub. 10–12–65. Filed 6–4–65.

800,839. IXAN. Solvay & Cie, Societe en Commandite Simple. SN 220,794. Pub. 10–12–65. Filed 6–9–65.

800,840. MALLYCLAD. Mallyclad Corporation. SN 220,951. Pub. 10–12–65. Filed 6–11–65.

800,841. POLYPLATE. Reichhold Chemicals, Inc. SN 220,962. Pub. 10–12–65. Filed 6–11–65.

Class 2—Receptades

800,842. HY-LO THERM. The Stellar Corporation. SN 172,691. Pub. 4–14–64. Filed 7–9–63.

800,843. TISSUETTE. Menda Company. SN 178,621. Pub. 10–12–65. Filed 10–9–63.

800,844. PILGRIM PRODUCTS. Webster Industries, Inc. MULTIPLE CLASS (Classes 2, 12, 42, and 50). SN 178,752. Pub. 10–12–65. Filed 10–10–63.

800,845. GRAVER. Union Tank Car Company. SN 188,307. Pub. 10–12–65. Filed 3–9–64.

800,846. KING MIDAS PRODUCTS AND DESIGN. Waterloo Idea Companies, d.b.a. King Midas Products. MULTIPLE CLASS (Classes 2, 8, 26, 37, and 50). SN 203,915. Pub. 5–25–65. Filed 10–14–64.

800,847. GEMINI SACKS AND DESIGN. Martin-Brower Corporation, assignee of Jackson Bag Corporation. SN 211,539. Pub. 10–12–65. Filed 2–8–65.

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

800,848. ADAPTA-SNAP. Prince Gardner Company, Inc. SN 209,110. Pub. 10–12–65. Filed 12–30–64.

800,849. AIRMASTER. Leeds Travelwear, Inc. SN 216,313. Pub. 10–12–65. Filed 4–12–65.

800,850. CHEQUER. Since 1868 Crescent Corporation, d.b.a. Crescent Corporation. SN 216,448. Pub. 10–12–65. Filed 4–13–65.

800,851. ASTRONAUT. Universal Luggage Co. Inc. SN 217,063. Pub. 10–12–65. Filed 4–21–65.

800,852. FASHIONAIRE. Shwayder Brothers, Inc. SN 217,143. Pub. 10–12–65. Filed 4–22–65.

Class 4—Abrasives and Polishing Materials

800,853. GOLD LABEL FREEWAX. Chemical Corporation of America. SN 192,681. Pub. 11–10–64. Filed 5–5–64.

800,854. GLO-GETTER. Amity Leather Products Co. SN 198,999. Pub. 10–12–65. Filed 8–3–64.

800,855. FABRI-LOK. Minnesota Mining and Manufacturing Company. SN 213,342. Pub. 10–12–65. Filed 3–4–65.

800,856. CREATE. S. C. Johnson & Son, Inc. SN 216,983. Pub. 10–12–65. Filed 3–12–65.

800,857. BOON. S. C. Johnson & Son, Inc. SN 213,984. Pub. 10–12–65. Filed 3–12–65.

Class 6—Chemicals and Chemical Compositions

800,858. DOGS DON'T. Theodore J. Weppner, d.b.a. Short-Cut for Shopping. SN 149,030. Pub. 10–12–65. Filed 7–13–62.

800,859. BLACK SWAN AND DESIGN. Black Swan Manufacturing Company. MULTIPLE CLASS (Classes 6, 12, 15, and 34). SN 156,541. Pub. 4–27–65. Filed 10–30–62.

800,860. JANES' GROUND. Cronite Company, Inc. SN 185,873. Pub. 10–12–65. Filed 2–3–64.

800,861. TULIP-TONE. Holland-Suco Color Company, by change of name from Holland Color and Chemical Company. SN 197,288. Pub. 10–12–65. Filed 7–7–64.

800,862. DOG SHIELD. Medical Supply Company. SN 199,299. Pub. 10–12–65. Filed 8–5–64.

800,863. TEMPROL. Swift & Company. SN 203,127. Pub. 10–12–65. Filed 10–1–64.

800,864. FLASK AND TEST TUBE (DESIGN). The Stamford Chemical Company. SN 203,345. Pub. 10–12–65. Filed 10–5–64.

800,865. CANDALBI-TEST. The Purdue Frederick Company. SN 204,708. Pub. 10–12–65. Filed 10–23–64.

800,866. PELLVIT. Röhm & Haas G.m.b.H. SN 208,494. Pub. 10–12–65. Filed 12–18–64.

800,867. KNITTEX. Chemische Fabrik Pfersee G.m.b.H. SN 209,762. Pub. 10–12–65. Filed 1–12–65.

800,868. OLEO-PHOBOL. Chemische Fabrik Pfersee G.m.b.H. SN 209,763. Pub. 10–12–65. Filed 1–12–65.

800,869. ENDSLIP. Durasol Drug & Chemical Co., d.b.a. Walter Lyons & Co. SN 215,200. Pub. 10–12–65. Filed 3–29–65.

800,870. PREVENTOX. General Aniline & Film Corporation. SN 215,408. Pub. 10–12–65. Filed 3–31–65.

800,871. VITAZIP AND DESIGN. Imperial Type Metal Company. SN 215,502. Pub. 10–12–65. Filed 4–1–65.

800,872. KOSOL. National Starch and Chemical Corporation. SN 215,535. Pub. 10–12–65. Filed 4–1–65.

800,873. JADE EAST. Swank, Inc. SN 215,549. Pub. 10–12–65. Filed 4–1–65.

800,874. THALAN. Monsanto Company. SN 215,767. Pub. 10–12–65. Filed 4–5–65.

800,875. ALFA-TOX. Geigy Chemical Corporation. SN 215,863. Pub. 10–12–65. Filed 4–6–65.

800,876. CAPAROL. Geigy Chemical Corporation. SN 215,864. Pub. 10–12–65. Filed 4–6–65.

Class 7 — Cordage

800,877. PRO-MA ROPE. The Thomas Jackson & Son Co. SN 206,041. Pub. 10–12–65. Filed 11–12–64.

800,878. SUSIFIX. Bandfabrik Breitenbach AG (Fabrique de Rubans Breitenbach S.A.) (Ribbon Manufactory Ltd. Breitenbach). SN 215,832. Pub. 10–12–65. Filed 4–6–65.

800,879. TOPCO. Topco Associates, Inc. SN 216,113. Pub. 10–12–65. Filed 4–8–65.

Class 8 — Smokers' Articles, Not Including Tobacco Products

800,846. (See Class 2 for this trademark.)

Class 9 — Explosives, Firearms, Equipments, and Projectiles

800,880. COPPELLA. Poudrerie Royale de Wetteren, Coppal et Cie, Societe Anonyme. SN 214,814. Pub. 10–12–65. Filed 3–23–65.

Class 10 — Fertilizers

800,881. ENVEE. Solar Nitrogen Chemicals, Inc., assignee of Hoosier Soil Service, Inc. SN 197,831. Pub. 10–12–65. Filed 7–14–64.

800,882. BERMUDA BOOSTER. Smith-Douglass Company, Incorporated. SN 209,815. Pub. 10–12–65. Filed 1–12–65.

800,883. FARM BUILDER AND DESIGN. Farm Builders, Inc. SN 209,921. Pub. 10–12–65. Filed 1–14–65.

Class 12 — Construction Materials

800,844. (See Class 2 for this trademark.)

800,859. (See Class 6 for this trademark.)

800,884. UNIFIED HOMES. Richardson Homes Corporation. SN 187,154. Pub. 10–12–65. Filed 2–20–64.

800,885. SOFTONE AND DESIGN. Gym Plastics Corp. SN 193,008. Pub. 10–12–65. Filed 5–8–64.

800,886. CLEAR-TITE. Weyerhaeuser Company. SN 197,000. Pub. 10–12–65. Filed 7–2–64.

800,887. STOP 'N VENT. A. M. Hunsiker, Inc. SN 198,275. Pub. 10–12–65. Filed 7–21–64.

800,888. SW. Anderson Safeway Guard Rail Corporation. SN 211,240. Pub. 10–12–65. Filed 2–3–65.

800,889. DURADO AND DESIGN. Locke Manufacturing Company. SN 211,368. Pub. 10–12–65. Filed 2–4–65.

800,890. EQUA-MIX. Permaflex Products Company, Inc. SN 216,192. Pub. 10–12–65. Filed 4–9–65.

800,891. LAMICLAD. Fruehauf Corporation. SN 216,406. Pub. 10–12–65. Filed 4–13–65.

800,892. MARK V. Searchway, Incorporated. SN 216,445. Pub. 10–12–65. Filed 4–13–65.

800,893. PERMA-FLEXIT. Searchway, Incorporated. SN 216,446. Pub. 10–12–65. Filed 4–13–65.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

800,894. W. Walton & Walton. SN 190,561. Pub. 10–12–65. Filed 4–7–64.

800,895. WRENCHLESS. E. B. Wiggins, Inc. SN 208,867. Pub. 10–12–65. Filed 12–24–64.

800,896. HEMLACO. Hemenway Furniture Company, Inc. SN 212,775. Pub. 10–12–65. Filed 2–25–65.

800,897. FLOOR VAC AND DESIGN. H-P Products, Inc. SN 215,966. Pub. 10–12–65. Filed 4–7–65.

800,898. ARMOR-PLAST. Brass-Craft Pacific, Inc. SN 216,257. Pub. 10–12–65. Filed 4–12–65.

800,899. STRAINMASTER. Nooter Corporation. SN 216,613. Pub. 10–12–65. Filed 4–16–65.

800,900. WEATHER MATIC AND DESIGN. Telsco Industries. MULTIPLE CLASS (Classes 13 and 26). SN 219,493. Pub. 10–12–65. Filed 5–24–65.

Class 14 — Metals and Metal Castings and Forgings

800,901. POLYCAST. Sandusky Foundry & Machine Company. SN 189,212. Pub. 3–9–65. Filed 3–20–64.

800,902. PLASTISEAL. Pre Finish Metals Incorporated. SN 211,923. Pub. 10–12–65. Filed 2–12–65.

800,903. NATIONAL STEEL. National Steel Corporation. SN 215,434. Pub. 10–12–65. Filed 3–31–65.

Class 15 — Oils and Greases

800,859. (See Class 6 for this trademark.)

800,904. SLEEK. Walter J. Sarad, d.b.a. Sleek Products. SN 204,512. Pub. 10–12–65. Filed 10–21–64.

800,905. CLEAN 'N TUNE. The Lubri-Loy Company. SN 210,574. Pub. 10–12–65. Filed 1–25–65.

800,906. PMC AND DESIGN. John C. Gudgel, d.b.a. Preventive Maintenance Company. SN 210,673. Pub. 10–12–65. Filed 1–26–65.

800,907. PUT A TIGER IN YOUR TANK! Humble Oil & Refining Company. SN 214,740. Pub. 10–12–65. Filed 3–24–65.

800,908. AMBIFAL. The Dow Chemical Company. SN 216,149. Pub. 10–12–65. Filed 4–9–65.

Class 16 — Protective and Decorative Coatings

800,809. HOWKOTE. E. M. Howey. SN 191,388. Pub. 10–12–65. Filed 4–17–64.

Class 17 — Tobacco Products

800,910. OLD PORT. Imperial Tobacco Company of Canada, Limited. SN 183,841. Pub. 4–6–65. Filed 12–31–63.

800,911. OLD PORT. Imperial Tobacco Company of Canada, Limited, assignee of R. J. Reynolds Tobacco Company. SN 199,517. Pub. 4–6–65. Filed 8–6–64.

Class 18 — Medicines and Pharmaceutical Preparations

800,912. NO-SOL. The Denver Chemical Manufacturing Company, assignee of Elmer E. Olson. SN 148,521. Pub. 6–30–64. Filed 7–6–62.

800,913. GEX AND DESIGN. National Bellas Hess, Inc. SN 188,131. Pub. 10–12–65. Filed 3–6–64.

800,914. ALDOCLOR. Merck & Co., Inc. SN 204,080. Pub. 10–12–65. Filed 10–15–64.

800,915. EARLY BIRD AND DESIGN. Interstate Industries, Inc., d.b.a. Interstate Chemical Company. SN 205,296. Pub. 10–12–65. Filed 11–2–64.

800,916. HIPREX. Rexall Drug and Chemical Company, d.b.a. Riker Laboratories. SN 206,298. Pub. 10–12–65. Filed 11–16–64.

800,917. BELCALOID. Boehringer Ingelheim G.m.b.H. SN 206,601. Pub. 10–12–65. Filed 11–20–64.

800,918. WINCAPS. Sterling Drug Inc. SN 210,616. Pub. 10–12–65. Filed 1–25–65.

800,919. ULTRA-LIFE. Ultra-Life Laboratories, Inc. SN 216,896. Pub. 10–12–65. Filed 4–19–65.

800,920. SUPLI-K. Mead Johnson & Company. SN 217,645. Pub. 10–12–65. Filed 4–29–65.

800,921. MAN ALIVE. Colgate-Palmolive Company. SN 217,850. Pub. 10–12–65. Filed 5–3–65.

800,922. TRILIUM. American Home Products Corporation. SN 218,254. Pub. 10–12–65. Filed 5–7–65.

800,923. T.P.R. American Home Products Corporation. SN 218,353. Pub. 10–12–65. Filed 5–7–65.

800,924. ARMOCYCLAR. Armour Pharmaceutical Company. SN 218,372. Pub. 10–12–65. Filed 5–10–65.

800,925. CHYMOCYCLAR. Armour Pharmaceutical Company. SN 218,373. Pub. 10–12–65. Filed 5–10–65.

Class 19 — Vehicles

800,926. H DEVICE (DESIGN). Honda Giken Kogyo Kabushiki Kaisha (Honda Motor Co. Ltd.). SN 182,264. Pub. 10–12–65. Filed 12–3–63.

800,927. OK. O.K. Tire and Rubber Co. SN 199,094. Pub. 10–12–65. Filed 8–3–64.

Class 21 — Electrical Apparatus, Machines, and Supplies

800,928. TELE-BEAM. The Kalart Company Inc., assignee, by mesne assignment, of Waltham Precision Instrument Company, Inc. SN 147,055. Pub. 1–28–64. Filed 6–15–62.

800,929. TASCO. Guaranteed Parts Company, Inc. SN 190,174. Pub. 10–12–65. Filed 4–2–64.

800,930. MX. Molex Products Company. SN 193,193. Pub. 10–12–65. Filed 5–11–64.

800,931. SKYLARK. Sunbeam Corporation. SN 201,755. Pub. 5–11–65. Filed 9–11–64.

800,932. MAXIMUS 1. United Transformer Corporation. SN 208,865. Pub. 10–12–65. Filed 12–24–64.

800,933. SURE FIRE. Woodward-Schumacher Electric Corporation. SN 210,832. Pub. 10–12–65. Filed 1–27–65.

800,934. FIBREHEAT. Si Lite, Inc. SN 211,587. Pub. 10–12–65. Filed 2–8–65.

Class 22 — Games, Toys, and Sporting Goods

800,935. PRO-PUTT. Pro-Putt, Inc. SN 202,041. Pub. 10–12–65. Filed 9–16–64.

800,936. MISCELLANEOUS DESIGN. The United States Playing Card Company. SN 213,731. Pub. 10–12–65. Filed 3–9–65.

800,937. "MARY" MAKE-UP. American Character, Inc. SN 213,832. Pub. 10–12–65. Filed 3–11–65.

800,938. CRICKET. American Character, Inc. SN 213,834. Pub. 10–12–65. Filed 3–11–65.

800,939. DEENA DOLLFACE. American Character, Inc. SN 213,835. Pub. 10–12–65. Filed 3–11–65.

800,940. "MARGIE" MAKE-UP. American Character, Inc. SN 213,836. Pub. 10–12–65. Filed 3–11–65.

800,941. UGHLETS. The Spesco Corporation. SN 214,191. Pub. 10–12–65. Filed 3–15–65.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

800,942. PANASONIC AND DESIGN. Matsushita Electric Industrial Co., Ltd. SN 176,552. Pub. 9–29–64. Filed 9–9–63.

800,943. DYNA-PACK. Monarch Road Machinery Company. SN 194,822. Pub. 7–20–65. Filed 6–3–64.

800,944. ALIGNAGLIDE. American Metal Products Company. SN 202,214. Pub. 10–12–65. Filed 9–21–64.

800,945. HELLER TOOL CO. SINCE 1836 AND DESIGN. Heller Tool Co. SN 204,069. Pub. 10–12–65. Filed 10–15–64.

800,946. PELLETOR. The Black Clawson Company. SN 207,008. Pub. 10–12–65. Filed 11–27–64.

800,947. WANDERER. Wanderer-Werke Aktiengesellschaft. MULTIPLE CLASS (Classes 23 and 26). SN 210,240. Pub. 10–12–65. Filed 1–19–65.

800,948. PERMA-BUOY. Jeffrey Galion Manufacturing Company. SN 211,999. Pub. 10–12–65. Filed 2–15–65.

800,949. GREENFIELD. Eli Lilly and Company. SN 213,226. Pub. 8–17–65. Filed 3–3–65.

800,950. SHELLBACK. Shellback Manufacturing Company. SN 213,804. Pub. 10–12–65. Filed 3–10–65.

800,951. RAPRENCH. The Ridge Tool Company. SN 216,104. Pub. 10–12–65. Filed 4–8–65.

800,952. SAF T JAC. Colonial Knife Company, Inc. SN 216,139. Pub. 10–12–65. Filed 4–9–65.

800,953. BEAVER AND DESIGN. Hydro-Air Engineering, Inc. SN 216,305. Pub. 10–12–65. Filed 4–12–65.

800,954. ML. Mountain Manufacturing Company, Inc. SN 216,423. Pub. 10–12–65. Filed 4–13–65.

800,955. MINELECTRIC. Olivetti Underwood Corporation. SN 216,425. Pub. 10–12–65. Filed 4–12–65.

800,956. RECON. Cummins Engine Company, Inc. SN 216,486. Pub. 10–12–65. Filed 4–14–65.

800,957. MISCELLANEOUS DESIGN. Gebrüder Busatis. SN 216,814. Pub. 10–12–65. Filed 4–19–65.

Class 26 — Measuring and Scientific Appliances

800,846. (See Class 2 for this trademark.)

800,900. (See Class 13 for this trademark.)

800,947. (See Class 23 for this trademark.)

800,958. MISCELLANEOUS DESIGN. Opticks, Inc. MULTIPLE CLASS (Classes 26 and 106). SN 189,927. Pub. 10–12–65. Filed 3–30–64.

800,959. HUMIDIPAK. McDuffee Bros., Inc. SN 206,056. Pub. 4–6–65. Filed 11–12–64.

800,960. FMO AND DESIGN. Prentice-Hall, Inc. SN 216,733. Pub. 10–12–65. Filed 4–16–65.

Class 28 — Jewelry and Precious-Metal Ware

800,961. CHARLES OF THE RITZ. Lanvin-Charles of the Ritz, Inc. SN 211,174. Pub. 10–12–65. Filed 2–2–65.

800,962. SHA-SHA-GEMS AND DESIGN. Wiesbauer's Sha-Sha Gems. SN 212,837. Pub. 10–12–65. Filed 2–25–65.

Class 29 — Brooms, Brushes, and Dusters

800,963. OPTIPAD. Geoscience Instruments Corporation. SN 198,347. Pub. 10–12–65. Filed 7–22–64.

800,964. POLITEX. Geoscience Instruments Corporation. SN 198,348. Pub. 10–12–65. Filed 7–22–64.

800,965. SONGRAND. The Songrand Corporation. MULTIPLE CLASS (Classes 29 and 44). SN 200,501. Pub. 10–12–65. Filed 8–24–64.

Class 31 — Filters and Refrigerators

800,966. GEMINI. Kisco Boiler & Engineering Co. SN 172,200. Pub. 10–12–65. Filed 7–1–63.

800,967. CUNO-PORE. The Cuno Engineering Corporation. SN 199,352. Pub. 10–12–65. Filed 8–6–64.

800,968. Q. Mero & Company, Inc. SN 202,292. Pub. 10–12–65. Filed 9–21–64.

Class 32 — Furniture and Upholstery

800,969. CARDTIQUE. Benjamin J. Pearlman, d.b.a. Benjamin J. Pearlman & Co. SN 207,732. Pub. 10–12–65. Filed 12–8–64.

800,970. BABY RECLINING ON A CHAIR (DESIGN). Baby Relax Ltd. SN 214,233. Pub. 10–12–65. Filed 3–16–65.

Class 34 — Heating, Lighting, and Ventilating Apparatus

800,859. (See Class 6 for this trademark.)

800,971. JUPITER. Carrier Corporation. SN 201,574. Pub. 10–12–65. Filed 9–10–64.

800,972. FUEL CHIEF. Texaco Inc. SN 202,642. Pub. 10–12–65. Filed 9–24–64.

800,973. AIR-IN. Provident Tradesmens Bank and Trust Company, administrator d.b.n.c.t.a. of the estate of Raymond H. Fager, deceased. SN 203,028. Pub. 10–12–65. Filed 9–30–64.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

800,974. BRR AND DESIGN. B. Rubin Research, Inc. SN 214,013. Pub. 10–12–65. Filed 3–12–65.

Class 36 — Musical Instruments and Supplies

800,975. STENO-BOOSTER. Conversa-Phone Institute, Inc. SN 204,140. Pub. 10–12–65. Filed 10–16–64.

800,976. OLO RECORDS. Thomas W. Pedigo. SN 206,755. Pub. 10–12–65. Filed 11–23–64.

800,977. MOTOWN. Motown Record Corporation. SN 208,479. Pub. 10–12–65. Filed 12–18–64.

800,978. TAMLA. Motown Record Corporation. SN 208,480. Pub. 10–12–65. Filed 12–18–64.

800,979. GORDY. Motown Record Corporation. SN 208,481. Pub. 10–12–65. Filed 12–18–64.

Class 37 — Paper and Stationery

800,846. (See Class 2 for this trademark.)

800,980. WEBTEXT. Weyerhaeuser Company. SN 200,219. Pub. 10–12–65. Filed 8–19–64.

800,981. TOREADOR. Weyerhaeuser Company. SN 200,686. Pub. 10–12–65. Filed 8–26–64.

800,982. GAYLORD. Gaylord Bros., Inc. SN 204,666. Pub. 10–12–65. Filed 10–23–64.

800,983. ROSEBUD TAPESTRY. Norcross, Inc. SN 209,370. Pub. 10–12–65. Filed 1–5–65.

800,984. AUTOSCRIPT. Molineus & Co. SN 210,582. Pub. 10–12–65. Filed 1–25–65.

800,985. GRAFEZE. Graphic Materials Corporation. SN 211,645. Pub. 10–12–65. Filed 2–9–65.

800,986. MORCO. The H. L. Moore Company, Inc. SN 212,342. Pub. 10–12–65. Filed 2–18–65.

800,987. ETHOCEL. The Dow Chemical Company. SN 217,315. Pub. 10–12–65. Filed 4–26–65.

Class 38 — Prints and Publications

800,988. SCIENCE BOOK-LABS AND DESIGN. Harcourt Brace & World Inc., assignee, by mesne assignment, of Science Materials Center, Inc. SN 155,747. Pub. 10–12–65. Filed 10–23–62.

800,989. ETTI-CAT. Josephin (Jo) Mary McCormick-Sakurai, d.b.a. Jom. SN 176,823. Pub. 10–12–65. Filed 9–12–63.

800,990. SCAN. Aero Service Corporation. SN 184,562. Pub. 10–12–65. Filed 1–14–64.

800,991. NEWSBOOK. Dow Jones & Company, Inc. SN 186,708. Pub. 10–12–65. Filed 2–14–64.

800,992. IRA RINEHART'S OIL AND GAS REPORT. John R. Less. SN 190,940. Pub. 10–12–65. Filed 4–13–64.

800,993. WEEKEND. Bob and Ruth Ritter, d.b.a. Ritter Productions. SN 191,796. Pub. 10–12–65. Filed 4–22–64.

800,994. "SOCIAL" SECURITY. Computer Programming Concepts, Inc. SN 193,119. Pub. 10–12–65. Filed 5–11–64.

800,995. SYST-O-COLOR. Uitgeverij Mouton & Co. N.V. SN 200,300. Pub. 10–12–65. Filed 8–20–64.

800,996. PRINCESS HOMES AND DESIGN. Princess Park Estates, Inc. SN 203,114. Pub. 10–12–65. Filed 10–1–64.

800,997. HH. Hospital Development Corporation. SN 203,184. Pub. 10–12–65. Filed 10–2–64.

800,998. IDEAFILE. Ideafile, Inc. SN 206,160. Pub. 10–12–65. Filed 11–13–64.

800,999. CIN AND DESIGN. Čin, Inc. SN 206,925. Pub. 10–12–65. Filed 11–25–64.

801,000. TAP. The Analysts' Publisher, Inc. SN 208,225. Pub. 10–12–65. Filed 12–16–64.

801,001. AMERICAN CAMPER. American Camping Association, Inc. SN 210,795. Pub. 10–12–65. Filed 1–27–65.

801,002. OUT OF THE INKWELL. Max Fleischer. SN 213,215. Pub. 10–12–65. Filed 3–8–65.

Class 39 — Clothing

801,003. RUF TUF AND DESIGN. Eagle Shoe Mfg. Company, Inc. SN 164,514. Pub. 10–12–65. Filed 8–13–63.

801,004. TEE TOGS. Foster-Hochberg Manufacturing Co., Inc. SN 186,348. Pub. 10–12–65. Filed 2–10–64.

801,005. BEN B. BERKE. Morton Robins, d.b.a. Famous Brand Shoes. SN 187,431. Pub. 10–12–65. Filed 2–25–64.

801,006. GAY TONE. F. W. Woolworth Co. SN 188,599. Pub. 10–12–65. Filed 3–12–64.

801,007. DONROCK. Selber Bros., Inc. SN 193,617. Pub. 10–12–65. Filed 6–19–64.

801,008. DURA-TEST. Sheffield Hosiery Mills, Inc. SN 195,332. Pub. 6–9–65. Filed 6–10–64.

801,009. MISS X AND DESIGN. Chadbourn Gotham, Inc. SN 195,514. Pub. 5–11–65. Filed 6–12–64.

801,010. CORAL BEACH. Steinberg Brothers, Inc. SN 196,567. Pub. 10–12–65. Filed 6–26–64.

801,011. TEE SWING. Classtex Knitting Mills. SN 200,284. Pub. 10–12–65. Filed 8–20–64.

801,012. KOLASKA. Morris Metzger & Sons, Inc. SN 205,198. Pub. 10–12–65. Filed 10–30–64.

801,013. MITZOU. Micheline Stephan de Izquierdo, d.b.a. Mitsou. SN 208,554. Pub. 10–12–65. Filed 12–21–64.

801,014. MINK MASTERPIECES. Irving Abrams Fur Corp. SN 211,331. Pub. 10–12–65. Filed 2–4–65.

801,015. GNOMES. Golo Footwear Corporation. SN 213,007. Pub. 10–12–65. Filed 3–1–65.

801,016. CHAMPAGNE BRA. Glamorise Foundations, Inc. SN 213,554. Pub. 10–12–65. Filed 3–8–65.

801,017. KOOL-EEZ. International Latex Corporation. SN 213,679. Pub. 10–12–65. Filed 3–9–65.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

800,844. (See Class 2 for this trademark.)

801,018. POLAR-6. Huyck Corporation. SN 199,369. Pub. 10–12–65. Filed 8–6–64.

801,019. SCOTLAND BY THE YARD AND DESIGN. Scotland by the Yard. SN 206,296. Pub. 7–20–65. Filed 11–16–64.

801,020. NEEDL-REDY. Sears, Roebuck and Co. SN 208,498. Pub. 10–12–65. Filed 12–18–64.

801,021. ORIGINALE. Bigelow-Sanford, Inc. SN 209,403. Pub. 10–12–65. Filed 1–6–65.

Class 44 — Dental, Medical, and Surgical Appliances

800,965. (See Class 29 for this trademark.)

801,022. ORTHAIRTOME. Zimmer Manufacturing Company. SN 207,850. Pub. 10–12–65. Filed 12–9–64.

801,023. ZOBEC. Johnson & Johnson. SN 208,459. Pub. 10–12–65. Filed 12–18–64.

801,024. SCDK. Cutter Laboratories, Inc. SN 214,088. Pub. 10–12–65. Filed 3–15–65.

Class 45 — Soft Drinks and Carbonated Waters

801,025. AH-HA AND DESIGN. George H. Byer. SN 172,724. Pub. 8–11–64. Filed 7–10–63.

Class 46 — Foods and Ingredients of Foods

801,026. M-M-MILD. Vienna Sausage Manufacturing Company. SN 170,785. Pub. 10–12–65. Filed 6–11–63.

801,027. ANGEL CREAM. Universal Foods Corporation, d.b.a. Red Star Yeast & Products Co. SN 181,716. Pub. 10–12–65. Filed 11–21–63.

801,028. RED STAR ANGEL CREAM. Universal Foods Corporation, d.b.a. Red Star Yeast & Products Co. SN 181,717. Pub. 10–12–65. Filed 11–21–63.

801,029. QUEEN ESTHER. Schleider Foods, Inc., d.b.a. Schleider's. SN 188,275. Pub. 10–12–65. Filed 3–9–64.

801,030. SAVORMIX. Mapleton's Nut Food Company Limited. SN 189,911. Pub. 10–12–65. Filed 3–30–64.

801,031. JERSEYLAND DAIRY. Jersey Land Dairy, Inc. SN 200,261. Pub. 10–12–65. Filed 8–20–64.

801,032. HENDERSON'S PORTION PAK. Henderson's Portion Pak Inc. SN 202,079. Pub. 10–12–65. Filed 9–17–64.

801,033. KNEED. Hunt Foods and Industries, Inc., d.b.a. Hunt-Wesson Sales Co. SN 202,478. Pub. 10–12–65. Filed 9–23–64.

801,034. JANE PARKER JP. The Great Atlantic & Pacific Tea Company, Inc. SN 202,899. Pub. 10–12–65. Filed 9–29–64.

801,035. OL' McDONALDS LITTLE FARM. Fun Farms, Inc. SN 206,438. Pub. 10–12–65. Filed 11–18–64.

801,036. PEPPERIDGE FARM. Pepperidge Farm, Incorporated. SN 207,624. Pub. 10–12–65. Filed 12–8–64.

801,037. TIGER SHAKE. Plus Products. SN 207,654. Pub. 10–12–65. Filed 12–7–64.

801,038. COW & GATE. Cow & Gate Limited. SN 207,948. Pub. 10–12–65. Filed 12–11–64.

801,039. BRETZEL BARRELS. Mr. Twister's Bretzel Co., Inc. SN 208,952. Pub. 10–12–65. Filed 12–28–64.

801,040. LETCO. L. E. Tibert Company. SN 209,930. Pub. 10–12–65. Filed 1–12–65.

801,041. TABLE SERVICE. Standard Brands Incorporated. SN 209,885. Pub. 10–12–65. Filed 1–13–65.

801,042. ROCKET HILLS THAT TASTE SPACE AND DESIGN. Rocket Pizza Company. SN 210,477. Pub. 10–12–65. Filed 1–22–65.

801,043. MISCELLANEOUS DESIGN. BTE, Inc. SN 210,518. Pub. 10–12–65. Filed 1–25–65.

801,044. LYNNE BROOK. Pet Milk Company. SN 210,979. Pub. 10–12–65. Filed 1–20–65.

801,045. DUNCAN'S COFFEE SHOP ETC. AND DESIGN. The Coca-Cola Company, d.b.a. Duncan Foods Co. SN 211,042. Pub. 10–12–65. Filed 2–1–65.

801,046. EMPIRE RANCH. Arteo Distributors, Inc. SN 214,500. Pub. 10–12–65. Filed 3–19–65.

801,047. MARSHBURN FARMS AND DESIGN. Marshburn, Inc., d.b.a. Marshburn Farms. SN 214,665. Pub. 10–12–65. Filed 3–22–65.

801,048. FLOR DE LIS AND DESIGN. La Industrial Paraguaya Sociedad Anonima. SN 217,849. Pub. 10–12–65. Filed 4–26–65.

801,049. EVERCANE. Everglades Sugar Refinery, Inc. SN 218,090. Pub. 10–12–65. Filed 5–5–65.

801,050. EVERCANE AND DESIGN. Everglades Sugar Refinery, Inc. SN 218,091. Pub. 10–12–65. Filed 5–5–65.

801,051. HAPPY LAND. R. D. Pringle, Inc., d.b.a. Little Farmer Foods. SN 218,314. Pub. 10–12–65. Filed 5–7–65.

Class 47 — Wines

801,052. DOKTOR FAUSTUS ETC. AND DESIGN. Grants of St. James's Limited. SN 211,524. Pub. 10–12–65. Filed 2–8–65.

Class 49 — Distilled Alcoholic Liquors

801,053. RONRICO AND DESIGN. Ronrico Corporation. SN 221,852. Pub. 10–12–65. Filed 6–23–65.

Class 50 — Merchandise Not Otherwise Classified

800,844. (See Class 2 for this trademark.)

800,846. (See Class 2 for this trademark.)

801,054. STORM KING. The Slater Company. SN 207,989. Pub. 10–12–65. Filed 12–11–64.

801,055. SURE FOOT. P. G. Atwood Company. SN 210,069. Pub. 10–12–65. Filed 1–18–65.

801,056. PULP-PAL. Port City Steel Company, d.b.a. Port City Steel Co. SN 210,350. Pub. 10–12–65. Filed 1–21–65.

801,057. VISU-LITE. Gamco, Inc. SN 210,771. Pub. 10–12–65. Filed 1–27–65.

801,058. KEY-KLU. Harry Diskin, d.b.a. H. Diskin Company. SN 211,351. Pub. 10–12–65. Filed 2–4–65.

801,059. QUEEN OF HEARTS. Gessner Products Company, Inc. SN 217,108. Pub. 10–12–65. Filed 4–22–65.

801,060. YEAH YEAH WHISK AND DESIGN. Blassco Corporation. SN 217,596. Pub. 10–12–65. Filed 4–29–65.

801,061. STA SAFE AND DESIGN. R. D. Werner Co., Inc. SN 218,351. Pub. 10–12–65. Filed 5–7–65.

801,062. TOPSIDE. Alfred Mossner Company. SN 219,046. Pub. 10–12–65. Filed 5–17–65.

801,063. GRANDPA'S. Mr. Gift and Associates Limited. SN 220,527. Pub. 10–12–65. Filed 6–7–65.

801,064. VISO-LITE. The Hopp Press, Inc. SN 221,054. Pub. 10–12–65. Filed 6–14–65.

801,065. WILLSEAL. Richardson-Merrell Inc. SN 221,102. Pub. 10–12–65. Filed 6–14–65.

Class 51 — Cosmetics and Toilet Preparations

801,066. DRUMMER AND DESIGN. Auvergne et Cie, Inc. SN 208,168. Pub. 9–14–65. Filed 12–15–64.

801,067. PIPING ROCK. Kayser-Roth Corporation. SN 211,438. Pub. 10–12–65. Filed 2–5–65.

801,068. HALAQUICK. Anasco G.m.b.H. SN 213,085. Pub. 10–12–65. Filed 3–2–65.

801,069. LOVING GLOW. Clairol Incorporated. SN 213,095. Pub. 10–12–65. Filed 3–2–65.

801,070. RETURN. Clairol Incorporated. SN 213,410. Pub. 10–12–65. Filed 3–5–65.

801,071. SHIRLEY GAY. Independent Grocers' Alliance Distributing Co. SN 219,344. Pub. 10–12–65. Filed 5–20–65.

Class 52 — Detergents and Soaps

801,072. TR-3 AND DESIGN. Superior Laboratories, Inc. SN 168,448. Pub. 6–1–65. Filed 5–8–63.

801,073. AMO-DERM AND DESIGN. Day & Frick, Inc. SN 183,388. Pub. 10–12–65. Filed 12–23–63.

801,074. DRI-PLUS AND DESIGN. Oil-Dri Corporation of America. SN 186,471. Pub. 10–12–65. Filed 2–11–64.

801,075. GLASS MATE. Salvatore J. Di Tucci. SN 204,770. Pub. 10–12–65. Filed 10–26–64.

801,076. GOOD HOPE. Biddle Purchasing Company, d.b.a. Meridian Distributors and/or Good Hope Distributors. SN 215,323. Pub. 10–12–65. Filed 3–30–65.

801,077. K GARD. Kay Chemical Corporation. SN 215,418. Pub. 10–12–65. Filed 3–31–65.

801,078. I.Q. Advance Chemical Company. SN 216,649. Pub. 10–12–65. Filed 4–16–65.

801,079. SHIRLEY GAY. Independent Grocers' Alliance Distributing Co. SN 219,345. Pub. 10–12–65. Filed 5–20–65.

801,080. A–125. Airkem, Inc. SN 219,750. Pub. 10–12–65. Filed 5–26–65.

801,081. NEW DAWN. Alberto-Culver Company. SN 220,439. Pub. 10–12–65. Filed 6–7–65.

801,082. INSTACLEAN. United States Borax & Chemical Corporation. SN 220,580. Pub. 10–12–65. Filed 6–7–65.

801,083. R & U. United States Borax & Chemical Corporation. SN 220,581. Pub. 10–12–65. Filed 6–7–65.

801,084. BRUSH-BRIGHT. Coolant Sales & Service. SN 220,747. Pub. 10–12–65. Filed 6–9–65.

801,085. SPRA-N-RINZ. Shur-Gloss Mfg. Co., Inc. SN 220,791. Pub. 10–12–65. Filed 6–9–65.

801,086. PROTRIENT. Colgate-Palmolive Company. SN 221,019. Pub. 10–12–65. Filed 6–14–65.

Service Marks

Class 100 — Miscellaneous

801,087. TELSPACE. Charles E. Lunts Publications & Services. SN 157,631. Pub. 10–12–65. Filed 11–20–62.

801,088. MISCELLANEOUS DESIGN. Crowning Glory, Inc. SN 161,964. Pub. 10–12–65. Filed 2–4–63.

801,089. HENNY PENNY. Henny Penny Corporation. SN 184,291. Pub. 10–12–65. Filed 1–9–64.

801,090. TAG-A-LONG. Mitchell M. Williams, d.b.a. Tag-A-Long Tours. SN 191,466. Pub. 10–12–65. Filed 4–17–64.

801,091. PG AND E. Pacific Gas and Electric Company. SN 193,572. Pub. 10–12–65. Filed 5–15–64.

801,092. PQ PIX ETC. AND DESIGN. Olan Mills, Inc. of Tennessee. SN 203,110. Pub. 10–12–65. Filed 10–1–64.

801,093. CARBOTHANASIA. Yolan R. Guttman. SN 207,594. Pub. 10–12–65. Filed 12–7–64.

801,094. BOY AND GIRL (DESIGN). The National School Public Relations Association. SN 208,272. Pub. 10–12–65. Filed 12–16–64.

801,095. IT'S FINGER LICKIN' GOOD. Kentucky Fried Chicken Corporation. SN 209,171. Pub. 10–12–65. Filed 12–31–64.

Class 101 — Advertising and Business

801,096. MUNIFACTS. The Bond Buyer. SN 184,882. Pub. 10–12–65. Filed 1–20–64.

801,097. DIAMOND KEY. Oil Heat Institute of Washington. SN 204,699. Pub. 10–12–65. Filed 10–23–64.

801,098. V STORE AND DESIGN. Variety Supply Company. SN 212,469. Pub. 10–12–65. Filed 2–19–65.

801,099. MAILMEN AND DESIGN. Mailmen Incorporated. SN 214,530. Pub. 10–12–65. Filed 3–19–65.

801,100. A TO Z. A to Z Rental, Inc. SN 217,820. Pub. 10–12–65. Filed 5–3–65.

Class 102 — Insurance and Financial

801,101. STRENGTH-ASSURANCE-SERVICE ETC. AND DESIGN. American Mortgage & Investment Corporation, d.b.a. American Mortgage Group. SN 185,185. Pub. 10–12–65. Filed 1–23–64.

801,102. PL ETC. AND DESIGN. Protected Home Mutual Life Insurance Company. SN 201,737. Pub. 6–29–65. Filed 9–11–64.

801,103. FIRST NATIONAL CASUALTY COMPANY. First National Casualty Company. SN 204,155. Pub. 10–12–65. Filed 10–16–64.

801,104. MA AND DESIGN. Mid-America Bond & Share Co. SN 208,372. Pub. 10–12–65. Filed 12–17–64.

801,105. PORTRAIT OF ANDREW JACKSON (DESIGN). The Andrew Jackson Life Insurance Company. SN 211,142. Pub. 10–12–65. Filed 2–2–65.

801,106. SIGN & FLY. American Express Company (New York corporation), assignee of American Express Company (New York unincorporated association). SN 211,856. Pub. 10–12–65. Filed 2–12–65.

Class 103 — Construction and Repair

801,107. P·G AND E·. Pacific Gas and Electric Company. SN 193,571. Pub. 10–12–65. Filed 5–15–64.

Class 104 — Communication

801,108. GOOD SOUND RADIO. Peoples Broadcasting Corporation. SN 207,077. Pub. 10–12–65. Filed 11–27–64.

Class 105 — Transportation and Storage

801,109. LPI. Lease Plan International Corp. SN 188,018. Pub. 10–12–65. Filed 3–5–64.

801,110. HIS & HERS AND DESIGN. Garber's Travel Service, Inc. SN 197,882. Pub. 10–12–65. Filed 7–15–64.

801,111. SACTOTE. Western Velo & Cement Specialties Company. SN 202,880. Pub. 10–12–65. Filed 9–28–64.

801,112. FINA AND DESIGN. American Petrofina, Incorporated. SN 206,911. Pub. 10–12–65. Filed 11–25–64.

Class 106 — Material Treatment

800,958. (See Class 26 for this trademark.)

801,113. SEABROOK. Seabrook Blanching Corporation. SN 184,110. Pub. 10–12–65. Filed 1–6–64.

801,114. IT'S THE FINISH THAT COUNTS. The Millville Manufacturing Co. SN 184,829. Pub. 10–12–65. Filed 1–17–64.

Class 107 — Education and Entertainment

801,115. MISTER TITAN. Mister Titan, Inc. SN 177,270. Pub. 10–12–65. Filed 9–18–63.

801,116. MAJOR MUDD. RKO General Inc. SN 178,036. Pub. 10–12–65. Filed 9–30–63.

801,117. ASTROVISION. American Airlines, Inc. SN 206,675. Pub. 10–12–65. Filed 11–23–64.

801,118. PI AND DESIGN. Parachutes, Incorporated. SN 207,322. Pub. 10–12–65. Filed 12–2–64.

Certification Marks

Class A — Goods

801,119. REPRESENTATION OF LURE HORN (DESIGN). Landbrugsministeriet. SN 147,473. Pub. 10–12–65. Filed 6–22–62.

801,120. DEEP STRENGTH. The Asphalt Institute. SN 192,149. Pub. 10–12–65. Filed S.R. 4–28–64; Am. P.R. 8–4–65.

TRADEMARK REGISTRATIONS RENEWED

27,448. QUEEN BESS. Cl. 46. 12–10–1895.
44,942. REPRESENTATION OF EAGLE AND OVAL. Cl. 37. 8–1–05.
46,097. RUBBER PERFECTION. Cl. 37. 9–5–05.
46,099. EAGLE AND DESIGN. Cl. 37. 9–5–05.
46,100. EAGLE AND DESIGN. Cl. 37. 9–5–05.
48,038. REPRESENTATION OF TWO LINKED PADLOCKS. Cl. 23. 12–5–05.
48,346. ASBESTINE AND DESIGN. Cl. 1. 12–26–05.
49,050. MONARCH. Cl. 39. 1–23–06.
49,361. UNION SPECIAL. Cl. 23. 1–30–06.
49,430. COLT. Cl. 9. 2–6–06.
49,803. RACER. Cl. 22. 2–20–06.
50,062. WARNER'S. Cl. 39. 2–27–06.
50,125. POCKET POSITIVE. Cl. 9. 3–6–06.
50,139. OKONITE. Cl. 21. 3–6–06.
50,335. GREAT WESTERN. Cl. 47. 3–13–06.
50,451. CARTER'S. Cl. 5. 3–20–06.
50,460. POLICE POSITIVE. Cl. 9. 3–20–06.
50,494. MOOSEABEC AND DESIGN. Cl. 46. 3–20–06.
50,584. COLT'S PT. F.A. MFG. CO. HARTFORD, CT. U.S.A. Cl. 9. 3–27–06.
50,585. NEW SERVICE. Cl. 9. 3–27–06.
50,828. SAMSON. Cl. 7. 4–3–06.
50,866. WHITMAN'S. Cl. 46. 4–3–06.
51,535. MONARCH. Cl. 39. 4–17–06.
200,808. DELIGHT. Cl. 46. 7–14–25.
202,236. LANDSHIRE. Cl. 39. 8–18–25.
203,481. LANDIS OWN YOUR OWN AND DESIGN. Cl. 46. 9–22–25.
203,945. KREMENTZ. Cl. 28. 9–29–25.
204,226. REPRESENTATION OF COLLAR BUTTON. Cl. 28. 10–13–25.
204,750. REPRESENTATION OF A SHIELD. Cl. 6. 10–27–25.
204,976. DUOGRAPH. Cl. 34. 10–27–25.
205,461. REPRESENTATION OF A SPINNING TOP. Cl. 39. 11–10–25.
205,562. TOOTSIE WOOTSIE. Cl. 46. 11–10–25.
205,899. SOFTEX. Cl. 37. 11–17–25.
206,472. WHEELING STEEL AND DESIGN. Cl. 14. 12–1–25.
206,988. RACO. Cl. 21. 12–15–25.
207,165. BEST UNIVERSAL. Cl. 25. 12–22–25.
207,247. ARASHEEN. Cl. 39. 12–22–25.
209,219. FLIGHTEX FABRIC. Cl. 50. 2–16–26.
209,721. TEA ROSE AND DESIGN. Cl. 39. 3–2–26.
209,794. 125. Cl. 22. 3–2–26.
209,837. SUNNYCAL. Cl. 46. 3–2–26.
209,849. MOHICAN. Cl. 2. 3–2–26.
209,935. ZONITE AND DESIGN. Cl. 6. 3–2–26.
210,205. GOLDCRAFT. Cl. 27. 3–9–26.
210,592. ADCO. Cl. 52. 3–16–26.
211,207. "AVONA." Cl. 32. 4–6–26.

211,419. DIAMOND. Cl. 13. 4–18–26.
417,301. G IN 1. Cl. 46. 10–23–45.
417,324. G.S.N. Cl. 14. 10–23–45.
417,502. MAXSONITE. Cl. 38. 10–30–45.
417,924. FIX. Cl. 10. 11–20–45.
418,236. CAPACITRON. Cl. 21. 12–11–45.
418,681. GEORGE INN. Cl. 46. 1–8–46.
418,895. CHLOR-ISOPOL. Cl. 5. 1–15–46.
419,225. MYOPONE. Cl. 18. 2–5–46.
419,470. MICRO NU-COP. Cl. 6. 2–19–46.
419,703. PHROSTO. Cl. 45. 3–5–46.
420,278. DIFLEX. Cl. 52. 4–2–46.
420,364. KAYNAR. Cl. 28. 4–9–46.
420,403. QUILT O' DREAMS. Cl. 32. 4–9–46.

TRADEMARK REGISTRATIONS CANCELED

Section 7(d)

264,689. BRIDGE. Cl. 46. 12–3–29.

Section 8

687,543. WRIGHTWAY GEMCRAFTERS. Cl. 28. 11–3–59.

The following registrations issued Nov. 10, 1959

687,730. SUPER SORB-MOR AND DESIGN. Cl. 1.
687,733. CUCLAD LAMICOID. Cl. 1.
687,737. LONE STAR AND DESIGN. Cl. 1.
687,739. FLEXLITE. Cl. 1.
687,742. ORLON CANTRECE. Cl. 1.
687,749. FLORA-LAVA. Cl. 2.
687,750. RIGITUF. Cl. 2.
687,755. LONA. Cl. 3.
687,761. PHOSFA-TIZIT. Cl. 6.
687,762. INVIN. Cl. 6.
687,764. TAB TIE. Cl. 7.
687,766. "BIG WHEEL." Cl. 8.
687,768. ROSY FUTURE. Cl. 10.
687,769. NITRODOL. Cl. 10.
687,791. BRILLIANT VU. Cl. 16.
687,795. SHER-WIL-LAST. Cl. 16.
687,798. LOS NOBLES. Cl. 17.
687,799. LA NOBLEZA. Cl. 17.
687,800. GALILEO AND REPRESENTATION OF GLOBE. Cl. 17.
687,803. WIFF 'N' PUFF. Cl. 17.
687,805. CORONET. Cl. 17.
687,814. O & F 444. Cl. 18.
687,815. FRANK'S. Cl. 18.
687,816. PABSTGARD. Cl. 18.
687,818. RADOSISTEN. Cl. 18.
687,820. NEOCOR-TYZINE. Cl. 18.
687,821. COR-TYZINE. Cl. 18.
687,827. PALFIUM. Cl. 18.
687,828. ACK-SYN. Cl. 18.
687,836. JUNCKER ETC. AND DESIGN. Cl. 19.
687,837. THE WHEEL OF FOURTUNE. Cl. 19.
687,839. SPENCE-CRAFT. Cl. 19.
687,842. SCOO-PED. Cl. 19.
687,845. VYLAM. Cl. 20.
687,846. EAGLE EYE TUNING. Cl. 21.
687,854. RA-DEL. Cl. 21.
687,861. ZENIAC. Cl. 21.
687,864. ROTO-JET. Cl. 21.
687,866. MULTI-VOX. Cl. 21.
687,867. PERMCO. Cl. 21.
687,870. CA-BOY. Cl. 22.
687,871. EFCO AND DESIGN. Cl. 22.
687,872. WESTERN "W–80" AND DESIGN. Cl. 22.
687,873. ACRO. Cl. 22.
687,874. POT O'GOLD. Cl. 22.
687,876. WHIRLEY WHIRLER. Cl. 22.
687,878. PLI-O-TYL. Cl. 22.
687,879. DOOZEE. Cl. 22.
687,884. CREST. Cl. 23.
687,892. VICTOR. Cl. 23.
687,912. MIDLAND AND DESIGN. Cl. 23.
687,913. MIDLAND. Cl. 23.
687,918. ROLLAFOLDER. Cl. 24.
687,920. TAPE-TALK. Cl. 26.
687,922. VANTRON. Cl. 26.
687,923. ADD-O-RULE. Cl. 26.
687,927. AQUA TENDA. Cl. 26.
687,929. ZEB. Cl. 26.
687,931. RADICON. Cl. 26.
687,933. HUMISTOR. Cl. 26.
687,941. DIEBOLD. Cl. 26.
687,942. BRIEFCASE THEATRE. Cl. 26.
687,946. FLEXICON. Cl. 26.
687,947. PEEK-A-RAMA. Cl. 26.
687,951. "AIR-BREATHE." Cl. 26.
687,953. JOLI. Cl. 27.
687,957. MATINEE WATCH. Cl. 27.
687,960. CP AND DESIGN. Cl. 29.
687,962. SUMMIT. Cl. 30.
687,963. SILVER-KOLD. Cl. 31.
687,967. OLD MEETING HOUSE CRAFT AND DESIGN. Cl. 32.
687,975. SMOOTHTEX. Cl. 35.
687,978. SONOLUX AND DESIGN. Cl. 36.
687,981. VISTALON. Cl. 37.
687,991. GULF COAST FILMS HOUSTON AND DESIGN. Cl. 38.
687,992. AIRCRAFT YEAR BOOK. Cl. 38.
687,994. THE ARROWHEAD. Cl. 38.
688,001. TWO-BOGGINS. Cl. 39.
688,002. SHIELDETTE AND DESIGN. Cl. 39.
688,005. DAROWEAR. Cl. 39.
688,007. MERSETA. Cl. 39.
688,010. RED COACHMAN. Cl. 39.
688,011. COCKTAIL VEST BY MADAME SANTINA. Cl. 39.
688,013. SHEHERAZADE. Cl. 39.
688,016. K. Cl. 39.
688,017. ABBEY. Cl. 39.
688,022. QUEEN ROSE. Cl. 39.
688,023. PEARLY PANTS. Cl. 39.
688,025. PERMATISATION. Cl. 39.
688,026. PERMAT. Cl. 39.
688,033. CANTARE. Cl. 39.
688,041. FAME-LON. Cl. 39.
688,044. WRAP-ADAPT. Cl. 39.
688,047. MILSANO. Cl. 39.
688,048. JIVEYS. Cl. 39.
688,049. ISLE OF CLOUD. Cl. 39.
688,050. GEMPEARL. Cl. 40.
688,055. LA NORKA. Cl. 42.
688,056. ORLON CANTRECE. Cl. 43.
688,057. COMMANDO. Cl. 44.
688,065. DIVINITY. Cl. 46.
688,069. REPRESENTATION OF FEATHER. Cl. 46.
688,075. PARTY QUEEN. Cl. 46.
688,083. MINUTEMAN AND DESIGN. Cl. 50.
688,084. 4711 ELAN. Cl. 51.
688,088. STAR LORE. Cl. 51.
688,099. TASTY TEN. Cl. 100.
688,101. HI-WAY SPECTACULARS. Cl. 101.
688,105. NCSI AND DESIGN. Cl. 102.
688,107. MORE MUSIC . . . LESS YAK! AND DESIGN. Cl. 104.
688,109. DANCELAND. Cl. 107.
688,120. FIX TRUE FRUIT ETC. AND DESIGN. Cl. 45.
688,121. SNO-WHITE POPCORN AND DESIGN. Cl. 46.

Section 18

411,511. FOR MEN ONLY GRADE A CREAM ETC. Cl. 6. 1–16–45.
416,051. FOR MEN ONLY. Cl. 4. 8–21–45.
417,394. FOR MEN ONLY. Cl. 6. 10–23–45.
424,820. FOR MEN ONLY ENAMEL TOOTHPASTE. Cl. 6. 10–22–46.
553,277. CALIFORNIA ORIGINAL. Cl. 20. 1–8–52.

TRADEMARK REGISTRATIONS AMENDED, DISCLAIMED, CORRECTED, ETC.

611,901. GIRLS CLUBS OF AMERICA, INC. AND DESIGN. Cl. 100. 9–6–55. Girls Clubs of America, Inc., Springfield, Mass. Amended to appear:



630,674. GULF AND DESIGN. Cl. 6. 7–17–56. Gulf Oil Corporation, Pittsburgh, Pa. Amended: In the statement, column 2, line 5 is deleted and *Owner of Reg. No. 621,650 and others.* is inserted, and the drawing is amended to appear:



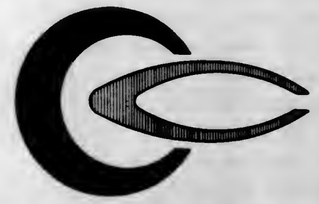
694,204. STEAM FLOW-AIR FLOW. Cl. 26. 3–8–60. Bailey Meter Company, Cleveland, Ohio. Amended: In the statement, column 1, after line 3, , *now of 29801 Euclid Ave., Wickliffe, Ohio 44092* is inserted.

695,289. F/B-LINE. Cl. 26. 3–29–60. Bailey Meter Company, Cleveland ,Ohio. Amended: In the statement, column 1, after line 3, , *now of 29801 Euclid Ave., Wickliffe, Ohio 44092* is inserted.

697,492. PRO-KEDS. Cl. 39. 5–10–60. United States Rubber Company, New York, N.Y. Amended to appear:

Pro-Keds

702,204. CC DESIGN. Cl. 23. Centre Circuits, Inc. Chemcut Corporation, State College, Pa. Amended: In the statement, column 1, after line 2, , *now by change of name Chemcut Corporation (Pennsylvania corporation), 500 Science Park Road, State College, Pa.* is inserted, and the drawing is amended to appear:



756,708. QUAKER KOAT WITHIN Q. Cl. 16. Quaker State Oil Refining Corporation, Oil City, Pa. Corrected: In the statement, column 1, line 1, "Pennsylvania" should be deleted and *Delaware* should be inserted.

765,417. TORRINGTON. Cl. 23. 2–25–64. The Torrington Company, Torrington, Conn. Corrected: In the statement, column 2, line 5, "etc." should be deleted and *needle and bearing races; also self-aligning ball bushings, cage and roller assemblies, wheel mandrels, cam followers, punches and small machine parts to customers' specifications, and rotary swaging machines* should be inserted.

770,194. QUAKER STATE Q. Cl. 6. 5–26–64. Quaker State Oil Refining Corporation, Oil City, Pa. Corrected: In the statement, column 1, line 1, "Pennsylvania" should be deleted and *Delaware* should be inserted.

798,091. USI AND DESIGN. Cls. 26 and 38. 10–26–65. U.S. Industries, Inc., New York, N.Y. Corrected: In the statement, column 1, line 4, "educational" should be deleted and *education* should be inserted and in line 8, after "purposes," *and units comprising all the above listed goods* should be inserted.

798,313. HYCON. Cl. 21. 11–2–65. Hycon Mfg. Company, Monrovia, Calif. Corrected: In the statement, column 2, line 1, after "cameras" *electrical and electronic components and accessories therefor* should be inserted.

798,535. BUDGET-MASTER. Cl. 26. 11–9–65. Master Products, Inc., South Miami, Fla. Corrected: In the statement, column 2, line 2, "giving" should be deleted and *given* should be inserted.

TRADEMARK REGISTRATIONS—NEW CERTIFICATES

New Certificates issued under sections 7(c), 7(f), 7(g) of the Trademark Act of 1946 for the unexpired term of the original registrations.

192,859. HOYT. Cl. 34. Hoyt Heater Company. 12–16–24. New Cert. Sec. 7(c) to Pioneer Manufacturing Co., Los Angeles, Calif.

557,425. THE CAPE CODDER AND DESIGN. Cl. 100. Walter G. Chapman. 4–8–52. New Cert. Sec. 7(c) to Begley Cape Codder System, Incorporated, Richmond, Ky.

567,787. PEDIACILLIN. Cl. 18. Schenley Laboratories, Inc. 12–9–52. New Cert. Sec. 7(c) to Abbott Laboratories, North Chicago, Ill.

567,788. PEDIAPEN. Cl. 18. Schenley Laboratories, Inc. 12–9–52. New Cert. Sec. 7(c) to Abbott Laboratories, North Chicago, Ill.

684,413. TELE-TAMRON. Cl. 26. Photographic Importing and Distributing Corp. 9–1–59. New Cert. Sec. 7(c) to Taisei Kogaku Kogyo Co., Ltd., Omiyashi, Japan.

689,418. FERASCORB. Cl. 18. Sumner H. Trombly, d.b.a. Lexington Chemical Co. 12–8–59. New Cert. Sec. 7(c) to Joseph S. Cohen.

INDEX OF REGISTRANTS

DECEMBER 28, 1965

(Registered ; Renewed ; Canceled ; Amended, Disclaimed, Corrected, etc. ; New Certificates ; 12c Publications.)

A to Z Rental, Inc., Chicago, Ill. 801,100, pub. 10–12–65. Cl. 101.
Ace Plastic Co., Jamaica, N.Y. 687,873, canc. Cl. 22.
Adco, Inc.: *See*—
American Disinfecting Co.
Advance Bag and Paper Co., Inc., Boston, Mass., to Continental Can Co., Inc., New York, N.Y. 209,849, canc. Cl. 2.
Advance Chemical Co., San Francisco, Calif. 801,078, pub. 10–12–65. Cl. 52.
Aero Service Corp., Philadelphia, Pa. 800,990, pub. 10–12–65. Cl. 38.
Aerovox Corp.: *See*—
Capacitron Co., The.
Aircraft Industries Association of America, Inc., Los Angeles, Calif. 687,992, canc. Cl. 38.
Airkem, Inc., New York, N.Y. 801,080, pub. 10–12–65. Cl. 52.
Air Reduction Co., Inc., to Air Reduction Co. Inc., New York, N.Y. 204,976, ren. 12–28–65. Cl. 34.
Alberto-Culver Co., Melrose Park, Ill. 801,081, pub. 10–12–65. Cl. 52.
Allied Chemical Corp.: *See*—
General Chemical Co.
All-Steel Equipment Inc.: *See*—
Roach-Appleton Mfg. Co.
Alvarez, Oscar L., Cabiguan, Las Villas, Cuba. 687,800, canc. Cl. 17.
American Airlines, Inc., New York, N.Y. 801,117, pub. 10–12–65. Cl. 107.
American Camping Association, Inc., Martinsville, Ind. 801,001, pub. 10–12–65. Cl. 38.
American Character, Inc., New York, N.Y. 800,937–40, pub. 10–12–65. Cl. 22.
American Chocolate Co.: *See*—
American Chocolate and Cocoa Co., Inc.
American Chocolate and Cocoa Co., Inc., d.b.a. American Chocolate Co., St. Louis, Mo. 688,065, canc. Cl. 46.
American Disinfecting Co., to Adco, Inc., Sedalia, Mo. 210,592, ren. 12–28–65. Cl. 52.
American Express Co., from American Express Co., New York, N.Y. 801,106, pub. 10–12–65. Cl. 102.
American Home Products Corp., New York, N.Y. 800,922–3, pub. 10–12–65. Cl. 18.
American Metal Products Co., Detroit, Mich. 800,944, pub. 10–12–65. Cl. 23.
American Mortgage Group: *See*—
American Mortgage & Investment Corp.
American Mortgage & Investment Corp., d.b.a. American Mortgage Group, Silver Spring, Md. 801,101, pub. 10–12–65. Cl. 102.
American Petrofina, Inc., New York, N.Y. 801,112, pub. 10–12–65. Cl. 105.
Amity Leather Products Co., West Bend, Wis. 800,854, pub. 10–12–65. Cl. 4.
Amsted Industries, Inc.: *See*—
Diamond Chain and Mfg. Co.
Anaco, G.m.b.H., Wiesbaden, Germany. 801,068, pub. 10–12–65. Cl. 51.
Anaysts Publisher, Inc., The, New York, N.Y. 801,000, pub. 10–12–65. Cl. 38
Anderson-Bolling Mfg. Co., Grand Haven, Mich. 687,837, canc. Cl. 19.
Anderson, Chas. H., Floors, Inc., Chicago, Ill. 687,845, canc. Cl. 20.
Anderson Safeway Guard Rail Corp., Flint, Mich. 800,888, pub. 10–12–65. Cl. 12.
Anglo-Scandinavian Mfg. Co. Ltd., Manchester, England. 688,017, canc. Cl. 39.
Armour Pharmaceutical Co., Chicago, Ill. 800,924–5, pub. 10–12–65. Cl. 18.
Artco Distributors, Inc., Glendale, Aris. 801,046, pub. 10–12–65. Cl. 46.
Asphalt Institute, The, College Park, Md. 801,120, pub. 10–12–65. Cl. A.
Atwood, P. G., Co., Chicago, Ill. 801,055, pub. 10–12–65. Cl. 50.
Auvergne et Cie, Inc., East Longmeadow, Mass. 801,066, pub. 9–14–65. Cl. 51.
BFE, Inc., Flushing, N.Y. 801,043, pub. 10–12–65. Cl. 46.
Baby Relax Ltd., Rainham, Essex, England. 800,970, pub. 10–12–65. Cl. 32.
Bandfabrik Breitenbach Ag (Fabrique de Rubans Breitenbach S.A.) (Ribbon Manfactory Ltd. Breitenbach), Breitenbach, Canton of Solothurn, Switzerland. 800,878, pub. 10–12–65. Cl. 7.
Bailey Meter Co., Cleveland, Ohio. 694,204. Am. 7(d). Cl. 26.
Bailey Meter Co., Cleveland, Ohio. 695,289. Am. 7(d). Cl. 26.
Belding Corticelli Fiber Glass Fabrics, Inc.: *See*—
Twining, E. S., & Co.
Belmont Mfg. Corp., Reading, Pa. 688,049, canc. Cl. 39.
Bella Green Zoysia Lawn Nurseries: *See*—
Dante Parenti.
Beno, Louis M., d.b.a. Beno's Nursery, Youngstown, Ohio. 800,831, pub. 10–12–65. Cl. 1.
Beno's Nursery: *See*—
Beno, Louis M.
Best Universal Lock Co., Indianapolis, Ind. 207,165, ren. 12–28–65. Cl. 25.
Biddle Purchasing Co., d.b.a. Meridian Distributors And/Or Good Hope Distributors, New York, N.Y. 801,076, pub. 10–12–65. Cl. 52.
Bigelow-Sanford, Inc., New York, N.Y. 801,021, pub. 10–12–65. Cl. 42.
Black Clawson Co., The, Hamilton, Ohio. 800,946, pub. 10–12–65. Cl. 23.
Black Swan Mfg. Co., Chicago, Ill. 800,859, pub. 4–27–65. Multiple Class (Classes 6, 12, 15, and 34).
Blanton Milling Co., to General Grain, Inc., Indianapolis, Ind. 27,448, ren. 12–28–65. Cl. 46.
Blassco Corp., Beverly Hills, Calif. 801,060, pub. 10–12–65. Cl. 50.
Boehringer, C. H., Sohn, Ingelheim am Rhein, Germany. 687,818, canc. Cl. 18.
Boehringer Ingelheim G.m.b.H., Ingelheim am Rhein, Germany. 800,917, pub. 10–12–65. Cl. 18.
Bond Buyer, The, New York, N.Y. 801,096, pub. 10–12–65. Cl. 101.
Brass-Craft Pacific, Inc., Gardena, Calif. 800,898, pub. 10–12–65. Cl. 13.
Brown Laboratories, Inc., Greenville, N.C. 687,814, canc. Cl. 18.
Brown & Williamson Tobacco Corp., Louisville, Ky. 687,805, canc. Cl. 17.
Bulova Watch Co., Inc., New York, N.Y. 210,205, ren. 12–28–65. Cl. 27.
Byer, George H., Anchorage, Alaska. 801,025, pub. 8–11–64. Cl. 45.
Canterbury Knitters, Ltd., New York, N.Y. 688,007, canc. Cl. 39.
Capacitron Co., The, Chicago, Ill., to Aerovox Corp., New Bedford, Mass. 418,236, ren. 12–28–65. Cl. 21.
Carrier Corp., Syracuse, N.Y. 800,971, pub. 10–12–65. Cl. 34.
Carter's Ink Co., The, Cambridge, Mass. 50,451, ren. 12–28–65. Cl. 5.
Centre Circuits, Inc., Chemcut Corp., State College, Pa. 702,204. Am. 7(d). Cl. 23.
Chadbourn Gotham, Inc., Charlotte, N.C. 801,009, pub. 5–11–65. Cl. 39.
Chapman, Walter G., to Begley Cape Codder Systems, Inc., Richmond, Ky. 557,425, new cert. Cl. 100.
Chemical Corp. of America, Tallahassee, Fla. 800,853, pub. 11–10–64. Cl. 4.
Chemische Fabrik Pfersee G.m.b.H., Augsburg, Germany. 800,867–8, pub. 10–12–65. Cl. 6.
Chemway Corp.: *See*—
Zonite Products Co.
Cin, Inc., New York, N.Y. 800,999, pub. 10–12–65. Cl. 38.
Clairol, Inc., New York, N.Y. 801,069, pub. 10–12–65. Cl. 51.
Clairol, Inc., New York, N.Y. 801,070, pub. 10–12–65. Cl. 51.
Classtex Knitting Mills, Orwigsburg, Pa. 801,011, pub. 10–12–65. Cl. 39.
Clayton, S. C., Co., Inc., Boston, Mass. 419,703, ren. 12–28–65. Cl. 45.
Cluett, Peabody & Co., Inc., New York, N.Y. 207,247, ren. 12–28–65. Cl. 39.
Cluett, Peabody & Co., Inc.: *See*—
Cluett, Peabody & Co.
Cluett, Peabody & Co., Troy, to Cluett, Peabody & Co., Inc., New York, N.Y. 49,050, ren. 12–28–65. Cl. 39.
Coca-Cola Co., The, d.b.a. Duncan Foods Co., Atlanta, Ga. 801,045, pub. 10–12–65. Cl. 46.
Colgate-Palmolive Co., New York, N.Y. 800,921, pub. 10–12–65. Cl. 18.
Colgate-Palmolive Co., New York, N.Y. 801,086, pub. 10–12–65. Cl. 52.
Colonial Knife Co., Inc., Providence, R.I. 800,952, pub. 10–12–65. Cl. 23.
Colt's Inc.: *See*—
Colt's Patent Fire Arms Mfg. Co.
Colt's Patent Fire Arms Mfg. Co., to Colt's Inc., Hartford, Conn. 49,430, ren. 12–28–65. Cl. 9.
Colt's Patent Fire Arms Mfg. Co., to Colt's Inc., Hartford, Conn. 50,125, ren. 12–28–65. Cl. 9.
Colt's Patent Fire Arms Mfg. Co., to Colt's Inc., Hartford, Conn. 50,460, ren. 12–28–65. Cl. 9.
Colt's Patent Fire Arms Mfg. Co., to Colt's Inc., Hartford, Conn. 50,584–5, ren. 12–28–65. Cl. 9.
Computer Programming Concepts, Inc., Cincinnati, Ohio. 800,994, pub. 10–12–65. Cl. 38.
Continental Can Co., Inc.: *See*—
Advance Bag and Paper Co., Inc.
Conversa-Phone Institute, Inc., New York, N.Y. 800,975, pub. 10–12–65. Cl. 36.
Coolant Sales & Service, Toledo, Ohio. 801,084, pub. 10–12–65. Cl. 52.

Cow & Gate Ltd., Guildford, Surrey, England. 801,038, pub. 10–12–65. Cl. 46.
Creamery Package Mfg. Co., The, Chicago, Ill. 687,960, canc. Cl. 29.
Crescent Corp.: *See*—
Since 1868 Crescent Corp.
Cronite Co., Inc., North Bergen, N.J. 800,860, pub. 10–12–65. Cl. 6.
Crowning Glory, Inc., Whittier, Calif. 801,088, pub. 10–12–65. Cl. 100.
Cummins Engine Co., Inc., Columbus, Ind. 800,956, pub. 10–12–65. Cl. 23.
Cuno Engineering Corp., The, Meriden, Conn. 800,967, pub. 10–12–65. Cl. 31.
Cutter Laboratories, Inc., Berkeley, Calif. 801,024, pub. 10–12–65. Cl. 44.
Daroson Sportswear, Inc., Brooklyn, N.Y. 688,005, canc. Cl. 39.
Day & Frick, Inc., Philadelphia, Pa. 801,073, pub. 10–12–65. Cl. 52.
Decker, Alfred, & Cohn, Inc., to Hart Schaffner & Marx, Chicago, Ill. 202,236, ren. 12–28–65. Cl. 39.
De Izquierdo, Michelline S., d.b.a. Mitzou, Madrid, Spain. 801,013, pub. 10–12–65. Cl. 39.
Dennis Co., The, Chicago, Ill. 687,766, canc. Cl. 8.
Denver Chemical Mfg. Co., The, Stamford, Conn., from E. E. Olson, Storm Lake, Iowa. 800,912, pub. 6–30–64. Cl. 18.
Desco Shoe Corp., New York, N.Y. 688,033, canc. Cl. 39.
Diamond Chain and Mfg. Co., Indianapolis, Ind., to Amsted Industries, Inc., Chicago, Ill. 211,419, ren. 12–28–65. Cl. 13.
Dick X-Ray Co., The, St. Louis, Mo. 688,057, canc. Cl. 44.
Diebold, Inc., Canton, Ohio. 687,941, canc. Cl. 26.
Diskin, H., Co.: *See*—
Diskin, Harry.
Diskin, Harry, d.b.a. H. Diskin Co., New York, N.Y. 801,058, pub. 10–12–65. Cl. 50.
Ditucci, Salvatore J., Somerville, Mass. 801,075, pub. 10–12–65. Cl. 52.
Diversey Corp., The, Chicago, Ill. 420,278, ren. 12–28–65. Cl. 52.
Diversified Industries, Inc., Trenton, S.C. 687,749, canc. Cl. 2.
Doozee, Inc., Oak Lawn, Ill. 687,879, canc. Cl. 22.
Dow Chemical Co., The, Midland, Mich. 800,835, pub. 10–12–65. Cl. 1.
Dow Chemical Co., The, Midland, Mich. 800,908, pub. 10–12–65. Cl. 15.
Dow Chemical Co., The, Midland, Mich. 800,987, pub. 10–12–65. Cl. 37.
Dow Jones & Co., Inc., New York, N.Y. 800,991, pub. 10–12–65. Cl. 38.
Drug Products Co., Inc., The, Bloomfield, N.J. 419,225, ren. 12–28–65. Cl. 18.
Duncan Foods Co.: *See*—
Coca-Cola Co., The.
Du Pont de Nemours, E. I., and Co., Wilmington, Del. 687,742, canc. Cl. 1.
Du Pont de Nemours, E. I., and Co., Wilmington, Del. 688,056, canc. Cl. 43.
Durasol Drug & Chemical Co., d.b.a. Walter Lyons & Co., East Boston, Mass. 800,869, pub. 10–12–65. Cl. 6.
Eagle Pencil Co., New York, N.Y., to Eagle Pencil Co., Danbury, Conn. 44,942, ren. 12–28–65. Cl. 37.
Eagle Pencil Co., New York, N.Y., to Eagle Pencil Co., Danbury, Conn. 46,097, ren. 12–28–65. Cl. 37.
Eagle Pencil Co., New York, N.Y., to Eagle Pencil Co., Danbury, Conn. 46,099, ren. 12–28–65. Cl. 37.
Eagle Pencil Co., New York, N.Y., to Eagle Pencil Co., Danbury, Conn. 46,100, ren. 12–28–65. Cl. 37.
Eagle Shoe Mfg. Co., Inc., Everett, Mass. 801,003, pub. 10–12–65. Cl. 39.
Efco Products, Loveland, Colo. 687,870–1, canc. Cl. 22.
Electric Regulator Corp., Norwalk, Conn. 687,864, canc. Cl. 21.
Empire Shield Co., Inc., New York, N.Y. 688,023, canc. Cl. 39.
Escalon Packers, Inc., Escalon, Calif. 417,301, ren. 12–28–65. Cl. 46.
Everglades Sugar Refinery, Inc., Clewiston, Fla. 801,049, pub. 10–12–65. Cl. 46.
Everglades Sugar Refinery, Inc., Clewiston, Fla. 801,050, pub. 10–12–65. Cl. 46.
Faesy & Besthoff, Inc., Edgewater, N.J. 419,470, ren. 12–28–65. Cl. 6.
Famous Brand Shoes: *See*—
Robins, Morton.
Famous Knitwear Corp., New York, N.Y. 688,041, canc. Cl. 39.
Farm Builders, Inc., Phoenix, Ariz. 800,883, pub. 10–12–65. Cl. 10.
Farmers Produce Co., Brawley, Calif., to Gro-Pak, Inc., Tacoma, Wash. 200,808, ren. 12–28–65. Cl. 46.
Fayscott Landis Machine Corp.: *See*—
Landis Machine Co.
First National Casualty Co., Fond du Lac, Wis. 801,103, pub. 10–12–65. Cl. 102.
Fischer Baking Co., Newark, N.J. 264,689, canc. Cl. 46.
Fleischer, Max, New York, N.Y. 801,002, pub. 10–12–65. Cl. 38.
Foster-Hochberg Mfg. Co., Inc., Seattle, Wash. 801,004, pub. 10–12–65. Cl. 39.
Friden Calculating Machine Co., Inc.: *See*—
Friden, Inc.
Friden, Inc., from Friden Calculating Machine Co., Inc., San Leandro, Calif. 687,920, canc. Cl. 26.
Friedman, Jules, d.b.a. Merit Plastics, Lynbrook, N.Y. 688,050, canc. Cl. 40.
Fruehauf Corp., Fairless Hills, Pa. 800,891, pub. 10–12–65. Cl. 12.
Fun Farms, Inc., Milwaukee, Wis. 801,035, pub. 10–12–65. Cl. 46.
Gameo, Inc., Big Spring, Tex. 801,057, pub. 10–12–65. Cl. 50.
Garber's Travel Service, Inc., Brookline, Mass. 801,110, pub. 10–12–65. Cl. 105.
Gaylord Bros., Inc., Syracuse, N.Y. 800,982, pub. 10–12–65. Cl. 37.
Gealy, Don R., d.b.a. Perma Electric Co., Dayton, Ohio. 687,867, canc. Cl. 21.
Gebruder Bussatis, Remscheid-Lennep, Germany. 800,957, pub. 10–12–65. Cl. 23.
Geigy Chemical Corp., Ardsley, N.Y. 800,875–6, pub. 10–12–65. Cl. 6.
General Aniline & Film Corp., New York, N.Y. 800,870, pub. 10–12–65. Cl. 6.
General Chemical Co., to Allied Chemical Corp., New York, N.Y. 204,750, ren. 12–28–65. Cl. 6.
General Grain, Inc.: *See*—
Blanton Milling Co.
General Motors Corp., Detroit, Mich. 800,828, pub. 10–12–65. Cl. 1.
Georgia-Pacific Corp.: *See*—
Stevens & Thompson Paper Co.
Geoscience Instruments Corp., New York, N.Y. 800,963, pub. 10–12–65. Cl. 29.
Geoscience Instruments Corp., New York, N.Y. 800,964, pub. 10–12–65. Cl. 29.
Gessner Products Co., Inc., Ambler, Pa. 801,059, pub. 10–12–65. Cl. 50.
Girls Clubs of America, Inc., Springfield, Mass. 611,901. Am. 7(d). Cl. 100.
Glamorise Foundations, Inc., New York, N.Y. 801,016, pub. 10–12–65. Cl. 39.
Golden Arrow Toiletries, New York, N.Y. 416,051, canc. Cl. 4.
Golden Arrow Toiletries, New York, N.Y. 424,820, canc. Cl. 6.
Golden Arrow Toiletries, New York, N.Y. 417,394, canc. Cl. 6.
Golo Footwear Corp., New York, N.Y. 801,015, pub. 10–12–65. Cl. 39.
Granados, Carlos D., Miami, Fla. 687,978, canc. Cl. 36.
Grants of St. James's Ltd., Burton-on-Trent, England. 801,052, pub. 10–12–65. Cl. 47.
Graphic Materials Corp., Washington, D.C. 800,985, pub. 10–12–65. Cl. 37.
Great Atlantic & Pacific Tea Co., Inc., The, New York, N.Y. 801,034, pub. 10–12–65. Cl. 46.
Griess-Pfleger Tanning Co., The, Waukegan, Ill. 800,833, pub. 10–12–65. Cl. 1.
Gro-Pak, Inc.: *See*—
Farmers Produce Co.
Guaranteed Parts Co., Inc., Seneca Falls, N.Y. 800,929, pub. 10–12–65. Cl. 21.
Gudgel, John C., d.b.a. Preventive Maintenance Co., Felton, Calif. 800,906, pub. 10–12–65. Cl. 15.
Gulf Coast Films, Inc., Houston, Tex. 687,991, canc. Cl. 38.
Guttman, Yolan R., New York, N.Y. 801,093, pub. 10–12–65. Cl. 100.
Gym Plastics Corp., Burbank, Calif. 800,885, pub. 10–12–65. Cl. 12.
H-P Products, Inc., Louisville, Ohio. 800,897, pub. 10–12–65. Cl. 13.
Harcourt Brace & World, Inc., from Science Materials Center, Inc., New York, N.Y. 800,988, pub. 10–12–65. Cl. 38.
Harvey, G. F., Co., Inc.: *See*—
Purdue Frederick Co., The.
Harvey, G. F., Co., Inc., The, New York, N.Y. 687,828, canc. Cl. 18.
Heller Tool Co., Newcomerstown, Ohio. 800,945, pub. 10–12–65. Cl. 23.
Hemenway Furniture Co., Inc., Shreveport, La. 800,896, pub. 10–12–65. Cl. 13.
Henderson's Portion Pak Inc., Coral Gables, Fla. 801,032, pub. 10–12–65. Cl. 46.
Henny Penny Corp., Eaton, Ohio. 801,089, pub. 10–12–65. Cl. 100.
Heusner Cigar Co., Inc., Hanover, Pa. 687,803, canc. Cl. 17.
Hillbilly Hickory Products Co., Texarkana, Ark. 800,832, pub. 10–12–65. Cl. 1.
Hillerich & Bradsby Co., Louisville, Ky. 209,794, ren. 12–28–65. Cl. 22.
Holland Color Chemical Co.: *See*—
Holland-Suco Color Co.
Holland-Suco Color Co., from Holland Color Chemical Co., Holland, Mich. 800,861, pub. 10–12–65. Cl. 6.
Honda Giken Kogyo Kabushiki Kaisha (Honda Motor Co. Ltd.), Tokyo, Japan. 800,926, pub. 10–12–65. Cl. 19.
Hoosier Soil Service, Inc.: *See*—
Solar Nitrogen Chemicals, Inc.
Hortex Mfg. Co., Inc., El Paso, Tex. 688,048, canc. Cl. 39.
Hopp Press, Inc., The, New York, N.Y. 801,064, pub. 10–12–65. Cl. 50.
Hospital Development Corp., New York, N.Y. 800,997, pub. 10–12–65. Cl. 38.
Howey, E. M., Woodbury, N.J. 800,909, pub. 10–12–65. Cl. 16.
Hoyt Heater Co., to Pioneer Mfg. Co., Los Angeles, Calif. 192,859, new cert. Cl. 34.

Humble Oil & Refining Co., Houston, Tex. 800,907, pub. 10–12–65. Cl. 15.
Hunt Foods and Industries, Inc., d.b.a. Hunt-Wesson Sales Co., Fullerton, Calif. 801,033, pub. 10–12–65. Cl. 46.
Hunt-Wesson Sales Co.: *See*—
Hunt Foods and Industries, Inc.
Hunziker, A. M., Inc., Peoria, Ill. 800,887, pub. 10–12–65. Cl. 12.
Huyck Corp., Rensselaer, N.Y. 801,018, pub. 10–12–65. Cl. 42.
Hycon Mfg. Co., Monrovia, Calif. 798,313, cor. Cl. 21.
Hydro-Air Engineering, Inc., St. Louis, Mo. 800,953, pub. 10–12–65. Cl. 23.
Icemakers Corp., Littleton, Colo. 800,836, pub. 10–12–65. Cl. 1.
Idealflle, Inc., Dallas, Tex. 800,998, pub. 10–12–65. Cl. 38.
Imperial Tobacco Co., of Canada, Ltd., Montreal, Quebec, Canada, from R. J. Reynolds Tobacco Co., Winston-Salem, N.C. 800,911, pub. 4–6–65. Cl. 17.
Imperial Type Metal Co., Philadelphia, Pa. 800,871, pub. 10–12–65. Cl. 6.
Independent Grocers' Alliance Distributing Co., Chicago, Ill. 801,071, pub. 10–12–65. Cl. 51.
Independent Grocers' Alliance Distributing Co., Chicago, Ill. 801,079, pub. 10–12–65. Cl. 52.
Industrial Absorbents and Supply Co.: *See*—
Yorgensen, Wesley H.
International Latex Corp., Dover, Del. 801,017, pub. 10–12–65. Cl. 39.
International Paper Co., New York, N.Y. 800,837, pub. 10–12–65. Cl. 1.
International Pulp Co., to International Talc Co., Inc., New York, N.Y. 48,346, ren. 12–28–65. Cl. 1.
International Rectifier Corp., El Segundo, Calif. 687,861, canc. Cl. 21.
International Talc Co., Inc.: *See*—
International Pulp Co.
Interstate Chemical Co.: *See*—
Interstate Industries, Inc.
Interstate Dry Goods Syndicate, The, Huntington, W. Va. 209,721, ren. 12–28–65. Cl. 39.
Interstate Industries, Inc., d.b.a. Interstate Chemical Co., Kansas City, Mo. 800,915, pub. 10–12–65. Cl. 18.
Irving Abrams Fur Corp., New York, N.Y. 801,014, pub. 10–12–65. Cl. 39.
Irwindale Citrus Association, Irwindale, to Paramount Citrus Association, Inc., San Fernando, Calif. 209,837, ren. 12–28–65. Cl. 46.
Jackson, Andrew, Life Insurance Co., The, Jackson, Miss. 801,105, pub. 10–12–65. Cl. 102.
Jackson Bag Corp.: *See*—
Martin-Brower Corp.
Johnson, S. C., & Son, Inc., Racine, Wis. 800,856–7, pub. 10–12–65. Cl. 4.
Jackson, Thomas, & Son Co., The, Reading, Pa. 800,877, pub. 10–12–65. Cl. 7.
Jeffrey Gallon Mfg. Co., Columbus, Ohio. 800,948, pub. 10–12–65. Cl. 23.
Jersey Land Dairy, Inc., Chelsea, Vt. 801,031, pub. 10–12–65. Cl. 46.
John-Frederics, New York, N.Y. 411,511, canc. Cl. 6.
Johnson & Johnson, New Brunswick, N.J. 801,023, pub. 10–12–65. Cl. 44.
Juncker Rijielfabriek N.V., Apeldoorn, Netherlands. 687,836, canc. Cl. 19.
Kalart Co., Inc., The, Plainville, Conn., from Waltham Precision Instrument Co., Inc., Waltham, Mass. 800,928, pub. 1–28–64. Cl. 21.
Karolos Fix S.A., Co., Athens, Greece. 688,120, canc. Cl. 45.
Karten, Morton, Inc., New York, N.Y. 688,001, canc. Cl. 39.
Kay Chemical Corp., Cleveland, Ohio. 801,077, pub. 10–12–65. Cl. 52.
Kayser-Roth Corp., New York, N.Y. 801,067, pub. 10–12–65. Cl. 51.
Kentucky Fried Chicken Corp., Shelbyville, Ky. 801,095, pub. 10–12–65. Cl. 100.
Keystone View Co., Meadville, Pa. 687,791, canc. Cl. 16.
King Midas Products: *See*—
Waterloo Idea Companies.
Kirchner's Kaynar Diamond Co.: *See*—
Kirchner & Reinch.
Kirchner & Reinich, to Kirchner's Kaynar Diamond Co., Minneapolis, Minn. 420,364, ren. 12–28–65. Cl. 28.
Kisco Boiler & Engineering Co., St. Louis, Mo. 800,966, pub. 10–12–65. Cl. 31.
Kleiber, Joseph P., Mt. Vernon, N.Y. 687,927, canc. Cl. 26.
Koenig, Alfred, Paris, France. 688,025–6, canc. Cl. 39.
Krementz & Co., Newark, N.J. 203,945, ren. 12–28–65. Cl. 28.
Krementz & Co., Newark, N.J. 204,226, ren. 12–28–65. Cl. 28.
Kress, S. H., and Co., New York, N.Y. 688,016, canc. Cl. 39.
La Industrial Paraguaya Sociedad Anonima Paraguayan Corp., Buenos Aires, Argentina. 801,048, pub. 10–12–65. Cl. 46.
Landbrugsministeriet, Copenhagen, Denmark. 801,119, pub. 10–12–65. Cl. A.
Landis Machine Co., to Fayscott Landis Machine Corp., St. Louis, Mo. 203,481, ren. 12–28–65. Cl. 43.
Lanvin-Charles of The Ritz, Inc., New York, N.Y. 800,961, pub. 10–12–65. Cl. 28.
Latrobe Electric Steel Co., to Latrobe Steel Co., Latrobe, Pa. 417,324, ren. 12–28–65. Cl. 14.
Latrobe Steel Co.: *See*—
Latrobe Electric Steel Co.
Lawrence Paper Co., The, Lawrence, Kans. 687,750, canc. Cl. 2.
Lazy U Inc., New York, N.Y. 688,044, canc. Cl. 39.
Lease Plan International Corp., Great Neck, N.Y. 801,109, pub. 10–12–65. Cl. 105.
Leeds Travelwear, Inc., New York, N.Y. 800,849, pub. 10–12–65. Cl. 3.
Lee Rubber & Tire Corp., d.b.a. Republic Rubber Division, Youngstown, Ohio. 687,975, canc. Cl. 35.
Less, John R., Dallas, Tex. 800,992, pub. 10–12–65. Cl. 38.
Leuco Food Products: *See*—
Nailes, Harold.
Liberty Coach Co., Inc., Bremen, Ind. 687,839, canc. Cl. 19.
Lilly, Eli, and Co., Indianapolis, Ind. 800,949, pub. 8–17–65. Cl. 23.
Little Farmer Foods: *See*—
Pringle, R. D., Inc.
Locke Mfg. Co., Lodi, Ohio. 800,889, pub. 10–12–65. Cl. 12.
London, Burton L., New York, N.Y. 687,923, canc. Cl. 26.
Lubri-Loy Co., The, St. Louis, Mo. 800,905, pub. 10–12–65. Cl. 15.
Luntz, Charles E., Publications & Services, St. Louis, Mo. 801,087, pub. 10–12–65. Cl. 100.
Lyons, Walter, & Co.: *See*—
Durasol Drug & Chemical Co.
Mailmen, Inc., Syosset, N.Y. 801,099, pub. 10–12–65. Cl. 101.
Mallyclad Corp., Madison Heights, Mich. 800,840, pub. 10–12–65. Cl. 1.
Mapleton's Nut Food Co. Ltd., Garston, Liverpool, England. 801,030, pub. 10–12–65. Cl. 46.
Marsh, Jordan, Co., Boston, Mass. 211,207, ren. 12–28–65. Cl. 32.
Marshall, Eleanor M., Brooklyn, N.Y. 688,013, canc. Cl. 39.
Marshburn Farms: *See*—
Marshburn, Inc.
Marshburn, Inc., d.b.a. Marshburn Farms, Norwalk, Calif. 801,047, pub. 10–12–65. Cl. 46.
Martin-Brower Corp., Chicago, Ill., from Jackson Bag Corp., Jackson, Tenn. 800,847, pub. 10–12–65. Cl. 2.
Master Products, Inc., South Miami, Fla. 798,535, cor. Cl. 26.
Matsushita Electric Industrial Co., Ltd., Kitakawachi-gun, Osaka, Japan. 800,942, pub. 9–29–64. Cl. 23.
Maxson Electronics Corp.: *See*—
Maxson, W. L., Corp., The.
Maxson, W. L., Corp., The, New York, N.Y., to Maxson Electronics Corp., Great River, N.Y. 417,502, ren. 12–28–65. Cl. 38.
McDuffee Bros., Inc., Wheaton, Ill. 800,959, pub. 4–6–65. Cl. 26.
Mead Johnson & Co., Evansville, Ind. 800,920, pub. 10–12–65. Cl. 18.
Medical Supply Co., Rockford, Ill. 800,862, pub. 10–12–65. Cl. 6.
Menda Co., City of Industry, Calif. 800,843, pub. 10–21–65. Cl. 2.
Merck & Co., Inc., Rahway, N.J. 800,914, pub. 10–12–65. Cl. 18.
Meridian Distributors And/Or Good Hope Distributors: *See*—
Biddle Purchasing Co.
Merit Plastics: *See*—
Friedman, Jules.
Mero & Co., Inc., Chicago, Ill. 800,968, pub. 10–12–65. Cl. 31.
Metzger, Morris, & Sons, Inc., New York, N.Y. 801,012, pub. 10–12–65. Cl. 39.
Mid-America Bond & Share Co., Decatur, Ill. 801,104, pub. 10–12–65. Cl. 102.
Midland Co., The, South Milwaukee, Wis. 687,912, canc. Cl. 23.
Midland Co., The, South Milwaukee, Wis. 687,913, canc. Cl. 23.
Midlash, J., Chicago, Ill. 687,953, canc. Cl. 27.
Mills, Olan, Inc., of Tennessee, Chattanooga, Tenn. 801,092, pub. 10–12–65. Cl. 100.
Millville Mfg. Co., The, Philadelphia, Pa. 801,114, pub. 10–12–65. Cl. 106.
Milsan Mills, Inc., Lebanon, Pa. 688,047, canc. Cl. 39.
Mininger, Abram B., Souderton, Pa. 687,874, canc. Cl. 22.
Minneapolis Contact Lens Clinic, Minneapolis, Minn. 687,946, canc. Cl. 26.
Minnesota Mining and Mfg. Co., St. Paul, Minn. 687,733, canc. Cl. 1.
Minnesota Mining and Mfg. Co., St. Paul, Minn. 800,855, pub. 10–12–65. Cl. 4.
Minuteman, Inc., New York, N.Y. 688,083, canc. Cl. 50.
Mission Broadcasting Co., San Antonio, Tex. 688,107, canc. Cl. 104.
Mr. Gift and Associates Ltd., Montreal, Quebec, Canada. 801,063, pub. 10–12–65. Cl. 50.
Mister Titan, Inc., Buffalo, N.Y. 801,115, pub. 10–12–65. Cl. 107.
Mr. Twister's Bretzel Co., Inc., North White Plains, N.Y. 801,039, pub. 10–12–65. Cl. 46.
Molex Products Co., Brookfield, Ill. 800,930, pub. 10–12–65. Cl. 21.
Molineus & Co., Wuppertal-Barmen, Germany. 800,984, pub. 10–12–65. Cl. 37.
Monarch Road Machinery Co., Grand Rapids, Mich. 800,943, pub. 7–20–65. Cl. 23.

Monsanto Co., St. Louis, Mo. 800,874, pub. 10–12–65. Cl. 6.
Moore, H. L., Co., Inc., The, Cochranton, Pa. 800,986, pub. 10–12–65. Cl. 37.
Mossner, Alfred, Co., Chicago, Ill. 801,062, pub. 10–12–65. Cl. 50.
Motown Record Corp., Detroit, Mich. 800,977–9, pub. 10–12–65. Cl. 36.
Mountain Mfg. Co., Inc., Kalispell, Mont. 800,954, pub. 10–12–65. Cl. 23.
Mulhens, Ferdinand, d.b.a. Eau de Cologne- & Parfumerie-Fabrik Glockengasse, Cologne (Rhine), Germany. 688,084, canc. Cl. 51.
Multi-Vox, Ltd., Multi-Vox Ltee, Montreal-North, Quebec, Canada. 687,866, canc. Cl. 21.
Nailes, Harold, d.b.a. Leuco Food Products, Chicago, Ill. 688,075, canc. Cl. 46.
Natacha Brooks, Ltd., New York, N.Y. 687,957, canc. Cl. 27.
Nathan, Lou, Inc., New York, N.Y. 687,755, canc. Cl. 3.
National Advertising Co., Beaford Park, Ill. 688,101, canc. Cl. 101.
National Bellas Hess, Inc., North Kansas City, Mo. 800,913, pub. 10–12–65. Cl. 18.
National Creditors Services, Inc., Tyler, Tex. 688,105, canc. Cl. 102.
National Lead Co., New York, N.Y. 687,762, canc. Cl. 6.
National School Public Relations Association, Washington, D.C. 801,094, pub. 10–12–65. Cl. 100.
National Starch and Chemical Corp., New York, N.Y. 800,872, pub. 10–12–65. Cl. 6.
National Steel Corp., Pittsburgh, Pa. 800,903, pub. 10–12–65. Cl. 14.
Neilson Chemical Co. of California: *See*—
Neilson, H. Raymond.
Neilson, H. Raymond, d.b.a. Neilson Chemical Co. of California, Los Angeles, Calif. 687,761, canc. Cl. 6.
Nooter Corp., St. Louis, Mo. 800,899, pub. 12–28–65. Cl. 13.
Norcross, Inc., New York, N.Y. 800,983, pub. 10–12–65. Cl. 37.
Norsk Hydro-Elektrisk Kvaelstofaktieselskab, Oslo, Norway. 687,769, canc. Cl. 10.
O.K. Tire and Rubber Co., Littleton, Colo. 800,927, pub. 10–12–65. Cl. 19.
Oil-Dri Corp. of America, Chicago, Ill. 801,074, pub. 10–12–65. Cl. 52.
Oil Heat Institute of Washington, Seattle, Wash. 801,097, pub. 10–12–65. Cl. 101.
Okonite Co., The: *See*—
Okonite Co., Ltd., The.
Okonite Co., Ltd., The, New York, N.Y., to The Okonite Co., Passaic, N.J. 50,139, ren. 12–28–65. Cl. 21.
Olin Mathieson Chemical Corp., New York, N.Y. 687,768, canc. Cl. 10.
Olivetti Underwood Corp., New York, N.Y. 800,955, pub. 10–12–65. Cl. 23.
Opticks, Inc., Dallas, Tex. 800,958, pub. 10–12–65. Multiple Class (Classes 26 and 106).
Oriental Promotions, Inc., New York, N.Y. 687,962, canc. Cl. 30.
Ortega, Hermanos, Havana, Cuba. 687,798–9, canc. Cl. 17.
Pabco Products Inc., from The Paraffine Companies, Inc., San Francisco, Calif. 553,277, canc. Cl. 20.
Pabst Brewing Co., Chicago, Ill. 687,816, canc. Cl. 18.
Pacific Gas and Electric Co., San Francisco, Calif. 801,091, pub. 10–12–65. Cl. 100.
Pacific Gas and Electric Co., San Francisco, Calif. 801,107, pub. 10–12–65. Cl. 103.
Parachutes, Inc., Orange, Mass. 801,118, pub. 10–12–65. Cl. 107.
Paraffine Companies, Inc., The: *See*—
Pabco Products Inc.
Paramount Bedding Corp., Norfolk, Va. 420,403, ren. 12–28–65. Cl. 32.
Paramount Citrus Association, Inc.: *See*—
Irwindale Citrus Association.
Parenti, Dante, d.b.a. Bella Green Zoysia Lawn Nurseries, Minotola, N.J. 800,829, pub. 10–12–65. Cl. 1.
Pearlman, Benjamin J., & Co.: *See*—
Pearlman, Benjamin J.
Pearlman, Benjamin J., d.b.a. Benjamin J. Pearlman & Co., Brooklyn, N.Y. 800,969, pub. 10–12–65. Cl. 32.
Pedigo, Thomas W., McMinnville, Tenn. 800,976, pub. 10–12–65. Cl. 36.
Peoples Broadcasting Corp., Columbus, Ohio. 801,108, pub. 10–12–65. Cl. 104.
Pepperidge Farm, Inc., Norwalk, Conn. 801,036, pub. 10–12–65. Cl. 46.
Pet Milk Co.: *See*—
Whitman, Stephen F., & Son.
Pet Milk Co., St. Louis, Mo. 801,044, pub. 10–12–65. Cl. 46.
Perma Electric Co.: *See*—
Gealy, Don R.
Permaflex Products Co., Inc., Philadelphia, Pa. 800,890, pub. 10–12–65. Cl. 12.
Photographic Importing and Distributing Corp., to Taisei Kogaku Kogyo Co., Ltd., Omiyashi, Japan. 684,413, new cert. Cl. 26.
Pfizer, Chas., & Co., Inc., Brooklyn, N.Y. 687,820–1, canc. Cl. 18.
Philco Corp., Philadelphia, Pa. 687,933, canc. Cl. 26.
Pilkington, Walter, d.b.a. Victor Valley Gem Shop, Hesperia, Calif. 687,892, canc. Cl. 23.
Pioneer Plastics Corp., Auburn, Maine. 800,838, pub. 10–12–65. Cl. 1.
Plas-Ties Co., Santa Ana, Calif. 687,764, canc. Cl. 7.
Pleasant Valley Wine Co., Rheims, N.Y., to the The Taylor Wine Co., Inc., Hammondsport, N.Y. 50,335, ren. 12–28–65. Cl. 47.
Plus Products, Los Angeles, Calif. 801,037, pub. 10–12–65. Cl. 46.
Port City Steel Co., d.b.a. Port City Steel Co., Savannah, Ga. 801,056, pub. 10–12–65. Cl. 50.
Poudrerie Royale de Wetteren, Cooppal et Cie, Societe Anonyme, Bruxelles, Belgium. 800,880, pub. 10–12–65. Cl. 9.
Pre Finish Metals Inc., Elk Grove Village, Ill. 800,902, pub. 10–12–65. Cl. 14.
Prentice-Hall, Inc., New York, N.Y. 800,960, pub. 10–12–65. Cl. 26.
Preventive Maintenance Co.: *See*—
Gudgel, John C.
Prince Gardner Co., Inc., St. Louis, Mo. 800,848, pub. 10–12–65. Cl. 3.
Princess Park Estates, Inc., San Diego, Calif. 800,996, pub. 10–12–65. Cl. 38.
Pringle, R. D., Inc., d.b.a. Little Farmer Foods, San Francisco, Calif. 801,051, pub. 10–12–65. Cl. 46.
Pro-Putt, Inc., Deerfield, Ill. 800,935, pub. 10–12–65. Cl. 22.
Protected Home Mutual Life Insurance Co., Sharon, Pa. 801,102, pub. 6–29–65. Cl. 102.
Provident Tradesmens Bank and Trust Co., administrator d.b.n.c.t.a. of the estate of Raymond H. Fager, deceased, Philadelphia, Pa. 800,973, pub. 10–12–65. Cl. 34.
Purdue Frederick Co, The, Yonkers, N.Y. 800,865, pub. 10–12–65. Cl. 6.
Purdue Frederick Co., The, from The G. F. Harvey Co., Inc., New York, N.Y. 687,827, canc. Cl. 18.
Quaker State Oil Refining Corp., Oil City, Pa. 770,194, cor. Cl. 6.
Quaker State Oil Refining Corp., Oil City, Pa. 756,708, cor. Cl. 16.
RKO General Inc., Boston, Mass. 801,116, 10–12–65. Cl. 107.
Radiation, Inc., Melbourne, Fla. 687,931, canc. Cl. 26.
Radio Electric Service Co., Philadelphia, Pa. 687,854, canc. Cl. 21.
Red Star Yeast Products Co.: *See*—
Universal Foods Corp.
Reichhold Chemicals, Inc., White Plains, N.Y. 800,841, pub. 10–12–65. Cl. 1.
Reliable Textile Co., Inc., New York, N.Y. 688,055, canc. Cl. 42.
Reliance Mfg. Co., New York, N.Y. 688,010, canc. Cl. 39.
Republic Rubber Division: *See*—
Lee Rubber & Tire Corp.
Rexall Drug and Chemical Co., d.b.a. Riker Laboratories, Los Angeles, Calif. 800,916, pub. 10–12–65. Cl. 18.
Reynolds, R. J., Co.: *See*—
Imperial Tobacco Co. of Canada, Ltd.
Rice, Stix Dry Goods Co., St. Louis, Mo., to Dwight S. Williams Co. Inc., New York, N.Y. 51,535, ren. 12–28–65. Cl. 39.
Richardson Homes Corp., Elkhart, Ind. 800,884, pub. 10–12–65. Cl. 12.
Richardson-Merrell Inc., New York, N.Y. 801,065, pub. 10–12–65. Cl. 50.
Ridge Tool Co., The, Elyria, Ohio. 800,951, pub. 10–12–65. Cl. 23.
Riker Laboratories: *See*—
Rexall Drug and Chemical Co.
Ritter, Bob and Ruth, d.b.a. Ritter Productions, Detroit, Mich. 800,993, pub. 10–12–65. Cl. 38.
Ritter Productions: *See*—
Ritter, Bob and Ruth.
Roach-Appleton Mfg. Co., Chicago, Ill., to All-Steel Equipment Inc., Aurora, Ill. 206,988, ren. 12–28–65. Cl. 21.
Robins, Morton, d.b.a. Famous Brand Shoes, Detroit, Mich. 801,005, pub. 10–12–65. Cl. 39.
Rocket Pizza Co., Waterman, Ill. 801,042, pub. 10–12–65. Cl. 46.
Rohm & Haas G.m.b.H., Darmstadt, Germany. 800,866, pub. 10–12–65. Cl. 6.
Ronrico Corp., San Juan, Puerto Rico. 801,053, pub. 10–12–65. Cl. 49.
Ross Enterprises: *See*—
Ross, Herbert H.
Ross, Herbert H., d.b.a. Ross Enterprises, Phoenix, Ariz. 687,942, canc. Cl. 26.
Rubin, B., Research, Inc., Bethesda, Md. 800,974, pub. 10–12–65. Cl. 35.
Safeway Stores, Inc., Oakland, Calif. 800,930, pub. 10–12–65. Cl. 1.
Samson Cordage Works, Boston, Mass. 50,828, ren. 12–28–65. Cl. 7.
Sandusky Foundry & Machine Co., Sandusky, Ohio. 800,901, pub. 3–9–65. Cl. 14.
Santina, Washington, D.C. 688,011, canc. Cl. 39.
Sarad, Walter J., d.b.a. Sleek Products, Lakewood, Colo. 800,904, pub. 10–12–65. Cl. 15.
Sawyer Research Products, Inc., Eastlake, Ohio. 800,834, pub. 10–12–65. Cl. 1.
Schaffner, Hart, & Marx: *See*—
Decker, Alfred, & Cohn, Inc.
Schenley Laboratories, Inc., to Abbott Laboratories, North Chicago, Ill. 567,787, new cert. Cl. 18.

Schleider's: *See*—
Schleider Foods, Inc.
Schleider Foods, Inc., d.b.a. Schleider's, Baltimore, Md. 801,029, pub. 10–12–65. Cl. 46.
Scholastic Magazines, Inc., New York, N.Y. 687,994, canc. Cl. 38.
Schutz, Nathan R., d.b.a. Contact Lens Center, New York, N.Y. 687,951, canc. Cl. 26.
Science Materials Center, Inc.: *See*—
Harcourt Brace & World, Inc.
Scoo-Ped, Ltd., Lincolnshire, England. 687,842, canc. Cl. 19.
Scotland By The Yard, Washington, D.C. 801,019, pub. 7–20–65. Cl. 42.
Seabrook Blanching Corp., Edenton, N.C. 801,113, pub. 10–12–65. Cl. 106.
Searchway, Inc., Bridgeport, Conn. 800,892, pub. 10–12–65. Cl. 12.
Searchway, Inc., Bridgeport, Conn. 800,893, pub. 10–12–65. Cl. 12.
Sears, Roebuck and Co., Chicago, Ill. 801,020, pub. 10–12–65. Cl. 42.
Selber Bros., Inc., Shreveport, La. 801,007, pub. 10–12–65. Cl. 39.
Shaw, Helen M., Beverly Hills, Calif. 688,002, canc. Cl. 39.
Sheffield Hosiery Mills, Inc., Miami, Fla. 801,008, pub. 3–9–65. Cl. 39.
Shellback Mfg. Co., Hazel Park, Mich. 800,950, pub. 10–12–65. Cl. 23.
Sherwin-Williams Co., The, Cleveland, Ohio. 687,795, canc. Cl. 16.
Short-Cut for Shopping: *See*—
Weppner, Theodore J.
Shur-Gloss Mfg. Co., Inc., Chicago, Ill. 801,085, pub. 10–12–65. Cl. 52.
Shwayder Bros., Inc., Denver, Colo. 800,852, pub. 10–12–65. Cl. 3.
Si Lite, Inc., Chicago, Ill. 800,934, pub. 10–12–65. Cl. 21.
Silver-Stahl Corp., San Francisco, Calif. 687,963, canc. Cl. 31.
Since 1868 Crescent Corp., d.b.a. Crescent Corp., New York, N.Y. 800,850, pub. 10–12–65. Cl. 3.
Slater Co., The, Chicago, Ill. 801,054, pub. 10–12–65. Cl. 50.
Sleek Products: *See*—
Sarad, Walter J.
Smith-Douglass Co., Inc., Norfolk, Va. 800,882, pub. 10–12–65. Cl. 10.
Smith, T. L., Co., The, Milwaukee, Wis. 687,918, canc. Cl. 24.
Solar Nitrogen Chemicals, Inc., Lima, Ohio, from Hoosier Soil Service, Inc., Bluffton, Ind. 800,881, pub. 10–12–65. Cl. 10.
Solvay & Cie, Societe en Commandite Simple, Brussels, Belgium. 800,839, pub. 10–12–65. Cl. 1.
Songrand Corp., The, Kansas City, Mo. 800,965, pub. 10–12–65. Multiple Class (Classes 29 and 44).
Spesco Corp., The, Atlanta, Ga. 800,941, pub. 10–12–65. Cl. 22.
Staley, A. E., Mfg. Co.: *See*—
Union-Baystate Co., Inc.
Stamford Chemical Co., The, Stamford, Conn. 800,864, pub. 10–12–65. Cl. 6.
Standard Brands Inc., New York, N.Y. 801,041, pub. 10–12–65. Cl. 46.
Star Lore, St. Louis, Mo. 688,088, canc. Cl. 51.
Steinberg Bros., Inc., Seattle, Wash. 801,010, pub. 10–12–65. Cl. 39.
Stellar Corp., The, Mobile, Ala. 800,842, pub. 4–14–64. Cl. 2.
Sterling Drug, Inc., New York, N.Y. 800,918, pub. 10–12–65. Cl. 18.
Stevens & Thompson Paper Co., New York, N.Y., to Georgia-Pacific Corp., Stamford, Conn. 205,899, ren. 12–28–65. Cl. 37.
Storer Broadcasting Co., Miami Beach, Fla. 688,109, canc. Cl. 107.
Sunbeam Corp., Chicago, Ill. 800,931, pub. 5–11–65. Cl. 21.
Superior Laboratories, Inc., Florissant, Mo. 801,072, pub. 6–1–65. Cl. 52.
Swank, Inc., Attleboro, Mass. 800,873, pub. 10–21–65. Cl. 6.
Sweets Co. of America, Inc., The, Hoboken, N.J. 205,562, ren. 12–28–65. Cl. 46.
Swift & Co., Chicago, Ill. 800,863, pub. 10–12–65. Cl. 6.
Tag-A-Long Tours: *See*—
Williams, Mitchell M.
Taylor Wine Co., Inc., The: *See*—
Pleasant Valley Wine Co.
Texaco Inc., New York, N.Y. 800,972, pub. 10–12–65. Cl. 34.
Texas Farm Products Co., Nacogdoches, Tex. 687,737, canc. Cl. 1.
Telsco Industries, Dallas, Tex. 800,900, pub. 10–12–65. Multiple Class (Classes 13 and 26).
Textile Rubber and Chemical Co., Inc., Dalton, Ga. 800,827, pub. 10–12–65. Cl. 1.
Thompson, Frank L., Miami, Fla. 687,815, canc. Cl. 18.
Thompson, Wm. T., Co.: *See*—
Thompson, Wm. T.
Thompson, Wm. T., d.b.a. Wm. T. Thompson Co., Los Angeles, Calif., to William T. Thompson Co., St. Louis, Mo. 417,924, ren. 12–28–65. Cl. 10.
Tibert, L. E., Co., Voss, N. Dak. 801,040, pub. 10–12–65. Cl. 46.
Topco Associates, Inc., Skokie, Ill. 800,879, pub. 10–12–65. Cl. 7.
Torrington Co., The, Torrington, Conn. 765,417, cor. Cl. 23.
Trombly, Sumner H., d.b.a. Lexington Chemical Co., to Joseph S. Cohen. 689,418, new cert. Cl. 18.
Tuffite Plastics, Inc., New York, N.Y. 687,739, canc. Cl. 1.
TV Time Foods, Inc., Bremen, Ind. 688,121, canc. Cl. 46.
Twining, E. S., & Co., to Belding Corticelli Fiber Glass Fabrics, Inc., New York, N.Y. 209,219, ren. 12–28–65. Cl. 50.
U.S. Industries, Inc., New York, N.Y. 798,091, cor. Cl. 38.
Uitgeverij Mouton & Co., N.V., The Hague, Netherlands. 800,995, pub. 10–12–65. Cl. 38.
Ultra-Life Laboratories, Inc., East St. Louis, Ill. 800,919, pub. 10–12–65. Cl. 18.
Underwood Corp., New York, N.Y. 687,884, canc. Cl. 23.
Uniform Supply Co., Inc., New York, N.Y. 687,878, canc. Cl. 22.
Union-Baystate Co., Inc., Cambridge, Mass., to A. E. Staley Mfg. Co., Decatur, Ill. 418,895, ren. 12–28–65. Cl. 5.
Union Special Machine Co., Chicago, Ill. 48,038, ren. 12–28–65. Cl. 23.
Union Special Machine Co., Chicago, Ill. 49,361, ren. 12–28–65. Cl. 23.
Union Tank Car Co., Chicago, Ill. 800,845, pub. 10–12–65. Cl. 2.
United States Borax & Chemical Corp., Los Angeles, Calif. 801,082, pub. 10–12–65. Cl. 52.
United States Borax & Chemical Corp., Los Angeles, Calif. 801,083, pub. 10–12–65. Cl. 52.
United States Playing Card Co., The, Cincinnati, Ohio. 800,936, pub. 10–12–65. Cl. 22.
United States Playing Card Co., The, East Norwood, Cincinnati, Ohio, to The United States Playing Card Co., Cincinnati, Ohio. 49,803, ren. 12–28–65. Cl. 22.
United States Rubber Co., New York, N.Y. 697,492. Am. 7(d). Cl. 39.
United Transformer Corp., New York, N.Y. 800,932, pub. 10–12–65. Cl. 21.
Universal Foods Corp., d.b.a. Red Star Yeast Products Co., Milwaukee, Wis. 801,027–8, pub. 10–12–65. Cl. 46.
Universal Luggage Co. Inc., New York, N.Y. 800,851, pub. 10–12–65. Cl. 3.
Urban, Frank J., Louisville, Ky. 687,947, canc. Cl. 26.
Van Norman Industries, Inc., Manchester, N.H. 687,922, canc. Cl. 26.
Variety Supply Co., Clara City, Minn. 801,098, pub. 10–12–65. Cl. 101.
Victor Valley Gem Shop: *See*—
Pilkington, Walter.
Vienna Sausage Mfg. Co., Chicago, Ill. 801,026, pub. 10–12–65. Cl. 46.
Vistalon, Inc., New York, N.Y. 687,981, canc. Cl. 37.
Walter Reade, Inc., Oakhurst, N.J. 688,099, canc. Cl. 100.
Waltham Precision Instrument Co., Inc.: *See*—
Kalart Co., Inc., The.
Walton & Walton, New Philadelphia, Pa. 800,894, pub. 10–12–65. Cl. 13.
Wanderer-Werke Aktiengesellschaft, Munich-Haar, Germany. 800,947, pub. 10–12–65. Multiple Class (Classes 23 and 26).
Warner Brothers Co., The, Bridgeport, Conn. 50,062, ren. 12–28–65. Cl. 39.
Waterloo Idea Companies, d.b.a. King Midas Products, Waterloo, Iowa. 800,846, pub. 5–25–65. Multiple Class (Classes 2, 8, 26, 37, and 50).
Webster Industries, Inc., Salem, Mass. 800,844, pub. 10–12–65. Multiple Class (Classes 2, 12, 42, and 50).
Wells Lamont Corp.: *See*—
Wells-Lamont Mfg. Co.
Wells-Lamont Mfg. Co., Minneapolis, Minn., to Wells Lamont Corp., Chicago, Ill. 205,461, ren. 12–28–65. Cl. 39.
Weppner, Theodore J., d.b.a. Short-Cut for Shopping, New York, N.Y. 800,858, pub. 10–12–65. Cl. 6.
Werner, R. D., Co., Inc., Greenville, Pa. 801,061, pub. 10–12–65. Cl. 50.
Western Fishing Line Co.: *See*—
Western Lace & Line Co.
Western Lace & Line Co., d.b.a. Western Fishing Line Co., Glendale, Calif. 687,872, canc. Cl. 22.
Western Velo & Cement Specialties Co., Los Angeles, Calif. 801,111, pub. 10–12–65. Cl. 105.
Weston Biscuit Co., Inc.: *See*—
Weston, George, Ltd.
Weston, George, Ltd., to Weston Biscuit Co., Inc., Passaic, N.J. 418,681, ren 12–28–65. Cl. 46.
Weyerhaeuser Co., Tacoma, Wash. 800,886, pub. 10–12–65. Cl. 12.
Weyerhaeuser Co., Tacoma, Wash. 800,980–1, pub. 10–12–65. Cl. 37.
Wiggins, E. B., Inc., Los Angeles, Calif. 800,895, pub. 10–12–65. Cl. 13.
Wiesbauer's Sha-Sha Gems, Torrance, Calif. 800,962, pub. 10–12–65. Cl. 28.
Wheeling Steel Corp., Wheeling, W. Va. 206,472, ren. 12–28–65. Cl. 14.
Whirley Corp., The, St. Louis, Mo. 687,876, canc. Cl. 22.
White Feather Farms, Inc., Dundee, Ill. 688,069, canc. Cl. 46.
Whitman, Stephen F., & Son, Philadelphia, Pa., to Pet Milk Co., St. Louis, Mo. 50,866, ren. 12–28–65. Cl. 46.
Wilcox-Gay Corp., The, Charlotte, Mich. 687,846, canc. Cl. 21.
William Underwood Co., Boston, Mass., to William Underwood Co., Watertown, Mass. 50,494, ren. 12–28–65. Cl. 46.

Williams, Dwight S., Co. Inc.: *See*—
Rice, Stix Dry Goods Co.

Williams, Mitchell M., d.b.a. Tag-A-Long Tours, Moab, Utah. 801,090, pub. 10–12–65. Cl. 100.

Winchendon Furniture Co., Winchendon, Mass. 687,967, canc. Cl. 32.

Woodward-Schumacher Electric Corp., Chicago, Ill. 800,933, pub. 10–12–65. Cl. 21.

Woolworth, F. W., Co., New York, N.Y. 801,006, pub. 10–12–65. Cl. 39.

Wright, L. J., Hauser, Oreg. 687,543, canc. Cl. 28.

Yorgensen, Wesley H., d.b.a. Industrial Absorbents and Supply Co., Hartford, Conn. 687,730, canc. Cl. 1.

Yorn Import Co., Inc., San Francisco, Calif. 688,022, canc. Cl. 39.

Zimmer Mfg. Co., Warsaw, Ind. 801,022, pub. 10–12–65. Cl. 44.

Zonite Products Co., New York, N.Y., to Chemway Corp., Wayne, N.J. 209,935, ren. 12–28–65. Cl. 6.

Zunderwerke Ernst Brun Zweigniederlassung der Wasag-Chemie Aktiengesellschaft, Krefeld-Linn, Germany. 687,929, canc. Cl. 26.

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